PUBLIC WORKS PROJECT
مشـــروع الأشـغال العامة

Yemen Sustainable Fishery Development in Red Sea and Gulf of Aden (SFISH) (P178143)

Environmental and Social Management Plan (ESMP No.02)

For the

Rehabilitation and Development of Bab-el-Mandab Fish Landing Site

14 July 2024

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ABBREVIATIONS

CoC	Code of Conduct
CSO	Central Statistical Organization
EIA	Environmental Impact Assessment
EPA	Environmental Protection Authority
ESCP	Environmental and Social Commitment Plan
ESIA	Environmental and Social Impact Assessment
ESMP	Environmental and Social Management Plan
ESSs	Environmental and Social Standards
GAF	General Authority for Fishing
GBV	Gender-Based Violence
GNI	Gross National Income
GM	Grievance Mechanism
HQ	Head Quarter
ID	Identification Card
IDA	International Development Association
IPF	Investment Project Finance
IPs	Interested Parties, UNICEF, other Clusters such as WASH
OHS	Occupational Health and Safety
PWP	Public Works Project
SEA/SH	Sexual Exploitation and Abuse/Sexual Harassment
SFD	Social Fund for Development
SFISH	Sustainable Fishery Development in Red Sea and Gulf of Aden
SMEPS	Small and Micro Enterprise Promotion Service
TPM	Third Party Monitoring
TVET	Technical Vocational Education Training
UN	United Nations
UNDP	United Nations Development Program
UNICEF	The United Nations International Children's Emergency Fund
WASH	Water, Sanitation, and Hygiene
WB	The World Bank
WHO	World Health Organization

1. Introduction

The current Environmental and social management plan (ESMP) for the Rehabilitation and Development of AL- Ordhy Fish Landing Center is prepared based on Sustainable Fishery Development in Red Sea and Gulf of Aden (SFISH) Environmental and Social Management Framework (ESMF)[1]. The ESMF was prepared by the United Nations Development Programme (UNDP) to meet the requirements of the World Bank's Environmental and Social Framework (ESF), and the national regulations. The SFISH project ESMF will guide Public Works Project (PWP) to ensure that all subprojects are prepared and implemented in accordance with the ESF requirements, including the preparation of subproject specific site ESMP. For this purpose, the ESMF details how PWP will screen each activity to assess its potential environmental and social risks and impacts and Occupational Health and Safety (OHS) risks and impacts, identify the mitigation measures, and monitor the ESMP implementation, most particularly the environmental and social and OHS performance of subprojects contractors.

According to the World Bank Environmental and Social Standards (ESS), the following standards are applicable to the project: ESS1 (Assessment and Management of Environmental and Social Risks and Impacts), ESS2 (Labor and Working Conditions), ESS3 (Resource Efficiency and Pollution Prevention and Management), ESS4 (Community Health and Safety), ESS5 (Land Acquisition, Restrictions on Land Use and Involuntary Resettlement), ESS6 (Biodiversity Conservation And Sustainable Management Of Living Natural Resources), ESS8 (Cultural Heritage) and ESS10 (Stakeholder Engagement and Information Disclosure). These instruments were prepared and approved by the WB for the parent project, the Sustainable Fishery Development in Red Sea and Gulf of Aden

The Sustainable Fishery Development in Red Sea and Gulf of Aden (SFISH) project aims at improving capacity for sustainable production and economic opportunities for beneficiaries across the fishery value chain in Yemen. The project is funded and supported by the World Bank's International Development Association (IDA) and is proposed as an Investment Project Finance (IPF) with the option for additional resources and countries based on the demand and readiness. The SFISH project includes investments in goods, civil works, services for physical investments, operating costs, and technical assistance.

The targeted landing site under this ESMP is located in Al-Ordhy area, Bab-el-Mandab, Dhubab District, Taiz Governorate. PWP is seeking the development of the targeted landing site by considering the social and environmental standards. The project implemented by the PWP will be adapted to environmental and climatic conditions of the area through rehabilitation and develop of fish landing centers, which will taking into consideration fisheries services and facilities to coastal communities including women, in addition to improving solid waste management systems in the centers.

In this ESMP, the sub-project falls under the fishery sector which is to rehabilitate and develop fishery landing site. PWP will invest 700,000 US$ to implement the civil works of

[1] https://www.pwpyemen.org/index.php/en/media-center-en/publications/category/14-sustainable-fishery-development-in-red-sea-and-gulf-of-aden-sfish

this sub-project which will be implemented by public/general contracting modality/contracted workers selected by a contractor and direct workers selected by PWP[2].

PWP completed its field visit in February and May 2023, during the field visit, the technical, social, and environmental teams collected important information from the concerned stakeholders in the area, including the fishermen's community, and local authorities (local council, Director of Fish Landing Project, etc.). The field visit included also an inspection of the already existing condition of the landing site constructed buildings and needed interventions to get it ready for fishing activities. Additionally, stakeholders and the public were engaged and consulted to discuss their feedback and concerns and to ensure the sustainability of the intervention.

The sub-project risk level under this ESMP is rated as Moderate based on the primary screening and the study of the anticipated risks and impacts. No significant adverse environmental and social, or occupational health and safety impacts are anticipated. In addition, any potential impacts that may emerge during the sub-project life cycle will be managed properly in an acceptable manner according to the project ESMF and WB's ESF. Table 1 below presents the general information relating to the sub-projects' positioning, location, and estimated cost.

Table 1 General Information about the Subproject.

Name of the Subproject:	Rehabilitation and Development of Al-Ordhy Fish Landing Site
Subprojects ID:	03-9-16081
Subproject Location	Al-Ordhy, Bab-el-Mandab, Taiz Governorate
Implementation Modality	General Contracting Modality
Subproject Sector:	Fishery Sector
Estimated Cost of Subproject:	700,000 US$
Estimated Cost of ESMP:	35,000 US$
Implementation period	12 Months
Beneficiaries	1,840 persons including 960 men, which includes (300 fishermen) and 880 women)
Field Visit (Yes/No; Include Date):	Yes, February, May 2023
Was Consultation Carried out? (Yes/No):	Yes, Refer to Public Consultation Section
Proposed Class of Subproject (Low to High):	Moderate

[2] The public contracting modality means implementing a subproject by a contractor who is chosen from public tender and public announcement, for construction activities, supply, installation, construction, and commissioning. A contractor may also hire contracted workers from within communities where construction activities will occur.

2. Sub-Project Description

The proposed sub-project will involve rehabilitation and developing the already existing construction of the landing site at Al-Ordhy area, Taiz Governorate. The targeted site is located opposite Bab-el-Mandab Strait. The objective of this sub-project is to help in providing appropriate facilities that help fishermen and fishing communities to improve their fish processes and capacity to adapt to different conditions. As a result, this will create several opportunities for beneficiaries to improve production and provide them with additional income.

Al-Ordhy landing site has been constructed in the Year 2010, but it is not complete. The area of the landing site for the sub-project is approximately 8,000 m^2. The existing condition of the landing site construction includes a wall encircling the site area, an incomplete guard's room, incomplete fish auction yard, and a protection wall to protect the landing site from strong wave actions. The landing site has an incomplete underground water tank (Figure 7).

The total number of beneficiaries is 1,840 persons of which (960 are men which includes 300 fishermen and 880 are women) . The subproject will be implemented through a contracting modality and the implementation period will be twelve months. The total estimated cost of sub-project is US $ 700,000, while the estimated cost of ESMP implementation will be 35,000 US$.

The contractor will be responsible to protect its workers and communities during implementation and apply the E&S mitigation measures and provide the required training, tools, and necessary PPEs for workers. Contractors will hire the workforce from the targeted areas. Given the fact that some parts of the activities require skilled labor, these tasks will be undertaken by appropriately skilled workers from the targeted areas and when not available, the contractors will hire skilled workers from nearby areas (which will be approximately 109 skilled workers over the duration of implementation period according to activities)[3]. In coordination with PWP and community committee, the contractor can finish the existing buildings such as guard's rooms and toilets to be used for workers accommodation. Additionally, the contractor will provide tented accommodation that meets the minimum space requirement of 4m2 per worker, as per the guidance note by International Finance Corporation (IFC) and the European Bank for Reconstruction and Development (EBRD) on worker's accommodation. Contractor will provide workers' accommodation with beds, blankets, and suitable kitchen facilities in the form of caravans.

The consultation was conducted in February 2023 with **29** males and **18** females from the local community and fishery association (see section 8). Also, PWP assisted local community elect community committee in the targeted area. The elected community committee and their members, including women and men, participated in the decision-making, need assessment, and public consultation. Also, they will participate in the monitoring of implementation, hand over the sub-project from the construction contractor to the operator, as well as operation and maintenance. Furthermore, according to SFISH's ESMF under subcomponent 2.1-d (page 11) the training, and capacity building related to sustainable fishing practices, and maintaining hygiene and sanitary aspects to maximize the

[3] The project will require accommodation since it is expecting the workers will come from the surrounding areas. The contractor will provide a suitable accommodation for them to settle in during the implementation period.

market values will be conducted by Technical Vocational Education Training TVET centers, and Yemeni Fishery Exporters' Association.

This sub-project will enhance the living environment and conditions for targeted communities. As a result of the subproject, targeted communities will improve the capacity for sustainable production and economic opportunities for beneficiaries across the fishery. Furthermore, the project will provide employment opportunities for skilled and unskilled workers from local communities during implementation, generating new fishermen, reducing economic impacts, and generating positive impacts on the targeted areas' economy.

The contractor will be responsible to protect its workers and communities during implementation and apply the environmental and social mitigation measures and provide the required training, tools, and necessary protection equipment for workers.

The PWP will ensure that the proposed subproject incorporates the proper environmental and social risk management principles and practices as outlined in the present ESMP, and thus ensure compliance with the Environmental and Social Framework (ESF) of the World Bank, as well as with the applicable environmental and social policies and legal requirements of the Government of Yemen.

2.1. Scope of Work

Al-Ordhy landing site is an unfinished construction, which has been built in 2010. Due to the current war situation in Yemen, the work has been stopped (Figure 8). The proposed project will involve rehabilitation and completing the already existing concrete building of the landing site at Al-Ordhy area. The objective of this project is to help in providing appropriate facilities for loading and fixed cold storage or mobile, the use of clean technologies.

The intervention of PWP will include: completion of existing auction yard and its required administrative offices, completion of the existing wall and the guard room, providing a landing site with a water service, electricity, communication, and sanitary system (Toilets, sewage network, a septic tank and soakaway pits for collecting sewage, etc.), development of the external works/services (driveway, car parking lots, vehicular gate access, pedestrian access, site landscaping, etc.), and construction of a ramp to receive the fishing boats easily and smoothly. The activities will require stones, sand, and cement for construction that will be bought from local markets.

Rehabilitation/Expansion of current structures:

Rehabilitation and enhancement of auction yard and water tank
The subproject activities will include but are not limited to the following:

- Wall, ceiling and floor restoration works.
- Plastering works for interior, and external walls and roofs (3.20-meter height)
- Painting works for Interior and exterior walls.
- Installation of durable, and Corrosion Resistance steel doors, good-quality wood doors, and aluminum doors.
- Works for connecting the electricity to the buildings.
- Supply and installation of lighting fixtures.
- Demolition and rehabilitation of the existing wall of the guard room.

New building / structures:

1. Construction of the following new buildings:
2. Administration building
3. Workshop
4. Rest area.
5. Public bathrooms
6. Electrical room
7. Electrical and sanitary works
8. Improvement of the general site
9. Construction of a boat receiving ramp

The new building activities will include but are not limited to the following:

- Site leveling works[4].
- Excavation works for the foundations to a depth of one meter to 1.5 meter, a width of not less than 1.2 meters and a length of not more than 1.8 meter.
- Backfilling works in layers using the extracted soil or proper materials in all part of works.
- Implement masonry works under the ground beams.
- Plain concrete works.
- Reinforced concrete works for foundations, columns, slabs, and floors.
- Plastering works for interior, and external walls and roofs for one floor (height not exceeding 3.20 meter).
- Painting works for Interior and exterior walls.
- Tile works for the building, stairs, and walls.
- Installation of durable, and Corrosion Resistance steel doors, good-quality wood doors, and aluminum doors.
- Installation of high-quality aluminum windows.
- Concrete ramp works for boats.
- All sanitary works include:
  - Supply and Installing 5 toilets spilt by gender (Squat Toilet and Sitting Toilet), disabled toilet accessories (handrail- Adjustable toilet).
  - Supply and installation of galvanized pipes with a diameter of 3" with 30 m in length, digging depth of 1.2 meters inside the landing site.
  - Supply and installation of UPVC of 100, 150, and 200 mm in diameter 705 m in length digging depth of 1.20 meters inside the landing site.
  - Supply and Installations rainwater drainage pipes, 4 inches in diameter 270 m in length.
  - Valves chamber rooms (100X100) and (80 × 80) cm.

[4] construction residues will be collected and transported and disposed to the authorized location in coordination with the local authorities.

- Construction a septic tank with dimensions 9.0m x 4.5 m with a depth of 2. 0m and soakaway[5] pit.
- Supply and installation of a water supply network of the water supplied from the artisanal well, and from tanks to new buildings, ¾" and 1/5" inches in diameter and 1680 meters long.
- Supply and installation of a sewage sedimentation tank (septic tank) with a capacity of 10,000 gallons made of polyethylene and implement two soakaway pits one for auction hall with discharges directly to soakaway pit and the other from bathrooms to septic tank then to another soakaway pit. The selection of the soakaway pit and discharging points will be selected in coordination with the Environment Protection Authority (EPA) to prevent sea water pollution.
- Supply and installation: 9 fiberglass tanks with a capacity of 1.5, 2 and 3 m^3.
- Drilling an artesian well located in the beach to supply sea water with a diameter of 18 inches and installing the submersible pump and testing the productivity and analyzing a water sample.

- Gravel backfills for internal landing center yard for parking vehicles.
- Supply and Implementation of insulation layer of roofs and floors (Flow-applied epoxy resin floor layer).
- Supply and Implementation of insulation layer of roofs (Acrylic).
- All electrical works and installations for new buildings and facilities the source of electrical is generator that will be supply and installation in next fund.
- Electrical works for lighting for the public site
- Electrical wiring works in roofs, floors, and walls
- Supply and installation the electrical equipment and accessories of the project.
- Supply and installation the main electrical distribution board.
- Supply and installation lighting fixtures.
- Supply and installation electric socket.
- Installation of an electrical bell and internet network
- Supply and installation roadway luminaires.
- Supply and installation of cameras and monitoring systems.
- Works for connecting the electricity to the buildings.
- Supply and installation earthing system.
- Supply and installation of a metal board with the name of the project, sponsor and the GM hotlines.
- Planting native non-invasive trees on the landing site like Dafla, Gahanamia, Vecus, Casya Gloca, Labakh.

  It is estimated that the equipment and tools given in the table below will be required to complete the different sub-project engineering activities.

- **Excavation and backfilling works** (Excavator, Backhoe, Dump truck, Wheel loader, Shovels and spades, Compactors, and Surveying equipment).

[5] A soakaway pit is a dry well or leach pit that is used for the disposal of wastewater, usually from septic tanks. It works by allowing the wastewater to slowly soak into the ground (soakaway) instead of contaminating nearby water sources.

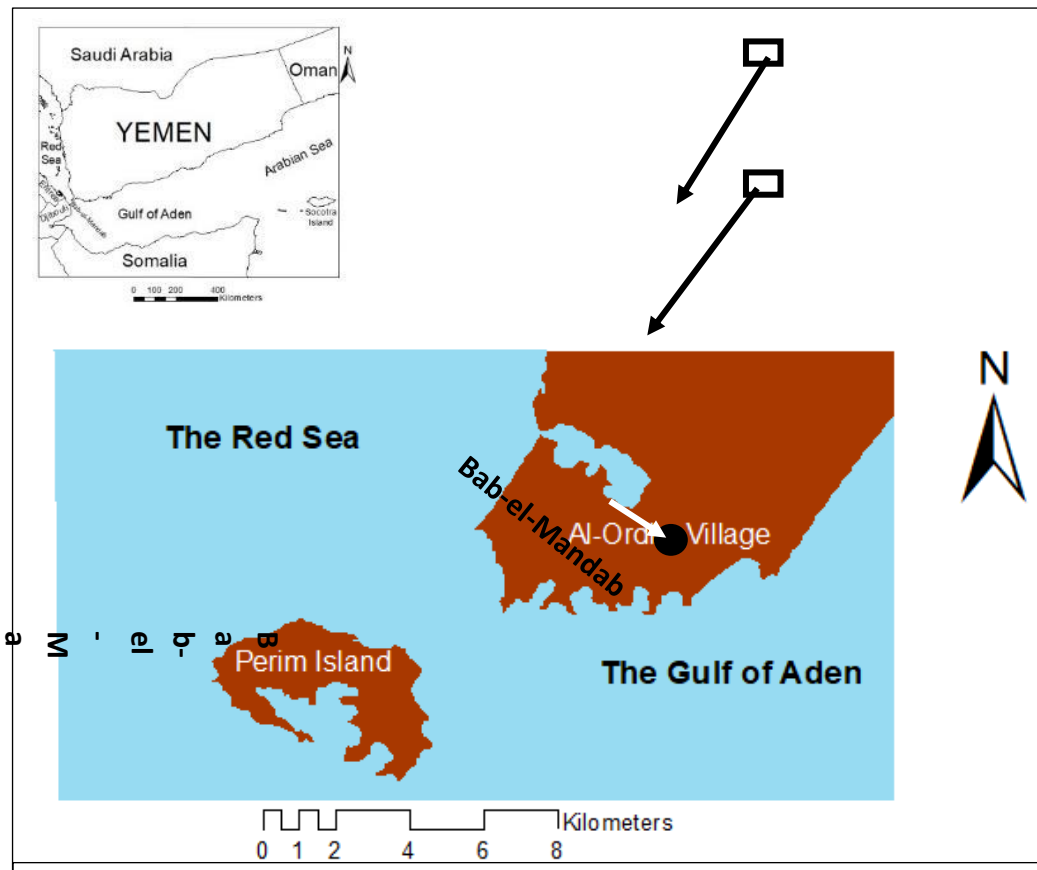
- **Plain and reinforced concrete** (Concrete mixer, Concrete, Concrete pumps, Trowels, Bar benders and cutters, Formwork (plywood or metal), Scaffolding, Concrete buckets.
- **Stone and block masonry works** (Mortar mixer, Trowels, Masonry hammers and chisels, Levels and, plumb lines, Masonry saws, Jointers and pointing tools, Masonry drills and bits, and Scaffolding)
- **Plastering works** (Plastering trowels, Hawk board, Plaster mixing machine, Sandpaper, Plaster sprayer, Straight edge, Scaffolding)
- **Painting works** (**Paint** brushes, Rollers, Paint sprayers, Paint trays, Paint buckets, Drop cloths, Sandpaper, Putty knives, Painter's tape, and Ladders).
- **Tile works** (Tile cutters (manual or electric), Tile spacers, Tile adhesive mixer, Notched trowels, Rubber floats, Grout mixers, Caulking guns, Spirit levels).
- **Sanitary works** (Pipe cutters, Pipe wrenches, Pipe benders, Plumbing snakes, Pipe sealant tape, Plungers, Hacksaws, Soldering irons, and Levels and plumb lines).
- **Lifting equipment for all activities:** Hoists and pulley systems, cranes.

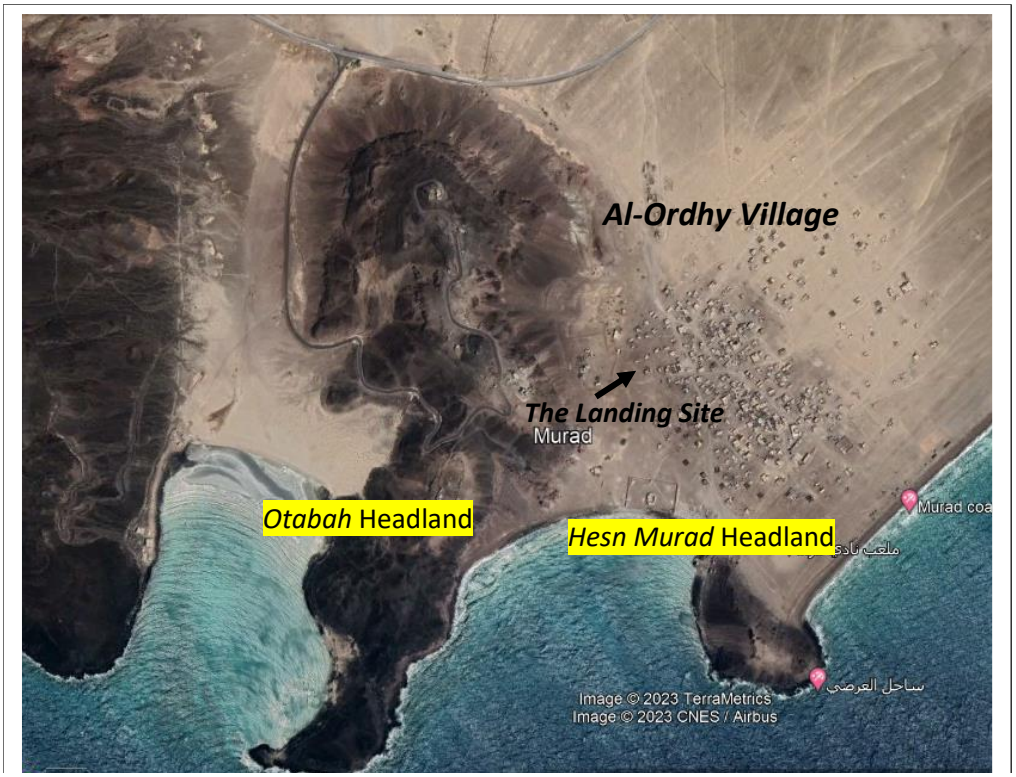
2.2. Location

The targeted landing site is located at a pocket beach which is located between two rocky headlands, *i.e. Otabah* Mountain to the west and *Hesn Murad* headland to the east, while it is bordered from the north with Tehama coastal plains (Figure 1). The landing site is approximately 1.1 Km far from the closest asphalt road. The access to the landing site is through a paved road, which is the only entry to it. The landing site is around 2.16 Km far from the highway that is connecting Aden City (about 180 km far) to Mocha City (about 97 km far). The only access to the landing site is through the village which is around 138 m far (Figure 2). Table 2 shows the name of the sub-project and its coordinates of the Location:

Table 2 Subproject coordinate

Governorate	Subproject-ID	Sub-project title	Latitude	Longitude
Taiz	03-9-16081	Rehabilitation and Development of Al-Ordhy Fish Landing Site	12° 40" 52'	43° 29" 22'


Saudi Arabia
Oman
YEMEN
Red Sea
Arabian Sea
Gulf of Aden
Somalia
Socotra Island
0 100 200 400 Kilometers
N
The Red Sea
Bab-el-Mandab
Al-Ordy Village
Perim Island
The Gulf of Aden
Bab - el - Mandab
N
0 1 2 4 6 8 Kilometers


Al-Ordhy Village
The Landing Site
Murad
Otabah Headland
Hesn Murad Headland
Murad coa
ساحل العرضي
Image © 2023 TerraMetrics
Image © 2023 CNES / Airbus

Road connecting the landing site to the closest asphalt road (1.1 km).

Road connecting the landing site to the main highway (2.16 km).

Road connecting the landing site to the village (138 m).

3. Environmental and Social Baseline Condition

Taiz Governorate has diverse geomorphological characteristics. The eastern side of the governorate is mountainous area while the western side is a part of Tihama coastal plains which extends along the western part of Yemen from the border with Saudi Arabia in the north and Bab-el-Mandab in the south. Tihama coastal plains are bordering the Red Sea waters along 770 km of shoreline, out of which, 166.8 km of shoreline belong to Taiz Governorate[6]. Taiz governorate has two coastal districts, *i.e.* Al-Makha and Dhubab. The landing site is located in Dhubab district (western coastal plain of Yemen) which has approximately 97 km of shoreline.

