UNITED NATIONS OFFICE FOR PROJECT SERVICES
For the benefit of the Republic of Yemen

Yemen Emergency Human Capital Project (P176570)
Additional Financing (P178655)
Second Additional Financing (P181317)

Updated Environmental and Social Management Framework (ESMF)

Final

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Second Yemen Human Capital Project (P176570)
Updated Environmental and Social Management Framework
In the context of the Second Additional Financing (P181317)

Prepared by UNOPS with the support of Yves Prévost

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Abbreviations

AF1	First additional financing
AF2	Second additional financing
AU	Autonomous Utility
CERC	Contingent Emergency Response Component
CCIF	City Cleaning and Improvement Fund
CSO	Civil Society Organization
DHIS III	District Health Information System II
DLA	District Local Authorities
DNA	Damage and Needs Assessment
DTC	Diarrhea Treatment Center
ECRP	Yemen Emergency Crisis Response Project
EHNP	Yemen Emergency Health and Nutrition Project
EHS	Environmental, Health and Safety
EHSG	Environment, Health and Safety Guidelines
EIDEWS	Electronic Integrated Disease Early Warning System
EPL	Environmental Protection Law (26/1995)
ESF	Environmental and Social Framework of the World Bank
ESHS	Environment, Social (including labor), Health, and Safety
ESIA	Environmental and Social Impact Assessment
ESMF	Environmental and Social Management Framework
ESMP	Environmental and Social Management Plan
ESS	Environmental and Social Standard
FMFA	Financial Management Framework Agreement
FCV	Fragility, Conflict and Violence
GARWSP	General Authority for Rural Water and Sanitation Project
GBV	Gender Based Violence
GDP	Gross Development Product
GHS	General Health and Safety guidelines
GIIP	Good International Industry Practice
GIS	Geographic Information System
GIZ	German Agency for International Cooperation (Deutsche Gesellschaft fur Internationale Zusammenarbeit
GM	Grievance Mechanism
GRM	Grievance Redress Mechanism
GOAM	General Organization for Antiquities and Museums
HF	Health Facility
HSSE	Health, Safety, Social and Environment
ICRC	International Committee of the Red Cross
IDA	International Development Association
IDP	Internally Displace Person
LC	Local Corporation
LMP	Labor Management Procedures
LTI	Lost Time Injury
MoPHP	Ministry of Public Health and Population
MoPIC	Ministry of Planning and International Cooperation
MoWE	Ministry of Water and Environment
NGO	Non-Governmental Organization
NWSA	National Water and Sanitation Authority
NWSSIP	National Water Sector Strategy and Investment Program
OCHA	United Nation Office for the Coordination of Humanitarian Affairs
PAP	Project Affected People
PEC	Public Electricity Corporation
PHC	Primary Health Care Center

PMU	Project Management Unit
PWP	Public Works Project
PV	Photovoltaic
RCA	Root Cause Analysis
RoY	Republic of Yemen
SEA	Sexual Exploitation and Abuse
SH	Sexual Harassment
SEP	Stakeholder Engagement Plan
SMP	Security Management Plan
TCC	Technical Coordination Committee
TPM	Third Party Monitoring
UNDP	United Nations Development Program
UNFPA	United Nations Population Fund
UNICEF	United Nations Children's Emergency Fund
UNOPS	United Nations Office for Project Services
UW-PMU	Urban Water Project Management Unit
WASH	Water, Sanitation and Hygiene
WFP	World Food Program
WHO	World Health Organization
WSLC	Water and Sanitation Local Corporations
WSS	Water Supply and Sanitation
WTP	Water Treatment Plant
WWTP	Wastewater Treatment Plant
YEHCP	Yemen Emergency Human Capital Project

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Glossary of Terms Used in the ESMF

Chance finds procedure. A chance find is archaeological material encountered unexpectedly during project construction or operation. A chance find procedure is a project-specific procedure which will be followed if previously unknown cultural heritage is encountered during project activities. The chance finds procedure will set out how chance finds associated with the project will be managed. The procedure will include a requirement to notify relevant authorities of found objects or sites by cultural heritage experts; to fence off the area of finds or sites to avoid further disturbance; to conduct an assessment of found objects or sites by cultural heritage experts; to identify and implement actions consistent with national law; and to train project personnel and project workers on chance find procedures.

Child labor consists of work by children that is economically exploitative or likely to be hazardous or to interfere with the child's education, or to be harmful to the child's health or physical, mental, spiritual, moral, or social development.

Compliance compares how well a process meets the requirements placed on the process.

Disposal. Final placement or destruction of wastes, polluted soils, and toxic or hazardous materials. Disposal may be accomplished through approved secure landfills, surface impoundments, or incineration.

Effluent. Wastewater, treated or untreated, that flows out of a treatment plant, sewer, or industrial outfall; generally, refers to wastes discharged into surface waters.

Environmental, Health, and Safety Guidelines (EHSGs) are technical reference documents with general and industry-specific statements of Good International Industry Practice. The EHSGs contain the performance levels and measures that are generally considered to be achievable in new facilities by existing technology at reasonable cost. For complete reference, consult the World Bank Group Environmental, Health, and Safety Guidelines, http://www.ifc.org/wps/wcm/connect/topics_ext_content/ifc_external_corporate_site/ifc+sustainability/our+approach/risk+management/ehsguidelines

Environment and Social Impact Assessment (ESIA) identifies and assesses the potential environmental risks impacts of a proposed project, evaluates alternatives, and designs appropriate mitigation, management, and monitoring measures.

Environmental and Social Management Plan (ESMP) details: (a) the measures to be taken during the implementation and operation of a project to eliminate or offset adverse environmental impacts, or to reduce them to acceptable levels; and (b) the actions needed to implement these measures.

Environmental and Social Management Framework (ESMF) is an instrument that examines the risks and impacts when a project consists of a program and/or series of subprojects, and the risks and impacts cannot be determined until the program or subproject details have been identified.

Good International Industry Practice (GIIP) is defined as the exercise of professional skill, diligence, prudence, and foresight that would reasonably be expected from skilled and experienced professionals engaged in the same type of undertaking under the same or similar circumstances globally or regionally. The outcome of such exercise should be that the project employs the most appropriate technologies in project-specific circumstances.

Grievance. An issue, concern, problem, or claim (perceived or actual) that an individual or community group wants a project implementor or contractor to address and resolve.

Grievance Mechanism (GM) is a locally based, formalized way to accept, assess, and resolve community feedback or complaints from individuals or communities who believe they are adversely affected by the Project.

Hazardous waste. By-products of society that can pose a substantial or potential hazard to human health or the environment when improperly managed. Substances classified as hazardous wastes possess at least one of four characteristics—ignitability, corrosivity, reactivity, or toxicity—or appear on special lists.

Lost Time Injury (LTI) is the incapacity to work for at least one full workday beyond the day on which the accident or illness occurred.

Lost workdays are the number of workdays (consecutive or not) beyond the date of injury or onset of illness that the employee was away from work or limited to restricted work activity because of an occupational injury or illness.

Mitigation. Measures taken to reduce adverse social and environmental impacts.

Monitoring. Periodic or continuous surveillance or testing to determine the level of compliance with statutory requirements or pollutant levels in various media or in humans, animals, and other living things.

Occupational Health and Safety deals with all aspects of health and safety in the workplace and has a strong focus on primary prevention of hazards (WHO).

Sludge. A semisolid residue from any of a number of air or water treatment processes. Sludge can be a hazardous waste.

Solid wastes. Nonliquid, nonsoluble materials, ranging from municipal garbage to industrial wastes, that contain complex, and sometimes hazardous, substances. Solid wastes include sewage sludge, agricultural refuse, demolition wastes, and mining residues. Technically, solid wastes also refer to liquids and gases in containers.

Stakeholder. Persons or groups who are directly or indirectly affected by a project as well as those who may have interests in a project and/or the ability to influence its outcome, either positively or negatively. They may include locally affected communities or individuals and their formal or informal representatives, national or local government authorities, politicians, religious leaders, civil society organizations and groups with special interests, the academic community, or other businesses.

Stakeholder Engagement is a broad, inclusive, and continuous process between a project proponent and those potentially affected by the project that usually spans the project's life. It includes consultations, information disclosure and dissemination, and participation.

Wastewater Treatment Plant. A facility containing a series of tanks, screens, filters, and other processes by which pollutants are removed from water.

Executive Summary

Introduction

This Environmental and Social Management Framework (ESMF) is an update of the ESMF prepared by UNOPS for the first Additional Financing (first AF; P178665) of the Yemen Emergency Human Capital Project (parent Project; YEHCP; P176570). It is specific to UNOPS's mandate in Components 2, 3 and 4 of the Project.

The update is in the context of the second Additional Financing (second AF; P181317) of the Project, to take into account the lessons learned from the parent Project and the first AF, as well the expansion of activities implemented by UNOPS under Component 2. Once adopted, it will apply to any new activities under all three phases the Project (parent Project, first AF and second AF).

UNOPS prepared the series of ESMFs, starting with the parent Project, to meet the requirements of the World Bank's Environmental and Social Framework (ESF), most particularly the Environmental and Social Standard on Assessment and Management of Environmental and Social Risks and Impacts (ESS1).

UNOPS has also in the context of the second AF updated the previously disclosed Labor Management Procedures (LMP) to meet the requirements of ESS2, Security Management Plan (SMP) and GBV/SEA/SH Prevention and Response Action Plan to meet the requirements of ESS4, Resettlement Framework (RF) to meet the requirements of ESS5. UNICEF and WHO have separately prepared their own ESMF, LMP, Biomedical Waste Management Plan, SMP, SEA/SH Action Plan, and RF. UNICEF, UNOPS and WHO jointly prepared, updated and disclosed a Stakeholder Engagement Plan (SEP) to meet the requirements of ESS10. All of these updated environmental and social risk management instruments shall be submitted to the World Bank for prior review and clearance before being disclosed and becoming effective.

The use of a Framework is appropriate and necessary, given that the Project consists of a large number of subprojects in many different localities, and that the specific location and activities of each subproject will only be determined during implementation.

Description of the Project

The Second AF will address a financing gap that came about during the implementation of YEHCP. It will finance the same activities that are currently supported by the Project (parent and first AF). The geographical scope of activities will remain the same. The second AF will also maintain a CERC (Component 3) to support the response to an eligible disaster if one arises.

UNOPS is mandated to implement the three subcomponents under Component 2, Improving Access to Water Supply and Sanitation and Strengthening Local Systems

- **Subcomponent 2.1**. Restoring Access to and Improving Quality of WSS Services in Selected Urban and Rural Areas (UNOPS)
- **Subcomponent 2.2**. Emergency Support for WASH Interventions to Prevent and Respond to Communicable Diseases (UNOPS), including:
  - Emergency Fuel Provisions
  - Emergency Water Trucking
- **Subcomponent 2.3**. Enhanced Capacity Building of Water and Sanitation Institutions at the Local Level

The United Nations Office for Project Services (UNOPS) is responsible for the overall implementation of its mandated activities, in cooperation with two local Implementing Partners: the Public Works Project

(PWP), and the Urban Water Project Management Unit (UW-PMU). UNOPS has recruited an Environmental and Social Standards Officer (ESSO) based in Sana'a to oversee environmental and social risk management, as well as Gender Mainstreaming Officer, a Health and Safety Officer, and a part-time international expert to support the ESSO in the implementation of the ESMF. Each Implementing Partner will deploy an ESSO and a Health and Safety Officer. Additional personnel may be recruited by UNOPS and its implementing partners to effectively manage the additional financing to the parent project because of the increase in the numbers of subprojects in each target city.

