



PUBLIC WORKS PROJECT

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

Environmental and Social Management Plan (ESMP No. 09)
For the

Rehabilitation and Development of Al-Dumkh Fish Landing Center

April 2025

Table of Contents

1	Introduction:	6
2	Sub-Project Description:	8
2.1	Scope of Work:	10
2.2	Location:	13
3	Environmental and Social Baseline conditions:	14
3.1	Socio-Economic	14
3.2	Meteorological conditions:	17
3.3	Hydrology:	17
3.4	Cultural Heritage:	19
3.5	Soil and Geology:	19
3.6	Air Quality and Noise:	20
3.7	Biodiversity:	20
3.8	Existing Situation of the Targeted Area:	21
3.9	Targeted Beneficiaries:	23
4	Environmental and Social Impacts Assessment:	23
4.1	Applicability:	23
4.2	Eligibility (Responsive Criteria and Exclusion List):	24
4.3	Environmental and Social Screening:	24
4.4	Land Acquisition/use and Economic and/or Physical Displacement:	26
4.5	Resources and Services' access restrictions:	26
4.6	Gender and Social related issues:	27
4.7	Child Labor:	27
4.8	Gender Equity:	27
4.9	Sexual Exploitation and Abuse/Sexual Harassment (SEA/SH)	29
	Conflict sensitivity and Do No Harm	29
5	Environmental and Social Impact Analysis Plan and Mitigation Measures	30
	Environmental and Social Management Plan:	31
	The occupational health and safety Management Plan	48
6	Environmental, Social, and OHS Clauses and Liabilities for Contractor	70
6.1	Conditions for the Eligible Contractor	70
6.2	Environmental and Social Specific Conditions for Contractor:	70
6.3	Environmental and Social Liabilities for Contractor	75
7	Environmental and Social Monitoring Plan	76
8	Stakeholders Engagement Plan and Public Consultation:	89

8.1	Public Consultation Findings and Feedback	92
8.2	Sustainability of Sub-project and Community Ownership	93
8.3	Stakeholders Engagement Plan:	94
8.4	Information Dissemination and disclosure	94
9	Capacity Building	94
10	Grievance Mechanism (GM)	96
Annexes		97
	Annex 1 – Typical Drawings	97
	Annex 2 – Environmental and Social Checklist	114
	Annex 3 – PWP Environmental and Social Responsiveness (ESR) Criteria at Proposal Stage	120
	Annex 4 - PWP Checklist of Expected Environmental and Social Impacts to be Addressed at the Design Stage	121
	Annex 4. Social agreements for the benefit of fisheries) - Arabic	122
	Annex 5 – PWP Complain Handling Mechanism	123

List of tables

Table 1 General information about the project.....	7
Table 2 shows the details of the proposed sub-project	12
Table 3 Name of the sub-project and the coordinates of the Location with link to google map.....	13
Table 4: Seasons (Yemeni coastal areas)	16
Table 5: Total number of beneficiaries segregated by gender	23
Table 6 Subproject population by age groups	27
Table 7 Subproject's beneficiaries, public consultations, community committee per gender	29
Table 8 ESMP table	31
Table9 Occupational and Health Safety Plan.....	48
Table 10 Environmental and Social Monitoring Plan.....	76
Table 11 subproject Consultation Date	89
Table 12 concerns of the community and the findings	92
Table 13 Environmental and Social Checklist	114
Table 14 PWP Environmental and Social Responsiveness (ESR) Criteria at Proposal Stage	120
Table 15 PWP Checklist of Expected Environmental and Social Impacts to be Addressed at the Design Stage	121

List of Figures

Figure 1: subproject location	13
Figure 2: Types of boats found in Yemen	15
Figure 2 Tidal position relative to center	18
Figure 5: Existing Situation of the Targeted Areas.....	22
Figure 4 Shows the consultation attendance sheets and meeting photos in Al-Dumkh Subproject	91
Figure 7 Show the typical drawings for Al-Dumkh Center	97
Figure 8 (Social agreement for the benefit of fisheries) - Arabic.....	122
Figure 9 PWP Complain Handling Mechanism	123

Abbreviations

BOQs	Bills of Quantities
CC	Community Committee
CO	Carbon Monoxide
CoC	Code of Conduct
DIPs	Detailed Implementation Plans
EBRD	European Bank for Reconstruction and Development
EPA	Environment Protection Authority
ES	Environmental Social
ESF	Environmental and Social Framework
ESMF	Environmental and Social Management Framework
ESMP	Environmental and Social Management Plan
ESR	Environmental and Social Responsiveness
ESS	Environmental and Social Standards
FCU	Fisheries Cooperatives Union
GAF	General Authority for Fisheries
GM	Grievance Mechanism
HDPE	High-Density Polyethylene
HQ	Head Quarter
IBA	Important Bird Area
IDA	International Development Association
IDP	Internal Displaced Persons
IFC	International Finance Corporation
IPF	Investment Project Finance
KBA	key biodiversity areas
LMP	Labor Management Procedures
MSDSs	Material Safety Data Sheets
OHS	Occupational Health and Safety
PERSGA	Protection of the Environment of the Red Sea and Gulf of Aden
PPEs	Personal Protective Equipment's
PTW	Permit to Work system
PWP	Public Works Project
SEA	Sexual Exploitation and Abuse
SEP	Stakeholder Engagement Plan
SFISH	Sustainable Fishery Development in Red Sea and Gulf of Aden

SH	Sexual Harassment
SMEPs	Small and Medium Enterprises Projects
SP	Sub-Project
TPM	Third-Party Monitoring
TVET	Technical Vocational Education Training
UNDP	United Nations Development Program
UV	Ultraviolet
WB	World Bank

1 Introduction:

The current Environmental and social management plan (ESMP) for the Rehabilitation and Development of AL-Dumkh 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, 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 aimed 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.

This ESMP aims to:

- Collect baseline data on the physical, biological, and socio-economic environment in the project area to inform impact assessment and monitoring.
- Evaluate potential environmental and social impacts of the proposed project. This includes impacts during both the construction and operation phases.

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>

- Identify measures to mitigate any potential negative impacts and enhance positive impacts.
- Develop a plan for environmental and social impact analysis and mitigation measures.
- Monitor key environmental and social indicators during project implementation to ensure compliance with relevant standards and mitigate impacts. Develop an environmental and social monitoring plan.
- Engage with stakeholders and the public in a transparent and meaningful consultation process. Obtain their feedback and input to inform project design. Develop a stakeholder engagement plan and conduct public consultations.
- Build capacity within the project team and the local community on environmental and social best practices. Conduct training and awareness programs.
- Establish an effective grievance mechanism to receive and address complaints from project affected persons and other stakeholders in a timely manner.

In this ESMP, the sub-project falls under the fish landing sector which is to rehabilitate and develop of Al-Dumkh fish landing center in Al-Masilah district – Al-Mahrah governorate in Yemen.

PWP will invest US \$ 500,000 to complete the civil works of this sub-project. The sub-project will be implemented by the contractor. The Public Works Project completed its field visits in October 2024, where community and environmental data were collected and stakeholders from the local authority, associations and fishermen were engaged and consulted to discuss their needs, suffering and concerns related to the center and ensure the sustainability of the intervention. The risk level of the sub-project has been rated as moderate under this ESMP, based on the primary screening and the study of the anticipated risks and impacts. Table 1 below presents the general information relating to the sub-project.

Table 1 General information about the project

Name of the Sub-project:	Rehabilitation and Development of AL-DUMKH Fish Landing Center
Sub-project ID:	18-09-17603
Sub-project Locations	Al-Mahrah
Sector and Type of Sub-project:	Fish Sector
Sub-project Implementer:	PWP
Estimated Cost of Sub-project:	500,000 US\$
Estimated Cost of ESMP	25,700 US\$
Field Visit (Yes/No; Include Date; another envisioned):	Yes- on 15 October 2024; another is not envisioned.
Was Consultation Carried out? (Yes/No):	Yes- Refer to Public Consultation Section (see public consultation section 7)
Implementation Period	7 months
Beneficiaries	600 fishermen
Proposed Class of Subproject (Low to High):	Moderate (refer to the Screening checklist in Annex 2)
Implementation Modality	Public Contracting modality ²

² Public contracting modality refers to the process of soliciting bids from qualified contractors through an open, competitive tendering process in compliance with Public Works Project (PWP) procurement rules and regulations

2 Sub-Project Description:

The current proposed project includes the rehabilitation and development of the existing fish landing site located in the coastal area of Al Mahrah Governorate. The targeted landing site is in the Al Dumkh area of Al Masilah District.

Al-Dumkh Center is one of the most important sources of supplying the region with commercial fish and a source of income for fishermen, fishmongers and workers in the fish sector. It is in a remote area inhabited only by some fishermen and is about 4 km away from the nearest residential area, which is Hassay. The center consists of a dilapidated main auction hall, administrative offices that need some repairs, and a mosque. The center is supervised by the administration of the Fisheries and Fish Resources Authority in Al Mahrah Governorate and is currently operated by the Hassay and Thamanoon Fishermen Cooperative Association.

Through the field visit conducted by the Public Works Project team and consultations with the center management and fishermen regarding their needs, the center lacks a new, spacious auction hall equipped with a ramp for fish landing to facilitate the process of transporting fish, a nearby fuel station to provide suitable fuel as the nearest fuel station is 10 km away from the center, in addition to the center's lack of public bathrooms, a sewage system, a suitable water source, an electricity source, and the restoration of the administrative offices currently located in the center. The project aims to maintain fish quality, improve fishermen's income, meet their needs, preserve the environment and reduce pollution risks in Al-Dumkh area by establishing and developing the facilities and infrastructure of Al-Dumkh fish landing center. This project will benefit 600 fishermen. The number of beneficiaries of the Hassay community is about 2215, including 1090 males and 1,125 females.^z

The sub-project will be implemented through a public contracting modality/ Third Party Contractors and the implementation period of seven months. The total estimated cost of the sub-project is 500,000 US\$. The estimated cost of ESMP implementation will be 25,700 US\$.

The planned number of workers for this sub-project is estimated at 190, of which 66 (35%) are skilled workers and 124 (65%) are unskilled workers during the project life of the sub-project. Since the area is remote, lacks transportation, and there are only fishermen, the contractor will recruit workers from the surrounding area which is about 4 km away and thus the project will require the provision of accommodation. The contractor will provide suitable accommodation such as tents or caravans for them to settle in during the implementation period which requires 4 square meters per worker according to International Finance Corporation (IFC) and the European Bank for Reconstruction and Development (EBRD) worker's accommodation guidance note³. The contractor can also use the existing bathrooms in the center to equip a septic tank and connect it to the bathrooms in case proper disposal of wastewater is not available for the bathrooms. The septic tank operation is based on an aerobic bacterium that digests sludge, after that, the treated wastewater will flow to soak away the pit to absorb in soil layers. Therefore, no sludge removal activities will be needed. In addition, the contractor will provide accommodation with beds, blankets, and suitable kitchen facilities in the form of caravans. The contractor will be responsible for protecting its workers and communities during implementation apply the environmental and social mitigation measures and provide the required training, tools, and necessary protection equipment for workers.

³ <https://www.ifc.org/content/dam/ifc/doc/mgrt/workers-accomodation.pdf>

The required stones will be purchased from the local market according to the needs, PWP will do its best to ensure that the stones obtained from the local markets are obtained from primary suppliers who have occupational health and safety procedures in place and who do not employ child labor or forced labor and who use quarries or stone collection sites outside ecologically sensitive zones. PWP will communicate its requirements and policies to the local market and primary suppliers and will do its best to check labor logs and IDs of primary suppliers. PWP will only use primary suppliers who obtain stones outside of ecologically sensitive sites (including important bird areas, key biodiversity areas and protected areas) and areas with community conflicts, and they will be retained and used on the same day, Public Works Project PWP/Contractor ensures, to the best they can, that the local suppliers obtain the stones from safe quarries away from ecologically sensitive zones and with OHS procedures in place. They will also be taking measures to mitigate any loading and transportation risks. Construction materials such as cement will be sourced from local markets as needed, retained, and used on the same day. Suppliers using forced labor and/or children will not be contracted.

A consultation meeting was held with the target community to form an elected community committee consisting of 3 men from the fishing community and 3 women, who will participate in decision-making, needs assessment and public consultation, and will also participate in monitoring the implementation and handover of the sub-project from the construction contractor to the operator (The administration of the Fisheries and Fish Resources Authority in Al Mahrah Governorate), 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 market values will be conducted by Technical Vocational Education Training TVET centers and Yemeni Fishery Exporters' Association.

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 Work⁴:

The proposed onshore works in the Al-Dumkh Center are aimed at increasing and upgrading the center facilities and infrastructure to conserve fish quality and improve the income of fishermen in Al-Dumkh area while improving the hygienic conditions. The proposed project will include the demolition of the old deteriorated auction hall that does not contain asbestos, the construction of a new and spacious auction hall with a ramp for fish landing, a fuel station, public toilets, a generator room, an electrical control room, a water source (well), a septic tank, Soakaway pit, in addition to the rehabilitation of the administrative offices. Activities will include but not be limited to the following:

New buildings/structures:

- Demolishing deteriorated auction hall including collecting and transporting construction waste to areas appointed by local authorities.
- Site leveling works.
- Excavation works at a depth of 1.5 meters, with a width between 2 - 2.5 meters, and a length between 2 - 3 meters for foundations.
- Backfilling works in layers using the extracted soil or proper materials in all parts of work.
- Supply the construction materials such as stones⁵, sand, and gravel from the market, when needed.
- Implement masonry works under the ground beams.
- Plain concrete works.
- Reinforced concrete works for foundations, columns, slabs, floors, and septic tank.
- Plastering works for interior, and external walls and roofs (3.10-meter height).
- 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.
- All sanitary works include
 - Supply and Installing toilets, disabled toilet accessories (handrail- Adjustable toilet).
 - Supply and Installations of sanitary pipes (buried at a depth of 80 cm and 60 cm wide with total length 250 m) with diameters of 8, 6 and 4 inches in diameter 346 m in length.
 - Supply and Installations rainwater drainage pipes, 4 inches in diameter 87m in length.
 - Valves chamber rooms (100X100) cm.
 - Installation a HDPE tank (septic tank) with dimensions of 17.0m length and diameter of 2.7 m. and two soakaway⁶ pit one for the auction hall with discharging directly, and the other from bathrooms to septic then to the soakaway pit. The septic tank operation is

⁴ For Typical Drawings please see (Annex 1).

⁵ Stones will be brought from local markets. The standard stones dimensions are (25*25*25) cm.

⁶ 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.

based on an aerobic bacterium which digests sludge, after that, the treated wastewater will flow to soak away the pit to absorb in soil layers. Therefore, no sludge removal activities will be needed.

- Supply and installation of a water supply network from tanks to new buildings, ¾" inches in diameter and 45 meters long. This water is sourced from the shallow well and will be used for cleaning purposes only. Fresh water will be brought by water trucks from well located in the Hasai area, which is about 10 km away.
 - Supply and installation: 3 fiberglass tanks with a capacity of 3 cubic meters.
 - Drilling a well with a diameter of 18 inches, 13-meter depth and installing the submersible pump and testing the productivity and analyzing a water sample which will be used only for washing. At a 13-meter depth, it is going to be brackish water-salt water due to the shallow depth. It is not ground water from the aquifers to be deeper and at a significant distance from the shoreline. In addition, the TDS of the water is of no importance it is used to just for washing purposes and not drinking. The well will have fences and signs to ensure no falls.
- Gravel backfills for roads and parking vehicles.
 - Supply and installation fire extinguishers.
 - 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.
 - 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 electrical roof mounted fans
 - Supply and installation electric socket
 - Installation of an electrical bell and internet network
 - Supply and installation ventilation exhaust fans
 - Supply and installation roadway luminaires
 - Supply and installation earthing system.
 - The main electrical distribution board.
 - Supply and installation of a metal board with the name of the project, sponsor and the GM hotlines
 - Collecting and transporting the construction waste residues to areas appointed by local authorities.
 - The fuel station will be built on a leak-proof concrete base to serve both boats and vehicles and will be located approximately 100 metres from the shore. The fuel tank will be fitted within well-insulated concrete walls to prevent any leaks.
 - Planting the native trees in the sub-project's locations.

Rehabilitation of current structures:

- Rehabilitation of administrative offices.

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, Bulldozer, Dump truck, Wheel loader, Shovels and spades, Jackhammers, Compactors, and Surveying equipment).
- **Plain and reinforced concrete** (Concrete mixer, Vibrators, Concrete pumps, Trowels, Reinforcement bars (rebars), Bar benders and cutters, Formwork (plywood or metal), Scaffolding, Concrete buckets, and Power tools (drills, saws, grinders, etc.))
- **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, and Spirit level)
- **Painting works** (Paint brushes, Rollers, Paint sprayers, Paint trays, Paint buckets, Drop cloths, Sandpaper, Putty knives, Painter's tape, and Ladders or scaffolding).
- **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:** Forklifts, Hoists and pulley systems, cranes.
- **Chemicals used:** Cement, epoxy, paint
- **Demolition machines and tools:** Wheel loader, Jackhammers, Sledgehammers, Chisels and Pry Bars.

The following table below shows the name of sub-project and the technical details related to the sub-project, estimated cost for the sub-project, ESMP cost, and estimated number of labors.

Table 2 shows the details of the proposed sub-project

No	Sub-Project ID	Subproject Name	Governorate	Total area of sub-project (m2)	SP Estimated Cost US\$	Estimated cost for ESMP Implementation US\$	Estimated/ planned No. of Labour
1	18-09-17603	Rehabilitation and Development of AL-DUMKH Fish Landing Center – AIMasilah district	AlMahrah	9,550	500,000	25,700	190

2.2 Location:

Al-Dumkh Land is in Al-Masilah district, Al-Mahrah governorate, Yemen. Al-Maharah is a coastal governorate along the Gulf of Aden. Al Mahrah Governorate is characterized by a long coastal strip estimated at 560 km in length. The following table shows the coordinates with links to google Maps, and Map photos for the proposed project taken from Google satellite.

Table 3 Name of the sub-project and the coordinates of the Location with link to google map

Governorate	Subproject-ID	Subproject Name	E (Y)	N (X)	Google Map Link
Al-Mahrah	18-09-17603	Rehabilitation and Development of AL-DUMKH Fish Landing Center – Al-Masilah district	50.810902	15.091500	LINK⁷

Figure 1: subproject location



⁷ <https://maps.app.goo.gl/4y8gCissVTW41macA>

3 Environmental and Social Baseline conditions:

The community and technical team of the Public Works Project conducted socio-economic surveys such as demographics, livelihoods, income, access to basic services and civil society organizations in the sub-project area. The team also surveyed the landing center site and the coastal area adjacent to the fish landing center site, as well as the marine environment.

3.1 Socio-Economic

Al-Maharah governorate is located in the far southeast of Yemen on the border with the Sultanate of Oman along approximately 500 kilometers of the Arabian Sea coast. It is located 1,318 kilometers east of Sana'a. The governorate is the least populous in Yemen. It is divided into nine administrative districts and Al-Ghaydhah, its capital, is a coastal town on the Arabian Sea. Based on the 2021 Humanitarian Needs Overview Yemen, OCHA, the population of Al-Maharah governorate, reached (157,606) people, including (99,386) males and (76,220) females, in addition, to 170,000 IDPs (status December 2022). The socioeconomic profile in Al-Maharah is represented by agriculture, livestock breeding, and fishing.

Al-Dumkh landing center overlooks the Gulf of Aden to the south on a flat, slightly sloping sandy coast. Al-Dumkh area is a remote, non-residential area except for the fishermen working in Al-Dumkh landing center. It is 4 km away from the center of the Hassay area, and is connected to the international highway No. 100 by a paved dirt line that ends at Al-Dumkh fish landing center.

Hassay area is the closest residential area to Al-Dumkh fish landing center, with a population of approximately 2,215, including 1,090 males and 1,125 females. The number of fishermen benefiting from the project is 600 fishermen.

Regarding the living standards of families in the area, the poverty rate experienced by the majority of families in the region is 60%, while families with medium income make up about 30%. The remaining families have good income levels. The unemployment rate in this area is approximately 50%.

The economic activity

Fishing is one of the most important sources of income for families in the targeted area, followed by trade, followed by daily wage labor. There are no farmers or any agricultural activity in the area.

Access to basic services

Regarding education, there is a primary school in the Hassay area, about 2 km from the project area, consisting of 9 classrooms. While the distance to the nearest high school is about 4 km.

Regarding health, there is a health unit in the Hassay area and a medicine store established by the local authority, about 2 km from the project.

As for drinking water sources, there is a non-governmental water network in the Hassay area and a well-used for drinking, about 10 km from the project. As for Dumkh, there are no water sources and it is brought by water truck.

There is no sewage network in the area and the residents suffer from the spread of diseases due to the poor sanitation conditions in the area

Civil Society Associations in the region:

Civil society associations and the private sector have a vital role to play in conserving the environment as well as degrading the environmental resources. NGOs are among the Associations that play a major role in the Yemen society. Most of these associations aim to develop and strengthen collaborations between actors engaged in different parts of the fish production system and provide services in the same field, as well as providing loans and contributions to supporting cultural and social services for fishermen.

There is one association in the region that currently operates the center, which is the Hassay and Thamanoon Fishermen Cooperative Association

Fishing⁸

Fisheries play a major role in contributing to both poverty alleviation and food security in Yemen as a whole, and currently provide livelihoods for some 60,000-80,000 artisanal fishermen and their families. In many coastal communities, fisheries remain the dominant sector of the economy, and in addition to direct employment and income, create many additional jobs and considerable income through multiplier effects.

Fish harvesting is mostly a full-time, male activity. Women are almost completely cut off from any aspect of direct fishing, and their role is in fish processing, at least among the fisher communities. The fishing expertise of individual fishers (i.e., the duration in fishing) is a key element, because all fishing activities, at the different production cycles, needs know-how. Fishing expertise also dictates behavior and codes of conduct, such as best practices in resource management and conservation. The total number of persons (men) directly involved in fisheries (fish harvesting) is about 600. However, a much larger population (difficult to estimate) is involved in different fisheries related activities, such as fish products processing and marketing, transport, boats building and repairing, etc.

According to a report by the Fisheries Cooperatives Union (FCU), there are 14,000 fishing vessels in Yemen. Two basic types of boats may be found in all Yemeni coastal areas:

- The huri is the most common: it is a canoe-like boat (from 6 to 20 meters long) of 15, 20 or 25 tons hold capacity, with an outboard engine; its crew is generally made up of 2 to 6 persons. Small huris can be seen anchored or lying on the beach, at all fishing centers. They cannot be operated when the seas are too rough.
- The sanbuuq is a large wooden boat, with an inboard engine. There are different types of sanbuuqs, ranging from 25 to up to 70 tons hold capacity; 12 - 15m long keels with 150 - 250 horsepower diesel engines). capacity (up to 5 tons of iced fish), and size of the crew (10 to 20 persons or more). Figure 2 shows these two types of boats.

Figure 2: Types of boats found in Yemen

⁸ Bonfiglioli, A., & Hariri, K. I. (2004). Small-scale Fisheries in Yemen. The World Bank.

	
A fiberglass larger <i>huri</i> with a 3-person crew	Large sanbuuqs

Manual fishing methods include a variety of fishing gear such as handlines, trolling lines, longlines, traps, cast nets, beach seine-nets, gill nets and round haul nets, and so on, according to fish species. A boat should normally be equipped with different types of nets, according to the seasons and the types of species harvested. The lack of ice and ice storage on the boats is considered as a major constraint of the entire artisanal industry. However, large boats take ice (about 1,000 kg per fishing expedition). According to Republican Decree Law No. (42) of 1991 Regulating the fishing, exploitation and protection of aquatic life, which authorizing the Ministry of Fisheries and its affiliated bodies to determine of fishing areas, the opening and closing of fishing seasons, also identify fishing gears that not due harm to aquatic life⁹.

According to Regional Organization for the Conservation of the Environment of Red Sea and Gulf of Aden PERSGA, fishing is a highly seasonal activity, which depends on climatologic elements (variations in winds and sea conditions) as well as on fish behavioral factors (some fish species are available throughout the year, others only at certain times of the day or at certain seasons). Artisanal fishing is mostly concentrated within 40 km from shore. There are high seasonal variations in terms of fish catch, depending on the species and their characteristics (see table 4) during the period June-September (south-west monsoon): While the catch of sardines stops completely, catches of other fish stocks increase. Shark is the only stock which is not affected by the monsoon. The period March-April is the peak of Yellowfin tuna catches. Lobster fisheries is closed from June to September, and the most productive period is from October to December.

Table 4: Seasons (Yemeni coastal areas)

PERIOD	ENGLISH	ARABIC
<i>April-June</i>	<i>Pre-monsoon</i>	<i>Futtur</i>
<i>June-Sept.</i>	<i>Monsoon</i>	<i>Shamal</i>
<i>Sept-Nov</i>	<i>Post-monsoon</i>	<i>Futtur</i>
<i>Nov-March</i>	<i>Winter</i>	<i>azyab</i>

⁹ For more information see link: https://yemen-nic.info/db/laws_je/detail.php?ID=11319

The tonnage of fish landed at Al-Dumkh Center daily is approximately one ton to one and a half tons per day. The fish are sold individually or in bundles. Some landings are not recorded and some fish products are not recorded as they are processed and sold directly to traders for export markets. Al-Dumkh Center is famous for exporting Lethrinus and shrimp widely and is also famous for other species such as Parrotfish, Tuna, Sardines and other types of crustaceans.

