



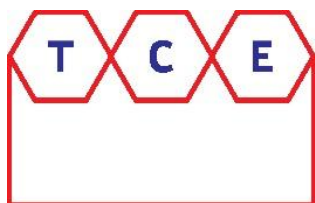
PREPARATION OF GENDER SENSITIVE AND CLIMATE-RESILIENT CITY WASH MASTERPLANS, MANAGEMENT MODALITIES AND TECHNICAL FEASIBILITY STUDIES FOR QARDHO AND SOUTH GALKAYO, SOMALIA

CONTRACT NO. 43428762

ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT (ESIA) FOR PILOT DECENTRALIZED WASTEWATER TREATMENT AT PUBLIC INSTITUTIONS IN QARDHO- SOMALIA

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SUBMITTED BY



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Contents

LIST OF FIGURES	V
LIST OF TABLES.....	VI
LIST OF ABBREVIATIONS.....	VIII
GLOSSARY	IX
E. EXECUTIVE SUMMARY.....	XI
E.1 PROJECT INFORMATION	XI
E.2 WASTEWATER TREATMENT AT PUBLIC INSTITUTIONS INTERVENTIONS	XII
E.3 OBJECTIVES OF ESIA.....	XII
E.4 LEGAL AND POLICY REGULATORY INSTRUMENTS	XIII
E.5 BASELINE SETUP	XVII
E.6 STAKEHOLDER CONSULTATIONS.....	XX
E.7 PROJECT POSITIVE IMPACTS.....	XXI
E.8 CONSTRUCTION PHASE NEGATIVE IMPACTS	XXIII
E.9 OPERATION PHASE NEGATIVE IMPACTS	XXIII
E.10 PROJECT CATEGORIZATION	XXV
E.11 ESIA RECOMMENDATIONS	I
1. BACKGROUND INFORMATION.....	1
1.1 PROJECT INFORMATION	1
1.2 THE PROJECT LOCATION.....	1
1.3 LOCAL ADMINISTRATION	1
1.4 OBJECTIVES OF ESIA.....	1
1.5 ASSESSMENT METHODOLOGY	2
1.5.1 Initial Screening and Baseline Assessment	2
1.5.2 Stakeholder Engagement.....	3
1.5.3 Impact Assessment Methodology	3
1.5.4 Impact Evaluation Methodology	3
1.5.5 Mitigation and Enhancement Measures	6
1.5.6 Management and Monitoring and Audit	7
2. PROPOSED PROJECT INTERVENTIONS	8
2.1 PROJECT DESCRIPTION – QARDHO DECENTRALISED WASTEWATER TREATMENT SYSTEMS.....	8
2.1.1 General Overview of Decentralized Treatment Facilities (DTFs)	8
2.1.2 Project Owner / Proponent.....	8
2.1.3 Project Location.....	8
DTF 1: Sheikh Osman Secondary School.....	8
DTF 2: Next to Qardho Airport.....	8
2.1.4 Project Phases:	9
2.1.5 Equipment and Material to be Used:.....	9
2.1.6 Waste Streams:	9
2.2 PROPOSED PUBLIC INSTITUTIONS WASTEWATER TREATMENT INTERVENTIONS.....	9
2.3 ESTIMATED PROJECT SHORT TERM INTERVENTIONS FOR QARDHO	11
2.4 PROJECT ACTIVITIES RELATED TO CONSTRUCTION OF WATER AND SANITATION INTERVENTIONS	11
2.4.1 Pre-project studies & planning	11
2.4.2 Design & engineering	11
2.4.3 Community engagement & institutional arrangements.....	12
2.4.4 Procurement & contracting	12

2.4.5	Construction activities	12
2.4.6	Commissioning & quality assurance	13
2.4.7	Operation, maintenance & sustainability	13
2.4.8	Monitoring, evaluation & adaptive management	13
2.4.9	Ancillary & enabling activities	13
2.4.10	Reuse & resource recovery (value capture)	14
2.4.11	Technology recommendations for Qardho context	14
3.	SITE BASELINE INFORMATION	15
3.1	CLIMATE	15
3.2	PHYSICAL AND TOPOGRAPHIC CONDITIONS	17
3.2.1	The Project Town Location	17
3.2.2	Topography and Landscape	19
3.2.3	Geology and Soils	19
3.2.4	Vegetation Cover	20
3.2.5	Air Quality	22
3.3	AQUATIC AND RIPARIAN ECOLOGY OF WADI QARDHO	22
3.4	SOCIO ECONOMIC BASELINE INFORMATION	23
3.4.1	Land Ownership and Settlements Patterns	23
3.4.2	Demographic Data:	23
3.4.3	Administrative Setup:	23
3.4.4	Infrastructure & Services:	24
3.4.5	Health Institutions in Qardho	24
3.4.6	Educational Institutions	24
3.5	WATER SUPPLY SITUATION	24
3.5.1	Power / Energy Sources	25
3.5.2	Water Distribution	25
3.5.3	Wastewater/Sanitation Practices	26
3.5.4	Project-based Improvements	26
3.5.5	Wastewater Treatment Process	26
3.5.6	Wastewater situation in Qardho	27
3.6	SANITATION SITUATION	28
3.6.1	Sanitation Systems	28
3.6.2	Household and Communal Latrines	28
3.6.3	Septic Tanks	30
3.6.4	Income, Livelihoods and Expenditure	31
3.6.5	Health	32
3.6.6	Security	32
4.	POLICY, LEGAL AND INSTITUTIONAL FRAMEWORK FRAMEWORKS 34	
4.1	NATIONAL REGULATORY AND POLICY FRAMEWORK	34
4.1.1	The Provisional Constitution of the Federal Republic of Somalia	34
4.1.2	Legislation and Policies on the Environment and Social Sectors	35
4.1.3	The Somali Labor Code	36
4.1.4	Legislation and Policies for the Health Sector	37
4.1.5	Legislation and Policies for the Water and Sanitation	39
4.1.6	Provisional Constitution of Somalia (2012) – Land & Natural Resources	39
4.1.7	Puntland Land Policy (Draft, 2018)	40
4.1.8	Customary Land Tenure (Xeer Somali)	40
4.1.9	National Security & Safety Frameworks (Federal & Puntland Levels)	41
4.1.10	Urban Planning and Land Use Regulations (Municipal Guidelines, Puntland)	41

4.1.11	Conflict Prevention & Social Cohesion Policies (Puntland Development Plan, 2020–2024).....	41
4.2	INSTITUTIONAL CAPACITY FOR ENVIRONMENTAL MANAGEMENT IN FGS	41
4.2.1	Institutional and Stakeholder Framework for Environmental & Social Management in Somalia	42
4.3	KEY INTERNATIONAL INSTRUMENTS RATIFIED OR ACCEDED TO BY SOMALIA:	44
4.4	RELEVANT INTERNATIONAL LABOUR ORGANIZATION (ILO) AND HUMAN RIGHTS INSTRUMENTS	46
4.5	REGIONAL TREATIES RELEVANT TO GBV, SEA, VAC AND PERSONS LIVING WITH DISABILITY (PLWD).....	47
4.6	AFRICAN DEVELOPMENT BANK INTEGRATED SAFEGUARDS SYSTEM	48
4.7	COMPARISON BETWEEN THE FGS FRAMEWORKS AND OTHER INTERNATIONAL STANDARDS.....	52
5.	STAKEHOLDER CONSULTATIONS.....	53
5.1	IDENTIFIED STAKEHOLDERS AND THEIR ROLES	53
5.2	METHODOLOGY OF STAKEHOLDER ENGAGEMENT	54
5.3	STAKEHOLDER CONSULTATION SUMMARY	57
5.3.1	Key Informant Interviews	57
5.3.2	Focus Group Discussions	57
5.4	GOVERNMENT AND INSTITUTIONAL VISITS.....	58
5.5	PLANNED STAKEHOLDER ENGAGEMENT ACTIVITIES.....	59
5.5.1	Stakeholder Engagement Plan (SEP)	59
5.5.2	Project implementation phase	62
5.5.3	Project closure phase	62
5.5.4	Process to be followed for arranging engagement activities	63
5.5.5	Engagement protocols	64
6.	ANALYSIS OF ALTERNATIVES	65
6.1	WASTE WATER TREATMENT OPTIONS.....	65
6.1.1	Wastewater treatment material alternatives.....	65
6.1.2	Design Alternatives	67
6.1.3	Location Alternatives.....	67
6.1.4	Operating Condition Alternatives	68
6.1.5	The 'No-Action' Alternative	68
7.	ASSESSMENT OF ENVIRONMENT AND SOCIAL IMPACTS.....	69
7.1	INTRODUCTION.....	69
7.2	PROJECT POSITIVE IMPACTS.....	69
7.2.1	Waste Water Treatment Plant - Operation phase positive impacts	69
7.3	CONSTRUCTION PHASE NEGATIVE IMPACTS	70
7.3.1	Impacts on Water Resources	70
7.3.2	Impacts on Soil Resources	72
7.3.3	Impact on Air quality within the Air – Shed.	74
7.3.4	Impacts related to Noise and Vibration	76
7.3.5	Impacts on Flora	78
7.3.6	Project Impacts and Mitigation on Aquatic and Riparian Ecology of Wadi Qardho	81
7.3.7	Traffic Management on Site	82
7.3.8	Waste Management on Site	83
7.3.9	Social Resources and Receptors.....	84
7.3.9.1	Workers, Community Health Safety and Security	84
7.3.9.2	Children Protection	87
7.3.9.3	Sexual Exploitation and Abuse (SEA).....	87
7.4	OPERATION PHASES NEGATIVE IMPACTS.....	88

7.4.1 Wastewater treatment Operational Impacts.....	88
7.4.2 Sanitation Works Operation Impacts	88
8. ENVIRONMENTAL AND SOCIAL MANAGEMENT AND MONITORING PLAN (ESMP).....	92
8.1 C-ESMPs AND SUB PLANS.....	92
8.2 LICENSES AND PERMITS (OCCUPATIONAL HEALTH AND SAFETY RELATED)	92
8.3 PURPOSE AND OBJECTIVES OF ESMP	93
9. GRIEVANCE REDRESS MECHANISM	103
9.1 INTRODUCTION	103
9.2 PURPOSE OF GRM	103
9.2.1 Purpose of Grievance Redress Mechanism (GRM)	103
9.3 OBJECTIVES OF GRM	104
9.4 GRM CORE PRINCIPLES	105
9.5 GRM FRAMEWORK.....	105
9.5.1 Grievance Category	105
9.5.2 GRM Provisions	107
9.6 GRM IMPLEMENTATION STEPS	107
9.7 INSTITUTIONAL RESPONSIBILITIES.....	114
9.8 MONITORING AND REPORTING	114
9.9 BUDGET FOR GRM IMPLEMENTATION.....	114
9.10 CONCLUSION	114
10. FINDINGS AND PROVISIONS	115
10.1 ASSESSMENT RECOMMENDATIONS:	115
10.2 PRE-CONSTRUCTION SAFEGUARDS READINESS	115
10.2.1 Permits and Licenses	115
10.2.2 Engaging ESHS Officers	115
10.2.3 Preparation of C-ESMP and Sub Plan.....	116
10.3 GENERAL OUTCOME OF ASSESSMENT – QARDHO WASTEWATER TREATMENT PROJECT	116
10.3.1 Positive Impacts Identified	116
10.3.2 Medium and High Adverse Impacts Identified	117
10.3.3 Trade-Offs	117
10.3.4 Contrast: Positive vs Negative Impacts.....	117
10.3.5 Ensuring a Sustainable Wastewater Treatment and Water Supply Project .	118
11. APPENDIXES	119
APPENDIX 1: STAKEHOLDER CONSULTATION	119
(MINUTES, REPORTS, LIST OF ATTENDANCE)	119
APPENDIX 2: MEETING PHOTOGRAPHS.....	132
APPENDIX 3: ATTENDANCE LIST – QARDHO MEETING	133
APPENDIX 4 : KEY INFORMANT INTERVIEWS FORMS.....	135
DTF 2 Site Information	143
Borehole Site Information	144
Pipeline Extension Information	144
Water Treatment Plant Information.....	145

LIST OF FIGURES

Figure 1.1: Study Area of Qardho Town	1
Figure 1.2: Qardho Town, Puntland State- Federal Republic of Somalia	2
Figure 1.3: Impact Assessment Process	2
Figure 2.1 Layout Plan of the Project Area with the Proposed sanitation systems in Qardho Town	10
Figure 2.2 Schematic diagram of the Decentralized Treatment Facility (DTF).....	12
Figure 3.1: Relative Humidity of Qardho.....	16
Figure 3.2: Average High and Low Temperature in Qardho from 1981 - 2024.....	16
Figure 3.3: Annual rainfall for Qardho	17
Figure 3.4: Study Area of Qardho.....	18
Figure 3.5: Qardho Town, Puntland State- showing DTF locations.....	18
Figure 3.6 Sheikh Osman Sec. School vegetation.....	20
Figure 3.7 Satellite Image showing the vegetation of the school.....	21
Figure 3.8 Satellite image showing vegetation around Qardho airport	21
Figure 3.9: Stone build Shared communal pit latrines within Shabeele IDP Camp	29
Figure 3.10: Temporary communal pit latrines within Shabeele IDP Camp	30
Figure 3.11: Incineration point for Hazardous waste from health facilities within Shabeele IDP Camp.....	30
Figure 3.12: Typical Household Septic Tank within the urban areas of Qardho town	30
Figure 3.13: Properly lined Septic tank for Safari Hotel in Qardho town	30
Figure 3.14: Newly acquired Exhauster tank at HODMAN Water Company	31
Figure 9.1 Categories of Grievances.....	106
Figure 9.2 Grievance Flow in Basic GRM.....	112
Figure 9.3 Detailed GRM Flow Chart	113

LIST OF TABLES

Table E.1 :Summary of the Proposed Water and sanitation works in Qardho.....	xii
Table E.2 Legal and policy regulatory Instruments relevant to ESIA.....	xiii
Table E.3 Institutional Framework – Qardho Decentralized Wastewater Treatment Project	xiv
Table E.4 ISS Operational safeguards	xvii
Table E.5: Key Informant Interviews	xx
Table E.6: Focus Group Discussions	xx
Table E.7: Public Meeting	xx
Table E.8 Construction Stage Negative Impacts and Mitigation Measures	xxiii
Table E.9 Operation Phase Negative Impacts and Mitigation Measures	xxiii
Table E.10 Environmental and Social Management Plan (ESMP) – Qardho Decentralized Wastewater Treatment Project.....	i
Table 1.1 Steps in Impact assessment methodology	3
Table 1.2: Impact characteristics	3
Table 1.3: Impact Type Definitions.....	4
Table 1.4: Definition of Likelihood	4
Table 1.5: Impact Significance	6
Table 2.1: Summary of the Proposed Interventions for pilot wastewater treatment in institutions- Qardho	9
Table 2.2: Estimated Project Costs.....	11
Table 3.1: Pipeline Summary in Qardho.....	25
Table 4.1: Social operation safeguards provision.....	49
Table 4.2 Comparison of the FGS Frameworks vs other international standards adopted in this project	52
Table 5.1 Stakeholder Engagement Matrix	55
Table 5.2 Key Informant Interviews.....	57
Table 5.3: Focus Group Discussions.....	57
Table 5.5 Stakeholder Mapping Matrix	60
Table 5.6SEP implementation budget.....	62
Table 5.7: Summary of planned stakeholder engagement in project implementation phase	63
Table 8.1: Pre-Mitigation Impact Assessment	71
Table 8.2: Residual Impact Significance	72
Table 8.3: Pre-Mitigation Impact Assessment	73
Table 8.4: Residual Impact Significance	74
Table 8.5: Ambient Particulate Matter (PM _{2.5} and PM ₁₀)	74
Table 8.6: Ambient NO _x SO _x , CO ₂ and O ₃	74
Table 8.7: Pre-Mitigation Impact Assessment	75
Table 8.8: Residual Impact Significance	76
Table 8.9. World Bank Group Noise Level Guidelines	77
Table 8.10: Pre-Mitigation Impact Assessment	77
Table 8.11: Residual Impact Significance	78
Table 8.12: Pre-Mitigation Impact Assessment	79
Table 8.13: Residual Impact Significance	80
Table 8.14 Summary of construction phase negative impacts	80
Table 8.15: Pre-Mitigation Impact Assessment	85
Table 8.16: Residual Impact Significance	87
Table 9.1: C-ESMPs and Sub plans.....	92
Table 9.2: Permits and Licenses	92
Table 9.3: Environment and Social Management Monitoring Plan – Construction Phase – Wastewater treatment	95

Table 9.4: Environment and Social Management Monitoring Plan – Operation of Sanitation Related Works.....	97
Table 9.5: Decommissioning Flow Chart.....	99
Table 9.6: Monitoring Plan – During Construction Phase.....	100
Table 9.1 Categories of Grievances.....	106
Table 10.1 Identified medium and high impacts.....	117
Table 10.2 Contrast between negative and positive impacts.....	117

LIST OF ABBREVIATIONS

AfDB	African Development Bank
BOD	Biological Oxygen Demand
C-ESMP	Construction – Environment and Social Management Plan
CoC	Code of Conduct
DEWATS	Decentralized Wastewater Treatment Systems.
ESIRT	Environment and Social Incidence Reporting Toolkit
EHS	Environmental Health and Safety
ESIA	Environmental and Social Impact Assessment
ESMP	Environment and Social Management Plan
FAO SWALIM	Food and Agriculture Organization of the United Nations (FAO) Somalia Water and Land Information Management
FGS	Federal Government of Somalia
GRC	Grievance Redress Committee
GM	Grievance Mechanism
GRM	Grievance Redress Mechanism
GPN	Good Practice Note
IDP	Internally Displaced Person
IFC	International Finance Cooperation
ILO	International Labour Organization
LACP	Land Acquisition and Compensation Plan
H&S	Health and Safety
MHM	Menstrual Hygiene Management
MOWDAFA	Ministry of Women Development and Family Affairs.
NGO	Non-Governmental Organization
NO _x	Sulphur Oxides
SO _x	Nitrogen Oxides
SEA	Sexual Exploitation and Abuse
SEP	Stakeholder Engagement Plan
SH	Sexual Harassment
SPD	Standard Procurement Documents
OHS	Occupational, Health and Safety
Pm	Particulate Matter
PPE	Personal Protective Equipment
PWDA	Puntland Water Development Agency
TMP	Traffic Management Plan
ToR	Terms of Reference
UNICEF	United Nations Children Fund
WB	World Bank
WBG	World Bank Group
WWTP	Waste Water Treatment Plant

GLOSSARY

Wastewater Treatment

- **Aerobic/Anaerobic:** Refers to processes that require oxygen (aerobic) or occur in the absence of oxygen (anaerobic) to break down waste.
- **Anaerobic Baffled Reactor (ABR):** A treatment system, often a multi-chamber septic tank, that enhances the digestion of organic matter.
- **Constructed Wetlands:** Engineered shallow basins planted with aquatic vegetation (like reeds) that naturally filter and treat wastewater.
- **Decentralized Wastewater Treatment Systems (DEWATS):** Small-scale, on-site systems used to treat wastewater close to its source, such as at a specific school or hospital.
- **Fecal Sludge Management (FSM):** The overall process of collecting, transporting, treating, and safely disposing of or reusing the semi-solid waste (fecal sludge) from latrines and septic tanks.
- **Membrane Bio Reactor (MBR):** An advanced wastewater treatment process that combines biological breakdown of waste with filtration using membranes.
- **Moving Bed Biofilm Reactor (MBBR):** A treatment method where small plastic carriers move within the wastewater, providing a large surface area for bacteria to grow and treat the water.
- **On-site Sanitation:** Any system that collects and treats wastewater at the location where it is generated (e.g., pit latrines, septic tanks).
- **Stabilization Ponds (WSPs):** Large, man-made ponds used to treat wastewater through natural biological processes. These can include facultative, oxidation, or maturation ponds.
- **Tertiary Treatment / Polishing:** An advanced stage of treatment after primary and secondary stages, designed to remove specific contaminants or pathogens before reuse.
- **Trickling Filters:** A treatment method where wastewater “trickles” over a bed of media (like rocks or plastic) covered in microorganisms that break down pollutants.

Wastewater Components & Outputs

- **Biosolids:** Treated, stabilized sludge that is rich in nutrients and can be safely used as a soil conditioner or fertilizer.
- **BOD (Biological Oxygen Demand):** A measure of the oxygen required by microorganisms to break down organic matter in water; a high BOD indicates high pollution.
- **COD (Chemical Oxygen Demand):** A measure of the total oxygen required to break down all organic matter in water; another indicator of water pollution.
- **Effluent:** The treated liquid wastewater that flows *out* of a treatment plant, septic tank, or industrial process.
- **Greywater:** Wastewater from household activities like washing dishes, laundry, and bathing (excluding toilet waste).
- **Influent:** The raw, untreated wastewater that flows *into* a treatment plant.
- **Leachate:** Contaminated liquid that forms when water seeps through waste, soil, or sludge.
- **Screenings & Grit:** The solid materials removed at the start of the treatment process. **Screenings** include rags and plastic; **Grit** includes heavy inorganic matter like sand.
- **Sludge:** The semi-solid material that settles out of wastewater during treatment, which requires further processing (like dewatering and stabilization).
- **TSS (Total Suspended Solids):** A measure of the solid particles suspended in water, which can cause cloudiness (turbidity).

Engineering & Environment

- **Alluvial Soils/Deposits:** Soil, sand, and gravel deposited by flowing water, typically found in wadis and floodplains.
- **Ambient (Air Quality):** The quality of the surrounding outdoor air.
- **Dewatering Beds / Drying Beds:** Sand or gravel beds designed to drain water from sludge, allowing it to dry out for easier handling.
- **Ephemeral (Wadi/River):** A river or stream (like Wadi Qardho) that flows only temporarily, usually in response to rainfall.
- **Eutrophication:** The excessive enrichment of water with nutrients (e.g., from sewage), which causes dense algae growth and oxygen depletion, harming aquatic life.
- **Fugitive Dust:** Dust that becomes airborne from sources like unpaved roads, construction sites, or stockpiles.
- **Geo-membrane Liner:** A synthetic, impermeable sheet used to line ponds or tanks to prevent liquid from leaking into the ground.
- **Hydrogen Sulphide (H₂S):** A toxic gas with a strong "rotten egg" odor, often produced by the anaerobic breakdown of sewage.
- **Hydrogeological:** Relating to the study of the distribution and movement of groundwater.
- **Inter-Tropical Convergence Zone (ITCZ):** A low-pressure belt near the equator whose movement governs the main rainy seasons (Gu' and Deyr) in Somalia.
- **Karstic Aquifer:** An aquifer formed in soluble rock like limestone, characterized by cracks and fractures that hold and transport groundwater.
- **Particulate Matter (PM):** Extremely small solid particles and liquid droplets suspended in the air (e.g., dust, soot), which are harmful to health.
- **Riparian:** Relating to the banks of a river, stream, or wadi. Riparian zones are the ecosystems directly adjacent to these water bodies.
- **Turbidity:** The cloudiness of water caused by suspended solid particles; an indicator of water quality.

& Assessment Terms

- **Bankable (Projects):** Projects that are considered financially and technically sound and well-structured, making them suitable to attract funding from banks or investors.
- **Good International Industry Practice (GIIP):** Standards, methods, and practices recognized by professionals as being effective and modern for a specific industry.
- **Receptor (Environmental/Social):** The person, community, species, habitat, or resource that may be affected by a project's impacts.
- **Residual Impact:** The environmental or social impact that remains *after* mitigation measures have been implemented.
- **Scoping:** An early stage in an impact assessment that identifies the key potential impacts and topics that need to be studied in detail.
- **Significance (of impact):** The overall importance of a potential impact, determined by combining its **magnitude** (how large the change is) and the **sensitivity** of the receptor (how vulnerable it is to that change).
- **Survivor-Centered Approach:** A method for handling cases of violence (like GBV/SEA) that prioritizes the rights, needs, and wishes of the survivor, ensuring their safety and confidentiality.

E. EXECUTIVE SUMMARY

E.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 Qardho, 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 Qardho 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 Qardho.

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 Pilot decentralized wastewater treatment at public institutions - (Hospitals/Health centers and schools).

The project intends to establish a decentralized wastewater treatment facilities in the following public institutions;

- DTF include DTF 1 (Sheikh Osman Sec. School) - Latitude 9.5081° N, Longitude 49.0855° E
- DTF 2 (Next to Qardho airport). - Latitude 9.5250° N, Longitude 49.0753° E

The projected cost of wastewater treatment facilities at public institutions will cost \$132,000 per facility, whereby 2No. facilities are to be constructed, bringing the total project cost to \$264,000. The cost of the projects ESMP implementation is estimated at \$30,500

E.1.1 Project site description

The scope of this ESIA focuses on DTF 1 and DTF 2 as stated below

DTF 1: Sheikh Osman Secondary School

- **Geo-Reference (Approximate):** Latitude 9.5081° N, Longitude 49.0855° E
- **Exact Locality:** This site is located within the grounds of the Sheikh Osman Secondary School, situated in a central, built-up district of Qardho.
- **Road/Estate:** The school is located just off the main **Qardho-Bosaso Highway (M2)**, which runs through the center of the city. It is surrounded by a dense, mixed-use neighborhood comprising residential homes, small shops, and other community buildings.

- **Site Description:** The proposed location is within the school's compound. The area is relatively flat and already developed for institutional use. A DEWATS at this site would be ideal for serving the high daily population of students and staff, managing the wastewater from the school's sanitation blocks. Its central location makes it a key demonstration site for institutional-level wastewater management.

DTF 2: Next to Qardho Airport

- **Geo-Reference (Approximate):** Latitude 9.5250° N, Longitude 49.0753° E
- **Exact Locality:** This site is located on open land adjacent to the Qardho Airport (Gardo Airport - GSR), which is approximately 5,300 meters given the airport's relative positioning of 9.545975,49.119148,
- **Road/Estate:** The site is situated on the northwestern outskirts of the city, along the main airport access road which connects to the Qardho-Bosaso Highway. The surrounding area is largely undeveloped.
- **Site Description:** The proposed location is in a sparsely populated area characterized by arid, open shrubland. The topography is generally flat. This site is suitable for a larger treatment facility due to land availability and its distance from dense residential areas, which provides a natural buffer zone. It is strategically positioned to serve the airport's terminal and administrative buildings, as well as potentially serving nearby peripheral settlements or IDP camps. The land offered for the DFT project was secured through a formal process involving the Local Government based on the standard operating procedures of the project financier and nature of the WASH project.

E.2 Wastewater Treatment at Public Institutions Interventions

The scope of works for Qardho wastewater treatment at public institutions is also detailed in the **Table E.1** below.

Table E.1 :Summary of the Proposed Water and sanitation works in Qardho

No.	Position/Description	Unit	Quantity
1	Pilot decentralized wastewater treatment at public institutions - (Hospitals/Health centers and schools)	No.	2

E.3 Objectives of ESIA

Reference is made to the African Development Bank adopted an Integrated Safeguards System (ISS) (also referred to as the “2013 ISS”, Revised 2023) 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 was done as per the AfDB and Somalia E&S laws.

E.4 Legal and Policy Regulatory Instruments

Federal Government of Somalia

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

Table E.2 Legal and policy regulatory Instruments relevant to ESIA

Instrument	Year	Brief Summary	Relevance to OS1 (E&S Assessment)
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).	Provides the constitutional mandate for ESIA and environmental governance; forms the legal foundation for safeguards.
National Environmental Policy (NEP)	2017	Aims to promote sustainable development through integrated environmental management, pollution control, and natural resource conservation.	Sets policy principles for environmental sustainability and supports project-level ESIA requirements.
Climate Change Policy	2020	Provides national direction for climate mitigation and adaptation, focusing on resilience in water, agriculture, health, and energy sectors.	Aligns projects with climate risk screening and adaptation planning under OS1.
National Adaptation Plan (NAP) Framework	Ongoing (post-2020)	Framework for implementing Somalia's adaptation priorities under the Paris Agreement.	Guides climate resilience measures in project design, as required in OS1.
Climate Change Education Policy	Draft (2020s)	Promotes awareness, curricula, and public engagement on climate change.	Supports capacity building and stakeholder engagement in safeguards process.
Environmental Management Bill	Draft (2020s)	Establishes environmental governance institutions, introduces a formal ESIA process, and defines penalties for non-compliance.	Core legal framework for ESIA compliance in Bank-financed projects.
Environmental Protection and Management Act	2024	Recently enacted, consolidates environmental protection measures, formalizes ESIA and environmental audits, and strengthens enforcement.	Provides a binding legal basis for ESIA, audits, and mitigation—directly mirrors OS1 requirements.
National Environmental Policy (updated)	2020 Draft	Updated NEP includes climate change, disaster risk reduction, and sustainable resource	Strengthens policy consistency with ISS safeguards.

		management.	
ESIA and Audit Regulations	Draft/under adoption	Provide detailed procedures for conducting ESIAs, audits, public participation, and disclosure.	Directly regulates screening, assessment, and monitoring (core of OS1).
Water Resources Law	2014 (Drafts earlier)	Governs sustainable use, allocation, and protection of water resources; prohibits pollution of water sources.	Relevant to wastewater projects – sets standards for water quality, pollution prevention.
Forests and Wildlife Law	Draft/various	Provides for protection of forests, wildlife conservation, and biodiversity management.	Links to OS3 but triggered by OS1 screening; requires biodiversity considerations in ESIA.
Fisheries Law	1985 (revised drafts)	Regulates exploitation of marine resources, prohibits discharge of pollutants into coastal waters.	Ensures marine and coastal protection for projects affecting water bodies, aligned with OS1 + OS3.