The Strait of Bab-el-Mandab extends between *Ras Al-Manheli* at the Republic of Yemen and *Ras Saiyyan* at Djibouti with a total width of 26 km. The strait is divided into two channels by Mayyun (Perim) Island. The first channel between the island and the Yemeni mainland is about 4 km in width and 25 m in depth, while the second channel is 20 km in width and 300 m in depth and lies between Perim island and the Djibouti's Seven Brothers archipelago. The second channel is the one that is internationally navigable where large cargo ships are passing through.

This section will provide a description of the present situation in the targeted subproject area. The baseline data will include climatic, hydrological, geological, biotic, and pollution conditions in the proposed landing site area.

Social survey with the targeted community has been conducted by the PWP social team during the field visit. The survey revealed that fishing activities are the main source of income among local communities, whereas the number of people depending on government salaries or social security is very limited. Fish is one of the main sources in the Tihama region due to rich fish resources in the Red Sea waters. The fishing sector in Taiz depends on small-scale fisheries, also referred to as traditional or artisanal fisheries. Yemen Red Sea fisheries production has increased from more than 30 thousand tons in 2010 to more than 42 thousand tons in 2012, and then decreased to 29,500 tons in 2014[7]. Anyway, no records or formal reports clarify volume of production after 2014, as the fish production decreased dramatically after 2015 as a consequence of the country's current conflict.

As the area characterized with rainfall scarcity and water sources shortage, there is no significant vegetation cover or any kind of agricultural activities. The project is making an effort to create a modest green cover within the landing site buildings by planting drought-resistant native tree species, this enhances the microclimate conditions and shield from dust and wind. The coastal community of Dhubab district has found fishing activities as the only source of income in the area, thus the landing site was considered as the only hope for the surrounding communities to increase revenue and improve their economic situation. The total number of fishermen who will benefited from the landing site are 300 persons with their boats (300 boats) that used it daily for landing their catch.

[6] **Nagi, H. M. H. 2021. Delineating and calculating the Length of Yemen's Mainland Shoreline; International Journal of Alternative Fuels Energy; 5(1): 1-9.**

[7] **Rajaa, J. A.; Al Kouni, N. M.; and Omair, S. M. 2017. Socio-Economic Impacts of the Protracted Conflict on Fishery Value Chain and People Livelihoods along the Yemen Red Sea Coast; FSIS Development Programme, FAO and European Union.**

Because of Al-Ordhy landing site has not been completed and operated, those 300 fishermen currently landed their fishes catching daily in Bab AlMandab landing site, which located 11 Km away from Al Ordhy village.

The high value of fish biodiversity in the coastal Red Sea of Yemen plays an important role in the socio-economic livelihood of Tehama's coastal communities of Yemen. The most important fish species of an economic value include Longtail Tuna, Little Tuna, King Fish, Cobia, Grouper, Sea Bream, Snapper, Indian Mackerel, Barracuda, Trevally, Cuttlefish, *etc.* The prices of fish and fishery products at the landing centers and retail markets have increased from 958 YR/kg in 2012 to 1,507 YR/kg in 2017[8]. Fish are usually transported to various markets along the countries' governorates.

The total population of Al-Ordhy's village is about 1,840, out of which 1,012 (55%) are between the ages of 18 and 65. Approximately 52% are males while about 48% are females. Several youths must migrate to other areas in the country (1%) and abroad (10%) to find jobs, as the current situation has led to increased unemployment and poverty. For the women the main daily works are fetching water, taking care of the children, in addition to household duties.

The targeted area lacks the basic services as there is no electricity, water network, nor sanitation network. However, there is one school (elementary and secondary) and small health care unit, as well as a very weak communication network. Local people live in a very harsh situation and need to be helped immediately to improve their livelihood.

○ 3.1. Physical Environment

3.2.1 Climate:

Meteorologically, Taiz Governorate is characterized with a rainy climate in the mountainous eastern part, while Tihama coastal plain is dominated by a hot, humid, and arid climate. Annually, Bab-el-Mandab is subjected to two monsoonal events. During the northeast monsoon (October to May), winds blow into the Red Sea from the south-southeast direction, whereas blow into the Gulf of Aden from an easterly direction. During this southwest monsoon, winds blow from the north-northwest over the southern Red Sea[8,9]. In Summer, sea breezes in the main body of the Red Sea building up strongly during the afternoon[10]. The sea breeze tends blow from the northwest. These winds drive high energy wave conditions[11].

Normally, most rainfall occurs during summer season between June and September as it is influenced by the southwest monsoon winds. However, by observing the average rainfall in Bab-el-Mandab area during the past five years, it showed fluctuating values of monthly precipitation with an average of 0.41mm. The maximum average values showed during the month of October and January (1.11mm and 0.56mm, respectively), whereas the average minimum values showed during the months of June (0.10mm) and September (0.15mm)

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[8] **Patzert, W. C. 1974. Wind Induced Reversal in the Red Sea Circulation; *Deep Sea Res*.; 21: 109-121.**

[9] **Morcos, S. A. and Varely, A. 1990. Red Sea, Gulf of Aden and Suez Canal: A Bibliography on Oceanographic and Marine Environmental Research; UNESCO, Paris.**

[10] **Sheppard, C.; Price, A. R. G.; and Roberts, C. 1992. Marine Ecology of the Arabian Region; Academic Press, London.**

[11] **Georeda Ltd. 1982. Oceanographiy, Final Report; Royal Commission for Jubail and Yanbu Contract, Kingdom of Saudi Arabia.**

Generally, air temperature conditions in the southern Red Sea are uniform, with average seasonal and daily ranges of air temperature smaller than the northern Red Sea. As per Morcos (1970)[12], this region is considered one of the hottest climates in the world. In Summer, the average air temperature is about 27.5 ºC in August rising to a maximum 37.5 ºC, while in Winter, average air temperature drops to 20-25 ºC in January. Average air temperature in Bab-el-Mandab area during the past five year showed same trends as above with higher values during summer and less values during winter season. The maximum average temperature was recorded during the month of July (31.72 ^{o}C), while the minimum average was recorded during the month of January (25.00 ^{o}C)

Average evaporation in the Red Sea is estimated to be in the range between 183 cm/yr [13] to 230 cm/yr [14]. Morcos and Varely (1990)[10] estimated the annual average evaporation in the whole Red Sea to be 210 cm/yr. Maximum evaporation occurs in November and minimum in June. This trend is matching with the recorded average evaporation in the past five years (2018–2022), as the maximum average values was in the month of November (6.97 mm), while the minimum values were recorded during the months of September, April, and May (3.81, 4.03, and 4,19mm, respectively). Higher values of evaporation in the southern region of the Red Sea are due to higher wind speeds that prevailed in the region[15].

Water vapor is contained in varying amounts in the air masses that collectively make up the lower atmosphere. The amount present depends upon the origin of the air mass and its recent history[15]. The past five years have been showing the fluctuation of relative humidity (RH) values. The maximum average relative humidity (82.6%) was recorded during the month of April, whereas the minimum average relative humidity (68.17%) was recorded during the month of July.

○ 3.2. Hydrology:

• *3.2.1. Water Masses*

The water masses of the Red Sea are formed under the influence of the water exchange with the Gulf of Aden through Bab-el-Mandab and all dynamic processes taking place in the Red Sea, in addition to air-water interactions. The surface currents are drift currents depending on the wind, which varies with the monsoon blowing in the Arabian Sea[16].

During SW monsoon (May to October), currents with sets between south and south-east predominate. The Southern currents are slightly stronger and reach high values of about 65 cm/s around Bab-el-Mandab[10]. At this time, the surface water of the Gulf of Aden flows out into the Arabian Sea as an east-going current and is replaced by water flowing from the Red Sea through Bab-el-Mandab. Whereas, during the NE monsoon (November to April), the currents are reversed with the mean set of surface water flowing northward. During this period, the north-east monsoon directs water from the Arabian Sea in the Gulf of Aden, pushing the latter's water in the Red Sea through Bab-el-Mandab. The prevailing south-east

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[12] **Morcos, S. A. 1970. Physical and Chemical Oceanography of the Red Sea; *Oceanogr. Mar. Biol. Ann. Rev.*; 8: 73-202.**

[13] **Privett, D. W. 1959. Monthly Charts of the Evaporation of the North Indian Ocean Including the Red Sea and the Persian Gulf; *Q. J. R. Meteorl. Soc.*; 85: 424-428.**

[14] **Yegorov, N. E.** 1950. Calculation of Heat Balance of the Red Sea (Russian); *j. Meteorology and Hydrology*; **3:** 34-56.

[15] **Stone, E. C. 1963. The Ecological Importance of Dew; *The Quarterly Review of Biology*; 38(4): 328-341.**

[16] **Edwards, A. J. and Head, S. M. 1987. Red Sea, Key Environment Series; Pergamon Press, Oxford, UK.**

wind in the southern Red Sea reinforces the northern surface currents where maximum velocities of 30-60 cm/s have been recorded by Morcos and Varely (1990)[10].

- ### *3.2.2. Mean Sea Level*

In the southern Red Sea, the atmospheric pressure and steric variations account for almost all variations in mean sea level[17]. Generally, the monthly Red Sea mean sea level in Winter is higher than the annual mean but lower in Summer. The minimum value of sea level (9cm) is observed during the month of May in Perim Island, where the lowest range of mean sea level (24 cm) in the Red Sea is observed[18].

- ### *3.2.3. Tides*

Tides in the Red Sea are essentially oscillatory and mainly of semi-diurnal type. The average spring tide range is 50 cm in the south of the Red Sea. A negligible tidal range occurs just to the north of Bab-Al Mandab at Al-Makha. From Al-Makha southwards, the time of high-water changes by several hours and the spring range increases to about one meter at Perim Island[18].

Tidal streams are present at Bab-el-Manda. Tidal streams passing through constrictions caused by reefs, current-formed sand bars, and low islands commonly exceed 1-2 m/sec [19]. In Bab-el-Mandab, the tidal currents are mainly of a mixed type with daily inequity with a shift of about 1.5 hours in phase. In general, the current flows north when the tide is ebbing and south when it is flooding[18]. Tidal currents are important mechanisms of water and nutrient movement. They are important in providing the water movement necessary for vigorous benthic biota, even in areas where there is little tide or water exchange other than oscillation of locally confined water.

3.4 Geology:

The Strait of Bab-el-Mandab is believed to be closed over 10,000 years ago. This complete or partial closure of the Red Sea led to salt deposits[20]. The present ecology of the area was driven partially from frequent connection with the Indian Ocean, which brought modern fauna and flora to the region, and from heavy erosion during the Pliocene and Pleistocene, which brought alluvial materials for benthic biota. A considerable amount of terrestrial material reached offshore and formed important new substrates and areas of sheltered habitats[20]. The influence of heavy erosion is seen by the presence of major wadi features, which developed during the Pleistocene.

The coastline of Yemen includes sand flats, pebble-beaches and cliffs. Yemen does not have the classical Red Sea fringing reefs; characteristic of Egypt and northern Saudi Arabia, which slope almost vertically into deep water. However, in general coral and coral reefs are widespread along Yemen's mainland coast south of Al-Khawkhah towards Bab-Al-Mandab,

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[17] **DouAbul, A. and Haddad, A. 1999. The Red Sea and Yemen's Red Sea Environments; [In: DouAbul, A.; Rouphael, T.; Marchant, S.; and Marchant, R. (Eds.); Protection of Marine Ecosystems of the Red Sea Coast of Yemen]; Hassall and Associates and Australian Marine Sciencdes and Technology Ltd;** UNDP**, Yemen.**

[18] **Morley, N. J. F. 1975. The Coastal Waters of the Red Sea; *Bull. Mar. Res. Centre, Saudi Arabia*; No.5.**

[19] **Sheppard, C.; Price, A. R. G.; and Roberts, C. 1992. Marine Ecology of the Arabian Region; Academic Press, London.**

[20] **Rushdi, A. I; Abubakr, M. M.; and Hebba, H. M. 1994. Marine Habitats of the Red Sea at AlUrj-AlSalif and Dhubab-Yahktul Areas: Their Ecology, Environment and Management Recommendations; UNDP and Sana'a University.**

in the landing site area, no coral reefs were observed or reported. Much of the southern coast of Yemen is exposed to strong wave action.

In the southern part of the Red Sea, shallow shelf is extensive. Therefore, most of Yemen coast along the Red Sea occupies very shallow continental shelf. This shelf is widest (~ 80km) north of Zugar Island and narrowest south of Al Mukha to Bab-Al-Madab (~ 20km).

The landing site of Al-Ordhy village is located in a pocket beach. It is characterized by a mixture of sand and rocky batches scattered in the beach (Figure 4). A sieve analysis of the beach sediments and grain size analysis showed that the sediments consist of very coarse sand that is moderately sorted. This is an indication of high energy waves which is dominated in the area. However, it is worth mentioning that the beach sediments could be changed in characteristics depending on the wave intensity and directions prevailed in the area throughout the year.

○ 3.5. Cultural Heritage

The targeted sub-project is located in an area where no archaeological spots are reported. It is located away from any heritage sites. Nevertheless, PWP will emphasis through contracts to include provisions about find chance procedures and the training of staff/supervisors to deal with the emergence of any potential chance found, including the need to formally and expeditely communicate with the Yemeni Antiquities Authority, in the Ministry of Culture, and the local council to assess the situation and take preventive actions immediately.

○ 3.6. Air Quality and Noise Nuisance:

Air quality is closely linked to the earth's climate and ecosystems globally. There are two sources that impacts air quality: anthropogenic emissions caused by the burning of fossil fuels, construction, sewage, and other activities, and natural sources, namely wind that carries dust and subsequently affects Particulate Matter readings.

With respect to the proposed landing site project, Al-Ordhy village is located in a remote area. In general, it is noticed that the air quality in village of Al-Ordhy is fresh and clear and

there is no relevant source of air pollution. Air pollution from anthropogenic sources is considered low in the location as it is far away from large urban areas, any industrial areas or congested transportation roads.

The World Health Organization (WHO) defines noise above 65 decibels (dB) as noise pollution. Noise becomes harmful when it exceeds 75 decibels (dB) and is painful above 120 dB.

Typical existing noise levels in the village are generally limited due to absence of extensive human activities.

3.7. Biotic Environment

3.7.1. Flora

The scarcity of rain and high temperature in Al-Ordhy village have created a harsh environment for plant species to grow. The area is characterized with a lack of sand dune, or any freshwater dependent, vegetation.

Only two species of benthic Phaeophyta algae have been observed washed up on the landing site beach. Those are *Sargassum sp.* and *Padina sp.* and were in negligible quantities. Algae play an important ecological role, serving as nursery areas for fish including commercially important species. Although, rocks in the beach and nearby rocky headlands supposed to be supporting algal growth, but because of the site is located in an open shore and characterized with high wave energy and water movement, thus algal communities are constrained from growing in such condition. Rushdi *et al.* (1994)[24] already mentioned that algal density in the Red Sea coast tends to increase whenever the shores are sheltered with little water movements.

3.7.2. Fauna

Lack of vegetation cover and scarcity of water resources have limited the existence of terrestrial fauna in the targeted village. Few livestock animals such as goats are acquired by villagers to benefit from their meat and dairy.

The Arabian Peninsula is an important "land Bridge" between Africa, Asia and Europe. Approximately, three billion birds annually migrate along north-south or east-west routes[4]. A number of these birds can be observed along the coast of Yemen. About 82 species of sea and shore birds were recorded from the coastal area of Yemen along the Red Sea (EPA, 2014). However, few specimens of birds were observed on the site's beach during the field visit (Figure 5). The bird species which observed are White-eyed Gull (*Larus leucophthalmus*) and Lesser Black-Backed Gull (*Larus heuglini*). The site is not reported as a bird sanctuary due to absence of wetlands or any other bird preferred habitats. According to the Bird Life International website, sub-project is located within the Important Bird Area (Bab al-Mandab – Mawza)[21].

[21] For more details about the area according to IBA site follow the link:
Bab al-Mandab - Mawza - keybiodiversityareas.org
https://datazone.birdlife.org/site/factsheet/bab-al-mandab--mawza-iba-yemen

Figure 1. Birds Spotted At the Landing Site

Existence of rocky materials in, or near, the landing site beach has led to the growth of some fauna species that can adjust to the rocky substrates. The rocky cliffs and rock substrates in the landing site are inhabited by several species of fauna (Figure 6). Rock barnacles (Crustacia) shells are found covering the flat rocks in the intertidal zone. They play an important role in the food chain. Barnacles are suspension feeders, consuming plankton and dissolved detritus suspended in seawater and are therefore essential in cleansing that water for other organisms. They are also a food source for these animals. Several species of molluscan animals are also found scattered in the rocky areas. Gastropods such as cap shape limpets are found scattered on the rocky cliffs and barnacles covered rocks. Oyster shells (bivalves) are also found attached to the stones. Chitons *Acanthopleura sp.* are found settled under rock edges and cracks during the day to avoid intensive sun light and is an important source of food and also bait to be used by fishermen. There are no observed or recorded endangered or threatened species present in the project area.

Figure 2. Shells, Gastropods, and chitons species spotted near the landing site. Pen (13.4 cm long) for size comparison.

3.7.3. Critical Habitats, sensitive habitats and Protected Areas

The visual inspections of the targeted site showed that there is no vegetation cover, nor critical habitats. Despite the fact that 90% of the total area of mangrove habitats in Yemen exist in the Red Sea coasts (Nagi, 2012), a close ecological sensitive marine habitat to the north of the landing site is approximately 8 km far through the land, and 14 km around the shoreline coastal waters (Figure 7). No sea turtles have been observed at the project site. There are not locally, globally or endemic threatened marine species occurring at the project site. No coral reefs were reported from the subproject area. The subproject is located within the IBA as explained above, a sensitive habitat, where migratory birds are present and are threatened by pollution from boats and ships and plastic bags. Some of the of the birds present in the IBA are globally threatened according to the IUCN[22]. Additionally threats also include falcon trapping in Autumn. The ESMP will ensure suitable measures are in place for those risks.

[22] Bab al-Mandab - Mawza (Yemen) - BirdLife IBA factsheet

3.8 Existing situation:

Al-Ordhy landing site has been constructed in the Year 2010, and it is one of the most important landing sites in the Governorate of Taiz. This landing site has not been completed and operated due to political disturbances in 2011.

The area of the landing site sub-project is approximately 8,000 m^2. The existing condition of the landing site construction includes a wall encircling the site area, an incomplete guard's room, incomplete fish auction yard, and a protection wall to protect the landing site from strong wave actions. The landing site has an incomplete underground water tank (Figure 8).

According to the beneficiaries, the fishing boats mainly suffer from the difficulty of reaching the Al-Ordhy shore. The fish prices usually became high in these villages because fishermen land their catches in Bab Al Mandab landing site which is located at 11 Km from Al-Ordhy village, as Bab Al Mandab is the nearest market to their landing site.

The targeted area does not have the basic social services to support sustainable development goals. The education situation is very weak where there is only one small school. More than that, there is no medical center which reflects the suffering the locals experience if they need any care. There are no drinking water sources close to them and no sanitation infrastructure.

Al-Ordhy landing site is an important source of several commercial fish for the region as well as a vital source of economic income for fishermen, fish traders, and workers in the fish market sector inhabiting Dhubab district and its neighboring suburbs. This landing site will be serving about 300 fishermen, with 300 boats that are functional, which creates overcrowding in neighboring landing site of Bab Al Mandab.

Local fishermen suffer from the deterioration of their catches and marketing failure because of the lack of an ice factory in the neighborhood of the landing site because of electrical power deficiency and increasing demand for ice. This situation forced them to transport their catches to the other landing site in order to preserve their catch and get it transported to other governorates in a good condition. This adds costs to their fish price, which makes it difficult for the fishermen to compete in the market. see photos for the existing situation below.

The landing site wall

The incomplete auction yard

The guarding room

Damaged wave protecting wall

The rocky landing site beach

Incomplete underground water tank

3.9. Targeted Beneficiaries

Through transparent allocation of funds that is based on national statistics indicators in the governorate and district levels, followed by coordination with local actors and inclusive participatory process, PWP will be reducing conflict over resources. The selection of the community beneficiaries is based on transparent eligibility criteria and consultations with communities and local leaders. Before implementation and during the participatory consultations with local communities to define the interventions, PWP's teams confirm the priority needs of the society and ensure that the intervention is in its suitable place.

The activities in the subprojects will serve the local communities that are considered direct beneficiaries. Table (3) below shows the total number of beneficiaries segregated by gender:

Table 3 Total number of beneficiaries segregated by gender

Subproject -ID	Project name	Benefited Neighborhoods	Beneficiaries			Fisher men	Fisher women
			Male	Female	Total		
03-9-16081	Rehabilitation and Development of Al-Ordhy Fish Landing Site	1	960	880	1,840	300	0

Before the sub-project handing over, PWP sub-area manager will invite the beneficiaries' representative to participate in this occasion. The beneficiaries' representative could be the head of the community committee, local council member, district manager, or any entity representing the beneficiaries. At the site handover ceremony, the PWP sub-area manager and contractor sign subproject handover minutes in the presence of a representative from the beneficiary community. The sub-area manager takes the opportunity to raise awareness among attendees about properly maintaining the subproject to ensure its long-term sustainability.

3. Environmental and Social Impact Analysis

In this section, the environmental and social risks are discussed in detail, These risks and their impacts on the community, as per their applicability by ESF standards of the World Bank. The mitigation measures for these risks are discussed in Section 5.

4.1. Applicability

The relevant standards of the World Bank's Environmental and Social Framework (ESF) have been applied to the project. As a result of the screening process, a number of Environmental and Social Standards are considered to be more relevant, namely:

- ESS1: Assessment and Management of Environmental and Social Risks and Impact,
- ESS2: Labor and Working Conditions,
- ESS3: Resource Efficiency and Pollution Prevention and Management,

- ESS4: Community Health and Safety
- ESS5: Land Acquisition, Restrictions on Land Use and Involuntary Resettlement
- ESS6: Biodiversity Conservation and Sustainable Management of Living Natural Resources
- ESS10: Stakeholder Engagement and Information Disclosure.

SFISH ESMF has been applied because this sub-project may pose moderate environmental and social impacts such as but not limited to residual wastes, child labour, and occupational health and safety (OHS) impacts.

4.2. Eligibility

This subproject is eligible for support as per the PWP Environmental and Social Responsiveness (ESR) Criteria (Annex 3).

4.3. Environmental and Social Screening

An Environmental and Social screening has been conducted by PWP Environmental and Social safeguards staff and designer engineers through site visits to subprojects sites, using the screening checklist attached in Annex 1. The subproject will have a positive impact on the local communities in the targeted areas. This would include providing Job opportunities during implementation for workers from local communities and will generate positive impacts on the economy in the targeted areas. Potential positive and negative impacts of the subproject are going to be described in the next section.

4.4. Potential Environmental Impacts

The environmental and social impacts could be categorized into two distinct phases. These two phases are the construction phase and the operational phase. The impact significance of the anthropogenic activities that are going to be faced in the proposed landing site on the surrounding environment during both phases are going to be predicted and evaluated. The prediction will be based on the available environmental baseline information of the project area. The construction phase is considered temporary with short term effects, while the operation phase is considered to affect the environment for a long term.

4.4.1. Potential Environmental Impacts during Construction Phase

The construction works have the potential to cause hindrances and nuisances and temporary disruptions of local activities on the proposed site. It would also cause interferences on the water body within the coastal area. The environmental considerations include the risks of pollution by the construction wastes from the yard and the risks of accidents during the construction. The construction-related impacts could be:

4.4.1.1. Noise Pollution

A minor noise pollution is expected during the construction operation due to the moving machines, trucks that transport construction materials to the site, workers' activities, as well as other activities related to construction.

- ### *4.4.1.2. Air Pollution*

Emission of particulate matter is expected to be generated during the rehabilitation and construction of the site. Transportation, loading, and unloading of the raw materials and construction waste are going to aggregate dust in the air. Excavation activities may also result in dust emissions.

- ### *4.4.1.3. Solid and liquid Waste Generation*

Civil engineering works would generate solid and liquid wastes from the construction sites. Earth and rubbles from site preparation, excavations, foundations, drained oils from engines, *etc*. are the major sources of wastes generation. As the landing site is already constructed and only preparations are required for developing it, there would be limited waste generation from site preparatory activities. However, a fair amount of construction wastes produced from constructing new offices, rooms, toilets, *etc*. is expected.