Physical Environment

3.2 Meteorological conditions:

The dry tropical climate prevails in Al Mahrah Governorate, with the exception of Hawf District, where rainfall falls regularly annually, starting from June until September. Temperatures range between 18 -33°C in the coastal areas adjacent to the Arabian Sea coast due to the blowing of seasonal winds.

Al Mahrah Governorate has a dry tropical climate with annual rainfall. Due to its proximity to large bodies of water (the Arabian Sea), the humidity ranges between 30-71%, unlike other coastal cities, due to rainfall and the spread of vegetation.

As for rain, it rains regularly every year from June to September.

The maximum wind speed is 61 km/h, and this is due to the fact that most of the city is located on the eastern coast and in an open area.

The weather in Yemen is generally clear during most days of the year. This is shown by the data on solar brightness recorded in a number of regions of the country with different ranges. The annual average ranges between 6 and 10 hours of brightness per day. The data showed that solar radiation is lower during the year in the coastal zone (less than 5500 MJ/m²/year).

3.3 Hydrology:

Ground Water:

There is a well in the Hassay area used for drinking purposes, and it is about 10 km away from the project area (Al-Dumkh fish landing center).

Surface Water:

It has been observed to the east of Al-Dumkh Fish Landing Center that there are signs of runoff points, as well as areas where rainwater accumulates due to the flow of rainwater from the Thamanoun plateau. However, these areas are not connected to the sea and pose no risk to the center. The Hassay runoff point is located more than 3 km from the project site, while the Mesial Thamanoun runoff point is over 11 km away.

Seawater

Turbidity

The major source of turbidity in the coastal water is typically phytoplankton, particulates, silts from shoreline erosion, resuspended bottom sediments, and organic detritus. In comparison with the open

oceans, the water turbidity in the coastal region is highly dynamic and closely associated with the atmosphere, and ocean variability, such as cyclones¹⁰ and algae blooms¹¹.

In the study conducted in the Gulf of Aden waters, the average turbidity values were 0.2 turbidity units. The seasonal values showed that the highest turbidity was during August and September. The turbidity in the coast was characterized by low turbidity values and large temporal variability. The total surface turbidity in the coast ranged between 0.2 and 3.5 turbidity units.

Sea level

The sea level at the Gulf of Aden rises between September and May and falls during June-July to reach the minimum in August. The seasonal oscillations in the mean sea level is attributed to astronomical effects, effects of evaporation, very low to negligible precipitation and river discharge, atmospheric pressure, and steric sea-level effects.

Currents:

Currents are stronger in the Gulf of Aden than in the Red Sea and are associated with the direction and force of the north-east and south-west monsoons. During the winter, driven by the north-east monsoon, they set west-south-west along the coast of Yemen at an average rate of around 0.25 knots. The middle of the Gulf of Aden, the current sets from the Horn of Africa to the west at average rates of 0.5 knots. However, stronger rates have been reported in some parts of the Gulf of Aden.

During the south-west monsoon in the summer months, the current along the Yemeni coast consistently sets east-northeast at an average rate of 1.0 knot, although rates of up to 3.0 knots have been recorded at this time. In the middle of the Gulf of Aden the currents are more variable, with counter currents tending to set from east to west¹².

Tides

The tide of the Indian Ocean and Gulf of Aden does not enter the Red Sea, where a different tidal regime is found. In the Gulf of Aden tides are generally diurnal, or a mix of diurnal and semi-diurnal tide. The maximum spring range at Aden is 2.7 m and at Djibouti 3.0 m. At the eastern end of the Gulf of Aden the tide becomes more semidiurnal, with an extreme range of around 2.7 m. Tidal streams in the Gulf of Aden are generally weak and masked by the current^{Error! Bookmark not defined.}

The fish landing center is located on a slightly sloping sandy coast. This coast is wide enough for the tides, as the highest tide in the fall reaches 50 meters, and the effect of the waves reaches a suitable distance from the fish landing center, Al-Dumkh. See the figure 2.

Figure 3 Tidal position relative to center

¹⁰ Shi, X., Y. Wang, & X.D., X. (2008). Effect of mesoscale topography over the Tibetan Plateau on summer precipitation in China

¹¹ Wang, M., & Shi, W. (2008). Satellite observed blue-green algae blooms in China's Lake.

¹² Gladstone, W., Facey, R., & Hariri, K. (2006). State of the marine environment: report for the red sea and Gulf of Aden. Jeddah: Regional Organization for the Conservation of the Environment of the Red Sea and Gulf of Aden (PERSGA).



3.4 Pollutants

Often when processing fish on fishing boats, waste oil, blood and offal are discharged directly into the auction hall. This oily fish waste spreads in the water and impacts the wildlife. Additionally, to wastewater being released untreated into the environment, human and animal waste that contains bacteria, viruses, nutrients, chemicals, medications, soaps and detergents, plastics, debris, and other solid waste pollutes seawater.

Several environmental and operational issues were noted during the site survey. Overall, the site suffers from inadequate levels of sanitation and poor management of solid and liquid waste.

A HDPE tank (septic tank) and two septic tanks will be installed, one for the auction hall, and the other from the bathrooms and both will go to the septic tank for treatment and then to the septic pit. The operation of the septic tank relies on aerobic bacteria digesting the sludge, after which the treated sewage flows into the absorption pit for absorption into the soil layers. Therefore, there will be no need for desludging activities.

Regular awareness sessions will be conducted for fishermen on proper disposal of solid/plastic waste and penalties will be applied for improper disposal of waste.

3.5 Cultural Heritage:

The sub-project will be implemented within the existing landing center for which there is no record of any archaeological or historical sites. The sub-project will be limited to improving and building new facilities. There are no potential impacts on the cultural heritage at the site.

3.6 Soil and Geology:

The project is located on the coast of Al-Mahra, which constitutes approximately 10% of the total Yemeni coastline. The coastline mainly consists of sandy beaches interspersed with some rocky headlands. The

sandy coast dominates extensively toward the open sea, with a gentle slope of the seabed extending to a distance of over 300 meters, where solid substrates are present.

3.7 Air Quality and Noise:

In general, there are no specific measures that indicate the level of noise in Yemen, but there are many sources of noise in Yemen, the most important of which are traffic, construction work, and sports, social and religious activities. As for the area where the project will be located, there are no sources of noise as it is a remote area. The project area has good air quality due to its coastal location and the absence of industrial activities. There is some dust pollution due to unpaved roads and occasional vehicle emissions.

3.8 Biodiversity:

Fauna and Flora

The sub-project area has no areas of high biological importance, biodiversity areas, nor archaeological sites. The area is not ecologically sensitive and do not have high biological importance, and there are no endangered species present. According to the Bird Life International and key biodiversity areas websites, the sub-project is located outside the Important Bird Area (IBAs) and key biodiversity areas (KBAs).

Due to the desert nature that constitutes most of the surface of Al Mahrah Governorate, this greatly affects the quality and quantity of vegetation cover. Thus, most of the vegetation cover available on the surface of the governorate is represented by desert plants and herbs, which often grow and increase in the rainy seasons. In addition to other types of perennial trees, especially thorny ones such as samr, sesban, in addition to limited quantities of sidr trees, palm trees, etc.¹³

Sesbania trees have been observed in the project area and the project implementation will likely result in their falling and removal. However, the removal of such species will have no significant environmental impact. Proper replanting of native species after construction can help restore any affected habitats.

There are many wild animals that Al Mahrah Governorate is famous for, the most important of which are, leopards, foxes, rabbits, and other species such as thorny hedgehogs, hyraxes, etc. There are also very small numbers of gazelles. All of these species are found in uninhabited areas. There are also different types of birds, the most important of which are falcons, wild pigeons, kites, owls, and other small birds of different sizes and names, which are often found in agricultural areas and valleys with dense trees.¹⁴ The project is located in a coastal area that was previously developed and is currently used for fishing activities and is not located near any protected area or critical habitat for the aforementioned wildlife species that are typically found in uninhabited areas.

Al Mahrah is a haven for many different reptiles and insects, and it contains more than 65 species of birds belonging to 30 families, including 6 species of rare birds. Through a survey of the project area, some resident non-migratory seabirds (gulls) were monitored on the sandy coast and some marine crabs of the

¹³ <http://yemen-nic.info/gover/almahraa/brife/>

¹⁴ <http://yemen-nic.info/gover/almahraa/brife/>

lobster type. The necessary measures will be taken to reduce any risks to these creatures present near the project.

Al Mahrah is famous for having a natural reserve, which is the Hawf Reserve, and it is considered a home to many wild animals, birds, and rare species of plants. It is about 300 km from the project.

Coral Reefs:

The warm water and absence of freshwater input provide very suitable conditions for coral reef formation adjacent to the coastline. They provide food and shelter for a large and diverse fauna and flora. Most fishing activities in the Region occur in shallow waters in the vicinity of coral reefs. Physical destruction, changes in water quality—such as raised nutrient levels, and changes in salinity and temperature—high levels of sedimentation, and changes in water currents can all damage coral reefs.

No coral reefs were observed in the project area and the closest area to these reefs is the Hof Protected Area which is about 300 km away from the project.

Turtles

Coastal beaches of the Gulf of Aden are of great importance to survival of two threatened species of sea turtles the green turtle (*Chelonia mydas*), and the hawksbill turtle (*Ertochelys imbricata*). No sea turtles were observed in the project area and the closest area where these turtles are found is the Hof Protected Area which is about 300 km from the project and the Sharma Reserve which is about 100 km away. There are no marine turtles or nesting sites in the vicinity of the project area.

3.9 Existing Situation of the Targeted Area:

Al-Damkh Fish Landing Center in Al-Mahra Governorate, Al-Masilah District, is located along a coastal strip estimated to be 560 km long. Al-Damkh Fish Landing Center is considered one of the most important fish landing centers in the region and serves as a vital source of fish supplies, such as sardines and shrimp. It also provides a primary source of income for fishermen, fish vendors, and workers in the fisheries sector.

However, several environmental and operational issues were recorded during the site survey. Overall, the site suffers from insufficient sanitation levels due to the lack of infrastructure for wastewater collection and poor management of solid and liquid waste. This has resulted in the accumulation of solid waste in various areas of the landing center. The current condition of the site's infrastructure is poor, as harsh climatic conditions have led to its deterioration, necessitating rehabilitation.

Additionally, the absence of a freshwater supply at the center has further complicated its operations. This lack of water impacts the cleaning of fish, equipment, and facilities, which raises additional hygiene concerns. A well will be built for cleaning purposes only while fresh water will be brought in by water trucks from a source in the Hasai area, about 10 km away.

Furthermore, the center faces the challenge of not having a reliable electricity source. This lack of power supply significantly affects the center's operations. The site also lacks an on-site fuel station, creating major challenges for fishermen and workers. The nearest fuel station is located 10 km away, resulting in

logistical difficulties and increased operational costs for those who rely on fuel for their fishing boats and equipment.

Figure 4: Existing Situation of the Targeted Areas



Accumulation of waste and solid materials in the center



Current status of the current auction hall at the center
, and it shows the current condition in Al-Dumkh Center4PWP technical team took pictures during their visit in October 202

3.10 Targeted Beneficiaries:

The project aims to maintain fish quality, improve fishermen's income, meet their needs, preserve the environment and reduce pollution risks in Al-Dumkh area by establishing and developing the facilities and infrastructure of Al-Dumkh fish landing center. This project will benefit 600 fishermen. The number of beneficiaries of the Hassay community is about 2215, including 1090 males and 1,125 females. The new facilities will create new job opportunities for both women and men who are not fishermen. Table 5 below shows the total number of beneficiaries segregated by gender:

Table 5: Total number of beneficiaries segregated by gender

Subproject-ID	Subproject Name	Benefited Neighborhoods	Beneficiaries			Fishers
			Male	Female	Total	
18-09-17603	Rehabilitation and Development of AL-DUMKH Fish Landing Site – Al-Masilah district	2	1,090	1,125	2,215	600
Total		2	1,090	1,125	2,215	600

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 local priority intervention and ensure that the intervention is in its suitable place.

4 Environmental and Social Impacts Assessment:

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

4.2 Eligibility (Responsive Criteria and Exclusion List):

This sub-project is eligible for support as per the PWP Environmental and Social Responsiveness (ESR) Criteria at the Proposal Stage- [see Annex 3](#)

4.3 Environmental and Social Screening:

An Environmental and Social screening has been conducted by PWP safeguards staff, field staff, and designer engineers through site visits to the sub-project site, using the screening checklist available in [Annex 2](#).

Positive impacts:

During the implementation phase, one of the most important social benefits that the project will bring is the creation of new jobs for professionals, craftsmen, and daily wage workers in the area. This will temporarily reduce unemployment and improve living standards during the implementation period. There will also be a temporary boost to the local economy through increased demand for goods and services. Those with limited experience will gain new skills, and the community will gain confidence that their needs have been met and the organizational skills of the fisheries association improved.

During the operational phase, the sub-project can have a positive impact on the environment and protect the area from solid and liquid waste and waste. The project will accommodate a larger number of fishermen, thus improving their living conditions, improving their fish products, reducing high operational costs, and working in a safer environment. The sub-project can have a positive impact on the environment by utilizing the available fish resources in the area effectively, improving their quality, preserving them, and managing their resources sustainably and reduce loss of value in the fisheries sector

Negative risks and/or impacts

During the implementation and civil works phase of a center sub-project, there are potential negative impacts on the environment that may occur, such as soil, surface water, and seawater contamination from sewage of latrine and accidental oil spills from equipment maintenance such as loaders, water trucks, waste transport tucks at the work site, and concrete works. Waste accumulation from construction waste activities (such as excavation soil) and construction materials and chemicals (i.e., cement, sand, and aggregate) could impact the surrounding area due to a lack of waste management procedures. Air pollution due to dust from excavations and removal of debris activities and emissions risk (i.e., CO, NOX, SOX, etc.) from machinery such as loaders, water, and waste transport trucks. Ambient noise risks during construction due to heavy construction equipment operation and steel works activity. Temporary

disturbance of marine biodiversity and removal of coastal vegetation (i.e., disturbance from noise, emissions, wastes, etc.)

During the implementation and civil works phase of the sub-project, potential negative social impacts on the community or fishermen may occur, such as child labor/forced labor risk, Sexual harassment, sexual exploitation and abuse (SEA/SH), discrimination against women, the elderly, youth, the poor, and persons with disabilities when selecting beneficiaries and when conducting public consultations, lack of workers' awareness and knowledge on respecting local community cultures including the prevention of SEA/SH, financial exploitation of community or beneficiaries, impacts on community or non-workers health and safety due to access worksite, and poor labor management, including non-transparent recruitment procedures .

With regard to occupational health and safety during implementation, minor and moderate injuries may occur during the activities of the subproject for workers, including injuries related to using scaffolding or ladders. Shoulders and back muscles injuries while lifting materials in the wrong way or lifting heavy loads for long distances, such as lifting stones, cement bags, etc. Exposure to sun heat and bad weather conditions such as sandstorms and heavy rain. Dust, sand, or small parts volatilize during work, causing breathing difficulties. Exposure to noise from machines. Using improper or defective tools. Handling chemicals (i.e., cement, epoxy, paint) causing skin, eye irritation, and difficulty breathing. Blisters on the hands or skin during activities (mixing cement, evacuation, transporting material). Lack of a traffic management plan at the work site and risk of accidents. Injuries, blisters, and other injuries while planting trees. Risk of Lifting Activity during use of lifting equipment such as a crane and risks and accidents from demolishing activities on workers. Electrical hazards that may lead to electrocution of workers or ignition of fires. Risks of falling into excavated zones or falling from heights. Additionally risks from drowning in case workers decide to go for a swim during break time. Hazards related to confined spaces such as tanks, pits, sewers, etc. Risk of conflict with the community because of poor management of grievances resulting from implementation of subproject activities.

Risks during operation and maintenance.

During the operation phase of the sub-project, there may be potential negative impacts on the social and environmental aspects, such as lack of maintenance of the center, impacts in handling of sewage and solid waste, , Biodiversity Conservation, High energy and water usage and the depletion of fish stocks. There is also the risk of poor management of grievances

There may be potential negative impacts on the social and environmental aspects such as the depletion of fish stocks in the surrounding waters due to poorly managed fishing practices. 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 takes place in a context where overfishing is possible. Exploitative fishing techniques and using non sustainable fishing gear and methods may pose a risk on biodiversity and fish stock. Additionally, fishing during spawning seasons may also decrease the number of mature fish and damage the value of the fisheries. The deterioration of government-controlled centres and weakness of monitoring practices are a key reason for the proliferation of such practices.

Furthermore, improper maintenance of boats and accidental oil and fuel leaks may impact the biodiversity and fish stock in the area. Improper disposal of fish waste, oils, and chemicals used in the center has the

potential to damage the water, soil, and air. Underage child labor, especially during peak seasons. Health and safety issues may arise during handling fish waste, biohazards, and poor hygienic practices are exposed to injuries. Risks of fire from generators may also be present.

PWP will ensure OHS measures are in place and monitor the environmental and social issues during the implementation of the sub-project with the support of the community committee which will be involved in the monitoring, as well as following up on the complaints system to ensure that all complaints are received, reported, and resolved quickly.

4.4 Land Acquisition/use and Economic and/or Physical Displacement:

The intervention will be implemented on the same land as the current site and within the available area of the center, which is approximately 15,000 square meters, owned by the General Authority for Fisheries in Al Mahrah Governorate (PWP in progress with the component authorities to get formal property documents but this needs to long time). Therefore, it will not require any land donation or cause any physical and/or economic displacement in accordance with WB ESS 5. In addition, the sub-project will not cause any economic resettlement (more details in Resources and Services' access restrictions in section 4.5).

The Public Works Project (PWP) has further formalized its commitment to implement this sub-project by securing a social agreement¹⁵ with the targeted community and local authority. The social agreement was concluded between the Public Works Project on the one hand and representatives of the local community committees (CCs), and the local authority on the other hand. This agreement includes the conditions and responsibilities between the two parties for the purpose of smooth implementation of the subprojects without obstacles, with the commitment of the local community representatives to facilitate and resolve any issues that may arise during implementing the subproject and after implementation as well, such as facilitating the work of technical and community studies, as well as facilitating implementation procedures after approving the subproject by facilitating the work of the implementing contractor at the agreed upon project site, as well as to operate the subprojects for the purpose which it was created for (Public interest). To review the signatures and stamps of parties with targeted communities and local authorities to implement this subproject, as detailed in [Annex 4](#) of the same document.

4.5 Resources and Services' access restrictions:

The project aims to meet the needs of fishermen, beneficiaries, and administrative staff working at the center. Based on the requirements, the deteriorated auction hall will be demolished, and a new auction hall will be constructed. However, this intervention may impose temporary restrictions on fishermen in selling their fish products. Consultations were held with the Hassay and Thamanoon Fishermen Association, which is responsible for operating the center. The association proposed relocating the

¹⁵ The social agreements state that the local authorities and the community committees are responsible for ensuring that there is no involuntary land acquisition in the targeted sub-project areas. In case any claims of ownership arise during the implementation, these entities are responsible for resolving the disputes. This procedure is conducted during the identification phase of the intervention to verify the baseline survey and to ensure that no involuntary land acquisition occurs. As a result, the agreement serves as a guarantee from community and local authority that the intervention will not require physical or economical resettlement and land acquisition

auction hall to an adjacent and spacious site, which is available and located right next to the center. This would allow fishermen to continue unloading and selling their fish products without any restrictions. Additionally, the intervention includes rehabilitating the administrative offices. This work will commence after completing the new auction hall. The offices will be temporarily relocated to the offices located in the new auction hall during the renovation process, ensuring that the required restoration works can be carried out without any disruptions.

The sub-project will not cause any restrictions on services and other facilities at Al-Dumkh Fish Landing Center site during the implementation period, as the project aims to establish new facilities and components in a planned manner to avoid any disruption to the daily operations of the center. Work activities will be implemented section by section in coordination with community committees, and the contractor will provide all necessary measures to ensure the safety of workers and visitors to the site in accordance with the specifications and health and safety requirements stipulated in the contract.

4.6 Gender and Social related issues:

Males and females were consulted and participated in developing and designing the subprojects to ensure they respond to the needs of all community groups including men, women, and disabled people. The subproject will take into consideration providing local communities with all support that increases their livelihoods and beneficiaries. This will include people with disabilities, females, males, and children.

4.7 Child Labor:

According to project ESMF and LMP no child labour/forced labour will be hired for subproject activities at all work sites including subprojects' quarries. The minimum accepted age is 18 years old, and verification of age will be done before starting the work by checking IDs and other available documents before the commencement of any work. A labour log will be kept, and all workers will be registered, according to contract conditions the contractors and workers should be aware of and sign the code of conduct that states that child labour is not allowed.

4.8 Gender Equity:

Both males and females have been considered beneficiaries when designing the subproject. Additionally, persons with disabilities have been considered during the design phase, where a ramp has been designed to serve people with disabilities and special needs. PWP is mainstreaming Gender in all aspects of the sub-project's cycle as well as raising awareness amongst the community both males and females on job opportunities during sub-project implementation. The total number of targeted beneficiaries for the subproject is 2,215 including 1,090 males and 1,125 females. The number of children under 18 years old is approximately 1,095, comprising 523 boys and 572 girls. The benefiting fishermen in the area amount to 600. The following table illustrates the population by age groups.

Table 6 Subproject population by age groups

location	Age Groups	Males	Females	Total
AL-DUMKH	1-5	185	195	380
	6-14	253	284	537

	15- 17	85	93	178
	18 - 64	493	500	993
	65 and older	74	53	127
Total		1,090	1,125	5212,

Women play a significant role in the region, as most women are employed in government positions in sectors such as healthcare and education. Additionally, they also work in the private sector, including beauty centers. It's known that women don't participate in the fishing process, but they contribute to activities like cleaning, drying, and preservation. PWP will give chances for women to work in the sub-project as a workforce according to their physical ability and according to the culture in the sub-project area. Women who meet requirements have been encouraged to participate as supervisor engineers as well as contractors and can get into the tender competition according to the WB procurement procedures for works and supplies.

Public Consultations

A consultation was conducted on October 15, 2024 with 15 men and women from the beneficiaries and the local community. A wide number of participants participated in this consultation, including important persons from the local authority in the district, from the Public Works Project, from the district office, from the beneficiary of the management of Al-Dumakh Fish Landing Center, as well as from the management of the Hassay and Thamnon Fishermen's Association and from the fishermen. To discuss the current status of the center, the most important needs required by the center, land ownership and appropriate solutions to avoid any problems during the implementation of the project.

Also, PWP established the community committee in the targeted area by sending the social consultants' team (males and females) and conducting focal group discussions in 15th October 2024 including 40 women and 80 men to enable participation in the electing of the community committee. The elected community committee and the members including women and men participated in the decision-making, need assessment, and public consultation. Also, community committee consisting of 6 men and 3 women will participate in the monitoring of implementation, receiving the sub-project, 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 market values will be conducted by TVET centers, and Yemeni Fishery Exporters' Association.

Table 7 below provides the figures on Sub-project's beneficiaries, public consultations, and community committees per gender.

Table 7 Subproject's beneficiaries, public consultations, community committee per gender

Subproject ID	Beneficiaries			Public Consultation			Community Committees		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
18-09-17603	1,090	1,125	2,215	80	40	120	3	3	6

4.9 Sexual Exploitation and Abuse/Sexual Harassment (SEA/SH)¹⁶

PWP raised the awareness of community members, both men, women, and persons with disabilities regarding Sexual Exploitation and Abuse (SEA)/Sexual Harassment during the public consultation process as well as raising community awareness on the Grievance Mechanism (GM) processes and how it can be used to address complaints resulting from project activities including gender discrimination and incidents of SEA/SH. Such incidents shall be treated with the highest level of confidentiality and anonymity in a survivor-centered process. Mandatory awareness training and sensitization sessions about refraining from unacceptable conduct towards local community members, specifically, women will be conducted by PWP through supervisor engineer and subarea staff for all contractors and workers throughout the project lifecycle. This also includes informing workers about the national laws that make sexual harassment, sexual exploitation and abuse, a serious and punishable offense.

Conflict sensitivity and Do No Harm

PWP has its conflict sensitivity manual to manage any conflict cases during the project 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 community provide their consent, acceptance, and satisfaction with the chosen intervention. No concerns were raised by the community against the sub-project. Public consultation included ensuring conflict sensitivity screening. In case of conflicts that cannot be resolved, the sub-project will be rejected. Also, conflict sensitivity is taken into consideration in the monitoring and reporting processes during the implementation by the Technical Resident Engineer. Furthermore, the elected community committee is trained to manage, monitor, and report any conflict that might be generated during the project cycle. Generally, the sub-project will help to build the resilience of the community and improve their living conditions positively.

¹⁶ World Bank Good Practice Note Addressing Sexual Exploitation and Abuse and Sexual Harassment (SEA/SH) in Investment Project Financing involving Major Civil Works <https://thedocs.worldbank.org/en/doc/6f3d9ddc6010c4221315dd1282958e41-0290032022/original/SEA-SH-Civil-Works-GPN-Third-Edition-Final-October-12-2022.pdf>

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 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 assessment stage. It defines the responsibilities of contractors and role players towards different environmental and social issues. It is expected that this plan will be used as the basis for the contractor environmental and social management plan before any activities conducted. The contractor shall develop the plan that is site and activity specific to ensure that impacts identified in this investigation and those that may be identified by the contractor on site are managed.

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.