Institutional Framework for bodies with direct relevance to the project

Table E.3 Institutional Framework – Qardho Decentralized Wastewater Treatment Project

Institution / Body	Type	Roles / Influence on Project
Ministry of Environment & Climate Change (MoECC) – Federal Government of Somalia	Public (Federal)	National policy oversight on environment, climate change, and safeguards; custodian of the Environmental Protection and Management Act (2024) and ESIA regulations. Provides approvals and guidance for compliance with national laws relevant to AfDB OS1.
Ministry of Water Resources (MoWR) – Federal Government	Public (Federal)	Oversees water policy, water quality standards, groundwater/water source protection, and wastewater regulation at national level.
Ministry of Health (MoH) – Federal Government	Public (Federal)	Ensures wastewater systems in the public institutions meet health and sanitation standards; oversees infection prevention and control.
Ministry of Education, Culture and Higher Education (MoE)	Public (Federal)	Ensures WASH infrastructure in schools meets education policy and hygiene standards; responsible for integration of hygiene awareness/education.
Puntland Ministry of Environment, Agriculture and Climate Change (MoEACC)	Public (State – Puntland)	Direct state-level regulator in Qardho. Issues ESIA permits, monitors compliance, and enforces environmental management law. Primary institution for environmental approvals.
Puntland Ministry of Water	Public (State –	Regulates water use, water supply, and sanitation

and Energy (MoWE)	Puntland)	infrastructure within Puntland. Supports technical oversight and alignment with water resources law.
Puntland Ministry of Health (MoH-P)	Public (State – Puntland)	Supervises sanitation, hygiene, and health safety within health institutions in Qardho; ensures medical wastewater is safely treated.
Qardho District Local Government / Municipality	Public (Local)	Provides permits for construction and land use; engages communities in planning; supports O&M (operation and maintenance) through municipal service frameworks.
African Development Bank (AfDB)	Development Financier	Project financier; requires compliance with 2013 ISS (and updated 2023 ISS). Provides technical guidance, safeguard screening, and monitoring during project lifecycle.
UNICEF Somalia / Puntland Office	Development Partner	Supports WASH programming in schools and health centers; often co-funds or provides technical support in sanitation projects.
FAO Somalia	Development Partner	Implements water/land resource management projects; relevant for climate-resilient design and technical assistance on water reuse.
NGOs (e.g., ADRA, CARE, NRC, local NGOs)	Non-state / Implementing partners	Active in Qardho on WASH-in-Schools and health facility sanitation; potential implementers for community engagement, training, and system operation.
Private Contractors / Consultants	Private	Design and construct decentralized wastewater treatment systems (DEWATS); provide O&M training; ensure technical compliance with ESMP/ESIA.
Community Groups (Hospital Boards, School Management Committees, Parent Associations, Water User Committees)	Civil Society	Key stakeholders for project acceptance, monitoring, and sustainability; ensure local ownership, report grievances, and participate in decision-making.
Academic/Research Institutions (e.g., Puntland State University)	Academia	Provide technical expertise, research on wastewater management, training programs for students and professionals.

The African Development Bank Integrated Safeguards System (ISS) and Somali E&S Laws

This ESIA follows the following Somali E&S laws and the AfDB ISS standards

Somalia Environmental laws relevant to the project

1. Provisional Constitution of the Federal Republic of Somalia (2012)

- **Article 25:** Every person has the right to an environment that is not harmful to their health and well-being.
- **Article 45:** The Federal Government must give priority to the protection, conservation, and preservation of the environment against anything that may cause harm to natural biodiversity, ecosystems, or the environment.

2. Environmental Management Bill (Draft, 2020s)

- Somalia has developed a draft **Environmental Management Bill**, with support from UNEP/UNDP. It establishes an **Environmental and Social Impact Assessment (ESIA) system**, requiring screening, assessment, mitigation, and monitoring before project approval.

3. National Environmental Policy (NEP) – 2015 (updated 2020 in draft form)

- Sets out principles for sustainable development, including pollution control, ecosystem protection, and ESIA requirements. It recognizes the need for environmental safeguards in development projects (water, energy, infrastructure).

4. Somali Environmental and Social Impact Assessment (ESIA) Regulations (under development)

- Somalia (through the Ministry of Environment & Climate Change) has been developing **ESIA regulations** that:
 - Define categories of projects requiring ESIA.
 - Outline consultation and disclosure obligations.
 - Specify review and approval roles.

5. Puntland Environmental Management & Climate Change Laws

The state-level laws and regulations that apply:

- Puntland has its own **Environmental Management Law (2016)**, which requires:
 - Environmental impact assessments for major projects.
 - Pollution control and waste management standards.
 - Institutional oversight through the Puntland Ministry of Environment, Agriculture and Climate Change.

AfDB ISS standards

In 2013, the African Development Bank adopted an Integrated Safeguards System (ISS) also referred to as the “2013 ISS”, Revised 2023), 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).

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 below.

Table E.4 ISS 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 5	Community Health, Safety and Security
7	Environmental and Social Operational Safeguard 8:	Vulnerable Groups
10	Environmental and Social Operational Safeguard 5	Stakeholder Engagement and Information Disclosure

E.5 Baseline Setup

Available information indicates that Qardho currently lacks a centralized wastewater treatment system and that most activity documented there focuses on water supply and basic sanitation rather than sewage collection or advanced treatment. Donor-backed WASH initiatives—most notably an African Water Facility-supported project (~€6.2 million) aimed at building climate resilience across Qardho, Dollow and South Galkayo—target improved access to safe drinking water, hygiene promotion, feasibility studies and construction of latrines, but do not include a town-wide sewerage plant.

There has not been a recent comprehensive census of Qardho with verified results that many sources agree on. A realistic estimate for today’s (2025) population of Qardho city/urban area

might be around 160,000 to 200,000 people (excluding nomadic or very remote rural populations).

Complementary efforts by agencies such as FAO, local NGOs and partners (including the Puntland Development Organization and WFP) have emphasized climate-smart water harvesting (haffirs), rainwater storage, rehabilitation of shallow wells and solar pumping to secure potable supply; these interventions include basic filtration and distribution components but not formal wastewater processing. Public notices and project briefs show work on latrines, catchments and assessments of saline water sources, yet there is little public documentation of sewer networks, desludging services, wastewater reuse programs, or regulatory enforcement for effluent discharge in Qardho. Taken together, the documented activities suggest progress on household- and community-level sanitation and on water sourcing/resilience, while systematic collection, treatment and safe disposal of municipal wastewater remain largely unestablished or unreported.

Qardho town is situated within the Ariel valley. The town is generally surrounded by high rises of limestone rocks, with the valley traversing the town from the north east to the south west. The town is basically located on a deposition zone. Within the valley bed, where Qardho town is situated, the terrain is generally flat with gentle sloping plains towards the North-East. In the north, parallel to the Gulf of Aden coast is a maritime plain varying in width from roughly twelve kilometers in the west to as little as two or three kilometers in the East. Scrub-covered, semi-arid, and generally drab, this plain, known as the Guban (burnt land), because of its heat and dryness during much of the year. It is crossed by broad, shallow watercourses that are beds of dry sand except in the rainy seasons. Inland from the gulf coast, the plain rises to the precipitous north-facing cliffs dissected by highlands. These form rugged mountain ranges that extend from Somalia's northwestern border with Ethiopia, eastward to the tip of the Horn where they end in the sheer cliffs of Caseyr.

Main economic activities/income contributions include: wholesale and retail distribution of imported foods and products, as well as local products; remittances, import and distribution of petrol, the telecommunications sector, the kat market, and a wide range of services offered by small-scale enterprises (welding, carpentry, health care, domestic work etc.). The town is an important regional hub for commerce between southern and central Somalia, the Somali region of Ethiopia and the port of Bossaso. The service sector is very important in Qardho economy and is strongly linked to livestock and livestock products trade.

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).

Wastewater and Sanitation

Qardho does not currently have a centralized wastewater treatment facility. Most households, schools, and health centers rely on pit latrines, septic tanks, or informal drainage systems. During heavy rains and flash floods, wastewater often mixes with stormwater because of poor drainage channels and unplanned construction along natural streams, creating contamination risks. In health facilities, wastewater and medical waste handling practices are poorly documented, and there are no known structured systems for safe treatment and disposal. This creates public health hazards and highlights the need for decentralized or small-scale wastewater treatment solutions.

Solid Waste Management

Solid waste management is another major challenge in Qardho. The town generates significant amounts of domestic waste, much of which is either burned, buried, or dumped in open spaces. While the municipality of Qardho does have a Health and Sanitation Department, its resources and operational capacity are limited. Collection services, if available, tend to be inconsistent and not city-wide. Recycling is minimal, though small pilot initiatives led by NGOs, such as Concepts for Community Programmes (CCP), have introduced plastic recycling and waste separation efforts in parts of Puntland, including Qardho. These are still at a very early stage and mostly depend on donor support.

Drainage and Flooding

Flooding is a recurring issue in Qardho. Seasonal rains frequently overwhelm the town's poor drainage system, causing flooding of streets, latrines, and waste disposal sites. Since many houses and informal settlements are built directly over natural waterways without proper planning or permits, blockages are common. Solid waste accumulation, especially plastics and debris, worsens the problem by clogging drains. This not only damages property and infrastructure but also contributes to the spread of waterborne diseases.

Institutional Context

Responsibility for sanitation and waste management lies with Qardho municipality, under its Health and Sanitation Department, but capacity is constrained. At the state level, Puntland authorities play a role in environmental and water resource management. Nationally, WASH projects funded by the African Development Bank (through the African Water Facility) are underway to improve water and sanitation in Qardho, South Galkayo, and Dollow.

Pressures and Gaps

Population growth, especially with the influx of internally displaced persons (IDPs), is putting additional pressure on Qardho's sanitation systems. Wastewater volumes are increasing, yet safe disposal remains limited. Solid waste services do not meet demand, and public awareness around safe waste disposal is low. Sludge management — such as emptying septic tanks or latrines and transporting sludge for safe disposal — is weak or informal. Overall, gaps include insufficient infrastructure, weak regulatory enforcement, limited funding for operation and maintenance, and poor public awareness.

E.6 Stakeholder Consultations

A total of 5 key informant interviews and 6 Focused Group Discussions (FGD) were conducted with representatives from the following sectors. Additionally, Public participation forums were held on 3rd September 2025 at Mayor Office Qardho.

Table E.5: Key Informant Interviews

Date	Stakeholder/Office Visited	Key Issues Discussed
12 th June 2025	Ministry of Women Development and Family Affairs (MOWDAFA) – Qardho-Social Department	Women's representation in WASH planning, lack of menstrual hygiene services, need for gender mainstreaming in local development plans.
11 th June 2025	Qardho Municipality (Mayor's Office & Public Works Dept.)	Infrastructure gaps, urban sanitation planning, challenges in maintaining public toilets.
9 th June 2025	Ministry of Water and Environment – Hoodman Water Management Company	Access to clean water, distance to water points, maintenance issues, low women involvement in user committees.
12 th June 2025	Ministry of Health – Shabeellee Health Centre	WASH-related health concerns, diarrhoea outbreaks, link between sanitation and maternal health.
13 th June 2025	Local NGOs (including women's associations)	Gender-based violence risks at water points, lack of sanitary pads, women's limited access to funding.

Table E.6: Focus Group Discussions

Date	Group Composition	Key Themes
12 th June 2025	Women from IDP camps (5 participants)	Long distances to water points, lack of safety and privacy at latrines, stigma around menstruation.
11 th June 2025	Waste services provider	Poor school sanitation, need for capacity building, establishment of recycling facilities
16 May 2025	Men and male youth (community leaders)	Limited awareness of gender-specific needs in WASH, support for improved community hygiene.
12 th June 2025	Mixed group: nurses, CHWs	Importance of inclusive WASH education, role of schools and health centers, capacity-building needs.

Outcomes of Public engagement meetings held on 11th and 12th June, 2025 at Shabelee

Table E.7: Public Meeting

Suggestion/ Question	Response
<i>Community Members</i> wanted to be informed How do you plan to mitigate the noise and air pollution from construction vehicles and drilling machinery, especially in residential areas, during the initial implementation phase?	Residents were informed that during implementation of the project there is a plan to limit and minimize noise. For air pollution, we will use modern, well-maintained vehicles and water down construction areas to control dust.
<i>Community Members</i> wanted to know What measures will be in place to prevent water contamination from accidental spills or improper waste disposal, especially from desludging units?	The residents were informed that all mobile desludging units will be equipped with sealed tanks and trained operators to prevent spills. We will also have a designated, secure off-site location for waste disposal, which will be regularly monitored.

Community Members wanted to know If you Can you provide details on the long-term management of sludge from the new wastewater treatment plant to ensure safe and proper disposal.	The meeting was informed that the sludge will undergo a stabilization process at each plant. The program has a long-term plan to either use it as a soil amendment for non-edible crops or transport it to a designated sanitary landfill, depending on its quality.
Community Members wanted to know if youths in the area will get employment opportunities during project implantation.	Residents were informed that all unskilled labour and some skilled will be sourced from the local community. Youths were encouraged to organize themselves into groups and avail themselves for the job opportunities for consideration.
Community Members wanted to be informed when the Project will commence, and if they should proceed with their plans of digging pit latrines or they should stop now that the new emergency latrines that will come along the project.	Residents were informed that, at this stage, the program is dedicated to conducting feasibility studies. It was conveyed that the project's commencement is contingent upon the securing of funding by the donor. Subsequently, implementation will be initiated based on the most pressing emergency needs of the community. In light of the new emergency latrines planned for the project, residents are advised to suspend their individual plans for digging new pit latrines.

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.

E.7 Project Positive Impacts

Construction phase positive impacts

- Employment Creation: At construction stage, an estimate 50-80 workers will be deployed per site on temporary employment basis to help in construction and land preparation activities. This will include both skilled and unskilled personnel especially from the local population.
- Income/Revenue to Government: Income to government will be realized in terms of taxes generated during the acquisition of relevant statutory licenses - such as ESIA approval, Municipal building/construction permit, Waste management permit, and Labour & safety compliance certification. 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.

Wastewater Treatment - Operation phase positive impacts

1) Better public health – fewer waterborne diseases

Treated wastewater and properly managed sewerage reduce contamination of drinking water, surface water and household environments, lowering diarrheal disease, cholera and other water-related illnesses – especially important for IDP camps and dense urban neighbourhoods.

2) Improved environmental quality and protection of local water sources

Operating treatment plants cuts pathogen and nutrient loads entering wadis and groundwater, protecting aquatic life and reducing eutrophication and odour problems in/around Qardho. These preserves limited local water resources and reduces downstream pollution.

3) Reliable water reuse for irrigation and livelihoods

Treated effluent can be safely reused for small-scale irrigation, tree planting, livestock watering (with appropriate treatment level), and for replenishing urban green spaces – supporting household food security, horticulture and income-generating activities. Regional WASH projects for Qardho highlight reuse as a resilience measure -African Water Facility

4) Economic and job benefits at the local level

Operation and maintenance create steady local employment (operators, technicians, truck drivers, labour for desludging), and lower health costs and water-purchase expenses for households –freeing household income for other uses. Large donors are investing in Puntland WASH improvements which include operational components. - African Development Bank

5) Improved sanitation coverage, dignity and gender outcomes

Functional wastewater systems reduce open defecation and unsafe on-site disposal, improving safety and dignity (especially for women and children), and reducing the time people spend collecting or buying water. Regional assessments show sanitation access in Puntland is low and that improved services strongly benefit vulnerable groups.

6) Reduced public-costs from flooding and contamination events

By controlling discharge quality and managing sludge, operational treatment reduces the risk that floods or overflow events will spread contaminated wastewater through neighbourhoods – lowering emergency response and healthcare burdens. - (MoEWR)

E.8 Construction Phase Negative Impacts

A summary of negative Impacts anticipated during construction stage are in the table below.

Table E.8 Construction Stage Negative Impacts and Mitigation Measures

Impact Area	Negative Impact	Ranking	Mitigation Measures
Water Resources	Risk of surface/groundwater contamination from wastewater, drilling fluids, or accidental spills	High	Proper containment of wastewater and fuels; safe disposal of drilling fluids; establish buffer zones from water sources
Soil Resources	Excavation and soil disturbance leading to erosion and compaction	Medium	Backfilling, soil stabilization, and controlled excavation methods
Air Quality	Dust emissions and exhaust fumes from machinery	Medium	Regular water sprinkling, covering stockpiles, proper equipment maintenance
Noise & Vibration	Disturbance to hospital/school operations and nearby communities	High	Use of silencers, restrict noisy works to daytime, provide notice to institutions
Flora	Clearance of small vegetation for site preparation	Low	Minimize clearing, replant disturbed areas, avoid unnecessary removal
Solid & Liquid Waste	Improper disposal of construction debris, packaging, and wastewater	High	Segregate wastes, reuse/recycle where possible, dispose in designated sites
Traffic & Safety	Increased risk of accidents around schools/hospitals due to movement of construction vehicles	High	Traffic management plan, signage, speed limits, awareness to staff/students

E.9 Operation Phase Negative Impacts

Table E.9 Operation Phase Negative Impacts and Mitigation Measures

Impact Area	Negative Impact	Ranking	Mitigation Measures
Water Resources	Risk of contamination from poorly treated effluent, sludge mismanagement, or chemical leaks	High	Regular monitoring, proper sludge disposal, secondary containment for chemicals
Soil Resources	Soil pollution from leakage of treatment by-products or sludge	Medium	Safe storage and lined disposal sites for sludge, periodic soil testing
Air Quality	Odor emissions from sludge handling and chemical use	Medium	Odor control systems, proper ventilation, covering sludge drying beds
Noise & Vibration	Noise from pumps, blowers, and mechanical equipment	Low-Medium	Use noise-dampening equipment, regular maintenance, restrict high-noise operations
Flora & Fauna	Localized impact from effluent discharge affecting vegetation or water-dependent organisms	Low	Ensure effluent meets discharge standards, reuse treated water for landscaping
Solid & Liquid	Generation of sludge, chemical	High	Segregate, treat, and dispose in

Waste	containers, laboratory waste		compliance with environmental regulations; recycling where possible
Occupational Health & Safety	Risks to staff from exposure to chemicals, pathogens, and machinery	High	PPE use, staff training, emergency response plans, safe chemical handling procedures

Sanitation Interventions

The short-term interventions as detailed in the feasibility report will entitle (i) Deploy mobile desludging units to empty overflowing latrines, (ii) Construct emergency latrines and soak pits in high-density or flood-prone zones, (iii) Construction and rehabilitation of onsite waste water facilities- 100 Units of Septic tanks and soak pits -Public places and vulnerable communities and (iv) Pilot decentralized wastewater treatment at public institutions - (Hospitals/Health centers and schools). The interventions will pose negative pollution related impacts during operation that will be mitigated as summarized below.

Table E.14: Mitigation of Impacts During Operation of Sanitation Interventions

Issue	Action required
Pollution of Water Resources by raw sewage from blocked Sewer pipes and Manholes.	• The water and sanitation department will ensure proper and periodic maintenance of sanitation interventions proposed • The water and sanitation department will activate a community watch group for information sharing on the status of the sewers • Regular cleaning of grit chambers and sewers to remove grease, grit, and other debris that may lead to sewer backups • Development of an inventory of system components, with information including age, construction materials, and drainage areas served • Design manhole covers to withstand anticipated loads and ensure that the covers can be readily replaced if broken to minimize entry of garbage and silt into the sewer and sanitation system • Ensure sufficient hydraulic capacity to accommodate peak flows and adequate slope in gravity mains to prevent build-up of solids and hydrogen sulphide generation • Regular inspection of the system to ensure performance is maintained at high levels • Blockages should be detected and promptly replaced • Communities living within the river basins where the trunk sewers will be constructed should be enlightened on dangers of using raw sewerage to irrigate farmlands.
Odour Menace from Wastewater Treatment Works	• The water and sanitation department will ensure appropriate covering/ventilation of the pre-treatment unit • The water and sanitation department will ensure appropriate handling and removal of grit/grease • The water and sanitation department will ensure scum is appropriately disposed of or properly stabilized

	• The water and sanitation department will ensure that the pond series have adequate water flow and aeration to reduce the potential of odour formation • The perimeter of the proposed site should be vegetated with trees and plants of varying heights thereby forming windbreaker and reduce dispersion of odour • Repairing of dilapidated the roofs of the sludge drying beds to ensure quick drying of sludge and appropriate disposal to reduce odour emanating from wet sludge.
Risks Associated with Sludge from the WWTP	• The water and sanitation department will dry sludge on the drying beds before disposing it off • Dried sludge could be used to make briquettes as a charcoal substitute or be sold to farmers as fertilizers • Excess sludge can be disposed in a designated landfill which shall only be for disposing dry odourless sludge. • Preparation and enforcement of operational guidelines for sludge management.
Solid Wastes Impacts at WWTP Screens	• The water and sanitation department will develop a comprehensive Waste Management Plan (WMP) for management of solid wastes from screen chambers • The water and sanitation department will employ personnel who will be in charge of maintaining hygiene and cleanliness of the sanitation facilities • including removal of solid wastes from screen chambers • Properly labelled and strategically placed waste disposal containers shall be provided at all places within the sanitation facilities • Solid wastes once removed from screens shall be collected and disposed appropriately as required by waste Management Regulations of (2006).
Inversion of Birds and Reptiles to the WWTP	• The sewage treatment plants should be protected from wildlife encroachments by providing secure barriers to keep off the animals from interfering with the plant operations and safety • The quality of effluent discharged into the natural water sources will be an important parameter on the regional control of the river eutrophication that attracts insects that reptiles feed on

E.10 Project Categorization

Under the African Development Bank's Integrated Safeguards System (2023), this project is classified as **Environmental Category 2**, a designation for initiatives likely to cause site-specific, reversible, and readily mitigated impacts. Similarly, Somalia's national legal and policy framework, including the Environmental Protection and Management Act (2024), designates it as a **Medium-Risk Project**, which is the national equivalent of the AfDB's Category 2.

This consistent classification is driven by key project features such as the planned wastewater discharge, generation of solid waste, temporary construction disturbances like dust and noise, and localized effects on the biodiversity and ecosystem services of Wadi Qardho, thereby triggering multiple operational safeguards and requiring the preparation of an Environmental and Social Management Plan (ESMP) or a preliminary environmental assessment pending final regulatory screening.

The potential adverse impacts are moderate, local, and reversible, and can be effectively mitigated through a well-prepared ESMP covering:

- Water resource protection and quality monitoring
- Safe handling and disposal of chemicals and laboratory wastes
- Occupational health and safety safeguards
- Community engagement and grievance mechanisms

Table E.10 Environmental and Social Management Plan (ESMP) – **Qardho Decentralized Wastewater Treatment Project**

Impact Area	Potential Impacts	Proposed Mitigation Measures	Responsibility	Monitoring Indicators	Phase	Budget (USD)
Construction Site Preparation	Vegetation clearance, soil erosion, disturbance of Wadi Qardho riparian zone	Limit clearing to designated sites; maintain 30m buffer; erosion control (silt traps, re-vegetation)	Contractor, MoEACC, Supervising Engineer	% of buffer maintained; erosion control in place	Construction	\$1,200 (for project duration)
Soil and Water Quality	Contamination from fuels, lubricants, wastewater, construction debris	Designated fuel/chemical storage; spill kits; safe disposal of waste	Contractor, MoEACC	# of spills; water quality test results	Construction & Operation	\$600 (Construction) \$1,000 (per year, Operation)
Air Quality and Dust	Dust from excavation, vehicle emissions, materials	Water spraying; cover trucks; maintain vehicles	Contractor	Dust suppression measures and complains	Construction	\$800 (for project duration)
Noise and Vibration	Disturbance to patients/students	Restrict works to daytime; use low-noise equipment	Contractor, Facility Admin	Noise levels (dB); complaints	Construction	\$600 (for project duration)
Solid Waste Management	Improper disposal of soil, packaging, institutional waste	Segregate waste; reuse/recycle; link with Qardho municipality	Contractor, Municipality	% waste recycled/disposed safely	Construction & Operation	\$500 (Construction) \$360 (per year, Operation)
Wastewater Management	Risk of untreated effluent entering Wadi Qardho	Ensure treatment meets Somali & AfDB standards; effluent testing; no direct discharge	Facility Mgmt, MoEACC	Effluent quality test results	Operation	(Covered by Water Quality budget)
Biodiversity & Riparian Ecology	Loss of habitats along Wadi Qardho	Maintain buffer zones; replant disturbed areas; monitor recovery	Contractor, MoEACC	Vegetation cover restored; indicator species observed	Construction & Operation	\$400 (Construction) \$200 (per year, Operation)
Occupational Health & Safety (OHS)	Worker accidents, dust exposure, unsafe machinery	PPE; OHS training; first aid kits	Contractor, Engineer	# of incidents; PPE usage	Construction	\$1,500 (for project duration)
Public Health (Hospitals/Schools)	Pathogen exposure, odour, mosquito breeding	Proper sludge handling; regular desludging; vector control	Facility Mgmt, MoH, MoEACC	Frequency of desludging; odour control measures	Operation	\$600 (per year, Operation)
Community Health & Safety	Increased traffic; accident risks	Traffic management plan; signage; traffic marshalls	Contractor, Local Authorities	# of incidents; signage in place	Construction	(Covered by OHS budget)
Social Impacts (Land & Access)	Temporary disruption of access	Schedule works off-peak; alternative access paths	Contractor, Facility Admin	Access maintained; complaints resolved	Construction	\$1,000 (for project duration)
Gender & Vulnerable Groups	Unequal participation; GBV risks	Inclusive consultations; workers' Code of Conduct; GRM	Contractor, UNICEF, MoEACC	# of consultations; GBV awareness sessions	Construction & Operation	\$1,500 (per year)
Climate Resilience	Flooding due to extreme rainfall	Raised platforms; flood-proof design; drainage maintenance	Engineer, MoEACC, MoH	Elevation compliance; drainage functioning	Design & Construction	\$300 (for project duration)

E.11 ESIA Recommendations

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 as listed
 - (iii) Implement Provisions of the Plans and Undertake Monthly and Quarterly reporting of ESHS compliance.

1. BACKGROUND INFORMATION

1.1 Project Information

Qardho (also known as Gardo) is a historical town in Somalia. It is the capital of Karkar region in Puntland State of Somalia an autonomous state in north-eastern Somalia. It serves as the administrative capital of the Qardho District and is an important commercial and cultural hub in the region. The town is located at approximately 237 km South of Bosaso port city. The distance from Qardho to Somalia's Capital City of Mogadishu is approximately 1,153 km and 205 KM from Garowe City the administrative capital of Puntland State. The town 's Global Positioning System is at Longitude 9° 30' 02" Latitude 49° 05' 31".'

The Terms of Reference (ToR) for this project stress the urgent need to develop climate-resilient, scalable, and context-appropriate sanitation solutions for Qardho. 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 Qardho” project.

1.2 The Project Location

Qardho town lies within the catchment of Wadi Qardho (also known as Togga Qardho), a prominent seasonal river (Qardho river) that flows through the heart of the town. This river, although dry for most of the year, becomes active during the rainy seasons, often carrying flash floods that affect low-lying areas and informal settlements along its banks. Qardho is definitely situated in a broad, shallow natural valley formed by seasonal watercourses.

The exact locality where the project is to be implemented is as shown;

1. DTF 1: Sheikh Osman Secondary School

- **Correct Geo-Reference (Approximate):** Latitude 9.5081° N, Longitude 49.0855° E
- **Exact Locality:** This site is located within the grounds of the Sheikh Osman Secondary School, situated in a central, built-up district of Qardho.
- **Road/Estate:** The school is located just off the main **Qardho-Bosaso Highway (M2)**, which runs through the center of the city. It is surrounded by a dense, mixed-use neighborhood comprising residential homes, small shops, and other community buildings.

2. DTF 2: Next to Qardho Airport

- **Geo-Reference (Approximate):** Latitude 9.5250° N, Longitude 49.0753° E
- **Exact Locality:** This site is located on open land adjacent to the Qardho Airport (Gardo Airport - GSR), which is approximately 5,300 meters given the airport's relative positioning of 9.545975,49.119148,

- **Road/Estate:** The site is situated on the northwestern outskirts of the city, along the main airport access road which connects to the Qardho-Bosaso Highway. The surrounding area is largely undeveloped.

Qardho Valley is the commonly used local term to describe the natural depression and drainage basin that shapes the town's topography. This valley collects runoff from the surrounding highlands and plateaus, channelling it through seasonal rivers and gullies that feed into Togga Qardho during the rainy season. The location of the town is as presented in the figure below in the Federal Republic of Somali.

Qardho (also known as Gardo) is a historical town in Somalia. It is the capital of Karkar region in Puntland State of Somalia an autonomous state in north-eastern Somalia. It serves as the administrative capital of the Qardho District and is an important commercial and cultural hub in the region. The town is located at approximately 237 km South of Bosaso port city. The distance from Qardho to Somalia's Capital City of Mogadishu is approximately 1,153 km and 205 KM from Garowe City the administrative capital of Puntland State. The town 's Global Positioning System is at Longitude 9° 30' 02" Latitude 49° 05' 31".