The wastes resulting from the construction/rehabilitation activities are big threats to the surrounding environment and water bodies. The hygiene and health of the adjacent communities could severely be damaged due to such activities. It is the same way with the manipulation of fine materials such as cement and sand which could have a moderate impact on the body. The materials normally used for the construction of infrastructure (concrete, embankment stones) have little negative effects on the environment. Piles of solid waste are going to be generated during the construction of the project. Those wastes may include concrete remaining, metal cutting, paper bags, cartons, empty paints containers, broken glass, *etc.* If solid wastes are not managed properly, there would be a potential for diseases to spread due to the suitable breeding conditions for vectors of diseases.

- **4.4.1.4 Soil and seawater contamination from waste and liquid waste**

Construction waste may pollute the coastal area and the sea environment. Liquid waste including accidental oil spills may also pollute the soil and seawater environment. Additionally, sediment particles from construction may get disposed into the seawater causing sea water turbidity and a reduction in visibility. This may in turn impact habitats.

- **4.4.1.5 Risks on Marine biodiversity**

Wastes and emissions may also put sea life at risk such as by consuming or getting entangled in the emitted wastes and or by the contamination of their habitats due to the release of toxic materials accidentally such as oil spills and by the temporary increase in water turbidity due to sediments emissions. Algal species Sargassum and Padina sp. May be at risk from pollution and contamination from spilled oil or wastewater. Additionally the construction of the cement ramp may cause temporary sedimentation in the area from the use of cement and potential water turbidity and pollution.

- **4.4.1.6 Risks on terrestrial biodiversity and IBA, migratory route and threatened species including IBA triggering species.**

According to the Birdlife International and to the subproject activities, threats to the IBA species include traffic increase to the area which may disturb birds landing especially during construction phase where there will be heavy machineries used. A potential risk is falcon hunting and trapping in autumn which may also be practiced by construction workers to the site. Pollution, emissions and wastes and discarded plastic bags may also play a role in disturbing birds and potentially other animals including sea creatures.

4.4.2. Potential Impacts during the Operational Phase:

Several activities concerning the daily operations on the landing sites including fish processing facilities could generate negative impacts. Those impacts could be:

- #### *4.4.2.1. Liquid discharge to sea water reducing water quality and disturbing biodiversity*

The most concern about negative impacts that could be generated from the landing site during the operation phase is the discharge of polluted substances into sea water which could lead to marine pollution and deteriorate marine life and habitats. This includes waste and wastewater discharges, spillage caused by fuel and used oil could be major sources of pollution. The major quantity of liquid waste that would be generated daily during the operation phase at the landing site includes sewage and wastewater from fish processing and washing of the marketing yard has the potential to pollute marine water or the soil of the landing site if not managed properly and disposed of untreated.

Leaking petrol, oil derivatives, liquid chemicals including epoxy or other liquids could be emitted from boats and the generator site and could lead to contaminate the marine waters. This kind of pollution could cause harmful effects and adversely jeopardize the health of human beings as a result of consuming contaminated aquatic fauna. Liquid wastes generated from boats as a consequence of cleaning cisterns and loading holds as well as engine maintenance are other sources of marine pollution if discharged directly to seawater. Waste management at the landing site must be taken very seriously by the landing site beneficiary and users.

- #### *4.4.2.2. Solid Waste generation*

The fisheries sector produces qualitatively and quantitatively variable wastes according to several activities conducted during the operation phase. Domestic wastes, commercial packaging, and fermented stuff, as well as wastes that are generated from maintenance and repair activities. Fishing processing activities generate adverse impacts on the surrounding environment and public health. Organic waste and by-products could find their way to the coastal sea water and need to be managed daily in order to avoid adverse impacts on the environment and public health. Unused and broken fishing gears usually disposed to the shore of the landing sites such as hooks, nets, traps, *etc.* causing solid waste pollution in the area and disturbing aquatic fauna which may consume solid waste and get trapped in nets. Some measures have to be recommended in the ESMP that would help to reduce the production of solid wastes and by-product.

- #### *4.4.2.3. Risks on Marine Biodiversity from overfishing, mismanagement in fishing gear and seasons and targeting the wrong species and emissions and waste generation*

The risk of increase in boat and fishermen number as a result of the upgrading and increasing auction halls capacities to receive more fishermen which may in turn put a pressure on fish stock in the area/overfishing. The subproject may increase risks of overfishing, wrong fishing techniques, and using non-sustainable fishing gear and methods may pose a risk on biodiversity and threatened species. Additionally, fishing during the wrong seasons such as spawning seasons may also decrease the number of fish in the area.

During operational phase the amount of plastic and fishing gear wastes including nets may also put sea life at risk such as by consuming or getting entangled in the emitted wastes and or by the contamination of their habitats due to the release of toxic materials accidentally such as oil spills from boats and diesel generator spills. The improper maintenance of boats and accidental oil and fuel leaks may impact the biodiversity in the area. Furthermore, the Improper disposal of fish waste, oils, and chemicals used in the center has the potential to contaminate the water, and soil resources. There is also a risk of increase in boats around the area and habitat deterioration due to bad fishing practices and potential use of unsustainable anchoring.

- **4.4.2.4 Risks on terrestrial biodiversity and IBA, migratory route and threatened species including IBA triggering species.**

  During operational phase the risk of traffic (including vehicles and boats and human activities(may increase in the area which may disturb birds landing. A potential risk is falcon hunting and trapping in autumn and the risk may increase of hunting is also practiced by fishermen in the site. Pollution, emissions and wastes and discarded plastic bags and fishing gear and nests may also play a role in disturbing birds and potentially other animals including sea creatures by getting entangled in nets or consuming waste materials.

- ***4.4.2.4. Air Emissions***

  Odour is often the most significant form of air pollution in fish processing. Major sources include the storage area of organic wastes, fish drying processes, and odour emitted in the marketing yard if not washed properly on daily basis. Odour control and prevention measures will need to be applied of the purpose of mitigation.

- ***4.4.2.5. High use in water and energy***

  During the operational phase, there is a potential for increased water usage, and this increase or excess may lead to the depletion and exhaustion of water resources. Inefficient appliances and plumbing leaks can result in the consumption of more water. The reuse of greywater may not meet the requirements for non-potable uses such as toilet flushing and may require supplementary water.

  During the operational phase, there is also a potential for increased energy usage, and this increase or excess may lead to a deterioration of energy efficiency for devices and equipment over time if they are not properly maintained.

4.5. Potential Socio-economic Impacts

The socio-economic impacts of the proposed landing site project will be overall positive in terms of their contributions to development, poverty alleviation and the creation of economic opportunities, particularly in the coastal communities.

4.5.1. Socio-economic Impacts during Construction Phase

- ***4.5.1.1. Positive Impacts***

  Job opportunity is going to be available for many local individuals particularly for casual workers. Employment opportunities provide both economic and social benefits. Several workers including casual labourers, carpenters, electricians, plumbers, *etc.* are expected to work in the landing site for the duration of the project. Also, semi-skilled and unskilled labor

and formal employees are also expected to obtain gainful employment during the period of construction. There will be gains in the local and national economies. Consumption of locally available materials such as: cement, rebar, wood, plumbing and electricity tools, *etc.* will help in the recovery of the economic situation in the local markets. There will also be the opportunity for the development of small businesses at the worksite to supply the workers with their basic needs food, drinks, cigarettes, etc.

- #### *4.5.1.2. Negative Impacts*

The major impacts that could be faced during rehabilitation and construction works of the landing site could be considered reversible and temporary if managed properly. Those negative impacts could be:

- #### *4.5.1.3. Increased Traffic*

During construction phase, roads leading to the project site will serve additional vehicles that are going to be used for transportation of construction materials to the site which may increase the frequency of road accidents.

- #### *4.5.2. Accidents and Other Occupational Health and Safety Issues*

Working close to a large water body, and sometimes, working within the water body itself could expose workers to major health and safety risks associated with the project construction activities. Works in such risky areas must be carefully planned to mitigate the risk of drowning for instance. Emergency response plan should be developed and emergency response equipment, especially those relating to emergency rescue readily made available on site.

Protection of staff on the construction sites should be supported immediately once the work started. Poor protection for the staff could cause discomfort, and nuisances by noise, dust and emitted gases, does not only lead to deterioration of their health, but also contributing to accidents at work. Lack of training on the use of hand-held tools and providing staff with protective equipment may lead to unfortunate calamities. Some of the OHS risk on the site such as:

Risks of drowning, breathing problems from dust emissions from excavation and leveling work, handling chemicals (cement, oil, and fuel) that may cause skin and eye irritation, physical exhaustion, working during bad weather conditions (heat wave, dust storm, rainy periods), ear disturbance from noisy activities and machineries used, accidents during materials and equipment transport, lack of toilets and latrines and hygiene, falling from ladder and falling from height, falling in excavated zones, dust emissions causing breathing difficulties, falling loads on workers from cranes, injuries while performing construction work using tools and machines, and electrical shocks while performing electrical works, skin and eye irritation from chemicals used such as epoxy. Other potential risks include the risk of fire, injuries due to slips, trips and falls, Hazards related to confined spaces such as tanks, pits, sewers, etc, risks of vehicles running into workers (pipeline area) and risk of lifting activities such as loads off cranes and OHS risks from vegetation planting activity.

4.5.3. Socio-economic Impacts during Operational Phase

Generally, the project is expected to produce significant environmental benefits in terms of resource conservation, pollution reduction, and improvement of public health. The community development and poverty abatement will generate mostly beneficial impacts.

Negative impacts are expected to be minor, localized, reversible, and could be mitigated if appropriate measures and effective control and management are to be followed. The discussion below summarized both the expected beneficial and adverse impacts related to the proposed project during operation stages.

- #### *4.5.3.1. Job Opportunities*

The project is expected to create new job opportunities and reduce the unemployment problem for the local people. Employment opportunities are one of the long-term major positive impacts of the project during the operation and maintenance of the proposed subproject. These will involve security personnel, solid waste management staff, and the persons who are going to be employed within the proposed project.

Also, it will support fishing communities with required facilities that help them improve their fish quality with the availability of facilities such as ice storage and clean water network. This will raise their income and improve their economic and livelihood situation.

- #### *4.5.3.2. Occupational Health and Safety Issues*

Health and safety of fishermen and other staff working in the landing site should be guaranteed. Working in such unhealthy areas (OHS hazards from handling fish waste /biohazards/ poor hygienic practices) where bacteria and other diseases that are spread all over the landing site must be carefully considered. Outbreaks of infectious disease such as diarrheal diseases and their consequences as cholera and dysentery, in addition to intestinal parasites among fishermen, vendors and other workers are common in such conditions. This is inevitable when unhygienic conditions and poor sanitation are prevailed. Risks also include coming into contact with sewage and wastewater during maintenance work of soakaway pit and sedimentation tanks.

Awareness programs should focus on providing the trainee with the knowledge that illustrate the benefits of proper fish handling and its impact on health and economy. Other programs could also help fishermen to acquire and build necessary skills and good practices to raise quality and reduce manifestations of fish spoilage according to scientific and health standards with high efficiency.

4.5.4. Land Acquisition

The land on which the intervention, about 8,000 m^2, will be built is public land that belongs to the Ministry of Agriculture, Irrigation, and Fish Wealth (MAIF) in Taiz Governorate. There are no legal conflicts regarding the land. The wall surrounding the landing site reflects that no ownership dispute over the land. Moreover, PWP reached social agreements with targeted communities and local authorities to implement these sub-projects. The social agreement was concluded between the Public Works Project on the one hand and representatives of the community committee (CC), and the local authority on the other hand. This agreement includes the conditions and responsibilities of the two parties for the purpose of smooth implementation of the subproject, with the commitment of the local community representatives to facilitate and resolve all issues that may arise during Implementing the subproject and after implementation as well. These include facilitating the work of technical and community studies, facilitating the implementation procedures

after approving the subproject, as well as operating the subproject for the purpose for which it was created for (Public interest).

4.5.5. Resources and services' access restriction

As the site isolated and not operated until now, there is no restriction to services or resources. Additionally, PWP and contractor will ensure there are not causing any restriction for the services and resources available in the area while construction of the subproject.

4.5.6. Gender and Social-Related Issues

The objective of the current subproject is to develop the fisheries sector and improve the coastal community's economic and social situation. The project will take into consideration providing local communities with all support that increase their livelihoods and beneficiaries. This will include people with disabilities, females, males, and children. The project aims to provide equal opportunities for all members of society, including vulnerable and disadvantaged group this includes considering persons with disabilities through accessible infrastructure in accordance with international standards, such as access ramps for persons with disabilities, and they involvement in community consultations and identifying their needs.

- #### *4.5.6.1. Child Labour*

The PWP will ensure that the contractor should not allow any children under 18 years to work on the construction site. All workers will be registered after presenting their documents which verify their age such as IDs or any other available official documents. Prevention of child and forced labor will be specified in the tender documents for contractors. The contractor will be obligated and monitored to implement the LMP. In case of age fraud, PWP will deliver a warning to the contractor, and scale-up procedures will be used to prevent the reoccurrence of this issue, including issuing a formal written warning to the contractor, then imposing a financial penalty, then temporarily suspending the contractor, and then terminating the contract. Any violation of this section will be strictly dealt with by the PWP.

- #### *4.5.6.2. Gender Equity*

PWP has ensured gender equity in the subproject's cycle as a core principle for the subproject's success. PWP is mainstreaming Gender in all aspects of the subproject cycle as well as raising awareness amongst the communities both male & female on Job opportunities during subprojects implementation. The landing site project is in Al-Ordhy Village, part of Al Hakam area which has a total population of 4,050 according to 2004 census, whereas the total population of Al-Ordhy is 1,840, out of which, 960 males and 880 females. The number of beneficiary families is approximately 350 families. The total number of fishermen who are benefited from the landing site are 300 persons with their boats (300 boats) that used it daily for landing their catch.

PWP has successfully established community committee in the targeted area, by designating social consultants' teams (male and female). Focused group discussions were conducted with the participation of both women and men within the elected community committee. The elected community committee will participate in the decision-making, need assessment, and public consultation. Also, they will participate in the monitoring of implementation, receiving the subproject, as well as subproject operation and

maintenance. Raising awareness of the fishing community was also conducted through public participation, as well as occupational, social, and health safety. Participation of women in the proposed project and the importance of gender in development were also highlighted. Women will directly benefit from the sub-project through increased employment opportunities during the construction and operation phase. In addition, the community committee consists of 6 members, 3 women and 3 men, with women's participation reaching 50% to ensure that their needs are represented. Furthermore, according to SFISH's ESMF under subcomponent 2.1-d (page 11) the training, and capacity building related to sustainable fishing practices, and maintaining hygiene and sanitary aspects to maximize the market values will be conducted by TVET centers, and Yemeni Fishery Exporters' Association.

- ***4.5.6.3. Sexual Exploitation and Abuse/Sexual Harassment (SEA/SH)***

PWP raised the awareness of community members, both men, women, regarding sexual harassment, and sexual exploitation and abuse (SEA/SH) during the public consultation. The PWP also raised community awareness on Grievance Mechanism (GM) processes and how it can be used to address complaints resulting from project activities including gender discrimination, and SH/SEA cases with the highest level of confidentiality and anonymity of complaints. To ensure effectiveness, repeated mandatory awareness training and sensitization sessions about refraining from unacceptable conduct towards local community members, specifically, women will be performed by PWP through supervisor engineer and subarea staff for all contractors and workers. This also includes informing workers about the national laws that make sexual harassment, sexual exploitation and abuse, and gender-based violence a serious and punishable offense.

4.5.7. Conflict Sensitivity and Do No Harm

PWP has its conflict sensitivity manual to manage any conflict cases during the project's cycle. Conflict sensitivity is given high priority and integrated into decision-making criteria in project approval. PWP adopts specific approaches when targeting the beneficiaries and defines their prioritization. Targeted communities provide their consent, acceptance, and satisfaction for the chosen interventions. No concerns were raised by the communities against the subproject. Public consultation included ensuring Conflict Sensitivity screening. In case of conflicts that cannot be resolved, the subproject will be rejected. Also, conflict sensitivity is taken into consideration in the monitoring and reporting processes during the implementation. Furthermore, the elected community committees are trained to manage, monitor, and report any conflict that might be generated during the project's cycle. Generally, the subproject will help to build the resilience of the communities and improve their living conditions positively.

5. Environmental and Social Impact Analysis Plan and Mitigation Measures

This section consists of a set of mitigation, monitoring, and institutional measures to be taken during the construction and operation of the project to eliminate adverse environmental and social impacts, offset, or reduce them to acceptable levels. On the other hand, it is meant for maximizing the positive impacts associated with the project activities.

The ESMP for this project is based on the potential impacts that have been assessed during this assessment stage.

Environmental and social impact analysis plan and mitigation measures will define the responsibilities of contractors and role players towards different environmental and social issues.

The environmental and social impact analysis plan and mitigation measures will also include the actions needed to implement these measures, which is illustrated in the following table.

○ 5.1. Environmental and Social Management Plan[23]

Table 4 Environmental and Social Management Plan

Sup-Project phase	Potential Impact Factor	Mitigation Measure	Personnel / Institution Responsible For Execution[24]	Estimated Cost/ SP
Social and community Impacts				
Implement ation	Child labor/forced labor risk	● Ensure child labor is not permitted; all workers are 18 years old and above as per ESS2 ● Verifying age by checking IDs and other available documents. ● Ensure a Labor Log is available, and all workers are registered. ● Avoid buying raw material from suppliers that employ children through checking the requirements and policies of the primary supplier, reviewing labor conditions and labor log of the primary supplier and communicating the requirements of PWP and UNDP regarding child labor to the supplier. ● Mandatory and repeated training and awareness-raising sessions for refraining child labor. ● Ensure the contractor looks for a different supplier who meets the requirement. ● Training of workers on the Codes of Conduct. All workers to sign Codes of Conduct.	● Resident Engineer ● PWP Safeguard Officer ● Community Committee ● Contractor	N. A

[23] **All The ES mitigation measures are obtained based on WB ESF and WB EHS sector-based guidelines.**

[24] **During Construction Phase, the contractor is responsible for implementing the mitigation measures. PWP field staff/ resident engineer is responsible, monitoring and reporting on ensuring mitigation measures are implemented. During O&M phases, the Local councils and the Beneficiary Committees are responsible for O&M.**

Implementation	Sexual harassment, sexual exploitation and abuse (SEA/SH)	● Mandatory and repeated training and awareness-raising for the workforce about refraining from unacceptable conduct toward local community members, specifically women. ● Informing workers about national laws that make sexual harassment and sexual exploitation and abuse a punishable offense that is liable to prosecution. ● Raise awareness of the GM system and how it can be used to report any SEA/SH cases. ● All workers fully understand and sign the CoC and adhere to it.	● Contractor ● Resident Engineer ● Community Committee ● Gender Focal Point	N.A
	Discrimination against women and persons with disabilities when selecting beneficiaries	● PWP adopts a non-discrimination policy that ensures a non-discriminatory and inclusive manner, including women and persons with disabilities when selecting sub-project. The policy also ensures the inclusion of women in community committees as well. ● Provides opportunities for women and other vulnerable groups to be consulted in a place and time convenient to them and which allows them to freely express their views	● PWP Sub-area Staff ● Community Committee ● Gender Focal Point[25]	N.A
	Lack of workers' awareness and knowledge on respecting local community cultures, and social safeguard issues on SEA/SH	● Implement a systematic awareness campaign to increase workers' awareness of local community tradition and cultures and the need to respect them. ● Contractor and its workers to sign the Code of Conduct.	● Contractor ● Resident Engineer ● Community Committee ● Gender Focal Point	N.A

[25] The Gender Focal Point is responsible for conducting Public Consultation, ensuring women participation in the selection of subproject, consensus on the subproject, site location, establishing Community committees including women representatives, resolving complaints related to GBV, SEA issues and monitoring during construction phases. PWP staff participate in the public consultation, discuss details, raise awareness on SEP, and discuss stakeholder concerns vis a vis the subproject community committee's formation and collection of community data / profiles. Community committee is responsible for raising the awareness between society, helping in solving problem and obstacles, accordingly, supporting the monitoring in sites and helping to solve GRM complaints in site as possible.

Implementation		● Ensure workers respect and adhere to the Code of Conduct (CoC) for the local community's protection and do no harm. ● GM system in place to handle any complaints on, SEA/SH.		
	Financial exploitation of community or beneficiaries	● Inform the beneficiaries that the sub-project is provided for free, and they should not pay anyone to get benefits from the sub-project. ● Prepare and publicize in the community a transparent recruitment procedure. ● Raise awareness among PWP consultants and resident engineers that there is zero tolerance for any cases of financial exploitation. ● Raise the awareness of the community committee, workers, and communities on the GM system and how it can be used to report any financial exploitation. ● Inform consultants, resident engineers, and the community about PWP regulations that make financial exploitation a serious contravention. ● Ensure the GM is operational, and community/beneficiaries receive regular training on how to use it and of its existence, so they feel comfortable using it	● PWP ● Community Committee	N.A
	No latrines near the project site and workers may have to practice open defecation.	● Finishing the existing latrines or constructing well-insulated latrines, hand-washing basins, and supplying them with water and soap. ● In case the presence of women workers, ensure latrines are separated by gender. ● Maintain good housekeeping in rented houses and cesspits.	● Contractor ● Resident Engineer	$700 for the sub-project

		● Ensure soap and water are always present in rented houses with latrines. Ensure any domestic waste is disposed of at designated areas including septic tank and soakaway pits. The selection of septic tanks and soakaway pits will be in coordination with the EPA to ensure waste water will not pollute seawater. ● For women labor, as there are mostly from the same area of work, they use their latrines in their houses. ● Ensure proper housekeeping of latrines		
	No skilled workers in the targeted areas for construction works.	● Skilled workers will be hired from neighboring areas if not available from the targeted area. ● In coordinate with PWP and community committee, the contractor will finish the existing buildings such as guard's rooms and toilets to be used for workers accommodation in terms of minimum space 4m2 per worker. ● provide good canteen and cooking and laundry facilities. ● Allow for regular breaks and provide permanant water supply.	● Contractor ● Resident Engineer ● Community committee	N.A
	Public Health includes risks of public visitors, fishermen and children's access to the worksite	● Install fences, barriers, dangerous warning/prohibition sites around the construction area which show potential danger to public people. ● Place appropriate warning and directional signs at areas where construction is taking place. ● Erect removable barriers ● Limit in coordination with traffic authorities the movement of heavy vehicles on roads/lanes used by the public during traffic peak hours.	● Contractor ● Resident Engineer	N.A

		● implement regular inspection by site guard. ● awareness of the public about risks and hazards at the project construction areas before the commencement on site ● Ensure all types of wastes are removed appropriately		
	Community dissatisfaction by Sub-project activities and Community participation	● Hold public interviews to address concerns/comments about construction and bypass issues. ● Inform public/beneficiaries before activities commencement about GM. ● Install an on-site, identification stand, containing how to communicate GM. ● Ensure that Complaint forms are available on the site.	● PWP ● Resident Engineer ● Community Committees	NA
	Damage to existing infrastructure (phone networks, electricity, etc.)	● Coordinate with local authorities on network lines to avoid their disruption. ● Any damage will be rehabilitated by the contractor. ● Be sure to identify the locations of the ground services extensions and coordinate with the relevant authorities to provide the plans and their delegates to come to the site and put signs on them before starting the excavation work.	● Contractor ● Resident Engineer	NA
	Lack of transparency in the recruitment of workers Failure to recruit workers from the community when the opportunity arises	● Offer employment opportunities to locals. ● Sensitization of communities on employment opportunities ● Raise awareness of the GM system and how it can be used to report any employment-related complaints. ● Implement a transparent and fair recruitment process. ● Training local workers to fill available jobs	● Contractor, PWP, GM Officer	NA

	Non-Functional GM	● GM should be established by the Contractor and PWP ● Inform the public about GM contact information and the method of submitting complaints. ● Details of complaints received should be incorporated into the audits as part of the monitoring process and respond to settle the complaint quickly and accordingly. ● All complaints must be addressed quickly within the timeframe given in the GM	● Contractor ● PWP	N.A
Maintenance phase	Lack of maintenance	The GAF and fisheries associations are committed to maintaining the intervention components/units. Raise the awareness of the fishermen represented by local authorities and communities' committees. Sign an agreement with local authorities and communities' committees to ensure subproject maintenance and sustainability of the project. Inform the beneficiaries about maintenance period and times beforehand and ensure providing alternative sites during maintenance work. Training a maintenance team from fisheries associations. Regular maintenance and inspection should be carried out. Ensure same but relevant mitigation measures from the previous sections will be applied during operation and maintenance activities.	● GAF / Local Authority / Fish Association / Community Committees	

Environmental Impacts				
Implementation Implementation	Air pollution due to dust from activities and gas emissions from machines	● Spray the work area with water regularly to reduce the dust. Water spray should be done efficiently to avoid wasting water. Water spraying can be carried out by using seawater. ● Use dust sweeping methods. ● Avoid working during dust storms and windy days. ● Ensure workers wear masks. ● Material loads must be suitably secured/covered during transportation to prevent the scattering of soil, sand, materials, or dust[26]. ● Properly cover waste during transportation ● Exposed soil and material stockpiles must be protected against wind direction and the location of stockpiles shall take into consideration the prevailing wind direction. ● Maintain machinery in good working conditions to minimize emissions including exhaust emissions of CO, NOx, and fumes. ● Provide adequate protective wear/gear for workers, and equipment must be maintained regularly to avoid any emissions. ● Offer good practice awareness to workers to turn off vehicles and machinery when not in use. ● Ensure turning off vehicles and machineries when not in use to reduce NOx and CO emissions from machineries and vehicles used.	● Contractor	N.A

[26] WBG General EHS Guidelines as good practice references are used during the implementation as Guidelines.