Environmental and Social Management Plan:

Table 8 ESMP table

Sup-Project phase	Potential Impact Factor	Mitigation Measure	Personnel / Institution Responsible For Execution	Estimated Cost
Social and Environmental Impacts				
Implementation	Child labor/forced labor risk	<ul style="list-style-type: none"> •Ensure child labor is not permitted; all workers will be verified to be over 18 years old and above as per ESS2 • 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. •Ensure the contractor looks for a different supplier who meets the requirement if current supplier fails to meet the requirements. •Verifying age by checking IDs and other available documents. •Ensure a Labor Log is available, and all workers are registered. •Mandatory and repeated training and awareness-raising sessions for refraining child labor. •Ensure the contractor looks for a different supplier who meets the requirement if current supplier fails to meet the requirements. •Training of workers on the Codes of Conduct. All workers to sign Codes of Conduct 	<ul style="list-style-type: none"> •Contractor •Technician Resident Engineer •Community Committee 	NA

Implementation	Sexual harassment, sexual exploitation and abuse	<ul style="list-style-type: none"> •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, sexual exploitation and abuse a punishable offense that is prosecuted. •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 to adhere to it. 	<ul style="list-style-type: none"> •Contractor •Technician Resident Engineer •Community Committee •Gender Focal Point 	500\$
Implementation	Discrimination against women, the elderly, youth, the poor, and persons with disabilities when selecting beneficiaries	<ul style="list-style-type: none"> •PWP adopts a non-discrimination policy that ensures a non-discriminatory and inclusive manner, including women and persons with disabilities when selecting sub-projects. The policy also ensures the inclusion of women in community committees is 50% according to community acceptance. •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. 	<ul style="list-style-type: none"> •PWP Sub-area Staff •Community Committee •Gender Focal Point¹⁷ 	NA

¹⁷ 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 SEA/SH 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	Financial exploitation of community or beneficiaries.	<ul style="list-style-type: none"> • Inform the beneficiaries that the subproject is provided for free, and they should not pay anyone to get benefits of the subproject. • Prepare and publicize in the community a transparent recruitment procedure. • 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. • Raise awareness among PWP Technical resident engineer 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. 	<ul style="list-style-type: none"> • Contractor • Technician Resident Engineer • Community Committee • GM Officer 	NA
Implementation	Lack of workers' awareness and knowledge on respecting local community cultures, and social safeguard issues on SEA/SH.	<ul style="list-style-type: none"> • Implement a systematic awareness campaign to increase workers' awareness of local community tradition and cultures and the need to respect them. • Contactor and its workers to sign the Code of Conduct and receive regular training on the same. • Ensure workers respect and adhere to the Code of Conduct (CoC) for the local community's protection and do no harm. They will be trained on the CoC before each worker signs it • Ensure GM system in place to handle any complaints related to incidents of SEA/SH. 	<ul style="list-style-type: none"> • Contractor • Technician Resident Engineer • Community Committee • Gender Focal Point • GM Officer 	500\$

Implementation	Public Health includes risks of the public, visitors, fishermen, and children's access to the worksite.	<ul style="list-style-type: none"> •Install fences, barriers, dangerous warning/prohibition sites around the construction area and quarries which show potential danger to public people. •Place appropriate warning and directional signs at areas where construction is taking place. •implement regular inspection by site guard. •Keep site surfaces clear from materials such as soil and gravel. •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. •Conduct management and safety plans for maintenance activities. •Erect removable barriers. •Prepare management and safety plans for maintenance activities. 	<ul style="list-style-type: none"> •Contractor •Technician Resident Engineer •Community Committee 	500\$
	Poor labor management including non-transparent recruitment procedures	<ul style="list-style-type: none"> •Raise awareness of the GM system and how it can be used •Document all disputes and resolve them •Respond to complaints and grievances in a timely and fair manner •Conduct regular community consultations to address concerns •Raising workers' awareness of conflict resolution and management 	<ul style="list-style-type: none"> •Contractor •Technician Resident Engineer •Community Committee 	

Implementation	Restrictions on services or resources	<ul style="list-style-type: none"> •This will be mitigated by implementing rehabilitation works during off stopped fishing seasons (autumn and winter), as well as work activities will be implemented section by section in coordination with fisheries associations and community committees. •Move the auction hall to the next alternative location until the contractor builds a new hall. 	<ul style="list-style-type: none"> •Contractor •Technician Resident Engineer 	NA
	No skilled workers in the targeted areas for construction works.	<ul style="list-style-type: none"> •Skilled workers will be hired from targeted areas if not available from neighboring areas. •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 permanent water supply. 	<ul style="list-style-type: none"> •Contractor •PWP •Technician Resident Engineer •Community Committee 	NA
	Complaints Occurrence	<ul style="list-style-type: none"> •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 	<ul style="list-style-type: none"> • Contractor •PWP 	NA
Implementation	Soil and surface water contamination from accidental oil spills, solid and liquid waste and sewage.	<ul style="list-style-type: none"> • Ensure oil change, machine maintenance, washing of machinery is done at designated insulated areas by concrete away from the soil, water areas, and drains. • Carry out machine maintenance and oil change at service centres if present. 	<ul style="list-style-type: none"> •Contractor •Technician Resident Engineer 	\$700

		<ul style="list-style-type: none"> • Only use well maintained equipment to avoid potential leaks. • Ensure the presence of spill prevention kits and remove any spill instantly. • Preparing a septic tank and connecting it to the bathrooms in case there is no sewage drainage for the bathrooms. • Avoid working during rainy seasons and bad weather conditions. • Only use well maintained equipment to avoid potential leaks and perform regular maintenance and maintain a machine maintenance log <ul style="list-style-type: none"> • Construction waste should be stored and handled in designated areas away from the soil and water and from any surface water zones. • Ensure fuel storage sites if present and latrines 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). • Store oil in secondary containment. • Properly label the chemicals and materials <p>Only use trained workers in handling storing and disposing chemicals and materials and disposal should be done via a certified contractor</p> <ul style="list-style-type: none"> • Ensure septic tank are located away from surface water areas. 		
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		<ul style="list-style-type: none"> Remove any spills straightaway and dispose the spilled chemical according to its MSDS guidelines. Perform quality tests on water resources that will be used. Managing and supplying the latrine with water and soap on daily basis. Buy the water from authorized places in coordination by the local authorities and provide them by water trucks Ensure workers dealing with waste wear proper PPEs. <p>Ensure proper housekeeping of latrines and cesspits. by collecting waste in designated area enclosed and not facing wind and regularly disposing them in areas appointed by local authorities.</p>		
Implementation	Poor management in construction waste, equipment, chemicals, storage of construction materials, and Solid waste produced by workers	<ul style="list-style-type: none"> Ensure that workers regularly collect all solid trash in well insulated bags, stored temporarily at designated zones and transport them to the designated landfill or dispose of it in a proper way that does not impact the environment through a certified contractor or at authorized area. <p>All chemicals and materials and waste are stored away from the sea. Chemicals must have spill prevention kits and spills removed straight away</p> <ul style="list-style-type: none"> No waste should be stored close to surface runoff zones. Waste management procedures will be added in the tender documents to ensure proper management of waste in the worksites. An appropriate mechanism was agreed upon for the management of waste resulted from cutting and processing of stones 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 and materials to and from the site to avoid spillage during transportation. 	<ul style="list-style-type: none"> Contractor Technician Engineer <p>Resident</p>	NA

		<ul style="list-style-type: none"> • Attach the waste receipt from the relevant landfill authorities. • Use well-maintained equipment to avoid leakage in the street. • Avoid working during rainy seasons. <p style="text-align: right;">Handling:</p> <ul style="list-style-type: none"> • Cement and other working materials will be brought to the work area and will be put within the work area until using them. Cement and any type of chemical will be handled according to its Material Safety Data Sheet (MSDS). • Workers' waste will be collected in a specific location ensuring that the collected area does not cause any access restrictions. • Work waste such as soil residues, stone-resaping residues, and empty cement bags will be collected in specific locations daily with ensuring that the collected area does not cause any access restrictions. • The Contractor's staff should be trained on waste handling. <p style="text-align: right;">Disposal:</p> <ul style="list-style-type: none"> • Properly collect, transport and dispose of solid waste and hazardous waste at designated permitted sites or landfills identified by the local authorities and cleaning funds. • Disposal approaches will be selected consistent with the characteristics of the waste and local regulations in coordination with the local authority. • Burning waste will not be allowed. • All solid waste will be transported to designated landfill areas. 		
	Air pollution due to dust from activities and gas emissions from machines	<ul style="list-style-type: none"> • There will be minor CO2 emissions from the trucks, however this will be controlled through regular maintenance of the trucks. • Ensure turning off vehicles and machineries when not in used to reduce NOx and CO and PM emissions from machineries and vehicles used. • Spray water to prevent dust. Water sprayed should be done efficiently to avoid wasting water. 	<ul style="list-style-type: none"> • Contractor • Technician Resident Engineer 	NA

		<ul style="list-style-type: none"> • Reduce the amount of water used to control dust, and use sweeping practices to reduce water usage in dust suppression. • Use dust sweeping methods to avoid wasting water in dust suppression. • Properly cover waste during transportation. • Exposed soil and material stockpiles must be protected against wind erosion and the location of stockpiles shall take into consideration the prevailing wind direction. • Provide adequate protective wear (i.e., masks) for workers, and equipment must be maintained regularly to avoid any emissions. <ul style="list-style-type: none"> • Spray the work area with sea water or greywater efficiently and regularly to reduce the dust. • Avoid working during dust storms and windy days. • Material loads must be suitably secured/covered during transportation to prevent the scattering of soil, sand, materials, or dust. • Exposed soil and material stockpiles must be protected against wind direction and the location of stockpiles shall take into consideration the prevailing wind direction. 		
	Noise and vibration are caused by machines, vehicles and steel works.	<ul style="list-style-type: none"> • Schedule compacting activities during daylight hours. • Noise levels in activities will not exceed high noise limits "80 dB for 8 working hours", and exposure hours will be limited. • Machinery must be maintained regularly to avoid exceeding noise emissions from poorly maintained machines. • Limit vehicle speed at critical locations. • Ensure using well maintained machineries and equipment. 	<ul style="list-style-type: none"> • Contractor • Technician Resident Engineer 	NA

		<ul style="list-style-type: none"> • Use small equipment. 		
	Disturbance marine biodiversity and vegetation removal	<ul style="list-style-type: none"> • Establish a liquid waste management plan from all the landing site components and proper disposal at authorized areas by EPA and other relevant authorities • Regular monitoring and inspection should be carried out on the latrines • Ensure providing special containers with secondary containment to store the used oil from the generator and away from water resources and se water. • Aware contractor and the implementation staff 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. • Oil storage tanks/used oil must be stored/installed on insulated ground/concrete ground • Any spills must be removed immediately • Limit noisy, disruptive activities. • Implementing spill containment and pollution prevention plans to avoid accidental releases of contaminants • Ensure regular maintenance by trained workers. • Ensure no presence of stagnant water from excavation • Avoid working during rainy seasons • Ensure Designs the fuel station and gas / fuel storage area involve suitable concrete base and far away from water area. • Ensure all chemicals are stored, handled and disposed according to their materials safety data sheets by trained workers • Carry out regular biodiversity monitoring and inspection on the status of habitats (Coral, 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) • Follow mitigation measures present for air pollution, ambient noise, and waste. 	<ul style="list-style-type: none"> • Contractor • Technician Resident Engineer • EPA 	NA

		<ul style="list-style-type: none"> • Avoid removing any vegetation as much as possible • Avoid removing any endemic or threatened vegetation if present 		
Operational and maintenance phase	lack of maintenance of the center	<ul style="list-style-type: none"> • The GAF and fisheries associations are committed to maintaining the intervention. • 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. 	<ul style="list-style-type: none"> • GAF • Community committee, • Local Authority • Fish Association 	
	High energy usage	<ul style="list-style-type: none"> • 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. • Raising awareness about energy conservation and promoting energy-saving behaviors. 	<ul style="list-style-type: none"> • Community committee, • Local Authority • Fish Association 	
	High use of water	<ul style="list-style-type: none"> • Using water-efficient appliances and equipment • Reusing grey water from sinks, showers, and other sources for flushing toilets and irrigation of treated. • Installing water meters to monitor water usage and carry ongoing monitoring for water quality to ensure it is safe to use 	<ul style="list-style-type: none"> • Community committee, • Local Authority • Fish Association 	NA

		<ul style="list-style-type: none"> • Monitor groundwater well and other water resources used regularly after implementing the subproject and monitor any changes in water quantity and quality • Raise awareness staff on ways to conserve water • Determine and monitor maximum daily abstraction rates from the well to achieve sustainability 		
	Soil contamination and gases emission from diesel leaks from the generator, fuel station, or chemical storage area	<ul style="list-style-type: none"> • Implement safe fuel handling practices, such as using approved containers for fuel storage, avoiding overfilling fuel tanks, and ensuring proper fuel transfer procedures are followed fuel storage in secondary containment on concrete base away from sea and runoff areas and water resources. • Ensure the presence of spill prevention kit and remove spills right away. • Ensure that the generator is placed in a well-ventilated area, to disperse the gaseous emissions and reduces the concentration of fumes around the generator. • Follow maintenance schedule for the generator to ensure proper functioning and minimize the risk of leaks • Regularly inspect the fuel lines, connections, and tanks for any signs of damage or leakage. Address any issues promptly to prevent further damage or contamination. • Implement secondary containment measures to capture and contain any fuel leaks or spills. This can include using containment trays around the generator and fuel storage area to prevent fuel from reaching the soil. • Provide training to employees and personnel involved in generator operation and fuel handling on safe practices, spill response procedures, and environmental risks. Promote awareness of the importance of preventing and addressing fuel leaks and emissions. 	<ul style="list-style-type: none"> • Community committee, • Local Authority <ul style="list-style-type: none"> • Fish Association 	NA
	Solid and liquid waste generated from facilities of the center and generator and fueling station	<ul style="list-style-type: none"> • 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 importance. • Inform the public of maintenance times. 	<ul style="list-style-type: none"> • Community committee, • Local Authority • Fish Association 	NA

		<ul style="list-style-type: none"> • 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. • Sign an agreement with local authorities on the maintenance and waste disposal requirements. • Disposing regularly of the organic waste in accordance with agreement with local authorities. • The liquid waste is piped to a septic tank, where solid waste is separated from liquids. • The collected solid waste from the septic tank is securely and hygienically disposed away. • Regular maintenance and inspection should be carried out on the septic tank and generator room • Fishing boats' engines, Vehicles, and equipment such as petrol pumps must be subjected to regular maintenance to avoid any leakage of hazardous on concrete bases and regularly inspect the area for spills.. • Ensure that site petrol pump area have impermeable floors to confine pollutants and regularly inspect the area for spills. • The area of continuous disposal of waste generated from fish processing operations shall be determined in the designated place for waste approved by the local authority • Transporting solid waste to the designated permitted sites, waste disposal sites allocated by the local authorities • Implement a penalty fees for boats/fishermen who release waste into the sea • Ensure the presence of spill prevention kits near gas station • Remove spills right away • Ensure refueling of boats is done in an environmentally safe manner (i.e enclosed surface to prevent leaks from boats into the sea) 		
	General occupational health and safety procedures for workers during operation including risks of fires from generators	<ul style="list-style-type: none"> • 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. 	<ul style="list-style-type: none"> • Community committee, • Local Authority • Fish Association 	NA

	, handling fish waste, biohazards, and poor hygienic practices	<ul style="list-style-type: none"> • Employees in hazardous facilities should be trained in accident prevention, first aid, emergency response, and reporting protocols. • Use mechanical lifting aids and trolleys to reduce manual handling of heavy objects. • 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. • The number of firefighting units must be present on the signs • Implementing proper procedures for collection, storage and disposal of fish waste and other biohazardous waste. • Ensure adequate wastewater treatment and solid waste management • Ensure non-slip flooring and walkways in processing areas • Store and label fish waste at designated zones • Regularly dispose fish waste/biohazards according to the local authority by certified local contractor • No biohazards to be disposed in the sea • Ensure workers maintain proper hygiene and cleaning of the site area and raise awareness of proper hygiene and housekeeping measures 		
	Biodiversity Conservation	<ul style="list-style-type: none"> • 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. 	<ul style="list-style-type: none"> • Community committee, • Local Authority • Fish Association 	NA

		<ul style="list-style-type: none"> • Ensure not disturbing turtles that reach the landing site shore and release any caught sea turtle right away. • 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). • 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. 		
	The depletion of fish stocks	<ul style="list-style-type: none"> • Using sustainable yield levels to establish total permissible harvest limits for major fish species. • limiting the use of certain damaging fishing gear after consulting with in coordination with local Environmental Protection Agency (EPA). • Designating specific regions as marine protected zones where fishing is prohibited. • Individual quotas for fishermen depending on catch limitations in coordination with EPA. • Restricting certain forms of fishing at specified periods of the year to protect spawning fish and youngsters in coordination with local Environmental Protection Agency (EPA). • 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. 	<ul style="list-style-type: none"> • Community committee, • Local Authority • Fish Association 	NA

		<ul style="list-style-type: none"> • Encourage the use of mooring anchorage instead of traditional anchors. • Ensure not disturbing turtles that reach the landing site shore and release any caught sea turtle right away. • 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). • 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. • In the broader context, the UNDP is engaged in other major sub components in this project to address fish stock management. These subcomponents are identifying and addressing institutional gaps in order to build the national institutional capacity for sustainable fisheries management. 		
	Air Emissions from organic waste and power generations	<ul style="list-style-type: none"> • Ensure that the generator is placed in a well-ventilated area, to disperse the gaseous emissions and reduces the concentration of fumes around the generator. • Maintain machinery in good working conditions to minimize emissions including exhaust emissions of CO, NOx, and fumes. • Cleaning regularly the selling yard to avoid the bad odors • Disposing regularly of the organic waste 	<ul style="list-style-type: none"> • GAF • Community committee, • Local Authority • Fish Association 	NA

The occupational health and safety Management Plan

Table 9 Occupational and Health Safety Plan

Tasks / Activates 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)	<ul style="list-style-type: none"> • Conduct comprehensive training about occupational and health safety (OHS) aspects before the beginning of the sub-project 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). • 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. • 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)¹⁸ 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. • Ensure maintain occupational health and safety system in the site to protect workers from hazards and risks. • 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. • Ensure the necessary personal protective equipment (PPE) is always worn by workers and they get it for free. • Involving the community committee in the monitoring of safety procedures and reporting any risks. • 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. • In case activities at height take place, provide safety ropes if workers and fall protection devices. • 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. • Provide training on handling chemicals or hazardous materials. Ensure workers are trained in handling paints, cement, insulators, and others and are aware of its health hazards. Additionally, ensure that workers handle and store chemicals or hazardous materials according to its MSDS. • Ensure no work is conducted during bad weather conditions (i.e., sandstorm, dust storm, rainy seasons, etc.) 								<ul style="list-style-type: none"> • Contractor • Resident Engineer • Workers 	provide safety equipment for workers 23500 from the intervention cost

¹⁸ 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.

	<ul style="list-style-type: none"> • In case scaffolding, ladders, works on project surfaces are used, inspect their stability and ensure guardrails are installed prior standing on them. Workers must also use strong safety harnesses when working at heights. • Ensure proper speed limit and driving safety measures are adhered to including wearing seatbelts. • Use appropriate and proper equipment and ensure its safety before starting any activity • Preparing the site and the appropriate organization of materials, vehicles and machinery before starting any activity to ensure the safety of workers • Provide safety training - On hazard awareness, material handling techniques, PPE use, fall protection, housekeeping and emergency response. • Aware workers on the risks and hazards of sea water conditions and weather events that could endanger their safety, enabling them to identify and avoid dangerous weather conditions and unsafe waterbodies. • Workers have the option to remove themselves from unsafe working conditions without any reprisals. • Adequate supervision to prevent swimming, and provide a trained lifesaver. • Provide life and health insurance to all project workers. • Regular breaks and provide drinking water for workers. • Report major accidents to the WBG within 48 hours by UNDP 							
Excavation works	<ul style="list-style-type: none"> • Injury of hands or feet during excavation in rock or semi-rock areas using a manual or mechanical excavator • Injury to the parties when using drilling or drilling equipment such as jackhammer • Misuse of equipment for excavation or waste removal and other workers • The collapse risks of the excavation's sides on the workers • Dust, sand, and small parts volatilize while excavating in soil. • Exposure to the burning sun during excavation. • Falling, Slipping, tripping from bad site arrangements. • Falling parts , tools , and equipment on workers into excavated area. • Noise exposure from machineries used • Exhaustion and injuries from excavation activities 		X	<ul style="list-style-type: none"> • Ensure that excavation workers understand special procedures that help avoid and mitigate potential risks. • Ensure activity is done by skilled workers. • Use appropriate equipment for drilling and pay special attention while using the mechanical excavators to cut or remove rocks. • Wear ear mufflers for noisy activities • Limit the use of continuous equipment for individual workers that generate noise and vibrations. • Maintenance of excavation equipment before starting work to ensure that it is in good and safe working condition. • Do not use tools with obvious signs of damage • Inspect the tool before use. • Conduct inclined excavation if the soil is collapsible or saturated with water. Also, the sides of the excavation shall be supported with timbering or steel that is adequate to protect the excavation sides from collapse. • Remove falling blocks or sliding soil in any area located above the excavation places. 			X <ul style="list-style-type: none"> • Contractor • Resident Engineer • Workers 	Part of PPEs cost first item

				<ul style="list-style-type: none"> • Ensure workers are wearing masks and goggles, safety boots and gloves to prevent dust and other particles from entering their respiratory system, eyes and to prevent skin injuries and cuts • Ensure providing regular rest breaks and water to workers • Check weather forecast prior to starting any work and avoid working during bad weather conditions, (e.g dust storm, heat waves, rainy periods etc.) • Preparing the site and organizing material coding to ensure the safety of workers at work • Adding banners and warning signs in the drilling areas • Provide guards at excavation areas to prevent local communities from accessing excavation • Collecting and transporting the excavation residues to the landfills allocated by local authorities • Alert local communities about the dangers of drilling. • Inspect ladders and scaffolds before using them. • Ensure adding signs and barriers around excavated areas to prevent workers from falling • Daily maintenance for the excavation fence to ensure it is fixed. • Ensure good housekeeping and site arrangement practices are followed • Removed all objectives, equipment, materials, and sliding soil from the areas surrounding excavations and at least 1 m from the edge to avoid falling into the excavation. • Periodic inspection to ensure that mitigation measures are implemented and stop any unsafe act or unsafe situation. 					
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					<ul style="list-style-type: none"> • Wear ear mufflers when using heavy and noisy machineries • Add barriers and signs around the 13m deep well to avoid falling inside them • Wear masks and googles and safety boots during excavations • Ensure regular breaks and potable water supply to workers 					
Work in closed or confined spaces	<ul style="list-style-type: none"> • Injuries due to lack of oxygen or toxic gases • Variation in temperature (cold, hot) • Trapping risks inside these places • Risks of contacting sewage • Workers' ignorance of safety hazards at the work site 		X		<ul style="list-style-type: none"> • Workers working in confined places must have a work permit approved by the person in charge. • Ensure the safety of the air surrounding the confined areas before each entry and measure oxygen and toxic gases concentrations and provide adequate lighting, and provide the necessary tools and devices such as a respirator, hydrogen sulfide meter, safety belts, helmets and paws ... etc • Provide devices for measuring and detecting gases • Providing air supply equipment by pumping air into closed spaces or places where toxic gases are present • Ensure proper ventilation of confined areas prior entry • Provide self-contained breathing apparatus (Air cylinders) to all workers when working in the confined spaces such as manholes • Ensure presence of extra oxygen tanks • Provide full-body harness and lifelines and gas detectors when working in the confined spaces (Sewer manholes) or canals; • Ensure no worker spends too much time in confined areas 			X	<ul style="list-style-type: none"> • Contractor • Resident Engineer • Workers 	Part of PPEs cost first item

[illegible]

					<p>anticipation of any emergency situation.</p> <ul style="list-style-type: none"> • Ensure workers are wearing overalls before entering sewage tanks • Ensure presence of washing machine and washing area for workers • Ensure all workers in confined areas know the risks and adhere to safety measures • Inspect all PPEs prior usage • A permit must be cut before entering any enclosed area from the site official to review the safety equipment before starting work in anticipation of any emergency. • 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, Location, and working shift, maximum shift time, start time and finish time of entry to the confined areas to ensure safety of workers. • All workers in confined areas are attached by safety ropes 					
Work at height	<ul style="list-style-type: none"> • Fall of workers from ladders, scaffolds, rooftops, platforms, etc. • Injury/death - inadequate ladder; inadequate use of ladder • Fall of tools, equipment or materials from above and strike workers below 		x		<ul style="list-style-type: none"> • Use safe scaffolding for working at height and ensure it is according to safety standards and specifications. And guardrails are implemented on scaffolds • Check the scaffolding specification before using it and ensure it is according to international safety standards. • Inspect ladders and scaffolds before usage and ensure they are properly fixed. • Wear fall protection devices and helmets. 			x	<ul style="list-style-type: none"> • Contractor • Resident Engineer • Workers 	Part of PPEs cost first item