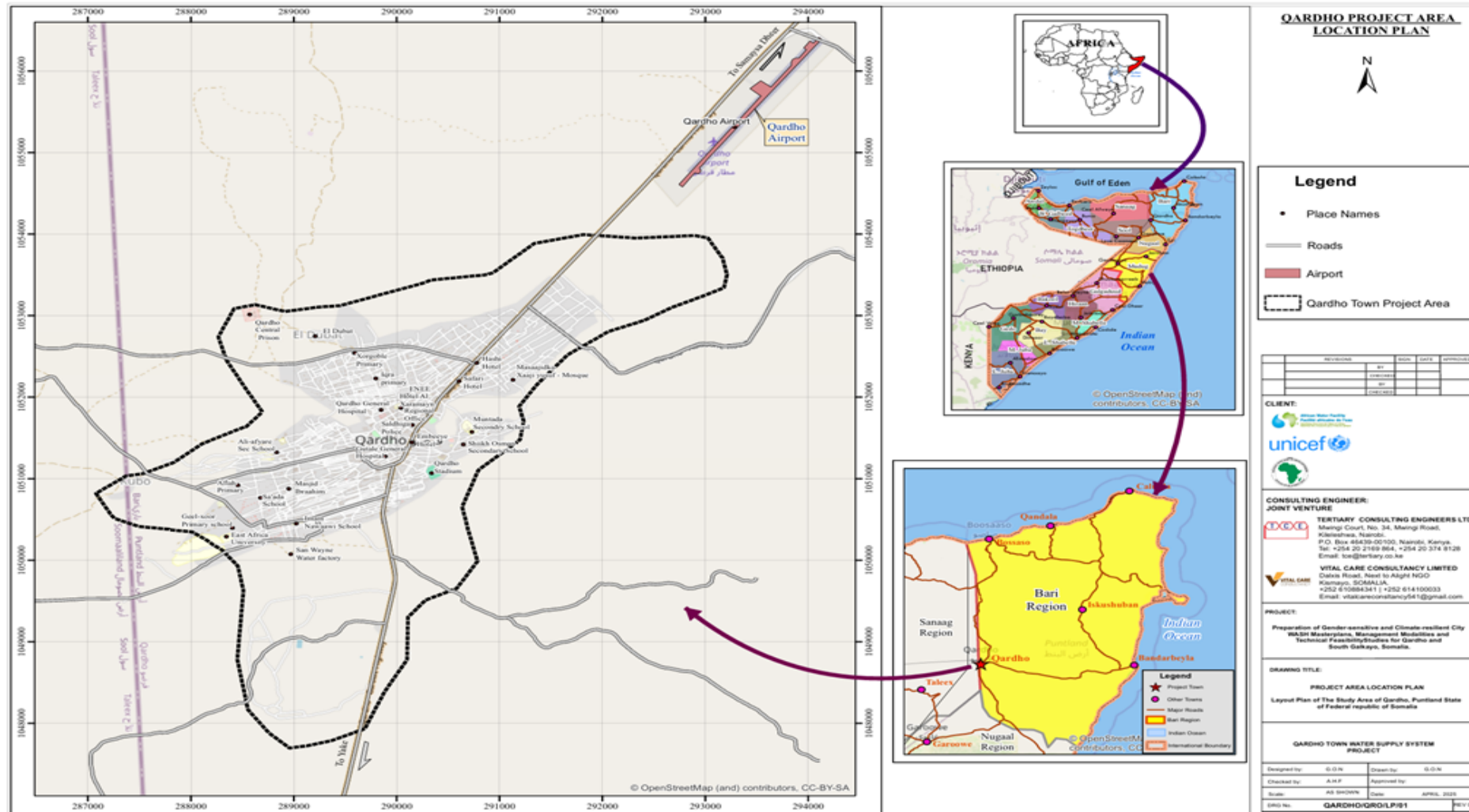


Figure 1.1: Study Area of Qardho Town
Source: African Water Facility

The Town of Qardho – with the proposed interventions is as presented in the figure below;

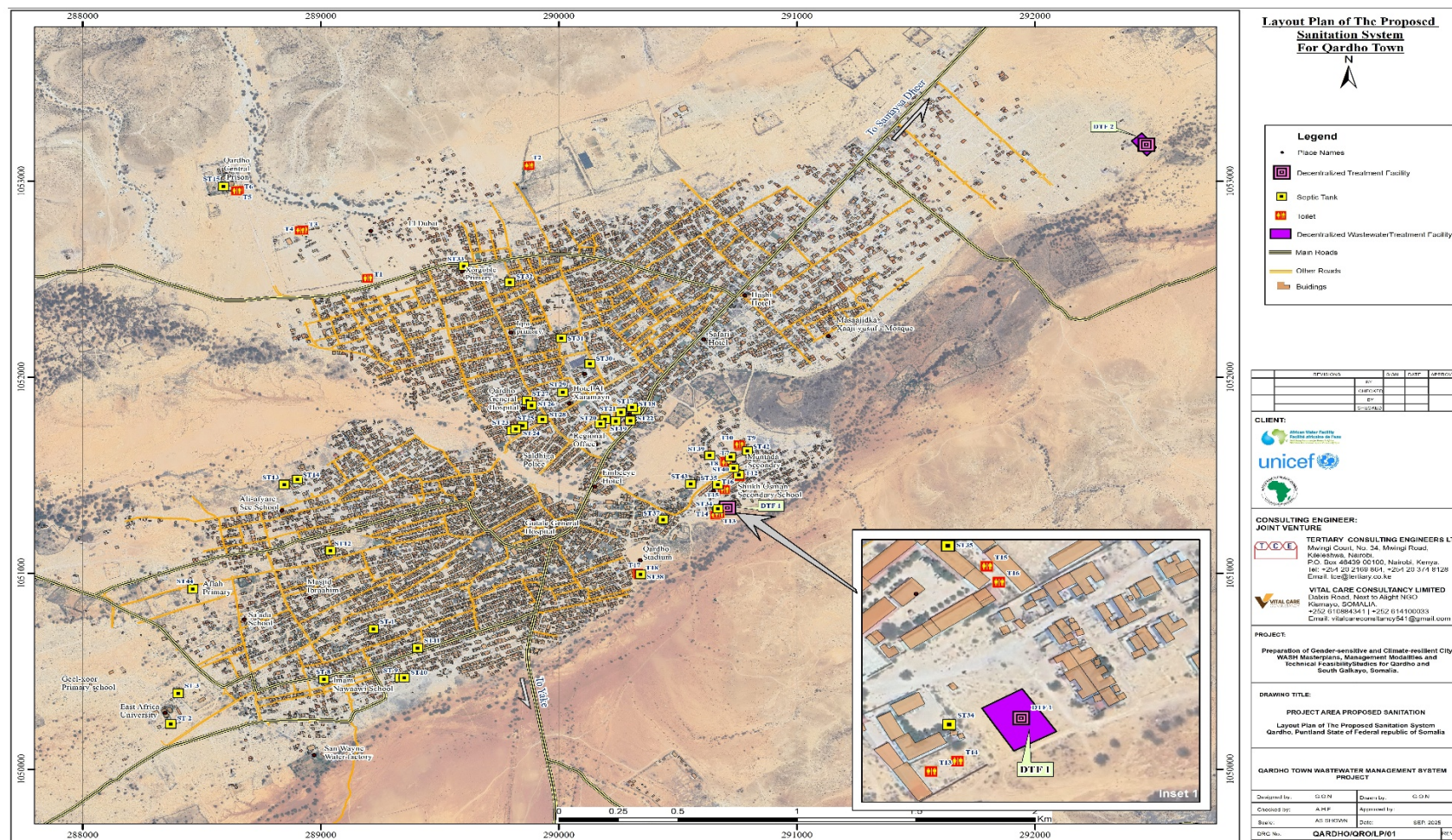


Figure 1.2: Qardho Town, Puntland State- Federal Republic of Somalia

Source: Google Earth

1.3 Local Administration

Qardho is both a district and the capital of the Karkaar region in Puntland, an autonomous federal state of Somalia. The administration of Qardho is shaped by its growing and diverse population. The local council and mayor are responsible for ensuring equitable service delivery and inclusive governance, especially after the introduction of direct elections. Population data (though limited) is central to planning, budgeting, and prioritization of services like water, sanitation, housing, and health.

Qardho town, is home to a variety of Somali clans, though it is primarily dominated by clans from the Darod clan family. The majority population of Qardho belongs to the Majeerteen sub-clan of the Darod family with several lineages present, such as Omar Mohamoud, Issa Mohamoud, and Ali Saleebaan. Other Darod Sub-clans include smaller numbers of other Harti Darod groups (e.g., Warsangeli, Dhulbahante) who have settled in Qardho for trade, pastoralism, and political ties.

Minority & IDP Clans include internally displaced persons (IDPs) from diverse backgrounds, including Hawiye, Rahanweyn (Digil-Mirifle), and marginalized Somali groups.

1.4 Objectives of ESIA

Reference is made to the African Development Bank adopted an Integrated Safeguards System (ISS) (also referred to as the “2013 ISS, Revised 2023”) 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 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.
- **Establish baseline environmental and social conditions** to provide a factual reference for assessing potential changes and for future monitoring.
- **Identify and assess potential environmental and social impacts** (positive and negative, direct and indirect, cumulative, and transboundary) associated with all project phases— design, construction, operation, and decommissioning.
- **Integrate environmental and social considerations** into the project planning, design, and decision-making processes to enhance sustainability, resilience, and long-term benefits.
- **Develop feasible mitigation and enhancement measures**, and consolidate these into a practical **Environmental and Social Management Plan (ESMP)** with clear roles, responsibilities, timelines, and budget provisions.

- **Ensure compliance with applicable national environmental and social legislation**, as well as AfDB's safeguard requirements
- **Facilitate inclusive stakeholder participation** through effective consultation, information disclosure, and a culturally sensitive, gender-responsive approach.
- **Promote transparency and accountability** by establishing mechanisms for documentation, disclosure, and grievance redress throughout the project cycle.
- **Provide a decision-support framework** for the Government of Somalia, the AfDB, and other stakeholders to ensure environmentally and socially responsible project implementation.

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 the figure below.

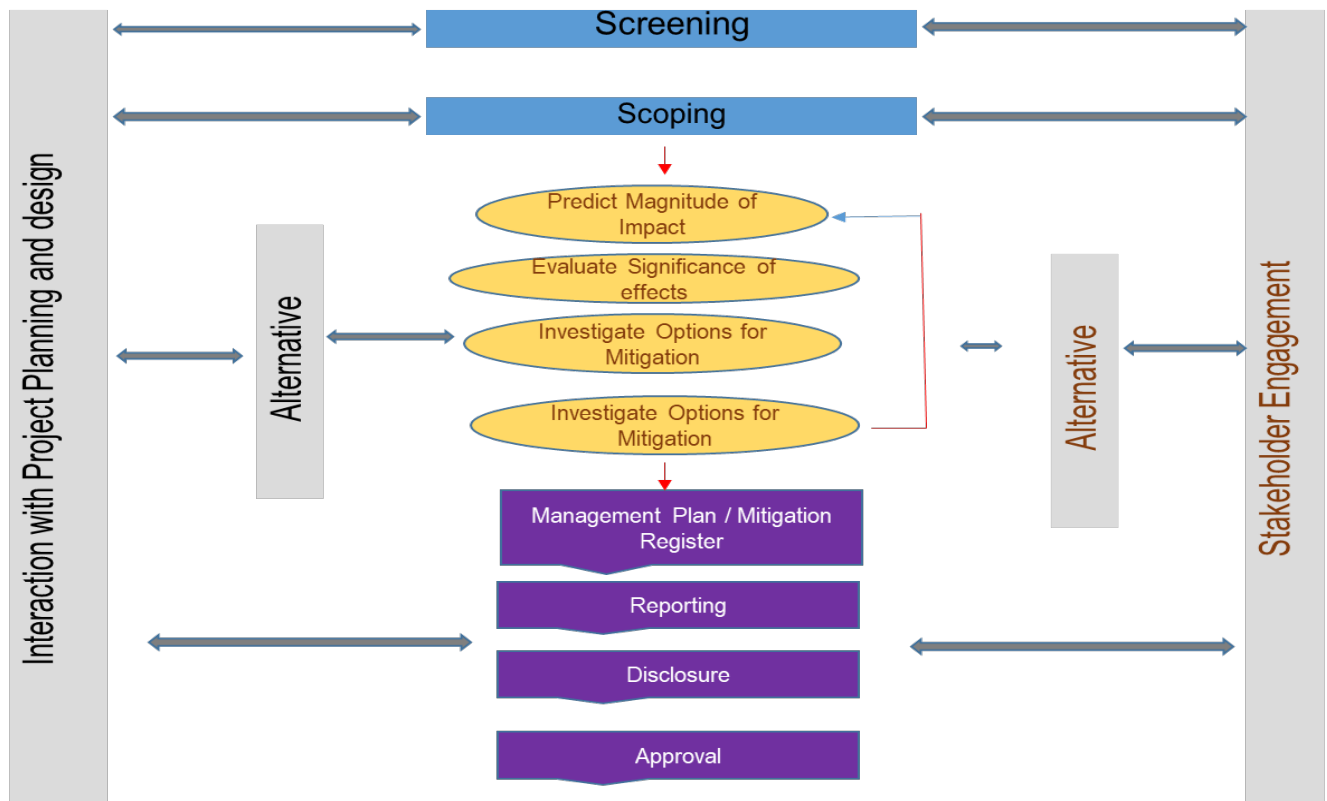


Figure 1.3: Impact Assessment Process

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 in the month of June, along the proposed water pipeline alignments 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 Qardho 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 **Figure 1.3** above and comprises the below listed steps.

Table 1.1 Steps in Impact assessment methodology

Step 1 -	Impact prediction – This step involves identifying and forecasting the potential environmental and 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

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 term Permanent
Scale	The size of the impact (e.g., the size of the area damaged or impacted, the fraction of a resource that is lost or affected, etc.)	No fixed designation, intended to be a numerical value or a qualitative description of intensity
Frequency	A measure of the constancy or periodicity of the impact	No fixed designation, intended to be a numerical value or a qualitative description

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

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

2.1 Project Description – Qardho Decentralised wastewater treatment systems

2.1.1 General Overview of Decentralized Treatment Facilities (DTFs)

The primary goal of these DTFs is to improve local sanitation services, enhance adaptability to climate change by protecting groundwater, and build community resilience through better public health. They are designed as practical, on-site solutions for specific institutions and communities.

2.1.2 Project Owner / Proponent

- **Project Proponent:** The project proponent is the Federal Government of Somalia, through the Ministry of Energy and Water Resources.
- **Funding Partner:** The African Development Bank (AfDB) Group is financing the project as part of the Urban Water Supply Infrastructure Phase II.

2.1.3 Project Location

DTF 1: Sheikh Osman Secondary School

- **Project Owner / Proponent:** The project proponent is the Federal Government of Somalia, through the Ministry of Energy and Water Resources. It is funded by the African Development Bank (AfDB).
- **Project Location:** The facility will be on the grounds of the Sheikh Osman Secondary School in a central, built-up district of Qardho. The approximate coordinates are Latitude 9.5081° N, Longitude 49.0855° E.
- **Description of Project Components:** This will be a small-scale, on-site system to serve the school.
 - **Primary Treatment:** A septic tank to separate solids from liquids.
 - **Secondary Treatment:** An anaerobic baffled reactor or anaerobic filter to digest organic matter.
 - **Tertiary Treatment:** A planted gravel filter or infiltration trench to "polish" the treated water for safe reuse (e.g., irrigating school trees).

DTF 2: Next to Qardho Airport

- **Project Owner / Proponent:** The project proponent is the Federal Government of Somalia, through the Ministry of Energy and Water Resources, funded by the AfDB.
- **Project Location:** This facility will be located on open land on the northwestern outskirts of Qardho, adjacent to the airport. The approximate coordinates are Latitude 9.5250° N, Longitude 49.0753° E.
- **Description of Project Components:** This will be a larger, community-scale system to serve the airport and potentially nearby settlements.
 - **Primary Treatment:** A screen and grit removal unit, followed by a larger sedimentation tank or a Waste Stabilization Pond (WSP).

- Secondary/Tertiary Treatment: A series of larger WSPs that use natural sunlight and algae to treat the water to a high standard.
- Community Engagement: Includes awareness drives and training for a Community Sanitation Committee if the DFT serves nearby residents.

2.1.4 Project Phases:

1. Phase I (Immediate): Detailed design, community consultations, and construction of the initial ponds and treatment units.
2. Phase II (Intermediate): Construction of the full series of ponds and the dedicated sludge handling facilities (drying beds).
3. Phase III (Long Term): Commissioning the plant, training operators, and establishing a plan for the reuse of treated water in local agriculture or afforestation.

2.1.5 Equipment and Material to be Used:

- Construction: Excavator, backhoe, concrete mixer. Materials include cement, gravel, pipes, and possibly a geo-membrane liner for the ponds.
- Operation: Maintenance tools and a vacuum truck for periodic sludge removal.

2.1.6 Waste Streams:

- Construction: Excavated soil, rock, and construction debris.
- Operation:
 - Treated Effluent: Safely treated water for reuse.
 - Stabilized Sludge: Larger quantities of sludge that can be composted and used as fertilizer.
 - Screenings & Grit: Solid materials removed at the inlet for disposal.

2.2 Proposed Public Institutions Wastewater Treatment Interventions

A summary of the proposed public institutions wastewater treatment is given in **Table 2-1** below

Table 2.1: Summary of the Proposed Interventions for pilot wastewater treatment in institutions- Qardho

No.	Position/Description	Unit	Quantity
1	Pilot decentralized wastewater treatment at public institutions - Locations DTF 1: Sheikh Osman Secondary School	No.	1
2	Pilot decentralized wastewater treatment at public institutions - Locations DTF 2: Next to Qardho Airport	No.	1

Figure 2.1 shows a Layout Plan of the Project Area with the Existing and Proposed Water and sewer Networks in Qardho.



2.3 Estimated Project Short Term Interventions for Qardho

Based on the adopted unit rates, the cost estimates for the public institutions waste water treatment in Qardho are summarized in the table 2-2 below

Table 2.2: Estimated Project Costs

No.	Position/Description	Unit	Quantity	Unit Cost (USD)	Total Cost (USD)
1	Pilot decentralized wastewater treatment at public institutions - Locations DTF 1: Sheikh Osman Secondary School DTF 2: Next to Qardho Airport	No.	2	132,000	264,000
	Subtotal (Qardho)				264,000

2.4 Project Activities Related to Construction of Water and sanitation Interventions

The process includes various stages as presented below.

2.4.1 Pre-project studies & planning

Baseline assessment / sanitation mapping: map existing sanitation (latrines, septic pits, informal drains), population density (including IDP camps), wastewater generation estimates, seasonal flows, groundwater depths and salinity.

Feasibility & options analysis: evaluate centralized vs decentralized systems, technology choices (e.g., stabilization ponds, constructed wetlands, septic + desludging, package MBR/MBBR plants), land availability, energy needs, and cost/benefit.

Environmental & Social Impact Assessment (ESIA) and Resettlement Action Plan (RAP) - where land acquisition is necessary; include gender and vulnerability analysis.

Hydrogeological & soil testing: infiltration rates, groundwater vulnerability, seismic considerations.

2.4.2 Design & engineering

Conceptual and detailed engineering design: influent screening, primary settling, secondary treatment (ponds/wetlands/biological reactors), sludge handling/drying, disinfection, tertiary polishing (if reuse planned). Include hydraulic and process design for peak and dry-season flows.

Design for local conditions: low-tech/resilient options (stabilization ponds, constructed wetlands) where grids are weak; include solar pumping and low-energy aeration where needed.

Sludge management design: dewatering beds, drying lagoons, safe transport routes, options for co-composting or controlled landfill.

Reuse & discharge plan: standards for irrigation reuse, aquifer recharge, or safe discharge to downstream environments.

(DTF)

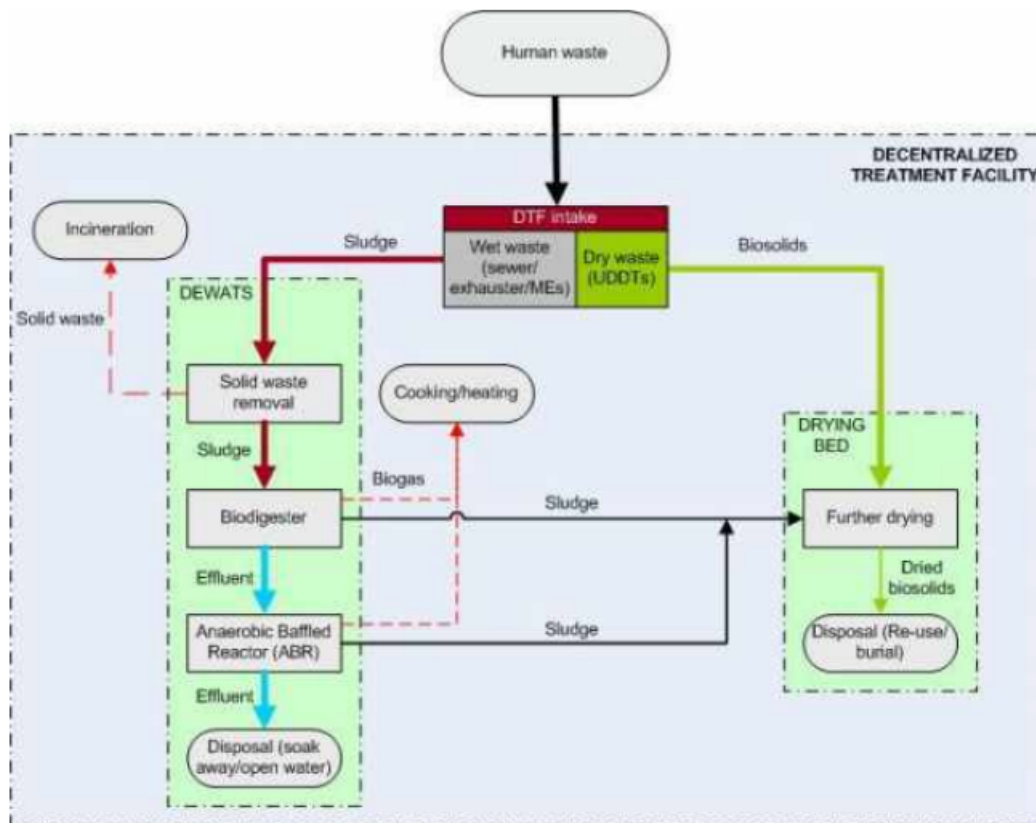


Figure 2.2 Schematic diagram of the Decentralized Treatment Facility (DTF)

2.4.3 Community engagement & institutional arrangements

Stakeholder consultations: municipalities, health authorities, water utilities, IDP representatives, women's groups, farmers (potential reuse stakeholders).

Awareness and behavior change: campaigns on latrine use, connection rules, illicit discharges, septic maintenance.

Define governance & O&M roles: utility vs municipal vs community management; tariff/fee model; desludging schedule and enforcement.

2.4.4 Procurement & contracting

Prepare tender documents: clear technical specs, quality standards, timelines, and performance guarantees.

Contracting model: EPC (engineering, procurement, construction) for larger plants; design-build for simpler systems; community contracts for decentralized works.

Local labour & capacity clauses: require local hires, skills transfer, and operator training in contracts.

2.4.5 Construction activities

Site preparation & earthworks: access roads, fencing, leveling, ponds excavation or concrete tank construction.

Civil works: inlet works, screens, grit removal (if used), primary clarifiers, ponds, wetland basins, sludge drying beds, pumping stations.

Mechanical & electrical installation: pumps, blowers (or passive aeration), piping, valves, control panels, solar PV arrays if off-grid.

Instrumentation & monitoring installations: flow meters, sampling points, simple lab or field kits for BOD/TS/coliforms.

Health & safety measures: worker PPE, safe handling of sludge, vector control during pond construction.

2.4.6 Commissioning & quality assurance

Hydraulic & process commissioning: stepwise filling, start-up of biological systems, stabilization time (particularly for ponds/wetlands).

Performance testing: verify effluent meets agreed standards; adjust retention times, aeration, or hydraulic loadings.

Operator training and manuals: SOPs for routine operation, troubleshooting, desludging schedules.

2.4.7 Operation, maintenance & sustainability

O&M plan: daily checks, weekly desludging, regular desludging fleet management, recordkeeping, spare parts inventory.

Financial sustainability: tariffs, municipal budget lines, public-private maintenance contracts, subsidy mechanisms for low-income households.

Capacity building: continuous training for operators, plant managers, and municipal inspectors.

2.4.8 Monitoring, evaluation & adaptive management

Water quality monitoring: inflow/outflow BOD, COD, TSS, pH, E. coli/coliforms, nutrient levels (N,P).

Operational KPIs: plant uptime, sludge volumes removed, energy consumption (kWh/m³), number of sewer blockages.

Public health & environmental indicators: incidence of waterborne disease in served areas, groundwater quality near disposal sites, safe reuse compliance.

Regular audits & community feedback loops: quarterly reports, grievance mechanisms.

2.4.9 Ancillary & enabling activities

Desludging service setup: trucks, pumps, licensed disposal sites, fee system.

Sanitation marketing & household connection drives: subsidies or microfinance for household septic improvements or latrine upgrades.

Policy & standards support: assist municipal/state governments to adopt wastewater discharge and reuse standards and enforcement mechanisms.

Emergency & contingency planning: overflow management in floods, rapid repairs during droughts, contingency power (solar + battery).

2.4.10 Reuse & resource recovery (value capture)

Treated effluent reuse: irrigation for non-food crops, fodder, or landscape irrigation with health safeguards.

Sludge valorization: co-composting with municipal organic waste for soil conditioner (after pathogen reduction), biogas from anaerobic digestion where feasible.

Carbon/green finance: explore carbon credits for methane reduction or climate resilience funding for solarized operations.

2.4.11 Technology recommendations for Qardho context

Small towns / low density: septic tanks + scheduled desludging, combined with constructed wetlands or stabilization ponds for communal clusters.

Medium density / higher funds: facultative ponds or oxidation ponds followed by maturation ponds; low-energy MBBR or package activated sludge if reliable power + skilled operators exist.

Energy resilience: design for solar pumping, gravity flows wherever possible, and passive aeration options to reduce O&M risk.

3. SITE BASELINE INFORMATION

3.1 Climate

Regionally Somali has an arid to semi-arid climate as shown in climate map of Somalia on figure 2.5. Qardho District, located in Puntland state has a hot arid climate, classified as a hot desert climate according to the Köppen climate classification. The average high temperature is 91°F (33°C), and the average low is 70°F (21°C). Precipitation is generally low, with an average of 0.48 inches per year. The town is characterized by the following climatic conditions.

- High Temperature: The highest average high temperature is in May, at 91°F (33°C).
- Low Temperature: The lowest average low temperature is also in May, at 81°F (27°C).
- Precipitation: May has the highest average precipitation at 27.7 millimetres
- Humidity: The average humidity is 71%.
- Wind: The average wind speed is 19 mph.

The Rainfall 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 Marh. 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.
- 2Gu': 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.

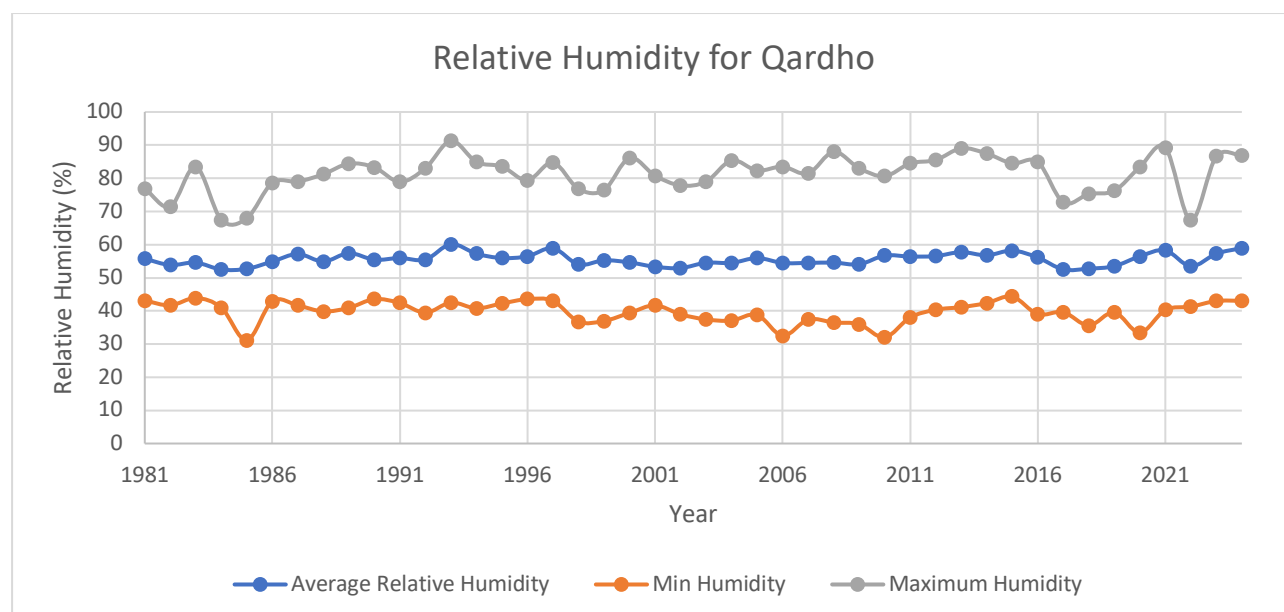


Figure 3.1: Relative Humidity of Qardho

Source: FAO

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.

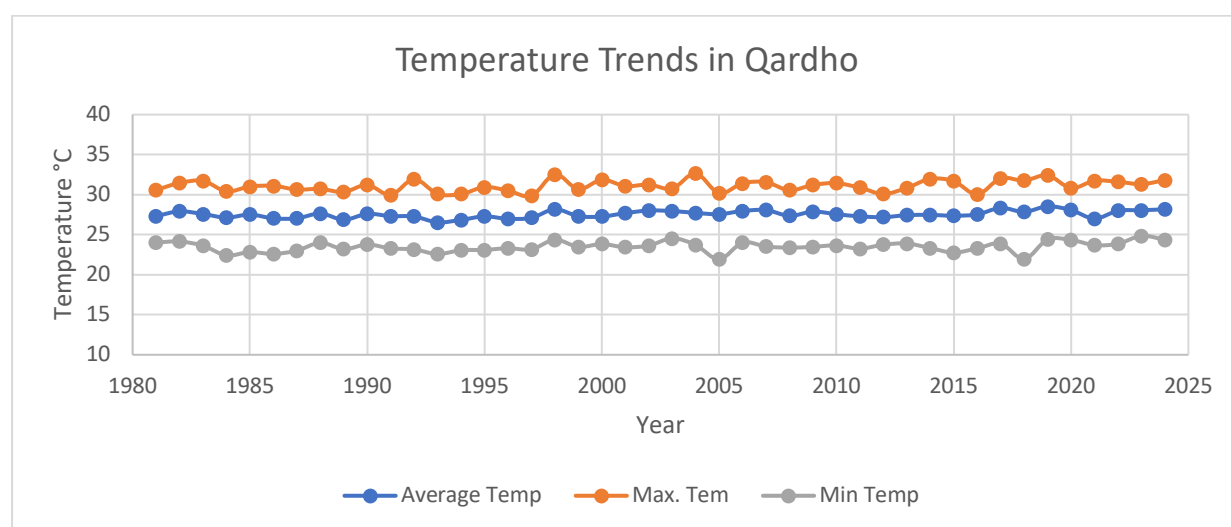


Figure 3.2: Average High and Low Temperature in Qardho from 1981 - 2024

Source: FAO

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.