Potential Environmental and Social Risks and Mitigation

The overall environmental and social risk rating of the Project is substantial due the social risks and the security risks. Component 1 involves reconstruction and rehabilitation works that will involve excavation and earthworks. These activities might cause risk and impacts on workers, communities, as well as the environment, if sufficient mitigation measures do not accompany their implementation.

The Project will only rebuild, restore, or rehabilitate existing infrastructure. There will be no expansion of existing facilities nor the creation of new ones, and rehabilitated facilities will be handed back to the competent authorities. The Project will not provide technical assistance to develop Operations and Maintenance (O&M) plans for the reconstructed or rehabilitated facilities. Thus, issues such as the siting of the facilities, and many of their operational impacts will be beyond the scope of the Project.

The ESMF identifies potential risks and defines detailed matching mitigation measures for:

- Labor management
- Sexual Exploitation and Abuse (SEA) and Sexual harassment (SH)
- Stakeholder Engagement
- Improving Access to Water Supply and Sanitation (WSS) and Strengthening Local Systems Urban Water and Sanitation
- Risks associated with contractors

ESHS requirements

In particular, the environmental and social risks associated with the contractors who will rebuild, rehabilitate, and restore the targeted facilities represent the bulk of the E&S risks of the Project. Annex 4 describes these risks, with references to the relevant portions of the ESF or of national laws and regulations. The nomenclature for describing the risks closely follows the nomenclature of the ESF, most particularly the General EHS Guidelines, which are directly referenced in ESS1, ESS2, ESS3 and ESS4. It also incorporates elements of ESS1, ESS2, ESS3, ESS4, ESS6, ESS8 and ESS10, as well as taking into account the Good Practice Notes developed by the World Bank in the context of the ESF.

Annex 5 provides risk profiles for each of the four subcomponents of Component 1: (i) Tertiary Municipal Services and Solid Waste Management; (ii) Urban Water and Sanitation; (iii) Urban Roads; and (iv) Electricity for Critical Services. Although the importance of specific risks might vary between subcomponents, the overall risk profiles for the four subcomponents are analogous.

The ESHS requirements include 11 sections:

1. General Provisions
2. Communication and Training
3. Construction Site Management
4. Environment
5. Occupational Health and Safety (OHS)
6. Solar PV Systems (Code of Practice)
7. Community Health and Safety
8. Emergency Preparedness and Response

9. Labour Force Management, including the Code of Conduct
10. Stakeholder Engagement
11. Contractor Environmental and Social Reporting

UNOPS and its Implementing Partners will cascade their environmental and social obligations to their contractors by requiring contractors to meet a set of Environmental, Social, Health, and Safety (ESHS) requirements (Annex 5) that directly match (mitigate) the risks listed in Annex 4. They represent the requirements that contractors must meet to be in accordance with the ESF.

Procedures to Address Environmental and Social Risks

UNOPS prepared initial investment plans and submitted to the World Bank as part of the preparation of the parent project, the first AF and the second AF, following consultations with the relevant stakeholders. These plans were then reviewed and approved by the Project Committee. Once approved the investment plans are translated into a procurement plan that is reviewed and cleared by the World Bank.

The UNOPS ESSO will review the proposed procurement plan before it is submitted by UNOPS to the World Bank and flag as ineligible for Project support subprojects that include any of the following attributes. The UNOPS ESSO will also screen all subproject proposals to exclude ineligible activities. The ESSO will also prepare and sign subproject specific screening forms (Template in Annex 7) indicating the proposed environmental and social risk rating of the subproject (Substantial, Moderate or Low) with justifications. The risk rating will determine the environmental and social risk management instruments to be prepared:

Low Risk	Environmental and Social Checklist (ESC)
Moderate Risk	Proportionate Environmental and Social Management Plan (ESMP)
Substantial Risk	Full ESIA and ESMP

UNOPS will submit the proposed risk ratings for subprojects to the World Bank together with the procurement plan or procurement plan updates.

- **Subprojects requiring an Environmental and Social Checklist (low risk)**. The ESSO for UNOPS or the relevant Implementing Partner will ensure that an Environmental and Social Checklist is prepared for low-risk subprojects as described in Annex 8, before the subproject can be implemented.
- **Subprojects requiring a proportionate ESMP (moderate risk)**. The ESSO for UNOPS or the relevant Implementing Partner will ensure that a proportionate ESMPs is prepared for moderate risk subprojects as described in Annexes 9 and 10. The UNOPS ESSO will review and ensure the quality of all ESMPs before they are sent to the World Bank by the Project Manager.
- **Subprojects requiring a full ESIA and ESMP (substantial risk)**. The UNOPS ESSO, in collaboration with the ESSO of the concerned Implementing Partner, will prepare draft ToRs as per the outlines in Annexes 11 and 12. The UNOPS Program Manager will submit the ToRs to the World Bank for review and clearance.

  UNOPS will competitively select consultants to prepare the full ESIAs and ESMPs for the subprojects that require them. The UNOPS ESSO will supervise their preparation and interact with the consultants. On completion of the instruments, the Program Manager will submit the draft ESIAs and ESMPs to the World Bank for their review, clearance and disclosure.

Any subproject assessed as high environmental or social risk will not be eligible for Project financing.

The Project has established a Grievance Mechanism (GM), as detailed in the Project Stakeholder Engagement Plan that has been used for environmental, resettlement and social issues. The ESSO in UNOPS and the Implementing Partners will handle Project activity-related complaints.

Monitoring and reporting

UNOPS will monitor and report on implementation of the ESMF, with input from implementation partners and the TPM agent. The UNOPS ESSO will ensure that monitoring of E&S risk management is included in the Project's quarterly reports to the World Bank, including an implementation status report.

The ESMF provides a list of indicators that match the identified risks. In particular, UNOPS and its Implementing Partners will monitor and document (including pictures) the environmental and social performance of contractors for each subproject throughout the contract period using the indicators in Annex 6. This will involve both spot check visits to work locations by Project staff, reviews of records kept by the contractor and of reports submitted by the contractor as indicated in the ESHS requirements. The frequency of site visits should be commensurate with the magnitude of activities and their associated environmental and social impacts. Each construction site should be visited at least once every two weeks during subproject implementation, and every week or more often for larger subprojects. The ESSOs will ensure that an update of all the indicators in the table is prepared every two weeks and filed, indicating for each indicator if the indicator is met.

For any incident or accident that causes or has the potential to cause material or significant environmental and/or social harm, the site supervisor/designated officer shall notify the responsible party's senior management and the Project Manager as soon as possible, and no later than 24 hours. UNOPS or its Implementing Partner will visit sites where a serious accident is recorded within one working day of the accident or incident, and report any significant accident or incident to the World Bank within 48 hours.

UNOPS and its Implementing Partners will document in a database each visit and interaction with a contractor, including identification of contractor noncompliance with the ESHS Requirements, the significance of the non-compliance, and guidance provided on actions to be taken. The ESSOs within UNOPS and Implementing Partners will follow up as needed to ensure timely resolution of issues of noncompliance with environmental and social clauses. This may include additional visits to the contractor's site or offices, further communications with contractor personnel, issuance of notices of deficiency or warnings to the contractor, and other actions as needed.

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Chapter 1
Introduction and Background

1.1 Introduction

1. This Environmental and Social Management Framework (ESMF) is an update of the ESMF prepared by UNOPS for the first Additional Financing (first AF; P178665) of the Yemen Emergency Human Capital Project (parent Project; YEHCP; P176570)[1]. It is specific to UNOPS's mandate in Components 2, 3 and 4 of the Project.
2. The update is in the context of the second Additional Financing (second AF; P181317) of the Project, to take into account the lessons learned from the parent Project and the first AF, as well the expansion of activities implemented by UNOPS under Component 2. Once adopted, it will apply to any new activities under all three phases the Project (parent Project, first AF and second AF).
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1.2 Background[2]

1.2.1 Country Context

5. Yemen's nine-year armed conflict has devastated Yemen's economy and deepened the country's humanitarian crisis. Physical damage to infrastructure in most governorates, depleted institutions, and a sharply contracted economy has left Yemenis extremely vulnerable. In addition to the conflict, multiple shocks such as the COVID-19 pandemic, a cholera epidemic, a locust invasion, rising food prices, food insecurity, and floods, have worsened conditions. Over 17 million people are experiencing acute food insecurity. Two million children and 1.3 million pregnant and lactating women suffer from acute malnutrition.[3] Institutional weaknesses that existed before the conflict have deepened. Parallel institutional structures in the North and South of the country have resulted in further fragmentation of service delivery. Territorial disputes and skirmishes, air and sea blockades, and currency crisis have also worsened economic conditions contributing further to deterioration of conditions in Yemen.

[1] The Project is jointly implemented by UNICEF, UNOPS and WHO
[2] The Background section is borrowed from the Project Paper for the Second AF of YELCP dated 17 June 2023
[3] OCHA, Yemen Humanitarian Needs Overview, 2023. December 2022

6. The scale of human capital deterioration has placed a heavy toll on all population in Yemen. In 2023, an estimated 21.6 million people, almost three-quarters of the population, including 12.9 million children, needed humanitarian assistance and protection, with over four million people, including two million children who are displaced.[4] Yemen's economy has faced multiple years of contraction since 2015, resulting in 40 percent of Yemenis losing their primary source of income since the start of the conflict. The Yemeni economy is divided between the Internationally Recognized Government of Yemen (IRG)-controlled and de-facto authority (DFA) controlled areas.

1.2.2 Sectoral Context

Health

7. Yemen's health sector has been devastated by almost a decade of conflict, institutional weakness and economic volatility. Significant damage to public infrastructure has led to service disruption and reduced functionality of basic services. About 38 percent of WASH facilities were damaged, only 21 percent are fully functioning, 54 percent are partially functioning, and 25 percent are non-functioning.[5] In addition, 38 percent of the Health Facilities (HFs) were damaged or destroyed. Furthermore, lack of fuel, electricity, water, and operations and maintenance (O&M) budget have further compromised the country's ability to deliver public services.

8. The latest WHO estimates indicate that 20.3 million people need urgent health services, 12.9 million are in acute need; about 10 million people do not have access to health services. Only about 55 percent of the primary health facilities and 35 percent of the district hospitals are functional, leaving people with limited access to health services. The shortage of human resources, medicines, equipment and supplies, and a brain drain of health workers have reduced availability of doctors and nurses and health care professionals.[6] The ratio of health worker to the population is low with only 12 workers per 10,000 people, a significant shortfall of the WHO standard of 20 workers per 10,000 persons. Since 2016, payment of salaries to health workers ceased, with partial payments introduced in 2018, however, health workers have not been paid consistently, leading to absenteeism and demand in informal payments.[7]

9. High global commodity prices with food inflation at 58 percent in August 2022, have deepened food insecurity and malnutrition.[8] Since the war escalated, families have not been able to afford enough food and a nutritionally diverse diet. A survey in 2022 indicates that 2.2 million children under five years old in Yemen are suffering from acute malnutrition, and about 540,000 children are at direct risk of death and life-threatening complications due to severe acute malnutrition. Without proper treatment of severely malnourished children, mortality odds remain high at 30 to 50 percent.[9] One of the main drivers is lack of access to adequate health, nutrition, and WASH services.

10. Immunization coverage has deteriorated because of the fragile health service delivery infrastructure and access to care and increase in vaccine hesitancy. About 28 percent of children under one year old are missing routine vaccinations. The number of zero dose and under vaccinated children in Yemen has risen in the last three years, placing Yemen as the leading country in MENA region with a total of 272,000 children under-vaccinated. As a result, Yemen suffers from multiple outbreaks of communicable diseases, including vaccine preventable diseases such as Diphtheria, Pertussis, Measles and Polio in various governorates.