	<ul style="list-style-type: none"> • Struck of workers by falling objects or moving parts of equipment when working at height. • Risk of electric shock from power lines, electrical cords and equipment when working at height. • Failure of ladders, scaffolds or other access equipment. • Overextend or lose their balance of workers when reaching or working from ladders, platforms, etc. • Working at height during adverse weather • Working on uneven, sloped or fragile surfaces at height • Collide workers with other persons, objects or equipment when working at height. 			<ul style="list-style-type: none"> • 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. • 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 and head helmets. • Do not stand under ladders or lifting areas • Ensure cautious supervision of the workers during working at height. • Use safety gloves while loading, transporting, and distributing bricks 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. as well as use safety gloves while mixing concrete. • Wearing isolation boots and gloves are obligatory while using the electrical tools. • Overalls, eye protection, and face visors are provided for workers who work on cutting. • Ensure ladders are stable and provide fall prevention devices. 					
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movement of equipment and vehicles at the project site	<ul style="list-style-type: none"> • People or workers struck by moving vehicles. • Likely traffic accidents (collision) between moving vehicles. • Falling workers from vehicles during moving. • Falling vehicles into excavations. • Vehicles running into workers. • Vehicles running into workers due to non-compliance or lack of a traffic management plan in the work site. 		X		<ul style="list-style-type: none"> • Emphasis on safety aspects among drivers. • Inform drivers on the local speed limit and monitor implementation. • Control and manage traffic, by using traffic cones, barriers, fences, or lights as appropriate. • 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 and a flagman should be present on site 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 bad weather conditions to avoid collision. Provide the worksite with barriers in the road edges to protect workers and vehicles from falling. • Ensure a presence of a flagman for work site arrangement and vehicle movements control • Require speed limits and backup alarms on vehicles • Wear seat belts • Arrangement and control of the worksite entrance and exits, and not allow for unauthorized person or vehicles enter the worksite. • Coordinate with local authorities and communities to provide 			X	<ul style="list-style-type: none"> • Contractor • Resident Engineer • Workers 	Part of PPEs cost first item
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					<p>alternatives road for road users during closing the worksite. Provide the vehicles in the worksite with audible reversing alarms and flashing beacons.</p> <ul style="list-style-type: none"> Prohibit workers to climb on the vehicles during moving to avoid falling. 					
Manual handling	<ul style="list-style-type: none"> 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. Handling chemicals (i.e., cement/paint) causing skin and eye irritation. Risks of injuries from lifting equipment Falling materials from lifting equipment on workers 		X		<ul style="list-style-type: none"> Avoid the need for unnecessary manual handling as possible when suitable equipment is present. <p>Raise awareness to workers on safe lifting techniques to avoid injuries</p> <ul style="list-style-type: none"> Reduce the load/ packing risk on your back by using lighter weights Reorganize the packing activity/task to further reduce the impact on the individual(s). Utilize mechanical lifting aids or equipment as appropriate. Ensure no worker is standing under lifting zone Ensure appropriate rest breaks and hourly work shifts are involved with potable drinking water. Provide personal protective equipment (e.g., gloves, foot protection, and non-slip footwear and masks). Provide training for workers on handling and storing any hazardous substances and materials and training on MSDSs. The use of the professional workforce to carry out mandatory activities while mixing and pouring concrete. Maintenance of all work equipment before starting the work such as Cement mixture. Always keep safe distance with 			X	<ul style="list-style-type: none"> Contractor Resident Engineer Workers 	Part of PPEs cost first item

				<p>work equipment including Cement mixture.</p> <ul style="list-style-type: none"> • Long rubber safety shoes and piles and gloves, masks and goggles should be worn while mixing concrete on site. • Workers are aware of the dangers of concrete mixing equipment and maintaining a safe distance during its movement and rotation. • Provide awareness sessions to workers on how to perform their tasks to avoid injuries • Avoid carrying unstable, unbalanced or oversized loads that could fall from the forklift or other lifting equipment. • Ensure that all forklift operators or other lift operators are properly trained. • Establishing designated traffic routes for forklifts • Maintain safe distance from cement mixer • 					
electrical hazards	<ul style="list-style-type: none"> • Electric shock or electrocution during Coming into contact with live electrical wires or equipment • Fires due to Faulty wiring, overloading circuits, or damage to electrical components • Burns to workers exposed to electrical arcs and fires. • Workers tripped over exposed or dangling wires. • Exposure to hazardous substances used in some electrical applications. 		x	<ul style="list-style-type: none"> • Using the proper personal protective equipment (PPE): This includes items such as hard hats, safety glasses, gloves, and arc-flash suits. • Isolate and de-energize electrical sources before working on them • Working in a well-lit area will help to prevent falls and make it easier to see potential hazards. • Using lockout/tagout procedures will prevent workers from coming into contact with energized electrical equipment. • Keeping electrical equipment in good working order 			x	<ul style="list-style-type: none"> • Contractor • Resident Engineer • Workers 	Part of PPEs cost first item

				<ul style="list-style-type: none">• Training workers on safe work practices such as how to use PPE and how to identify and avoid hazards.• Worksites should be inspected for hazards on a regular basis.• Regularly inspect fire extinguishers• Only qualified workers should be allowed to work with electrical equipment.• Ensure proper grounding and bonding of all systems and equipment• Secure or cover exposed wires to reduce trip hazards• ensuring power circuits are protected by the appropriate rated fuse or circuit breaker to prevent overloading• Using battery powered tools instead of mains operated where possible• Providing safe and suitable electrical equipment for example not using leads and tools in damp or wet conditions unless they are specially designed for those conditions• Only trained/qualified workers are allowed to conduct electrical works				
Steel working hazards	<ul style="list-style-type: none">• Injuries from handling heavy steel beams and components.• Welding and cutting activities involve risks like burns, eye injuries, cuts, and electric shocks• Exposure to metal dust and fumes from welding, grinding, and cutting processes• Fall hazards when working at heights, especially during steel erection.• Risks from unstable or improperly supported steel structures• Injures due to failure of slings, chains, lifting beams or other lifting equipment.		X	<ul style="list-style-type: none">• Using proper personal protective equipment this includes flame and cut resistant clothing, welding helmet with appropriate filter lenses, leather gloves, safety boots, and hearing protection.• Crews should communicate and coordinate lifting plans before each lift to ensure everyone understands the procedure and their roles.• Using local exhaust ventilation systems or position fans to extract smoke, fumes and gases away from the welder's breathing zone. Welding must be carried out in well ventilated areas• Areas below lifting operations should be roped off or flagged as safety zones to keep other workers away.			X <ul style="list-style-type: none">• Contractor• Resident Engineer• Workers	Part of PPEs cost first item

				<ul style="list-style-type: none">• Workers should be trained on how to properly attach slings and lifting devices, signals to communicate with crane operators, and safe lifting postures to minimize strain.• Checking for cracks, bends or other damage that could compromise integrity during lifting.• Nylon ropes can be attached to steel beams to help workers guide and stabilize pieces during lifting and placement.• When welding, confine the area with barriers or warning tape to keep others at a safe distance from UV light, hot sparks and metal.• Inspecting welding leads, cables, and torches regularly for damage that could cause electric shock. Replace faulty parts immediately.• Rotate workers or implement work-rest regimes to reduce the total amount of time exposed to fumes and dust.					
Concrete working hazards	<ul style="list-style-type: none">• Avoid the need for unnecessary manual handling as possible when suitable equipment is present.• Reduce the load/ packing risk on your back by using lighter weights• Reorganize the packing activity/task to further reduce the impact on the individual(s).• Utilize mechanical lifting aids or equipment as appropriate.• Ensure no worker is standing under lifting zone• Ensure appropriate rest breaks and hourly work shifts are involved with potable drinking water.• Provide personal protective equipment (e.g., gloves, foot protection, and non-slip footwear and masks).		X	<ul style="list-style-type: none">• Wearing high visibility clothing in the worksite.• The use of the professional workforce to carry out mandatory activities while mixing and pouring concrete.• Maintenance of all work equipment before starting the work such as Cement mixture.• Always keep safe distance with work equipment including Cement mixture.• Excavations are fenced and warning signs placed around them.• Ensure skilled workers are hired for this activity.• Use cotton or woven gloves while loading, transporting, and distributing stones during construction.• Use wind gloves while loading, transporting, and distributing sharp			X <ul style="list-style-type: none">• Contractor• Resident Engineer• Workers	Part of PPEs cost first item	

	<ul style="list-style-type: none"> • Provide training for workers on handling and storing any hazardous substances and materials and training on MSDSs. • The use of the professional workforce to carry out mandatory activities while mixing and pouring concrete. • Maintenance of all work equipment before starting the work such as Cement mixture. • Always keep safe distance with work equipment including Cement mixture. • Long rubber safety shoes and piles should be worn while mixing concrete on site. • Workers are aware of the dangers of concrete mixing equipment and maintaining a safe distance during its movement and rotation. • Provide awareness sessions to workers on how to perform their tasks to avoid injuries • Avoid carrying unstable, unbalanced or oversized loads that could fall from the forklift or other lifting equipment. • Ensure that all forklift operators or other lift operators are properly trained. • Establishing designated traffic routes for forklifts 			<ul style="list-style-type: none"> materials like steel bars during implement reinforced concrete beams. • Long rubber safety shoes and piles should be worn while mixing concrete on site. • Ensure that concrete mixing equipment is in good condition. • Workers are aware of the dangers of concrete mixing equipment and maintaining a safe distance during its movement and rotation. • Locating cement mixing equipment on fixed level ground to avoid collapse during operation, and to move away from traffic. • Use gloves and handle and store, dispose cement according to its MSDS by trained workers. • Ensure that an emergency response plan is in place to respond to any accidents or emergencies. • Periodic inspection to ensure that mitigation measures are implemented and stop any unsafe act or unsafe situation. • Involving the community committee in the monitoring of safety procedures and reporting any risks. • Add a buffer zone around lifting areas and ensure no worker stands below lifting zone and wear head helmets 					
Paintwork hazards	<ul style="list-style-type: none"> • Exposure to hazardous chemicals such as solvents, paints, thinners, and cleaners, which can cause skin irritation, eye injury, respiratory problems, and other health effects. • Working in confined spaces, which can pose risks of low oxygen levels, 		X	<ul style="list-style-type: none"> • Wear suitable personal protective equipment (PPE) compatible with the chemicals used and the work environment such as gloves, goggles, masks, ear plugs, and coveralls. • Using local exhaust ventilation systems or open windows/doors to ensure good 			X	<ul style="list-style-type: none"> • Contractor • Resident Engineer • Workers 	Part of PPEs cost first item

	<p>toxic fumes, fire, explosion, and entrapment¹³.</p> <ul style="list-style-type: none"> • Paint spills and splashes can damage surfaces, goods and equipment not protected or covered properly during painting work. • Electrical hazards from working close to live electrical power lines or equipment. 			<p>airflow and reduce inhalation of paint fumes</p> <ul style="list-style-type: none"> • For tasks with higher chemical exposures, limit the work duration and rotate workers to reduce total exposure. • Know how to prevent injury from electrical hazards. Maintain safe distances from energized electrical equipment or utility lines. • Keep tools and equipment, and their safety features, in good working order. This can be achieved by routine inspection of working equipment. • Select paints with lower VOC content- Use water-based paints instead of solvent-based varieties where possible. • Ensure adequate storage and labeling of paints according to safety data sheets helps reduce accidental exposures. • Safety goggles help protect eyes against splashes or airborne paint particles that can cause irritation. • Hand washing and showering after paintwork 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. • Do not allow welding, grinding, smoking or any other ignition sources in areas where flammable paints are used. 					
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				<ul style="list-style-type: none"> • Only keep the minimum amount of paint and thinners needed for the job in the work area. Store excess in a flammable's cabinet. • Use drop cloths, masking tape, plastic sheets and other coverings to protect floors, walls, furniture and equipment from paint splashes and overspray. • Clean up spills immediately • Restrict access to the painting area to only the workers actively involved in the job. • 					
Mechanical hazards	<ul style="list-style-type: none"> • Hazards include entanglement, amputation, crushing and impact injuries. • Failures in high pressure air, gas or liquid systems. • Uninsulated pipes, ductwork and equipment carrying hot fluids or gases can cause burn injuries. • Excessive noise levels from mechanical equipment like ventilation systems, compressors and pumps. • Inhalation and contact risks during storage and handling of materials used in mechanical systems • Vibrational injuries of the arm or whole body while using tools, compressors, and other vibration equipment used in mechanical systems • Workers risk cuts and lacerations from knives, saws, metal edges and other sharp hazards involved in plumbing installation. • Accidentally striking buried utilities or overhead power lines can cause injuries, fires or electrocution. • Burning of exposed skin as a result of the release of steam, hot liquids or gases. 		X	<ul style="list-style-type: none"> • Using PPE like gloves, safety glasses, hearing protection and steel-toe boots to protect workers from mechanical risks. • Educating employees on hazards, controls, safety procedures, lockout/tagout and PPE use related to mechanical equipment. • Checking machinery and tools regularly for damage, wear and safety defects. Tagging out unsafe equipment until repaired. • Reducing exposure times to mechanical hazards while dealing with toxic materials or during welding work • Keeping work areas free of debris, spills and clutter that can cause slips, trips and being caught in or between equipment. • Be mindful of where your hands and arms are when operating tools or machinery to avoid getting caught between moving parts. • Using holsters for sharp tools • Put away or sheath tools when not in use • Supervising workers and ensure they follow safe work procedures, machine guards remain in place, and PPE is properly utilized during installation work. • Restricting access to areas with hazardous moving machinery to only those involved in the work and using warning signs and/or barriers. 			X	<ul style="list-style-type: none"> • Contractor • Resident Engineer • Workers 	Part of PPEs cost first item

	<ul style="list-style-type: none"> • Burns and fires due to welding. 			<ul style="list-style-type: none"> • Thoroughly check welds, threaded fittings and other joints and connections for defects before pressurizing the system. • Ensure any flexible hose used can withstand the system pressure and meet industry standards for the application. • Educate employees on the causes, symptoms, first aid and prevention of thermal burns. Ensure they understand the dangers of hot surfaces. • Make sure workers have access to appropriate hearing protection • Use manual tools for installation work when feasible to reduce noise exposures. • Make sure all chemical containers are properly labeled and stored in areas with restricted access when not in use. • Use vibration dampening tools and provide anti-vibration gloves • Limit the time for workers working on vibrating tools. • Utilities must be located and clearly marked before digging or working overhead • Train workers in burn hazards and first aid specific to welding - Educate them on preventing thermal burns • Follow measures under “steel working hazards” • Provide burn treatment . 					
Planting native non-invasive trees	<ul style="list-style-type: none"> • Tree planting OHS risks from injuries, blisters and other injuries while planting trees 		X	<ul style="list-style-type: none"> • Provision of dust masks to workers and goggles and gloves and boots and helmets • Workers to wear protective gear i.e. safety boots, safety helmets, reflector jacket, gloves etc • Train workers on safe tree planting techniques and safety measures • Use organic fertilizers such as green manure 			X	<ul style="list-style-type: none"> • Contractor • Resident Engineer • Workers 	Part of PPEs cost first item

Working in unhealthy areas	<ul style="list-style-type: none"> • 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. • unhygienic conditions and poor sanitation are prevailed. • risk from drowning and fishing during bad weather and sea storms seasons. 		X	<ul style="list-style-type: none"> • Awareness programs should focus on providing the trainee with 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. • Raise awareness on good hygienic practices • Awareness sessions to fishermen on the risks and hazards of water, enabling them to identify and avoid dangerous weather conditions and unsafe waterbodies. • Adequate supervision to prevent swimming, and provide a trained lifesaver. • Provide and train the fishermen on rescue means like lifejackets, GPS, etc. • Install early warning system for fishermen • Train the fisheries on the evacuation procedures in the sudden sea storms' cases. • 			X	<ul style="list-style-type: none"> • Fish Association • Fish Authority • SMEPS during their training program • community committee 	Part of PPEs cost first item
Lifting Operations	<ul style="list-style-type: none"> • Injuries of workers from falling/suspended loads and misunderstandings on load movements. • Crushing objects. • Noise/vibration injuries 		X	<ul style="list-style-type: none"> • 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; • 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; 	X			<ul style="list-style-type: none"> • Fish Association • Fish Authority • SMEPS during their training program • community committee 	Part of PPEs cost first item

				<ul style="list-style-type: none"> • 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. • Prohibit working during rainy periods. • Ensure a proper buffer distance visibly marked between workers and lifting areas is kept. • All workers are wearing head helmets and safety boots • Ensure a supervisor/flagman is present for site movement and arrangements • 					
	<ul style="list-style-type: none"> • Drowning risks 		x	<ul style="list-style-type: none"> • Raising awareness among workers about the dangers of approaching the sea and its surroundings • Installing a fence around the work area • Ensuring that a person is appointed responsible for safety • Ensuring that there is an emergency rescue plan 	x			<ul style="list-style-type: none"> • Contractor • Resident Engineer • Workers 	Part of PPEs cost first item
DEMOLITION WORKS	<ul style="list-style-type: none"> • Risks of demolishing activities on injuries and accidents 		x	<p>Provide and enforce the use of appropriate personal protective equipment (PPE), such as (earmuffs, Gloves, boots, goggles, Hardhats, etc.)</p> <ul style="list-style-type: none"> • Instructing workers in the safe operation of machines and tools. • Instructing workers in proper lifting techniques to reduce stress and sprain risks • Provide mechanical aids, such as carts, to assist with the movement of heavy materials. • Regular rest breaks to prevent overexertion and fatigue. • Implementing dust control measures, such as wetting down surfaces before removal works, to reduce airborne dust. 	x			<ul style="list-style-type: none"> • Contractor • Resident Engineer • Workers 	Part of PPEs cost first item

				<ul style="list-style-type: none">• Provide workers with hearing protection devices, such as earplugs or earmuffs, and ensure their proper use. Regular and proper disposal of waste to create a safe environment on site for workers. <ul style="list-style-type: none">• Assign competent supervisors to oversee the work and ensure that safe work practices are followed• Regular and continuous awareness-raising before starting any removal works activity to educate workers about the risks and control measures for safety.• Ensure workers are standing at a safe marked distance from the demolishing equipment and zone					
Transport of equipment and materials	<ul style="list-style-type: none">• Transporting equipment and waste to and from the site and risks of road accidents• People or workers struck by moving vehicles.• Falling workers from vehicles during moving.• Falling vehicles into excavations.		x	<ul style="list-style-type: none">• Stop the movement of vehicles on the worksite during bad weather conditions to avoid collisions.• Ensure drivers have valid driving licenses.• Emphasis on safety aspects among drivers.• Ensure workers are wearing high visibility clothes• Inform drivers of the local speed limit, safety measures (e.g., wearing seat belts, respecting road regulations), and monitor implementation.• Provide traffic signs in the worksite, especially for speed limits, route directions, parking places, entrances and exits, walkways, and worksite warning signs.• Daily inspection and maintenance of vehicles by the contractor to ensure they are in good condition prior to starting work.• Arrangement and control of the worksite entrances and exits, and prevent unauthorized persons or vehicles from entering the worksite.• Presence of a flagman for worksite arrangement and movement.	x		<ul style="list-style-type: none">• Contractor• Resident Engineer• Workers	Part of PPEs cost first item	

				<ul style="list-style-type: none">• Provide vehicles and equipment in the worksite with audible reversing alarms and flashing beacons.• Carry a drug test for drivers.• Prohibit workers from climbing on vehicles while they are moving to avoid falls.• Ensure a flagman is present on-site to guide vehicle movements and prevent vehicles from getting too close to excavation edges.• Avoiding or minimizing transportation through night hours.• Add barriers around work area					
Operation and Maintenance Phase	<ul style="list-style-type: none">• Occupational health and safety risks are similar to those in the section above on occupational health and safety during the construction phase <p>General occupational health and safety procedures for workers during operation including risks of fires from generators.</p> <p>handling fish waste, biohazards, and poor hygienic practices</p>		x	<ul style="list-style-type: none">• Ensure that the same relevant mitigation measures from the previous OHS impacts will be applied during the operation and maintenance phase.• Require appropriate personal protective equipment (PPE) like cut-resistance 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.• Use mechanical lifting aids and trolleys to reduce manual handling of heavy objects.• Raise awareness on good hygienic practices• Ensure the presence of fire extinguishers	x		<ul style="list-style-type: none">• Fish Association• Fish Authority• SMEPS during their training program• community committee	NA	

				<ul style="list-style-type: none">• 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. <p>Ensure regular inspections of fire extinguisher</p> <ul style="list-style-type: none">• Wear PPEs such as masks and gloves to prevent inhaling generator's emissions• Monitor fuel consumption of generator to detect any leaks• Ensure presence of spill prevention kits and remove any spills straight away• Ensure generator and fuel are present on concrete bases• The number of firefighting units must be present on the signs.• Implementing proper procedures for collection, storage and disposal of fish waste and other biohazardous waste.• Ensure adequate wastewater treatment and solid waste management• Ensure non-slip flooring and walkways in processing areas• Wear PPEs including gloves and masks while handling fish wastes					
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					<p>Store and label fish waste at designated zones</p> <ul style="list-style-type: none">• Regularly dispose fishwaste/biohazards according to local authority by certified local contractor <p>Ensure workers maintain proper hygiene and cleaning of the site area and of their personal hygiene by ensuring soap and water is present on site</p>					
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6 Environmental, Social, and OHS Clauses and Liabilities for Contractor

The ES and OHS conditions are the indicators that PWP will build on to select the eligible contractor for the ES requirements while the ES and OHS clauses are the measures and instructions that will be included in the bidding documents to ensure contractor obligations during the implementation.

6.1 Conditions for the Eligible Contractor

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 site handing to the contractors.
5. Contractors are fully responsible for any accident or incident that may occur
6. Contractor'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. They are adhering to compliance with all measures given to them and they are fully responsible for any noncompliance.
8. Contractors should abide by the principle of non-discrimination in all aspects of employment.
9. The contractor will be alerted and terminated if they do not comply with the E&S and OHS mitigation measures during implementation.
10. Contractors shall ensure compliance with the Code of Conduct
11. Contractor shall ensure compliance with the LMP.

6.2 Environmental and Social Specific Conditions for Contractor:

The contractor shall supply and execute the necessary works on-site to mitigate the environmental and social impacts of the sub-project in accordance with the bidding and contractual E&S requirements. The contractor is responsible for following a specific contractor-ESMP that will be included in their bidding documents as specific specifications, items in BOQ, and ES instructions and guidelines as attachments. 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 contractor will:

- 1.1 Provide occupational health and safety training on a regular basis to all employees involved in the works.

- 1.2 Provide protective masks, helmets, gloves, overalls and safety shoes, and safety goggles, breathing apparatus and any other PPE appropriate to the task assigned and determined through risk assessment.
- 1.3 Provide workers in high-noise areas with earplugs or earmuffs.
- 1.4 Ensure availability of first aid box and ensure that at least one person trained in first aid is always available on-site.
- 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 Plan¹⁹:

The estimated / planned number of laborers for the rehabilitation and enhance landing site sub-project is 190 which (35%) 66 skilled and 124 (65%) unskilled labor during the project life for the sub-project in which the expected life project contracts will be seven months. Workers are recruited at the beginning of each activity of the project, as it is expected that excavations and the paving works will be the most active activities in which workers are recruited. Contractor shall ensure that all workers are hired formally with proper contract, in accordance with national regulation, ESS2, and the LMP. The contractor is responsible for:

- 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 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 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 it 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.
- 2.5 Community Health and Safety: The contractor shall protect the local community from any risks that might be generated during the implementation.
- 2.6 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 adequate health and safety training²⁰, required PPE, first aid box, toilets, soap and potable drinking water, and as mentioned in the plan above.
- 2.7 Overtime Work: The contractor shall provide workers basic wages per hour of overtime on normal working days and on the day of weekend, and official holidays and leave, in addition to the entitlement to fair wages for such holidays according to the Yemeni labor Law.

¹⁹

²⁰ This project will be implemented by national / traditional contractors. However, the contractor will be responsible for providing training and PPEs for each worker

- 2.8 Gender and Social Inclusion: Contractor to adopt non-discrimination in job opportunities during the implementation to ensure a non-discriminatory and inclusive manner, including women, as mentioned in the Environmental and Social Management Plan.
- 2.9 Training of workers: PWP staff and Contactor shall provide the workers with required training and daily toolbox talk in the Environment, OHS,, SEA, GM, and as mentioned in the Environmental and Social Management Plan.
- 2.10 Addressing worker grievances: Contactor shall provide the worksite with a GM system for all 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. Ensure that workers are aware that grievances will be handled positively. Contractor, resident engineer, and community committee are trained to handle grievances positively.
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. Carrying out the project activities that need skill at the hands of trained and skilled workers and ensuring full supervision.
5. Assign a permanent safety supervisor to follow up on 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 harnesses, etc. in quantities enough for all laborers at the expense of the contractor and ensure the adherence of use by all.
8. Provide first aid boxes in the worksite (as per the emergency response plan) which contain (adhesive plaster of different sizes - –sterile gauze - scissors – disinfectant- forceps - etc.).
9. Provide a emergency 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.Provision of water and soap in rented apartment of (workers, supervisors, monitors and trainers) with bathrooms and or trenches with covers and obliging all workers and supervisors to use them.
- 11.Separate the material and store them accordingly and provide enough space for movement and maneuvering. If applicable, commit to properly removing, handling, storing, and disposing of hazardous wastes and materials according to their MSDSs by trained workers.
- 12.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. If applicable, commit to properly removing, handling, storing, and disposing of hazardous wastes and materials according to their MSDSs by trained workers.
- 13.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.
- 14.Commit to storing hazardous materials away from workers and not to changing oils or leaving grease residue in the work area.
- 15.Commit to the repair of public services (electricity, telephone, water, sewage) that are broken during the implementation of the project.