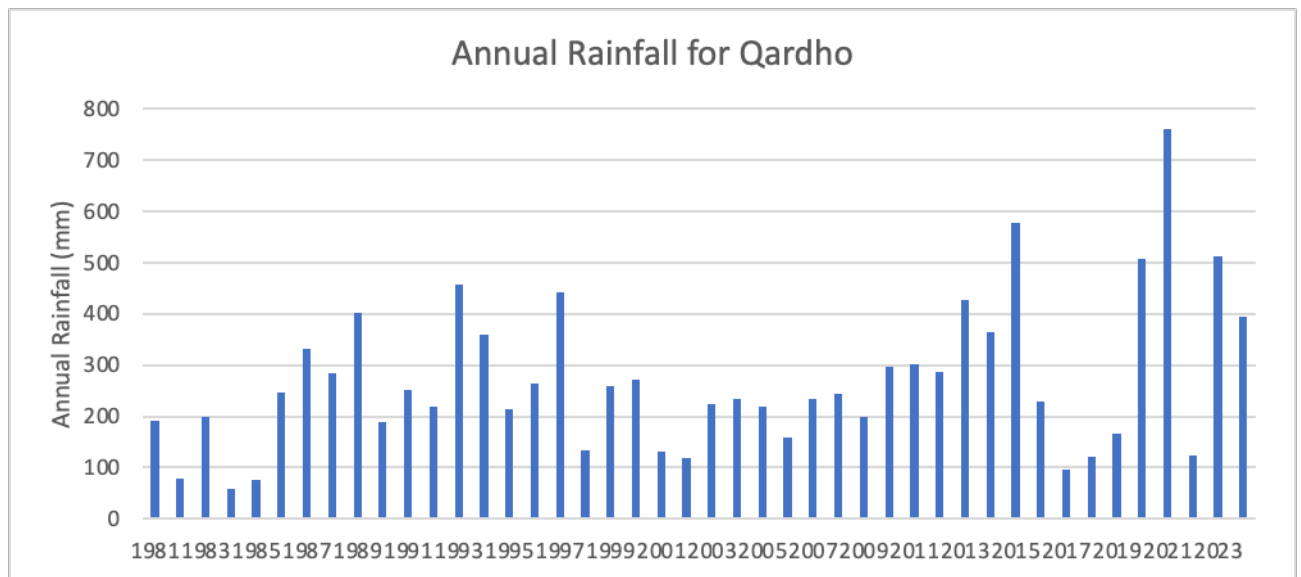


Figure 3.3: Annual rainfall for Qardho

Source: FAO

3.2 Physical and Topographic Conditions

3.2.1 The Project Town Location

Qardho town lies within the catchment of Wadi Qardho (also known as Togga Qardho), a prominent seasonal river (Qardho river) that flows through the heart of the town. This river, although dry for most of the year, becomes active during the rainy seasons, often carrying flash floods that affect low-lying areas and informal settlements along its banks. Qardho is definitely situated in a broad, shallow natural valley formed by seasonal watercourses.

While the valley may not have a widely documented or officially named separate identity beyond its association with Togga Qardho, “Qardho Valley” is the commonly used local term to describe the natural depression and drainage basin that shapes the town’s topography. This valley collects runoff from the surrounding highlands and plateaus, channelling it through seasonal rivers and gullies that feed into Togga Qardho during the rainy season.

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

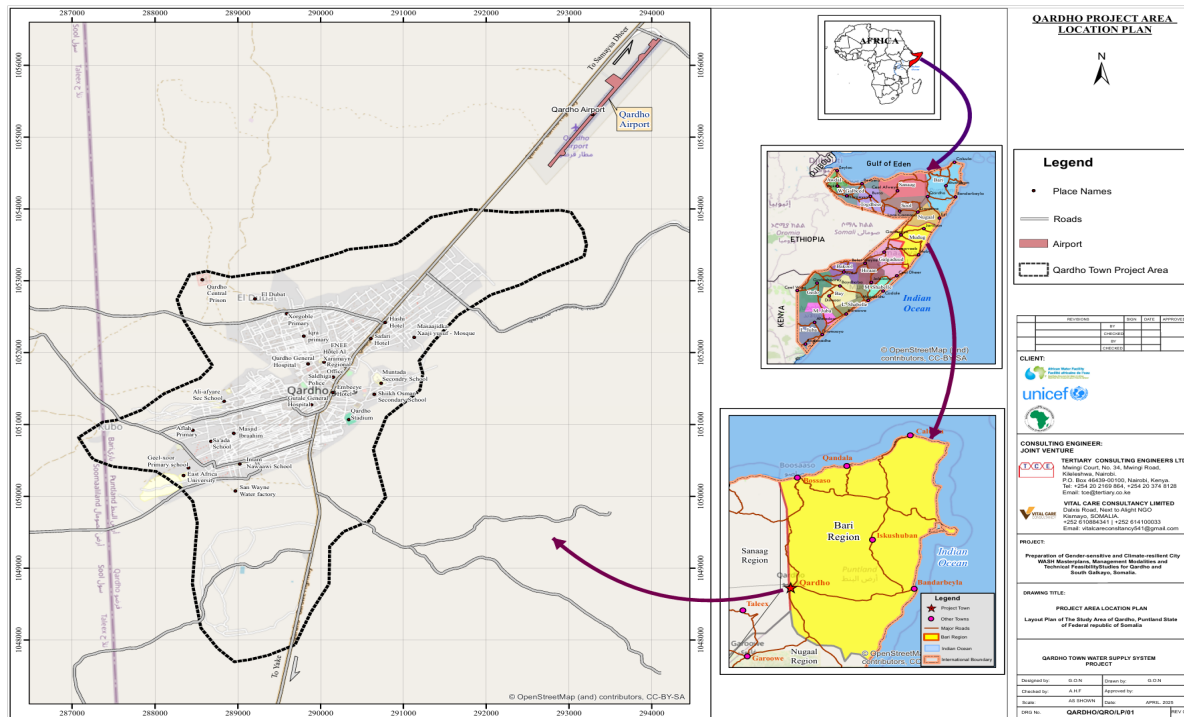


Figure 3.4: Study Area of Qardho

The Town of Qardho is as presented in the figure below with the proposed project interventions;

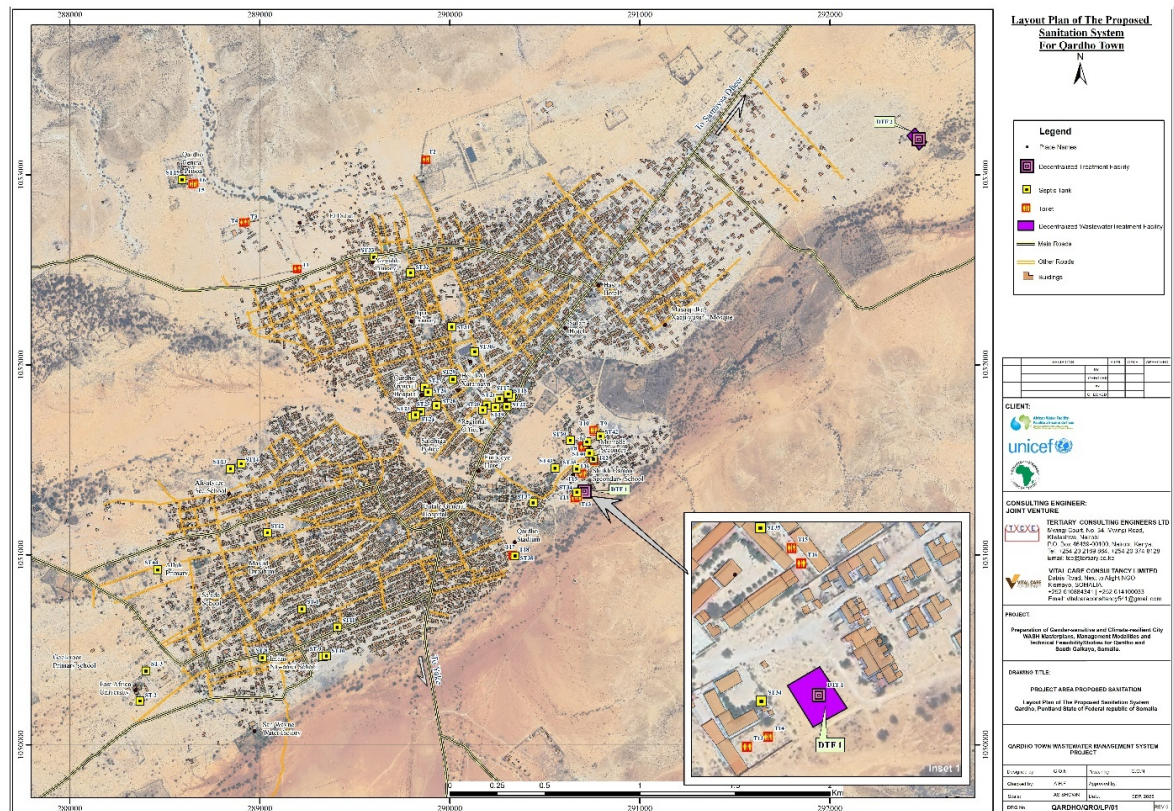


Figure 3.5: Qardho Town, Puntland State- showing DTF locations

Source: Google Earth

3.2.2 Topography and Landscape

The topography of Qardho is generally flat with gentle sloping plains towards the North-East. In the north, parallel to the Gulf of Aden coast is a maritime plain varying in width from roughly twelve kilometres in the west to as little as two or three kilometres in the East. Shrub-covered, semi-arid, and generally drab, this plain, is known as the Guban (burnt land), because of its heat and dryness during much of the year. It is crossed by broad, shallow watercourses that are beds of dry sand except in the rainy seasons. Inland from the gulf coast, the plain rises to the precipitous north-facing cliffs dissected by highlands. These form rugged mountain ranges that extend from Somalia's north western border with Ethiopia, eastward to the tip of the Horn where they end in the sheer cliffs of Caseyr

3.2.3 Geology and Soils

Geology

The geology of the Qardho area is dominated by sedimentary rock formations dating back to the Tertiary period. Key formations include:

Karkar Formation (Eocene): This is a prominent geological feature in the region. It is primarily composed of limestone, with layers of marl and dolomite. This formation is significant not only structurally but also as an important karstic aquifer, meaning it holds groundwater in fractures and solution channels within the rock.

Taleh Formation (Eocene): Underlying the Karkar Formation, the Taleh Formation is also widespread. It consists largely of evaporitic rocks such as gypsum and anhydrite, interbedded with limestone and marl.

The landscape is part of the rugged Karkaar mountain ranges and is incised by ephemeral riverbeds, known locally as wadis or togas. These riverbeds are a key feature, prone to flash floods and accumulating alluvial deposits.

Soils

The soils in and around Qardho are generally shallow, with low organic matter and nutrients, reflecting the arid climate and the parent limestone and gypsum bedrock. The dominant soil types are:

Calcisols and Gypsisols: These are soils rich in calcium carbonate (lime) or gypsum, respectively. They are common in arid and semi-arid environments and typically have low moisture retention.

Alluvial Soils: Found within the wadis and adjacent floodplains, these soils consist of sediments like sandy clay, silt, and gravel deposited by seasonal water flow. While potentially more fertile than the surrounding upland soils, they are localized to the river channels.

Overall, the soils are highly susceptible to erosion, particularly from water during intense, infrequent rainfall (causing flash floods) and from wind during the dry seasons. This susceptibility contributes to land degradation in the region.

3.2.4 Vegetation Cover

Qardho 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 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*

DTF 1: Sheikh Osman Secondary School Vegetation

The project site within the school compound is largely cleared and composed of compacted earth. The dominant vegetation consists of a few intentionally planted, mature, and hardy shade trees.

- Type of Vegetation: The most prominent vegetation is the Neem tree (*Azadirachta indica*), which is widely planted in Somali schoolyards for its shade and resilience. Beyond these trees, there is very little other plant life, except for some sparse, opportunistic weeds that may appear after rainfall.



Figure 3.6 Sheikh Osman Sec. School vegetation

Source: Sheikh Osman Sec. School Facebook page



Figure 3.7 Satellite Image showing the vegetation of the school
Source: Google Earth

DTF 2: Next to Qardho Airport Vegetation

The project site within the airport's property is located on undeveloped land, and its vegetation is representative of the natural local ecosystem.

- Type of Vegetation: The site is a semi-arid Acacia-Commiphora scrubland. This is characterized by scattered, hardy, drought-resistant shrubs (primarily *Acacia* species), sparse tussocks of dry grasses, and significant patches of bare, sandy ground. The vegetation is open and not dense

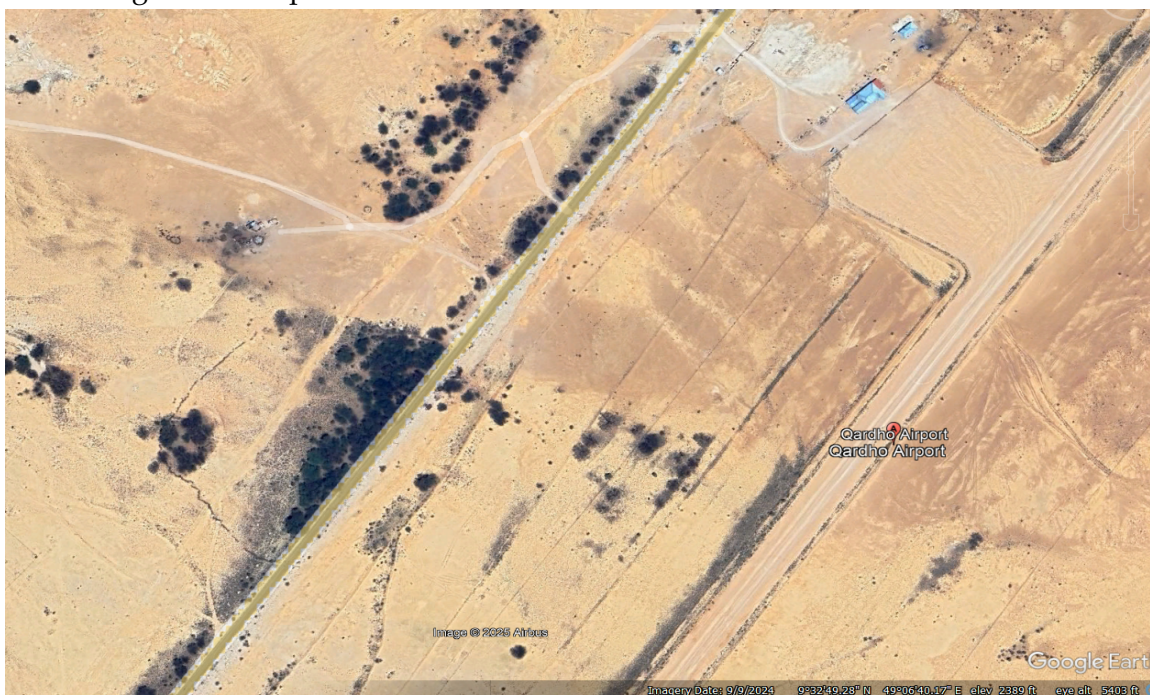


Figure 3.8 Satellite image showing vegetation around Qardho airport
Source: Google Earth

3.2.5 Air Quality

The air quality in the project locality of Qardho is generally poor, primarily due to high concentrations of airborne dust and particulate matter (PM).

Primary Sources of Air Pollution

The area is not affected by heavy industrial pollution; instead, the main air quality issues stem from the following sources:

- Natural and Fugitive Dust: Being in a semi-arid environment with many unpaved roads, wind and vehicle movement constantly generate significant amounts of dust.
- Combustion Emissions: Localized pollution comes from:
 - Vehicle Exhaust: Emissions from a fleet of older, often poorly maintained vehicles.
 - Biomass Burning: Widespread use of charcoal and firewood for cooking.
 - Waste Burning: The common practice of open-air burning of solid waste.
 - Diesel Generators: Prevalent use of generators for electricity contributes to localized fumes and soot.

In summary, while free from industrial smog, the air in Qardho is consistently laden with dust and smoke from local activities, typical of a developing urban centre in an arid region

3.3 Aquatic and Riparian Ecology of Wadi Qardho

Wadi Qardho is a seasonal (ephemeral) watercourse that traverses Qardho town, flowing primarily during the Gu (April-June) and Deyr (October-December) rainy seasons. While it remains dry for most of the year, heavy rainfall generates flash floods that recharge temporary pools and the subsurface aquifer. These conditions create a short-lived but ecologically important aquatic environment.

During wet periods, the wadi supports temporary aquatic fauna such as amphibians (frogs, toads), aquatic macro-invertebrates (insects, larvae, beetles), and occasionally small fish species transported during floods. Semi-aquatic and riparian species are also present, including water birds (herons, egrets, ducks) and reptiles. Riparian vegetation such as reeds and grasses grows along the banks, providing habitat, stabilizing soils, and creating micro-ecosystems that sustain biodiversity during flood cycles.

Many organisms are adapted to the wet-dry cycle, surviving through drought-resistant eggs, burrowing in sediments, or dispersing to other habitats when water recedes. This makes the wadi a seasonal biodiversity hotspot, despite its temporary hydrology.

The ecological value of Wadi Qardho lies in its role as a periodic aquatic habitat and a floodwater dispersal channel. Any discharge of untreated wastewater, construction activity, or solid waste dumping into the wadi would pose risks to both aquatic life and downstream communities. Under the AfDB Integrated Safeguards System (Operational Safeguard 3 – Biodiversity and Ecosystem Services), this seasonal ecosystem requires consideration in environmental and social management planning.

3.4 Socio Economic Baseline Information

3.4.1 Land Ownership and Settlements Patterns

Land use activities in Qardho primarily revolve around agriculture, with tea being the dominant crop, followed by coffee and other cash crops like sugarcane and horticulture. Residential and commercial developments are also significant, contributing to infrastructure growth and potential urbanization challenges. Additionally, wetlands play a role in cultural practices and resource utilization, while also facing encroachment issues.

Land Tenure at Project Sites

- Type of Tenure: The proposed sites are primarily located on public/institutional land, which is state-owned or managed by local institutions (schools, hospitals, health centers).
- Security of Tenure: The tenure is formal and secure, reducing risks of disputes or the need for resettlement. Permissions can be obtained from the relevant district authorities or institutional management.
- Community-Managed Land: A few peri-urban sites may fall under community-controlled land, overseen by local elders and Water and Sanitation Committees (WSCs). Access is based on community consent, ensuring equitable water use.

Current Land Use at Project Sites

- Institutional Grounds: Sites within school compounds, hospital grounds, or health centers are currently used for institutional purposes. These may include open grounds, minor landscaping, or playgrounds.
- Peri-Urban / Community Land: Some sites in less dense areas are open communal spaces with sparse vegetation. These areas are occasionally used for grazing or community gatherings but are largely undeveloped.
- Land Use Impact: Drilling and rehabilitation activities will require minor clearing of open areas, but overall land use is compatible with the proposed project. There is no displacement or major alteration of existing land use.

3.4.2 Demographic Data:

- Estimated population of Qardho town: ~65,000–70,000, including IDPs and surrounding communities.
- 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.

3.4.3 Administrative Setup:

- **District Administration**: Qardho District under Bari Regional Government.
- **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.

3.4.5 Health Institutions in Qardho

Qardho General Hospital serves as the main hospital in Qardho. It includes a Microbiology Laboratory. A **new health centre** was inaugurated in February 2023 by Save the Children, in partnership with the Puntland Ministry of Health and funding from Sheikh Thani bin Abdullah Al Thani. This centre provides primary health services: prenatal care, safe deliveries, vaccinations, and maternal & child nutrition services.

3.4.6 Educational Institutions

Educational institutions in Qardho, form a developing system composed of public, private, and religious schools, ranging from primary to university levels.

Levels of Education

- **Primary and Secondary Education:** Qardho has a number of primary and secondary schools that serve the city and surrounding areas. These include both government-run and privately-managed institutions, which form the foundation of formal education in the region. Notable schools include Al-Azhar Primary and Secondary School, Haji Ali Bihi Secondary School, and Sheikh Osman Secondary School.
- **Koranic Schools:** Alongside the formal system, traditional Koranic schools (*Dugsi*) play a crucial role in providing foundational religious education and basic literacy for many children.
- **Higher Education:** Qardho is a regional hub for higher learning, most notably hosting a major campus of East Africa University (EAU). This institution offers various undergraduate degree programs, providing vital opportunities for post-secondary education and professional training within the region.

3.5 Water Supply Situation

There are no permanent rivers in the region; only flashy streams exist which have surface water only after high rainfall events and normally drain into either the Indian Ocean, or the Gulf of Aden. These ephemeral water courses are important for water sources (wells dug at the river banks / beds), and for their relatively rich vegetation.

The water supply situation in is not adequate, particularly in rural areas where women and children travel long distances to a water source in the dry season to collect water for domestic

and livestock use. Surface water resources are generally scarce because of their dependency on seasonal climatic variations that leave traditional surface water storage facilities either partially filled or empty.

3.5.1 Power /Energy Sources

The source of energy for the water abstraction from boreholes are solar, power grid and generator. However, the cost of 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.

3.5.2 Water Distribution

Water sources

Surface water Sources

Qardho town's primary surface water source is the Kubo River, which experiences frequent flooding due to urbanization impacting its water flow capacity. A project focuses on reducing flood risks and improving the river's productive potential, including its use for irrigation. Additionally, water harvesting and storage systems are being implemented to provide water during dry seasons.

Ground Water Sources

Qardho town primarily relies on groundwater sources, specifically boreholes, for its water supply. These boreholes are a key component of the town's water infrastructure, ensuring a regular supply to the community. There are 12 number boreholes which collects water to one overhead painted steel panel tank installed on a reinforced concrete frame 10,0 m high. However, out of the 12 only 8 boreholes are functional while 2 have been faced out due to flooding effects.

Water Abstraction Sources

There are 12 no boreholes abstracted as ground water source for Qardho town. Based on each borehole yield in Table 3-1 the approximate yield per day based on the numbers of hours the pump is working **2,820 m³** per day.

Water Transmission

From the storage tanks, water gravitates to town water distribution network through uPVC pipes ranging 200mm to 25mm. The distribution network includes the followings pipe sizes;

Table 3.1: Pipeline Summary in Qardho

Pipeline Summary	Pipeline Lengths (m)
DN 50	17,886
DN 75	770
DN100	11,635
DN150	2,854
DN200	155
	33,300

3.5.3 Wastewater/Sanitation Practices

On-site sanitation systems: Most households and IDP camps rely on pit latrines, ventilated improved pit (VIP) latrines, or septic tanks. These facilities provide primary containment of human waste but do not involve advanced treatment.

Desludging and disposal: When latrines or septic tanks fill up, sludge may be removed manually and often disposed of in unregulated sites, creating environmental and public health risks.

Communal sanitation facilities: Recent WASH projects (African Water Facility, Save the Children, UNICEF, NGOs) have supported the construction and rehabilitation of latrines in Qardho, especially in IDP camps, to reduce open defecation. These remain localized systems rather than a town-wide treatment network.

Wastewater runoff: Greywater (from washing and household use) is usually discharged directly into the environment or into informal drainage channels, with no formal collection or treatment.

3.5.4 Project-based Improvements

WASH resilience projects in Qardho have focused on latrine construction, hygiene promotion, and safe water provision (e.g., borehole rehabilitation, pipeline extensions, water kiosks), but not on advanced sewage treatment.

Some initiatives have explored constructed drainage and catchment systems to prevent flooding and reduce wastewater stagnation during heavy rains, indirectly managing wastewater hazards.

3.5.5 Wastewater Treatment Process

1. Collection and Primary Containment

Household level: Wastewater from toilets goes into septic tanks or lined pit latrines instead of unlined pits, to prevent groundwater contamination.

Community/IDP level: Shared sanitation blocks connected to small septic tanks or holding tanks.

Greywater (from kitchens and washing) should be collected separately and directed to soak pits or small treatment units.

2. Sludge Management

Septic tanks and latrines fill up over time. A system for regular desludging (using vacuum trucks or small desludging carts in dense areas) should be organized by the municipality or NGOs.

Collected sludge should be transported to a sludge treatment site outside populated areas.

3. Secondary Treatment (Decentralized Units)

At the treatment site or near larger communities:

Anaerobic baffled reactors (ABRs): Low-cost tanks that treat sludge through natural anaerobic digestion.

Constructed wetlands or waste stabilization ponds: Shallow basins planted with reeds where natural microbial and plant processes clean wastewater. These work well in Qardho's climate (hot, dry with seasonal rains).

Effluent (treated liquid) can then be discharged safely into the environment or used for irrigation of non-food crops.

4. Tertiary / Polishing (Optional, for reuse)

Sand filters or gravel filtration beds for final polishing.

Solar disinfection (SODIS) or chlorination for effluent if reused for agriculture or construction purposes.

5. Resource Recovery

Biogas: Sludge digestion in ABRs or biogas digesters can produce small amounts of cooking fuel for community kitchens.

Compost: Dried, treated sludge can be converted into safe soil conditioner for tree planting or landscaping, if culturally acceptable.

6. Institutional and Community Management

- Municipality-led monitoring of desludging services and treatment plants.
- Community training on safe latrine use, greywater disposal, and desludging.
- Partnerships with NGOs and private operators to run desludging and treatment services sustainably.

3.5.6 Wastewater situation in Qardho

The baseline wastewater situation in Qardho, Puntland, Somalia, presents significant challenges to public health and environmental sustainability. The city, which serves as a central hub for the Bari region, lacks a comprehensive sewage and wastewater treatment infrastructure.

Current Wastewater Management Status

- **Absence of Sewage Systems:** Qardho does not have a centralized sewage network. Wastewater from households and institutions is typically managed through individual pit latrines or open defecation, especially in informal settlements and IDP camps.
- **Limited Wastewater Treatment:** There are no operational wastewater treatment plants in Qardho. This absence leads to untreated sewage being discharged into the environment, posing risks to public health and the surrounding ecosystems.
- **Wastewater in IDP Camps:** In camps like Shabelle, water and sanitation conditions are inadequate, with no piped water systems in place. Residents rely on communal latrines and water trucking, which are insufficient to meet the needs of the population. (MoEWR)

3.6 Sanitation Situation

3.6.1 Sanitation Systems

The existing sanitation system in Qardho is largely unplanned and inadequate to meet the needs of its growing urban population. Most households use traditional pit latrines or simple pour-flush toilets connected to unlined pits or poorly constructed septic tanks. These facilities are often built without technical oversight, resulting in substandard containment that poses health and environmental risks, especially when pits overflow or collapse. Desludging is infrequent and unregulated, and there is no formal fecal sludge treatment plant (FSTP) in operation. This has led to widespread, informal disposal of fecal waste – either dumped in open fields, dry riverbeds (such as Togga Qardho), or shallow soak pits that leach into the ground.

In high-density areas and informal settlements—including those hosting internally displaced persons (IDPs)—the sanitation situation is particularly dire. Many IDP camps rely on communal or emergency latrines that are overused, poorly maintained, and lack handwashing facilities. Open defecation remains common in some settlements -mainly the IDP camps, due to insufficient access to safe toilets.

As of March 2024, there are 12 verified IDP (Internally Displaced Persons) sites in Qardho, Puntland, Somalia. These sites collectively host approximately 3,946 households, totaling 19,757 individuals

The lack of drainage infrastructure exacerbates the problem; stormwater runoff during the rainy season often floods latrine pits, spreading fecal matter into living areas and increasing the risk of disease outbreaks such as cholera and diarrhoea. These challenges are worsened by Qardho's topography, which sits in a shallow valley basin, causing wastewater and floodwater to collect in low-lying zones where the most vulnerable populations live.

Institutional capacity to manage sanitation is limited. The local municipality lacks the technical resources, funding, and staffing to implement systematic sanitation services or enforce construction and hygiene standards. There is also a significant gap in public awareness regarding sanitation best practices and hygiene behavior, contributing to unsafe disposal methods and environmental contamination. Private sector involvement in sanitation—such as pit emptying services—is minimal and unregulated, making it both unreliable and unsafe. In summary, Qardho's sanitation system is characterized by fragmented infrastructure, insufficient institutional oversight, and a lack of safe treatment and disposal mechanisms. These conditions demand urgent, integrated interventions focusing on containment, collection, treatment, and long-term resilience to flooding and public health risks.

3.6.2 Household and Communal Latrines

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Figure 3.9: Stone build Shared communal pit latrines within Shabeele IDP Camp



Figure 3.10: Temporary communal pit latrines within Shabeele IDP Camp



Figure 3.11: Incineration point for Hazardous waste from health facilities within Shabeele IDP Camp

3.6.3 Septic Tanks

In Qardho, septic tanks are one of the more improved on-site sanitation systems used by a portion of the urban population, particularly in formal settlements, institutional buildings, and better-constructed residential compounds. A septic tank is an underground chamber where wastewater from toilets (and sometimes greywater from kitchens and bathrooms) flows for initial treatment. Inside the tank, solids settle to the bottom forming sludge, while liquids overflow into a soak pit or drain field where further percolation and natural treatment may occur. In Qardho, however, many septic tanks are often not constructed to proper technical standards. They may lack watertight sealing or sufficient leach fields, and some even discharge directly into open drains or riverbeds, especially in areas close to Togga Qardho.