[4] OCHA, Yemen Humanitarian Needs Overview 2023, December 2022
[5] World Bank, 2020, "Damage and Need Assessment."
[6] WHO, 2022 Health Resources and Services Availability Monitoring System Report (HERAMS)
[7] World Bank, Yemen Country Economic Memorandum. 2022 pp. 46-47
[8] October 2022 IMF Staff visit to Yemen press release: https://www.imf.org/en/News/Articles/2022/10/05/pr22336-yemen-imf-staff-concludes-visit-to-yemen
[9] Yemen HNO 2023

Water

11. Yemen experiences critical water stress and is the 6th most water stressed country globally. The water crisis and climate change are contributing to food insecurity, malnutrition, and instability. The high proportion of water resources used in agriculture (over 90 percent), coupled with population growth and the overdraft of nonrenewable groundwater resources, has led not only to a massive nationwide water shortage but also to the deterioration of the existing water quality which cannot be solved by short-term emergency measures. The annual per capita renewable water resource has declined from 221 cubic meters in 1992 to only 80 cubic meters in 2014.[10] In addition, the coastal cities lack safe drinking water, largely due to sea water intrusion and deterioration of water quality. The lowering of groundwater levels, which no longer allows for their natural recharge, is the most dramatic consequence of this overexploitation. Aquifers that supply some major cities, including Sana'a, are at risk of being fully depleted, threatening future generations.

12. It is estimated that 15.4 million people lack access to safe water and adequate sanitation services in Yemen (OCHA).[11] The current water network reaches less than 30 percent of the Yemeni population. Lack of access to potable water is one of the underlying causes of malnutrition in the country, undermining economic and social stability, and expected to worsen due to climate change. Millions of Yemenis, including women and children need to walk for miles to fetch water.

13. Deteriorating WASH infrastructure has contributed to a cholera outbreak and the spread of other communicable diseases. Lack of access to clean water has caused major health outbreaks, including cholera and acute watery diarrhea.[12] Water-borne diseases affected 75 percent of the population in Yemen, while 3 million people had hepatitis because of contaminated water consumption.[13]

1.3 Rationale

14. In line with ESS1, the Project uses an Environmental and Social Management Framework instead of an Environmental and Social Impact Assessment (ESIA) and an Environmental and Social Management Plan (ESMP), because the exact nature and location of subprojects and their impacts are not fully known.

15. As indicated in ESS1:

    The ESMF sets out the principles, rules, guidelines and procedures to assess the environmental and social risks and impacts. It contains measures and plans to reduce, mitigate and/or offset adverse risks and impacts, provisions for estimating and budgeting the costs of such measures, and information on the agency or agencies responsible for addressing project risks and impacts, including on its capacity to manage environmental and social risks and impacts. It includes adequate information on the area in which subprojects are expected to be sited, including any potential environmental and social vulnerabilities of the area; and on the potential impacts that may occur and mitigation measures that might be expected to be used.

16. The updated ESMF will guide UNOPS and its Implementing Partners[14], to ensure that all subprojects meet the requirements of the ESF, including the preparation of subproject specific Environmental and Social Management instruments in accordance with the ESF. For this purpose, the ESMF details how

[10] Al-Gheeti et al, 2018: "A review of potential factors contributing to epidemic cholera in Yemen". https://iwaponline.com/jwh/article/16/5/667/41416/A-review-of-potential-factors-contributing-to
[11] OCHA Humanitarian Response Plan 2023. ye_hrp_2023_final1.pdf (humanitarianresponse.info)
[12] https://www.icrc.org/en/document/water-situation-yemen
[13] Al-Gheeti et al, 2018: "A review of potential factors contributing to epidemic cholera in Yemen". https://iwaponline.com/jwh/article/16/5/667/41416/A-review-of-potential-factors-contributing-to
[14] (i) the Public Works Project (PWP); (ii) the Road Maintenance Fund Implementation Unit (RMF-IU) (RMF-IU), and; (iii) Urban Water Project Management Unit (UW-PMU).

UNOPS and its Implementing Partners will screen each subproject to assess its environmental and social risks and impacts, identify the necessary mitigation measures, and monitor ESMP implementation, most particularly the environmental and social performance of Project contractors.

1.4 Lessons learned

1.4.1 Systemic approach

17. UNOPS Yemen is moving towards a systemic approach to the management of E&S risks for the World Bank funded projects that it implements. UNOPS is already preparing ESMFs, LMPs, SEPs, SEA/SH Action Plans and SMPs across its portfolio of projects in Yemen according to the same mold. In particular, its use of more elaborate ESMFs with elements of an internal E&S management system[15] ,allows for the preparation of less elaborate subsidiary ESMPs for subprojects, which could in turn lead to a more streamlined review and clearance process by the World Bank.

18. Streamlining the review process is critical. To limit excessive repetition, UNOPS will systematically cross-reference to the ESMF for additional details.

1.4.2 E&S Coordinator

19. As part of its systemic approach, UNOPS is in the process of recruiting an international officer[16] who will oversee E&S risk management across the portfolio of World Bank funded projects in Yemen. Although the position is titled HSSE Officer, the function will be that of E&S risk management Coordinator. The Officer will oversee the work of all locally recruited ESSOs and other officer involved in E&S risk management, including stakeholder engagement, GBV, grievance mechanism.

1.4.3 Monitoring the preparation of E&S risk management instruments

20. UNOPS has come to consider the preparation of ESMPs as a production chain that it explicitly manage. As a consequence, UNOPS will establish and maintain a database indicating the preparation timeline for each instrument, including reviews and responses. This will allow UNOPS to identify bottlenecks and define solutions to improve timely delivery, such as capacity building and the management of consultant contracts. Nonetheless, UNOPS has observed that not all delays are prejudicial as sometimes ESMP preparation is delayed while technical studies are being finalized.

1.4.4 Controlling the quality of ESMPs

21. UNOPS has learned that a significant part of the delays in Bank approval of ESMPs is due to their uneven quality. As a consequence:

- UNOPS will systematically control the quality of all ESMPs before they are sent to the World Bank, including the ESMPs prepared by its Implementing Partners
- UNOPS will require that all ESMPs be prepared according to the outline in Annex 7, which will make ESMPs more predictable and thus easier to review
- UNOPS will more clearly indicate when social data required in the E&S baselines of ESMPs is not available or cannot be collected because of security considerations or political sensitivities
- UNOPS understands that some of the ESMPs are prepared in Arabic because of the limited availability of in-country English speaking expertise, and then translated into English using Google

[15] The internal E&S management system is unrelated to ESMS described in ESS9, although some of it features will be analogous

[16] This international officer will be a UNOPS staff. It is a distinct position from the previously mentioned international consultant

translate. Although understandable, the writing style of such documents deviates from standard English. Given that the in-country audience for the Arabic version is much larger than the number of persons involved in the review of the English version, a pragmatic and cheaper solution would be to tolerate some extent of poor English as long as the text is comprehensible and factually correct.

1.4.5 Building Capacity

22. Lack of capacity within the Implementing Partners remains a major challenge, in terms of preparing ESMPs and of monitoring compliance with the Environmental, Social, Health and Security requirements for contractors. UNOPS has already developed elements of a comprehensive training program for OHS, GBV and grievance mechanisms. These will be further strengthened and brought together into a comprehensive training program as a key elements of UNOPS' systemic approach to E&S risk management in Yemen.

1.4.6 Strengthening consultations and grievance mechanisms

23. UNOPS has had considerable success in informing and engaging institutional stakeholders and the broader civil society regarding the Project despite a complex environment due to the conflict. This has led to a broad social acceptance of the Project which has greatly facilitated its implementation. The ESMF more greatly emphasize meaningful consultations with Project Affected Parties, which are a prerequisite to an effective grievance mechanism, as grievances will not be forwarded if there is little trust or knowledge of the GMs.

1.4.7 Monitoring and controlling the performance of contractors

- The ESMF for YEHCP (parent project and first AF) did not contain a detailed list of indicators for monitoring contractors against the contractualized ESHS requirements. This ESMF addresses this oversight by including a long list of indicators for the ESHS requirements.

1.4.8 Way forward

24. This updated ESMF incorporates responses to the above lessons learned.

UNOPS

Chapter 2
Project Description[17]

2.1 Project Description

25. The second Additional Financing of the Project will support same activities under the current original Project (parent and first AF) to sustain essential health, nutrition, population, and WASH services for additional 12 months. The PDO, implementation arrangements, including fiduciary and disbursement arrangements will remain the same. However, the end-targets of the Result Framework will be revised, reflecting expected impacts from the additional funds. The closing date of the Project will remain unchanged.

Component 1. Improving Access to Healthcare, Nutrition, and Public Health Services (implemented by UNICEF and WHO

26. The second AF will finance the same activities that are currently supported by the Project (parent and first AF). UNICEF and WHO will continue to implement the activities under this component, using the same operational arrangements. Component 1 aims to help sustain essential health and nutrition services at currently supported health facilities. Most of the requested funds will finance service delivery inputs e.g., energy-efficient equipment, supplies, training, and operational costs for primary, secondary, and tertiary HFs (including over 2,200 primary health care facilities and approximately 80 hospitals, laboratories, and other facilities in Yemen). The inputs will help HFs remain functional and deliver essential health and nutrition services for an additional 12 months until September 2024. The component will also contribute towards national health system preparedness capacity and support building of individual and institutional capacity in health information and quality of care. The project equipment that is electricity-based operation devices will be determined by their power efficiency to ensure lower electricity input and costs. The Project will consider the use of solar energy as a power supply alternative for operating equipment procured by the Project. Furthermore, equipment must be water-use efficient for cleaning.

Subcomponent 1.1. Improving Access to the MSP at Primary Healthcare Level (UNICEF and WHO)

27. This subcomponent will continue to ensure uninterrupted delivery of health services to meet escalating climate-related health needs through Minimum Service Package (MSP) service delivery at the primary level. Specifically, the following will be provided: (i) critical inputs for the operation of primary health care centers (PHCs) (permanent and temporary fixed sites), including provision of operational costs and essential supplies, health worker per-diems for regular outreaches by health workers, and for conducting integrated support supervision; (ii) integrated outreach (outreach and mobile teams for the population in remote areas and IDPs); (iii) service delivery at community level through community health workers; and (iv) four basic services including integrated management of childhood illnesses, immunization, nutrition and maternal and newborn services.

28. Under this subcomponent, UNICEF will continue to work with WHO to provide support through development of protocols, basic medical supplies and training of healthcare workers in WHO packages to ensure that non communicable disease prevention and care are available at the primary care level. For reproductive health, the facilities need to have trained healthcare workers to provide

[17]. The Project description is based on the Project Paper dated 6th June 2023

skilled deliveries and refer the complicated cases to secondary or tertiary care. The project continues to support minor refurbishment to create the required space/room to conduct deliveries. The availability and retention of a general practitioner in selected health centers will be supported through per diem payments for conducting clinical mentoring and on job training to health workers in health facilities and neighboring facilities where the general practitioners are based. This will enhance the quality of care at the primary health facilities and in turn improve uptake of services.

Subcomponent 1.2. Improving Access to Essential Preventive and Curative Nutrition Services (UNICEF)

29. This subcomponent will continue to support the provision of nutrition interventions with a focus on reducing malnutrition (stunting, wasting and micronutrient deficiencies) in children under five years, adolescents, and women in Yemen. This will be accomplished through the provision of quality primary health care and community nutrition services with a focus on multisectoral convergence and system strengthening.