16. The contractor shall coordinate with the competent authorities to organize traffic in the streets to facilitate movement in case the project causes any congestion, if necessary.
17. Report immediately any accident or injury occurring during the execution of the work and within a maximum period of 24 hours to PWP and within 48 hours to the UNDP and the WBG.
18. Conduct awareness sessions about OHS before the beginning of work by the contractor this includes hazards associated with the activity, mitigation measures, workers' responsibility, GM, sexual harassment, abuse, as well as the disciplinary action against any violation.
19. The contractor shall adhere to the use of the Permit to Work system (PTW²¹) for all activities and ensure all workers are aware of the system.
20. Contractor must address the risk of SEA/SH, through: 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 SEA/SH a punishable offense that is prosecuted.
 - Introducing a Worker Code of Conduct as part of the employment contract, and including sanctions for non-compliance (e.g., termination)
 - Adopting a policy to cooperate with law enforcement agencies in investigating complaints about SEA/SH.
21. Contractor must not employ workers below the age of 18 and must ensure verification of documents is conducted before hiring.
22. Provide proof of health and life insurance for all laborers, including the third party, before the implementation of the project.
23. Commitment not to use any type of explosive materials in any of the project's activities.
24. Movement of Trucks and Construction Machinery: The Contractor moving solid or liquid construction materials and waste shall take strict measures to minimize littering of roads by ensuring that vehicles are licensed and 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. Construction materials should be brought from registered sources in the area and debris should be transferred to assigned places in the landfill with a documented confirmation.
25. The Contractor shall not commence any work affecting public vehicular roads or traffic around the project until all traffic safety measures required by the work have been fully operational.
28. Gas, Noise, and Dust Control: The Contractor 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 in or close to residential areas.
 - 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.
 - Shut 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.

²¹ 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.

- 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 to mitigate impacts from dust, gas, noise, and climate change

26. Protection of the Existing Installations: The Contractor 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.

27. The contractor must not engage in any illicit activities, including but not limited to, embezzlement, kickbacks, or any form of bribery or corruption. The contractor must also implement effective measures to prevent and detect any fraudulent or corrupt practices within their own organization, as well as within any subcontractors or suppliers involved in the sub-project.

28. To prevent theft of equipment and materials on the project site, the contractor must take all necessary measures to ensure their protection.

29. The contractor shall be responsible for implementing security measures, such as fencing, lighting, and surveillance cameras, to prevent unauthorized access to the project site.

30. The contractor shall be required to conduct regular inspections of the project site to identify and address any potential soil erosion or destabilization risks.

31. As part of the project's commitment to preserving cultural heritage, the contractor must conduct a pre-construction archaeological survey of the construction site. This survey shall be conducted by qualified and experienced archaeological experts, and shall involve a comprehensive assessment of the project area to identify any potential archaeological artifacts or features that may be impacted by construction activities.

32. The Contractor shall ensure that workers are trained and competent in the proper handling, handling, storage, and disposal of hazardous chemicals or materials, including but not limited to paints, cement, sealants, and other materials, and that they are aware of the potential health risks associated with handling such materials.

33. The contractor shall be responsible for ensuring that all scaffolding, ladders, and other surfaces are properly secured and supported, and that they are able to support the weight of workers and equipment without risk of collapse or failure.

34. The contractor shall be responsible for verifying that all workers have the necessary qualifications and training to work with electrical equipment, and that they are aware of the hazards associated with working with electrical equipment.

35. The contractor shall also be responsible for ensuring that all electrical equipment is properly installed, maintained, and used in accordance with all applicable laws and regulations.

36. The contractor is required to ensure proper implementation of dangerous and heavy lifting operations. This includes developing a communication plan and coordinating lifting plans before each elevator to ensure the safety of the work, loads, and equipment.

37. The contractor shall ensure that all personnel involved in concrete work wear appropriate personal protective equipment. In addition, the contractor shall ensure the integrity of all frameworks used in

the concrete work. The frameworks shall be properly installed and securely braced to prevent any failure or collapse during the work.

38. The contractor shall ensure that all personnel involved in welding and iron work wear appropriate personal protective equipment (welding helmets, face shields, safety glasses, leather gloves, and leather aprons). In addition, ensure the safety of all installation and welding work. The installation and welding work shall be performed in accordance with all applicable safety standards and regulations, and shall be inspected by a qualified inspector to ensure that it is safe and meets all required specifications.
39. The contractor shall ensure that all personnel involved in sanitary work wear appropriate personal protective equipment (gloves, safety glasses, and respiratory protection). In addition, ensure the safety and well-testing of all sanitary work. The sanitary work shall be performed in accordance with all applicable safety standards and regulations, and shall be inspected by a qualified inspector to ensure that it is safe and meets all required specifications.
40. Working in bad weather is not allowed.
41. Environmental training on machinery efficiency, the importance of maintenance, transportation efficiency, and good practice usage of machinery to mitigate impacts from dust, gas, noise, and climate change

6.3 Environmental and Social Liabilities for Contractor

Contractor 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 sub-project bidding documents.
- Deductions for environmental non-compliance 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 non-compliance, such as alert, final alert, and termination of the contract.
- Environmental penalties shall be calculated and deducted from 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 occupational health and safety, in the environment or the social aspects, PWP has the power to terminate the contractor's contract, but the contractor in the blacklist, 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 contractor 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 contractor has not remedied the environmental impact during the allotted time, the PWP will stop the work and give the contractor a notification indicating a financial penalty according to the non-complied mitigation measure that was specified in the bidding document. No further actions will be required if that restoration is done satisfactorily. Otherwise, if the contractor has 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

The following table indicates mitigation measures with reference to the above tables of the ESMP for the E&S and OH&S. The monitoring indicators are addressed for all the mitigation measures. The implementation of the mitigation measures will be monitored through daily checks by the resident engineers, biweekly as well as monthly visits by PWP sub-areas staff and the regular TPM, community committee, and UNDP field monitoring visits and audits.

The roles and responsibilities of each responsible personnel are as follows:

- Gender Focal Point: is responsible by the PWP 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 by the PWP to monitor all the safeguards process and reporting to UNDP(as a general supervisor) as detailed in the ESMP and other ES documents, including SEP, and ensuring their compliance.
- GM Officer is responsible by the PWP to monitor the GM processes, including awareness raising, receiving complaints and following up, and reaching closure.
- Resident Engineer: conduct daily monitoring by the PWP to guarantee compliance in the field on sub-project bases.
- Community Committee: Appointed by PWP to support in monitoring and solving the problems if any, support in raising the awareness of the community, monitoring the community inclusion and Community satisfaction. During operation their role is also to coordinate with the local authorities / councils to ensure the maintenance and sustainability of the sub-project.
- Sub-area Staff: follow up on the compliance by the PWP in sites and ensure everything is implemented according to the ESMP.

The following aspects in table 10 below will be monitored (though the list will be kept updated to accommodate any emerging issues or updated aspects that may be recommended by the monitoring reports):

Table 10 Environmental and Social Monitoring Plan

Action	Monitoring methodologies and Indicators	Implementation Responsible ²² / Monitoring	Timeframe
Community Health and safety			
<p>No child labor is permitted, and workers must be 18 years or older.</p> <p>Avoid buying raw material from suppliers that employ children.</p>	<p>Methodology:</p> <ul style="list-style-type: none"> • Checking identification documents • Worker interviews. • Checking employment documents for suppliers <p>Indicator:</p> <ul style="list-style-type: none"> • Completeness of records. • Age verification from the IDs • Documentation reviews. 	<ul style="list-style-type: none"> • Contractor • Resident Engineer • Community Committee • Safeguard Specialist 	<ul style="list-style-type: none"> • Daily
<p>Combating sexual exploitation and abuse, sexual harassment, and discrimination during project implementation.</p> <p>Ensuring that the contractor considers gender differences during the implementation of the project through the work of facilities designated for women</p>	<p>Methodology:</p> <ul style="list-style-type: none"> • Policy against SH, abuse, and discrimination. • Anonymous GM • Routine facility checks • Worker feedback. <p>Indicator:</p> <ul style="list-style-type: none"> • Number and types of disciplinary actions applied for policy violations. • Number and types of complaints reported through GM. • Satisfaction of female workers 	<ul style="list-style-type: none"> • Contractor • Resident Engineer • Gender Focal Point • Community Committee • Safeguard Specialist 	<ul style="list-style-type: none"> • Daily
<p>Ensure non-discrimination and inclusion of women and persons with disabilities when selecting beneficiaries.</p>	<p>Methodology:</p> <ul style="list-style-type: none"> • Checking sex-disaggregated data. • Checking data of beneficiaries with disabilities. <p>Indicator:</p> <ul style="list-style-type: none"> • Monitor the percentage of women beneficiaries compared to men. • Monitor the percentage of disable beneficiaries. 	<ul style="list-style-type: none"> • Contractor • Resident Engineer • Gender Focal Point • Community Committee • Safeguard Specialist • 	<ul style="list-style-type: none"> • Design phase • During the implementation
<p>Ensure that the beneficiaries or the community is not financially exploited</p>	<p>Methodology:</p> <ul style="list-style-type: none"> • Beneficiaries are informed clearly and repeatedly. • Anti-corruption policy. 	<ul style="list-style-type: none"> • Sub-area staff • Resident Engineer • Safeguard Specialist 	<ul style="list-style-type: none"> • Weekly • Monthly

²² 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.

	<ul style="list-style-type: none"> • GM system. • Random beneficiary surveys Indicator: <ul style="list-style-type: none"> • Verify that beneficiaries know that project benefits are to be provided free of charge • Number and types of complaints reported through GM. 	<ul style="list-style-type: none"> • Community Committee 	
Lack of workers' awareness and knowledge on respecting local community cultures, and social safeguard issues on Gender, and SEA/SH	Methodology: <ul style="list-style-type: none"> • Awareness records. • Community complaints. Indicator: <ul style="list-style-type: none"> • Number of awareness sessions provided. • Number and types of complaints reported. 	<ul style="list-style-type: none"> • Sub-area staff • Resident Engineer • Safeguard Specialist • Community Committee 	<ul style="list-style-type: none"> • Monthly
Ensure public health and that the public and children do not have access to the work site.	Methodology: <ul style="list-style-type: none"> • Visual inspection. GM system. Indicator: <ul style="list-style-type: none"> • Number of recorded complaints. • Number of reported incidents. • 	<ul style="list-style-type: none"> • Resident Engineer • Contractor • Community Committee • Safeguard Specialist 	<ul style="list-style-type: none"> • Daily
Restrictions on services or resources	Methodology: <ul style="list-style-type: none"> • Community surveying about cultivation seasons. • Visual inspection for restrictions schedule of work records Indicators: <ul style="list-style-type: none"> • Surveying results. • Number of complaints from farmers. • Contractors' local communities' members signed on meeting minutes. 	<ul style="list-style-type: none"> • Resident Engineer • Contractor • Community Committee • Safeguard Specialist • 	<ul style="list-style-type: none"> • Weekly
Skilled workers will be hired from neighboring areas if not available from targeted area.	Methodology: <ul style="list-style-type: none"> • labor log Indicators: <ul style="list-style-type: none"> • Number of skilled workers from the targeted area and neighboring 	<ul style="list-style-type: none"> • Contractor • Resident Engineer • Safeguard Specialist 	<ul style="list-style-type: none"> • Before the commencement of work and implementation
Contractor and their workers are aware to respect the local community's protection	Methodology: <ul style="list-style-type: none"> • Training records. • COC records. 	<ul style="list-style-type: none"> • GM Officer • Contractor • Resident Engineer 	<ul style="list-style-type: none"> • Before the commencement of work

	<ul style="list-style-type: none"> Contractors, and their workers signed on the Code of Conduct (CoC). Indicators: <ul style="list-style-type: none"> Number of complaints received. Signature lists in a CoC document with all worker's signature. 	<ul style="list-style-type: none"> Gender Focal Point Safeguard Specialist 	<ul style="list-style-type: none"> biweekly
Knowledge of the local community, the community committee, and workers about the GM, as well as the contact numbers.	Methodology <ul style="list-style-type: none"> Providing a complaint box, number of awareness-raising and brochures distributing. Indicator: <ul style="list-style-type: none"> The number of awareness-raising. Presence of sign board with GM contact details The number of complaints 	<ul style="list-style-type: none"> GM Officer Resident Engineer Safeguard Specialist 	<ul style="list-style-type: none"> During public consultation Bi-weekly
Regular awareness sessions to community members, the community committee, and workers about the use of GM	Methodology: <ul style="list-style-type: none"> Awareness records Indicator: <ul style="list-style-type: none"> Number of awareness sessions provided for the use of GM. Number of people attending. Type of people. 	<ul style="list-style-type: none"> GM Officer Resident Engineer Safeguard Specialist 	<ul style="list-style-type: none"> Weekly
Involvement of the community in the monitoring of the implementation of the sub-project and reporting any findings	Methodology: <ul style="list-style-type: none"> Disclosure of project activities with designs Using GM system Indicator: <ul style="list-style-type: none"> No. of GM complaints from the community and The number of resolved complaints. 	<ul style="list-style-type: none"> Community Committee Sub-area Staff Resident Engineer Safeguard Specialist 	<ul style="list-style-type: none"> Daily
Community satisfaction	Methodology: <ul style="list-style-type: none"> Surveys and Interviews Grievances Community meetings Indicator: <ul style="list-style-type: none"> Results from satisfaction surveys and interviews. Number of grievances raised and types 	<ul style="list-style-type: none"> GM Officer Community Committee Safeguard Specialist 	<ul style="list-style-type: none"> Monthly

	<ul style="list-style-type: none"> • Feedback received during community meetings • Number of accidents 		
Monitoring and reporting SH/SEA complaints and GM cases related to SH/SEA are well-treated and mitigated quickly.	Methodology: <ul style="list-style-type: none"> • Provide GM system Indicator: <ul style="list-style-type: none"> • Number of recorded grievances related to SEA and SH and number of solved grievances 	<ul style="list-style-type: none"> • Gender Focal Point • Safeguard Specialist • GM Officer • Resident Engineer 	• Weekly
Environmental Impacts			
Reducing or preventing any pollution on soil and water sea water from oil spills and sewage from latrines.	Methodology: <ul style="list-style-type: none"> • Visual inspections • Worker surveys • Complaint records Indicator: <ul style="list-style-type: none"> • Visible presence of leakage. • Visible change in soil color. • Cesspits and latrine located close to runoff area and water resources • Number of spill accidents • Presence of pests and flies. • Presence of soap and water in latrines. <p>incidents</p> <p>Number of complaints regarding water spills.</p>	<ul style="list-style-type: none"> • Resident Engineer • Contractor • Community Committee • Safeguard Specialist 	• Daily
Ensure air quality and reduce the generation of dust, volatile particles and gases emitted from equipment	Methodology: <ul style="list-style-type: none"> • Visual inspections of dust and particles generating activities. • Emissions inspections • Complaints records Indicators: <ul style="list-style-type: none"> • Visual observations and presence of dust cloud. <p>Number of society complaints on the air quality, noise level or waste at work site.</p>	<ul style="list-style-type: none"> • Resident Engineer • Contractor • Community Committee • Safeguard Specialist 	• Daily
Ensure that noise and vibration are controlled at the site due to machinery, vehicles and steel works.	Methodology: <ul style="list-style-type: none"> • Noise level and vibration readings. • Equipment maintenance records • Community complaints on noise and vibrations. 	<ul style="list-style-type: none"> • Resident Engineer • Contractor • Community Committee • Safeguard Specialist 	• Daily

	Indicators: <ul style="list-style-type: none"> Noise monitoring results in above legal limits. Equipment assessments results Number of Community complaints. Number of maintenance performed on equipment. 		
Ensuring the Use of Good and Potable Water for Various Project Activities	Methodology: <ul style="list-style-type: none"> Identify source of water before starting works. Validate source capacity. Procure tanks as per required capacity Indicators: <ul style="list-style-type: none"> Source identified vs alternatives. Volume extracted daily vs approved capacity 	<ul style="list-style-type: none"> Resident Engineer Contractor Community Committee Safeguard Specialist 	<ul style="list-style-type: none"> Daily
Risks on marine biodiversity and removal of vegetation	Methodology: <ul style="list-style-type: none"> Conduct habitat surveys before and during works. Raising awareness of fishermen. Proper management of fishermen Monitoring and inspection of biodiversity Indicators: <ul style="list-style-type: none"> Compliance with habitat areas restrictions. Significant change in species structure and composition Presence of dead animals. 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 percentage of removed endemic or threatened vegetation. 	<ul style="list-style-type: none"> Resident Engineer Contractor Community Committee Safeguard Specialist EPA and fish authority 	<ul style="list-style-type: none"> Monthly

Monitor improper waste management by visual inspection	Methodology: <ul style="list-style-type: none"> Grievances system related to waste mismanagement Periodic inspection for non-compliance with waste storage waste receipt inspection Indicators: <ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> Contractor Resident Engineer Community Committee Safeguard Specialist 	<ul style="list-style-type: none"> Daily
Occupational health and safety			
Adherence of contractor to permit to work system for activities as identified by the risk assessment ²³ and ensuring all safety measures for the task are in place	Methodology: <ul style="list-style-type: none"> PTW records Monitor the issuance and completion of PTW. Regular site inspections. Incident records Indicators: <ul style="list-style-type: none"> Number of PTW. Records of non-compliances with OHS requirements during project activities. Number of incidents. Check if permits are visibly displayed at the work site. Check PTW are correctly filled out, signed. 	<ul style="list-style-type: none"> Contractor Resident Engineer Community Committee Safeguard Specialist 	Daily as required
Conduct comprehensive training and about occupational and health safety	Methodology: <ul style="list-style-type: none"> Training records and content. 	<ul style="list-style-type: none"> GM Officer Contractor Resident Engineer 	Daily as required

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- ²³ 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.

(OHS) aspects before the beginning of the sub-project implementation.	<ul style="list-style-type: none"> • evaluate workers during their tasks • Knowledge assessment Indicators: <ul style="list-style-type: none"> • Complete training records for all workers • Low failure rates on knowledge assessments • Observations showing workers applying proper safety practices 	<ul style="list-style-type: none"> • Safeguard Specialist • Community Committee 	
All OHS requirements for the sub-project are identified and available in the workplace.	Methodology: <ul style="list-style-type: none"> • Recipient PPE record. • Visual inspection. Indicators: <ul style="list-style-type: none"> • Incorporating OHS requirements into project documents. • Number of incidents • Presence of OHS equipment in place. • Presence of PPEs in place. • Presence of barriers, signs and flagman selected. • Presence of first aid kits 	<ul style="list-style-type: none"> • Safeguard Specialist • Resident Engineer • Contractor • Community Committee 	<ul style="list-style-type: none"> • Daily as required
Workers aware of the safety requirements are conducted	Methodology: <ul style="list-style-type: none"> • Awareness sessions records • Visual observation and photographic documentation Indicator: <ul style="list-style-type: none"> • Number of awareness sessions for workers. • Number of injuries 	<ul style="list-style-type: none"> • Resident Engineer • Contractor • Workers • Safeguard Specialist 	<ul style="list-style-type: none"> • Weekly
Ensure maintain occupational health and safety system in the site to protect workers from hazards and risks	Methodology: <ul style="list-style-type: none"> • Implement appropriate controls to eliminate or minimize risks. • inspections to identify any new hazards Indicators: <ul style="list-style-type: none"> • Number of hazards identified • Percentage of risks controlled • Inspection findings 	<ul style="list-style-type: none"> • Contractor • Resident Engineer • Community Committee • Safeguard Specialist 	<ul style="list-style-type: none"> • Daily

Ensure the necessary personal protective equipment (PPE) is always worn by workers and they get it for free	Methodology: <ul style="list-style-type: none"> • Implement appropriate controls to eliminate or minimize risks. inspections to identify any new hazards Indicators: <ul style="list-style-type: none"> • Number of hazards identified • Percentage of risks controlled Inspection findings Presence of PPEs Number of workers not adhering to PPEs	<ul style="list-style-type: none"> • Contractor • Resident Engineer • Workers • Community Committee • Safeguard Specialist 	<ul style="list-style-type: none"> • Daily
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: <ul style="list-style-type: none"> • Have a formal written emergency response plan • Routinely inspect and test the plan and first aid kits. • Visual inspection. Indicators: <ul style="list-style-type: none"> • Emergency plan banner in the site photo. • Results of inspect and test. • Low number of actual emergencies. • Presence of first aid boxes and their numbers. • Number of first aiders present. • Details of nearest hospital posted and available. Photo for the first aid box on site	<ul style="list-style-type: none"> • Contractor • Workers • Community Committee • Resident Engineer • Safeguard Specialist 	<ul style="list-style-type: none"> • At the beginning of implementation
Involving the community committee in the monitoring of safety procedures and reporting any risks	Methodology: <ul style="list-style-type: none"> • Conduct joint inspections • Respond to issues raised Indicators: <ul style="list-style-type: none"> • Regular meetings and inspections with the community • Number of risks/hazards identified by community committee 	<ul style="list-style-type: none"> • Community Committee • Resident Engineer • Contractor • Safeguard Specialist 	<ul style="list-style-type: none"> • Daily
Conduct regular inspections for any unsafe acts, near misses, or accidents.	Methodology:	<ul style="list-style-type: none"> • Resident Engineer • Contractor 	<ul style="list-style-type: none"> • Daily

	<ul style="list-style-type: none"> • Routine inspections of the worksite, tools, equipment and worker tasks • Near miss reporting • Accident/injury reporting Indicators: <ul style="list-style-type: none"> • Number of unsafe acts or at-risk behaviors • Rate of near-miss reports • Severity of injuries 	<ul style="list-style-type: none"> • Community Committee • Safeguard Specialist 	
Severe accidents and incidents are reported to head office within 24 hours and communicated to PWP and within 48 hours to the UNDP	Methodology: <ul style="list-style-type: none"> • Accident and injuries reports within 24 hours Indicators: <ul style="list-style-type: none"> • Number and types of accidents, and injuries reported and recorded and time of reporting • Number of reported accidents within 24 hours to PWP and within 48 hours to the UNDP Versus the number of reported accidents after 24 hours to PWP and after 48 hours to UNDP 	<ul style="list-style-type: none"> • Safeguard specialist • Resident Engineer • Community Committee 	<ul style="list-style-type: none"> • within 24 hours • within 48 hours
Ensure all activities that require specific skills are done by skilled workers.	Methodology: <ul style="list-style-type: none"> • Worker qualifications • Supervisor Approval Indicator: <ul style="list-style-type: none"> • Percentage of workers with documented qualifications meeting job requirements • Supervisor approval records 	<ul style="list-style-type: none"> • Resident Engineer • Community Committee • Contractor • Safeguard Specialist 	<ul style="list-style-type: none"> • Daily
Workers' satisfaction	Methodology: <ul style="list-style-type: none"> • Workers' grievances system Indicators: <ul style="list-style-type: none"> • Number of workers' grievances and type • Number of resolved grievances 	<ul style="list-style-type: none"> • Contractor • Resident Engineer • Community Committee • Safeguard Specialist 	<ul style="list-style-type: none"> • Weekly
Tools and equipment are to be regularly maintained and inspected to ensure they are of acceptable quality and in good	Methodology: <ul style="list-style-type: none"> • Periodic visual inspection of tools and equipment • Periodic Maintenance 	<ul style="list-style-type: none"> • Resident Engineer • Community Committee • Contractor 	<ul style="list-style-type: none"> • Monthly

working condition for the required activity	Inspection on maintenance log Indicator: <ul style="list-style-type: none"> • Results of the periodic report • Number of maintenance performed on tools • Number of times fire extinguishers were inspected 	<ul style="list-style-type: none"> • Safeguard Specialist 	
All construction works are to be conducted during daylight and no work is to be done at night	Methodology: <ul style="list-style-type: none"> • Define work hours • Supervisor monitoring • Timesheet reviews Indicator: <ul style="list-style-type: none"> • Zero confirmed incidents of out-of-hours work occurring • No discrepancies found in timesheet reviews 	<ul style="list-style-type: none"> • Resident Engineer • Contractor • Community Committee • Safeguard Specialist 	<ul style="list-style-type: none"> • Daily
Organizing the movement of equipment and vehicles at the project site	Methodology: <ul style="list-style-type: none"> • Define routes • Enforce safe speed limits • Scheduled movements Indicator: <ul style="list-style-type: none"> • Worksite map showing clearly defined routes • Number of near miss incidents 	<ul style="list-style-type: none"> • Resident Engineer • Contractor • Community Committee • Safeguard Specialist 	<ul style="list-style-type: none"> • Daily
Manual handling	Methodology: <ul style="list-style-type: none"> • Mechanical aids • Safe work procedures for manual handling tasks • Monitoring Indicator: <ul style="list-style-type: none"> • Completeness and functionality of mechanical lifting aids • Adherence to safe work procedures observed during monitoring 	<ul style="list-style-type: none"> • Resident Engineer • Contractor • Community Committee • Safeguard Specialist 	<ul style="list-style-type: none"> • Daily
Operational phase monitoring			
Marine Biodiversity risks and depletion of fish stocks	Methodology: <ul style="list-style-type: none"> • Surveys Indicators <ul style="list-style-type: none"> • Number of spill events 	<ul style="list-style-type: none"> • Community Committee • Local Authority In collaboration with EPA 	<ul style="list-style-type: none"> • Bi-Annually

	Significant decrease in fish species and other non-targeted species		
Solid and liquid waste generated from facilities of the center, air emissions and odor emissions	Methodology: <ul style="list-style-type: none"> • Inspect filter pond operation. And sediment removal regularly. • Inspect waste storage, loading/transport procedures. • Consult local authorities and community on impacts. Indicator: <ul style="list-style-type: none"> • Filter pond efficiency. • Inspection reports for storage, load spills, transport vehicles. • Feedback from authorities /communities on waste management. Number of complaints regarding emissions and wastes	<ul style="list-style-type: none"> • Community Committee • Local Authority 	<ul style="list-style-type: none"> • Monthly
High use of water	Methodology: <ul style="list-style-type: none"> • Install water meters to track usage. • Develop reuse systems. Indicator: <ul style="list-style-type: none"> • Water usage data from meters. • Volume of greywater captured and reused 	<ul style="list-style-type: none"> • Community Committee • Local Authority 	<ul style="list-style-type: none"> • Monthly
High energy usage	Methodology: <ul style="list-style-type: none"> • Visual inspections. • Monitor and track the energy consumption. • Provide training and awareness sessions Indicator: <ul style="list-style-type: none"> • Percentage reduction in total energy consumption. • Number of awareness sessions conducted 	<ul style="list-style-type: none"> • Community Committee • Local Authority 	<ul style="list-style-type: none"> • Monthly
General occupational health and safety procedures for workers during cleaning,	Methodology: <ul style="list-style-type: none"> • Monitor use and proper maintenance of all required 	<ul style="list-style-type: none"> • Community Committee • Local Authority 	<ul style="list-style-type: none"> • Monthly

packaging, cooling and storage operations for onions and dates	personal protective equipment (PPE). • OHS inspections and audits Indicators: • Number of incidents and types • The record of injuries in project reports		
The maintenance, operation and preservation of the center	Methodology: • Conduct regular inspections • Number of complaints Indicators: • Inspection reports • Number of resolved complaints	• Community Committee • Local Authority	• Annually
Working in unhealthy areas and presence of wastes	Methodology: • Complaints recorded. • Visual inspection • Number of trainings on OHS, environmental issues and social issues Injuries log Indicator: • Number of complaints regarding health issues • Number of trainings provided regarding OHS, environmental and social topics Number of injuries/accidents/incidents	• Fish Association • Fish Authority • community committee	• Every three months
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	• Bi-Annually

8 Stakeholders Engagement Plan and Public Consultation:

A consultation was conducted on October 15, 2024 with 15 men and women from the beneficiaries and the local community. A wide number of participants participated in this consultation, including important persons from the local authority in the district, from the Public Works Project, from the district office, from the beneficiary of the management of Al-Dumakh Fish Landing Center, as well as from the management of the Hassay and Thamnon Fishermen's Association and from the fishermen. To discuss the current status of the center, the most important needs required by the center, land ownership and appropriate solutions to avoid any problems during the implementation of the project.