Figure 3.12: Typical Household Septic Tank within the urban areas of Qardho town



Figure 3.13: Properly lined Septic tank for Safari Hotel in Qardho town

A small number of premises, particularly government offices, health centers, hotels, and larger homes, have internal sewerage systems that convey waste from multiple toilets and plumbing points into a centralized compound septic tank. These are usually confined to higher-income neighborhoods such as Bakaaraha Market and Qardho-Bosaso Highway (M2), or institutional compounds. However, regular desludging of these tanks is rare due to the limited availability of exhauster services.

The local government of Qardho recently acquired a new exhauster truck with the primary aim of serving the public. While its use is generally intended for public benefit, households are charged approximately USD 100 per desludging service. In contrast, private exhauster operators—mainly based in Garowe—provide services in Qardho at significantly higher rates, charging around USD 300 for desludging a single household toilet and up to USD 500 for servicing larger facilities such as hotels. These high private sector charges, coupled with limited availability of affordable public services, place a substantial financial burden on residents in need of fecal sludge removal.



Figure 3.14: Newly acquired Exhauster tank at HODMAN Water Company

Based on the urban profile of Qardho and observed sanitation patterns in similar secondary towns in Puntland, it is reasonable to estimate that 15–25% of the urban population in Qardho uses septic tanks. This percentage includes formal households, institutions, and commercial premises with either direct toilet-to-tank connections or internal sewerage leading to septic tanks. The remainder of the population largely relies on pit latrines or other less improved facilities.

3.6.4 Income, Livelihoods and Expenditure

In Qardho town a significant portion of the population has completed primary education, with about 61.7% having received that level of education. While literacy rates are high, particularly among mothers, maternal education levels still have room for improvement, despite notable increases. The county also boasts a substantial number of educational institutions, including

ECD centers, primary schools, and secondary schools, as well as institutions for adult and vocational training

3.6.5 Health

The health status in Qardho, Somalia, is marked by a fragile healthcare system and significant public health challenges. The region faces a high prevalence of communicable diseases, including water-borne illnesses like cholera, as well as malaria and acute respiratory infections. Maternal and child health is a major concern, with high rates of mortality and widespread malnutrition.

Healthcare Access and Challenges

Access to healthcare is severely limited due to a lack of infrastructure, with most services provided by NGOs and international aid agencies. The public system is under-resourced, and the private sector is often too expensive for the general population. Geographic and financial barriers, coupled with a lack of access to safe water and sanitation, further complicate efforts to provide adequate care.

Key Issues

- Communicable diseases: Outbreaks of cholera and other waterborne illnesses are common.
- Maternal and child health: High rates of mortality and malnutrition persist.
- Limited infrastructure: The public health system is weak, relying heavily on NGOs.
- Access barriers: Poverty, long distances, and inadequate water and sanitation are major challenges.

3.6.6 Security

The security baseline for Qardho town is one of moderate stability, but with persistent underlying risks from terrorism and local conflicts that could impact infrastructure projects.

While there are no specific, direct threats identified for the DTF sites at Sheikh Osman Sec. school and Qardho airport, the general security environment creates potential risks. As public infrastructure projects, the sites could be viewed as soft targets for extortion by armed groups. Furthermore, the construction process could inadvertently become entangled in local land or clan-based disputes. Standard security protocols for managing site access and materials will be necessary to mitigate opportunistic crime.

General Context

- Qardho (Puntland) is more stable than much of southern Somalia but remains part of a fragile, high-risk environment.
- Risks include: inter-clan tensions, petty crime, weak institutional capacity, and spillover from militant groups (ISIS-Somalia, Al-Shabaab).
- Regional counter-terror operations occur intermittently.
- Humanitarian pressures (IDPs, drought, floods) heighten tensions and resource competition.

Qardho Town – Security Profile

- Overall- the town relatively calm but unpredictable; localized disputes and occasional criminal incidents are common.
- Threats could include theft, vandalism, inter-clan violence, displacement-related unrest, sporadic militant activity in surrounding areas.
- Puntland maintains security forces and has response capacity, but law enforcement and emergency response remain limited.

Threat Scenarios (Likelihood) around the project sites

- Petty crime/asset theft - High probability without security measures.
- Community protests/access disruption - Moderate probability.
- Militant incidents - Low-to-moderate probability (mainly regional, not town-centre).
- Displacement or inter-clan violence impacts: Moderate probability in wider area.

4. POLICY, LEGAL AND INSTITUTIONAL FRAMEWORK FRAMEWORKS

4.1 National Regulatory and Policy Framework

4.1.1 The Provisional Constitution of the Federal Republic of Somalia

Institutional

The key legal instrument for the management of environmental and social risks in Somalia is the Provisional Constitution, and especially Article 25 ("Environment"), Article 43 ("Land"), Article 44 ("Natural Resources") and Article 45 ("Environment"). Article 25 of the Constitution states that "[every Somali] has the right to an environment that is not harmful to their health and well-being, and to be protected from pollution and harmful materials." The article proceeds to declare that "[every Somali] has the right to have a share of the natural resources of the country, whilst being protected from excessive and damaging exploitation of these natural resources."

Article 45 (in Chapter 3 - "Land, Property and Environment") exhorts "all people in ... Somalia" to "participate in the development, execution, management, conservation and protection of the natural resources and environment." Article 43, on its part, provides guidelines on environmental and social risk management that can be observed. However, there is a dearth of sufficient environmental or social safeguards in terms of legislated and or drafted regulations. The Article also affirms that the federal government shall give priority to the protection, conservation, and preservation of the environment against anything that may cause harm to natural biodiversity and the ecosystem.

Additionally, Article 12 of the Constitution addresses issues of application of fundamental rights. Further, the Provisional Constitution has made commitments on women's empowerment and gender mainstreaming. Article 15 (1, 2, 4) together with Article 24(5) of the Constitution provides for the protection of women against all forms of violence and provides for protection from sexual abuse, segregation, and discrimination. Article 15 prohibits Female Genital Mutilation (FGM).

Article 11 (1) 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 shall have equal rights and duties before the law, and that the State must not discriminate against any person on the basis of age, race, colour, tribe, ethnicity, culture, dialect, gender, birth, disability, religion, political opinion, occupation, or wealth. Article 14 stipulates that a person may not be subjected to slavery, servitude, trafficking, or forced labor for any purpose, while Article 24 (5) prohibits sexual abuse in the workplace. The Puntland Sexual Offences Act 2016 prohibits sexual harassment.

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. And, every labor law and practice shall comply with gender equality in the workplace.

Article 111J – The Office of the Ombudsman: The office is protected against interference from any other person or entity. As such, independence, integrity and effective service delivery are also maintained. The Ombudsman shall: (i) Investigate complaints against government workers regarding: allegations/ outright violations concerning basic rights and freedom, abuse of power, unfair behavior, mercilessness, lack of clemency, indiscipline or disrespect, corruptive act, illegal behavior, or those that could lead to mischief or injustice; (ii) Investigate complaints in relation to the activities of the Public Service Commission and other administrative institutions of the government, including defense and police forces that could lead to unequal services, unfair recruitment, or administration; (iii) Take appropriate steps to rectify or change items mentioned in earlier clauses through a fair, and appropriate process of consultations and sacrifices among the people concerned; (iv) Report on the complaints and issues raised and submit to the head of the offender; (v) Forward cases to the Attorney General and bring them before a court, as appropriate.

- **Trigger:** Article 25 of the Constitution guarantees the right to a clean and healthy environment, while Article 43 emphasizes that land and natural resources must be managed in the public interest
- **Relevance to Project:** The proposed project directly contributes to the realization of these constitutional rights by improving sanitation and water management systems, thereby enhancing public health and environmental protection.
- **Compliance Measures:** To align with constitutional requirements, land for project facilities must be acquired transparently and without forced displacement. In addition, environmental safeguards, including the preparation and implementation of Environmental and Social Impact Assessments (ESIA) and Environmental and Social Management Plans (ESMP), must be applied to protect ecosystems and ensure community health.

4.1.2 Legislation and Policies on the Environment and Social Sectors

Somalia National Environment Policy: The Somali Cabinet, on February 13, 2020, approved the National Environmental Policy. The stated goal of environmental policy is to improve the health and quality of life of the Somali people. The development of this policy was backstopped by the Global Environment Facility (GEF) and the United Nations Development Program (UNDP). This is the first time that an environmental policy has been developed and taken to Cabinet level for approval, since the collapse of the previous central administration in 1991.

In November 2020, an Environmental Impact Assessment Bill was approved by the Somali cabinet and sent to parliament for ratification. The Directorate is also the operational focal point for multilateral environmental agreements and funds, such as GEF, and Green Climate Fund (GCF). It is also tasked with conducting Sectoral Environmental Assessments, Environmental and Social Impact Assessments (ESIAs) and EAs, although at present there is no enabling legislation or regulations in place, other than the aforementioned Impact Assessment Bill.

Environmental and Social Impact Assessment Regulations of 2021 (draft). The Somali authorities have since moved to give effect to the aforementioned Environmental Assessment Bill of 2020. As of March 2021, the Directorate of Environment and Climate Change has published draft environmental and social impact assessment (ESIA) regulations.

Occupational Safety and Health. Legislation on OSH in Somalia is limited, with the labor code known as Act No. 31 of 2004: Private Sector Act¹ as the main reference on OHS issues. This law addresses hours of work, holidays and rest periods, employees' pay and emoluments, contracts, recruitment procedures, etc., but does not directly address OHS concerns. Instead, the Labor Code establishes the general rights, duties and responsibilities of the parties of labor relations, as well as conditions for ensuring the safety and health of workers.

The revised draft Somalia Labor Code² has more emphasis on OSH requirements. It makes the Director of OSH responsible for the registration of hazards and risks, regulation and supervision of all workplaces and monitoring or enforcing compliance with the Labor Code and any other labor law to the extent that they regulate safety, health and welfare in the workplaces. Part VI of the Revised Draft Labor Code covers the administration of occupational accidents, injury and disease provisions at workplace, employer's general duties towards to OSH, insurance requirements, employees' general duties, medical support, compensations, offenses, and penalties, etc.

The Labor Code covers protection against risks to workers, notification procedures in occupational accidents, medical requirements at site and conveyance of injured workers to hospitals, among others. Below is the list of relevant provisions of the Labor Code with regard to OHS.

Trigger: The project is subject to the provisions of the National Environmental Policy (2017), the Environmental Protection and Management Act (2024), and the Draft Environmental Impact Assessment and Audit Regulations.

Relevance to Project: In line with these instruments, the project must undergo a full Environmental and Social Impact Assessment (ESIA) prior to implementation. It is also required to integrate principles of climate resilience, waste reuse and recycling, and pollution prevention and control into its design and operation.

Compliance Measures: The ESIA report must be submitted for review and approval to Puntland's Ministry of Environment, Climate Change and Wildlife. Mitigation measures will include dust suppression, safe waste disposal, and routine water quality monitoring. Furthermore, stakeholder consultations must be conducted to ensure community participation and alignment with the guidelines of the National Environmental Policy.

4.1.3 The Somali Labor Code

The *Labor Code of 1972* stipulates that all employment contracts must include provisions on: a) the nature and duration of the contract; b) the hours and place of work; c) the remuneration payable to the worker; and d) the procedure for suspension or termination of contract. Furthermore, all contracts must be submitted to the competent Labor Inspector for pre-approval. With regards to OHS standards, the employer is obligated to provide adequate measures for health and safety, protecting staff against related risks, including provision of a safe and clean work environment and of well-equipped, constructed and managed workplaces that provide

¹ Referred to in Somali as "Wax ka Bedelka iyo Kaabista Xeerka Shaqaalaha Rayidka (Xeer Lam 32/2004)"

² Under development in a process that includes the International Labor Organisation

sanitary facilities, water and other basic tools and appliances ensuring workers' health and safety.

The Code further stipulates that the workers have the right to submit complaints and the employer must give the complaints due consideration. Remuneration must be adequate in view of the quality and quantity of the work delivered, and must be non-discriminatory with regard to age, gender and other aspects. Maximum number of working hours per week are 8 hours per day and 6 days per week. Some work is considered dangerous and unhealthy, and forbidden for women and youth (defined as 15-18 years of age). This includes the carrying of heavy weights or working at night. More details on the labor code are provided in the updated LMP for this Project.

The Labor Code further forbids work for children below the age of 12 but allows employment of children between the ages of 12-15, but employment has to be compatible with proper protection, health and the moral of children. The Code also recognizes freedom of association. Employers are prohibited from engaging in any kind of discrimination or restriction of the right of freedom of association. Workers are allowed to join trade unions. Further, the Labor Code stipulates the right to equal pay for the same work and women are entitled to 14 weeks of maternity leave at half pay.

The *Somali Penal Code of 1962* criminalizes rape and other forms of sexual violence as well as forced prostitution. Articles 398-9 provide that 'carnal intercourse' and 'acts of lust committed with violence' are punishable with 5-15 years and 1-5 years of imprisonment, respectively. Abduction for the purpose of lust or marriage is prohibited under Art 401. The *Family Code of 1975* sets the minimum age for marriage at 18 years for males and females. Females between the age of 16 and 18 can marry with their guardian's consent. Marriage is based on equal rights and duties.

- **Trigger:** National labor laws provide for worker safety, employment rights, regulated working hours, and fair compensation.
- **Relevance to Project:** The construction phase will involve both local and possibly migrant laborers, exposing the workforce to occupational health and safety (OHS) risks, potential accidents, and social impacts associated with labor influx.
- **Compliance Measures:** All contractors must provide written contracts, fair wages, personal protective equipment (PPE), and insurance coverage for workers. Site safety protocols, including toolbox talks, first aid availability, and regular emergency drills, must be implemented. The project will also strictly prohibit child labor and forced labor in compliance with national labor standards and international safeguards.

4.1.4 Legislation and Policies for the Health Sector

Somalia also developed Immunization Policy 2020 - which provides strategic guidance on vaccine quality, target population, administration of vaccines, ensuring safe injections, immunization service delivery strategies, cold chain and vaccine management, roles and responsibilities of health workers and vaccinators, social mobilization, immunization data management, among others.

The *National Health Sector Strategic Plan (HSSP-II 2017-2021)*: The Strategy is based on nine building blocks. It 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. The project will also apply the strategic guidance of the third phase of the health sector strategic plan (*HSSP-III 2022-2026*).

The HSSP II takes a pragmatic approach to the provision of Essential Package of Health Services (EPHS) including community-based health services across the FMS/BRAs and Regions of Somalia. However, implementation is limited to some regions; due to funding limitations and insecurity. The package is largely implemented by NGOs with emergency support from humanitarian partners. It is also continuously updated, with the priority to consolidate and scale-up essential health services in all areas, where access and security permits.

The plan provides a framework for future health programs to work within, expanding access to quality services, encouraging better targeting of disease specific programs, in coordination with government's strategic priorities, and more effective use of external support. The HSSP-II has set a target of developing and/or adopting the following health sector policy and legal frameworks by 2021: Public Health Act; Drug Policy – already developed and endorsed; Drug Act – the draft bill has been submitted to the parliament – pending for approval; Health Policy – the last one developed was in 2014; Health Regulatory Framework: National Health Professional Act was developed and signed by the President – currently in force; WATSAN and Environmental Health Policy and Strategy – this has been developed and endorsed; as well as Community Health Strategy, which was developed in 2015.

Although poorly managed at the national level, the FMoH is currently revising the EPHS, with the aim of delivering health services through a five-tiered system: National/Regional hospitals; Referral Health Centers; Health Centers, Primary Health Units; and community-based health workers. Most services comprise of basic PHC and outpatient services and cater to women and children. Public sector service points are often managed, financed and at least partially staffed by employees of international and/or national NGOs and community-based organizations (CBOs).

- **Trigger:** Somalia's Essential Package of Health Services (EPHS) and the Public Health Regulations under the Puntland Ministry of Health provide the framework for safeguarding public health in relation to water supply and sanitation services.
- **Relevance to Project:** The establishment of clean water provision facilities directly contributes to reducing the prevalence of waterborne diseases such as cholera and diarrhea. At the same time, construction activities may introduce temporary risks, including dust, noise, poor sanitation, and workplace accidents, which could affect both workers and nearby communities.
- **Compliance Measures:** The project will integrate occupational health and safety measures for workers throughout construction, including proper sanitation facilities and health awareness. It will coordinate with local health authorities to ensure safe handling of any medical waste and to establish health surveillance mechanisms. Post-construction,

all treated effluent must comply with Somali water quality standards to protect community health and ensure safe, sustainable service delivery.

4.1.5 Legislation and Policies for the Water and Sanitation

The Somalia's Provisional Constitution (2012) guarantees the right to clean water, sanitation, and a healthy environment. The National Environmental Policy (2017) and Environmental Protection and Management Act (2024) require ESIA's and safeguards for all water and sanitation projects. The Water Resources Law and draft National Water Policy regulate water use, waste discharge, and pollution prevention. The Public Health Law links sanitation to disease control, ensuring protection against waterborne illnesses. The Climate Change Policy (2020) and National Adaptation Plan Framework emphasize climate-resilient WASH systems to address droughts, floods, and water scarcity.

The project is anchored in the Somali Constitution (2012), which guarantees the right to clean water, sanitation, and a healthy environment. It complies with key environmental and water sector regulations, including the National Environmental Policy (2017), the Environmental Protection Act (2024), and the Water Resources Law, through ESIA approval, pollution control, and safe water discharge practices. In addition, the project supports public health and climate resilience policies, such as the Public Health Law, the Climate Change Policy (2020), and the National Adaptation Programme (NAP) Framework, by reducing disease risks and integrating climate-smart design approaches. Finally, it adheres to the Somali Labor Code by ensuring worker safety, fair labor practices, and community safeguards during both construction and operation phases.

Relevance to the project

The WTP's design and operational framework are directly shaped by this legal hierarchy. The Provisional Constitution (2012) establishes the project's fundamental purpose—fulfilling the right to clean water—while the Environmental Protection Act (2024) and Water Resources Law set the core technical parameters. These laws mandate the initial ESIA and create the operational rules for pollution control by regulating waste discharge and water use. Specifically, they govern effluent management, dictating how the WTP must treat and dispose of its backwash water and clarification sludge to prevent environmental harm. Furthermore, the Public Health Law sets the final treated water quality standards to prevent disease, while the "safeguard" requirements of the Environmental Act inform the Occupational Health and Safety (OHS) systems needed to protect workers from chemical and biological hazards. Finally, the Climate Change Policy (2020) guide the WTP's engineering, mandating climate-resilient water treatment technologies .

4.1.6 Provisional Constitution of Somalia (2012) – Land & Natural Resources

Article 43 of the Somali Constitution requires that land and natural resources be managed in the public interest, with allocation guided by law. In the context of this project, the proposed borehole facilities will be located within public institutions such as schools and health centers. To ensure compliance, land allocation will follow transparent procedures through Qardho Municipality and Puntland State authorities, with safeguards in place to prevent displacement or encroachment on community and private land.

Relevance to the project

The Provisional Constitution of Somalia (2012) provides the foundational legal framework governing land and natural resources management in the country. It emphasizes equitable access, sustainable use, and environmental protection of natural resources. This is directly relevant to the Gender-Sensitive and Climate-Resilient City WASH Masterplans project, as it guides how land and water resources should be utilized and protected during project planning and implementation. Specifically, it ensures that land acquisition, water abstraction, and sanitation infrastructure development are undertaken in a manner that respects community rights, promotes environmental sustainability, and aligns with national principles of equitable resource distribution.

4.1.7 Puntland Land Policy (Draft, 2018)

The draft Puntland Land Policy aims to clarify urban land tenure, prevent conflicts, and strengthen municipal authority in land allocation. For this project, the trigger arises from the need to ensure that institutional land in Qardho is formally allocated and properly recorded to avoid future disputes. Compliance will require obtaining official land-use permits from Qardho Municipality and engaging community elders and stakeholders in the site selection process to prevent potential clan-based conflicts.

Relevance to the project

The Puntland Land Policy (Draft, 2018) is relevant to the project as it provides the guiding framework for land tenure, allocation, and management within Puntland State, where one of the project towns—Qardho—is located. The policy promotes equitable and transparent land use planning, safeguards community and public interests, and supports sustainable development through proper land administration. Its relevance lies in ensuring that the project's land acquisition, right-of-way demarcation, and infrastructure development are conducted lawfully, minimize displacement, and align with Puntland's spatial planning and environmental sustainability principles.

4.1.8 Customary Land Tenure (Xeer Somali)

Somali customary law plays a central role in governing land ownership and usage, particularly in peri-urban and rural areas. While the proposed project sites within public institutions are under municipal ownership, adjacent lands may still fall under clan-based customary tenure. To ensure compliance, the project will engage local elders and religious leaders to verify land boundaries, confirm community acceptance, and prevent overlapping claims or disputes.

Relevance to the project

The Customary Land Tenure system (Xeer Somali) is highly relevant to this project as it governs local land ownership, access, and use rights across Somalia, particularly in rural and peri-urban areas where formal land registration is limited. Under Xeer Somali, land and water resources are traditionally managed through clan-based agreements that emphasize communal access, conflict resolution, and equitable sharing. For the WASH Masterplan and Feasibility Studies, recognizing and aligning project activities with Xeer principles is essential to ensure community acceptance, prevent land disputes, and facilitate smooth acquisition or use of land for infrastructure development such as water points, pipelines, and sanitation facilities.

4.1.9 National Security & Safety Frameworks (Federal & Puntland Levels)

Provision: The Federal Government of Somalia and Puntland State are mandated to ensure security and public safety, including the protection of critical infrastructure.

Trigger in Project: Construction activities may attract risks such as theft, vandalism, or community tensions, while the presence of heavy equipment could create additional safety hazards.

Compliance: The project will coordinate with local police and Puntland security authorities to ensure site safety, provide on-site security guards during construction, and develop a Security Management Plan to safeguard workers, assets, and surrounding communities.

4.1.10 Urban Planning and Land Use Regulations (Municipal Guidelines, Puntland)

Provision: Municipal councils regulate urban planning, zoning, and building permits.

Trigger in Project: New facilities within institutions require compliance with local urban planning/zoning.

Compliance: Secure building permits from Qardho Municipality; comply with construction codes and institutional land-use restrictions.

4.1.11 Conflict Prevention & Social Cohesion Policies (Puntland Development Plan, 2020–2024)

Provision: Encourages inclusive governance, clan consensus, and conflict prevention in development projects.

Trigger in Project: Potential disputes over land use, employment opportunities, or resource allocation.

Compliance: Implement a Stakeholder Engagement Plan (SEP); prioritize local labor recruitment; establish a grievance redress mechanism (GRM).

Relevance to the project

The Conflict Prevention and Social Cohesion Policies outlined in the Puntland Development Plan (2020–2024) are highly relevant to this project as they promote inclusive governance, equitable resource distribution, and community participation—all essential for sustainable WASH service delivery. By integrating these principles, the project supports peacebuilding through improved access to safe water and sanitation, reduces competition over scarce resources, and strengthens social cohesion among host communities and internally displaced persons (IDPs). This alignment ensures that project implementation contributes to both environmental resilience and social stability in Puntland.

4.2 Institutional Capacity for Environmental Management in FGS

The institutional basis for improving the management of environmental risks in projects in Somalia is being established. The Environmental Management and Coordination Bill is currently being reviewed by the Somali Parliament. The House of the People approved the Bill in March 2023 and further reviews by the Senate are expected in May 2023, during the next parliamentary session. Once enacted, the Environmental Management and Coordination Act is expected to improve environmental governance and intergovernmental cooperation, as well as

lay a foundation for undertaking environmental and social impact assessments in the country. The procedures for environmental and social impact assessments have already been elaborated in regulations that have been issued by the Ministry of Environment and Climate Change (MoECC).

The MoECC has commenced negotiations with departments and ministries in charge of the environment from the various Federal Member States, with a view of sharing responsibilities for managing environmental issues, including licensing procedures for development projects. Furthermore, an institutional capacity and structural assessment of the MoECC is underway with the support of the World Bank and the United Nations Environment Program. The statutory mandate for national environmental management in lies with the Ministry of Environment and Climate Change (MoECC). It is mandated to draft relevant policies and legislation, including establishing of the Environmental Quality Standards, and Sectoral Environmental Assessments, Environmental and Social Impact Assessments (ESIA).

Laws on environmental governance in South West Somalia (SWS), Jubaland and Hirshabelle are at infancy stages and environmental impact assessment capacity are nascent. Environmental decision-making arrangements includes the FGS signing international conventions, and parliament approving Environmental Acts and Laws. However, necessary laws have not been formulated yet.

Ministries have passed regulations on Environmental and Social Impact Assessments (ESIAs). The State Ministries of Environment are to be consulted before any infrastructure activities in their respective state with potential environmental and social risks and impacts. The Ministries are mandated to supervise all matters relating to the environment. They are mandated to review and approve ESIAs and RAPs. Some States, such as South West State and Jubaland, have Land Authorities, which are responsible for land adjudication matters. For the project implementation, this project will rely fully on AfDB ISS.

4.2.1 Institutional and Stakeholder Framework for Environmental & Social Management in Somalia

1. Federal-Level Institutions

- **Federal Ministry of Environment & Climate Change (MoECC):** Provides national policy guidance on environment and climate change.

Influences project compliance with environmental protection frameworks (e.g., 2024 Environmental Protection & Management Act).

- **Federal Ministry of Energy & Water Resources (MoEWR):** Oversees water policy, water allocation, and wastewater regulation.

Influences project design standards on wastewater reuse and water quality.

- **Federal Ministry of Health (MoH):** Ensures sanitation projects reduce public health risks.

Influences monitoring of hygiene and disease prevention outcomes.

- **Federal Ministry of Labor & Social Affairs (MoLSA):** Oversees occupational health and safety.

Influences worker protection, fair labor, and OHS enforcement in construction.

2. State-Level Institutions (Puntland)

- **Puntland Ministry of Environment, Climate Change & Wildlife:** Main authority for ESIA approval, environmental monitoring, and compliance in Qardho.

Direct regulator of project's environmental safeguards.

- **Puntland Ministry of Health:** Oversees sanitation and health linkages at institutional level.

Influences operational health standards at schools and health centers.

- **Puntland Ministry of Public Works & Transport:** Provides building permits and urban planning approvals.

Influences land allocation and compliance with municipal building codes.

- **Puntland Ministry of Planning & International Cooperation (MoPIC):** Coordinates development projects and donor-funded initiatives.

Influences alignment of project with regional development priorities.

3. Local-Level Institutions

- **Qardho Municipality (Local Government):** Controls land use, zoning, and building permits for institutional sites.

Directly influences site selection, land allocation, and local oversight.

- **Traditional Authorities (Clan Elders, Religious Leaders):** Manages customary land tenure and community acceptance.

Influences conflict prevention, grievance resolution, and community buy-in.

- **Community-Based Organizations (CBOs) & School Management Committees:** Ensures community participation and O&M support.

Influence sustainability and ownership of sanitation systems.

4. Private Sector Actors

- **Local Contractors/Construction Companies:** Responsible for facility construction. Influences quality, safety, and timely delivery of infrastructure.

- **Waste Management Service Providers:** Potentially engaged for sludge management or solid waste disposal.

Influences long-term sustainability of treatment operations.

- **Suppliers (Equipment, Materials):** Provide construction and treatment system components.

Influences cost and technical reliability.

5. Development Partners & NGOs

- **African Development Bank (AfDB):** Project financier and safeguard enforcer. Influences categorization, ESIA compliance, and monitoring.

- **UNICEF Somalia:** Active in Puntland WASH programs.

Influences technical support, standards for WASH in schools/health facilities, and possible co-financing.

- **NGOs/INGOs (e.g., CARE, NRC, Save the Children):** Implement WASH and community health interventions.

Influences awareness campaigns, hygiene promotion, and community acceptance.

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.
- Triggered as wastewater treatment reduces methane and other GHG emissions from unmanaged waste. Compliance is supported through climate-smart, low-carbon designs.
- (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)
- Triggered through control of hazardous waste imports and management. Compliance is ensured by safely handling wastewater sludge and avoiding hazardous waste transfer.
- (ix) **Basel Convention on the (1989)**: It seeks to control Transboundary Movement of Hazardous Wastes and their Disposal.
- Triggered in relation to transboundary movement of hazardous waste. While the project is local, compliance means ensuring that no untreated sludge or hazardous material is exported improperly.
- (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.
 - ✓ Compliance → Safe storage, PPE, training for workers, and spill management protocols
- Occupational Safety and Health Convention (1981) and its Protocol of (2002);
 - ✓ Triggered in ensuring safe working conditions at construction sites.
 - ✓ Compliance → Risk assessments, OHS plans, PPE provision, and accident reporting procedures.
- Promotional Framework for Occupational Safety and Health Convention, (2006) (No. 187);
 - ✓ Triggered in establishing a safety culture across the project.
 - ✓ Compliance → Integration of OHS policies into contractor management and routine safety training.
- 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.
 - ✓ Compliance → Strict contractor clauses against child labor, verification of worker age, and engagement of labor inspectors.
- International Convention on the Elimination of All Forms of Racial Discrimination (CERD) (1976);
 - ✓ Triggered in hiring and community engagement.
 - ✓ Compliance → Non-discriminatory hiring, equal access to project benefits, and inclusive community participation.
- Optional Protocol to the Convention on the Rights of Persons with Disabilities (2007);
 - ✓ Triggered by the need to ensure accessibility in public institutions.
 - ✓ Compliance → Designing sanitation facilities with ramps, handrails, and inclusive toilets.

- The Convention on the Elimination of All Forms of Discrimination against Women (CEDAW) (1985);
 - ✓ Triggered in gender-sensitive WASH provision.
 - ✓ Compliance → Separate, safe toilets for women and girls; women's involvement in decision-making committees.
- The Convention on the Rights of Persons with Disabilities (CRPD) (2012);
 - ✓ Triggered in ensuring equitable access to sanitation.
 - ✓ Compliance → Universal design standards integrated into facility construction.
- The International Covenant on Civil and Political Rights (ICCPR) (2004);
 - ✓ Triggered by the project's obligation to respect community rights (participation, consultation, grievance redress).
 - ✓ Compliance → Transparent consultations, stakeholder engagement, and functioning GRM.
- The International Covenant on Economic, Social and Cultural Rights (ICESCR) (2004).
 - ✓ Triggered by the right to water, sanitation, health, and safe work.
 - ✓ Compliance → Expanding access to WASH, protecting worker welfare, and reducing disease risks.