		● Avoid spraying water where electrical live lines are presented		
	Loud noise and severe vibration are caused by machines and vehicles.	● Avoiding or minimizing transportation through or processing material in community areas (like concrete mixing). Machinery must be maintained regularly to avoid exceeding noise emissions from poorly maintained machines. ● Limit noisy activities to normal daylight hours. ● Limit vehicle speed at critical locations (Limits of 10, 15 or 20 mph may be appropriate depending on the vehicles used, site layout and hazards). ● Measures to reduce noise to acceptable levels must be implemented and could include silencers, mufflers. ● Machinery must be maintained regularly to avoid exceeding noise emission from poorly maintained machines. ● Use small equipment	● Contractor	N.A
	Soil and water contamination from accidental oil spills	Properly store all types of waste and hazardous chemicals if any in insulated areas to avoid spillage and away from runoff areas (i.e. paints, and oil) Properly store chemicals (i.e. oil and cement) according to their Material Safety Data Sheets (MSDSs) Ensure oil change, machine maintenance or mixing cement is done at designated insulated areas by concrete away from the soil, water areas, and drains. Store oil and other chemicals (epoxy and cement (in secondary containment. Properly label the chemicals and materials Store oil in well-ventilated area and concrete base	● Contractor ● Resident Engineer	N.A

		Only use trained workers in handling storing and disposing chemicals and materials and disposal should be done via a certified contractor. The selection of the soakaway pit and cesspits are made in coordination with the EPA. Carry out machine maintenance and oil change at service centers if present. Only use well maintained equipment to avoid potential leaks and perform regular maintenance and maintain a machine maintenance log. Oil change and maintenance must be handled by trained personnel. Construction waste should be stored and handled in designated areas away from the soil and water runoff. Avoid working during rainy seasons, and dust storms. Ensure the presence of spill prevention kits in case oil spills occur from machinery used. Provide training on environmental safety measures and hazardous materials and waste management measures. The used oil can be collected and sold to the used oil shops. Carry a spill-prevention kit according to each MSDS and remove any spill instantly. Ensure the presence of spill prevention kits in case oil spills occur from machinery used.		

		Ensure fuel storage sites if present are properly insulated and away from runoff areas and insulated from the soil (concrete base) and fuel is handled, stored and disposed according to its material safety data sheet (MSDSs). Avoid working during rainy seasons. Store oil in secondary containment and well-ventilated area. Properly label the chemicals and materials Only use trained workers in handling storing and disposing chemicals and materials and disposal should be done via a certified contractor.		
	Probability of an archaeological discovery during the activities	● Ensure to stop the work in the discovery area and inform the Antiquities Authority and the local authority. ● Ensure to prevent seizing any archaeological items and deliver them to the Antiquities Authority with an official report. ● Ensure that awareness sessions are held for all workers on the importance of archaeological finds and report any archaeological items that are found during the implementation of project activities.	● PWP ● Contractor ● Resident Engineer ● Community Committee	N. A
	Solid waste produced by workers (trash and plastic bags) accumulates and pollutes the environment and Stones waste accumulation and soil excavation	● Ensure that workers regularly collect all solid trash in enclosed bags stored at inaccessible areas to animals and transport them to the designated landfill or dispose of it in a proper way that does not impact the environment. ● Ensure good housekeeping practices at latrines.	● Community Committee ● Contractor ● Resident Engineer	N. A

		• Ensure no wastes are stored near drainage areas or sewage networks and seawater areas and ensure regular disposal by certified contractors. • Ensure any excavated soil or waste are covered and are stored in areas with very little wind. • An appropriate mechanism was agreed upon for the management of waste resulting from the excavation to be transported to pre-designated areas. Dust residues that may be produced are moved to the designated areas. • Properly covering trucks that transport collected waste to avoid spillage during transportation. • Attach the waste receipt from the relevant landfill authorities. • The Contractor's staff should be trained in waste handling. • Waste management procedures will be added in the tender documents to ensure proper management of waste in the worksites. • Use well-maintained equipment to avoid leakage in the street. • Avoid working during rainy seasons.		
	Temporary disturbance on marine biodiversity and (IBA)birds' life areas	• Conduct works outside sensitive seasons like spawning to avoid impacts. • Ensure all equipment are well-maintained and fitted with fuel spill prevention devices. • Ensure the presence of spill prevention kits.	GAF • Local Authority • Fish Association • Contractor Resident Engineer	N. A

		• Control noise, air and light pollution from project activities to prevent disturbance to marine life according to mitigation measures mentioned in the above sections. • Ensure proper storage, handling and disposal of construction materials, wastes, and potential pollutants. • Provide awareness training to workers on the importance of algal beds and coral reef conservation. • Prohibit dumping of wastes and discharge of untreated wastewater/effluents. • Inform workers that hunting bird collection and trade is not permitted and is punishable. • Monitor and Implement penalties for any bird trapping or hunting and for waste dumping and mismanagement. • Monitor sea life and algae *Sargossum* and *Padina* sp. and implement measures based on results according to EPA guidelines. • Avoid working close to bird nesting sites and during nesting seasons or sensitive seasons and migratory seasons. • Minimize movement of heavy vehicles and equipment during migration seasons. • Prevent littering of plastic bags and other wastes that can entangle or be consumed by birds. • Select soak-away pits and drainage areas and sewage drains and cesspits /septic tanks away from. • Sea water turbidity will be monitored and according to the results, coordination with EPA will be made to ensure proper measures are implemented. • Avoid mixing cement near water areas. • Dust suppression measures must be implemented on site such as using sea water in dust suppression.		

	Hazardous materials/waste	● Ensure proper storage of hazardous materials and wastes. Any potentially hazardous materials or wastes will be stored, handled, and disposed of according to their Material Safety Data Sheets. ● Ensure that hazardous wastes (i.e., oil containers, epoxy etc.) are properly stored and insulated away from drainage areas and runoffs, and water areas /sea zone and managed and disposed of safely and legally. ● Ensure the presence of spill prevention kits and remove spills right away according to guidelines on MSDSs and manufacturer's guidelines. ● Ensure workers do not spend long exposure times to chemicals. ● Ensure hazardous wastes and materials are handled by trained workers. ● Store handle and dispose any chemicals including epoxy and paint away from drain areas and se water areas.	● Contractor ● Resident Engineer	N.A
Operation and maintenance				
Operational and maintenance phase	Liquid discharge to sea water	Establish a liquid waste management plan form all the landing site components and ensure perfect reflection in the intervention designs like for the selling yard, toilets, … etc. Regular maintenance and inspection should be carried out on the septic tank and generator and boats. Ensure providing special containers to dispose the used oil from the generator and give awareness for the locals about its important.	● Community committee, ● Local Authority ● Fish Association	N.A

		Inform the public of maintenance times. aware fishermen about the sensitivity of the marine environment and the importance of not pollute the sea and the suitable ways and places to dispose the liquid waste to its places. Handing the sub-project to the respective local authorities. Sign an agreement with local authorities on the maintenance requirements. Carry out regular biodiversity monitoring and inspection on the status of habitats (seaweed and other organisms present in the area) via snorkeling or diving. This could be done in collaboration with the environmental protection agency (EPA) Carry the construction work outside of biodiversity sensitive seasons (fish spawning seasons etc.) This could be done in collaboration with the environmental protection agency (EPA). • Monitor and Implement penalties for any bird trapping or hunting and for waste dumping and mismanagement. • Monitor sea life and algae *Sargossum* and *Padina* sp. and implement measures based on results according to EPA guidelines. • In coordination with EPA the landing site and EPA to inspect boats and implement fees and penalties on boats with possible risks of damage and oil tank leaks • Implement Emergency response plan and resources for oil/chemical spill containment and cleanup.		

	Disturbance on marine biodiversity and birds life areas	● Proper management of fishermen by using eco-friendly fishing gear and specifying fishing season and managing the carrying capacity of the area. ● Implement a fishing season away from the spawning season and sensitive fish seasons (this can be managed with fish authorities and EPA) ● Raising awareness of fishermen about the importance of marine habitats and measures used for conservation of marine species including the negative impacts of overfishing. ● Encourage the use of mooring anchorage instead of traditional anchors. ● Ensure not disturbing marine habitats that near the landing site shore. ● Carry out regular biodiversity monitoring and inspection on the status of habitats (the organisms present in the area) via snorkeling or diving. This could be done in collaboration with the environmental protection agency (EPA). ● Allow fishing in specific seasons outside of biodiversity sensitive seasons (fish spawning seasons etc.) This could be done in collaboration with the environmental protection agency (EPA) and fishing authority. ● Proper disposal of plastic and fishing gear wastes at designated waste disposal sites ● Regular maintenance and inspection of boats, and equipment for leakage and implement penalties for boats that are not properly maintained. ● Implement penalties for waste dumping by ships and boats and monitor boats in the area.	GAF EPA Community committee, Local Authority Fish Association	

		• Implement Emergency response plan and resources for oil/chemical spill containment and cleanup. • Avoid working close to bird nesting sites and during nesting seasons or sensitive seasons and migratory seasons. • Minimize movement of heavy vehicles and equipment during migration seasons • Monitor and Implement penalties for any bird trapping or hunting and for waste dumping and mismanagement. • Monitor sea life and algae *Sargossum* and *Padina* sp. and implement measures based on results according to EPA guidelines.		
	Air Emissions	• Cleaning regularly the selling yard to avoid the bad odors. • Regularly disposing the organic waste • Carry out regular maintenance on the generator. • Consider the possibility of adding PV system in the future using the operational financial proceeds from the auction hall, motivated by the need to offset costs of generator fuel.	• Community committee, • Local Authority • Fish Association	N.A
	Overfishing and targeting the wrong species	• Aware fishermen about the risk of practice the overfishing and targeting the wrong species. • Aware fishermen about the suitable ways fish catching. • Proper management of fishermen by using eco-friendly fishing gear and specifying fishing season and managing the carrying capacity of the area. • Inform the fishermen about the fishes' seasons and types which are permit at each season. • Aware fishermen about the national laws which forbidden the overfishing.	• Community committee, • Local Authority • Fish Association	N.A

		• Implement regular monitoring on fishermen and strict penalties in case of noncompliance • SFISH includes project components on fisheries management which will empower and capacitate the relevant authority to decide and impose fisheries conservation measures to limit overfishing of depleted fish species.		
	Solid Waste Disposal	● Insert Solid waste management plan form all the landing site components and ensure perfect reflection in the intervention designs like for the selling yard, toilets, … etc. ● Regular maintenance and inspection should be carried out. ● Ensure providing special containers to dispose the solid waste and give awareness for the locals about its important. ● Inform the public of maintenance times. ● Aware fishermen about the sensitivity of the marine environment and the importance of not pollute the sea and the suitable ways and places to dispose the fish gears to its places. ● Handing the sub-project to the respective local authorities. ● Sign an agreement with local authorities on the maintenance requirements. ● Implement beach clean up campaigns and regular clean ups ● Monitor landing sites and implement penalties related to mismanagement of waste. ●	● Community committee, ● Local Authority ● Fish Association	N.A
	High use of water	● Using water-efficient appliances and equipment	● Community committee,	N.A

		● Reusing grey water from sinks, showers, and other sources for flushing toilets and irrigation of treated. ● Installing water meters to monitor using. ● Raise awareness staff on ways to conserve water	● Local Authority ● Fish Association	
	High energy usage	● Energy-efficient appliances and equipment, such as ENERGY STAR-certified products, will significantly reduce energy consumption. These devices are designed to operate more efficiently, using less energy while providing the same level of functionality. ● Enhancing insulation and sealing air leaks will improve energy efficiency by reducing heat transfer and minimizing the need for cooling. ● Using energy-efficient lightening LED bulbs. ● Regular maintenance of energy-consuming systems and equipment will ensure they operate at optimal efficiency levels, reducing energy consumption and waste. ● Raise awareness to workers/fishermen on good energy saving practices	● Community committee, ● Local Authority ● Fish Association	N.A

○ 5.2. The occupational health and safety risk management plan

Table 5 Occupational and Health Safety Plan

Tasks with risk possibilities	Hazard	Risk degree	Risk mitigation measures	Risk degree after	Responsible	Estimated Cost

		H	M	L		H	M	L		
General Requirements (OHS general actions for all activities of the sub-project)	(General): Conduct comprehensive training about occupational and health safety (OHS) aspects before the beginning of the sub-project's implementation by PWP. This includes (hazards associated with the activities., how to use tools properly mitigation measures, and workers' responsibility as well as the disciplinary action against any violation. (General): Weekly repeated awareness sessions on OHS hazards associated with the activities, mitigation measures, and workers' responsibility as well as the disciplinary action against any violation. (General): Workers sign that they have received awareness about the implementation of the activity, and that they understood the special procedures that help mitigate, minimize and avoid potential risks. Conduct daily toolbox talks for workers. Integrate the OHS measures in the activities' detailed implementation plans (DIPs) to ensure the implementation of OHS measures on time. Activation of the Permit to Work (PTW)[27] system for the activities of the moderate and high risk. Ensure the right authorization procedures are in place for the permit to work in the worksites. (General): Ensure maintain occupational health and safety system in the site to protect workers from hazards and risks. (General): Workers sign that they have received awareness about the implementation of the activity, and that they understood risk assessment that help mitigate, minimize and avoid potential risks. (General): Ensure the necessary personal protective equipment (PPE) is always worn by workers and they get it for free. (General): Involving the community committee in the monitoring of safety procedures and reporting any risks. (General): Emergency response plan to be in place with details of the nearest hospital or medical center, responsibilities are understood for all works, first aid boxes are available and a list of trained first aiders is posted and known by all workers.								• Contractor • Resident Engineer • Workers	provide safety equipment for workers 34300 $ 4% from the intervention cost

[27] A work permit is a permit that gives the contractor approval to begin carrying out the activity specified in the permit after reviewing the risks and control procedures for this activity.

	Ensure effective monitoring to the worksites including inspections and spot checks to ascertain compliance with OHS measures. Conduct regular inspections for any unsafe acts, near misses, or accidents. Discover the root causes of any non-compliance cases or/and accidents occurring and suggest the corrective actions to avoid reoccurring. Conduct regular inspections for any unsafe acts, near misses, or accidents. Discover the root causes of any non-compliance cases or/and accidents occurring and suggest the corrective actions to avoid reoccurring. Provide training on handling, storing and disposing cement and any type of chemicals. Wear high rubber boots to protect from snake bites. Ensure no work is conducted during bad weather conditions (i.e., sand storm, dust storm, rainy seasons etc.) In case ladders are used, inspect their stability prior standing on them. In case scaffold are used, inspect their stability and well insulted by competent person prior using it. Ensure proper speed limit and driving safety measures are adhered to including wearing seatbelts. Ensure workers are trained on handling, storing and disposing chemicals including cement and are aware of its health hazards. Additionally, ensure that workers handle and store and dispose chemicals and cement according to its MSDS. Report major accidents to the WBG within 48 hours. Provide life and health insurance to all project workers.		

Rehabilitation and enhancement of selling yard										
Excavation and Backfill Works	Workers fall from the edge of the ’excavated sites. Excavation sides get demolished or soil slides during excavation or excavation residues slide on the worker during excavation. Dust, sand and small parts volatilize while excavating in sandy soil. Limb injury while using drilling and excavation equipment. Exposure to hot sun during drilling causes headaches Misuse of equipment necessary for excavation or removal of waste and the like.		x		Site preparation and proper organization of the stacked material in order to ensure the safety of workers during work. Install warning signs, barricading of working area with safety tapes and fencing to prevent unauthorized access of public and pedestrians to openings, excavation, and backfilling work areas in particular and the work sites in general. Conduct inclined excavation if the soil is collapsible or saturated with water. Also, the sides of the excavation shall be supported with timbering work if required. Use appropriate equipment for levelling and excavation and pay extra attention while using mechanical excavators. Removal of falling blocks objects or sliding soil in any area above the level of excavation in and around the pit. Ensure collection and transportation of the			x	● Contractor / Resident Engineer / Workers	Part of PPEs cost first item

					excavation residues to the designated landfills right away. Safety gloves, dust masks, protective helmets, protective boots and all necessary PPE to mitigate the risks of conducting the activity are to be used by workers at all times on-site. Deposit soil extracted 0.80 meter away from the edges. Allow for regular breaks and provide water. Workers have the option to remove themselves from unsafe working conditions without any reprisals. Ensure barriers and signs are added around excavated areas. Ensure the presence of a flagman for work site arrangement and movement.					
Mixing the concrete materials.	Serious injuries due to contact with cement mixture equipment when it is working. Blisters on the hands due to the cement component impact during the mixing and direct contact with liquid cement.		x		Use of professional labor force to implement activities that are obligatory while mixing and pouring concrete. Use safety gloves while loading, transporting, and distributing stones while building. Long, rubber safety boots, goggles and gloves shall be worn while mixing concrete. Ensure concrete mixture equipment is in			x	• Contractor/ Resident Engineer	Part of PPEs cost first item

					good condition. Workers to be aware of concrete mixture equipment risk and keep a safe distance during its movement and rotation. Locate the cement mixer equipment on firm-level ground to avoid collapse during operation and locate it away from traffic. Provide suitable gloves and masks. Rinse eyes with water if they come into contact with cement dust and consult a physician. • Use soap and water to wash off dust to avoid skin damage. • Wear a P-, N- or R-95 respirator to minimize inhalation of cement dust. • Eat and drink only in dust-free areas to avoid ingesting cement dust For wet concrete, wear alkali-resistant gloves, coveralls with long sleeves and full-length pants, waterproof boots and eye protection. Wash contaminated skin areas with cold, running water as soon as possible. Rinse eyes splashed with wet concrete with water for at least 15 minutes and then go to the hospital for further treatment. Use hand trucks or forklifts when					

					possible. • Lift properly and get a coworker to help if a product is too heavy					
Implementing of Sanitation works, Work in closed or confined spaces (Water Tank or Septic Tank)	• Hands or feet get injured while excavating work. • Dust, sand, and small parts volatilize while excavating in soil. • Breathe the plastic dust emitted from UPVC pipe pieces. • Injuries due to lack of oxygen or toxic gases • Variation in temperature (cold, hot) • Trapping risks inside these places. • Confined space entry and risk of asphyxia				• A permit must be cut issued entering any closed area from the site official to review the safety equipment before starting work in anticipation of any emergency. • Issuance of work permits by the resident engineer to carry out the work. • Workers sign that they have received awareness about the implementation of the activity and that they understood the special procedures that help mitigate, minimize and avoid potential risks. • A proper supervision to ensure OHS measures are in place and access control logbook to record all trained workers working in the confined areas including register of workers names,				Contractor/ Resident Engineer / Workers •	Part of PPEs cost first item

					Location, and working shift, maximum shift time, start time and finish time of entry to the confined areas to ensure safety of workers. • A proper ventilation for confined areas prior allowing any work and gas test to be conducted prior work shift to ensure the areas are free from any toxic and harmful gasses. • Specific PPEs suitable to the type of activity, including provision of self-contained breathing apparatus (SCBA) with oxygen tanks to workers when working inside areas where there is insufficient oxygen with proper training on how to use them properly. • Hire skilled labour to implement these activities. • Ensure the provision of tools for measuring toxic gases and oxygen levels during work in closed or confined spaces. • A suitable lighting shall be provided inside the confined areas during work hours.					

					• Use protective masks while cutting pipes. • Ensure the necessary personal protective equipment (PPE) is provided for excavation workers. • Install temporary fencing around the excavations to prevent falling. • Ensure activity is done by skilled workers. • Ensure no work is conducted during bad weather conditions (i.e., sandstorms, dust storms, rainy seasons etc.) • Ensure limited time spent in confined areas. • Leave the place immediately in the event of an emergency. • Do not use any smoke generators or sources in enclosed spaces. • The presence of an observer outside the closed place permanently during work in anticipation of any emergency situation. • Inspect the tool before use. • Do not use tools with obvious signs of damage. • Maintain the excavation					

					equipment before starting the work to ensure it is in good condition and safe to work. ● Ensure wash facilities are present to clean up after confined space entry.					
Construction of rooms walls, plastering, painting, and floor pouring and tiling.	Falling from height. Injury or severe fractures caused by falling. Blisters on the hands due to direct contact with cement. Chemical inhalation. Injury of the worker's head or construction while transporting stones. Foot injuries while mixing concrete. Eye Injuries while applying plastering scratch or base coat. Injuries of the shoulders and back muscles because of lifting the wrong way or lifting heavy load for long, far distances between the worker and construction. Injuries in hands and feet due to using of hand tools like hammers, and chisels. Misuse of equipment during plumbing		x		Ensure that the stairs or scaffolding are stable and set up on the leveled ground and must be affixed to any stable body with no movement. The used scaffold shall be in excellent condition in addition to ensuring the quality of the shuttering works and scaffolds supported by the supervising engineer. Inspect ladders before usage Wear fall protection devices and hard hats. Use a safety harness working at height. Use safety gloves while loading, transporting, and distributing stones Long, rubber safety boots shall be worn while mixing concrete. Eye protection must be worn to protect the eyes from volatile cement while applying plastering scratch or base coat or braking and forming stones as well as use safety gloves while mixing concrete.			x	● Contractor/ Resident Engineer	Part of PPEs cost first item

	work.									
Installation of pipes lines and plumbing works	Risk due to excavation works for pipes lines. Injuries during the pipe's connection works. Misuse of equipment during plumping work. Traffic Accidents.		x		Hire skilled labor to implement these activities. Follow the mitigation measures for excavation risks mentioned above in the excavation risk part and traffic accidents. Issuance of work permits for confined spaces if applicable. Ensure all drivers have valid driving license and provide training for safe driving practices such as keeping speed limit and adhering to safety belts.			X	• Contractor/ Resident Engineer	Part of PPEs cost first item
Demolition work on the existing walls	Serious accidents/injuries due to demolition works. Working on heights The collapse of demolition works on workers Workers' ignorance of safety hazards at the worksite.	x			Safely remove the damaged parts. Avoid using ladders during demolition works. Inspect ladders before usage. Wear fall protection devices and helmets. Ensure workers are not working during environmentally risky periods (sand storms, rainy periods etc.)			x	Contractor / Resident Engineer /Workers	Part of PPEs cost first item

	Using ladders while Demolition. Using the wrong equipment for the wrong purposes				Workers must keep a safe distance from demolition area and demolition areas must be properly covered. A safe distance must be marked, and signs must be added to alert workers from demolition area risks and distance					
Working at heights	Injury/death - inadequate ladder; inadequate use of ladder; failure to wear fall arrest gears; inadequate scaffold erection; inadequate safe work procedure	x			Use safe scaffolding for working at height and ensure it is according to safety standards and specifications. Check the scaffolding specification before using it and ensure it is according to international safety standards. Inspect ladders before usage. Wear fall protection devices and helmets. Daily check for scaffolding before starting the work at heights to ensure the working platforms with guard- rails, fence, toe-boards are according to safe specifications standard. Ensure the scaffolding is erected to fixed buildings and on safe ground. Using of scaffolds sufficient large to allow safe use and movement and ensure there is sufficient bracing into scaffolds. Determine the allowed loads for use on the platforms to prevent its collapse.			x	Contractor / Resident Engineer /Workers	Part of PPEs cost first item.