Also, PWP established the community committee in the targeted area by sending the social consultants' team (males and females) and conducting focal group discussions in 15th October 2024 including 40 women and 80 men to enable participation in the electing of the community committee. The elected community committee and the members including women and men participated in the decision-making, need assessment, and public consultation. Also, community committee consisting of 6 men and 3 women will participate in the monitoring of implementation, receiving the sub-project, 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 market values will be conducted by TVET centers, and Yemeni Fishery Exporters' Association.

Table 11 below shows the sub-project intervention and consultation date.

Table 11 subproject Consultation Date

Sub Project Intervention	Consultation Date	Consulted Beneficiaries		
		Male	Female	Total
Rehabilitation and Development of AL-DUMKH Fish Landing Site – Alshihr district	15/10/2024	15	1	16
		80	40	120
Total		95	41	136

Topics of the Consultations and Information Disclosure:

- Ensure that community's needs are in line with their priorities.
- Inform local community about the activities to be undertaken, the sub-projects' timetable, and the work plan.
- Inform them about the opportunities to have a job during implementation.
- Raise their awareness about the subproject's potential risks such as safety, health, environmental, and social risks and required control measures.
- Inform them about their roles in monitoring the compliance of contractor and workers in the worksite and their rights to give their concerns.
- Document and address the local community's concerns, expectations, and feedback.

- Ensure the participation of subproject beneficiaries both females and males.
- Discuss the positive impacts that the subproject will have on improving services for the beneficiaries.
- Inform them that the road traffic may temporarily be interrupted during implementation and how to coordinate with sub-project supervisors and contractor to manage the traffic.
- Raise their awareness regarding social safeguards such as SEA/ SH, and abuse, that may occur during the implementation and the required measures that should be taken in case of occurrence.
- Inform them about how to use the GM to give their opinions regarding social risks, OHS, and any complaints and concerns about project activities without fear.
- Raise their awareness regarding other diseases such as Cholera and other transmissible diseases.
- Distribution of awareness posters about OHS, GM, and Gender with all beneficiaries to contribute to building positive culture regarding social risk management.

Figure 5 Shows the consultation attendance sheets and meeting photos in Al-Dumkh Subproject



8.1 Public Consultation Findings and Feedback

Table 12 concerns of the community and the findings

Summary of Consultation for [Stakeholder name/community]		
Date of consultation	15/10/2024	
Location of consultation	The administration building at Al Dumkh Fish Landing Center	
Total Number of participants (# of women / # of men)	Total 136 Men: 41 Women: 95	
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)?	<p>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.</p> <p>The elderly ,IDPs, disabilities and women were included in the consultations regarding their needs, and women were involved in the community committee</p>	
Main issues/ identified risks/concerns/questions/complaints (specify if male or female)	Answers from the project team	Follow-up actions (who is responsible)
<ul style="list-style-type: none"> One of the beneficiary fishermen asks where the workers will come from. One of the beneficiary fishermen wonders if the project will cause fishing restrictions this season due to the implementation of the project. 	<ul style="list-style-type: none"> The contractor will employ workers from the surrounding area of Hassay, which is approximately 4 km away from the project site. Suitable housing such as tents or caravans will be provided for the workers during the implementation period, to ensure that the local community benefits from the project and provides job opportunities for the people of the area.. The project team will work closely with fishermen, local authorities, and the Hassay and Thamanoun Association to ensure that the project does not interfere with fishing schedules and operations. It has been agreed to move the auction hall to a larger, currently available location next to the center so as not to hinder fishermen from their work until the new auction hall is ready. The project aims to benefit the local community, including fishermen, from the implementation of the project, as 	<ul style="list-style-type: none"> Contractor, Technical Resident Engineer Community committee, Local Authority, Fish Association

<ul style="list-style-type: none"> • One of the beneficiary fishermen wonders if fishermen will be allowed to participate in construction activities. 	<p>the project will bring in skilled and unskilled workers and will provide training programs and specific activities for the unskilled, which are usually not at risk to them.</p> <ul style="list-style-type: none"> • Women play an important role in project implementation and monitoring activities and their participation is of utmost importance as the project is committed to gender equality and women's empowerment. We will ensure that women are represented in the community committee that will be established to oversee the implementation of the project. 	<ul style="list-style-type: none"> • Contractor, Technical Resident Engineer
<ul style="list-style-type: none"> • Can women participate in the project and monitor the activities? Will women's complaints be taken into consideration? 		<ul style="list-style-type: none"> • Contractor, Technical Resident Engineer,

8.2 Sustainability of Sub-project and Community Ownership

PWP engages all affected parties of sub-project within the sub-projects' cycle, consultations are conducted at various stages including consultation with the community for selection of intervention based on focal group discussions with women and men, formation of the Community committee by electing members including female members with the total number of 6, 3 males and 3 females, training on various aspects for operation and maintenance. Also, coordination with Local Authority / Council to inform on activities taking place, the possibility of their role in operation and maintenance, their role as monitors in operational and maintenance phase. Furthermore, PWP conducts public feedback sessions with targeted community during site visits to listen to their concerns and feedback as well as to ensure their acceptance of the intervention.

Before the subproject handing over, PWP sub-area manager will invite the beneficiaries' representatives 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 signing of the beneficiaries' representative. During this occasion, the sub-area manager makes awareness to the attendance beneficiaries about the importance of the sub-project maintenance to ensure the sustainability of the intervention. Also, community will be consulted on how a rehabilitated site will be managed in the future, what lessons can be learnt from the absence of management over the past 20 years. The community committee will have the right also to monitor this site. The Fish association will be given the responsibility to manage the activities, collect the fees, provide the services and provide the maintenance.

8.3 Stakeholders Engagement Plan:

According to SFISH stakeholder engagement plan (SEP)²⁴ PWP will continue to engage the stakeholders during the sub-project's implementation by conducting meetings with beneficiaries, the community committee, and the local authority to discuss any raised issues, and implementation aspects, as well as listen to stakeholders' concerns and feedback. The sub-area manager will conduct monthly meetings with community committee 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.

The PWP resident engineer will be in continuous cooperation and coordination with the community committee at the site to discuss any issues that might be raised. Furthermore, different meetings with the local authority may be conducted to strengthen cooperation and facilitate implementation. In addition, at the end of implementation meetings with beneficiaries, community committee, and local authority will be Organized to prepare for the sub-project submission and operation process. Training for beneficiaries and community committee on the project operation and maintenance will be conducted to ensure subproject sustainability.

8.4 Information Dissemination and disclosure

As part of a transparent approach, PWP will disseminate information about the subproject in a variety of ways and at varying levels. It begins by coordinating with the local authority to create a solid coordination framework. The local community will be engaged through public consultations and different awareness sessions will be held during the preparation and implementation phases with the distribution of IEC (information, education, communication) regarding the benefits available under the project. This process will highlight sustainability and environmental and social aspects, GM tools, etc. Following the approval of this document PWP will develop an Arabic version of the ESMP which will be available to all local stakeholders at the site. The translated ESMP will also be available on the PWP website.

9 Capacity Building

PWP conducts capacity building for different levels in all projects' life cycle. Annual comprehensive training will be done for PWP main and sub-areas staff in which revision and updates have been reflected according to the World Bank's new ESF. In public consultation, awareness session was held on all topics covered by section 8.2. The executive staff as the main part in managing project implementation at the governorates level will have training sessions in place for their responsibilities, liabilities, risk impact assessment, and planned mitigation measures, and they should sign their commitment to these procedures. Also, another training session will take place for resident engineer where every person's responsibility, implementation procedures, needed forms, risk assessment methods, and general OHS procedures will be given. In handing over the site to the contractor, PWP sub-area representative will

²⁴ <https://pwpyemen.org/index.php/en/media-center-en/publications/category/14-sustainable-fishery-development-in-red-sea-and-gulf-of-aden-sfish>

conduct awareness sessions for workers, community committee, and some present from the local community members that will represent the required Environmental, Social, and OHS needs. Different awareness sessions should be held during the implementation phase of the sub-project. In daily awareness sessions, the resident engineer and the contractor OHS assistant will explain to workers what risks they can expect in the course of their work. As part of this awareness, SEA/SH, GM, and code of conduct procedures will be discussed. The PWP sub-area assistant will conduct sub-project site visits every two weeks to stay in touch with workers and community. In addition to raising awareness among workers, PWP sub-area manager outreach to the local community every month. As part of the project closing phase, local authority and community committee will be provided with project maintenance procedures on-site.

10 Grievance Mechanism (GM)

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 means also introduced to beneficiaries and listed below.

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

PWP has GM staff at Head Quarters (HQ) 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. Complaint 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 Officer monitors complaints to ensure they are resolved satisfactorily, and complaints are closed. Complaints received will be recorded and investigated and the person who submits 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.

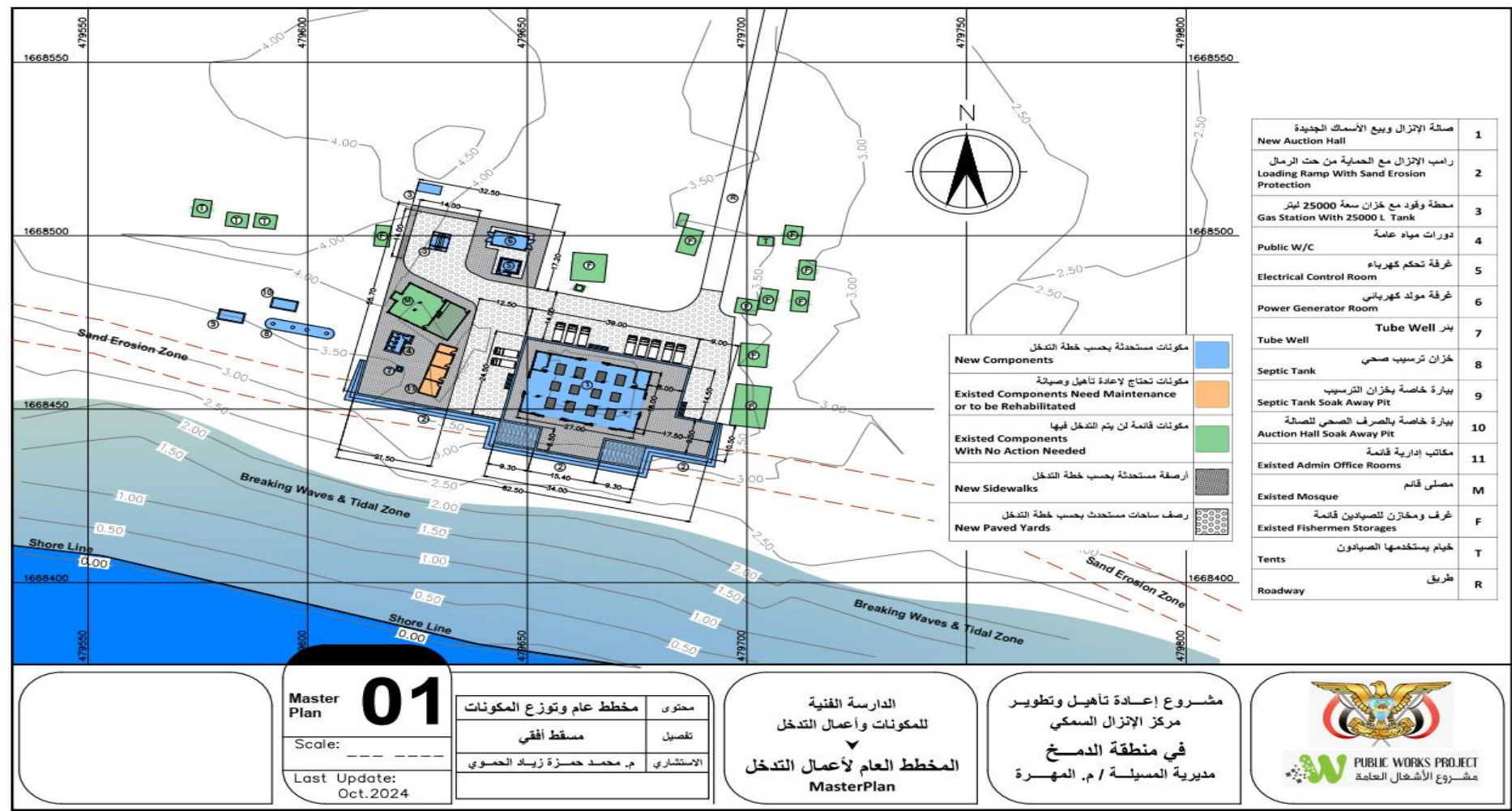
Every effort is made to resolve any complaint at the community level and within a time frame of 14 days by community committee members, sub-area staff, and residential engineer, in case it could not be solved, the complaint is raised to the HQ's specialists. UNDP will monitor the implementation of the 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 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[1] procedures. After one year, the GM system will be 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.

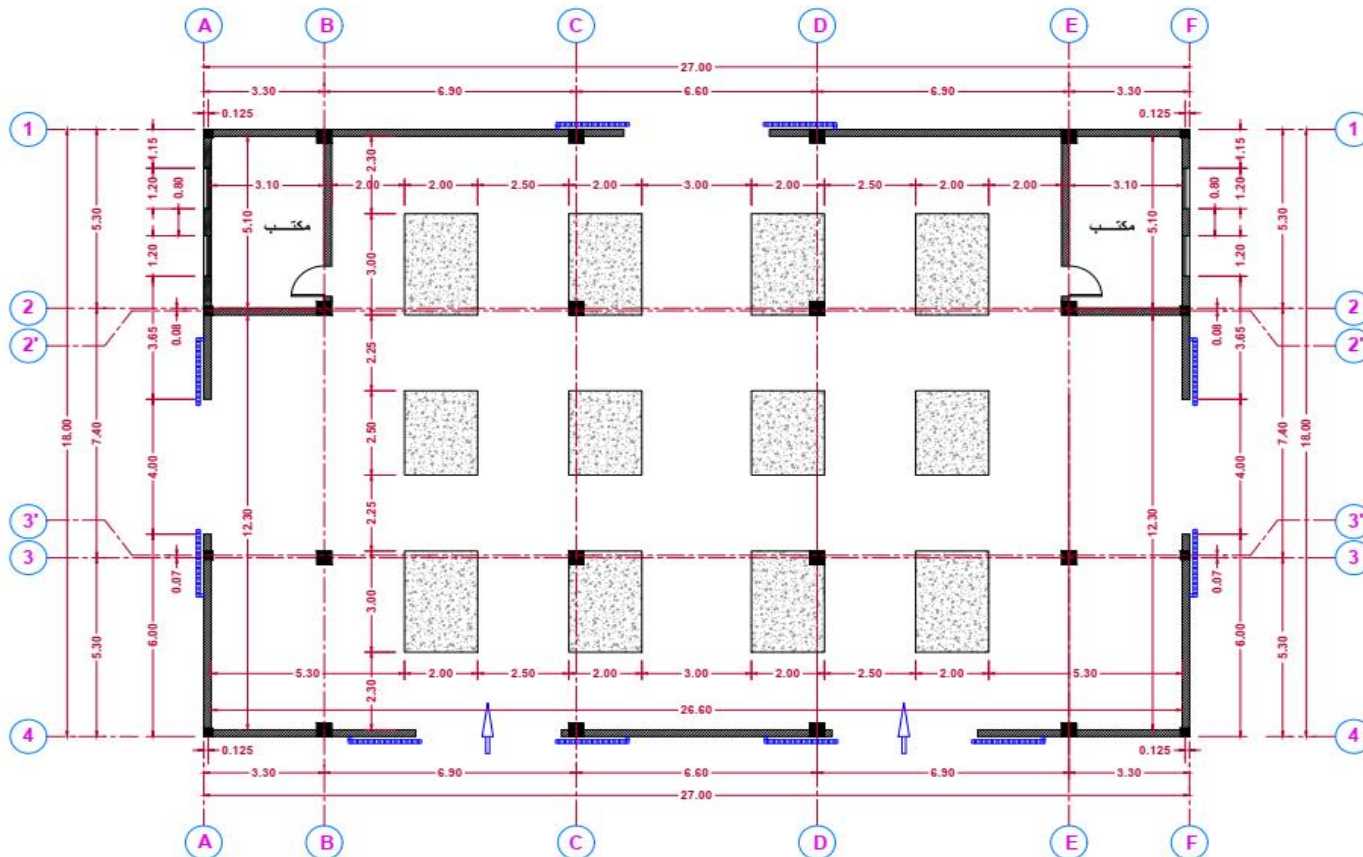
Annexes

Annex 1 – Typical Drawings

Figure 6 Show the typical drawings for Al-Dumkh Center



Drawings showing the main component of the intervention



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02

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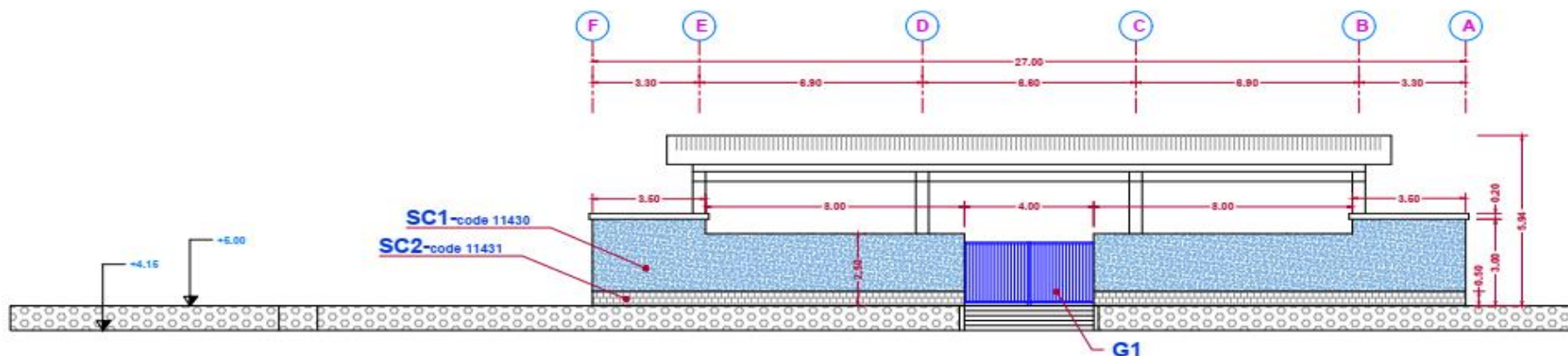
Last Update:
Oct.2024

الدراسة المعمارية	محتوى
مسقط أفقي	تفصيل
م. محمد حمزة زياد الحموي	الاستشاري

الدراسة الفنية
للمكونات وأعمال التدخل
▼
صالة بيع الأسماك
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مشروع إعادة تأهيل وتطوير
مركز الإنزال السمكي
في منطقة الدمخ
مديرية المسيلة / م. المهرة





الواجهة الرئيسية الخلفية (شمالية)

Doors Table جدول الأبواب

مساحة Area	الارتفاع Height	العرض Width	الوصف Description	الرمز Symbol
8.80 m ²	2.2m	4.00m	بوابة خارجية معدنية من الحديد المربع الثقوي مزالق معلق مع سكة سفلية External metal gate made of hollow square section iron – Sliding door gate	G1

جدول تنظيد الجدران الخارجية
External Walls Finishing Table

رمز Symbol	الوصف Description
SC1	طريقة خارجية بالمسحاة (لون فاتح مناسب) External Sandblasting With Machine (Suitable Bright Color)
SC2	تلمية حجر اسود منشار (حيش) (8 - 12 سم) Covering With Black Basalt Stone (Habbash) of 8 ~ 12 cm Size

● الجدران من البلك الاسمنتي الاوماليكي

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Hall

04

Scale: --- ----

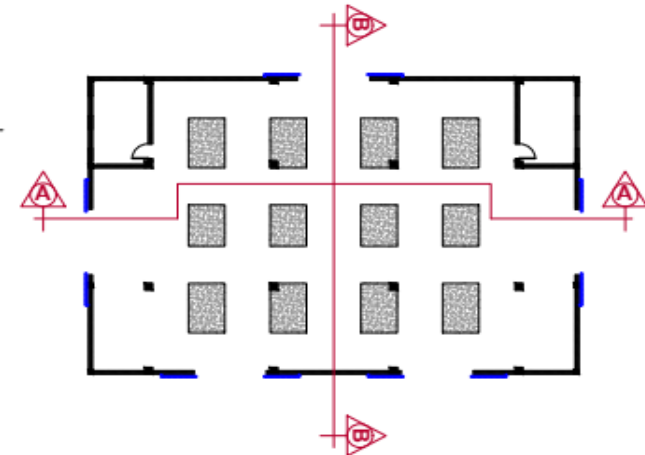
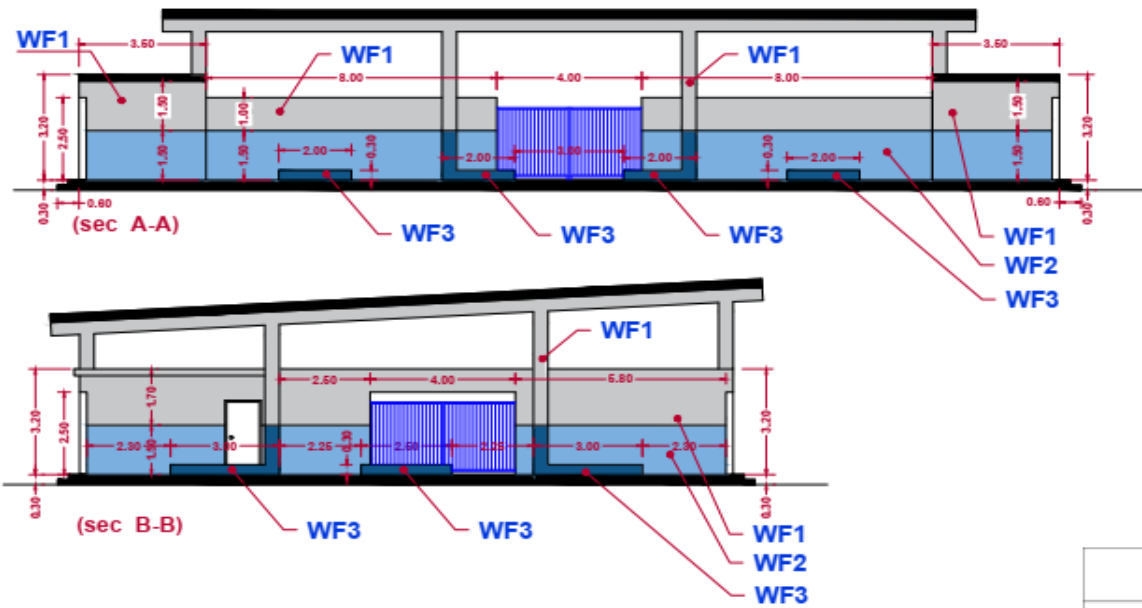
Last Update:
Oct.2024