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);
- ECOWAS 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 “2013 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.
2. 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 4.1: 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 undertake 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
5	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

6	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
7	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 maintain a constructive relationship and channels of communication with them, in particular project-affected parties among other objectives	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

4.7 Comparison between the FGS Frameworks and other international standards

Table 4.2 Comparison of the FGS Frameworks vs other international standards adopted in this project

Thematic Area	FGS Frameworks	AfDB ISS (2013) Safeguards	Other International Standards	Relevance to the Project
Environmental Protection & ESIA	Environmental Protection & Management Act (2024); ESIA & Audit Regulations	OS 1: Environmental & Social Assessment – comprehensive ESIA required	Basel Convention (1989), Bamako Convention (1991)	Project requires ESIA approval, mitigation of borehole drilling 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, borehole construction standards, and safe sanitation facilities.
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 Wadi Qardho ecology.
Biodiversity & Ecology	Forests & Wildlife Law; Fisheries Law (1985)	OS 3: Biodiversity Conservation	Ramsar Convention, CBD (Biodiversity)	Water systems must prevent disruption of seasonal Wadi Qardho aquatic life.
Gender & Social Inclusion	Constitution (2012) guarantees equality; Gender Policy mainstreaming	Cross-cutting Safeguard – gender mainstreaming & inclusion	CEDAW, CRC, CRPD	Separate facilities for women/girls, inclusion of persons with disabilities, child-sensitive designs.
Community Engagement	NEP (2017) requires public participation; Local Government Act	OS 1 & OS 2: Stakeholder Engagement, Disclosure, Grievance Mechanisms	UDHR, ICCPR (Civil Rights), ICESCR (Social Rights)	Community consultations, GRM, and stakeholder engagement must be central to planning.

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 Qardho 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:**

Qardho 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 Methodology of stakeholder engagement

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)
- c) **Focus group discussions (FGDs)** disaggregated by sex and age to capture diverse perspectives; (i) 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. (ii) The other FGD was held with CISP an NGO dealing with Gender issues in Somalia and specifically Qardho and (iii) The last one was held at Qardho 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
Puntland 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.
Puntland 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.
Puntland 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.
Qardho 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 Consultation Summary

A total of 5 key informant interviews and 6 Focused Group Discussions (FGD) were conducted with representatives from the following sectors. Additionally, Public participation forums were held on 3rd September 2025 at Mayor Office Qardho.

5.3.1 Key Informant Interviews

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

Table 5.2 Key Informant Interviews

Date	Stakeholder/Office Visited	Key Issues Discussed
12 th June 2025	Ministry of Women Development and Family Affairs (MOWDAFA) – Qardho-Social Department	Women's representation in WASH planning, lack of menstrual hygiene services, need for gender mainstreaming in local development plans.
11 th June 2025	Qardho Municipality (Mayor's Office & Public Works Dept.)	Infrastructure gaps, urban sanitation planning, challenges in maintaining public toilets.
9 th June 2025	Ministry of Water and Environment – Hoodman Water Management Company	Access to clean water, distance to water points, maintenance issues, low women involvement in user committees.
12 th June 2025	Ministry of Health – Shabeellee Health Centre	WASH-related health concerns, diarrhoea outbreaks, link between sanitation and maternal health.
13 th June 2025	Local NGOs (including women's associations)	Gender-based violence risks at water points, lack of sanitary pads, women's limited access to funding.

5.3.2 Focus Group Discussions

Table 5.3: Focus Group Discussions

Date	Group Composition	Key Themes
12 th June 2025	Women from IDP camps (5 participants)	Long distances to water points, lack of safety and privacy at latrines, stigma around menstruation.
11 th June 2025	Waste services provider	Poor school sanitation, need for capacity building, establishment of recycling facilities
16 May 2025	Men and male youth (community leaders)	Limited awareness of gender-specific needs in WASH, support for improved community hygiene.
12 th June 2025	Mixed group: nurses, CHWs	Importance of inclusive WASH education, role of schools and health centers, capacity-building needs.

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.

Outcomes of Stakeholder Visits

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.

3. Stakeholder Identification and Analysis

Table 5.4 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 center staff & patients	Reduced disease risks, safe wastewater handling	Medium	Workshops, staff training, noticeboards
	Local communities (adjacent households)	Oduor, 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	Puntland Ministry of Environment, Climate Change & Wildlife	ESIA approval, monitoring	High	Formal meetings, compliance reporting
	Puntland Ministry of Health	Sanitation-health linkages	High	Joint inspections, technical coordination
	Puntland Ministry of Public Works & Urban Development	Building approvals, siting	High	Planning coordination, site inspections
	Qardho	Land allocation,	High	Regular coordination

	Municipality	service delivery		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 Qardho Municipality and Puntland Environment 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 5.5 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 rumors 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 5.6: Summary of planned stakeholder engagement in project implementation phase

Engagement Type	Purpose
Pre-Construction Sensitization	Meetings Ensures early disclosure of construction plans, timelines, and risks to promote informed stakeholder participation.
Construction Kick-Off Meeting	Promotes coordination and clear communication of roles/responsibilities, aligned with inclusive engagement principles.
Monthly Community Feedback	Forums Fulfils OS 10's requirement for continuous consultation to manage emerging issues and maintain social license.
Grievance Redress Meetings	Provides access to an effective GRM as required by OS 10 to address construction-related complaints in real-time.
Environmental & Social Risk	Monitoring Sessions Ensures that construction risks (dust, waste, labour influx) are monitored with stakeholder involvement, as required.
Labour Engagement Meetings	Promotes non-discriminatory employment practices, working conditions, and grievance channels for workers.
Traffic and Public Safety Meetings	Informs stakeholders of potential access disruptions and ensures inclusion of vulnerable road users (per OS 10)
Women and Vulnerable Group	Dialogues Supports equitable participation, safeguards vulnerable populations, and captures gender-specific concerns.
Emergency Response and	Preparedness Meetings Ensures communities are informed and prepared to respond to construction-related incidents or health risks.
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.

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.
- Conduct of engagements: This will be the recording of proceedings and gathering feedback systematically.
- 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 Waste Water Treatment Options

Wastewater treatment processes are commonly classified as either aerobic or anaerobic systems. In accordance with best practices for each case and considering local environmental and climatic conditions, appropriate measures will be implemented to design the works, ensuring compliance with the effluent standards outlined by the Ministry of Environment, Agriculture and Climate Change (MoEACC). For each system, the treatment plants will incorporate primary treatment, which includes screen and grit removal units as prerequisites. Secondary and Tertiary treatment will be incorporated where necessary. The following wastewater treatment processes are applicable in Somalia urban areas including technologies that may not have been used before:

- Waste Stabilization Ponds (WSPs)
- Trickling Filters
- Oxidation Ditches
- Sequencing Batch Reactors (SBR)
- Rotating Biological Contactor (RBC)
- Moving Bed Biofilm Reactor (MBBR)
- Membrane Bio Reactor (MBR)
- Onsite Sanitation
- Sludge Handling Facilities
- Nascent Technologies (i) On-Site Sludge Treatment and Dewatering System and (ii) Lime Mixer

All the above Wastewater Treatment Technologies are preceded by Preliminary Treatment of wastewater which entails the removal of screens and grit to be detailed in the design report.

6.1.1 Wastewater treatment material alternatives

1. Collection and Containment (Septic Tanks, Latrines)

- Concrete (cast-in-place or precast) → durable, locally available, good for lined pits and septic tanks.
- Ferrocement (thin reinforced concrete) → cheaper, lighter alternative for tanks and covers.
- Bricks or masonry blocks → for lining pit latrines, available locally.
- Plastic/HDPE prefabricated tanks → lightweight, easy to install, but may be costly to import.
- Oil drums or repurposed containers → can be adapted for small holding tanks (temporary/low-scale).

2. Piping and Conveyance

- PVC / uPVC pipes → affordable, corrosion-resistant, widely used in Somalia for water and wastewater distribution.
- HDPE pipes → flexible, durable under high pressure, but more expensive.
- Clay pipes (traditional) → sustainable but heavier and harder to install/maintain.
- Galvanized steel pipes → strong but prone to rust, less ideal for wastewater.

3. Treatment Structures (Septic Tanks, Wetlands, Ponds)

- Reinforced concrete → best for permanent septic tanks, anaerobic baffled reactors, and stabilization ponds.
- Earth-lined ponds with clay or geomembrane liners → cost-effective for stabilization ponds, but need proper sealing to prevent leakage.
- Bricks/stone masonry → for walls of small treatment units.
- Plastic liners (HDPE, LDPE, geomembranes) → to line ponds or wetlands where clay is not available.

4. Filtration Media

- Gravel and sand → for constructed wetlands, slow sand filters, soak pits.
- Charcoal/biochar → low-cost local adsorbent to improve removal of organics and odor.
- Crushed stone or recycled concrete → substitute for gravel in filters.

5. Plant-based Natural Systems

- Local reeds (e.g., Phragmites, Typha) → used in constructed wetlands to uptake nutrients.
- Vetiver grass → strong root system, good for erosion control and polishing effluent.
- Papyrus → available in wet areas, can be used in wetlands or greywater polishing.

6. Disinfection & Reuse

- Chlorine (calcium hypochlorite or sodium hypochlorite) → commonly available in Somalia for water disinfection.
- Solar disinfection (SODIS) → transparent plastic/ glass containers + sunlight for greywater.
- Sand + gravel polishing units → simple and cheap for final filtration before reuse in irrigation.

In summary:

For Qardho, the best wastewater treatment material alternatives would combine locally sourced materials (concrete, bricks, gravel, reeds) with affordable imports (PVC pipes, plastic liners) to create septic tanks, soak pits, wetlands, and ponds. This balances cost, availability, and sustainability while ensuring systems can be built and maintained by local masons and technicians.

6.1.2 Design Alternatives

The document outlines multiple technology choices for each stage of the treatment process, allowing for different design configurations based on cost, space, and treatment goals.

- **Sludge Stabilization Technology:** The project could choose between:
 - **Anaerobic Baffled Reactors (ABR):** A multi-chambered system for enhanced sedimentation and digestion of organic matter.
 - **Biodigesters:** Closed tanks that also perform anaerobic digestion but are specifically highlighted for their potential to produce biogas.
- **Sludge Dewatering and Drying Method:** Alternatives for drying the processed sludge include:
 - **Unplanted Drying Beds:** Simple sand and gravel beds that use sun and evaporation to dry sludge.
 - **Planted Drying Beds:** A similar design that incorporates vegetation like reeds to improve drainage and evapotranspiration.
- **Effluent (Liquid) Treatment:** For the final polishing of treated water, the design could incorporate:
 - **Constructed Wetlands:** Engineered systems with vegetation to naturally treat the effluent.
 - **Soakaway Pits or Infiltration Trenches:** Structures designed for the safe infiltration of treated liquid into the soil.
 - **Maturation Ponds:** Shallow ponds that use sunlight and natural processes to reduce pathogens.
- **Sanitation Facilities in Flood-Prone Areas:** Instead of conventional latrines that can overflow or collapse in floods, the project alternative is to construct Raised Emergency Toilets with Lined Holding Tanks. These are built above ground and have watertight tanks to prevent contamination during floods.

6.1.3 Location Alternatives

While the document does not name specific alternative sites, it provides clear criteria for selecting a location. The alternatives would consist of evaluating different land parcels against these requirements.

- **Proximity to Served Area:** A DTF is a localized system, so alternative sites should be evaluated based on their strategic proximity to the urban neighborhoods, informal settlements, or institutions they are intended to serve.
- **Setback Requirements:** Any proposed location must be assessed against setback

standards. The chosen site must be at least 100–200 meters away from residences and water bodies to minimize potential nuisance and health risks.

- Land Size: Alternative sites must have adequate space. For a medium town, a facility would require between 0.5 and 1.5 hectares, depending on the chosen technologies.

6.1.4 Operating Condition Alternatives

The primary operational alternative is the choice between a basic disposal model and a model focused on resource recovery.

- Alternative 1: Basic Disposal Operation: In this model, the DTF would focus solely on treating sludge and effluent for safe disposal. Solids would be processed into biosolids for disposal, and treated water would be discharged into soakaways.
- Alternative 2: Resource Recovery Operation: This model operates the DTF as a circular economy system. This would involve:
 - Biogas Recovery: Capturing methane from biodigesters for use in cooking or electricity generation.
 - Biosolid Composting: Co-composting the dried sludge with organic waste to create fertilizer for agricultural use.
 - Effluent Reuse: Using the nutrient-rich treated water for controlled agriculture.
- Sludge Collection Method: The operational plan could choose between using mechanized exhaustor trucks or employing manual emptiers to collect sludge from homes and institutions.

6.1.5 The 'No-Action' Alternative

The 'no-action' alternative is a scenario where the DTF and raised toilet project is not implemented. The consequences of this option are the continuation of the existing sanitation problems.

- Continued Groundwater Contamination: Without a DTF to safely receive and treat waste, the reliance on unlined pit latrines and overflowing septic tanks would continue, leading to ongoing fecal seepage into groundwater.
- Health Risks from Overflowing Latrines: The problem of overflowing latrines, particularly in dense IDP camps, would persist, posing significant public health risks.
- Increased Flood-Related Contamination: In flood-prone areas, the failure to build raised toilets would mean that standard pit latrines will continue to overflow or collapse during floods, contaminating floodwaters and spreading disease

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 such as ESIA approval, Municipal building/construction permit, Waste management permit, and Labour & safety compliance certification. 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 Waste Water Treatment Plant - Operation phase positive impacts

Environmental Impacts

Reduced pollution → Prevents raw sewage and greywater from contaminating rivers, soil, and groundwater.

Protection of ecosystems → Treated water entering the environment has lower nutrient and pathogen loads, reducing damage to plants, animals, and aquatic life.

Climate resilience → Constructed wetlands and stabilization ponds can also recharge groundwater and support vegetation cover.

Public Health Impacts

Disease reduction → Lower risk of cholera, diarrhea, typhoid, and other waterborne illnesses linked to untreated wastewater.

Safer living conditions → Reduced stagnant wastewater minimizes mosquito breeding (malaria, dengue risk).

Improved nutrition → Cleaner water and safer environment protect children's growth and development.

Water Resource Impacts

Water reuse → Treated effluent can be used for irrigating trees, fodder crops, or landscaping, which is especially valuable in drought-prone areas like Qardho.

Groundwater protection → Proper containment and treatment prevent contamination of shallow wells that many communities depend on.

Socio-Economic Impacts

Reduced healthcare costs → Fewer disease outbreaks mean families and government spend less on treatment.

Job creation → Building and operating treatment units, desludging services, and maintenance create employment.

Resource recovery → Biogas from sludge and composted biosolids can provide energy or fertilizer for local use.

Urban development → Better sanitation improves Qardho's attractiveness for investment, schools, and institutions.

Wastewater treatment in Qardho would protect the environment, improve health, conserve scarce water, and support livelihoods. Even simple decentralized systems (like septic tanks, wetlands, or ponds) could have a transformative impact by reducing disease, safeguarding water sources, and providing opportunities for reuse and recovery.

7.3 Construction Phase Negative Impacts

7.3.1 Impacts on Water Resources

Qardho Municipality, located within Puntland 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 sewerage leaking from rehabilitation works within the area

Potential Impacts

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

- Site activities such as trench 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 water lines will render the soils susceptible to agents of erosion subsequent siltation of rivers and stream along the Water alignment. 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	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 Water Lines 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 (Pre-mitigation)	Residual Impact 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 Qardho 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 Vertosols 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 Water Lines 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 (Pre-mitigation)	Residual Impact 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 (AQI³) and PM2.5 air pollution in Somalia, the ambient air quality status of South Qardho is summarized in the tables 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) ³
	Particulate matter ≤2.5 (pm _{2.5})	15 to 20	35
	Particulate matter ≤10 (pm ₁₀) ⁴	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)

³ Environmental Protection Agency (EPA) National Ambient Air Quality Standards (NAAQS)

⁴ EMCA 1999 Air Quality Regulation of 2014

	<0.01	0.5	0.011	0.191	0.07	10.0	0.015	0.12
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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 mosques, schools, markets and health facilities that could be affected by polluted air as a result of Project Activities that release SO_x, NO_x Co and O₃ and PM₁₀ and PM_{2.5}

Pre- Mitigation Impact Assessment is as shown below

Table 7.7: Pre-Mitigation Impact Assessment

Impact	Degradation of the Air-shed during Construction				
Nature of Impact	Negative	Positive		Neutral	
	Increase in airborne pollution.				
Type of Impact	Direct	Indirect		Induced	
	Impact is a result as a direct interaction between project activities				
Duration of Impact	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.
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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 from 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 the table below.

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 mosques, schools, markets and health facilities that could be affected by excessive noise beyond recommended MoEACC Guidelines

Pre mitigation Impact Assessment is presented in the table below

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 the table below

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

Qardho 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 approximately 1-2 hectares based on the project design 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 alignment routes that is considered a fragile ecosystem, sensitive to changes to its components. Pre mitigation Impact Assessment is presented in the table 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 Water Lines will be constructed with 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

Table 7.14 Summary of construction phase negative impacts

Impact Category	Description of Impact	Severity / Ranking	Affected Receptors	Notes / Key Considerations
Impacts on Water Resources	Potential contamination of surface and groundwater due to untreated wastewater discharge.	High	Rivers, wells, community water supply	Most critical; mitigated through DEWATS treatment, monitoring of effluents, and safe discharge
Impacts on Soil Resources	Soil contamination from wastewater infiltration and sludge disposal; erosion at construction sites.	Moderate-High	Agricultural land, construction sites	Requires proper sludge management, erosion control, and site restoration measures
Impacts on Air Quality	Release of odors, particulate matter, and potential methane from wastewater treatment units.	Moderate	Surrounding communities, project staff	Controlled by proper aeration, covered storage tanks, and odor treatment
Impacts related to Noise & Vibration	Construction noise and vibration from equipment; operational noise from pumping stations.	Low-Moderate	Nearby schools, hospitals, and residents	Temporary; mitigated through scheduling, equipment maintenance, and noise barriers
Impacts on Flora	Minor removal or disturbance of vegetation	Low	Local vegetation patches	Limited spatial extent; can be mitigated through

	during site preparation and construction.			replanting and careful site layout
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7.3.6 Project Impacts and Mitigation on Aquatic and Riparian Ecology of Wadi Qardho

Wadi Qardho is a seasonal watercourse that flows mainly during the rainy seasons and provides temporary but important aquatic and riparian habitats. The wadi supports amphibians, aquatic macro-invertebrates, occasional small fish, water birds, reptiles, and riparian vegetation such as reeds and grasses. Although these ecosystems are intermittent, they play a key role in local biodiversity, soil stabilization, and floodwater dispersion.

Potential Project Impacts

- **Habitat disturbance:** Construction works (excavation, material storage, machinery movement) near the wadi may disturb riparian vegetation and soil stability, leading to erosion and siltation.
- **Water quality risks:** Accidental release of untreated wastewater, oils, fuels, or construction waste into the wadi could degrade water quality during flood events, harming aquatic organisms and downstream users.
- **Hydrological disruption:** Improper siting of facilities or waste disposal could obstruct natural drainage channels, intensifying flood risks and altering habitat dynamics.
- **Biodiversity stress:** Seasonal species (frogs, insects, birds) may lose breeding and feeding grounds if riparian zones are degraded.

Proposed Mitigation Measures

- **Buffer zones:** Maintain a minimum buffer (≥ 30 m where feasible) between project structures and the wadi channel to protect riparian habitats and natural drainage.
- **Construction management:** Store fuel, chemicals, and construction materials away from the wadi; implement spill prevention and response plans.
- **Wastewater treatment:** Ensure all effluent from decentralized treatment systems is treated to acceptable standards before discharge; avoid direct release into the wadi.
- **Erosion control:** Use silt traps, vegetative cover, and controlled excavation methods to reduce sediment runoff into the wadi during construction.
- **Revegetation:** Restore disturbed riparian zones with native vegetation after works are completed to stabilize soils and re-establish habitats.
- **Monitoring:** Include aquatic/riparian ecology indicators (e.g., water quality, vegetation cover, presence of indicator species) in the project's environmental monitoring plan.

Residual Impacts

With the application of these mitigation measures, residual impacts on aquatic and riparian ecology are expected to be **low to moderate** and largely temporary, confined to the construction phase. In the long term, improved sanitation infrastructure will reduce pollution pressures on the wadi, contributing positively to ecosystem health and downstream water quality.

7.3.7 Traffic Management on Site

The Construction Environmental and Social Management Plan (C-ESMP) for the Qardho DEWATS project must include measures to manage traffic and ensure safety around project sites, especially since construction occurs near hospitals, health centers, and schools.

- **Traffic Assessment:** Evaluate existing traffic conditions near the project sites, including vehicle types, volumes, speeds, and pedestrian activity. Pay special attention to school zones, hospital entrances, and areas with high pedestrian movement.
- **Work Zone Identification:** Identify construction areas for wastewater treatment units, pipeline laying, and related civil works. Determine if partial road closures, temporary lane restrictions, or detours are necessary, particularly near institutional entrances.
- **Roadway Markings and Signage:** Install clear, visible signage to inform motorists, staff, patients, students, and visitors about work zones, speed reductions, temporary detours, and lane restrictions. Ensure temporary pavement markings guide traffic safely around construction areas.
- **Lane Closure Planning:** Plan any lane closures to minimize disruption. Coordinate with local authorities to obtain permits and plan detours to maintain access to hospitals, health centers, and schools. Consider timing closures during off-peak hours where possible.
- **Temporary Traffic Control Devices:** Use cones, barricades, delineators, and channelizing devices to safely guide vehicles and pedestrians around the construction zones. Devices should create clear separation between work areas and traffic.
- **Pedestrian Safety:** Maintain safe pedestrian access with marked walkways or temporary routes around construction sites. Provide ramps or temporary bridges if necessary, and ensure students and hospital visitors can safely navigate around the work zones.
- **Flagging Operations:** If manual traffic control is needed, ensure trained flaggers guide vehicles safely through work zones. Equip flaggers with proper safety gear and follow standardized procedures.
- **Communication and Public Awareness:** Inform local communities, hospital staff, school administrators, and residents about construction schedules, traffic disruptions, and detours. Use notice boards, SMS alerts, local radio announcements, and community meetings where applicable.

- **Emergency Response Planning:** Ensure emergency vehicles have unobstructed access to hospitals and schools. Coordinate with local emergency services to communicate work zone layouts and detours.
- **Ongoing Monitoring and Adjustments:** Continuously monitor traffic flow and safety around construction areas. Collect feedback from affected stakeholders and make necessary adjustments to reduce congestion, maintain safety, and minimize disruption to institutional operations.

7.3.8 Waste Management on Site

Wastes on Site will include both liquid and solid 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
- 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.

Liquid Wastes that will be associated to the project

- Untreated wastewater from toilets, kitchens, washrooms, and laboratories.
- Greywater from sinks and showers.
- Treated effluent from DEWATS units.
- 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

- Sludge from DEWATS treatment units.
- Screenings (rags, plastics, sanitary products) from inlet screens.
- 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 waste from kitchens, offices, and hospitals.

7.3.9 Social Resources and Receptors

7.3.9.1 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

The typical receptors recorded *within* the immediate DTF project sites are the people, structures, and environmental features that make up the institutions themselves.

DTF 1: Sheikh Osman Secondary School

Since the project is located entirely within the school's compound, the receptors are the components of the school itself.

- **Human Receptors:** The most direct receptors are the students, teachers, and administrative staff who use the facility daily.
- **Physical Receptors:** The main school infrastructure, including classrooms, administrative offices, and playground areas.
- **Distance from Project Site:** These receptors are all located within the same compound, making their distance 0 meters, or immediately adjacent to the construction footprint.

Potential Impact

The presence of the Project could affect the health, safety and wellbeing of the communities around the proposed waste water treatment plant 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 within the institutions or open barricaded 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 the table below.

Table 7.15: 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 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 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	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	Positive	Negligible	Small	Medium	Large

magnitude	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 along the Water Lines and road users including vehicle users, pedestrians and cyclists) is considered medium.		
Impact significance	Negligible	Minor	Moderate
	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 the table below.

Table 7.16: Residual Impact Significance

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

7.3.9.2 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

7.3.9.3 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; 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.

7.4 Operation Phases Negative Impacts

7.4.1 Wastewater treatment Operational Impacts

The most significant challenges currently facing wastewater treatment 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 and sanitation departments at the operation stage of the Project.

7.4.2 Sanitation Works Operation Impacts

Environment and social Impacts during operation phase of the proposed Sanitation Works is presented in sub sections below

Water Pollution by Raw Sewerage

Water sources in the area are mainly shallow wells, dams, seasonal rivers and ground water aquifers. Poorly maintained and designed sewers can lead to spillage of raw sewage particularly at manholes and burst areas into the environment which eventually seeps in water sources. These can cause outbreaks of water borne related diseases like cholera and typhoid.

Mitigation Measures

- The water and sanitation departments will ensure proper and periodic maintenance of sewers and treatment plants
- The water and sanitation departments will activate a community watch group for information sharing on the status of the sewers
- Regular cleaning of grit chambers and sewers to remove grease, grit, and other debris that may lead to sewer backups
- Development of an inventory of system components, with information including age, construction materials, and drainage areas served
- Design manhole covers to withstand anticipated loads and ensure that the covers can be readily replaced if broken to minimize entry of garbage and silt into the sewer system
- Ensure sufficient hydraulic capacity to accommodate peak flows and adequate slope in gravity mains to prevent build-up of solids and hydrogen sulphide generation
- Regular inspection of the system to ensure performance is maintained at high levels
- Blockages should be detected and promptly replaced
- Regular monitoring and sampling of the wastewater at influent and effluent points as well as in the receiving water bodies
- Communities living within the river basins where the trunk sewers will be constructed should be enlightened on dangers of using raw sewerage to irrigate farmlands.

Odor Menace

The process of wastewater collection, conveying or treatment has the potential to generate and release odors to the surrounding area. Most odor problems occur in the collection system, in primary treatment facilities and in solid handling facilities as well as the sludge drying beds. The most frequently reported symptoms attributed to odors from treatment plants include headache, nausea, hoarseness, cough, nasal congestion, palpitations shortness of breath, stress, drowsiness, alterations in mood, and eye, nose, and throat irritation. Hydrogen Sulphide (H₂S) is the most prevalent gas associated with domestic wastewater collection and treatment.

The conditions leading to Hydrogen Sulphide formation usually favor the production of other odorous gases such as ammonia which may have considerably higher undetectable odor thresholds, and consequently H₂S may be an indicator of their presence. Exposure of receptors to levels of hydrogen Sulphide above 5ppb can lead to odor nuisance.

Mitigation to odor menace from WWTP

- The water and sanitation departments will ensure appropriate covering/ventilation of the pre-treatment unit
- The water and sanitation departments will ensure appropriate handling and removal of grit/grease
- The water and sanitation departments will ensure scum is appropriately disposed of or properly stabilized
- The water and sanitation departments will ensure that the pond series have adequate water flow and aeration to reduce the potential of odour formation
- The perimeter of the proposed site should be vegetated with trees and plants of varying heights thereby forming windbreaker and reduce dispersion of odour
- Repairing dilapidated roofs of the sludge drying beds to ensure quick drying of sludge and appropriate disposal to reduce odour emanating from wet sludge.

Risks Associated with Sludge from the WWTP

Wastewater Treatment Plants often require sludge removal overtime in order to guarantee efficient operation of the plant. However, if sludge is not management properly it can pose significant health hazards to workers, community and water quality from the de-sludging exercise.

Also, if sludge on site is not properly managed, it leads to significant land and soil contamination at the disposal site and eventually pollution water resources when leachate from the sludge flows into water resources. Therefore, mitigation measures for sludge associated risks are presented below.

Mitigation Measures

- The water and sanitation departments will dry sludge on the drying beds before disposing it off
- Dried sludge could be used to make briquettes as a charcoal substitute or be sold to farmers as fertilizers
- Excess sludge can be disposed in a designated landfill which shall only be for disposing dry odourless sludge.
- Preparation and enforcement of operational guidelines for sludge management by the local County Government.

Solid Wastes Impacts at WWTP Screens

Wastewater trunk and secondary sewers are often used illegally as dumping sites at open manholes. Therefore, solid wastes which include plastic bottles, wood, cloths and debris are often screened and disposed of at screening chambers at inlet works of the sanitation works.

Mitigation Measures

- The water and sanitation departments will develop a comprehensive Waste Management Plan (WMP) for management of solid wastes from screen chambers
- The water and sanitation departments will employ personnel who will be in charge of maintaining hygiene and cleanliness of the WWTP including removal of solid wastes from screen chambers
- Properly labelled and strategically placed waste disposal containers shall be provided at all places within the WWTP
- Solid wastes once removed from screens shall be collected and disposed appropriately as required by waste Management Regulations.

Inversion of Birds and Reptiles to the WWTP

There is a possibility of birds' attraction to the sewage treatment plants arising from proliferation of insects and aquatic flora suitable for birds' food. Certain species and population of birds at Sewage treatment plant could become a safety risk to aviation sector; however, no flight corridor was identified within the vicinity. Certain animals including crocodiles and hippos may encroach the sewage treatment plants and other areas arising from overgrown vegetation. This will not only be a nuisance to the plants' operations but also pose safety threats to the immediate residents and commercial premises.

The sewage discharging from the treatment plants (as well as other discharges from sources) are a determinant of the macro and micro flora and fauna in rivers. Excessive nutrients will lead into increased eutrophication of the river waters while chemical and organic loading will reduce the capacity for the river waters to support life (low oxygen levels and toxic conditions).