					Erecting scaffolds by competent workers. Inspect the scaffolds before starting the work. Issue special permit to work for scaffolds to ensure it is safe to use. Ensure that the stairs or scaffolding are stable and set up on the levelled ground and must be affixed to any stable body with no movement. Use safety harnesses by workers during working at height. Ensure cautious supervision of the workers during working at height. Use safety gloves while loading, transporting, and distributing stones while building. Long, rubber safety boots shall be worn while touching the concrete. Eye protection must be worn to protect the eyes from volatile cement while applying plastering scratch or base coat or braking and forming stones. as well as use safety gloves while mixing concrete. Wearing isolation boots and gloves are obligatory while using the electrical tools. Ensure ladders are stable and provide fall prevention devices.					

					Wear head helmets and fall prevention devices when working from height.					
Dealing with hazardous material and waste	• Skin and eye irritation and allergies from hazardous material such as wet cement and epoxy.		X		Store, handle and depose hazardous material and waste according to their MSDSs. Hazardous materials and wastes should be handled by trained workers. Workers should be provided with proper PPEs. Using local exhaust ventilation systems or open windows/doors to ensure good airflow and reduce inhalation of paint fumes. For tasks with higher chemical exposures, limit the work duration and rotate workers to reduce total exposure. Keep tools and equipment, and their safety features, in good working order. This can be achieved by routine inspection of working equipment.			x	• Contractor / Resident Engineer /Workers	Part of PPEs cost first item

					Select paints with lower VOC content- Use water-based paints instead of solvent-based varieties where possible. Ensure adequate storage and labeling of chemicals items according to safety data sheets helps reduce accidental exposures. Safety goggles help protect eyes against splashes or airborne chemical particles that can cause irritation. Presence of Hand washing and showering after chemical works can remove residual chemicals and reduce dermal absorption. Consider alternative products where possible that do not contain harmful chemicals like aromatic hydrocarbons and lead. Alternative products where possible that do not contain harmful chemicals like aromatic hydrocarbons and lead. Train workers on chemical hazards, exposure symptoms, and safe work practices to minimize chemical absorption and inhalation. Use drops cloths, masking tape, plastic sheets and other coverings to protect					

					floors, walls, furniture and equipment from chemical splashes and overspray. Clean up spills immediately. Restrict access to the painting, and insulation areas to only the workers actively involved in the job.					
Reinforcement Concrete works include reinforcement steel bars installation and concrete pouring (columns, beams, slabs),	Workers fall from height (more than two-meter) which may lead to death or serious injuries. Injuries or serious fractures as a result of reinforcement steel bars placing and concrete pouring. Various typical injuries to the hands during shuttering work and reinforcement steel bars placing. Falling materials from high surfaces on the workers or pedestrians may cause death or serious injuries. Collapsing of working scaffolding, platforms, concrete formwork on the workers or pedestrians may cause death or serious injuries. injuries due using of cutting equipment. Injuries in hands and feet due to using of hand tools like hammers, and chisels.		x		Use safe scaffolding for working at height and ensure it is according to safety standards and specification that ensures the use of rigid materials and the use of redundant fastening systems. Check the scaffolding specification before using it and ensure it is in accordance with international safety standards. Do daily check for scaffolding before starting the work at heights to ensure the working platforms with guard- rails, fence, toe-boards are properly installed in accordance with safe specifications standards. Ensure the scaffolding is erected to fixed buildings and on safe ground. Using of scaffolds sufficiently large to allow safe use and movement and ensure there is sufficient bracing into scaffolds. Check the platforms big enough to allow safe use of equipment and materials, safe passage, clean and tidy.			x	• Contractor/ Resident Engineer	Part of PPEs first item

					Determine the allowed loads for use on the platforms to prevent its collapse. Erect scaffolds by competent workers. Inspect the scaffolds before starting work. Issue special permit to work for scaffolds to ensure it is safe to use. Ensure that the stairs or scaffolding are stable and set up on the leveled ground and must be affixed to any stable body with no movement. Use safety harnesses by workers and guard rails during working at height. Ensure cautious supervision of the workers during working at height. Use safety gloves while loading, transporting, and distributing stones. Long, rubber safety boots shall be worn while touching the concrete. Eye protection must be worn to protect the eyes from volatile cement while applying plastering scratch or base coat or braking and forming stones as well as use safety gloves while mixing concrete. Wearing isolation boots and gloves are obligatory while using electrical tools.					

Implement and install electrical works.	Occupational accidents and incidents caused by electrical work. Injuries during electrical foundation works. Injuries from electrical shocks. Injuries because of stumbling by random power wires. Electric shock and burns from contact with live parts. Injury from exposure to arcing, fire from faulty electrical equipment or installations.	X			Take all safety precautions to address hazards for workers and visitors and the nearby community including safety/warning signage, and safety barriers around the work sites. Train workers regarding avoiding and responding to electric shocks. Provide fully insulated installation tools, instruments, and equipment. Identify buried electrical cable prior the activity. Hire skilled labour to implement these activities. Issuance of work permits by the resident supervising engineer to carry out the work. Ensure adhering to electricity resistant PPEs. Do not work during wet seasons or near wet areas. No loose connections are allowed to avoid fire and other disasters. Power to be cut-off while not working. Properly cables (armored cables) without any joint to be used for electric supply. Cables and wiring should be outdoor and indoor specified for each site. Provide fire extinguishers suitable for use in electrical fires. Ensure skilled workers are hired for these activities. Periodic inspection to ensure that mitigation			**X**	Contractor Resident Engineer Workers	Part of PPEs first item

					measures are implemented and stop any unsafe act or unsafe situation. Provide electrical resistant PPEs including gloves.					
Risk of Lifting Activity such as crane and risk of falling loads	Hazards related to the loads, e.g. crushing due to impact of moving objects or loads falling because they are not aligned properly, or the wrong type of slings were used Hazards from cranes falling over because of improper fixation or strong wind, unsafe loads, loads exceeding the safe weight limits, trapping/crushing risk while working at height, falling from height. Hazards related to poor environment that may interfere with communication between workers or concentration needed for the task (noise) or cause sweaty, slippery objects (heat, poor ventilation) Contact with overhead electrical cables. Risk of High wind speed, Poor communication and poor visibility	X			Close the lifting area with fence to prevent access to the lifting area during lifting work. Install warning Signs in lifting activities site. Carry out lifting work by well trained, qualified, and certified lifting team; and provided means of communication and flagman to spot the movement line and prevent the presence of personnel underneath the lifting tracks. Use well-maintained equipment for lifting that are appropriate for the weight; well, checked and tested by a third party. Secure loads when lifting and use strong and reliable fixation materials to make sure that the load is well tighten and no solid parts falls from the load during lifting. Protect the units against staining, discoloration and other damage until they are installed in their final location. Lifting device capacity shall be 1.65 times the maximum calculated static load at that point.			**X**	• Contractor/ Resident Engineer /Workers	Part of PPEs first item

					An ultimate load shall be ≥ 4 times the maximum static load. Ensure to coordinate with local authority on areas with electricity grids/networks and cables in order to avoid electrical shocks. Prohibit working during rainy periods. Ensure a proper buffer distance (marked with signs and barriers) between workers and lifting areas is kept. Workers are wearing safety boots and helmets					
Working at Night	Poor or insufficient light at project site increase chances of accidents Pushing female to work at night which may lead to increased social risk or conflict in their families etc**.**		X		Use of permit to work for working at night. No more than 4-6 hours of work per day are allowed during night as per the legislation and LMP. Work hours are limited to the approved 8 hours per day that can be done in one shift at night or divided into two shifts (day and night times) 4 hours each for each shift according to the local law. Workers are voluntarily agreed to work at night and proper permit are in place. Ensure proper supervision and supervisors are in place. Ensure proper lights with adequate distribution are installed at project site.			X	• Contractor/ Resident Engineer /Workers	Part of PPEs first item

					Ensure work site is properly secured and in/out is fully controlled. Ensure activities conducted at night are not high risk. Provide head lights to all workers at project site. Install reflective /Florescent signs around the work areas. Ensure proper PPEs are provided for workers, including reflective vests, etc. Ensure supervisors are available at all times. No alone worker is allowed at night. Ensure GM system is place and awareness are given to all workers and they sign the code of conduct. Raise awareness on risks of working at night with all workers. Ensure Emergency Response Plan is in place. Ensure Communication means are in place. No female worker is permitted to work at night at any outdoor interventions.					

OHS from Planting native non-invasive trees	Tree planting OHS risks from injuries, blisters and other injuries while planting trees		X		Provision of dust masks to workers Workers to wear protective gear i.e. safety boots, safety helmets, reflector jacket, gloves etc Train workers on safe tree planting techniques Use organic fertilizers such as green manure			X	• Contractor/ Resident Engineer /Workers	Part of PPEs first item
Manual Handling	Risk of heavy, Bulky, or unwieldy load Risk of Unstable/ unpredictable loads Risk of PPE clothing hindering the movement or posture Risk of poor communication on safety between workers Risk of workers' back injuries due to wrong manual handling.		**x**		Avoid the need for unnecessary manual handling as possible when suitable equipment is present. Reduce the load risk by using lighter weights or more stable containers. Reorganize the activity to further reduce the impact on the individual(s). Utilize mechanical lifting aids or equipment as appropriate. Ensure appropriate rest breaks, job rotation, and training are involved. Raise awareness to workers on safe lifting techniques to avoid back injuries. Provide personal protective equipment (e.g., gloves, foot protection, and non-slip footwear). Ensure trained workers are dealing with cement and wearing proper PPEs including gloves, goggles and masks			**x**	• Contractor • Resident Engineer • Workers	Part of PPEs first item

					Provide training for workers on handling and storing any hazardous substances and materials					
Transfer of equipment, workers and **materials**	Road accidents from bad driving Traffic accidents during transportation of the needed materials and equipment Likely traffic accidents (collision) between moving vehicles. Falling workers from vehicles during moving. Falling vehicles or equipment into excavations.		**x**		Ensure drivers are aware of good driving practices such as wearing seat belts and maintaining speed limit. Ensure drivers have formal licenses to drive this type of trucks. Avoiding or minimizing transportation through night hours. Machinery must be maintained regularly to avoid traffic accidents. Conduct as much work as possible during low traffic periods. Emphasis on safety aspects among drivers Daily inspection and maintenance for the vehicles by the contractor to ensure they are in good condition prior to starting the work. Provide traffic signs in the worksite, especially for speed limits, routes directions, parking places, entrance and exits, pedestrians' walkways, and worksite warnings signs. Warning signs for vehicles should be added at a safe distance from work site to warn drivers to slow down prior to reaching the work area. Stop the movement of vehicles in worksite in			**x**	• Contractor • Resident Engineer • Workers	Part of PPEs first item

					bad weather conditions to avoid collision. Provide the worksite with barriers in the road edges to protect workers and vehicles from falling. Arrangement and control of the worksite entrance and exits, and not allow for unauthorized person or vehicles enter the worksite. Limit vehicle speed at critical locations (Limits of 10, 15 or 20 mph may be appropriate depending on the vehicles used, site layout and hazards).					
Operational phase	General occupational health and safety procedures for workers during operation including risks of fires from generators and hygienic practices		**x**		Require appropriate personal protective equipment (PPE) like cut-resistant gloves, goggles, aprons, and dust masks. Enforce proper use of PPE at all times. Provide hand washing stations and hand sanitizers for workers. Employees in hazardous facilities should be trained in accident prevention, first aid, emergency response, and reporting protocols. Raise awareness on good hygienic practices. Ensure the presence of fire extinguishers. Ensure presence of fire signs with details on how to use extinguishers. Train facility workers on using fire extinguishers and how to react in case of fire.			**x**	Community committee, Local Authority Fish Association	N.A

					Awareness programs should focus on providing the trainee with the knowledge that illustrate the benefits of proper fish handling and its impact on health and economy. Other programs could also help fishermen to acquire and build necessary skills and good practices to raise quality and reduce manifestations of fish spoilage according to scientific and health standards with high efficiency. Follow same practices for confined space entry present in the construction phase. Ensure proper washing areas are present for confined space entry and hazardous waste handling and disposal in the construction phase.					

6. Environmental, Social, and OHS Clauses and Liabilities for Contractors:

a. Conditions for the Eligible Contractors:

1. Provision of adequate and suitable equipment for the activities of the subprojects
2. A financial capability that ensures the subprojects will be executed and completed as per agreed terms and conditions.
3. Provision of health and life insurance policies for the workers as a condition of signing the contracts.
4. The OHS tools should be provided with acceptable quality according to the BOQ with conducting training for the workers. These materials should be conditional for the handover of the site to the contractors.
5. Contractors are fully responsible for any accident or incident that may occur.
6. Contactor's strict compliance with the ban on the use of explosives.
7. Contractors and contractors' site representatives have undertaken OHS training and are fully aware of the risks, mitigation measures, and responsibilities.
8. Contractors should abide by the principle of non-discrimination in all aspects of employment.
9. Banning the use of explosives should be enforced and monitored.
10. The contractor will be terminated if they do not comply with the E&S and OHS mitigation measures during implementation.
11. Contractors shall ensure compliance with the Code of Conduct in the contract.

b. Environmental and Social Clauses for Contractors:

The contractors shall supply and execute the necessary works on-site to mitigate the environmental and social impacts of the subproject in accordance with the bidding and contractual E&S requirements. The Environmental and Social Clauses for Contractors should at least reflect the following but not exhaustive items:

1. Worker Health and Safety:

To avoid work-related accidents and injuries, the contractors will:

1.1 Provide occupational health and safety training to all employees (including the contracted community workers if any) involved in the works.

1.2 Provide protective masks, helmets, overalls and safety shoes, and safety goggles, as appropriate.

1.3 Provide workers in high noise areas with earplugs or earmuffs.

1.4 Ensure availability of first aid box.

1.5 Provide employees with access to toilets and potable drinking water and soap.

1.6 Train workers regarding the handling of hazardous materials and storing and managing hazardous materials

2. Labor Management Plan:

the contractor is responsible for all sub-contractors and suppliers working under him and ensuring that they met the requirements of the national law and the ESF.

The estimated/planned number of labors for rehabilitation and enhance Al-Ordhy Landing Site is **109** (33%) skilled and **218** (67%) unskilled labor[28] (Skilled workers which will be present according to activities) which will be working according to implementing activity during the project life in which the expected life project contracts will be twelve months, it is expected the skilled laborers will not be given accommodation. The contractor shall ensure that all workers are hired formally with proper contract, in accordance with national regulation, ESS2, and the LMP. In which the contractor is responsible for the following:

2.1 Wages and Deductions: The contractor shall be in line with the current market rates paid for skilled, semi-skilled, or unskilled labor. Also, the daily rates could differ from one governorate to another; hence, they should be equivalent to the wages paid in the specific location. PWP field staff shall monitor and ensure the contractor pays all workers males and females based on market rates in the area.

2.2 Child Labor and Forced Labor: Ensure all workers are 18 Years old and above, and no child, forced, involuntary or unpaid labor will be used in any work.

2.3 There will be no discrimination in the wage rates between males and females for that there will be no forced labor employed.

2.4 Labor influx: The contractor should use workers from the local communities as possible. Some parts of the activities include special works that require skilled labors, these tasks may undertake by appropriately skilled workers from the targeted areas and when not available, the contractors may hire skilled laborers from nearby areas.

2.5 Sexual Exploitation and Abuse (SEA)/Sexual Harassment (SH): The contractor and its workers should sign the Code of Conduct (CoC) and ensure workers respect and adherence to the Code of Conduct for the local community's protection and do no harm. Ensure that workers respect local community cultures, and social safeguard issues on Gender, SEA/SH. Raise awareness of the GM system and how it can be used to report any SEA/SH cases.

2.6 Community Health and Safety: The contractor shall protect the local communities from any risks that might be generated during the implementation as mentioned in the OHS plan above.

2.7 Occupational Health and Safety (OHS): The contractor shall maintain occupational health and safety system on the site to protect workers from hazards and risks and provide

[28]The total labour force will be distributed according to work activities during 12 months of each subproject. The estimated working days in the sub-project are 250 working days, with 6 working days per week and 8 hours of work per day

adequate health and safety training[29], required PPE, first aid box, toilets and potable drinking water, and as mentioned in the OHS plan above.

2.8 Overtime Work: The contractors shall provide workers basic wages per hour of overtime on normal working days and on the day of weekly rest, and official holidays and leave, in addition to the entitlement to standard wages for such holidays according to the Yemeni Laws.

2.9 Gender and Social Inclusion: Contractors to adopt a non-discrimination in job opportunities during the implementation to ensure a non-discriminatory and inclusive manner, including women, as mentioned in this Environmental and Social Management Plan.

2.10 Training of workers: PWP staff and Contactors shall provide the workers with required training and daily toolbox talk in the OHS, , SEA, GM, and as mentioned in the Environmental and Social Management Plan.

2.11 Addressing worker grievances: Contactors shall provide the worksite with a GM system for all workers (contracted workers) including providing the complaints box and the project board with complaint means. The mechanism will also allow for anonymous complaints to be raised and addressed. Training on handling grievances in a positive manner shall be provided to the contractor. Ensure that workers are aware that grievances will be handled positively. Contractors, resident engineers, and community committees are trained to handle grievances in a positive manner

3. Supply and implement roadblocks and traffic signs to prevent the entry of non-workers to work sites (zinc - timber - concrete blocks - warning tapes - traffic signs).
4. Conduct work section by section and keep enough access to spaces for fishermen for the remaining functioned parts of the landing site.
5. Assign a permanent safety supervisor to follow up the implementation of an environmental and social management plan as well as OHS requirements during the implementation of work activities at the site
6. Apply a safety work permit system for all working activities at the site to ensure full implementation of ESMP and OHS requirements.
7. Supply of personal safety equipment and tools including boots, helmets, gloves, goggles, masks, earplugs, safety belts, air breathing apparatus, full body harness etc. in quantities enough for all laborers at the expense of the contractors and ensure the adherence of using by all.
8. Provide first aid boxes in the worksites (as per the emergency response plan) which contain (adhesive plaster of different sizes - sterile gauze - scissors – disinfectant- forceps - etc.).
9. Provide a contingency plan containing the names and numbers of the nearest health center and local assistants, the routes to be used, and the means of transport.
10. All necessary PPEs gears required for the job are distributed to each worker who will be participating in the implementation.

[29] This project will be implemented by national / traditional contractors. However, the contractor will be responsible for providing training and PPEs for each worker

11. Provision of water for these bathrooms and or trenches with covers and obliging all workers and supervisors to use them.
12. Separate the material and store them accordingly and provide enough space for movement and maneuvering.
13. Removal of all waste during the implementation period to a dedicated location outside the work area (allocated landfills) and following the instructions of the consultant.
14. Commit to placing disturbing equipment away from populated places, not at accessible zones for the community, nor at sensitive zones and watercourses, and operating them at the appropriate times.
15. Commit to storing hazardous materials away from workers and not to change oils or leave grease residue in the work area.
16. Commit to the repair of public services (electricity, telephone, water, sewage) that are broken during the implementation of the project.
17. Report immediately severe accident or injury occurring during the execution of the work and within a maximum period of 24 hours to the UNDP and in 48 hours to the WBG..
18. Conduct awareness sessions about OHS before the beginning of work by the contractors this includes hazards associated with the activity, mitigation measures, workers' responsibility, GM, sexual harassment, abuse, and gender-based violence as well as the disciplinary action against any violation.
19. The contractors shall adhere to the use of the Permit to Work system (PTW) for all activities and ensure all workers are aware of the system.
20. Contractors must address the risk of gender-based violence, through:

    Mandatory and repeated training and awareness-raising for the workforce about refraining from unacceptable conduct toward local community members, specifically women.

    20.1.1 Informing workers about national laws that make sexual harassment and gender-based violence a punishable offense that is prosecuted.

    20.1.2 Introducing a Worker Code of Conduct as part of the employment contract, and including sanctions for non-compliance (e.g., termination)

    20.1.3 Adopting a policy to cooperate with law enforcement agencies in investigating complaints about gender-based violence.
21. Contractors must not employ workers below the age of 18 and must ensure verification of documents is conducted before hiring.
22. Provide proof of insurance for all laborers, including the third party, before the implementation of the project.
23. Commit to not use any type of explosive materials for the extraction of stones required for the project or any relevant works.
24. Movement of Trucks and Construction Machinery: The Contractors moving solid or liquid construction materials and waste shall take strict measures to minimize littering of roads by ensuring that vehicles are loaded in such a manner as to prevent falling off or spilling of construction materials. This could be done by sheeting the sides and tops of all vehicles carrying mud, sand, other materials, and debris. Debris should be transferred to assigned places in the landfill.
25. Traffic Safety Measures: The Contractors shall provide, erect, and maintain such traffic signs, road markings, barriers, traffic control signals, and other measures as may be necessary for ensuring traffic safety around the rehabilitation site. The Contractors shall not commence any

work that affects the public motor roads and highways until all traffic safety measures necessitated by the work are fully operational.

26. Gas, Noise, and Dust Control: The Contractors shall take all practicable measures to minimize nuisance from noise, vibration, and dust caused by heavy vehicles and construction machinery. This includes:

- Respecting normal working hours.
- Maintaining equipment in a good working order to minimize extraneous noise from mechanical vibration, creaking, and squeaking, as well as emissions or fumes from the machinery.
- Shutting down equipment when it is not directly in use.
- using operational noise mufflers
- Provide a water tanker and spray water when required to minimize the impact of dust.
- Limiting the speed of vehicles used for construction.
- Environmental training on machinery efficiency, the importance of maintenance, transportation efficiency and good practice usage of machinery in order to mitigate impacts from dust, gas, noise and climate change.

27. Protection of the Existing Installations: The Contractors shall properly safeguard all buildings, structures, works, services, or installations from harm, disturbance, or deterioration during the concession period. The Contractor shall take all necessary measures required for the support and protection of all buildings, structures, pipes, cables, sewers, and other apparatus during the concession period and will be required to repair any damage that may occur, in coordination with the Municipality and the relevant authorities.
28. Working in rainy seasons is not allowed where there is a risk of flooding, endangering workers or equipment.

c. Environmental and Social Liabilities for Contractors

Contractors will be legally and financially accountable for any environmental or social damage or prejudice caused by their workers and it is thus expected that controls and procedures are put in place to manage environmental and social performance. These will include:

- Mitigation measures to be included in the contract will be specified in the subproject bidding documents.
- Deductions for environmental noncompliance will be added as a clause in the Bill of Quantities (BOQ) section.
- The contractor should fully comply with all instructions; otherwise, according to the contract documents, suitable sanctions should be applied depending on the severity of the expected risk from this noncompliance, such as alert, final alert, and termination of the contract.
- Environmental penalties shall be calculated and deducted in each submitted invoice.
- Any impact that is not properly mitigated will be the object of an environmental/social notice by PWP.
- Any action from the perspective of PWP is severing and can cause a huge impact on the occupational health and safety, in the environment or in the social aspects, PWP has the power to terminate the contractor's contract, but the contractor in the black list, and Warranty confiscation.