محتوى
الدراسة المعمارية
تفصيل
واجهة رئيسية خلفية
الاستشاري
م. محمد حمزة زياد الحموي

الدراسة الفنية
للمكونات وأعمال التدخل
▼
صالة بيع الأسماك
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مشروع إعادة تأهيل وتطوير
مركز الإنزال السمكي
في منطقة الدمشخ
مديرية المسيلة / م. المهرة





جدول تشطيب الجدران الداخلية
Internal Walls Finishing Table

رمز Symbol	الوصف Description
WF1	دهان إيبوكسي مقاوم بسمك لا تقل عن 500 ميكرون Epoxy Resistant Coating With Minimum Thickness of 500 Micron
WF2	طبقة تغطية إيبوكسي للجدران بارتفاع 1.5 متر وسمك لا تقل عن 3 ملم Epoxy Coating Layer For Walls With Height of 1.50 m & Minimum Thickness of 3 mm
WF3	طبقة تغطية إيبوكسي لكتات العرض بسمك لا تقل عن 5 ملم Epoxy Coating Layer For Counters With Minimum Thickness of 5 mm

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Hall

06

Scale:

Last Update:
Oct.2024

الدراسة المعمارية

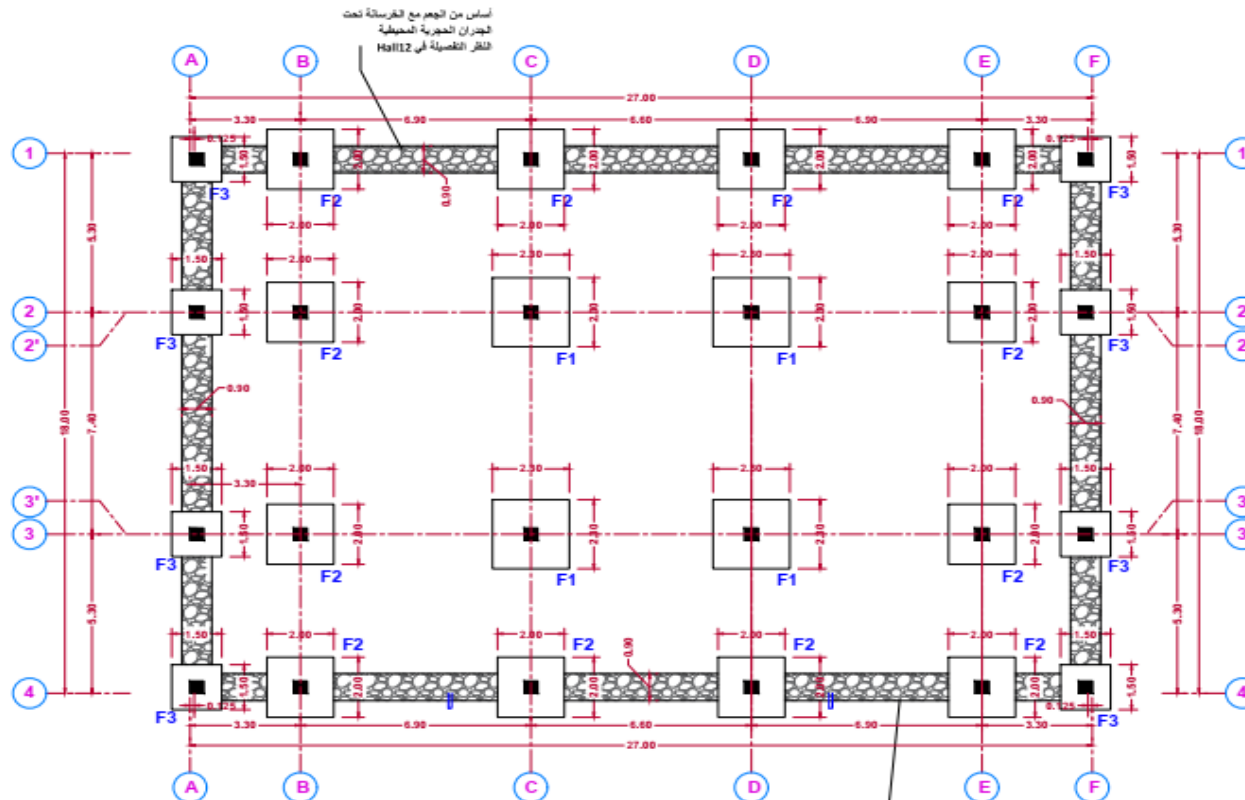
قطاعات داخلية

م. محمد حمزة زباد الحموي

الدراسة الفنية
للمكونات وأعمال التدخل
صالة بيع الأسماك
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مشروع إعادة تأهيل وتطوير
مركز الإنزال السمكي
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مديرية المسيلة / م. المهرة





ملاحظات:

- يتم التأسيس على تربة طبيعية لا تقل قدرة تحملها عن 150 kN/m^2 أو ما يعادلها ويتوجب على المقاول إجراء تحريات التربة الضرورية للتحقق من قدرة التحمل المطلوبة لتربة التأسيس وذلك تحت إشراف المهندس الاستشاري.
- لا يقل منسوب التأسيس عن 2 m أسفل صفر أرضية المبني.
- يجب تسوية تربة التأسيس ودكها أصولاً مع الترطيب المناسب للوصول إلى كثافتها العظمى وذلك تحت إشراف المهندس الاستشاري.
- يتم استخدام التيلون المشمع العازل تحت طبقة خرسانة النظافة على كامل مساحة الطبقة.
- يتم عزل جدران وأسفل القواعد مع الرقاب بمادة البيتومين الحار بشكل جيد (3 طبقات على الأقل).

ملاحظات:

- يجب أن لا يقل محتوى الاسمنت في الخرسانة العادية لطبقة النظافة عن 250 kg/m^3 ولا تقل المقاومة المكمبة لها على عمر 28 يوم عن 20 N/mm^2 أو 200 kg/cm^2
- يجب أن لا يقل محتوى الاسمنت في الخرسانة المسلحة للقواعد عن 350 kg/m^3 ولا تقل المقاومة المكمبة لها على عمر 28 يوم عن 25 N/mm^2 أو 250 kg/cm^2
- يجب أن يطابق مركز ثقل العمود مركز القاعدة أسفل منه في جميع القواعد.
- يجب أن لا تقل أبعاد رقب الأعمدة عن 1 m
- يجب معالجة الخرسانة المصبوبة برشها بالماء مرتين يومياً صباحاً ومساءً ولمدة 10 أيام اعتباراً من اليوم التالي للصب
- يجب عدم التكسير في الخرسانة بعد صبها لأي سبب كان
- يجب أن لا يقل الغطاء الخرساني في القواعد عن 50 mm
- يجب مراعاة الأصول الفنية في صب ودمك الخرسانة واستخدام الهزازات المناسبة ودائماً بإشراف المهندس الاستشاري

جدول تفاصيل وتسليح القواعد					
القاعدة	خرسانة مسلحة	نظافة	تسليح سطحي أساسي	تسليح سطحي كابوتي	تسليح علوي
F1	2300x2300x600 mm	2500x2500x100 mm	8 Φ 16mm بالأتجاهين	8 Φ 16mm بالأتجاهين	8 Φ 16mm بالأتجاهين
F2	2000x2000x600 mm	2200x2200x100 mm	7 Φ 16mm بالأتجاهين	7 Φ 16mm بالأتجاهين	7 Φ 16mm بالأتجاهين
F3	1500x1500x600 mm	1700x1700x600 mm	6 Φ 16mm بالأتجاهين	5 Φ 16mm بالأتجاهين	6 Φ 16mm بالأتجاهين

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14

Scale: ---

Last Update: Oct.2024

محتوى	الدراسة الإنشائية
تفصيل	مسقط القواعد
الاستشاري	م. محمد حمزة زياد الحموي

الدراسة الفنية

للمكونات وأعمال التدخل

▼

صالة بيع الأسماك

Auction Hall

مشروع إعادة تأهيل وتطوير

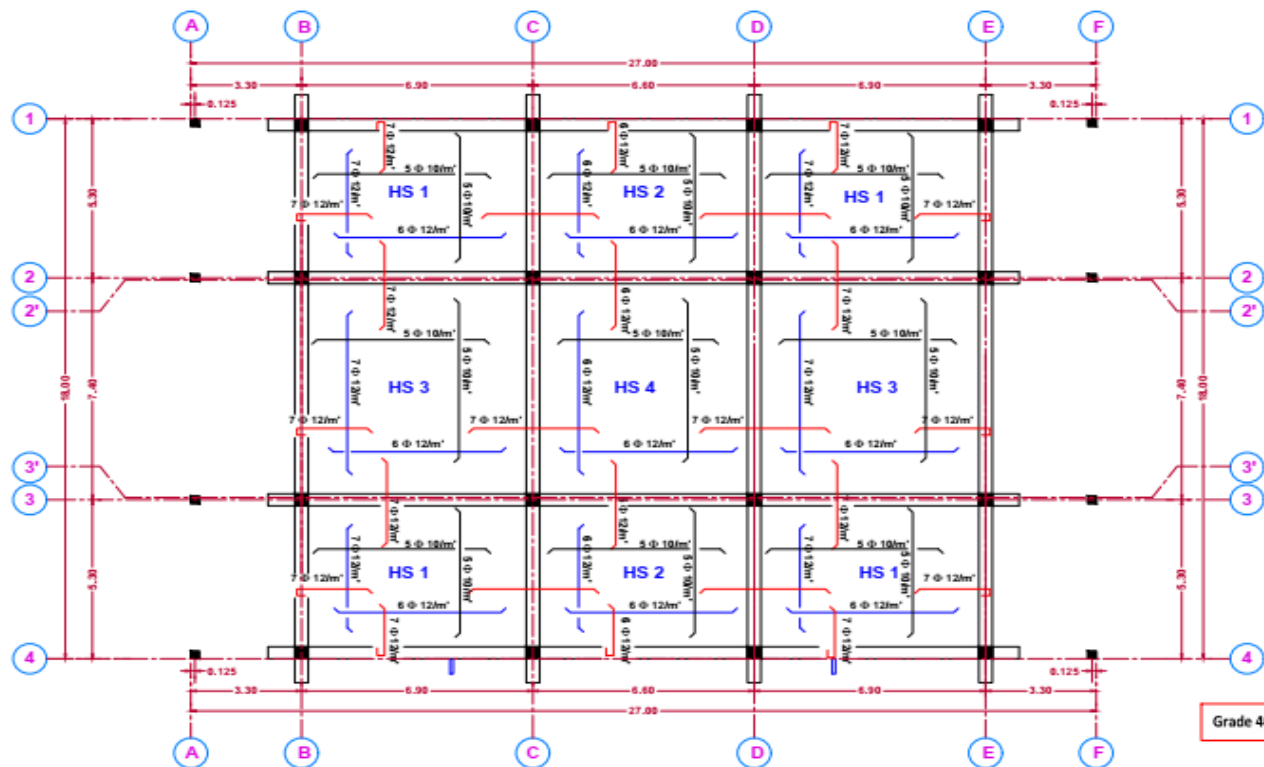
مركز الإنزال السمكي

في منطقة الدمخ

مديرية المميلة / م. المهرة

PUBLIC WORKS PROJECT

مشروع الأشغال العامة



- ملاحظات:
- يجب أن لا يقل محتوى الاسمنت في الخرسانة المسلحة للبلطات عن 375 kg/m^3 ولا تقل المقاومة المكببة لها على عمر 28 يوم عن 28 N/mm^2 أو 280 kg/cm^2
 - يجب أن لا تقل سماكة الغطاء الخرساني عن 30mm
 - يجب معالجة الخرسانة المصبوبة برشها بالماء مرتين يومياً صباحاً ومساءً ولمدة لا تقل عن 14 يوم اعتباراً من اليوم التالي للصب وذلك الشدات بعد 21 يوم.
 - يجب عدم التكسير في الخرسانة بعد صبها لأي سبب كان.
 - يجب مراعاة الأصول الفنية في صب ودك الخرسانة واستخدام الهزازات المناسبة ودائماً بإشراف المهندس الاستشاري.
 - يجب الكشف الجيد عن مواضع التعشيش ومعالجتها مباشرة بعد فك الشدات أصولاً عبر تكسير الخرسانة الشائكة وتنظيف الموضع وصفره حديد التسليح في حال ظهوره والطلاء بمادة الأيبوند ثم تطبيق مادة الجراوت تحت إشراف المهندس الاستشاري.

كل حديد التسليح المستخدم Grade 40

Auction Hall

24

Scale: ---

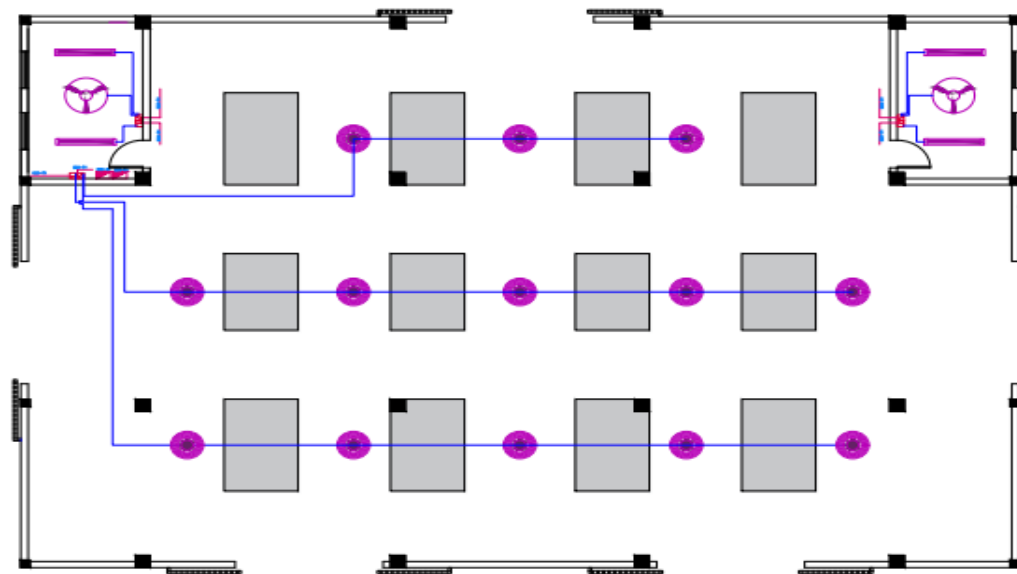
Last Update:
Oct.2024

محتوى
الدراسة الإنشائية
تفاصيل بلاطات
سقف الصالة
الاستشاري
م. محمد حمزة زياد الحموي

الدراسة الفنية
للمكونات وأعمال التدخل
▼
صالة بيع الأسماك
Auction Hall

مشروع إعادة تأهيل وتطوير
مركز الإنزال السمكي
في منطقة الدمشخ
مديرية المميلة / م. المهرة





POWER & LIGHTING	
SYMBOL	DESCRIPTION
	MAIN POWER DISTRIBUTION BOARD .IP66
	POWER DISTRIBUTION BOARD . IP66
	IP 65INDUSTRIAL LIGHTING 100W HIGH BAY LED LIGHT
	36W 2X 18LED TUBE FLUORESCENT FIXTURE
	INDUSTRIAL LIGHTING SWITCH ,IP 1 , 65WAY 1, GANG 10AM
	INDUSTRIAL LIGHTING SWITCH ,IP 1 , 65WAY 2, GANG 10AM
	16A INDUSTRIAL SINGLE PHASE, SOCKET IP 65
	CEILING FAN ,SPEED CONTROLLER

Auction
Hall

27

Scale: --- ----

Last Update:
Oct.2024

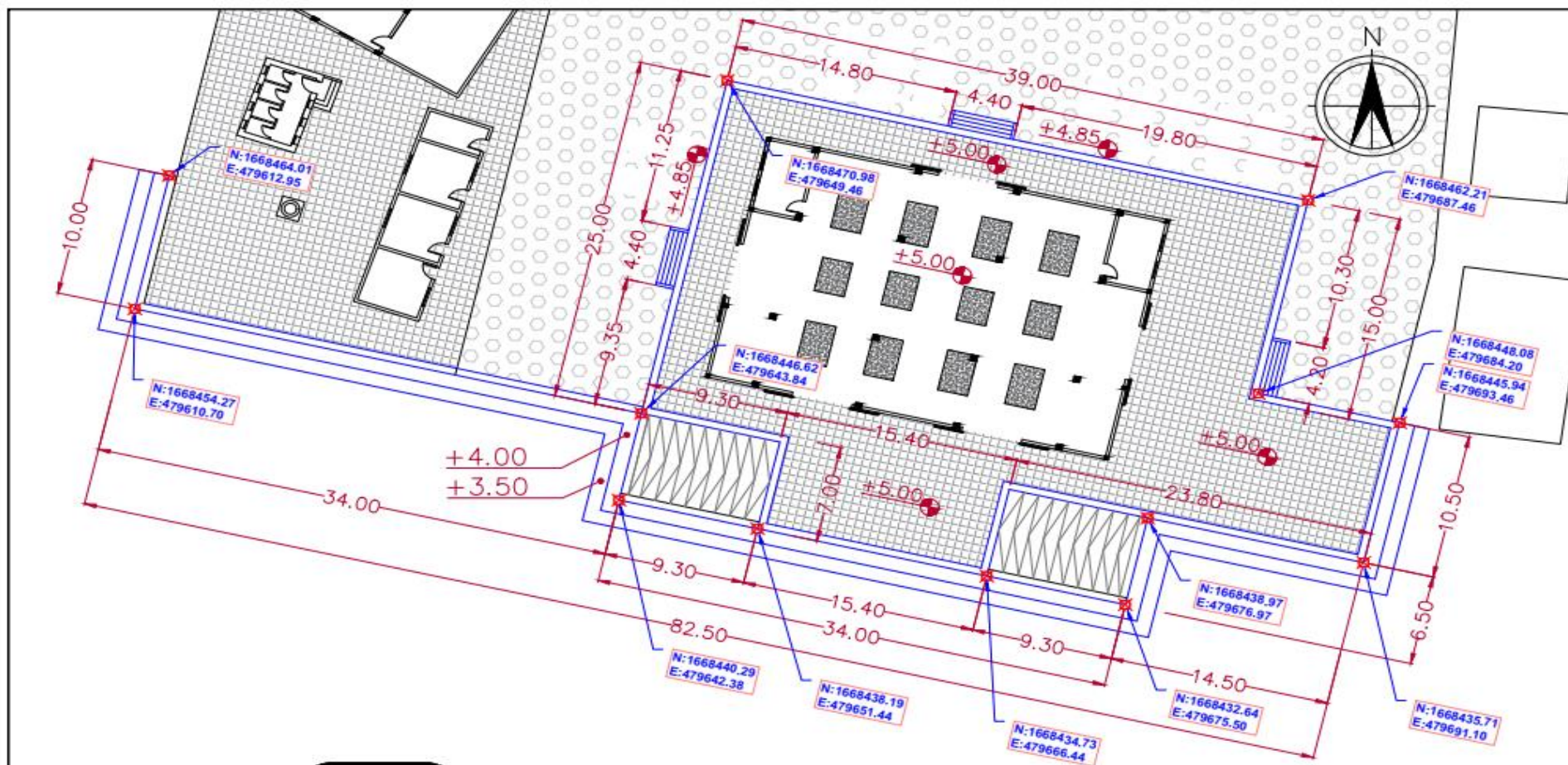
الدراسة الكهربائية	محتوى
التجهيزات والإضاءة	تفصيل
م. محمد حمزة زياد الحموي	الاستشاري

الدراسة الفنية
للمكونات وأعمال التدخل
▼
صالة بيع الأسماك
Auction Hall

مشروع إعادة تأهيل وتطوير
مركز الإنزال السمكي
في منطقة الدمشخ
مديرية المسيلة / م. المهرة



Drawings showing of the new hall



01
LOADING
RAMP
& SAND EROSION PROTECTION

Scale: ---

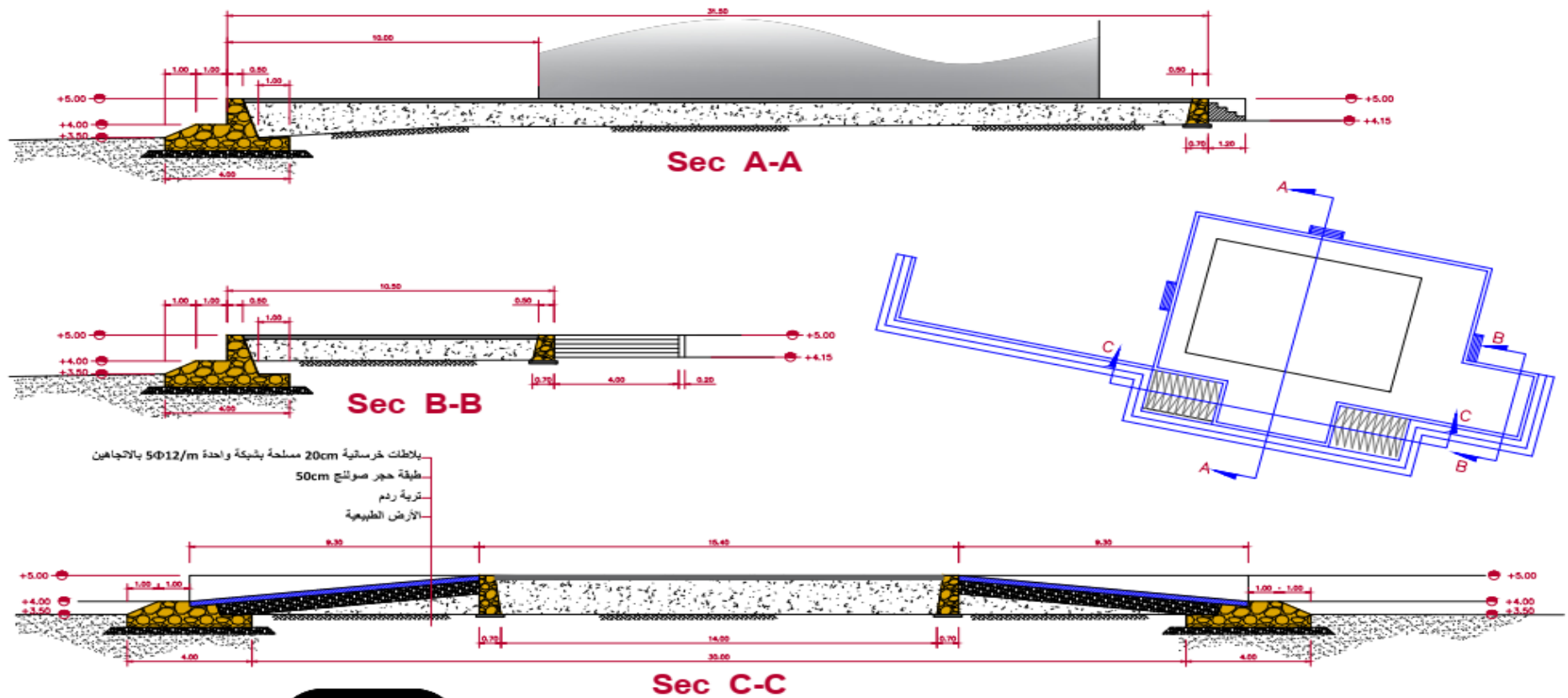
Last Update:
Oct. 2024

التخطيط الأفقي	محتوى
مسقط أفقي تفصيلي	تفصيل
م. محمد حمزة زياد الحموي	الاستشاري

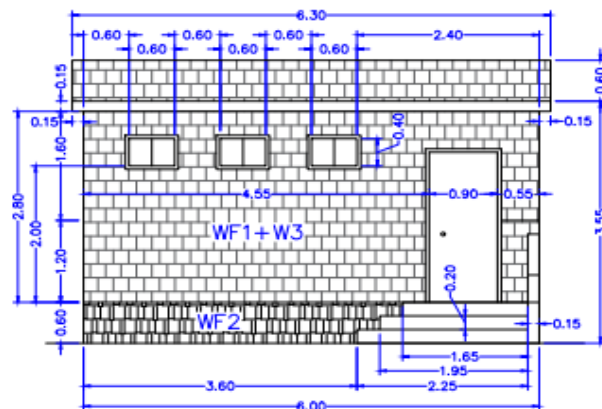
الدراسة الفنية
للمكونات وأعمال التدخل
▼
رامب الإنزال
والحماية من نحر الرمال

مشروع إعادة تأهيل وتطوير
مركز الإنزال السمكي
في منطقة الدمشخ
مديرية المسيلة / م. المهرة

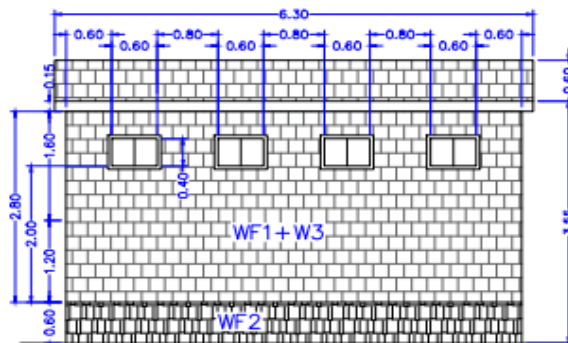




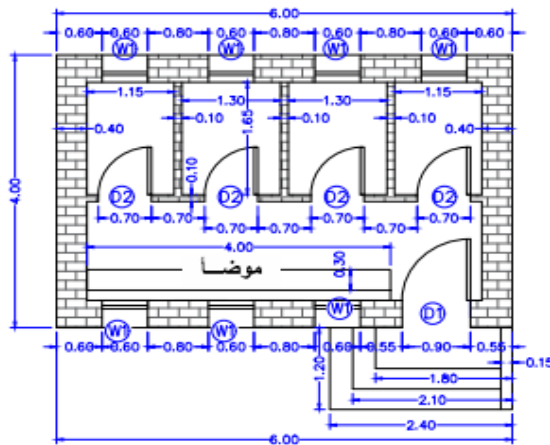
Drawings showing of the ramp around a hall