30. UNICEF will continue implementing activities to preserve the health system and provide essential nutrition specific services at all YEHCP supported HFs, ensuring availability of malnutrition screening and treatment, referral, infant and young child feeding (IYCF) and micronutrient supplementation services. The AF2 will continue to finance procurement of nutrition supplies, including ready-to-use therapeutic food, antibiotics like Amoxicillin and micronutrient supplements. The AF2 will also support strengthening of referral services for severe acute malnourished children with medical complications from the outpatient therapeutic feeding programs to therapeutic feeding centers; strengthening the quality of services through supportive supervision, and on-the-job training at the facility level and review meetings to monitor and evaluate the program at district and governorate levels. Furthermore, as part of nutrition systems strengthening, efforts to strengthen the supply chain system to ensure the availability of supplies and avoid stockout at all levels (central, governorate, district, and health facility) will be continued, which will also address some of the vulnerabilities exacerbated by climate change and increase the resilience of the system. This comes along with information system strengthening to ensure data flow at all health system levels by building capacity, supporting DHIS II, implementing the nutrition information system action plan, and generating evidence through Standardized Monitoring and Assessment of Relief and Transitions (SMART) surveys.

31. To strengthen beneficiary outreach, UNICEF will continue to support the deployment of mobile teams to hard-to-reach areas, climate-vulnerable populations and IDPs' settlements which would provide curative and preventive health and nutrition services. In addition, support to community health and nutrition volunteers would continue to ensure community referral and provision of preventive services to pregnant and lactating women, adolescents and under five children. UNICEF will also continue to support the Scaling Up Nutrition Secretariat to advocate for and strengthen the Yemen Action Plan which has the objective of monitoring and coordinating multi-sectoral approaches. This will include collaboration and coordination across UN agencies and other development partners with a strong emphasis on the implementation of social and behavior change initiatives.

Subcomponent 1.3. Improving Access to the MSP at Secondary and Tertiary Care Level (WHO)

32. This subcomponent will continue to ensure continuum of care at secondary and tertiary HFs, as well as sustaining blood bank and central public health laboratory capacities. Inputs will include provision of fuel, oxygen, supplies, equipment, training, and supportive supervision to the supported health facilities. Training activities will include sessions focused on awareness-raising for climate change mitigation.

33. Under the proposed AF2, the subcomponent will continue to target HFs based on the same vulnerability assessment criteria that have continued since the Emergency Health and Nutrition Project (EHNP). Approximately 80 hospitals will continue to be supported for priority interventions to mitigate service disruptions, critical equipment, consumables, medicines and fuel support as required. Fuel monitoring devices will further improve fuel efficiency and increase the transparency on GHG emissions in new hospitals. The AF2 will continue to support diarrhea treatment centers (DTCs) to manage cholera cases, as needed.

34. In partnership with UNICEF, WHO is leading a technical review of the MSP that was first developed in 2016. The subcomponent will continue to support operationalizing the updated MSP, through training, developing guidance documents and drafting/updating lists of essential medicines and equipment, to build stakeholder capacities to implement the revised package.

Subcomponent 1.4. Sustaining National Health System Preparedness and Public Health Programs (WHO)

35. This subcomponent will continue to support nationwide public health programs and measures. Activities under this sub-component will contribute to climate adaptation by monitoring climate-sensitive diseases (such as vector-, food- and water-borne, diseases and neglected tropical diseases, for example, schistosomiasis) through electronic integrated disease early warning system (EIDEWS), updating seasonal mapping, forecasting, and conducting preventive campaigns to reduce the impacts of potential outbreaks. Climate change adaptation will also be strengthened by enhancing preparedness to respond to the health and nutrition impacts of acute events such as flooding, drought, and locusts, including by ensuring continuity of essential health and nutrition services during and after climate-related emergencies and providing such services to areas expected to be affected by climate change. This will have an impact on acute nutrition outcomes such as wasting and also increase resilience both in a disaster context as well as generally. Capacity-building activities under this subcomponent will also include sessions focused on awareness-raising for climate change adaptation. The activities supported under this sub-component will also complement the activities proposed for funding in the Yemen application submitted by Implementing Entities (FAO, UNICEF and WHO) to the Pandemic Fund, which includes expanding EIDEWS sentinel sites and further revitalizing Yemen's Field Epidemiology Training Programme, in addition to expanding support to central public health laboratories, strengthening specimen transport systems, building genetic sequencing capacities, as well as building health workforce capacities, including those of community health workers.

Subcomponent 1.5: Health System Strengthening (UNICEF and WHO)

36. To continue building individual and institutional capacities, the proposed AF2 will continue to support in strengthening health information system capacities. The proposed AF2 will continue to implement capacity building activities for improved quality-of-care, and enhanced project and public financial management for the health sector. For quality of care, WHO will use the indicator framework developed under the YEHCP to strengthen capacities at the facility level through training and performance monitoring, including supportive supervision. UNICEF will work with implementing partners to enhance implementation, monitoring and documentation of the quality-of-care initiatives at the PHC levels that are described above (refer to subcomponent 1.1). For public financial management, WHO will support a needs assessment and subsequent rollout of training for health workers. With the Harmonized Approach to Cash Transfer, UNICEF conducts micro-assessment for all its implementing partners on their financial management capacities and capacity enhancement is done where gaps have been identified. Capacity of Governorate Health Offices and District Health Offices will be strengthened on district health systems management systems including planning, implementation, and monitoring of the PHC systems at the different levels, in addition to enhancing their financial management capacities.

37. UNICEF and WHO will continue to roll out DHIS II in Yemen, based on global WHO metadata packages to ensure data comparability across countries. UNICEF and WHO will work together on building capacity and ensuring coherence across DHIS II platforms used in Yemen. The packages will include different modules, such as reproductive, maternal, neonatal, child, adolescent health, immunization, nutrition, and COVID-19 vaccine delivery. Based on an assessment conducted by WHO in the southern governorates and lessons from UNICEF-led implementation in the northern governorates, WHO and UNICEF will support the Ministry of Public Health and Population (MOPHP) in developing policy and guidelines, training, data quality and DHIS II infrastructure.

Component 2: Improving Access to Water Supply and Sanitation and Strengthening Local Systems (UNOPS)

38. All current activities funded under the Project (parent project and AF1) will continue to be supported under this component. The component will be implemented by UNOPS in partnership with autonomous national and local water and sanitation institutions including the Urban Water-Project Management Unit (UW-PMU in Sana'a and Aden), the Public Works Project (PWP), respective Water and Sanitation Local Corporations (WSLCs), Autonomous Utilities (AUs), and National Water and Sanitation Authority (NWSA) branches in selected, priority urban and peri-urban areas and local branches of the General Authority for Rural Water and Sanitation Project (GARWSP) in selected rural areas to strengthen their resiliency and capacity to plan, design, implement, supervise, and provide O&M of the subprojects. This component will continue to support the same interventions with more focus on rehabilitation of WSS facilities, including networks, water wells, boosters and pumps station, etc. and development and utilization of solar panel, emergency support to the functionality of WSS system and health facilities. AF2 will continue to support fuel provision to water and sanitation facilities, water provision to HFs (urban, pre-urban and rural areas) and the implementation of additional key activities (to be implemented within 12 months) to complement and support the ongoing interventions related to the implementation of the exit strategies for emergency fuel and water trucking. This component will ensure that emergency fuel and water trucking provisions are subject to the implementation of time-bound pragmatic exit strategies to avoid carbon lock-in, building on the results achieved and lessons learned under Yemen EHNP and YEHCP and based on YEHCP stakeholder engagement and consultation. For monitoring the implementation of Fuel and Emergency Water Trucking Exit Strategies, UNOPS will share a monitoring and evaluation matrix of the agreed exit strategies indicators in its regular progress reports.

39. The ongoing activities of the fuel exit strategy include solarization of water and sanitation facilities, intervention's related to reducing water losses, supply and installation of water meters, supply and installation of fuel meters, and rainwater harvesting system funded under Yemen Integrated Services Emergency Project (YIUSEP II, YEHCP parent project and AF1). The ongoing activities of the water trucking exit strategy include connecting HFs to more sustainable sources such as public water networks, water well, and rehabilitation of water wells. Capacity building activities have been expanded under YIUSEP, YEHCP, AF1 and AF2 to cover the additional needs of local institutions that are not covered previously. Activities under this component will continue to preserve and strengthen the resiliency of national and local institutions (UW-PMU, PWP, WSLCs and their branches, branches of rural water authority, etc.) through supporting, among others, procurement and contract management, low carbon and climate resilient infrastructure, technical design, asset management, O&M of WSS facilities for medium and long term, information management, safeguards, and leadership capacities of local water and sanitation institutions.

Subcomponent 2.1. Restoring Access to and Improving Quality of WSS Services in Selected Urban and Rural Areas (UNOPS)

40. This subcomponent will continue to support the same interventions (OF and AF1) focusing on rehabilitating water and wastewater facilities (networks, booster and pumping stations; wells; water meters; wastewater treatment plants (WWTP), procurement and delivery of O&M materials, equipment, and machine tools such as spare parts, measuring devices, manholes, sewage maintenance vehicles, laboratory equipment and supplies, and increasing WSLCs' sustainability (i.e., through enhancing their institutional capacity including institutional revenues through improving the collections, reducing non-revenue water, conducting community campaigns for mutual benefit of water supply and fees payments). Although subcomponent 2.2 will continue financing the needed fuel for WSS facilities, this subcomponent will improve energy efficiency as part of the fuel exit strategy by supporting the operation of main water and wastewater facilities by providing efficient electro-mechanical equipment.

Subcomponent 2.2: Emergency Support for WASH Interventions to Prevent and Respond to Communicable Diseases (UNOPS)

41. This subcomponent continues to strengthen Yemen's readiness and capacity to prevent and respond to communicable diseases, caused by natural disasters, climate change and/or exacerbated by poor sanitation and hygiene. It addresses basic needs of WASH requirements and supplies in priority urban, peri-urban and rural areas at the decentralized levels based on transparent selection criteria that include vulnerability to climate change. UNOPS already developed exit strategies from fuel and water trucking building based on the exit strategies developed by UNICEF and WHO under the closed EHNP and will ensure implementation of these exit strategies under the AF2. Implementation of the exit strategies is being reviewed and assessed periodically to ensure gradual shift toward more low-carbon and sustainable solutions. WASH rehabilitation in HFs and schools is ongoing under YEHCP (parent and AF1) based on clear and transparent criteria to ensure integration and complementarities with health and energy interventions funded by the World Bank and to maximize the impact on the ground.

Emergency Fuel Provisions

42. Fuel supply, mainly diesel, has become a critical activity to ensure functionality of WWTPs and water supply facilities. Fuel supply is required to ensure continuity of safe WSS services under 37 WSLCs (NWSA, branches and AUs) in 15 governorates. As part of the ongoing implementation of the exit strategies from fuel supply, about 30 solar energy solutions (or up to 7,500 kW) are under implementation to reduce usage of fuel. UNOPS will continue to coordinate with UNICEF and other implementing partners and donors to ensure that the AF2 continues to support the emergency needs of fuel provisions and in parallel implement the already developed exit strategies as a condition in which this subcomponent can fund the fuel provisions. As agreed under AF1, UNOPS reviewed and updated the fuel exit strategies prepared under the EHNP, based on detailed consultations with stakeholders, considering the sensitivity of the interventions and limitations of the available funding to implement both emergency fuel and water trucking at the same time. The ongoing interventions related to the fuel exit strategy include the implementation of supply and installation of solar systems, connecting the pumping stations, water wells, sanitation system, and WWTP to main electricity grid lines whenever possible, reduction of water losses and improvement in the operation and revenue collections of WSLCs. UNOPS will ensure the implementation of the fuel exit strategies by September 2024. Following the same arrangement of fuel delivery under AF1, UNOPS will ensure close coordination with the World Food Programme (WFP) and will use its own logistical capacity based on the detailed assessment. Third Party Monitoring (TPM) will be carried out at the supply site and throughout the supply and usage chains and linkage will be made with the provided WSS services to ensure that fuel has been utilized for the intended purposes. The operational costs also include per

diem and transportation costs for the key technical staff of PMUs and WSLCs, supply of equipment and spare parts and rehabilitation of water and sanitation facilities as needed.