Mitigation Measures

- The sewage treatment plants should be protected from wildlife encroachments by providing secure barriers to keep off the animals from interfering with the plant operations and safety
- In the event of larger wildlife e.g., hippos, the water and sanitation departments will ensure appropriate consultations with the national wildlife authority on appropriate management actions.
- The quality of the effluent discharged into the river will be an important parameter on the regional control of the river eutrophication that attracts insects that reptiles feed on

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. The table below presents details of Sub plans

Table 8.1: C-ESMPs and Sub plans

#	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 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 -	After signing of	Contractor	

	Ministry of Labor and Social Services Somalia	Works Contract		
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:

- **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.
- **Establish baseline environmental and social conditions** to provide a factual reference for assessing potential changes and for future monitoring.
- **Identify and assess potential environmental and social impacts** (positive and negative, direct and indirect, cumulative, and transboundary) associated with all project phases – design, construction, operation, and decommissioning.
- **Integrate environmental and social considerations** into the project planning, design, and decision-making processes to enhance sustainability, resilience, and long-term benefits.
- **Develop feasible mitigation and enhancement measures**, and consolidate these into a practical **Environmental and Social Management Plan (ESMP)** with clear roles, responsibilities, timelines, and budget provisions.
- **Ensure compliance with applicable national environmental and social legislation**, as well as AfDB's safeguard requirements
- **Facilitate inclusive stakeholder participation** through effective consultation, information disclosure, and a culturally sensitive, gender-responsive approach.
- **Promote transparency and accountability** by establishing mechanisms for documentation, disclosure, and grievance redress throughout the project cycle.
- **Provide a decision-support framework** for the Government of Somalia, the AfDB, and other stakeholders to ensure environmentally and socially responsible project implementation.

The Environmental, Social Management and Monitoring Plan (ESMP) is summarized in the table below

Table 8.3: Environment and Social Management Monitoring Plan – Construction Phase – Wastewater treatment

Risk Category & Potential Risk	Anticipated Impact	Mitigation Measures	Responsibility	Monitoring Parameter	Budget (USD)
1. Air Quality					
Dust (Particulate Matter) from excavation, vehicle movement, and stockpiles.	- Respiratory health issues for workers, students and staff. - Nuisance and reduced visibility.	- Spray water on unpaved roads and active work areas. - Cover trucks transporting soil/ materials. - Enforce low speed limits (15 km/h) on-site.	Contractor	- Daily visual inspection of dust levels. - Weekly checklist confirming dust control actions.	3,500
2. Noise & Vibration					
Noise from excavators, concrete mixers, and vehicles.	- Disruption of classes at the school and operations. - Hearing damage risk for workers.	- Restrict noisy construction activities to non-school hours (e.g., afternoons) at the school site. - Ensure all machinery is well-maintained with functional mufflers. - Provide workers with appropriate PPE (earmuffs).	Contractor	- Weekly verification of work schedule adherence. - Spot checks for worker PPE usage. - Community complaints log.	2,000
3. Water & Soil Resources					
Contamination of soil and groundwater from fuel, oil, or chemical spills.	- Pollution of the local environment. - Potential long-term contamination of the underlying aquifer.	- Designate a lined, secure area for fuel storage and vehicle maintenance, away from drains. - Keep spill kits readily available on-site. - Prohibit discharge of cement washout onto bare ground.	Contractor	- Weekly inspection of fuel/chemical storage areas. - Records of any spills and cleanup actions taken.	2,500
4. Waste Management					
Improper disposal of solid and liquid construction waste.	- Land pollution, attraction of pests, and public health hazards.	- Segregate waste on-site (excavated soil, rubble, packaging). - Provide clearly marked bins for different waste types. - Dispose of all waste at a government-approved disposal site.	Contractor	- Daily visual inspection of site housekeeping. - Waste disposal receipts and records.	4,000
5. Occupational Health & Safety (OHS)					
Accidents and physical injuries	- Serious injury, disability, or fatality.	- Mandatory use of appropriate PPE for all	Contractor / PIU	- Daily checks for PPE	10,000

to workers (e.g., falls, trench collapse).	- Work stoppages and project delays.	workers. - Conduct daily "toolbox talk" safety briefings. - Ensure excavations are shored or sloped; provide safe access. - Keep a fully stocked first aid kit and trained personnel on-site.	E&S Officer	compliance. - Records of safety briefings. - Site accident and incident logbook.	
6. Community Health & Safety					
Accidents involving the public (students, community, pastoralists).	- Injury to community members from open trenches, vehicle movement, or unsecured materials.	- Securely fence the entire construction site with controlled access points. - Install clear warning signs at the site perimeter. - Cover or secure all open excavations at the end of each workday.	Contractor	- Daily inspection of fencing, gates, and signage. - Log of any community safety complaints.	6,000
7. Vegetation & Soil Management					
Unnecessary clearing of vegetation and topsoil loss.	- Loss of natural scrubland habitat - Soil erosion and increased dust generation.	- Clearly demarcate and minimize the construction footprint before work begins. - Preserve mature trees where possible (school site). - Stockpile cleared topsoil for later use in site landscaping/restoration.	Contractor	- Pre-construction survey to demarcate clearing limits. - Visual check to ensure topsoil is stored separately.	1,500
8. Socio-Economic					
Social friction from labor practices or community interactions.	- Disputes over job opportunities. - Conflict between construction workers and the local community.	- Prioritize hiring of unskilled labor from local communities through a transparent process. - Implement and enforce a worker Code of Conduct (respecting local culture, no harassment).	Contractor / PIU	- Review of employment records to verify local hiring. - Monitor community complaints regarding worker behavior.	1,000
TOTAL ESTIMATED BUDGET					\$30,500

Table 8.4: Environment and Social Management Monitoring Plan – Operation of Sanitation Related Works

Issue	Action required	Responsibility	Provisional Budget
Pollution of Water Resources by raw sewage from blocked Sewer pipes and Manholes.	• HODMAN Co will ensure proper and periodic maintenance of sewers and treatment plants • HODMAN Co will activate a community watch group for information sharing on the status of the sewers • Regular cleaning of grit chambers and sewers to remove grease, grit, and other debris that may lead to sewer backups • Development of an inventory of system components, with information including age, construction materials, and drainage areas served • Design manhole covers to withstand anticipated loads and ensure that the covers can be readily replaced if broken to minimize entry of garbage and silt into the sewer system • Ensure sufficient hydraulic capacity to accommodate peak flows and adequate slope in gravity mains to prevent build-up of solids and hydrogen sulphide generation • Regular inspection of the system to ensure performance is maintained at high levels • Blockages should be detected and promptly replaced • Communities living within the river basins where the trunk sewers will be constructed should be enlightened on dangers of using raw sewerage to irrigate farmlands.	Hodman Water Management (HODMAN Co.)	To be established at Operation Phase and included in the operation of the Project
Odour Menace from Wastewater Treatment Works	• HODMAN Co will ensure appropriate covering/ventilation of the pre-treatment unit • HODMAN Co will ensure appropriate handling and removal of grit/grease • HODMAN Co will ensure scum is appropriately disposed of or properly stabilized • HODMAN Co will ensure that the pond series have adequate water flow and aeration to reduce the potential of odour formation • The perimeter of the proposed site should be vegetated with trees and plants of	HODMAN Co	To be established at Operation Phase and included in the operation of the Project

	varying heights thereby forming windbreaker and reduce dispersion of odour Repairing of dilapidated the roofs of the sludge drying beds to ensure quick drying of sludge and appropriate disposal to reduce odour emanating from wet sludge.		
Risks Associated with Sludge from the Waste Water treatment sites	- HODMAN Co will dry sludge on the drying beds before disposing it off - Dried sludge could be used to make briquettes as a charcoal substitute or be sold to farmers as fertilizers - Excess sludge can be disposed in a designated landfill which shall only be for disposing dry doorless sludge. - Preparation and enforcement of operational guidelines for sludge management	HODMAN Co	To be established at Operation Phase and included in the operation of the Project
Solid Wastes Impacts at sludge treatment sites	- HODMAN Co will develop a comprehensive Waste Management Plan (WMP) for management of solid wastes from screen chambers - HODMAN Co will employ personnel who will be in charge of maintaining hygiene and cleanliness of the WWTP including removal of solid wastes from screen chambers - Properly labelled and strategically placed waste disposal containers shall be provided at all places within the WWTP - Solid wastes once removed from screens shall be collected and disposed of appropriately as required by city by laws	HODMAN Co	To be established at Operation Phase and included in the operation of the Project
Inversion of Birds and Reptiles to the WWTP	- The sewage treatment plants should be protected from wildlife encroachments by providing secure barriers to keep off the animals from interfering with the plant operations and safety - In the event of larger wildlife, HODMAN Co will ensure appropriate consultations with the Somalia Wildlife Services on appropriate management actions. - The quality of effluent discharged into the river will be an important parameter on the regional control of the river eutrophication that attracts insects that reptiles feed on	HODMAN Co	To be established at Operation Phase and included in the operation of the Project

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 8.5: 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 provisions, 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 below

Table 8.6: 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.	HODMAN Co
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.	HODMAN Co
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.	HODMAN Co
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.	HODMAN Co
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.	HODMAN Co
2.3	OCCUPATIONAL HEALTH AND SAFETY (OHS) MEASURES Develop and implement occupational, health and safety (OHS) measures, based on World Bank EHS Guidelines, as part of the ESMF and ESMPs including through, <i>inter alia</i> , implementing adequate OHS measures and incorporating LMP and SRAMF 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.	HODMAN Co
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 incorporated in the ESMPs to be prepared under the project	Prepare Construction Specific Environmental and Social Management Plans	Contractor
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 Chance Finds procedures in ESMF 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 OS10, 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.	HODMAN Co

9. GRIEVANCE REDRESS MECHANISM

9.1 Introduction

The Grievance Redress Mechanism (GRM) for the Qardho New borehole drilling and rehabilitation project is designed to provide a transparent, accessible, and culturally appropriate channel for addressing concerns, complaints, or disputes that may arise during project preparation, construction, and operation.

It ensures compliance with:

- AfDB ISS (2013), OS1 & GN10 (Stakeholder Engagement & Information Disclosure).
- Somali Constitution (2012) – Right to participation and access to justice.
- Public participation in ESIA.

9.2 Purpose of GRM

9.2.1 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.

9.3 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.

9.4 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

9.5 GRM Framework

9.5.1 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 9.1 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 9.1 Categories of Grievances

9.5.2 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.

9.6 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.

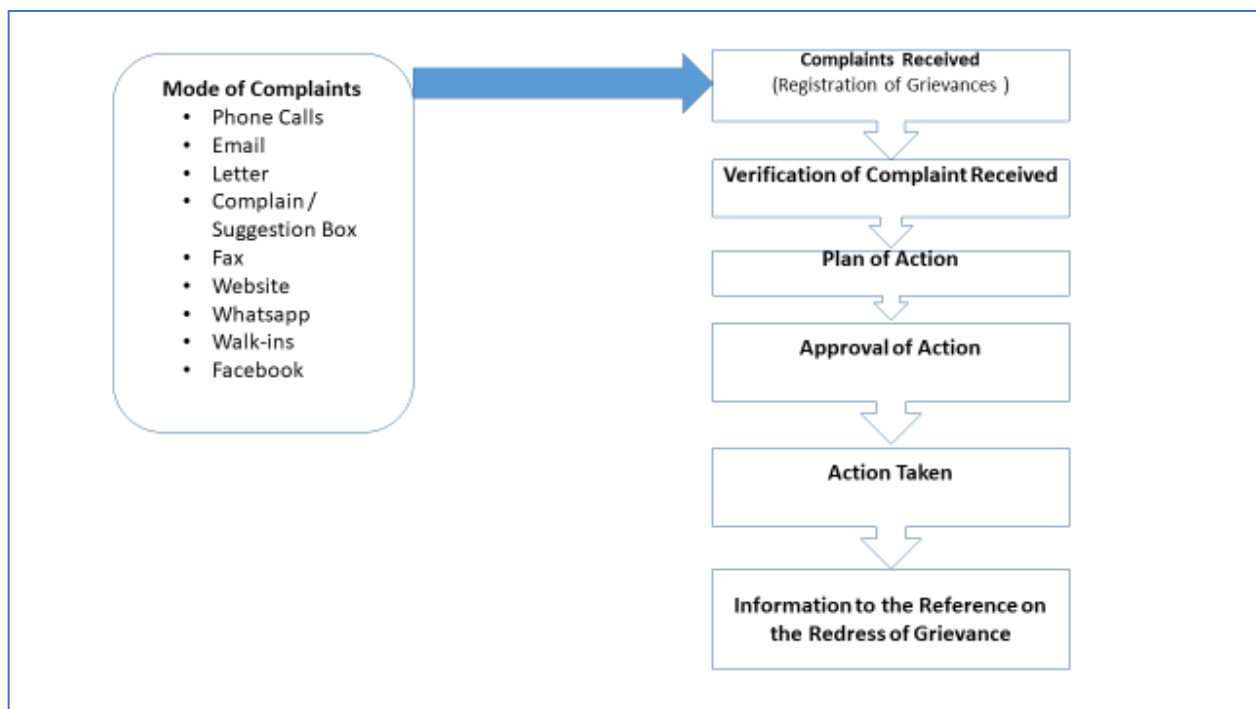


Figure 9.2 Grievance Flow in Basic GRM

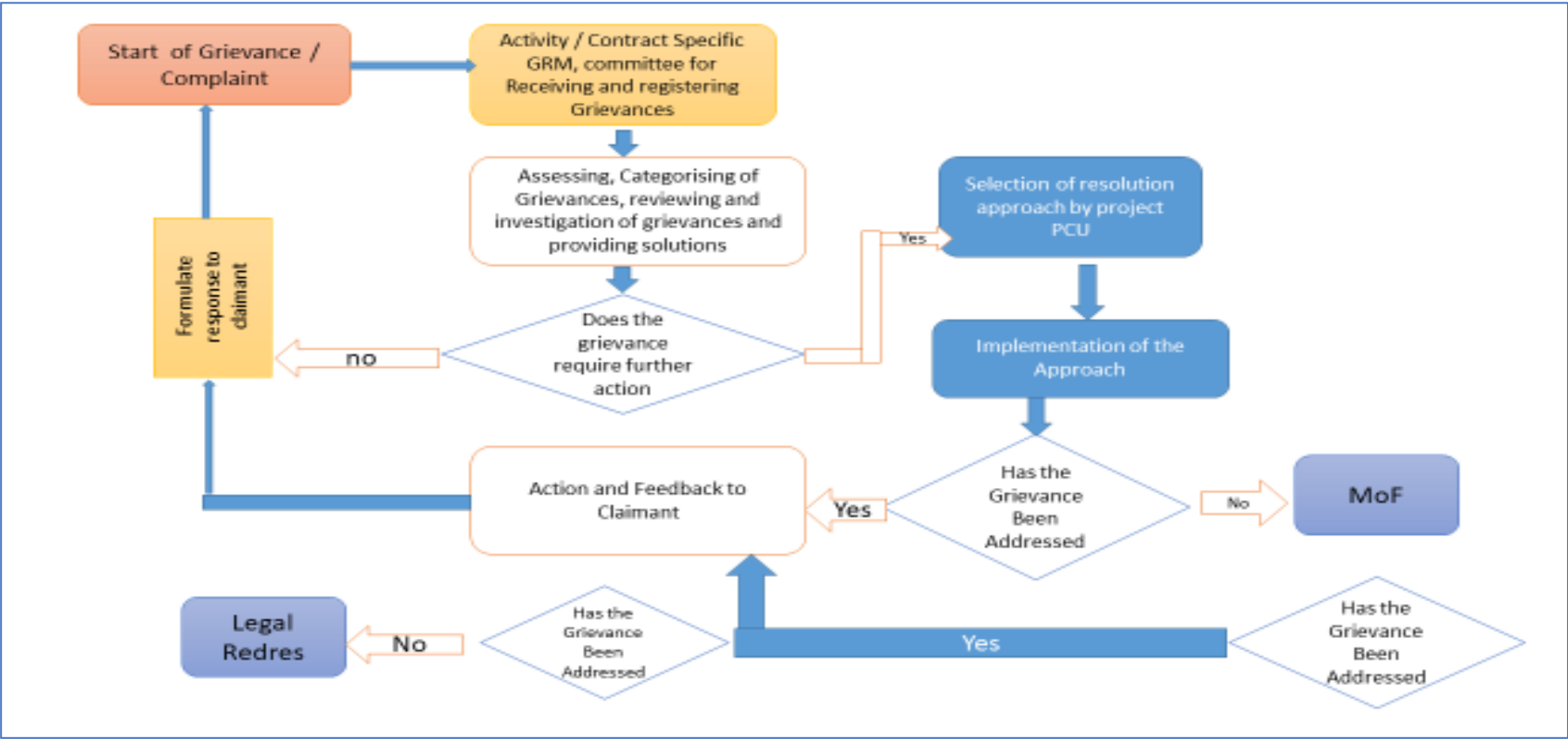


Figure 9.3 Detailed GRM Flow Chart

9.7 Institutional Responsibilities

- **Contractor:** First line of response for construction-related grievances (noise, dust, safety).
- **Qardho 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.

9.8 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.

9.9 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

9.10 Conclusion

The GRM is a vital safeguard tool to ensure that the Qardho Borehole drilling and rehabilitation 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 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
 - iii. Implement Provisions of the Plans and Undertake Monthly and Quarterly reporting of ESHS compliance.

10.2 Pre-Construction Safeguards Readiness

10.2.1 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 Department of Occupational Health and Safety domicile within Ministry of Labour and Social Affairs of the Federal Government of Somalia,
- Obtain Approval of Plans from Qardho County Government Physical Planning Department for any structures on site
- Acquire Permits from the State's Public Health Department 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

10.2.2 Engaging 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.

10.2.3 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 project's Implementation body, a summary of the Sub Plans is presented below

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

10.3 General Outcome of Assessment – Qardho Wastewater Treatment Project

10.3.1 Positive Impacts Identified

- **Improved Access to Safe Water and Sanitation:**
 - New boreholes and rehabilitated facilities will provide reliable water supply to schools, hospitals, and communities, reducing water scarcity.
- **Public Health Benefits:**
 - Reduced reliance on unsafe water sources decreases waterborne diseases, improving community health.
- **Gender and Social Equity:**
 - Women, children, and vulnerable groups gain safer and closer access to water, reducing the time and burden of water collection.
- **Climate Resilience:**

- Solar-powered and sustainable pumping systems reduce reliance on fossil fuels and ensure continuous supply during dry periods.
- **Capacity Building and Local Employment:**
 - Training of Water and Sanitation Committees and engagement of local contractor's support skills development and community empowerment.

10.3.2 Medium and High Adverse Impacts Identified

Table 10.1 Identified medium and high impacts

Impact Area	Impact	Severity / Ranking	Mitigation Measures
Water Resources	Potential contamination from drilling mud, cuttings, and wastewater	High	Proper containment and treatment of drilling waste; controlled discharge; water quality monitoring
Soil Resources	Soil erosion, compaction, and disturbance at site	Medium	Use of erosion control measures, temporary stabilization of cleared areas, proper disposal of cuttings
Air Quality	Dust and emissions during drilling	Medium	Dust suppression with water sprays; equipment maintenance; use of PPE
Noise & Vibration	Disturbance from drilling machinery	Medium	Limit drilling to daytime; install noise barriers if near sensitive receptors
Flora	Minimal removal of sparse trees and shrubs	Low	Retain existing vegetation where possible; replant native species post-construction

10.3.3 Trade-Offs

- **High Initial Costs vs Long-Term Sustainability:**
 - Use of rotary drilling and solar-powered pumps increases upfront costs but ensures long-term reliability, climate resilience, and low operational costs.
- **Localized Construction Disturbance vs Community Health Benefits:**
 - Temporary dust, noise, and soil disturbance are outweighed by improved access to safe water, sanitation, and reduced disease incidence.

10.3.4 Contrast: Positive vs Negative Impacts

Table 10.2 Contrast between negative and positive impacts

Aspect	Positive	Negative	Assessment
Community Health	Reduced waterborne diseases	Temporary exposure to dust and noise	Positive impacts clearly outweigh minor disturbances
Environment	Minimal vegetation loss;	Soil erosion, potential	Mitigable with proper

	sustainable energy use	water contamination	ESMP measures
Socio-Economic	Improved access, gender equity, skill development	Temporary disruption during construction	Positive impacts outweigh adverse effects
Sustainability	Climate-resilient infrastructure	High initial cost	Benefits justify investment for long-term gains

10.3.5 Ensuring a Sustainable Wastewater Treatment and Water Supply Project

- **Mitigation Measures:** Implement ESMP measures for soil, water, air, noise, and vegetation management.
- **Monitoring & Compliance:** Regular water quality, environmental, and social monitoring.
- **Community Engagement:** Strengthen Water and Sanitation Committees, ensure equitable access and grievance redress mechanisms.
- **Sustainability Measures:** Use solar-powered pumps, routine maintenance, and institutional capacity building.

Conclusion:

The ESIA demonstrates that the positive impacts of improved water access, health, gender equity, and climate resilience outweigh the temporary and manageable adverse impacts. With proper mitigation and monitoring, the project is environmentally sustainable, socially beneficial, and economically justified for Qardho.

11.APPENDIXES

- i. Stakeholder Consultation (Minutes, Reports, List of Attendance)**
- ii. Appendix 1: Meeting Photographs**
- iii. Attendance List – Qardho Meeting**
- iv. Key Informant Interviews Forms**

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



ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT (ESIA) FOR WATER AND SANITATION SHORT-TERM INTERVENTIONS PROPOSED FOR QARDHO, SOMALI

MINUTES OF PUBLIC PARTICIPATION FORUM HELD ON THE 3rd September 2025 AT MAYOR OFFICE QARDHO

MINUTES

<u>Item</u>	<u>Minutes</u>	<u>Action By</u>
1.	<u>Introduction</u> The meeting began with a warm welcome from Qardho's mayor, Mohamed Hayef. He explained that the meeting was called to thoroughly assess the social and environmental impacts of the city's new water and sanitation projects. He emphasized that the day's discussion was a critical opportunity to get feedback on both the positive and negative effects of the new infrastructure. The mayor stressed that the projects must not only work well but also be sustainable for the long-term benefit of the residents and the environment. The mayor finally welcomed the project consultants and gave them time to provide the community and stakeholders with detailed information about the project.	Mayor Mohamed hayef
2.	<u>Project Information</u> The Consultant representative Mr. Abdinasir Farah thanked stakeholders for creating time to come and participate in the ESIA public participation forum. He gave a brief of the proposed Project scope which include; Drilling of new boreholes, rehabilitation of existing, new pipeline extension, rehabilitation of existing network, replacing of solar panels, replacement of standby- generators, construction of water storage tanks, construction of water treatment plant, construction of quality monitoring laboratory, deploy mobile desludging unit, construction of latrines, construction of decentralized wastewater treatment unit, construction and rehabilitation of onsite wastewater facilities including septic tanks and soak pits. Mr. Abdinasir Farah informed the meeting that the Government of Somalia received financing from the African Development Bank (AfDB)	Tertiary Consulting Engineer /Abdinasir Farah

	to support Somalia Sustainable Towns Water Supply and Sanitation Programme. The main objective of the Programme is to improve the access, availability and sustainability of water supply and wastewater management services in multiple towns including Qardho. To achieve this objective, Qardho Town has been prioritized as one of the Towns to benefit from the Program with the Increasing of water supply system of the town and establishment of water sanitation system. The Project Executing Agency (PEA) is UNICEF on behalf of Puntland Water Development Agency (PWDA). (PWDA) is state corporations under the Ministry of Energy, Minerals and Water responsible for development, maintenance and management of Water Infrastructure in their areas of jurisdiction.	
3.	<u>Environment and Social Safeguard Reports</u> Mr. Abdinasir Farah informed the meeting that they were going to prepare a report that would eventually help with the final preparation of the final design of the project. The reports are <i>Environmental and Social Impact Assessment Report</i> (ESIA). He added that the ESIA would capture all the environmental and social impacts of the project and provide mitigation measures. They were assured that all their opinions and objections would be put in the report so as to ensure that the project would run smoothly.	Tertiary Consulting Engineer / Abdinasir Farah
4.	<u>Project Positive Impacts</u> Mr. Abdinasir Farah pointed out to the meeting that water supply and sanitation improvement have enormous benefits as summarized below. • The projects prioritize efficiency to reduce waste. By fixing leaks in pipelines and boreholes and using modern meters, less water is lost, which helps conserve this critical resource. • A key goal is to keep our water clean. The new pipeline system, along with better latrines and septic tanks, stops waste from contaminating groundwater and other local water sources. • The project is making the city more environmentally friendly. Switching to solar-powered pumps and using efficient generators means less reliance on fossil fuels, leading to cleaner air and a quieter community. • The project is built for the future. By improving existing infrastructure, like boreholes and water tanks, the community has a reliable, long-lasting water supply without the need for constant new construction. • By improving sanitation and ensuring a clean water supply, the project is directly protecting public health. Proper waste management and better facilities prevent the spread of diseases and create a safer, healthier place to live.	Tertiary Consulting Engineer / Abdinasir Farah
5.	<u>Impacts to Environment (Natural and Social)</u> Mr. Abdinasir Farah informed the meeting that negative impacts likely to be triggered by the Project to the environment are as indicated below.	Tertiary Consulting Engineer

	• Construction activities, such as drilling boreholes and excavating for pipelines, can lead to soil erosion and the destruction of local vegetation and wildlife habitats. • The use of heavy machinery, construction vehicles, and desludging trucks creates noise and releases harmful emissions, impacting local air quality and disturbing communities. • There is a constant risk of polluting water sources through accidental spills, poorly managed drilling fluids, or leaks from pipelines and wastewater systems. • Over-pumping of water from new boreholes can cause the local water table to drop, which affects other wells and can harm ecosystems that rely on that water source. • Building large infrastructure like wastewater treatment plants requires significant land and can negatively impact the local area with unpleasant odours. • A major long-term risk is the improper handling of waste, whether it's the treated sludge from a plant or the raw waste from desludging, which can pollute the environment if not disposed of correctly. • Solar panels and batteries used at borehole sites have a limited lifespan and contain heavy metals, posing an environmental challenge for their safe disposal at the end of their use. • Despite being designed to be leak-proof, a pipe failure in the extension network could release water or, in the case of wastewater, contaminants into the environment. He further added that all these impacts would be addressed comprehensively by the ESIA study report and appropriate mitigation measure provided.	/ Abdinasir Farah						
6.	<u>Question and Answer Session</u> After discussion summarized above, the community were invited to a question-and-answer session under the guidance of the chief. Detailed questions and suggestion of the plenary session are presented in Table 1 below Table 1: Plenary Session <table><tr><th>Suggestion / Question</th><th>Response</th></tr><tr><td>Mr. Mohamed wanted to be informed How do you plan to mitigate the noise and air pollution from construction vehicles and drilling machinery, especially in residential areas, during the initial implementation phase?</td><td>Residents were informed that during implementation of the project there is a plan to limit and minimize noise. For air pollution, we will use modern, well-maintained vehicles and water down construction areas to control dust.</td></tr><tr><td>Mr. Abdirasak wanted to know What measures will be in place to prevent water</td><td>The residents were informed that all mobile desludging units will be equipped with sealed tanks and trained</td></tr></table>	Suggestion / Question	Response	Mr. Mohamed wanted to be informed How do you plan to mitigate the noise and air pollution from construction vehicles and drilling machinery, especially in residential areas, during the initial implementation phase?	Residents were informed that during implementation of the project there is a plan to limit and minimize noise. For air pollution, we will use modern, well-maintained vehicles and water down construction areas to control dust.	Mr. Abdirasak wanted to know What measures will be in place to prevent water	The residents were informed that all mobile desludging units will be equipped with sealed tanks and trained	Tertiary Consulting Engineer / Abdinasir Farah
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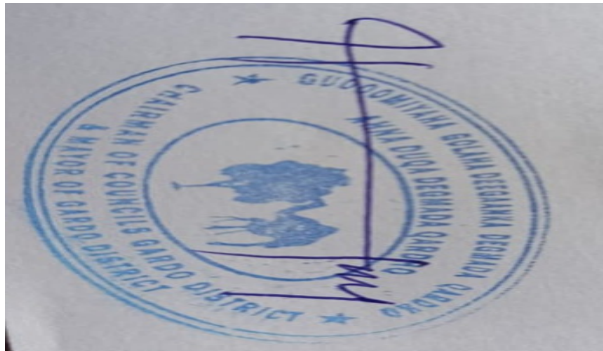
	contamination from accidental spills or improper waste disposal, especially from desludging units?	operators to prevent spills. We will also have a designated, secure off-site location for waste disposal, which will be regularly monitored.	Tertiary Consulting Engineer / Abdinasir Farah
	Mrs. Xaliimo wanted to know If you Can you provide details on the long-term management of sludge from the new wastewater treatment plant to ensure safe and proper disposal.	The meeting was informed that the sludge will undergo a stabilization process at the plant. The program has a long-term plan to either use it as a soil amendment for non-edible crops or transport it to a designated sanitary landfill, depending on its quality.	
	Mr. Bashiir wanted to know if youths in the area will get employment opportunities during project implantation.	Residents were informed that all unskilled labour and some skilled will be sourced from the local community. Youths were encouraged to organize themselves into groups and avail themselves for the job opportunities for consideration.	Tertiary Consulting Engineer / Abdinasir Farah
	Mr. C.madoobe wanted to be informed when the Project will commence, and if they should proceed with their plans of digging pit latrines or they should stop now that the new emergency latrines that will come along the project.	Residents were informed that, at this stage, the program is dedicated to conducting feasibility studies. It was conveyed that the project's commencement is contingent upon the securing of funding by the donor. Subsequently, implementation will be initiated based on the most pressing emergency needs of the community. In light of the new emergency latrines planned for the project, residents are advised to suspend their individual plans for digging new pit latrines.	
7.	<u>Closing Remarks</u> The meeting was brought to a close with final remarks from the Mayor of Qardho, Mr. Mohamed Hayef. He expressed deep gratitude to all the participants and stakeholders for their valuable input, acknowledging with pride the progress made in increasing the city's water supply and establishing sanitation systems. During the meeting, the social and environmental impacts of the projects were thoroughly assessed, and all concerns that were raised were carefully noted. The mayor committed to diligently addressing and mitigating any negative impacts. He concluded by emphasizing that the project's long-term success would be defined not only by the new infrastructure, but also by the continued collaboration with the community and the sustainability of the solutions provided.		Mayor Mohamed hayef

Minutes Prepared by:

Abdinasir Farah

Environment Consultant -Tertiary Consulting Engineer

Signed



For: Mayor Mohamed hayef

MINUTES OF PUBLIC PARTICIPATION MEETING – QARDHO WASH SANITATION FACILITIES PROJECT

Date: 23rd October 2025

Venue: Shabele IDP Camp, Qardho

Time: 10:00 a.m. – 12:15 p.m.