واجهة أمامية



واجهة خلفية



جدول الجدران والتشطيب الخارجي
Walls & Exterior Finishing Table

الوصف Description	الرمز Symbol
مباني من الحجر الفاتح اللون باستخدام الحجارة المتوفرة محليا سماسة 40 سم Walls built with bright color locally available stones with thickness of 40cm	WF 1
حجر كرسى بازلت نصف ونيس للكرسي الظاهر Stone chair built with black basalt stones	WF 2
طبقة دهان بلاستيكي على الجدران الخارجية Transparent plastic coating paint for exterior walls	WF 3

جدول الأبواب والنوافذ
Doors & Windows Table

المساحة Area	الارتفاع Height	العرض Width	الوصف Description	الرمز Symbol
1.98 m ²	2.2m	0.90m	باب خشبي كرسى عريض Pressed Wooden single leaf door	D1
1.40 m ²	2.00m	0.70m	باب ألومنيوم للحماسات Aluminum door for WC	D2
0.024 m ²	0.40m	0.60m	نافذة ألومنيوم مع زجاج مملح 6 ملم مع تيل ناس Aluminum window with white reflective glass (6mm) and insects protection net	W1

PUBLIC
WC

01

Scale:

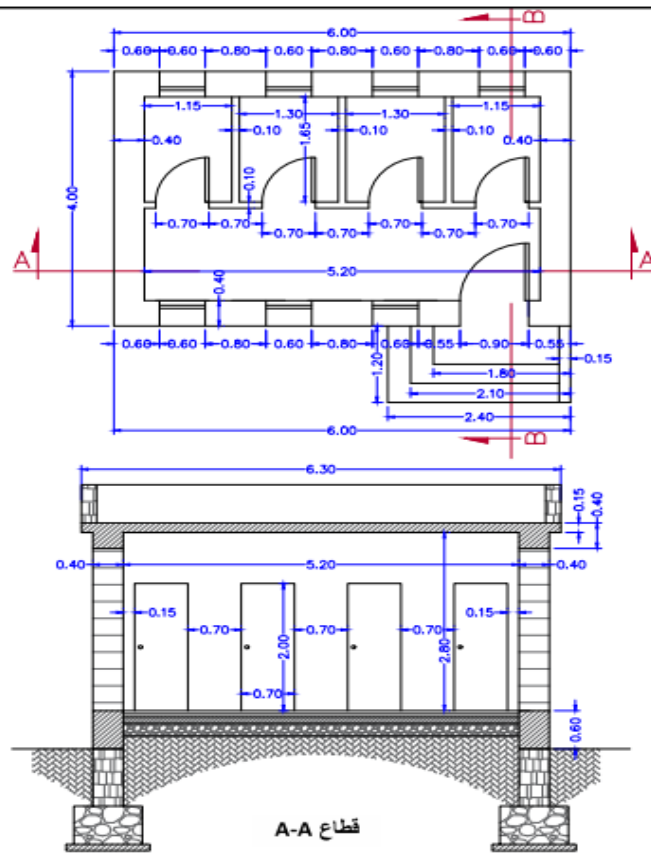
Last Update:
Oct.2024

محتوى
الدراسة المعمارية
تفصيل
مسقط أفقي + واجهات
الاستشاري
م. محمد حمزة زياد الحموي

الدراسة الفنية
للمكونات وأعمال التدخل
دورات المياه

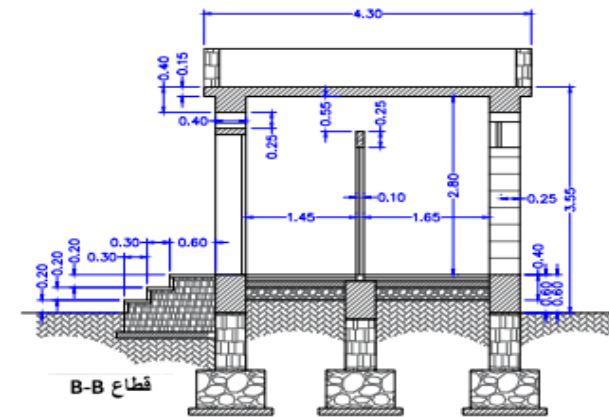
مشروع إعادة تأهيل وتطوير
مركز الإنزال السمكي
في منطقة الدمخ
مديرية المميلة / م. المهرة





جدول التشطيب الداخلي
Interior Finishing Table

الموقع Place	الوصف Description
الأرضيات Floors	بلاط سيراميك مانع للتزحلق بلون متجانس 30x30 سم Non-slip high quality uniformly colored ceramic tiles 30x30 cm
الجدران Walls	بلاط سيراميك أبيض (كيشاني) 30x20 سم White ceramic tiles (Kelshani) 30x20 cm
الأسقف Roofs	دهان إيبوكسي مقاوم بسمك لا تقل عن 500 ميكرون Epoxy resistant coating with minimum thickness of 500 micron



PUBLIC
WC

02

Scale: ---

Last Update:
Oct.2024

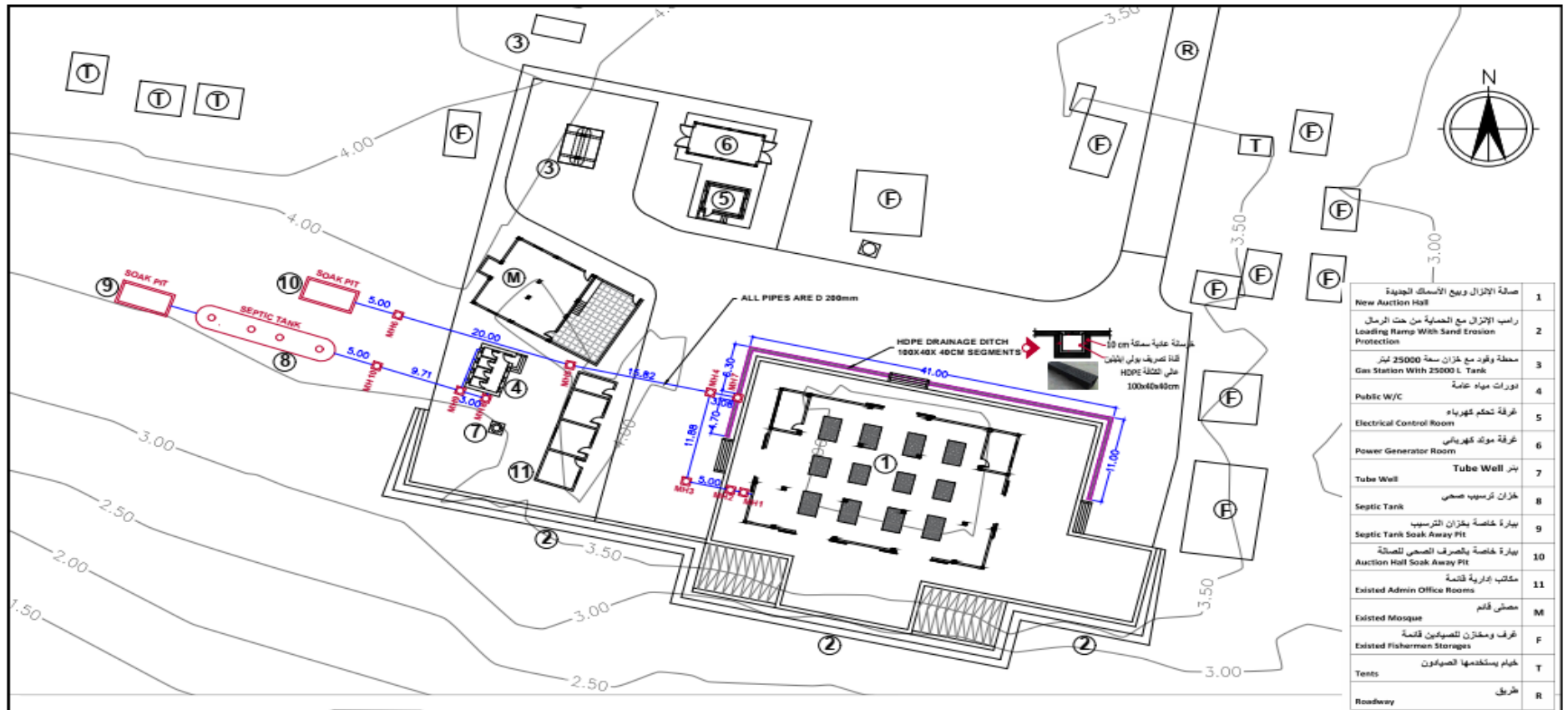
محتوى
تفصيل
الدراسة المعمارية
مقاطع
م. محمد حمزة زياد الحموي
الاستشاري

الدراسة الفنية
للمكونات وأعمال التدخل
دورات المياه

مشروع إعادة تأهيل وتطوير
مركز الإنزال السمكي
في منطقة الدمخ
مديرية المميلة / م. المهرة



Drawings showing of the public W.C



SANITARY

01

Scale: ---

Last Update:
Oct.2024

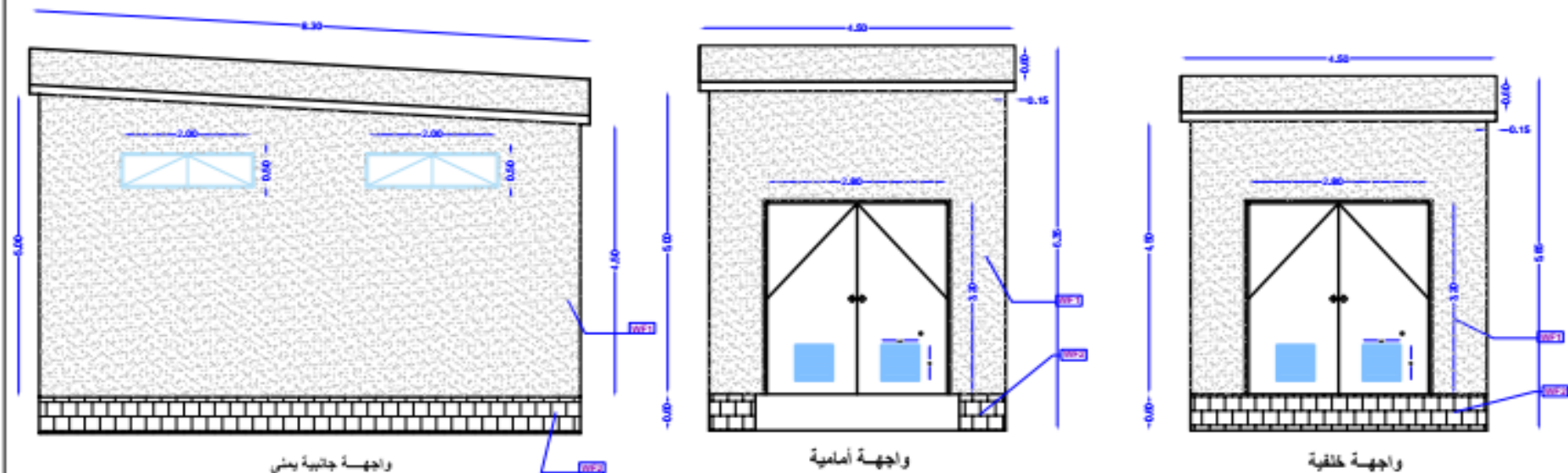
محتوى
توزيع مكونات الصرف الصحي
تصميم
المستشاري
م. محمد حمزة زباد الحموي

الدراسة الفنية
للمكونات وأعمال التدخل
الصرف الصحي

مشروع إعادة تأهيل وتطوير
مركز الإنزال السمكي
في منطقة الدمخ
مديرية المسيلة / م. المهرة



Drawings showing of the Sanitary

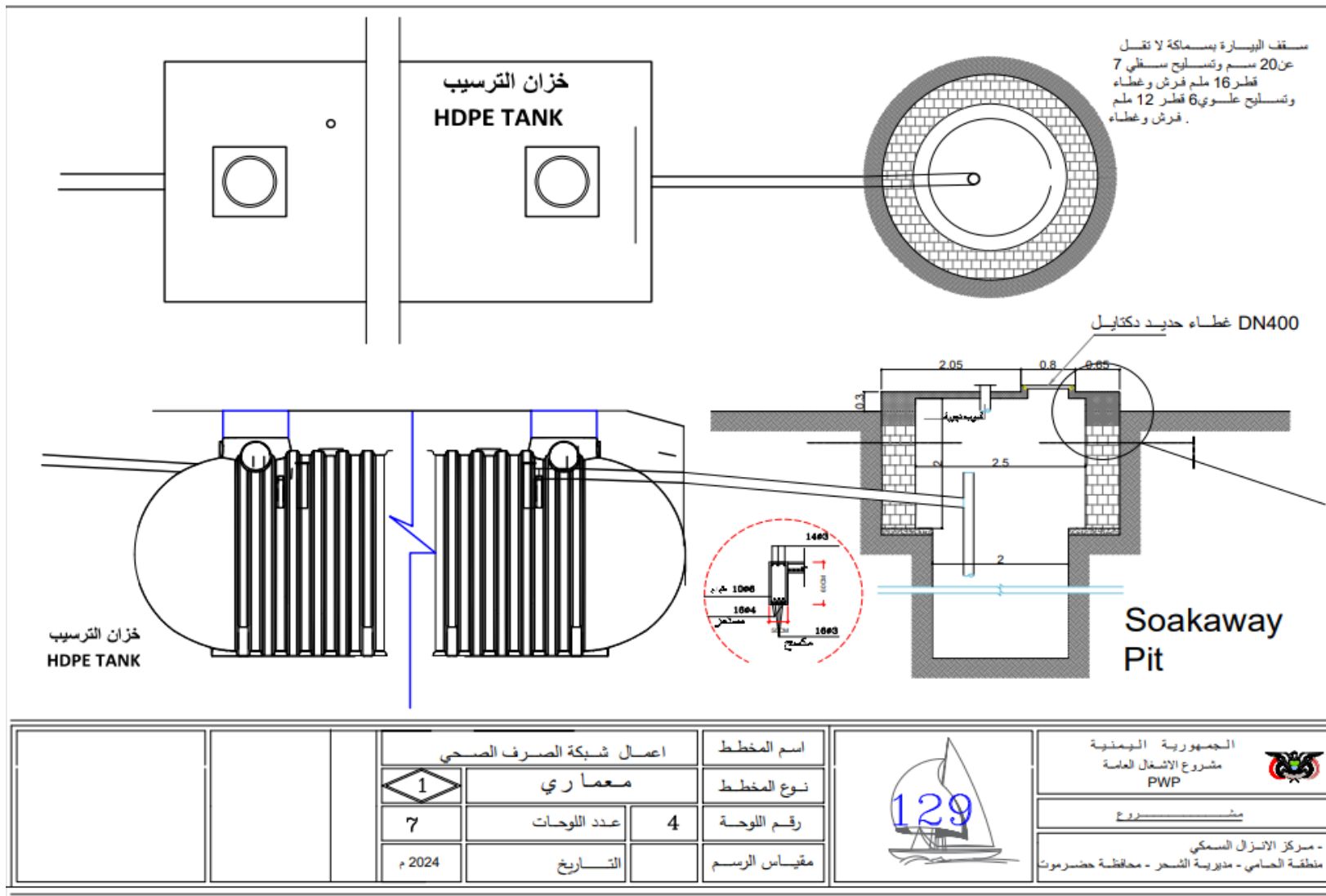


WALLS TABLE	
جدول الجدران	
رقم الجدار	الوصف
W1	جدار خارجي (Outside Wall)
W2	جدار داخلي (Inside Wall)

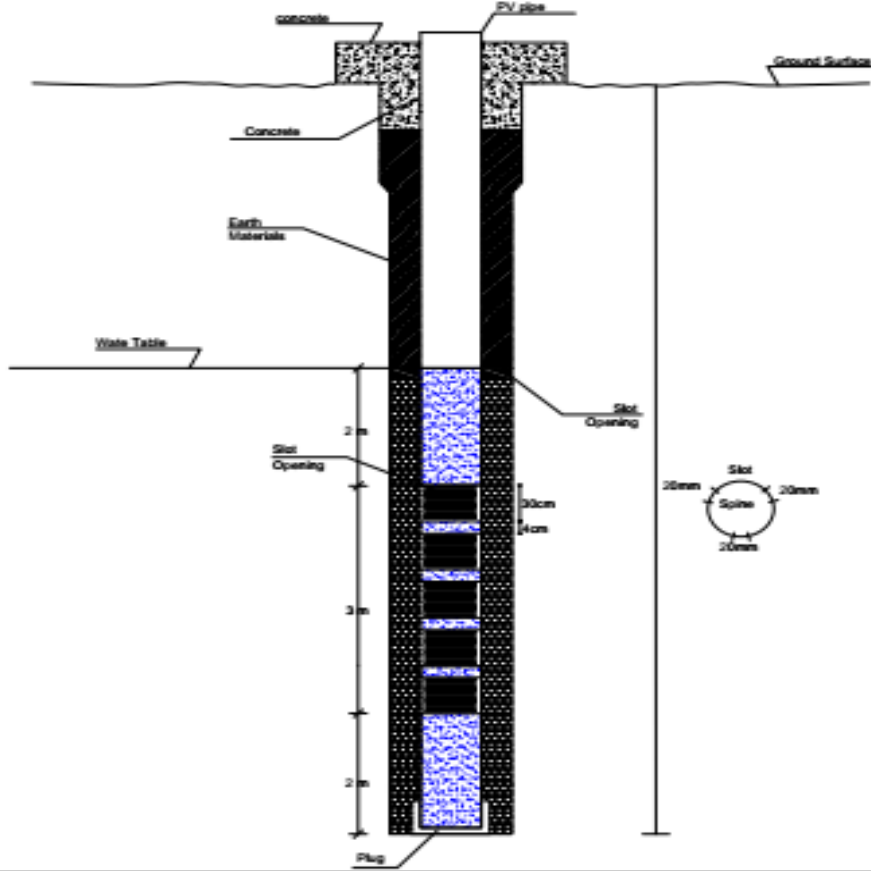
ختم المقاول	اسم المقاول	تفاصيل مبنى المولد الكهربائي		اسم المخطط	 الجمهورية اليمنية مشروع التأسيس العامة pep
		 معماري	نوع المخطط	اسم المخطط	
		09 2024 م	01 التواريخ	رقم الترخيص	اسم المخطط
				ملاحظات الرسم	ملاحظات المخطط



Drawings showing of the Generator Room



Drawing showing the septic tank (HDPE) and Soakaway Pit



		مقطع تقصيلي للهندس		اسم المخطط	 الجمهورية اليمنية مشروع الإنشاء العامة PWP
		1	صحي	نوع المخطط	
		5	عدد اللوحات	رقم اللوحة	
		2024 م	التاريخ	مقياس الرسم	

The Well

Annex 2 – Environmental and Social Checklist

Table 13 Environmental and Social Checklist

Sub-Project No.	18-09-17603
1: The Natural Environment	Answer Negative Impact Rate (Minor/Moderate/Substantial/High)
<p>1.1 Are there any environmentally sensitive areas or threatened species that could be adversely affected by the subproject (specify below)?</p> <p>Intact natural forests</p> <p>Riverine forest</p> <p>Wetlands (lakes/rivers/seasonally inundated areas)</p> <p>If yes, how far are the nearest wetlands (lakes, rivers, seasonally inundated [flooded] areas)? _____km</p> <p>Habitats of endangered species for which protection is required under Yemeni laws and/or international agreements</p> <p>Others (describe) (e.g., cultural sites, burial places, etc.)</p>	<p>NA</p> <p>NA</p> <p>NA</p> <p>NA</p> <p>NA</p> <p>NA</p> <p>NA</p>
2. Fauna and Flora	
2.1 Will the subproject involve the disturbance or modification of existing drainage channels (rivers, canals) or surface water bodies (wetlands, marshes)?	NA
2.2 Will the subproject lead to the destruction or damage of terrestrial or aquatic ecosystems or endangered species directly or by induced development?	NA

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?	NA
3. Destruction/Disruption of Land and Vegetation	
3.1 Will the subproject lead to unplanned use of the infrastructure being developed?	Minor
3.2 Will the subproject lead to the destruction of soils in cleared areas not suited for agriculture?	NA
3.3 Will the subproject lead to the interruption of subsoil and overland drainage patterns (in areas of cuts and fills)?	NA
3.4 Will the subproject lead to landslides, slumps, slips, and other mass movements in soil?	NA
3.5 Will the subproject lead to erosion of lands?	NA
3.6 Will the subproject lead to health hazards and interference of plant growth by the dust raised and blown by vehicles?	Minor
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.)	NA
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 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.	Moderate
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)?	NA
5.2 Based upon visual inspection or available literature, are there areas that have risks soil salinity?	NA
6 Landscape/aesthetics	
6.1 Is there a possibility that the subproject will adversely affect the aesthetic attractiveness of the local landscape?	NA
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?	NA
8. Resettlement and/or Land Acquisition	
8.1 Will the subproject require land acquisition?	NA
8.2 If so, will this land acquisition be involuntary?	NA
8.3 If so, will this involuntary land acquisition lead to relocation or loss of shelter, loss of assets, or access to assets?	NA
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)?	NA
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?	NA
8.6 Will the subproject led to permanent physical or economic displacement	NA
8.7 Will the subproject led to temporary physical or economic displacement	NA
8.8 Will the project bring about consolidation or adjustment of tenure rights?	NA

9. Noise pollution during Construction and Operations	
9.1 Will operating noise level exceeds allowable/ambient noise limits?	Minor
10. Solid or Liquid Wastes, including Medical Waste	
10.1 Will the subproject generate 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?	Minor
11.2 If, “Yes”, does the subproject include plan for safe handling, use & disposal?	Yes
12. Water and Soil Contamination	
12.1 Will the subproject require raw materials/construction materials?	Moderate
12.2 Will subproject generate 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?	NA
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?	NA
12.6 Will subproject lead to the destruction of vegetation and soil in the right-of-way; borrow pits, waste dumps, and equipment yards?	NA
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?	NA
12.8 Will this project include the development irrigation scheme?	NA

12.9 Will this project aim at improving an irrigation scheme (without expansion)?	NA
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)?	NA
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?	Minor
13.2 Will this project affect the labor conditions, child and force labour?	Minor
14. Gender Inclusion Risks	
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	Minor
14.2 Will this subproject pose risk on community related to sexual harassment, sexual exploitation and abuse.	NA
14.3 Will this subproject cause any conflict among communities	NA
15. Indigenous People	
15.1 Are indigenous peoples present in the Project area (including the Project area of influence)?	NA
15.2 Is it likely that the Project or portions of the Project will be located on lands and territories claimed by indigenous peoples?	NA

15.3 Would the proposed Project potentially affect the human rights, lands, natural resources, territories, and traditional livelihoods of indigenous peoples?	NA
15.4 Would the Project adversely affect the development priorities of indigenous peoples as defined by them?	NA
16. Community Health, Safety	
16.1 Would elements of Project construction, operation, or decommissioning pose potential safety risks to local communities?	Minor
16.2 Would the Project pose potential risks to community health and safety due to transport, storage, construction?	Minor
16.3 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)?	Minor
16.4 Would failure of structural elements of the Project pose risks to communities? (e.g., the collapse of buildings or infrastructure)?	NA
17. Working Conditions	
17.1 Would the Project result in health risks (e.g., from water-borne or other vector-borne diseases)?	NA
17.2 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
17.3 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

Note: To be selected and filled according to project type based on PWP baseline study

Table 14 PWP Environmental and Social Responsiveness (ESR) Criteria at Proposal Stage

Proposal Title	Rehabilitation and Development of AL-Dumkh Fish Landing Site	
Proposal Location	Al-Mahrah 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 subprojects' 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 PWP policy and have agreed to follow/apply them towards successful implementation.	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 sub-project were explained to the community, and an acceptable system was developed for this purpose	Yes	
Responsibility for operation and maintenance are defined and committed by the community committee	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 - PWP Checklist of Expected Environmental and Social Impacts to be Addressed at the Design Stage

Table 15 PWP Checklist of Expected Environmental and Social Impacts to be Addressed at the Design Stage

Project Name	Rehabilitation and Development of AL-Dumkh Fish Landing Site	
Project Location	Al-Mahrah Governorate	
Check List of the E&S Issues to be Addressed for construction subproject at the Design Stage	Confirmation	
	Write Yes or NO	
The relevant authorities were consulted on the design and all their observations were taken into consideration.	Yes	
The design of the project will include the ES & OHS monitoring plan	Yes	
The project design will ensure local community participation during implementation.	Yes	
The design and the contractual materials for example stone are in harmony with the surrounding environment and the architectural character of the village.	Yes	
GM tools have been included in the project document.	Yes	
A safe work plan has been developed to project activities to control risks.	Yes	
OHS measures and Personal Protection Equipment (PPEs), were added to the bidding documents.	Yes	
Temporary latrine and wash hand facilities have been included in the project document.	Yes	
If any of the answers are "No", then the reasons must be stated in the design report.		

Annex 5. Social agreements for the benefit of fisheries) - Arabic
Figure 7 (Social agreement for the benefit of fisheries) – Arabic (Available upon request)