- For minor infringements and social complaints: if an incident occurs, that causes temporary but reversible damage, the contractors will be given the notice to remedy the problem and restore the environment. No further actions will be taken if the PWP project engineer confirms that restoration is done satisfactorily.
- For social notices, the PWP project engineer will alert the contractors to remedy the social impact and to follow the issue until solved. If the contractor does not comply with the remediation request, work will be stopped and considered under no excused delay.
- If the contractors have not remedied the environmental impact during the allotted time, the PWP will stop the work and give the contractors a notification indicating a financial penalty according to the non-compiled mitigation measure that was specified in the bidding document. No further actions will be required if that restoration is done satisfactorily. Otherwise, if Contractors have not remedied the situation within one day any additional days of stopping work will be considered no excused delay.
- In the event of repeated non-compliance totaling 5% of the contract value, the Project Engineer will bring the environmental and social notices to the PWP procurement to take legal action.

7. Environmental and Social Monitoring Plan

This section is to highlight the systematic measurements of key environmental indicators over a specific time within the targeted landing site. The main aim of the monitoring plan is to provide the information required to ensure that the project implementation has the least possible negative environmental impacts on the people and environment arising from the construction and operation of project facilities. Monitoring measures should be regular and performed over a long period of duration. The monitoring plan will clearly indicate the linkages between impacts identified in the ESMP report, measurement indicators, detection limits (where appropriate), and definition of thresholds that will signal the need for corrective actions.

The implementation of the mitigation measures will be monitored through daily checks by the supervisor engineers, daily by resident technicians, biweekly by the OHS/SES staff at the branches as well as monthly visits by PWP subareas managers. The roles and responsibilities of each responsible personnel are as follows:

- Gender Focal Point: is responsible to monitor the implementation of measures under the gender action plan, including those related to gender equity, gender discrimination, , SEA, women workforce, beneficiaries' awareness, and GM
- Safeguard Specialist: is responsible to monitor all the safeguards process (as a general supervisor) as detailed in the ESMP and other ES documents, including SEP, and ensuring their compliance.
- GM Officer: is responsible to monitor the GM processes, including awareness raising, receiving complaints and following up, and reaching closure.
- Resident Engineer: Conducts the daily monitoring and guarantee the compliance in the field in subproject bases.
- Community Committee: support in monitoring and solving the problems if any, support in raising the awareness of the community, monitor the community inclusion and Community satisfaction.

- Subarea Staff: follow up the compliance in sites and ensure everything is implemented according to the ESMP.

  Following aspects will be monitored (though the list will keep updated to accommodate any emerging issues or updated aspects that may be recommended by the monitoring reports.

Table 6 Monitoring Plan

Action	Monitoring Methodologies and Indicators	Responsible[30]	Timeframe
Community Health and safety			
Contractor and their workers are aware to respect the local community's protection and do no harm.	**Methodology**: ● Provide awareness-rising. ● GM system in place. ● Contactor and its workers to sign the COC. **Indicators**: ● 100% of contractors, and their workers signed the Code of Conduct (CoC) ● The number of complaints received.	● PWP Safeguard ● Contractor ● Resident Engineer ● Gender Focal Point	● Before the commencement of work ● biweekly
Knowledge of the local community, the community committee, and workers about the GM, as well as the contact numbers.	**Methodology:** ● Provide a complaint box, awareness-raising, Signboard with GM contact details in place and brochures distributed. **Indicator:** ● The number of awareness-raising. ● Presence of sign board with GM contact details ● The number of complaints	● Sub-area Staff ● Resident Engineer	● Within one week before commencement of work ● Bi-weekly

[30] **The indicators are shared between the Responsible agencies, some of them are the responsible for implement the action and others are responsible for monitoring the actions' implementation according to the level of the position.**

Action	Monitoring Methodologies and Indicators	Responsible[30]	Timeframe
Regular awareness sessions to community members, the community committee, and workers about the use of GM	**Methodology:** ● Awareness records **Indicator:** ● Number of awareness session.	● Resident Engineer	● At the onset of subproject ● Regularly
Public safety during the construction work	**Methodology:** ● Visual observation and photos ● Visitor log **Indicator:** ● Number of recorded injures. ● Number of awareness sessions for community ● Visitor log compliance	● Resident Engineer ● Contractor	● Daily
Community satisfaction	**Methodology**: ● Grievances ● Surveys and Interviews **Indicator**: ● Number of grievances raised and types ● Number of resolved complaints ● Number of accidents ● Results from satisfaction surveys and interviews	● Community Committee	● Monthly

Action	Monitoring Methodologies and Indicators	Responsible[30]	Timeframe
No child labor or forced labor is permitted, and workers must be 18 years or older. Avoid buying raw material from suppliers that employ children.	**Methodology**: ● Verifying age by checking IDs and other available documents ● Ensure a Labor Log is available, and all workers are registered ● Visual inspection ● Employment documents for suppliers inspection Documentation reviews ● Age verification from the IDs ● **Indicator**: ● Number of child labor (employed/ used or number of recorded workers under the age of 18 ●	● Contractor ● Resident Engineer ● Community Committee	● Daily
Involvement of the community in the monitoring of the implementation of the sub-project and reporting any findings	**Methodology**: ● Disclosure of project activities with designs ● Using GM system **Indicator**: ● No. of GM complaints from the community ● The number of resolved complaints	● Community Committee ● Sub-area Staff ● Resident Engineer	● Daily

Action	Monitoring Methodologies and Indicators	Responsible[30]	Timeframe
Ensure non-discrimination and inclusion of women and persons with disabilities when selecting beneficiaries	**Methodology**: ● The beneficiaries of the project **Indicators**: ● Number of women beneficiaries during consultations versus men ● Number of women and men in community committees ● Number of GM complaints regarding discrimination and solved complaints	● Gender Focal Point ● Sub-area staff ● Resident Engineer ● Safeguard Specialist ● Community Committee	● Before the commencement of work ● During the implementation
Ensure no financial exploitation of communities or beneficiaries.	**Methodology**: ● GM complaints ● Awareness sessions **Indicator**: ● Number of GM complaints regarding financial exploitation	● Sub-area staff ● Resident Engineer ● Safeguard Specialist ● Community Committee	● Weekly ● Monthly
Monitoring and reporting SEA/SH complaints and GM cases related to SEA/SH, are well treated and mitigated quickly.	**Methodology**: ● Provide GM system **Indicator**: ● Number of recorded grievances and ● Number of resolved complaints	● Gender Focal Point ● Safeguard Specialist ● GM Specialist	● Weekly

Action	Monitoring Methodologies and Indicators	Responsible[30]	Timeframe
		• Resident Engineer	
Ensuring awareness is raised regarding SEA/SH among all the community. Ensure laws are known for any violations	**Methodology**: • Use of Photos • Provide an awareness session about punishing violations. **Indicators**: • Number of awareness sessions • Number of SEA/SH cases	• Gender Focal Point • Resident Engineer • Community Committee	• Monthly
Hire of skilled workers from neighboring areas if not available from targeted area.	**Methodology**: labor log **Indicators**: Number of skilled workers from the targeted area and neighboring	• Resident Engineer • Community Committee • Contractor	• Monthly
Ensure temporary latrines are available for both men and women. Ensure regular cleaning.	**Methodology**: • Locating Gender-Specific latrines. • Visual inspection **Indicators**: • latrines are available with signs according to gender.	• Resident Engineer • Contractor • Community Committee •	• Weekly

Action	Monitoring Methodologies and Indicators	Responsible[30]	Timeframe
Ensure public health and that the public and children do not have access to the work site.	**Methodology**: ● Install appropriate fencing, barriers and warning signs. ● security personnel or monitoring systems. ● Visitor log. **Indicator**: ● fences, barriers and warning signs are intact. ● Security performance. Visitor log compliance	● Resident Engineer ● Contractor ● Community Committee ●	● Weekly
Environmental Impacts			
Soil contamination	**Methodology**: ● Visual inspection and photographs **Indicator**: ● Change in soil color ● Presence of waste outside designated zones ● Number of complaints from locals	● Resident Engineer ● Contractor	● Daily
Monitor improper waste management by visual inspection	**Methodology**: ● Grievances system related to waste mismanagement. ● Periodic inspection for non-compliance with waste storage	● Resident Engineer	● Daily

Action	Monitoring Methodologies and Indicators	Responsible[30]	Timeframe
	● waste receipt inspection **Indicators**: ● Number of non-compliance with waste storage and handling ● Number of times waste was improperly accumulated, or wasted was recorded and stored outside a designated area ● Number of grievances related to waste mismanagement ● Presence of waste receipt and dates		
air pollution, gas emissions, noise, waste, and traffic management	**Methodology**: ● Complaints records. ● Visual inspection **Indicators**: ● The presence of fumes /dust observed ● Presence of Road debris ● Number of society complaints on the air quality, noise level or waste at work site	● Resident Engineer	● Daily
Hazardous materials and wastes storage	● Methodology: ● Visual and photographic and waste receipt ● inspection	● Resident Engineer ● Contractor	● Daily

Action	Monitoring Methodologies and Indicators	Responsible[30]	Timeframe
	• Indicator: • Number of times hazardous materials and waste were recorded outside designated zones • Visible soil leak • Presence of waste receipt • Presence of proper label on materials		
Ensure that the place is free of any artifacts or archaeological features.	**Methodology**: • Visual inspection during survey work • Screening of excavated soil **Indicator**: Presence of stone, ceramic or glass artifacts, unusual soil types, holes, or human remains.	• Contractor • Resident Engineer • Community Committee •	• Monthly
Biodiversity (IBAs)risks.	**Methodology:** • Inspection/site visits • Raising awareness of fishermen • Conduct habitat surveys before and during works **Indicator:** • Significant change in species structure and composition including birds. • Presence of dead animals. • Number of spill events.	• Resident Engineer • Contractor • Community committee • EPA	• Monthly

Action	Monitoring Methodologies and Indicators	Responsible[30]	Timeframe
	Compliance with habitat areas restrictions Sea water indicators above legal limits (high turbidity, high contamination from boat spills) Number of non-compliance and hunting events recorded. Number of penalties on fishermen and boats.		
Occupational health and safety			
- Permit to work (PTW) which is a formal documented system used in PWP sub-projects to control any risk within work activities to ensure the safe execution of work onsite.	**Methodology**: ● PTW records **Indicators**: ● Number of PTW ● Records of non-compliance with OHS requirements during project activities. ● Number of incidents	● Contractor ● Resident Engineer ● PWP safeguard	Daily
Adherence of contractor to permit to work system for activities as identified by the risk assessment[31] and ensuring all safety measures for the task are in place	**Methodology**: ● Issuance of the permit to work **Indicators**:	● Contractor ● Resident Engineer	Daily as required

[31] **Risk assessment should be undertaken once in the project cycle and when its required as when we have new activities in the subprojects or when a severe accident happens, in which the risks and their mitigation measures should be attached with sub-project documents.**

Action	Monitoring Methodologies and Indicators	Responsible[30]	Timeframe
	● Number of issued permits of work and safety measures with the type of work ● Number of incidents/ accidents recorded and type	● PWP safeguard	
Occupational Health and Safety Hazards. Availability of the correct type of PPE and the adherence to proper use of PPE by all workers.	**Methodology**: ● Recipient PPE record. ● Visual inspection **Indicators:** ● Number of PPE distributed. ● PPES check list ● Number of accidents/ incidents and injuries	● Contractor ● Resident Engineer ● PWP safeguard	● daily
All OHS requirements for the sub-project are identified and available in the workplace.	**Methodology**: ● Incorporating OHS requirements into project documents. ● OHS inspections and audits **Indicators:** ● Number of incidents and types ● The record of injuries in project reports	● Subarea Staff ● Resident Engineer	● Daily as required
Workers' awareness of the safety requirements is conducted	**Methodology**: ● Awareness sessions records ● Visual observation and photographic documentation	● Resident Engineer	● Weekly

Action	Monitoring Methodologies and Indicators	Responsible[30]	Timeframe
	Indicator: ● Number of awareness sessions for workers. ● Number of injuries		
Occupational Health and Safety Hazards	**Methodology**: ● Availability of the correct type of PPEs and the adherence to proper use of PPE by all workers **Indicators**: ● Number of workers adhering to the suitable PPEs ● Number of injuries accidents and details on recovery	● Contractor ● Resident Engineer	● Daily
Workers' satisfaction	**Methodology**: ● Workers' grievances system **Indicators**: ● Number of workers' grievances and type ● Number of resolved grievances	● Contractor ● Resident Engineer	● Weekly
Involving the community committee in the monitoring of safety procedures and reporting any risks	**Methodology**: • Conduct joint inspections • Respond to issues raised **Indicators**: • Regular meetings and inspections with the community	• Community Committee • Resident Engineer • Contractor	● Daily

Action	Monitoring Methodologies and Indicators	Responsible[30]	Timeframe
	Number of risks/hazards identified by community committee	• Safeguard Specialist •	
Conduct regular inspections for any unsafe acts, near misses, or accidents.	**Methodology**: • Routine inspections of the worksite, tools, equipment and worker tasks • Near miss reporting • Accident/injury reporting **Indicators**: • Number of unsafe acts or at-risk behaviors • Rate of near miss reports Severity of injuries	• Resident Engineer • Contractor • Community Committee • Safeguard Specialist •	• Daily
Tools and equipment are to be regularly maintained and inspected to ensure they are of acceptable quality and in good working condition for the required activity	**Methodology**: • Periodic visual inspection of tools and equipment • Periodic Maintenance Inspection on maintenance log **Indicator:** • Results of the periodic report Number of maintenance performed on tools	• Resident Engineer • Community Committee • Contractor • Safeguard Specialist •	• Monthly

Action	Monitoring Methodologies and Indicators	Responsible[30]	Timeframe
Organizing the movement of equipment and vehicles at the project site	**Methodology**: • Define routes. • Enforce safe speed limits • Scheduled movements **Indicator**: • Worksite map showing clearly defined routes Number of near miss incidents Number of accidents	• Resident Engineer • Contractor • Community Committee • Safeguard Specialist •	• Daily
All construction works are to be conducted during daylight and no work is to be done at night	**Methodology**: • Define work hours • Supervisor monitoring • Timesheet reviews **Indicator**: • Zero confirmed incidents of out-of-hours work occurring No discrepancies found in timesheet reviews	• Resident Engineer • Contractor • Community Committee • Safeguard Specialist •	• Daily
Manual handling	**Methodology**: • Mechanical aids • Safe work procedures for manual handling tasks	• Resident Engineer • Contractor	• Daily

Action	Monitoring Methodologies and Indicators	Responsible[30]	Timeframe
	• Monitoring Completeness and functionality of mechanical lifting aids • Adherence to safe work procedures observed during monitoring **Indicator**: Number of incidents Number of workers not adhering to proper PPE Presence of PPEs and safety tools in place	• Community Committee • Safeguard Specialist •	
An emergency response plan with details of the nearest hospital or medical center shall be in place and responsibilities are understood by all workers. First aid boxes are available and a list of trained First aiders is posted and known by all workers	**Methodology**: Photos and site inspection **Indicators:** • Emergency plan banner in the site photo • Photo for the first aid box on site • Photos that reflect workers' training in the emergency plan and the first aid. • Photo for the first aid box on site	• Contractor • Resident Engineer • Safeguard Specialist	• From the beginning of the implementation
Inspections are conducted to verify the safety measures are in place and documented	**Methodology**: • Forms and reports filled in every visit **Indicator**:	• Sub-area Staff • Resident Engineer	• Daily •

Action	Monitoring Methodologies and Indicators	Responsible[30]	Timeframe
	● The number of problems found/noncompliance		
Severe accidents and incidents are reported to head office within 24 hours and communicated to UNDP and within 48 hours to the WBG	**Methodology**: ● Accident and injuries reports within 24 hours **Indicators**: ● Number and types of accidents, and injuries reported and recorded and time of reporting ● Number of reported accidents within 24 hours to UNDP and within 48 hours to the SBG versus the number of reported accidents after 24 hours to UNDP and after 48 hours to WBG	● Safeguard specialist ● Resident Engineer	● within 48 hours
Ensure all activities that require specific skills are done by skilled workers.	**Methodology**: ● Labor data with skill level **Indicator**: ● Number of skilled workers, and type of work	● Resident Engineer	● Daily
Tools and equipment are to be regularly maintained and inspected to ensure they are of acceptable quality and in good working condition for the required activity	**Methodology**: ● Periodic inspection of tools and equipment **Indicator:** ● Results of the periodic report Number of maintenance performed on tools	● Resident Engineer	● Monthly

Action	Monitoring Methodologies and Indicators	Responsible[30]	Timeframe
All construction works are to be conducted during daylight and when required night works are allowed	**Methodology**: • Using GM system **Indicator**: • No. of GM complaints and number of resolved complaints Presence and number of workers on site	• Resident Engineer • Community Committee	• Daily
Ensure the necessary personal protective equipment (PPE) is always worn by workers and they get it for free	**Methodology**: • Implement appropriate controls to eliminate or minimize risks, inspections to identify any new hazards **Indicators**: • Number of hazards identified • Percentage of risks controlled Inspection findings Presence of PPEs Number of workers not adhering to PPEs	• Contractor • Resident Engineer • Workers • Community Committee • Safeguard Specialist •	• Daily
Working at height	**Methodology**: • PTW records • Recipient PPE record. • Visual inspection **Indicator**:	• Resident Engineer • Contractor	• Weekly

Action	Monitoring Methodologies and Indicators	Responsible[30]	Timeframe
	● Number of PTW ● Records of non-compliances with working at height requirements during project activities ● Number of incidents		
Operational phase monitoring			
maintenance works during the operational phase	**Methodology:** ● Complaints recorded ● Visual inspection **Indicator:** ● Visible deterioration detected. ● The stones began to be removed. Number of complaints regarding road quality/deterioration	● Community Committee ● Local Authority ● Fish Association	● Monthly
Biodiversity Conservation	**Methodology**: Proper management of fishermen. Raising awareness of fishermen. Encourage the use of mooring anchorage instead of traditional anchors. Monitoring and inspection of biodiversity. Inspection/site visits. Boat maintenance inspection	● Fish Association / Local Council / EPA and fish authority	● Six Month

Action	Monitoring Methodologies and Indicators	Responsible[30]	Timeframe
	Indicators: Significant change in species structure and composition. Presence of dead animals. Significant decrease in seaweed cover. Presence of fishermen during spawning seasons Number of spill events. Presence of mooring buoys instead of traditional anchors. Number of awareness sessions provided to fishermen. Number of falcon/bird hunting events Number of penalties to boats and fishermen		
Working in unhealthy areas and presence of wastes	**Methodology:** Complaints recorded. Visual inspection Number of trainings on OHS, environmental issues and social issues **Indicator:** Number of complaints regarding health issues Number of trainings provided regarding OHS, environmental and social topics.	Fish Association Fish Authority ● Community Committee	● Every three months

Action	Monitoring Methodologies and Indicators	Responsible[30]	Timeframe
	Number of waste mismanagement events and waste disposed in the sea		
The depletion of fish stocks	**Methodology:** ● Issue numbered permits aligned to quotas/limitations ● Monitor gear used and catch quantity **Indicator:** ● No. of permits issued vs total fishing capacity. Catch data vs quotas/seasonal restrictions	● Community Committee Local Authority	● Annually
High use of water	**Methodology:** ● Visual inspections. ● Monitor and track the energy consumption. ● Provide training and awareness sessions **Indicator:** ● Percentage reduction in total energy consumption. Number of awareness sessions conducted	● Community Committee ● Local Authority	● Every three months
High energy usage	**Methodology:** ● Visual inspections. ● Monitor and track the energy consumption. ● Provide training and awareness sessions **Indicator:**	● Community Committee ● Local Authority	● Every three months

Action	Monitoring Methodologies and Indicators	Responsible[30]	Timeframe
	● Percentage reduction in total energy consumption. Number of awareness sessions conducted		
General occupational health and safety procedures for workers	**Methodology**: ● Monitor use and proper maintenance of all required personal protective equipment (PPE). ● OHS inspections and audits **Indicators:** ● Number of incidents and types The record of injuries in project reports	● Community Committee ● Local Authority	● Monthly

8. Stakeholder Engagement Plan and Public Consultation

○ 8.1. Public Consultation

The team conducted consultation meetings with stakeholders through focused group discussion and interviews with governmental departments in Taiz Governorate and Dhubab District. Meetings with fisheries cooperative and fishermen has been also carried out. Through those meetings, information has been collected related to the current situation of the fish landing site and the priorities of rehabilitating needs. Social and environmental impacts, either negatively or positively, have been discussed with different stakeholders and used in preparing the environmental and social management plan (ESMP).

Discussions with different official stakeholders and key staff in Dhubab District also focused on the importance and benefits that fishermen's community will gain with the rehabilitating and completing the fish landing site in Al-Ordhy area.

A consultation meeting was conducted at the landing site with several fishermen and some officials. Another meeting was conducted with females in the landing site separately in a village house (Figure 8). The number of males who attended the meeting were twenty-nine persons, whereas the number of females were eighteen. Information have been delivered to the local communities about the activities to be undertaken, the sub-projects timetable, and the work plan.

Figure 8 Consultation with Fishermen and women community in the landing site area.

PWP team conducted community awareness about subproject's potential risks such as safety, health, environmental, and social risks and required control measures to avoid, minimize, or offset negative impacts. The meetings also focused on raising

awareness about the importance of the environment in improving coastal community's livelihoods, and how to protect environmentally sensitive habitats. The team Informed them about their roles in monitoring the compliance of contractors and workers at the worksites and their rights to give their concerns.

Table 7 subproject Consultation Date

Sub Project Intervention		Dates	Participants		
			Male	Female	Total
Rehabilitation and Development of Al-Ordhy Fish Landing Site	Local community	14/2/2023	29	18	47
Total			29	18	47

Raising awareness of the fishing communities was also conducted about public participation, as well as occupational, social, and health safety. Participation of women in the proposed project and the importance of gender in development were also highlighted. The team has instructed the fishing community about the importance of the Community Committee, its tasks, and the proper way for recommending or electing its members. The Community Committee has been chosen, which is consisting equally of three male and three female members. The team then conducted a meeting with the Community Committee and trained them on carrying out their tasks, the proper way of communication, and conflict resolution principles and methods.

○ 8.2. Public Consultation Findings and Feedback

Table 8 concerns of the community and the findings

Summary of Consultation for [Stakeholder Al-Ordhy area, Dhubab District]	
Date of consultation	14/2/2023
Location of consultation	The landing site
Total Number of participants (# of women / # of men)	Total 47 Men: 29 Women: 18
Have measures been taken to ensure the inclusion of vulnerable people (e.g. the elderly, people with reduced mobility, people with special needs, illiterate people, women, etc.) (if so, who/how)?	Stakeholders were invited to attend the consultation meeting via public announcements, individual and group interviews while touring the sub-project area, in addition to informing local authorities and community leaders to attend and participate in the public consultations. The elderly and women were included in the consultations regarding their needs, and women were involved in the community committee.

Main issues/ identified risks/concerns/questions/complaints (specify if male or female)	Answers from the project team	Follow-up actions (who is responsible and by when)
●One of the fishermen asks whether the project is capable of accommodating the number of fishermen and meeting all their needs in terms of maintaining and refurbishing their boats and providing fishing tools. (male)	●Not all, the new landing site will be able to accommodate more than 300 fishermen, as the subproject will implement main infrastructure that fishermen can use to maintain and renew their boats through the workshop building.	● The landing center
●One of the women who are able to work asks whether the project will allocate a portion of the labor to women during the implementation of the project. (female)	●The contractor is committed to providing workers, whether women or men, from the targeted areas. The elected community committee works to facilitate the employment of workers, including women. Anyone who wishes to register for employment must register his name with the community committee in the employment registry or even during the start of project implementation, with coordination with the resident engineer.	● Community Committee , Technical Resident Engineer
●One of the workers asks about the risks that workers may be exposed to during project implementation, such as falling from height (man)	●All workers will receive detailed training on identified risks. Required personal protective equipment (PPE) will be provided and use enforced.	● Contractor , Technical Resident Engineer

○ 8.3. Sustainability of Subproject and Community Ownership

PWP engages all affected parties of subprojects within the subprojects cycle. Consultations are conducted at various stages including consultation with the communities for selection of interventions based on focal group discussions with women and men. Formation of the Community committee by electing members including female members with a total number of six (3 males and 3 females). Also, coordination with Local Authorities/Councils to inform on activities taking place, and the possibility of their role in operation and maintenance, in addition to their role as facilitators in case of security issues or any disputes, *etc*. Moreover, coordination with other IPs such as Small and Micro Enterprise Promotion Service (SMEPS) and other agencies in the Field. Furthermore, PWP conducts public feedback sessions with targeted communities during site visits to listen to their concerns and feedback as well as to ensure their acceptance of the interventions

Before the sub-project handing over, the PWP sub-area manager will invite the beneficiaries' representative to participate in this occasion. The beneficiaries' representative could be the head of the community committee, Fisheries Association, local council member, district manager, or any entity representing the beneficiaries. The site handing over ends with minutes of subproject handing over between PWP sub-area manager and the contractor with the signing of the beneficiaries' representative. During this occasion, the sub-area manager

informs the attendees about the importance of the sub-project maintenance to ensure the sustainability of the intervention.