Emergency Water Trucking

43. Access to clean water for health facilities is critical, and emergency water trucking will continue to be supported to the agreed list of 110 HFs. The ongoing implementation of the exit strategy under AF1 includes connecting HFs to more sustainable sources such as public water networks, functional water wells, and rehabilitation of wells within the targeted HF. While water trucking to HFs is provided, monitoring of the water quality is ongoing at water sources, distribution points, tanker trucks, and household levels through testing water quality for public and private providers. UNOPS is engaging with qualified private water trucking suppliers to ensure supply of the urgent and required water to the needed HFs and DTCs, supported under subcomponent 2.2. UNOPS will continue funding costs of the water supply to HF through the LWSC after receiving confirmation from HFs, Third-Party Monitoring Agency (TPMA), and UNOPS technical team on the delivery of services. To support the transition, bills will be paid only for 12 months as a short-term measure to enable HFs to manage the payment of the cost of water. In parallel, UNOPS will ensure the implementation of the exit strategies by September 2024.

Subcomponent 2.3. Enhanced Capacity Building of Water and Sanitation Institutions at the Local Level

44. Strengthening the resilience of local WSS institutions at the decentralized levels will continue under this sub-component as planned under the OF and AF1. As part of the consolidation of WASH interventions under the ongoing operations, a detailed capacity building and training plan for system strengthening at national and decentralized level have been addressed under the ongoing urban project YIUSEP-II and AF with focus mainly on urban areas. Capacity building has started for LWSCs, NWSA's branches and AUs. In addition to the specific needs, the capacity building activities include technical training including planning around when it is most convenient for women to support the local institutions to assume their service delivery mandate more effectively beyond the boundaries of the project. The support may include provision of per diem to key staff if needed based on clear Terms of Reference (TOR) with associated deliverables and timelines. This support will build medium and long-term capacity at the local level and cover topics including procurement and contract management, social and environmental standards, low carbon and climate resilient infrastructure, technical design, asset management, grievance redress and gender-sensitive stakeholder engagement, capacity building of WSLCs' on gender parity in recruitment, the advantages of gender diversity in the workplace, and other critical needs which may be identified. Under AF2, this subcomponent will consider the findings and recommendations of the capacity assessment carried out by the World Bank for the UW-PMU and Sana'a and Aden Local Water and Sanitation Corporations and the additional needs that may be needed as well as ensure coordination with implementing partners including German Agency for International Cooperation (Deutsche Gesellschaft fur Internationale Zusammenarbeit, GIZ).

Component 3. Implementation Management and Monitoring and Evaluation (UNICEF, WHO, and UNOPS)

45. This component will continue to support the implementation, administration, management, monitoring and evaluation, and environmental and social aspects of the project, including: (i) direct cost; (ii) indirect cost; (iii) provision of consultancy services required for project monitoring, evaluation and coordination at the local level; (iv) conducting independent audits of project activities; (v) audit conducted by the implementing agencies; and (vi) TPM.

Component 4: Contingent Emergency Response Component (CERC) (UNICEF, WHO, and UNOPS)

46. This component description remains unchanged with the CERC in place to provide agile response in case of an emergency.

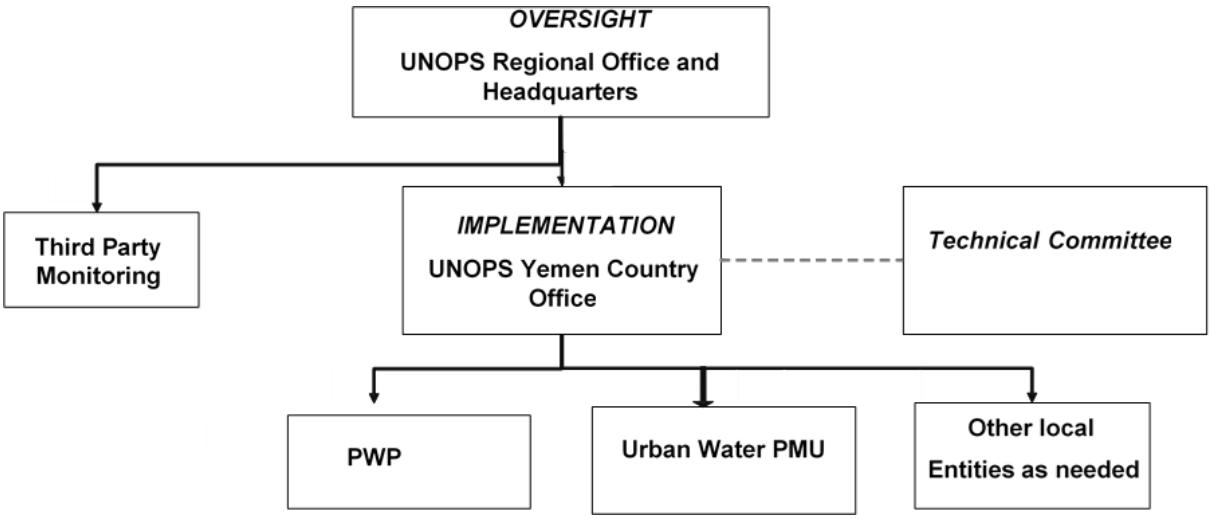
2.2 Institutional and Implementation arrangements

2.2.1 UNOPS

47. The proposed Second AF is processed as part of an emergency operation under Paragraph 3 of the World Bank Policy on "Development Cooperation and Fragility, Conflict and Violence". It uses UNOPS as the non-sovereign recipient of IDA funds (for the benefit of Yemen) and alternative implementation agency on an exceptional basis under the Financial Management Framework Agreement (FMFA) between the World Bank and UN agencies. The FMFA provides for the use of the UN's Financial Regulations by offering flexibility in the application of Bank fiduciary policies through the application of alternative assurance mechanisms. UNOPS will follow its own procurement procedures as Alternate Procurement Arrangements (APA) allowed by the World Bank's Procurement Framework Policy Section III.F.

48. The Second AF will continue to be implemented by UNOPS through direct implementation as well as Project cooperation agreements and performance-based contracts with local partners. UNOPS will: (i) be responsible for Project implementation; (ii) monitor the Project targets and results in coordination with the local partners; (iii) handle relevant procurement, financial management, and disbursement management, including the preparation of withdrawal applications under the project; and (iv) ensure that all reporting requirements for IDA are met per the Project Financing Agreement. The Figure below describes the governance and management structure to be put in place under the project.

Figure 1. Project Governance and Management Structure



49. UNOPS has a regional structure with the regional hub based in Amman, Jordan and has an established capacity in the areas of finance, procurement, human resources, IT, and security to provide support and advice as needed. In addition, a Regional Oversight and Management Advisor oversees operations in the region and provides management advice to the Regional Director. The Regional Office is also supported by the UNOPS headquarters based in Copenhagen, Denmark, which provides global corporate oversight and program support.

50. The UNOPS office in Sana'a hosts a Project manager, procurement specialists, finance specialists, an Environmental and Social Standards Officer (ESSO)[18], a Gender Mainstreaming Officer, a Health and Safety Officer, a logistics officer, and an administrative officer. Additional personnel may be recruited to by UNOPS and its Implementing Partners to effectively manage the parent Project and the two AFs. The Gender Mainstreaming Officer and the Health and Safety Officer will contribute to the ESSO's tasks, such as contributions to the various reports or the preparation of ToRs. The ESSO will also be supported by a part-time international expert, who will assist in the management, monitoring and reporting of environmental and social risk management aspects throughout project implementation.

ESMF Implementation

51. UNOPS is responsible for the overall implementation of this ESMF. More specifically UNOPS will ensure that:

- Site specific environmental and social risk management instruments are prepared in a timely manner by UNOPS or the relevant Implementing Partner, as needed
- Tender documents and construction contracts include effective and enforceable contractual clauses to manage environmental and social risks
- No activities start before the required environmental and social risk management measures are in place
- The environmental and social performance of contractors at all times meets the Project's environmental and social requirements.

52. In addition, the Implementing Partners (PWP, UW-PMU) will each designate an ESSO and a Health and Safety Officer, who will monitor and control the on-site environmental and social performance at subproject level.

2.2.2 TPM

53. UNOPS has already recruited a Third-Party Monitoring (TPM) agent (composed of international audit firm and an experienced technical firm) to undertake independent results verification of subprojects funded under the project, on the basis of ToRs developed by UNOPS and approved by the World Bank. As a consequence of the Second AF, UNOPS will amend the TPM contract to account for the increased number of subprojects. The TPM will continue reporting to the WB and to UNOPS on the Project's technical achievements and the environmental and social performance of the Project.

2.2.3 Implementing Partners

54. While retaining overall responsibility for implementation, fiduciary and E&S risk management aspects of the Project, UNOPS will work with local partners for the implementation of Project activities. These local partners have been created through World Bank and other international donor interventions, have years of experience in implementing IDA investments. During the crisis, they have continued to support the implementation of donor-funded projects, leveraging their sector-specific knowledge, relationships with local entities, and on-the-ground experience. They have a good track record of successfully implementing E&S risk management requirements, in compliance with World Bank policies. Despite the conflict, the Implementing Partners have continued to improve their E&S risk management capacities through project implementation and training programs.

Public Works Project (PWP)

55. The World Bank and other regional, bilateral, and international development agencies have funded and supported PWP since its inception in 1996. Between 1996 and 2015, PWP implemented 5,149

[18] The ESSO will be supported by a part-time international expert, who will assist in the management, monitoring and reporting of environmental and social risk management aspects throughout Project implementation

projects in about 11,200 villages and 1,300 urban neighborhoods, totaling an estimated US$ 648 million. PWP has played a significant role in improving poor communities' access to education, water, sanitation, roads, and irrigation, among other services. Bank experience with PWP has shown that the organization has a good track record for fiduciary due diligence, effective delivery of results and political neutrality. PWP is headquartered in Sana'a with nine regional offices and a current core staff of 53.

Urban Water Project Management Unit (UW-PMU)

56. The UW-PMU has implemented several water supply and sanitation projects in Yemen. It was established in 2002 as a financially and administratively independent PMU to manage all activities related to the implementation of the World Bank Urban Water Supply and Sanitation Adaptable Program Loan (P057602). During the implementation of this project, the UW-PMU attracted funds from various donors. It had implemented projects including 1,000 km of water supply networks, 250 km of sewer lines, reservoirs with a total capacity of 40,000 m3, three wastewater treatment plants, drilling and construction of 65 production and investigation boreholes and several emergency rehabilitations works. It is based Sana'a and Aden and has close working relationships with LCs.

2.2.4 Other National Stakeholders

Local Water and Sanitation Corporations (LCs)

57. Local Water and Sanitation Corporations (LCs) are decentralized, corporatized and commercialized utilities established under Cabinet Decree 237 of 199, which serve the main cities and secondary towns in each governorate. By law, LCs' Boards are responsible for all aspects of service development and provision in their area, including design and construction of water supply systems and their subsequent ownership, operation and monitoring, as well as tariff setting.

58. Prior to the escalation of the conflict, 23 LCs and 10 annexed autonomous utilities (AUs) had been established, and their service areas covered about 50 percent of the country's urban population, with the rest covered by private tankers. LCs provide services to large cities whereas AUs are utilities in secondary towns of the same governorate.

59. UNOPS will ensure that Component 2 will be implemented in full cooperation and collaboration with the respective LCs.

Local Councils

60. Local councils are the administrative body which have been elected by the local community for each governorate/ directorate. They cooperate with governmental offices in implementing, operating and supervision of projects. They approach donors for financing the demanded projects and facilitate handing over the different important infrastructure services projects to the related ministry office.