Facilitator: Project Environmental and Social Safeguards Team

Participants: Community members (attendance list attached), representatives from Qardho Municipality, local elders, and WASH Committees.

Objective: To engage the Shabele IDP community on the proposed sanitation facilities under the Qardho WASH Project, share project objectives, and receive feedback and concerns from residents.

Minute Taker: Kurad Aada

Opening Remarks

The meeting commenced with a warm welcome by one of the elders, followed by introductions by the facilitation team. The project safeguards officer briefed participants on the objectives of the session, emphasizing the importance of community input in shaping project design, particularly in ensuring inclusivity, gender sensitivity, and community ownership of sanitation facilities.

Overview of the Proposed Project

A brief presentation was made on the **Construction and Rehabilitation of Onsite Sanitation Facilities** component, which will include approximately **100 units of septic tanks and soak pits** to serve public institutions and vulnerable communities such as the Shabele IDP camp. The presentation highlighted the project's expected benefits, including improved hygiene, reduction of open defecation, and safer management of wastewater.

Community Concerns and Discussions

Issue/Concern Raised	Response / Clarification Provided	Responsible Party	Action / Follow-Up
1. Type of Sanitation Facilities Proposed – Mr. <i>Desan Ibrahim</i> inquired about the specific types of facilities to be constructed.	The project will establish gender-sensitive toilets, septic tanks, and soak pits for use in public institutions and IDP settlements. The systems will be environmentally safe and aligned with local design standards.	Project Engineer / MoEMWR	Provide detailed facility designs to local administration before commencement.
2. Cost of Access / Using the Facilities – Mr. <i>Caasho Cabdi</i> asked whether the public will pay to use the toilets.	It was explained that cost structures, if any, will be set by the regulatory authority in consultation with the municipality and community leaders, based on existing local regulations.	Qardho Municipality / Regulatory Authority	Develop a community-informed tariff and management plan prior to commissioning.
3. Gender-Friendly Facility Design – Ms. <i>Xaawo Xaji</i> raised concerns about the design, requesting separate units for men and women and facilities suitable for women's privacy and hygiene needs.	The team confirmed that all toilets will be gender-segregated and designed in accordance with Islamic and cultural norms, including provisions for buibui hanging hooks, washing points, and sanitary pad disposal bins.	Design Consultant / Contractor	Incorporate gender-sensitive and culturally appropriate features in final designs.
4. Operation and Maintenance of Facilities – Ms. <i>Hodan Aada Xisayi</i> sought clarification on who will manage and maintain the facilities after construction.	The facilities will be managed by the Community Water and Sanitation Committees (CWSCs) under the supervision of Qardho Municipality. Capacity building and training will be provided before handover.	MoEMWR / CWSC / Municipality	Develop an O&M plan and conduct training for local caretakers prior to commissioning.
5. Employment Opportunities for Locals – Mr. <i>Sal Cumar</i>	The project is expected to commence in early 2026, following	Contractor / Project	Include local hiring provisions in

Issue/Concern Raised	Response / Clarification Provided	Responsible Party	Action / Follow-Up
Gure asked when the project will start and if local people will be considered for construction jobs.	completion of approvals and procurement. Priority will be given to local laborers, especially youth and women, during construction.	Implementation Unit (PIU)	contractor agreements.

Closing Remarks

The facilitator thanked the participants for their active engagement and valuable feedback. Community members expressed their appreciation for being involved early in the planning process and emphasized the importance of timely implementation and continued consultation. The meeting concluded at **12:15 p.m.** with a word of thanks from the community chairperson.

Attendance Register

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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 Camp Shabele (IDP) Date 23/10/2025

#	Name	Village	Tel	Sign
1=	Dagan Maxamed Ibraahim	Camp new	6567827	Dagan
2=	Faadhuno Muusuf Xasan	Kaam Shabele	6725071	Faadhuno
3=	Muraad Aadan El	KAM HORMUD	7466670	Muraad
4=	Xurub Cali Madiid	Kaam Shabele	5633774	Xurub
5=	H Xaan Maxamed Xusay	Kaam Tawakal	6494863	H Xaan
6=	Shugri Cali Maxamed	Kaam Shabele	7528257	Shugri
7=	Gaado Cabdi Beexay	KAM Miyuu	6494133	Gaado
8=	Falastiin Maxamed Xaaji	Kamp New	4537360	Falastiin
9=	Faadhuno Xasan Xusay	Loa	7584504	Faadhuno
10=	Nadar Maxamed Nasab	- Shabele	5428860	Nadar
11=	Sac Cumar Gure	Kam Yemeni	5906756	Sac
12=	Xaaklo Xaaji Cabdi	Shabele	6063927	Xaaklo
13=	Caasho Cabdi Aadan	New Camp	7961022	Caasho
14=	Caasho Dacmar Khaliif	Shabele	7539065	Caasho
15=	Caasho Ibraahim Aadan	Tawakal	6723231	Caasho
16=	Shugri Maxamed Maxamed	Hormud	6102514	Shugri
17=	Muuu Nabeel Maxamed	K new	7923528	Muuu
18=	Gaaklo Habsiye Xusay	KAM Jamaala	6310631	Gaaklo
19=	Far Xaalo Cali Aadan	Loa	7016989	Far Xaalo
20=	Nadar Aadan Xusay	Tawakal Camp	6677063	Nadar

Pictures





MINUTES OF PUBLIC PARTICIPATION MEETING - QARDHO WATER SUPPLY FACILITIES

Date: 23rd October 2025

Venue: Washington Borehole Site, Qardho

Time: 10:30 a.m. – 12:45 p.m.

Facilitator: Project Environmental and Social Safeguards Team

Participants: Local residents, elders, youth and women representatives and WASH Committee members.

Objective: To engage community members in discussions on the proposed water supply facilities under the Qardho WASH Project, including borehole rehabilitation, pipeline expansion, water tariffs, and community participation.

Minute Taker: Ibrahim Ahmed Raxooy

1. Opening and Introductions

The meeting commenced with a warm welcome, followed by introductions of the project team and community participants. The facilitator explained the objective of the session—to provide community members with detailed information about the proposed water supply interventions and to gather their feedback and concerns for inclusion in the project's design and environmental assessment.

2. Project Overview

The project team presented the scope of the **Qardho Water Supply Improvement Component**, including:

- Rehabilitation of **12 existing boreholes** and construction of **additional production wells** to increase water availability.
- **Expansion of water transmission pipelines** and construction of public water kiosks for IDP and low-income areas.
- **Installation of solar-powered pumping systems** to replace diesel use and reduce operational costs.
- Development of **water storage tanks and treatment systems** for quality assurance.

The community was encouraged to raise questions, share opinions, and make suggestions to ensure that the facilities reflect local needs and priorities.

3. Community Concerns and Responses

Issue/Concern Raised	Response / Clarification Provided	Responsible Party	Action / Follow-Up
1. Location of New Boreholes and Pipelines – Mr. Bile Aadan Yusuf inquired about where the new boreholes and pipeline routes would be located and whether any private land would be affected.	The team clarified that the new boreholes will mainly be developed within public or community land, prioritizing areas with poor access such as Kuleejka and Xingood zones. Pipeline routes will follow existing public easements and road reserves to avoid displacement.	Project Engineer / MoEMWR / Qardho Municipality	Conduct detailed site surveys and confirm final alignments with local leaders and landowners before construction.
2. Water Tariffs and Affordability – Ms. Caasho Maxamud asked how much the community will pay for water after the system is operational.	It was explained that water tariffs will be determined by the Hodman Water Company and the Qardho Municipality in consultation with the community, ensuring affordability and alignment with Puntland Water Pricing Guidelines. Vulnerable households and IDPs	Hodman Water Company / Municipality	Develop and disclose a transparent tariff framework before commissioning the system.

Issue/Concern Raised	Response / Clarification Provided	Responsible Party	Action / Follow-Up
	will receive subsidized rates.		
3. Pipeline Safety and Access – Mr. Calco Cah Dashir raised concerns about potential damage to roads and access routes during pipeline installation.	The project team assured that all construction will follow approved utility corridors, and affected access routes will be restored immediately after pipe laying. Traffic and pedestrian safety measures will be implemented during construction.	Contractor / Supervising Engineer	Include road reinstatement and safety procedures in the construction method statement.
4. Employment of Local Workers – Ms. Mulki Xasan asked if local community members would be considered for construction jobs.	The project will prioritize local labor, including youth and women, for unskilled and semi-skilled works such as excavation, pipe laying, and site maintenance.	Contractor / Project Implementation Unit (PIU)	Include local recruitment requirements in contractor agreements.
5. Project Timeline and Implementation Schedule – Mr. Mahad Maxamud Raxooy asked when the construction would begin and how long it would take.	The project is expected to commence in early 2026, following ESIA approval and tendering. Construction is projected to last 9-12 months, depending on seasonal conditions.	MoEMWR / UNICEF / Municipality	Share detailed construction schedule and updates during subsequent community meetings.

4. Closing Remarks

The facilitator thanked all participants for their active engagement and valuable insights. Community members expressed appreciation for being consulted and urged the project team to ensure transparency in employment and fair access to water services. The meeting concluded at **12:45 p.m.** with a word of thanks from the community chairperson.

Attendance Register



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 Klaxhington Borehole Date 23/10/2025

#	Name	Village	Tel	Sign
1	Ibrahim axmal raxooy	Garyacadi xaf	7737737	
2	Maxamed xasan mahad	Yungood	2662853	
3	Cah siid chark	Xorgoble	7697525	
4	Bile axdan yuusuf	Garyacadi	7234449	
5	Yusuf yacqub xusein	Chirwagala	6235450	
6	Abukar Maxamed ibrahim	Bayla Bayla	773270	
7	Chalassar axmal mulki	Xorgoble	7417065	
8	Shah gadiy Cah ibrahim	Kaambo	74131268	
9	Xalimo xusein maxamed	Garyacadi	6125055	
10	Xalimo Cah xusein	Xungood	5098874	
11	Mukhtaar ibrahim maxamed	Shumaleen	7617083	
12	Maxamed macall sawi	M.G.	6785256	
13	Xashash ciisman cah	Hadama	6444432	
14	Caasim abukar maxamed	Bayla Bayla	773203	
15	Bile Cah xasan	Bayla Bayla	712575	
16	Fardousa Chahinur Cah	Calahay	719433	
17	Salmo Cah dashir	Garyacadi	4371797	
18	Mulki xasan Maxamed	Shumaleen	5534081	
19	Bayla axdan gadiy	Xorgoble	8990392	
20	Abukar ciisman shukh	Hadama	7743138	
21	Mahad maxamed raxooy	Garyacadi	7737737	
22	Sharmarke ciisman	2G	7736572	
23	Maxamed Abdi	LG	7772154	
24	Maxamed Mohamed	Consultancy	6773477	
25	Xorgoble Saad	Garyacadi	7734191	

Pictures





APPENDIX 2: MEETING PHOTOGRAPHS

SAMPLE PHOTOS OF THE MEETING



APPENDIX 3: ATTENDANCE LIST - QARDHO MEETING

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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

#	Name	Village	Tel	Sign
1	Muhammad Aliyev Ahmed	Kidagiti V.	7737215	[Signature]
2	Muhammad Aliyev Ahmed	Muhammad Aliyev Ahmed	7737215	[Signature]
3	Said Hassan Ahmed	Heldamoon	7733339	[Signature]
4	Muhammad Aliyev Ahmed	Kidagiti V.	7737215	[Signature]
5	Muhammad Aliyev Ahmed	Kidagiti V.	7737215	[Signature]
6	Muhammad Aliyev Ahmed	Kidagiti V.	7737215	[Signature]
7	Muhammad Aliyev Ahmed	Kidagiti V.	7737215	[Signature]
8	Muhammad Aliyev Ahmed	Kidagiti V.	7737215	[Signature]
9	Muhammad Aliyev Ahmed	Kidagiti V.	7737215	[Signature]
10	Muhammad Aliyev Ahmed	Kidagiti V.	7737215	[Signature]
11	Muhammad Aliyev Ahmed	Kidagiti V.	7737215	[Signature]
12	Muhammad Aliyev Ahmed	Kidagiti V.	7737215	[Signature]
13	Muhammad Aliyev Ahmed	Kidagiti V.	7737215	[Signature]
14	Muhammad Aliyev Ahmed	Kidagiti V.	7737215	[Signature]
15	Muhammad Aliyev Ahmed	Kidagiti V.	7737215	[Signature]
16	Muhammad Aliyev Ahmed	Kidagiti V.	7737215	[Signature]
17	Muhammad Aliyev Ahmed	Kidagiti V.	7737215	[Signature]
18	Muhammad Aliyev Ahmed	Kidagiti V.	7737215	[Signature]
19	Muhammad Aliyev Ahmed	Kidagiti V.	7737215	[Signature]
20	Muhammad Aliyev Ahmed	Kidagiti V.	7737215	[Signature]

[Circular Stamp: QARDHO DISTRICT OFFICE, MINISTRY OF GOVERNMENT AFFAIRS, FEDERAL GOVERNMENT OF SOMALIA]

ENVIRONMENTAL IMPACT ASSESSMENT (EIA) IMMEDIATE INTERVENTIONS- PUBLIC PARTICIPATION

ATTENDANCE LIST

[illegible]

APPENDIX 4 : Key Informant Interviews Forms

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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
Qardho Town

- Entity / Name of Group/ *Women from IDP camp (shabeelle)*
- Date and Venue..... *18th June 2025 - main office*
- Attendance / Representation
..... *Women leaders (chairpersons) and the consultant*
- Topic of Discussion
..... *Challenges faced in the camp.*
- Key Issues Discussed
..... *→ poor sanitation facilities*
..... *→ insecurity at night while going to the toilets*
..... *→ far distances to fetch water*
..... *→ not enough storage facilities*
..... *→ no ambulance at the local health centre*
..... *→ lack of gender sensitive toilets*
- Way forward and Resolution
..... *→ training of better hygiene practices*
..... *→ women empowerment*
..... *→ more sanitation facilities*
- 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

Qardho Town

1. Entity / Name of Group/ Social Dept / Disaster Managt
2. Date and Venue 11th June - Mayor's Office
3. Attendance / Representation
..... workers from the department
4. Topic of Discussion
..... general Women hygiene practices
5. Key Issues Discussed
→ Accessibility to the local Govt offices lacks
disability access
→ No Sanitary pads disposal places
→ expensive and not accessible to many
vulnerable homes
→ many women headed households lack
income
→ flooding affects many small business
6. Way forward and Resolution
→ capacity building and training of entrepreneurs
→ gender sensitive washrooms
→ better hygiene services
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

Qardho Town

1. Entity / Name of Group/ Men from Shabellae IDP camp
2. Date and Venue..... 12th June at the camp's offices
3. Attendance / Representation
..... male leaders, religious elders
4. Topic of Discussion
..... general safe WASH practices
5. Key Issues Discussed
→ better sanitation facilities for women
E. galls
→ improved access to clean and safe water
→ limited awareness in terms of better uses in hygiene
→ improved access to medicine in the health centre
6. Way forward and Resolution
→ the project to improve the existing facilities
→ more water points near the camp
→ gender sensitive toilets
→ solar lighting to camp
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

Qardho town

1. Entity / Name of Group/ Daryeel Waste Management Company
2. Date and Venue 11th June 2025 → Daryeel Waste Mngt
3. Attendance / Representation
Workers from the company and the consultant
4. Topic of Discussion
→ improvement of services
→ alternative land for waste disposal
5. Key Issues Discussed
→ more garbage trucks needed
→ solid waste segregation
→ solid waste handling
→ introduction of recycling
→ alternative land for solid waste treatment
6. Way forward and Resolution
→ more training to the people on reducing of waste
→ solid waste management practices
→ capacity building
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

Qardho Town, Puntland

1. Entity / Organization / Department

Shabeelle Health Centre

2. Name of officer and Position / Individual Consulted

→ Medical Superintendent

3. Date and Venue 12th June 2025 → Shabeelle Health Centre

4. Topic of Discussion

Hospital challenges in terms of servicing IDPs
(women & children)

5. Key Issues Discussed

- insufficient water in the camp or rather the distance from the water points to the household is far
- Lack of Ambulance in the hospital that can help in the emergencies
- disposal of hospital waste - small incinerator
- Gender Based Violence among women

6. Way forward and Resolution

- capacity building to the local NGOs → TASS
- more programs especially in water and sanitation
- water points to be brought closer to the camps

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

Qardho Town, Puntland

1. Entity / Organization / Department

Shabeelle Health Centre

2. Name of officer and Position / Individual Consulted

A Patient at Shabeelle Health Centre Mrs → Halima

3. Date and Venue 10th June 2025 → Shabeelle Health Centre

4. Topic of Discussion

Challenges in accessing good sanitation

5. Key Issues Discussed

→ lack of enough supplements for the kids
→ vaccinations for children sometimes is delayed
→ difficulty in getting water

6. Way forward and Resolution

→ NGO to help with sanitation facilities
→ the project should bring water close to the IDP
camps
→ the Gov't Puntland to improve supplies of medicine

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

Qardho Town, Puntland

1. Entity / Organization / Department

Hadman Water Mangonet

2. Name of officer and Position / Individual Consulted

IDRIS

3. Date and Venue

9th June → Hadman Water company

4. Topic of Discussion

Improved services

5. Key Issues Discussed

*→ more accessible water points to camps
→ maintenance issues and rehabilitation of
lines
→ involvement of women in the water
sector*

6. Way forward and Resolution

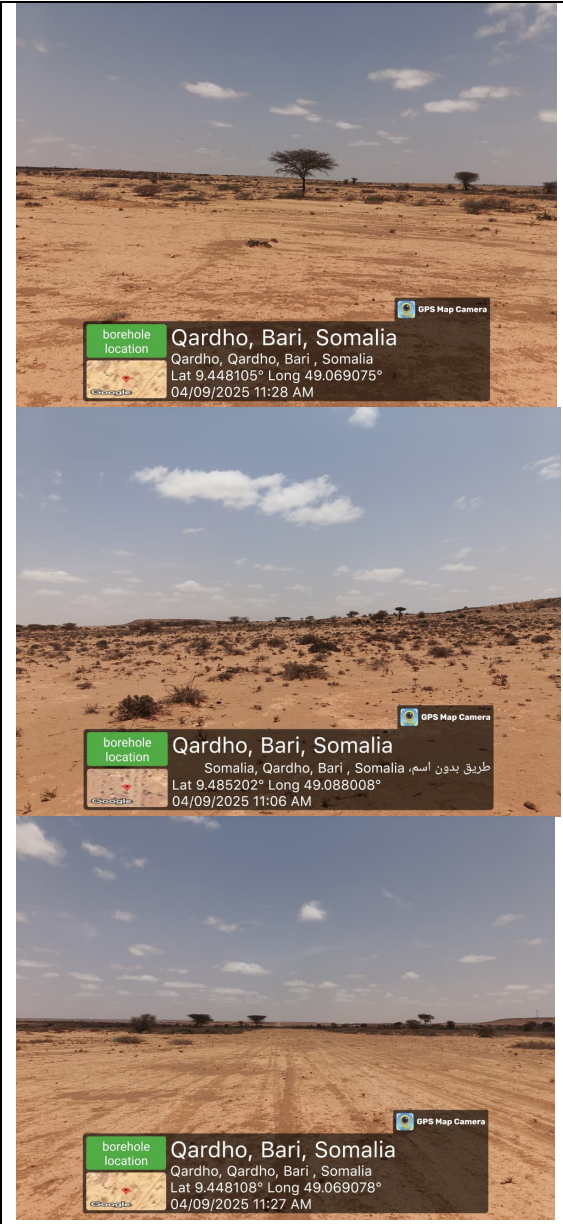
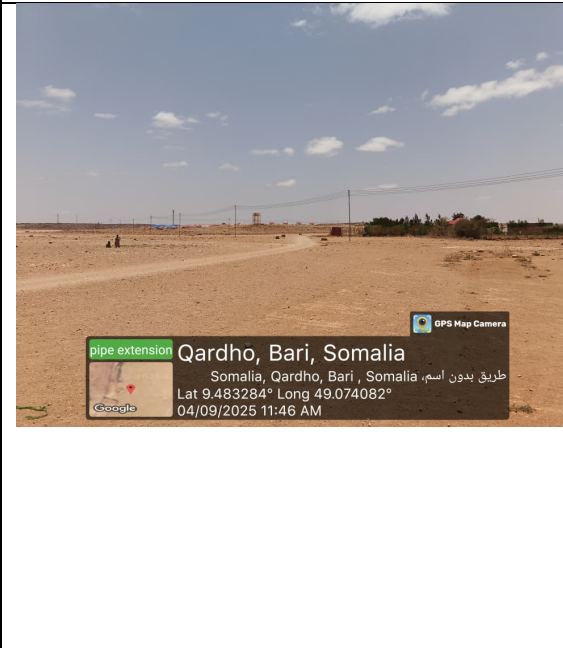
*→ increased women participation
→ to protect & propose more places
for boreholes*

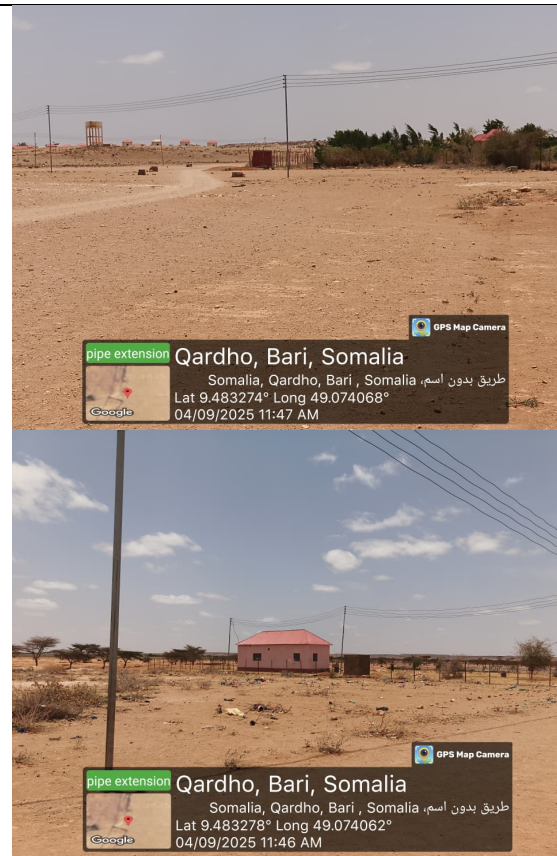
7. Signature and Confirmation

[Signature]

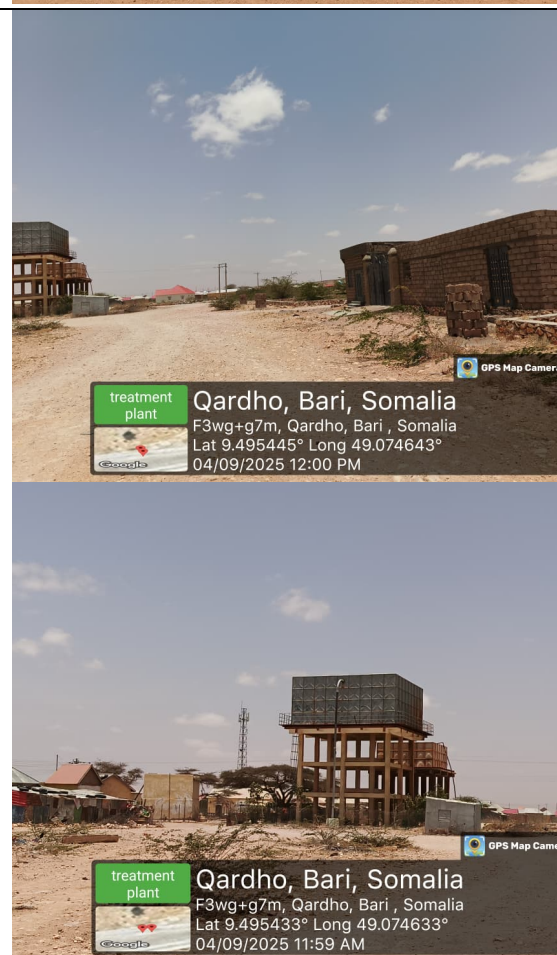
 The table contains three photographs of the DTF 1 site. Each photo includes a GPS overlay with the following information: DTF 1, Qardho, Bari, Somalia, G34v+656, Qardho, Bari, Somalia, Lat 9.505408° Long 49.093362°, 04/09/2025 09:21 AM. The middle photo's overlay shows: DTF 1, Qardho, Bari, Somalia, G34v+g64, Qardho, Bari, Somalia, Lat 9.506056° Long 49.093156°, 04/09/2025 09:19 AM. The bottom photo's overlay shows: DTF 1, Qardho, Bari, Somalia, G34v+656, Qardho, Bari, Somalia, Lat 9.505735° Long 49.093281°, 04/09/2025 09:20 AM.	DTF 1 Site Information Location: The proposed site for the Decentralized Wastewater Treatment Facility (DTF 1) is located on a parcel of land designated as public property, which is under direct government ownership. This advantageous positioning eliminates the need for private land acquisition, streamlining the project's implementation process and reducing potential land-use conflicts. Environmental Context and Potential Impacts: The facility's location is within a village, surrounded by a typical residential environment. The operation of a wastewater treatment plant at this site presents potential environmental challenges. Specifically, the process may release odors that could diminish the quality of the air, and the noise from the plant's machinery could disturb the auditory environment of the nearby community. These factors have the potential to negatively impact the comfort and well-being of the surrounding residents. Site Constraints: The property is constrained on two of its boundaries. The eastern side is completely bordered by residential buildings, while the western side is directly adjacent to a public school. This close proximity to both a living area and a learning environment necessitates a careful approach to project design to ensure effective mitigation of noise and odor. The northern and southern boundaries, however, remain open, which could provide opportunities for strategic placement of equipment and the
--	---

	implementation of buffer zones.
	DTF 2 Site Information • Location: The proposed site for the Decentralized Wastewater Treatment Facility (DTF 2) is located on a parcel of land designated as public property, which is under direct government ownership. This advantageous positioning eliminates the need for private land acquisition and streamlines the project's implementation. • Environmental Context and Potential Impacts: The surrounding environment contains only three residential buildings, located approximately 50 meters away. However, the operation of a wastewater treatment plant still poses a risk of releasing odors and generating noise that could affect the air quality and disturb the nearby community. • Site Constraints: The property is open in all directions, with any nearby buildings having only a minor impact on the site's layout.

 borehole location Qardho, Bari, Somalia Qardho, Qardho, Bari, Somalia Lat 9.448105° Long 49.069075° 04/09/2025 11:28 AM borehole location Qardho, Bari, Somalia Somalia, Qardho, Bari, Somalia طريق بدون اسم Lat 9.485202° Long 49.088008° 04/09/2025 11:06 AM borehole location Qardho, Bari, Somalia Qardho, Qardho, Bari, Somalia Lat 9.448108° Long 49.069078° 04/09/2025 11:27 AM	Borehole Site Information - Location: Four potential sites for drilling new boreholes were identified and visited. All but one of these sites are located on land that is government-owned and designated as public property. The remaining site has a mixed ownership status, being 50% private and 50% public land. The diverse ownership of these proposed locations is a key factor that will be considered during the project's planning and implementation phases. - Environmental Context: The sites proposed for the new boreholes are situated at a significant distance from the main urban area of the town. During the site visits, no immediate environmental issues or impacts were observed. The remote nature of these locations means that any potential environmental disruption, such as noise or dust from drilling, would be far from residential areas and have a minimal impact on the community.
 pipe extension Qardho, Bari, Somalia Somalia, Qardho, Bari, Somalia طريق بدون اسم Lat 9.483284° Long 49.074082° 04/09/2025 11:46 AM	Pipeline Extension Information - Location: The proposed sites for the pipeline extension are situated on undeveloped, raw land. This is a significant advantage as it means there are no paved roads to cut or disrupt during the project's implementation. This location choice will help minimize disturbances to urban infrastructure and traffic flow. - Environmental and Social Impacts: During the site visits for the proposed pipeline extension, minimal environmental impacts were observed. The primary concern identified was a social one: the high number of children in the area. The biggest risk is that



children may fall into the trenches dug for the pipes. This necessitates strict safety measures, including proper fencing and clear signage around all excavation sites to prevent accidents and ensure community safety.



Water Treatment Plant Information

- Location: The proposed sites for the water treatment plant are considered highly suitable for the project. A significant advantage is that the land is predominantly government-owned, which streamlines the land acquisition process and helps prevent potential land-use conflicts.
- Environmental Impact: While the plant will house heavy machinery that generates noise during operational hours, this poses a challenge due to its proximity to residential buildings. Another key consideration is the management of wastewater and remaining byproducts that require proper disposal. The designated disposal area is located approximately 200 meters from the proposed site, which will require the installation of a dedicated pipeline to transport the waste safely. This disposal challenge is consistent for both proposed locations.