8.4. Stakeholders Engagement Plan

According to SFISH stakeholder engagement plan (SEP)[32], PWP will continue to engage the stakeholders during the subproject's implementation through conducting meetings with beneficiaries, community committees, and local authorities to discuss any raised issues, implementation aspects, as well as listen to stakeholders' concerns and feedback. Subarea's managers will conduct monthly meetings with community committees around ten to twelve times during the implementation to coordinate with them for the implementation and safeguard issues, conducting awareness and training sessions regarding safeguard requirements and their monitoring roles. Also, PWP resident engineers will be in continuous cooperation and coordination with the community committees and Fish Association at the sites to discuss any issues that might be raised. Furthermore, different meetings with the local authorities may be conducted to work in cooperation to facilitate the implementation. In addition, at the end of implementation, meetings with beneficiaries, Fish Association, community committees, and local authorities will be conducted to prepare for the subproject submission and operation process. Also, to conduct the training for beneficiaries and community committee on the project operation and maintenance to ensure subproject sustainability.

8.5. Capacity Building

PWP conducts capacity building for different levels in all subproject's life cycle. An annual comprehensive training is always done for PWP main and sub-areas staff in which revision and updates are reflected according to the world bank's new ESF.

During the public consultation, an awareness raising session was conducted covering all topics. The executive staff[33] as the main responsible for managing project implementation at the governorate's level will have training sessions in place to understand their responsibilities, liabilities, risk\impact assessment. Also, the plan for the mitigation measures will be presented, and they should sign their commitment to apply these procedures. Also, another training course will take place for resident engineers where every person's responsibility, implementation procedures, needed forms, risk assessment methods, and general OHS procedures will be explained. As part of the procedures for -project site handing to the contractor, PWP sub-area representatives will conduct awareness sessions for workers, community committees, and some of the community members that will present the required environmental, social, and OHS aspects needed in the implementation phase. During the implementation phase, different awareness sessions should be held in the different sub-project period. The resident engineer with help from the contractor OHS assistant will conduct daily awareness sessions as much as possible in which works daily expected risks should be clarified for workers. SEA/SH, GM, code of conduct will be part of this awareness as well. Every two weeks, PWP sub-area assistant will raise the awareness of workers and local communities

[32] https://pwpyemen.org/index.php/en/media-center-en/publications/category/14-sustainable-fishery-development-in-red-sea-and-gulf-of-aden-sfish

[33] **The contractor, supervisor engineer, and contractor OHS assistant.**

during the site visit. PWP sub-area managers will conduct awareness raising sessions for workers and the local community monthly as well. The procedures for project maintenance on project site handing, will be explained to local authorities, Fish Association, and communities' committees as part of the project closing phase.

9. Grievance Mechanism[34]

As part of an ongoing move to improve its accountability, PWP has developed a Grievance Mechanism (GM) system for managing, responding to, and monitoring issues within its Programs. The accumulated experience in PWP to respond and interact with all partners and beneficiaries enables it to improve and adopt an efficient GM, focusing on institutionalizing the experience in dealing with complaints and mainstream it in the system context. GM awareness sessions have been conducted to explain the mechanism and introduce the system to the local communities, including female members and workers. GM brochures distributed to the local community that have full details on the system and complaint boxes placed in the subproject sites which will be opened weekly in a formal meeting with supervision from the local community committee -that is selected earlier during the early intervention stage. The complaints are then registered and classified according to their type and raised to branch offices to be addressed and solved. Other communication channels are also introduced to beneficiaries and listed below:

- Complaints box at subproject location which is open every week
- Telephone: 8002626
- SMS, Telephone, and What's Up Number 775626262
- Face to face during visits of PWP teams.

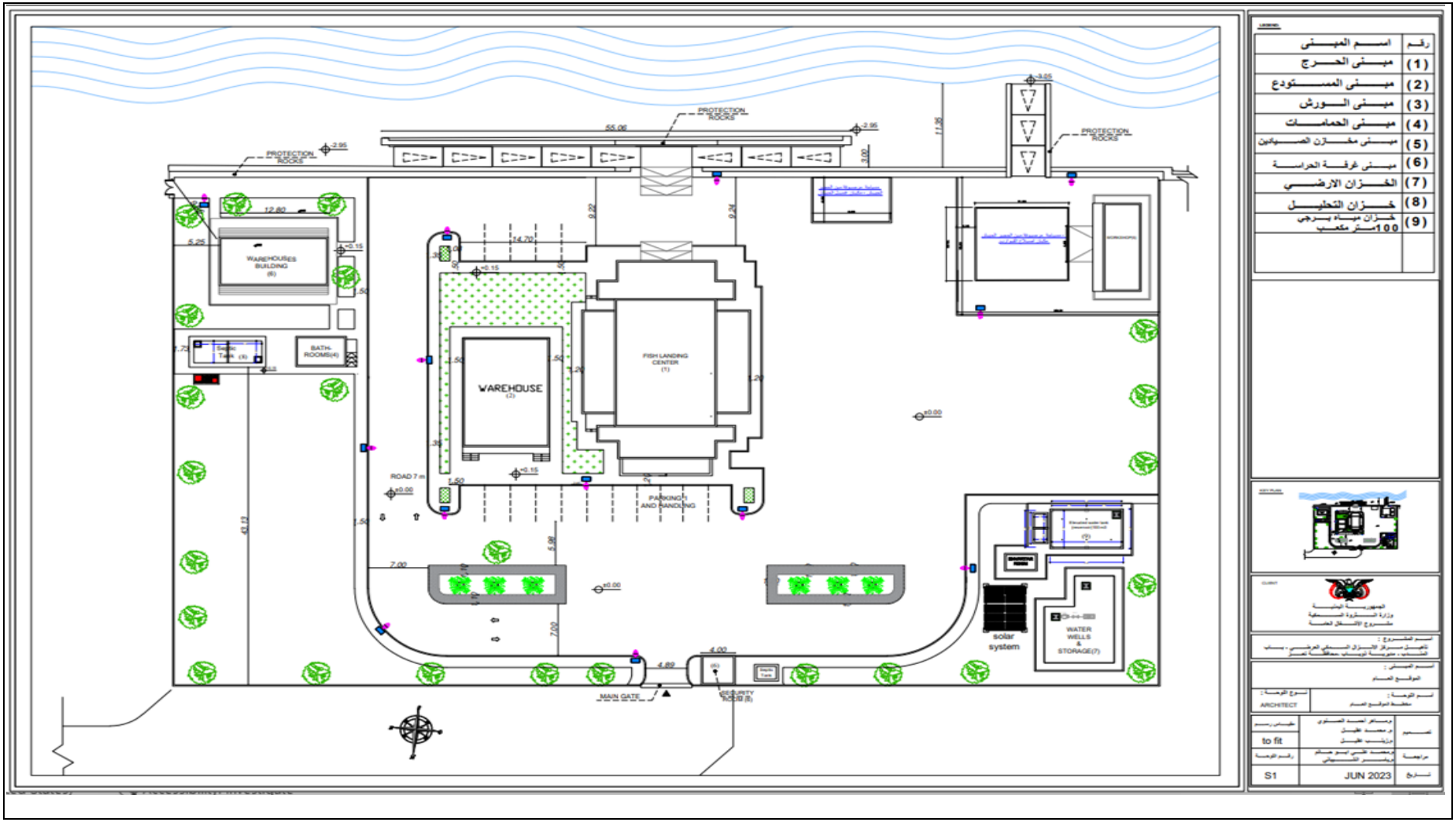
PWP has GM staff at Head Quarters (HQs) and locally at the subproject for GM handling. Each complaint is resolved either at the field by the Supervisor, or the Branch Office Manager or raised to the HQ. Complain boxes are collected by PWP staff during bi-weekly field visits. Ensure registering all complaints and address all that can be resolved in the field. The designated GM specialist monitors complaints to ensure they are resolved satisfactorily, and complaints are closed. Complaints received will be recorded and investigated and the person who submit the complaints will be notified with the updates of his/her case. Similarly, all complaints received anonymously will be treated at the same level and as seriously as other complaints.

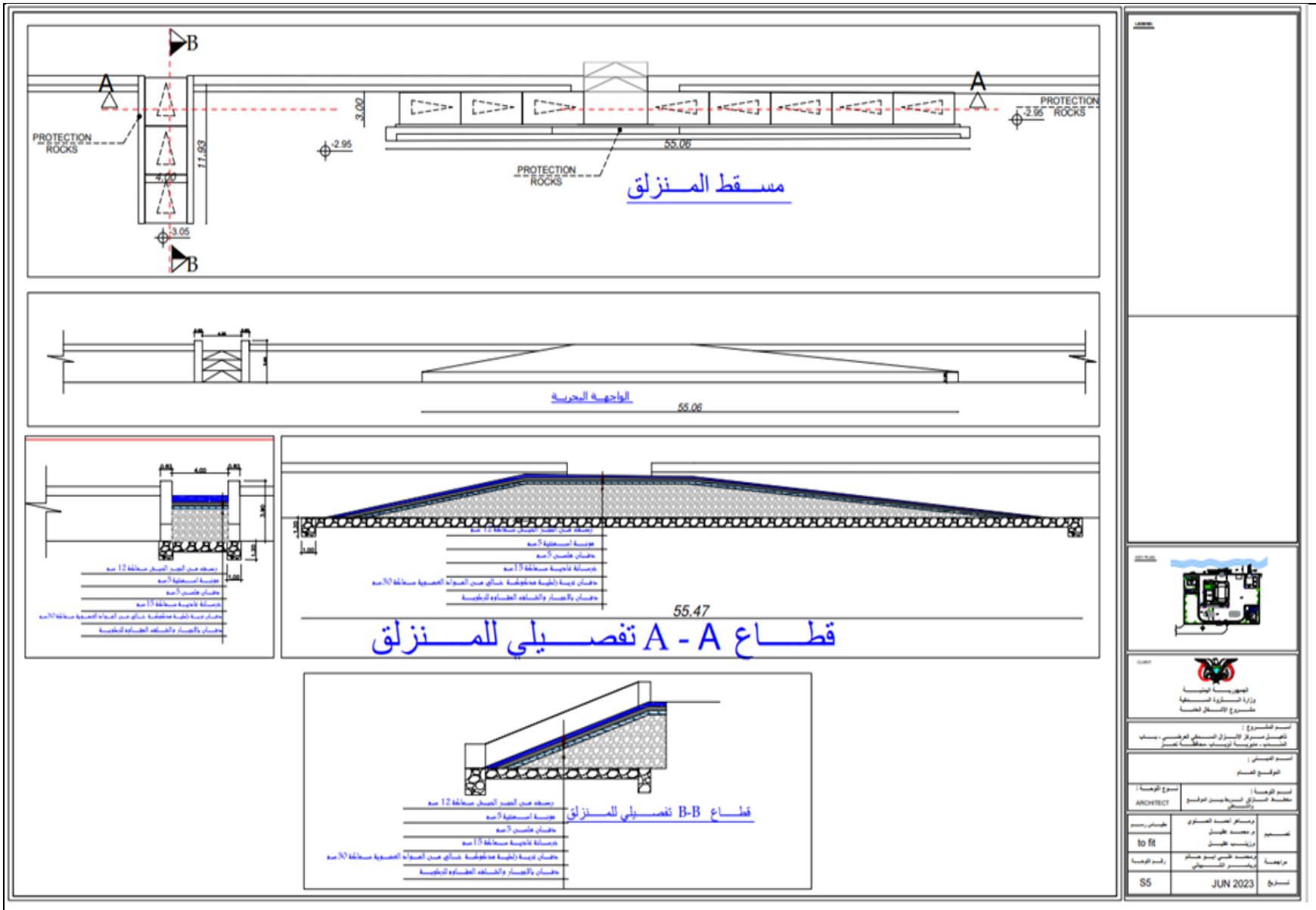
Every effort is made to resolve any issue at the community level and within a time frame of 14 days by community committee members, sub-area staff, and residential engineer, and in case they could not solve it the complaint will be referred to the HQ's specialists. UNDP will monitor the implementation of the Grievance Mechanism (GM) system and follow up on pending complaints and provide any needed assistance in case PWP is not able to solve the complaints themselves or higher involvement is required through SRM- Stakeholder Response Mechanism- to help project-affected stakeholders, governments and other partners jointly

[34] For more information see link https://docs.google.com/document/d/16PNeo62NkCqmTOwOPveMqfzlYMBSUaNcYROjBv6nQus/edit

resolve concerns and disputes. SEA/SH related complaints will be managed within the overall GM in which complaints will be managed according to SEA/SH action plan procedures. After one year, the GM system will be regularly reviewed in order to improve it. For instance, by examining the nature of complaints, complaints made by which gender, If the GM is adapted to women, if no women made complaints, etc.

Annex 1: Typical Drawings

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A
PROTECTION ROCKS
11.93
-3.05
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مسـقط المـنزلق
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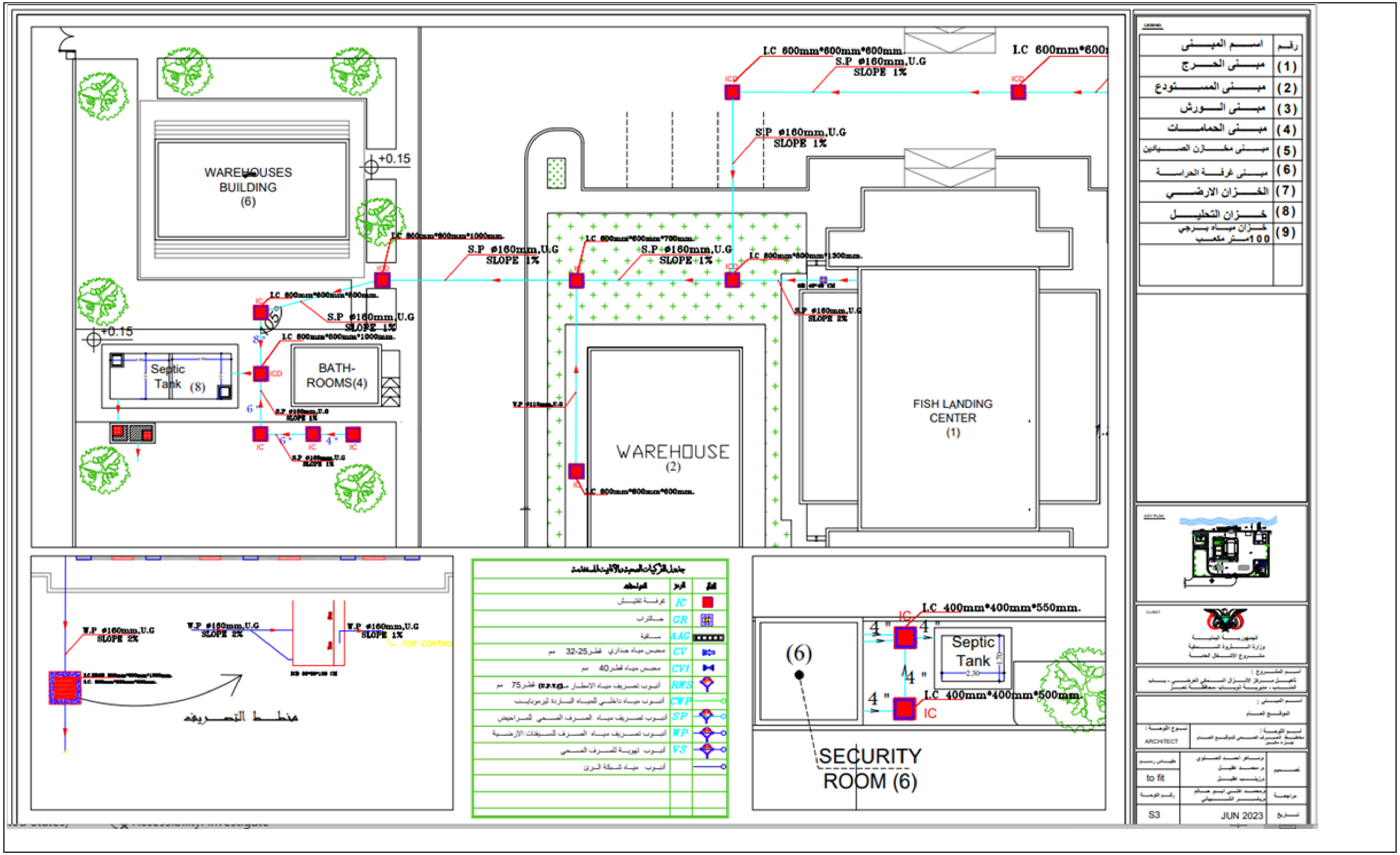
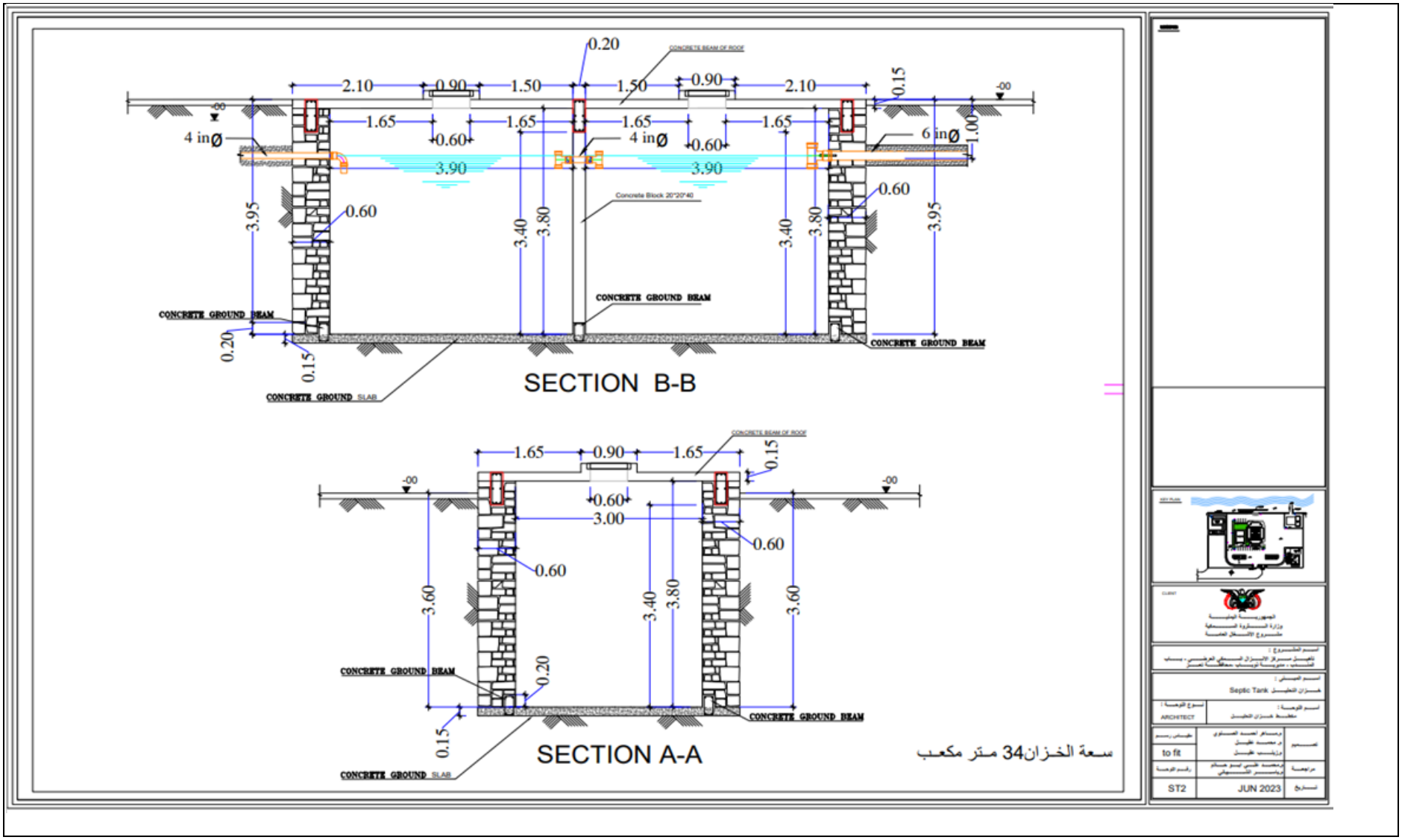
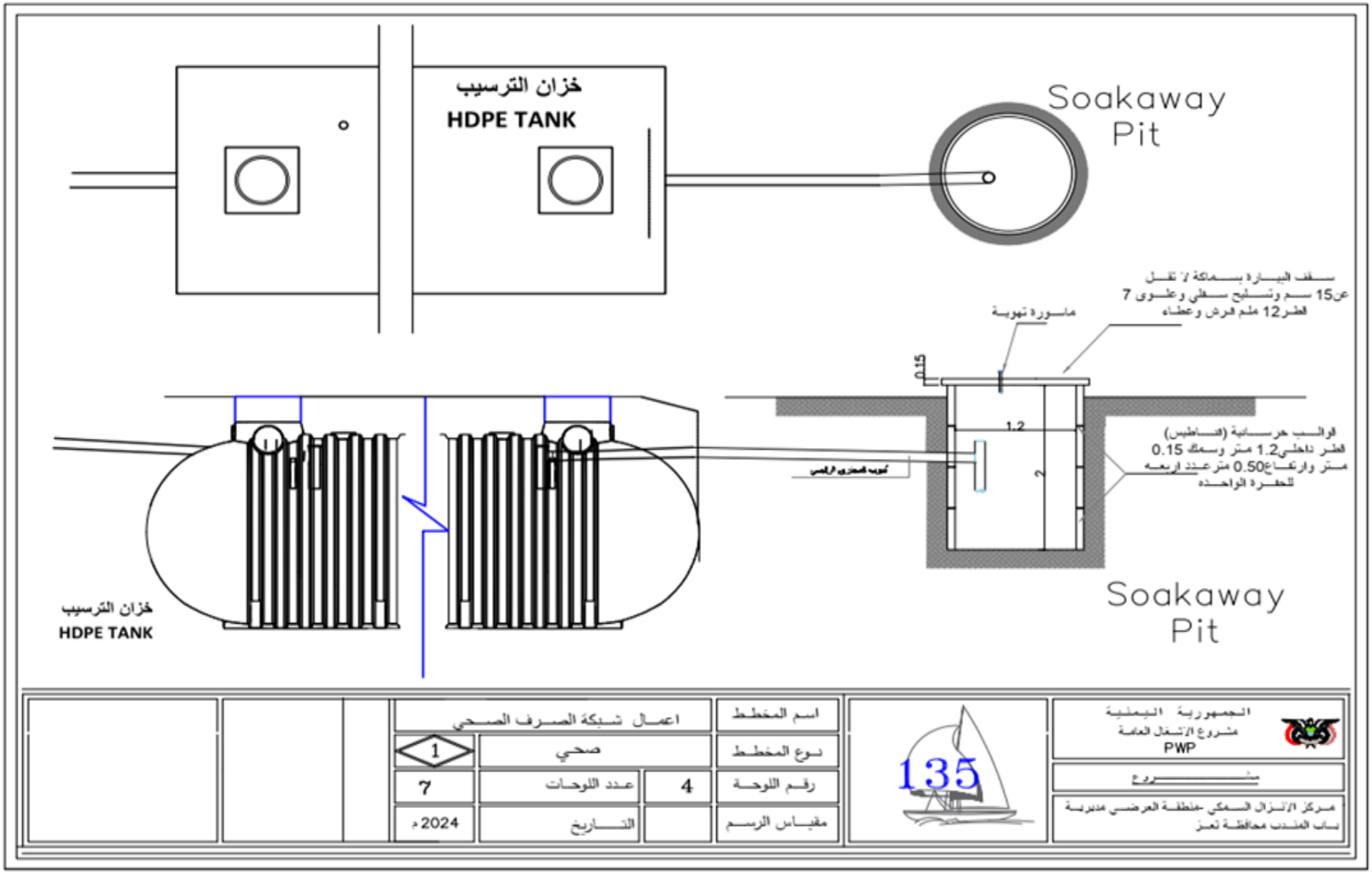
B-B قطـاع تفصـيلي للمـنزلق