Civil Society Organizations (CSOs)

61. There are over 12,000 registered CSOs in Yemen, but only a few hundred CSOs have the capacity and resources to fulfill their mandates. As a consequence, UNOPS will be selective in engaging CSOs with the Project activities.

62. Nonetheless, under Component 2 of the Project and starting with the second year of implementation, the Project will include additional activities based on community priorities identified through citizen engagement mechanisms and the community validation of investment options. UNOPS will implement these activities by engaging Civil Society Organizations or other relevant technical experts, as needed.

2.2.5 The World Bank

63. The World Bank will closely coordinate with UNOPS for the implementation and overall oversight of the of site-specific environmental and social risk management instruments, e.g., ESMPs and RPs to ensure that their scope and quality are satisfactory to the Bank.

64. The World Bank will also monitor the implementation of the different prepared instruments through regular supervision missions (which will include an environmental and/or social specialist) during which document reviews, and site visits and spot-checks by TPM will be conducted as needed.

2.2.6 Project Technical Committee (TC)

65. Specific to Component 2 of the project and to facilitate the investment planning process and ensure cross-sectoral coordination, UNOPS will chair a TC composed of representatives from the local partners (PWP and UWS-PMU). Other members will be engaged during the project, if needed. The World Bank will join the TC as an observer. The TC will play an advisory role and will meet periodically and on an as needed basis. Its main tasks will include a) conducting a periodic review of project implementation progress and providing recommendations for improvement, as necessary; b) reviewing proposed sub- projects for the yearly investment plans and recommending a shortlist; and c) strategically communicating the project and its investments to other donors and stakeholders.

UNOPS

Chapter 3
Legal and Regulatory Framework

66. This ESMF is prepared to:

    1. meet the requirements of the World Bank's Environment and Social Standards (ESS), including the World Bank Group Environment, Health and Safety (EHS) Guidelines, and other guidelines and guidance
    2. comply with national environmental and social laws and regulations.

3.1 World Bank Requirements

3.1.1 World Bank Environmental and Social Framework

67. The World Bank Environmental and Social Framework (ESF) sets out the World Bank's Commitment to sustainable development. It includes a set of ten Environmental and Social Standards (ESSs) that establish the mandatory requirements that the Borrower and the projects must meet through the project life cycle:

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
ESS7 Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities
ESS8 Cultural Heritage
ESS9 Financial Intermediaries
ESS10 Stakeholder Engagement and Information Disclosure.

68. All of the above standards are relevant to the Project, except for ESS7 and ESS9. The standards establish objectives and requirements to avoid, minimize, reduce and mitigate environmental and social risks and impacts, and to compensate for or offset any residual impacts. In the context of YEHCP, UNOPS shall address the Project's environmental and social risks as part of the environmental and social assessment process, in accordance with ESS1. ESS2–10 set out the obligations of UNOPS in identifying and addressing environmental and social risks and impacts that may require particular attention.

3.1.2 Environment, Health and Safety Guidelines

69. The ESF also requires all projects to apply the relevant requirements of the World Bank Group Environmental, Health and Safety Guidelines (EHSGs)[19]. These are technical reference documents, with general and industry specific examples of Good International Industry Practice (GIIP). They define acceptable pollution prevention and abatement measures and emission levels in World Bank financed projects.

[19] A complete list of industry-sector guidelines can be found at: www.ifc.org/ifcext/enviro.nsf/Content/EnvironmentalGuidelines

70. The EHS Guidelines contain the performance levels and measures that are generally considered to be achievable in new facilities by existing technology at reasonable costs. Application of the EHS Guidelines to existing facilities may involve the establishment of site-specific targets, with an appropriate timetable for achieving them.

71. The application of the Guidelines to existing facilities may involve the establishment of site-specific targets with an appropriate timetable for achieving them. The environmental assessment process may recommend alternative (higher or lower) levels or measures, which, if acceptable to the World Bank, become project - or site-specific requirements.

72. If less stringent levels or measures than those provided in the EHS Guidelines are appropriate, in view of specific project circumstances, a full and detailed justification for any proposed alternatives is needed as part of the site-specific environmental assessment. This justification should demonstrate that the choice for any alternate performance levels is protective of human health and the environment. When host country regulations differ from the levels and measures presented in the EHS Guidelines, projects are expected to achieve whichever is more stringent.

73. In the context of YEHCP, UNOPS will use the General EHS Guidelines, and the Water and Sanitation EHS Guidelines. The General Guidelines cover environmental, occupational health and safety, and community health and safety related risks.

3.1.3 Environmental and Social Risk Classification

74. The World Bank classifies projects into one of four classifications: High Risk, Substantial Risk, Moderate Risk or Low Risk. This classification takes into account relevant issues, such as the type, location, sensitivity, and scale of the project; the nature and magnitude of the potential environmental and social risks and impacts; and the capacity and commitment of the Borrower (including any other entity responsible for the implementation of the project) to manage the environmental and social risks and impacts in a manner consistent with the ESSs. Other areas of risk may also be relevant to the delivery of environmental and social mitigation measures and outcomes, depending on the specific project and the context in which it is being developed. These could include legal and institutional considerations; the nature of the mitigation and technology being proposed; governance structures and legislation; and considerations relating to stability, conflict or security.

75. The World Bank has classified the environmental and social risks of YEHCP, including the second AF, as substantial, because the Project involves physical interventions to be implemented in urban cities, including the restoration/rehabilitation of some services, such as the replacement of water and sanitation pipes. Although no significant risks and adverse environmental impacts are anticipated; potential minor adverse impacts are expected from works related to earthworks, dust and air emissions, debris, and other solid waste generation and management, social inconveniences and community health and safety due to traffic increase, blocked streets, noise, dust, as well as workers health and safety. The World Bank will review the risk classification on a regular basis during implementation, and will change the classification where necessary, to ensure that it continues to be appropriate. Any change to the classification will be disclosed on the World Bank's website.

3.1.4 Labor Management Procedures

76. Under ESS2 on Labor and Working Conditions, UNOPS is required to develop labor management procedures (LMP) for YEHCP. The LMP was prepared and updated as a standalone document according to the established template.

77. The LMP will facilitate planning and implementation of the Project. It identifies the main labor requirements and risks associated with the Project, and helps UNOPS determine the resources necessary to address Project labor issues. The LMP is a living document that will be reviewed and updated throughout the development and implementation of the Project.

3.1.5 Stakeholder Engagement Plan

78. As required by ESS10, UNOPS has in the context of the Project and its additional financings and in consultation with the World Bank, developed, updated, and will implement a Stakeholder Engagement Plan (SEP) proportionate to the nature and scale of the Project and its potential risks and impacts. The SEP:

- Describes the timing and methods of engagement with stakeholders throughout the life cycle of the project, distinguishing between project-affected parties and other interested parties.
- Describes the range and timing of information to be communicated to project-affected parties and other interested parties, as well as the type of information to be sought from them.
- Takes into account the main characteristics and interests of the stakeholders, and the different levels of engagement and consultation that will be appropriate for different stakeholders.
- Sets out how communication with stakeholders will be handled throughout project preparation and implementation.
- Describes the measures that will be used to remove obstacles to participation, and how the views of differently affected groups will be captured. Where applicable, the SEP includes differentiated measures to allow the effective participation of those identified as disadvantaged or vulnerable.

79. When the stakeholder engagement with local individuals and communities depends substantially on community representatives, UNOPS will make reasonable efforts to verify that such persons do, in fact, represent the views of such individuals and communities, and that they are facilitating the communication process in an appropriate manner.

80. The SEP for the YEHCP second AF is a standalone document that is disclosed separately.

3.1.6 Grievance Mechanism

81. As required by paragraphs 26 and 27 of ESS10, UNOPS has included and will implement a grievance mechanism (GM) as part of the disclosed updated SEP, to receive and facilitate resolution of concerns and grievances of Project Affected Parties related to the environmental and social performance of the Project in a timely manner.

82. As required by ESS10, the GM required is proportionate to the potential risks and impacts of the Project and will be accessible and inclusive. Furthermore:

- The grievance mechanism is expected to address concerns promptly and effectively, in a transparent manner that is culturally appropriate and readily accessible to all project-affected parties, at no cost and without retribution. The mechanism, process or procedure will not prevent access to judicial or administrative remedies. The Borrower will inform the project-affected parties about the grievance process during its community engagement activities, and will make publicly available a record documenting the responses to all grievances received
- Handling of grievances will be done in a culturally appropriate manner and be discreet, objective, sensitive and responsive to the needs and concerns of the project-affected parties. The mechanism will also allow for anonymous complaints to be raised and addressed.

3.1.7 Environmental and Social Commitment Plan

83. In the context of the Project and its additional financings, UNOPS developed, updated and will implement an Environmental and Social Commitment Plan (ESCP) that sets out the measures and actions required for the Project to achieve compliance with the ESSs. The ESCP forms part of the legal agreement.

84. This ESCP takes into account the findings of the environmental and social assessment, the World Bank's environmental and social due diligence, and the results of consultations with stakeholders. It is

an accurate summary of the material measures and actions required to avoid, minimize, reduce or otherwise mitigate the potential environmental and social risks and impacts of the project.

85. UNOPS will diligently implement the measures and actions identified in the ESCP in accordance with the timeframes specified, and will review the status of implementation of the ESCP as part of its monitoring and reporting.

86. UNOPS will notify the World Bank promptly of any proposed changes to the scope, design, implementation or operation of the project that are likely to cause an adverse change in the environmental or social risks or impacts of the project. The updated ESCP will be disclosed.

3.1.8 Contingent Emergency Response Components (CERC)[20]

87. The World Bank requires all activities financed through the CERC to meet ESF requirements, keeping in mind that this requirement only applies once the CERC is triggered. CERC activities will rely as much as possible on the Project's environmental and social instruments.

88. If the CERC is activated, the World Bank will advise UNOPS on the following elements:

- Confirming which activities can proceed on the basis of the provisions of the CERC-ESMF, with no additional environmental or social assessment, and which ones require assessment (and at what level) prior to being initiated.
- Rapidly assessing the environmental and social baseline of the planned CERC activities and locations based on readily available information.
- Determining the sequencing and implementation plan for:
  - Mobilizing technical assistance and funding to prepare any additional ESF instruments, e.g., Environmental and Social Management Plan, Resettlement Plan, etc.
  - Preparing the ESF instruments and carrying out their Bank review, revisions, clearance, and approval.
  - Consultations and disclosure.
  - Establishing roles and responsibilities for ESF implementation, and monitoring.
  - Estimating the costs for safeguards preparation and implementation.

89. If CERC activities exceed the scope of the original PDO and thus this ESMF, UNOPS might be called on to prepare a supplemental CERC-ESMF as part of an eventual Project restructuring. The CERC-ESMF would include a screening process for the potential activities, the institutional arrangements for environmental and social due diligence and monitoring, any needed capacity-building measures, and generic guidance on emergency small-scale civil works. It would also indicate which kinds of emergency response actions can proceed with no additional environmental or social assessment, and which ones would require assessment (and at what level) prior to being initiated. It may also identify trade-offs, where required short-term responses could create longer-term risks that need to be managed.

90. Given the uncertainties and rapid changes inherent in emergency situations and responses, the CERC-ESMF would be built around a flexible, "adaptive management" approach, i.e., with emphasis on monitoring of key outcomes and mechanisms to feed information rapidly and effectively into decision- making and management.

91. UNOPS will use the same institutional framework and the same screening process and criteria for the CERC as for the other Project components.

[20] This section is based on Paragraphs 17 of the World Bank Guidance on Contingent Emergency Response Components (CERC) (16 October 2017)
30 https://unemg.org/wp-content/uploads/2019/07/FINAL_Model_Approach_ES-Standards-1.pdf

3.2 UNOPS Requirements

92. The UNOPS policy on Health, Safety, Social and Environmental (HSSE) Management[21] applies to all UNOPS activities and facilities as well as to all UNOPS contracted and/or subcontracted activities and facilities. UNOPS shall promote environmental sustainability and resilience in its activities and facilities, systematically preventing and addressing negative impacts on the environment.