WAREHOUSES BUILDING (6)
+0.15
Septic Tank (8)
BATH-ROOMS(4)
WAREHOUSE (2)
FISH LANDING CENTER (1)
I.C 600mm*600mm*600mm.
S.P ø160mm,U.G SLOPE 1%
I.C 600mm*600mm*1000mm.
I.C 400mm*400mm*550mm.
I.C 400mm*400mm*500mm.
Septic Tank
(6)
SECURITY ROOM (6)
W.P ø160mm,U.G SLOPE 2%
W.P ø160mm,U.G SLOPE 1%
مخطط التصريف
رقم
اسم المبنى
(1) مبنى الحرج
(2) مبنى المستودع
(3) مبنى الورش
(4) مبنى الحمامات
(5) مبنى مخازن الصيادين
(6) مبنى غرفة الحراسة
(7) الخزان الارضي
(8) خزان التحليل
(9) خزان مياه برجي 100متر مكعب
ARCHITECT
to fit
S3
JUN 2023


SECTION B-B
SECTION A-A
CONCRETE GROUND BEAM
CONCRETE GROUND SLAB
Concrete Block 20*20*40
سعة الخزان34 متر مكعب
Septic Tank
JUN 2023
ST2


خزان الترسيب
HDPE TANK
Soakaway
Pit
سقف البيارة بسماكة لا تقل عن15 سم وتسليح سفلي وعلوي 7 قطر12 ملم قرش وعطاء
مادورة تهوية
0.15
1.2
2
الواسب حرسانية (قماطيس) قطر داخلي1.2 متر وسمك 0.15 متر وارتفاع0.50 متر عدد اربعه للحفرة الواحده
خزان الترسيب
HDPE TANK
Soakaway
Pit
الجمهورية اليمنية
مشروع الاشغال العامة
PWP
مشروع
مركز الانزال السمكي لخطفة العرضي مديرية باب المندب محافظة تعز
اسم المخطط
اعمال شبكة الصرف الصحي
نوع المخطط
صحي
1
رقم اللوحة
4
عدد اللوحات
7
مقياس الرسم
التاريخ
2024 م
135

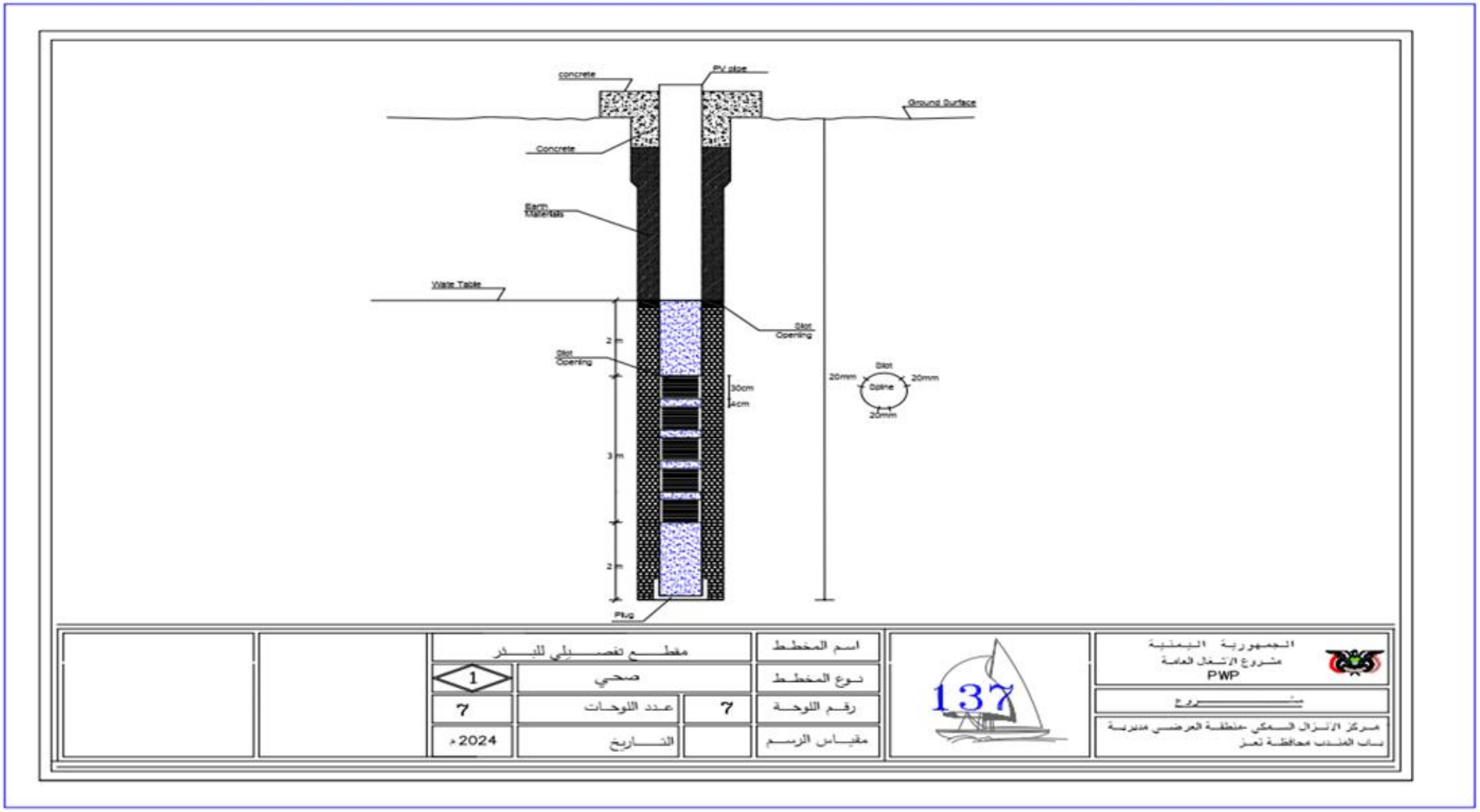


Figure 10 A general site and main components of fishery landing sit

Annex 2: Environmental and Social Screening for Eligibility Environmental and Social Screening Checklist for the Proposed Subproject.

Table 9 Environmental and Social Screening for Eligibility Environmental and Social Screening Checklist

Sub-Project No.	16081-9-03
1: The Natural Environment	Answer (NA, minor, moderate, substantial, or high)
1.1 Are there any environmentally sensitive areas or threatened species that could be adversely affected by the subproject (specify below)?	
Intact natural forests	No
Riverine forest	No
Wetlands (lakes/rivers/seasonally inundated areas)	Minor
If yes, how far are the nearest wetlands (lakes, rivers, seasonally inundated [flooded] areas)?	
Habitats of endangered species for which protection is required under Yemeni laws and/or international agreements	
Marine sensitive Areas	No
Others (describe) (e.g. cultural sites, burial places, etc.)	Minor
	No
2.Fauna and Flora	
2.1 Will subproject involves the disturbance or modification of existing drainage channels (rivers, canals) or surface water bodies (wetlands, marshes)?	No
2.2 Will the subproject lead to the destruction or damage of terrestrial or aquatic ecosystems or endangered species directly or by induced development?	No
2.3 Will the subproject lead to the disruption/destruction of wildlife through interruption of migratory routes, disturbance of wildlife habitats, and noise-related problems?	Minor
3.Destruction/Disruption of Land and Vegetation	
3.1 Will the subproject lead to unplanned use of the infrastructure being developed?	No
3.2 Will the subproject lead to long-term or semi-permanent destruction of soils in cleared areas not suited for agriculture?	No
3.3 Will the subproject lead to the interruption of subsoil and overland drainage patterns (in areas of cuts and fills)?	No
3.4 Will the subproject lead to landslides, slumps, slips, and other mass movements in soil?	No
3.5 Will the subproject lead to erosion of lands?	No
3.6 Will the subproject lead to health hazards and interference of plant growth by the dust raised and blown by vehicles?	No
4. Protected areas	
4.1 Does subproject occur within/adjacent to any protected areas designated by the government (national park, national reserve, world heritage site, etc.)	No

4.2 If the subproject is outside of, but close to, any protected area, is it likely to adversely affect the ecology within the protected area (e.g. interference with migration routes of mammals or birds)	Minor
4.3 Would this project increase the current impact on the surrounding environment for example by using more water, chemicals, or machinery than previously? If yes HOW More water will be used for construction process as well as water that are going to be used during operation for toilets, cleaning and washing in the auction yard, etc. Chemicals will be used temporarily during rehabilitation of the landing site through painting processes and possible oil spills from fishing boats if not managed properly.	Minor
5. Geology and Soils	
5.1 Based on visual inspection or available literature, are there areas of possible geologic or soil instability (erosion-prone, landslide-prone, subsidence-prone)?	No
5.2 Based upon visual inspection or available literature, are there areas that have risks of a large-scale increase in soil salinity?	No
6 Landscape/aesthetics	
6.1 Is there a possibility that the subproject will adversely affect the aesthetic attractiveness of the local landscape?	No
7. Historical, archaeological or cultural heritage site	
7.1. Based on available sources, consultation with local authorities, local knowledge, and/or observations, could the subproject alter any historical, archaeological, or cultural heritage site or require excavation nearby?	No
8. Resettlement and/or Land Acquisition	
8.1 Will the subproject require land acquisition?	No
8.2 If so, will this land acquisition be involuntary?	-
8.3 If so, will this involuntary land acquisition lead to relocation or loss of shelter, loss of assets, or access to assets?	-
8.4 If so, will this involuntary land acquisition lead to loss of income sources or means of livelihood (whether or not affected persons must move to another location)?	-
8.5 Will the subproject lead to involuntary restriction of access to legally designated parks and protected areas resulting in adverse impacts on the livelihoods of displaced persons?	No
9. Noise pollution during Construction and Operations	
9.1 Will operating noise level exceeds allowable/ambient noise limits?	No
10. Solid or Liquid Wastes, including Medical Waste	
10.1 Will subproject generate large amounts of residual wastes (solid or liquid wastes), including medical waste?	Moderate
10.2 If “Yes”, does the subproject include plan for collection & disposal?	Yes
11. Pesticides, Insecticides, Herbicides or any other Poisonous or Hazardous Chemicals	
11.1 Will the subproject require the use of such chemicals?	No
11.2 If, “Yes”, does the subproject include plan for safe handling, use & disposal?	No
12. Water and Soil Contamination	
12.1 Will the subproject require large amounts of raw materials/construction materials?	Moderate
12.2 Will subproject generate large amounts of residual wastes, construction material waste, or cause soil erosion?	Moderate

12.3 Will the subproject result in soil or water contamination (e.g. from oil, grease, and fuel from equipment)?	Moderate
12.4 Will the subproject lead to contamination of ground and surface water bodies by herbicides for vegetation control and chemicals for dust control?	No
12.5 Will the subproject lead to an increase in suspended sediments in streams affected by road cut erosion, a decline in water quality & increased sedimentation downstream?	No
12.6 Will subproject lead to the destruction of vegetation and soil in the right-of-way; borrow pits, waste dumps, and equipment yards?	No
12.7 Will the subproject lead to the creation of stagnant water bodies in borrow pits, quarries, etc., encouraging mosquito breeding and other disease vectors?	No
12.8 Will this project include the development of a large irrigation scheme?	No
12.9 Will this project aims at improving an irrigation scheme (without expansion)?	No
12.10 Will this project change the water quality and quantity in the project area or areas connected to it	Minor
12.11 Will this project involve the intensification of production systems that leads to land-use changes (e.g. deforestation), higher nutrient inputs leading to soil or water pollution, changes in water regimes (drainage, irrigation)?	No
13. Decent Work	
13.1 Will this project affect the current or future employment situation of the rural poor and in particular the labor productivity, employability, labor conditions, and rights at work of self-employed rural producers and other rural workers?	No
14. Gender	
14.1 Could this project risk overlook existing gender inequalities in access to productive resources, goods, services, markets, decent employment, and decision-making? For example, by not addressing existing discrimination against women and girls, or by not taking into account the different needs of men and women	No
15. Community Health, Safety, and Working Conditions	
15.1 Are indigenous peoples present in the Project area (including Project area of influence)?	No
15.2 Is it likely that the Project or portions of the Project will be located on lands and territories claimed by indigenous peoples?	No
15.3 Would the proposed Project potentially affect the human rights, lands, natural resources, territories, and traditional livelihoods of indigenous peoples?	No
15.4 Would the Project adversely affect the development priorities of indigenous peoples as defined by them?	No
15.5 Will this project permanently or temporarily removes people from their homes or means of production/livelihood or restrict their access to their means of livelihood?	No
15.6 Will the project bring about consolidation or adjustment of tenure rights?	No
15.7 Would elements of Project construction, operation, or decommissioning pose potential safety risks to local communities?	Minor
15.8 Would the Project pose potential risks to community health and safety due to transport, storage, construction?	Minor

15.9 Would the Project pose potential risks to community health and safety due to the use and/or disposal of hazardous or dangerous materials (e.g. explosives, fuel, and other chemicals during construction and operation)?	No
15.10 Would failure of structural elements of the Project pose risks to communities? (e.g. collapse of buildings or infrastructure)?	No
15.11 Would the Project result in potential increased health risks (e.g. from water-borne or other vector-borne diseases)?	No
15.12 Does the Project pose potential risks and vulnerabilities related to occupational health and safety due to physical, chemical, biological, and radiological hazards during Project construction, operation, or decommissioning?	Moderate
15.13 Will the Project activities cause any risks for workers during the construction?	Moderate

Annex 3: PWP Environmental and Social Responsiveness (ESR) Criteria at Proposal Stage

Table 10 PWP Environmental and Social Responsiveness (ESR) Criteria at Proposal Stage

Proposal Title	**Fish Landing Site**
Proposal Location	**Taiz governorate**
ESR Criteria at the Proposal Stage	Confirmation Write Yes or No
Consultation with the local community including a community leader, men, women, and girls was conducted in the proposal stage regarding the design and location of the project. Their opinions were included in the proposal.	Yes
Poor and vulnerable beneficiaries were defined, and the community was obliged to provide help for them in the subproject implementation.	Yes
The project will not have a significant adverse environmental and social impact	Yes
The project will not raise land acquisition problems	Yes
Stakeholders are aware of the PWP policy and have agreed to follow/apply them towards a successful implementation of the subproject.	Yes
Targeted beneficiaries are highly in need of this project	Yes
All communities including (Male, female, and children) will benefit from the intervention.	Yes
The operation and maintenance requirements of the project were explained to the community, and an acceptable system was developed for this purpose	Yes
Responsibility for operation and maintains are defined by PWP and committed by community committee and local authority.	Yes
Local communities are aware of project risks and GM.	Yes
The project will not cause any conflict among communities	Yes
If the answer to any of the above questions is 'NO' then the project will be dropped at the proposal stage. If the answer is 'Yes' then incorporating this information in the project proposal	

Annex 4: Public Consultation Reports (Social agreements) – Arabic

الجمهورية اليمنية

مشروع الأشغال العامة

وحدة إدارة المشروع

اتفاقية تنفيذ مشروع ترميم وإعادة تأهيل مراكز انزال سمكي لمدينة..............................

اسم المشروع : مشروع .... العزلة : .... - مديرية .... محافظة/ .... رقم المشروع : 03-9-16081

انه وفي يوم الثلاثاء والموافق ..../ ٢ / ٢٠٢٢م تم الاتفاق بين كل من مشروع الأشغال العامة ويدعى في هذا الاتفاق بالطرف الأول والإخوة ممثلوا السلطة المحلية مع الأخوة ممثلي أهالي (لجنة المستفيدين والتي تم تشكيلها وانتخاب الهيئة الادارية لها)............- مديرية .... ويدعوا في هذا الاتفاق بالطرف الثاني وبعد التأكد من إحتياج المنطقة المذكورة للمشروع المذكور وضرورة التدخل في إعادة تاهيل مركز الانزال السمكي في المنطقة والتي يقر الطرف الثاني بموجب هذا الإلتزام بأن هذا المركز لا يتعلق بملكية خاصة أوعامة وأنه ملزم بحل أي إشكال قد يظهر في أي موقع في المدينة بعمل التنازلات أو التعويض أو خلافه، وان الأطراف تلتزم بما يلي:

(1) يقوم الطرف الأول بتنفيذ أعمال الدراسة والتصميمات والرسومات والتي توضح كل مكونات المشروع والملزمة لكل الأطراف كل بمساهمته التي تم الإتفاق عليها، ويتمثل جزء من مساهمة الطرف الثاني في تسهيل أعمال المهندسين والفنيين والمقاول المنفذ وتذليل كافة الصعوبات التي قد تظهر خلال أعمال الدراسة من قبل أهالي المنطقة مثل الاعتراضات على أماكن الحفر والردم، ، وعمل الطرقات اللازمة لخدمة المشروع والعمل على حل كافة المشاكل الأخرى مع الأهالي (مهما كان نوعها) والتي قد تظهر خلال أعمال الدراسة أو التنفيذ أو حتى عند التسليم أو بعد التسليم لمكونات المشروع المساهمة العينية أوالمساهمة النقدية المطلوبة.

(2) يقوم الطرف الأول بواسطة المقاول المعين من قبله بتنفيذ مكونات المشروع وبموجب الرسومات وجداول الكميات الخاصة بالمشروع،ويلتزم الطرف الثاني في هذا بالموافقة على المواقع التي تم اختيارها لمكونات المشروع خلال أعمال الدراسة والمسح، وبعدم توقيف تنفيذ العمل في هذه المواقع ، سواء كانت أعمال حفر او دم و خلافه ،وكذلك يلتزم الطرف الثاني بتوفير مقاطع الأحجار في المنطقة والتي يقرها المهندس المشرف ويتعهد الطرف الثاني بعدم إعتراض المقاول عند أخذ الأحجار من تلك المقاطع والقيام بحل المشاكل في هذا الموضوع مع الأهالي مهما كان نوعها.

(3)يوافق الطرف الثاني على التواجد الميداني المستمر قبل وخلال فترة التنفيذ مع فريق التنفيذ وذلك للإحاطة بكل مكونات المشروع على الطبيعة ومعرفة طريقة التنفيذ والتشغيل حتى يسهل عليهم إدارة المشروع وصيانته مستقبلاً، وعند وجود أي ملاحظة على عملية التنفيذ فأن على الطرف الثاني رفعها إلى المهندس المشرف والمعين من قبل مشروع الأشغال العامة أو إلى مدير المنطقة الفرعية.

(4)يلتزم الطرف الثاني بإستخدام هذا المشروع في المجال الذي صمم من أجله وهو في هذه الحالة لغرض إيجاد بيئة نظيفة وسهله للصيادين بشكل سليم،وعدم إستغلال هذا المشروع لأي غرض خاص أو عام أو أي استخدام آخر خلاف ذلك مهما كان.

(5)إن لمشروع الأشغال العامة الحق في إلغاء هذا الاتفاق وتعهداتها إذا توقف أو سار المشروع ببطء طالما كان الأهالي في المنطقة هم السبب، أو عند مخالفة أحد البنود المذكورة أعلاه.

(6)إن مشروع الأشغال العامة لن يتحمل مسئولية عن أي ضرر جسماني لأي طرف كان نتيجة تشييد هذا المشروع مهما كانت الأسباب.

(7)في حالة إلغاء هذا المشروع لأي سبب كان فإن الطرف الثاني (ممثل الأهالي) يلتزمون بعدم اعتراض المقاول في سحب أدواته ومعداته من الموقع.

(8)تعتبر هذه الاتفاقية ملزمة للطرفين بعد التوقيع عليها وتعميدها.

الطرف الثاني:

(1)الهيئةالإدارية لمشروع (ممثلوا الأهالي المستفيدون) ....

الاسم	التوقيع
1-	
2-	
3-	
4-	
5-	

يعتمد

(2)المجلس المحلي للمنطقة

محافظ المحافظة

الطرف الأول

مشروع الأشغال العامة

- مدير المنطقة الفرعية

- مدير عام المديرية

رئيس المجلس المحلي

- مدير مشروع الأشغال العامة

م/ سعيد عبده أحمد

Figure 10 Public Consultation Reports (Social agreement) – Arabic

Annex 5: PWP Complaints Handling Mechanism

تمهيد:

الرقابة المجتمعية على تنفيذ المشاريع المنفذة من قبل مشروع الأشغال العامة شرط أساسي ومهم في آلية الرقابة والتقييم على المشاريع المنفذة و هو ما جعل مشروع الأشغال العامة ... وفي نفس الوقت خلق علاقة مبنية على الشراكة المجتمعية ساهمت في جعل المجتمع يقوم بدوره الرقابي على المشاريع ... المصلحة العامة

تجربة تنموية:

- الرقابة المجتمعية الفاعلة المؤثرة بسهولة وحرية تقديم الشكوى والوصول إلى أعلى هرم قيادي في مشروع الأشغال العامة . قضى على الإهمال والتسيب ومنع المحاباة وحد من الفساد
- التكامل والتعاون والتكاتف بين المجتمعات المستفيدة ومشروع الأشغال العامة سر نجاح الأنشطة التنموية وضمان أمان حمايتها عن الفساد وضمان استدامتها وجودتها وتحقيق أقصى درجات منفعتها وخلق الشعور بالرضا والتماسك المجتمعي الجامع حول المصلحة العامة بدلاً من المشكلات والنزاع
- حيثما يتواجد مشروع الأشغال العامة فهنا يعني رقابة مجتمعية فاعلة . تمثل اليد الطولى والوجه الآخر لمشروع الأشغال العامة

من الميدان:

نجح مشروع الأشغال العامة في تبني رأي الناس عند تحديد المشاريع المقترحة والاستماع إلى أصواتهم والتفاعل مع شكواهم وتلمس أوجاعهم والتفاعل مع مقترحاتهم التي تعبر عن احتياجاتهم وتطلعاتهم

شارك في حل المشكلة(الشكوى):

- تأكد من صحة الشكوى أو المشكلة الناتجة عن المشاريع والأعمال التنموية المنفذة في منطقتك وناقشها مع الآخرين
- كن صادقاً ومحايداً في التعامل مع أي شكوى أو مشكلة قد تحدث أثناء تنفيذ المشروع وتجنب الأحكام والمواقف المسبقة
- أحرص على تحقيق المصلحة العامة عند تقديم الشكوى دون سواها وتحرر من الأهواء الشخصية
- شجع مجتمعك وكل من حولك في نطاق المشروع على روح المبادرة في وضع الحلول والمعالجات للمشكلة في بدايتها والتي من السهل حلها بإمكانيات وقدرات المجتمع.
- لا تتردد عن استخدام حقوقك في رفع الشكاوى وتقديم المقترحات حول الاختلالات في جودة أو مواصفات المشاريع المنفذة .وجدواها الاقتصادية وفائدتها الخدمية لمجتمعك .

أخي المواطن الكريم:

ضميرك وواجبك يحتمان عليك القيام بدورك في الرقابة المجتمعية على جودة المشاريع المنفذة والخدمات المقدمة فمشاركتك الرقابية هي الضمانة الأكيدة ضد الممارسات الخاطئة وغير المشروعة والوصفة الناجعة للقضاء على التسيب والإهمال.

لتكون فاعلاً :

"عليك التحرر من الأهواء الشخصية .وكن حريصاً على تحقيق المصلحة العامة ومتعاوناً ومساهماً في نجاح الأنشطة والمشاريع التنموية المنفذة في منطقتك ومراقباً أميناً على جودة الخدمات والأنشطة المقدمة لمجتمعك ، بحيث تكون معبرة وملبية لاحتياجات الناس و محققة أقصى درجات المنفعة والاستفادة والفوائد المرجوة منها.