93. To this end, UNOPS implements a *health, safety, social and environmental management systems*[22] *approach that:*

- *Is risk-based, ensuring that health and safety risk-mitigation is embedded in all activities and that planning, resource allocation, supervision and performance monitoring are adequate for keeping UNOPS workplaces free of occupational injuries and illnesses.*
- *Promotes excellence in HSSE, by aligning with international standards and best practices as appropriate and consistent with applicable national legislation and standards and the UN Common System Frameworks;*
- *Operates in a way that will meet or go beyond the organization's compliance requirements;*
- *Monitors and continuously improves HSSE management by setting appropriate targets, measuring performance against the targets and ensuring that performance gaps and non-compliance with requirements are addressed;*
- *Engages on HSSE issues with UNOPS personnel, partners, contractors, suppliers, sub-suppliers and any other people who work under UNOPS; ensures that everyone understands the requirements and their obligations under this Policy and have a chance to participate in HSSE decisions and actions;*
- *Encourages stakeholders and partners to protect the environment and foster positive social development.*

94. Executive Office Instruction (EOI) SSC.2021.01[23] sets out the mandatory processes and requirements for HSSE management in UNOPS. The EOI applies to the management of HSSE in activities and projects that are controlled by UNOPS, including activities that UNOPS assigns to contractors. For projects without physical sites and where UNOPS has no managerial control, the applicability of HSSE shall be limited to HSSE aspects specifically assigned to UNOPS.

3.2.1 Health and Safety Performance

95. It is mandatory for people at UNOPS workplaces to comply with the UNOPS Golden Rules for addressing fatal or significant hazards:

- *Only competent personnel (licensed, qualified, experienced and have had job-specific training), who have been adequately resourced shall be allowed to perform work provided they are authorized to do the work.*
- *Work at heights, or any work where a risk assessment identifies a danger of falling to a lower level, shall only take place if hazards from working at heights are controlled and if there is adequate fall prevention or protection (safe access, safe platform, protected edges, fall restraint and fall arrest).*
- *Installation, repair or any other work on electrical equipment shall only be performed by competent (licensed, qualified, experienced and have had job-specific training) personnel.*
- *Work activities shall not be performed before energy sources have been effectively isolated and locked out, and stored energy has been released/secured.*

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21 https://content.unops.org/documents/libraries/policies-2020/executive-office-directives-and-instructions/health-safety-and-social-environment-management/en/EOD.ED-HSSE-Management.pdf

22 See section 3.2.8 of the ESMF for applicability to the Project

23 https://content.unops.org/documents/libraries/policies-2020/executive-office-directives-and-instructions/health-safety-and-social-environment-management/en/EOI-HSSE-Management.pdf

- *Vehicles and mobile plant equipment used for work purposes on site must address all aspects of safe operation including being fit for purpose. All personnel shall follow road and site traffic rules and pedestrians should be separated from mobile plant equipment and vehicles.*
- *Mechanical lifting operations shall be planned, supervised and undertaken by competent personnel using certified equipment that has the capacity for the lifts being undertaken. The lifting equipment must not be used for any purpose other than its original design purpose and the lifts shall only take place after people have been removed from the travel path or drop zone of a suspended load.*
- *Excavations shall have barricades to prevent people falling in them; appropriate means of access and egress; and shall be protected from collapse.*
- *All personnel shall be made aware of how to handle, store and dispose of any chemicals or hazardous substances they use in their work activities.*
- *People shall not be allowed to enter a confined space unless they are properly trained, have all of the required safety and rescue equipment and understand the safe system of work for the specific activity and confined space.*
- *Any person working in or around water/liquid accumulations or storage facilities shall take the necessary precautions to prevent drowning including not working alone and wearing a buoyancy vest. UNOPS projects shall take the necessary precautions to ensure that members of the community, with special attention to children, are not exposed to drowning in water bodies that have been created as a result of project activities.*
- *Access to UNOPS workplaces, premises and project sites shall be controlled to prevent exposure of the public to hazards. Access control measures shall be supported by informative and warning signs.*
- *Workers shall be provided with adequate, safe to use equipment including personal protective equipment (PPE). The PPE requirements must be made known to workers before they are exposed to hazards requiring PPE protection Planned inspections and maintenance programmes shall be put in place for equipment used in infrastructure works*
- *Adequate eating areas, toilet facilities and change rooms shall be provided at workplaces. Culture, hygiene and gender considerations shall be included in the design and maintenance of the facilities.*
- *UNOPS business units shall ensure that UNOPS facilities, including external facilities for events hosted by UNOPS, are accessible by people with disabilities.*
- *Safety-critical tasks such as working at heights, lifting operations, excavations, tasks in confined spaces and working over water bodies shall be performed under direct supervision. The tasks shall only commence after a written approval in the form of a permit to work has been issued by an authorized person, all permit conditions have been met and all workers participating in the task have been made aware of the key controls in the risk assessment and the procedure for performing the task.*

3.2.2 Social and Environmental (SE) Performance in Projects

UNOPS has developed minimum SE performance requirements applicable to all projects that are available on its Intranet.

Social and Environmental Screening (SES) requirement

- Except for projects limited to the provision of services in a transactional role only (e.g., human resources, procurement or financial transactional services), all new UNOPS projects shall undergo a Social & Environmental Screening at the pre-engagement phase.
- The Business Developer is responsible for the completion of the SES; key project stakeholders and technical experts shall be consulted to ensure that the Screening is informed by the best available knowledge; and considers direct, indirect and cumulative impacts throughout the life cycle of the project.

- The SES results indicate in which thematic areas there have been identified risks and opportunities (if any) for the project. These risks and opportunities shall inform the consequent steps of the management system.

Social and Environmental Management Plans

- Except for cases where the SES results indicate that no formal SE requirements apply, all projects shall develop SE plans as detailed by the UNOPS management system, to address the project SE risks and opportunities and other requirements set in the 2021 UNOPS HSSE policy.
- The applicable SE plans shall make use of adaptive management; apply the mitigation hierarchy for risks and impacts; follow internationally recognized good practice principles such as the precautionary principle and good international industry practice (GIIP), such as the EHS Guidelines of the World Bank Group.

96. All projects shall implement activities of awareness raising and prevention of sexual exploitation, abuse and harassment, in a manner proportional to their size and risk profile.

3.2.3 Health and Safety Guidelines[24]

97. UNOPS has developed 16 General Health and Safety Guidelines, as well as 3 HSSE Guidelines[25] that are mandatory for Projects implemented by UNOPS.

General Health and Safety Guidelines

GHS01	General Site Rules
GHS02	Lifting
GHS03	Electrics
GHS04	Excavation
GHS05	Fire Safety
GHS06	Noise
GHS07	Scaffold
GHS08	Underground Services
GHS09	Working at Heights
GHS10	Significant Accident or Incident Response
GHS11	Confined Space
GHS12	Site Establishment
GHS13	Welfare Facilities
GHS14	Construction Camp
GHS15	Site Rule Poster
GHS16	Visitors Induction Briefing

General HSSE Guidelines

GHSE02	HSSE Roles and Responsibilities
GHSE03	Boundaries of HSSE Applicability
GHSE04	Mandatory HSSE Inspections

98. These Guidelines are accompanied by 30 templates (forms)[26] that are mandatory for projects implemented by UNOPS[27]:

Form HS01	Project HS Plan
Form HS02	Project HS Plan Short Format

[24] UNOPS applies these guidelines to all projects that it implements
[25] These guidelines are available to UNOPS staff through UNOPS' Intranet
[26] These templates are available to UNOPS staff through UNOPS' Intranet
[27] There is no Form HS12, HSE14, HSE15 or HSE17.

Form HS03 Emergency Contact Numbers
Form HS04 Emergency Drill Record
Form HS05 Risk Assessment
Form HS06 Risk Assessment Briefing Register
Form HS07 Schedule of Key Tasks
Form HS08 Confined Spaces Permit
Form HS09 Hot Works Permit
Form HS10 Excavation Permit
Form HS11 Lifting Permit
Form HS13 Ladders Inspection Checklist
Form HS14 Scaffold Inspection Checklist
Form HS15 Small Tools Inspection Report
Form HS16 Lifting Devices Inspection Record
Form HSE01 Office HSE Plan
Form HSE02 Register Interested Parties
Form HSE03 Legal Register
Form HSE04 Check for Compliance Requirements
Form HSE05 Site HSE Inspection
Form HSE06 Office HSSE Inspection
Form HSE07 Site Induction Register
Form HSE08 Visitor Induction Register
Form HSE09 Incident Report
Form HSE10 Incident Review Report
Form HSE11 Incident Highlight Report
Form HSE12 Quarterly HSSE Report
Form HSE15 Management Review Agenda
Form HSE16 Internal review
Form HSE18 HSSE Training Matrix

3.2.4 Environmental and Social Guidelines

General Environmental Management Guidelines

GEM01 Generic Register of Environmental Impacts
GEM02 Waste Management and Hazardous Substances
GEM03 Protection of Water;
GEM04 Wastewater
GEM05 Borrow Pit Management;
GEM06 Preservation of Historical, Archaeological and Cultural Remains
GEM07 Hazardous Waste Management
GEM08 Mandatory Requirements for Environmentally Sustainable Meetings and Events

General Social Guidelines[28]

GS01 Safe Accommodations for Women in UNOPS Facilities
GS03 Prevention of Project Related SEAH
GS04 PSEAH Specific Guidance for Contractors
GS05 PSEAH Project Site Focal Point Draft

[28] There is no GS02

99. These Guidelines are accompanied by 8 environmental management templates (forms) and 2 10 templates (forms)[29] that are mandatory for projects implemented by UNOPS[30]:

Form EM01	Project SE Plan
Form EM01	SE Plan for Mine Action Operations
Form EM03	Social and Environmental Screening Report
Form EM04	Register Social Environmental Risk
Form EM05	Environmental review Report
Form EM06	Site Waste Management Plan
Form EM07	Office Waste Management Plan
Form EM08	Sustainability Management Plan
Form SE02	Enhanced PSEAH Risk Screening
Form SE03	GBV PSEAH Plan

100. UNOPS currently has a number of policies and directives that guide the way the organization implements projects and ensures the welfare of its workers and beneficiaries. UNOPS is in the process of developing a comprehensive set of environmental and social safeguards that will be applicable to all of the Project's it implements. The safeguards will be based on the Model Approach to Environmental and Social Standards for UN Programming. The Model Approach represents a key step in moving towards a common approach among UN entities for addressing environmental and social standards for UN programming.

3.2.5 Prevention of Sexual Exploitation, abuse and Harassment (PSEAH)

As with all UN agencies, UNOPS is subjected to the United Nations Protocol on Allegations of Sexual Exploitation and Abuse Involving Implementing Partners[31]. Thus, the UNOPS Guidelines and templates include provisions for preventing and responding to SEAH, including Guidance on minimum requirements for works contractors on Protection from Sexual Exploitation, Abuse and Harassment (GS04), and the requirement that contracted workers sign an Individual Code of Conduct (SE01)

3.2.6 Minimum Health and Safety Requirements for Contractors[32]

101. UNOPS' Minimum Health and Safety Requirements for Contractors (July 2021) which translate some but not all of the Health and Safety Guidelines and the Social and Environmental Guidelines into requirements applicable to contractors.

..these requirements establish the minimum occupational health and safety (HS) performance level that applies to UNOPS work and UNOPS workplaces. It applies to activities performed by UNOPS contractors and subcontractors. Those bidding for UNOPS work must consider these requirements when pricing their work and consequently ensure that their HS system meets or operates above these requirements if they are contracted to carry out work on behalf of UNOPS.

Contractors are required to ensure that their project personnel and Subcontractors are made aware of and fully comply with these UNOPS HS requirements, and/or country-specific legal requirements (the most stringent will apply in all cases).

[29] These templates are available to UNOPS staff through UNOPS' Intranet
[30] There is no Form EM02 or Form SE01. However, SE01 is the Code of Conduct
[31] https://www.un.org/en/pdfs/UN%20Protocol%20on%20SEA%20Allegations%20involving%20Implementing%20Partners%20-%20English_Final.pdf
[32] This publication may be reproduced for personal use but may not otherwise be reproduced or stored in a retrieval system or transmitted, in any form or by any means, electronic, photocopying, recording or otherwise, without prior written permission of UNOPS.

This document is adapted for each specific procurement process because there may be some sections that do not apply to the specific work that a contractor is bidding for or some specialized requirements that are unique to the work to be performed may be missing. Therefore, it is important to ensure that prospective contractors are using the document that has been adapted for the project and provided as part of the procurement documents.

3.2.7 Information Disclosure

102. Information disclosure by UNOPS is guided by the Operational Instruction on Information Disclosure (OI.LG.2019.02) and the Executive Office Instruction on Information Classification (EOI.IAIG.2019.02). According to these instructions, neither the HSSE Guidelines nor the E&S instruments prepared for projects implemented by UNOPS are considered to be public documents. As a consequence, they are not made publicly available or disclosed by UNOPS.

3.2.8 Applicability to the Project

103. When applied to contractors, the GEM and GHS can provide clear and comprehensive instructions to contractors, particularly regarding work safety issues. The templates accompanying the guidelines are practical and can easily be operationalized. However, the UNOPS E&S requirements are not yet publicly available, and although referenced in bidding document prepared by UNOPS, they are generally not included as technical clauses of contracts.

104. The application of the UNOPS environmental and social requirement in the context of the Project will in no way supersede or diminish the obligation by UNOPS and its Implementing Partners to implement the Project in accordance with the ESF of the World Bank and the relevant ESSs, as well as the laws and regulations of Yemen, as set forth in this ESMF.

3.3 National Requirements and Policies

105. The Republic of Yemen (RoY) has drafted policies, developed sectoral legislation and implementation procedures, established institutions responsible for environmental management, and joined international conventions. The ongoing conflict has considerably weakened the capacity of the assigned institutions to implement policies and existing laws. As a consequence, the use of Yemen's environmental and social management framework is not considered for the Project, particularly for the approval of the primary instruments (ESMF, LMP, SMP, SEA/SH Prevention and response Action Plan, Resettlement Framework, and SEP) and for subproject ESMPs.

3.3.1 National Environmental Action Plan

106. The foundational document for environmental management in Yemen is the National Environmental Action Plan (NEAP) that the ROY prepared in 1995, with the support of the UNDP and the World Bank. The NEAP defines priority actions regarding key environmental issues such as water resources, land resources, natural habitats, and waste management.

3.3.2 Environmental Protection Law

107. The Environmental Protection Law (Law 26/1995; EPL), was enacted in 1995 in the wake of the NEAP. It constitutes the framework environmental legislation for Yemen, including provisions for environmental protection, the issuance of permits, and the requirement to prepare Environmental Impact Assessments (EIAs). The provisions of the law are implemented through By-Law 148/000.

108. The law is also designed to: (i) incorporate environmental considerations in economic development plans at all levels and stages of planning, (ii) protect the national environment from activities practiced beyond national boundaries, and; (iii) implement international commitments

ratified by the RoY in relation to environmental protection, pollution control, the conservation of natural resources, and global environmental issues such as the depletion of the ozone layer depletion and climate change.

Environmental Protection Authority

109. The EPL established an Environmental Protection Council (EPC)and granted it power to take all measures necessary to protect and improve the quality of environment and to prevent pollution of the environment. Decree 101/2005 established the Public Environmental Protection Authority (EPA) to replace the EPC and lays down its objectives, tasks and management. The functions assigned to the EPA include:

- Preparing and executing appropriate policies/strategies/plans to protect the environment
- Conducting environmental surveys
- Assessing areas/resources/species to be protected through necessary measures conserving the ecosystem including flora and fauna, wild and marine life as per existing laws and monitoring their application
- Developing legislative proposals for environment protection in coordination with other agencies involved
- Developing a National Emergency Plan to combat natural disaster and environmental pollution in consultation with the agencies concerned implementing environmental protection law and other relevant laws/regulations
- Reviewing EIA studies for public /private sector projects for giving clearance and monitoring their execution
- Coordinating relevant programs/activities with national, regional and international agencies and organizations
- Recommending necessary laws, regulations and systems to protect the environment, in accordance with regional and international agreements on environmental protection.
- Collecting data, assessing and evaluating the status of the environment, and setting up suitable monitoring systems
- Laying down appropriate standards for protecting the environment from pollution and formulating policy guidelines to combat industrial pollution and protect animal, plant and marine ecology

Environmental Impact Assessments

110. The EPL requires the preparation of EIAs for projects proposed by the public and private sectors. The proponent is responsible for undertaking the EIA, but the report may be prepared by the proponent or the competent authority or both. Line ministries and Government bodies commission EIA studies at the request of funding agencies and seek the advice of the EPA.

111. The EPA is responsible for implementing screening procedures, assisting in scoping, evaluation and approval of the Environmental Impact Statement (EIS). However, there is still no regulatory framework to support the implementation of the EPL and the provision of undertaking EIAs for projects is not strictly enforced, particularly for projects that are not internationally funded.

112. Given the current context, modifications to the EIA procedures are not expected during the project. Current procedures will be taken into account, but there is no expectation at this point that the EPA will review the Project's safeguard instruments.

National Environmental Standards and Specifications

113. The former Environment Protection Council (EPC) issued environmental standards and specifications as annexes to the Executive Regulations, covering potable water quality, wastewater quality for agriculture, and ambient air quality, emissions, noise, biodiversity and protected areas. These include standard application forms intended for use by all relevant government bodies.

114. The EPC has released draft standards for wastewater quality and air quality but a comprehensive set of standards is not yet available. In their place international standards, primarily those of the World Health Organization (WHO) are used.

115. Decree 148/2000 sets permissible limits for pollutants for use by all government bodies (see Annex 2).

3.3.3 Water Law

116. The Water Law (Law 33/2002, updated by Law 41/2006)) regulates water supply and sanitation. The structure of water sector institutions consists of two national-level ministries (MoWE and MAI) and an intermediate-level water authority (NWRA). According to the amended water law and its by-law, the MoWE/NWRA are jointly responsible for organizing and developing water resources. The MAI is responsible for formulating policies and legislation that regulate the use of the irrigation water in line with the national water policies and plans and under the umbrella of the National Water Sector Strategy and the Investment Program (NWSSIP). The MoWE is the lead ministry for the oversight of water resources and water service provision, including in rural areas. The MoWE also supervises local water companies/corporations (public utilities) and all water suppliers (including private) to the domestic and industrial sectors.

117. Each water supply and sanitation Local Corporation has a Decree issued at the date of its establishment that stipulates the provisions and rules to govern and manage the LC, as well as the functions, tasks and responsibilities of interrelated public bodies. Thus, each of the five cities targeted by the Project (Sana'a, Aden, Taiz, Ibb, and Mukalla) has its own decree. Each LC provides water supply and sanitation service to all customer groups in a specified area.

Water Supply

118. Under Article 54 or the updated Water Law, MoWE has "the authority to protect the water resources from contamination, preserve its standard quality, and prohibit activities that lead to its contamination or deterioration of its standards and combat cases of emergency contamination in cooperation with the relevant and competent authorities."

119. The Water Law also "provides a legal basis for controlling groundwater abstractions. It includes measures like licensing and registration requirements for wells and rigs, and more strict control regimes in water stressed catchments. The Water Law also supports decentralization in the form of encouraging the formation of basin committees and requires working closely with Local Councils in implementation of water management measures." The government has worked to put in place a system of water rights, and to enforce contracts involving voluntary transfers of such rights between consenting parties. The NWRA (through its branch offices) is authorized to implement water laws and regulations and to allocate surface and groundwater resources to the most compelling needs.

Wastewater

120. The Water Law specifies that treated wastewater shall not be disposed of or allowed to be used except after coordination with the MoWE and the relevant authorities, and after consultation and coordination with its users and those who are affected by its use. Article

121. Article 54 of the Water Law indicates that the concerned competent agencies shall, in coordination with the MoWE, issue licenses for; (i) the disposal of waste, sludge, wastewater, oils and specify locations and methods of their disposal and construction of their facilities; (ii) reuse of treated water sewerage effluents according to the approved standards and specifications, and; (iv) construction of sewerage networks and desalination plants according to the relevant laws

122. The NWSSIP Update defines acceptable sanitation systems, taking into account that Yemeni topography, and the low flow of wastewater can make centralized sewage treatment systems uneconomic.

3.3.4 Resettlement

123. The law most directly relevant to Project resettlement issues is the Public Eminent Domain Law (Law 1/1995), most particularly Articles 12-16 on temporary acquisition, and Articles 21-27 defining provisions for land acquisition. The Yemeni laws and regulatory framework are presented extensively in the Resettlement Framework (RF), which outlines the key issues and procedures for involuntary land acquisition under this Law.

3.3.5 Labor

124. The Labor Law (Law 5/1995) requires employers to address Occupational Health and Safety issues, including ventilation and lighting of workspaces; protection from emissions (gas, dust, etc.) hazards; protection from machine accidents and hazards; provision of gender-specific toilet facilities; provision of safe drinking water for workers; basic firefighting equipment and emergency exits; provision of appropriate personal protection equipment; fair compensation; access to periodic medical examinations; availability of first aid.

125. The Labor Law regulates the rights and wages of workers, their protection, occupational health and safety. In addition, the Social Insurance Law regulates retirement compensation.

Gender

126. The Labor Law states that women are equal to man in all aspects without any discrimination, and that equality should be maintained between women and men workers in recruitment, promotion, wages, training, social insurance. It also regulates work time for pregnant women.

127. Yemen also ratified the Convention on Elimination of all Forms of Discriminations Against Women (CEDAW) in 1984, and prepared a National Strategy for Women Development in 1997, which was updated in 2015. Implementation of CEDAW is delegated to relevant ministries and authorities (Decree 55/2009). Based on amendments proposed by the Women National Committee, 24 laws were amended to ensure building gender balance in accordance with the convention.

ILO Fundamental Conventions

128. Yemen has ratified the eight ILO "fundamental" Conventions, covering subjects that are fundamental principles and rights at work:

3. Freedom of Association and Protection of the Right to Organize Convention, 1948 (No. 87)
4. Right to Organize and Collective Bargaining Convention, 1949 (No. 98)
5. Forced Labour Convention, 1930 (No. 29) (and its 2014 Protocol)
6. Abolition of Forced Labour Convention, 1957 (No. 105)
7. Minimum Age Convention, 1973 (No. 138)
8. Worst Forms of Child Labour Convention, 1999 (No. 182)
9. Equal Remuneration Convention, 1951 (No. 100)
10. Discrimination (Employment and Occupation) Convention, 1958 (No. 111).

129. Law 7/2001 ratified ILO Convention Number 138 on Minimum Age for Admission to Employment. ILO Convention 182 on the Worst Forms of Child Labor refers to child labor as work that is mentally, physically, socially or morally dangerous and harmful to children; and interferes with their schooling by depriving them of the opportunity to attend school, by obliging them to leave school prematurely; or by requiring them to attempt to combine school attendance with excessively

long and heavy work. Nonetheless, drawing a line between "acceptable" forms of work by children and child labor can prove difficult, as it depends on the child's age, the types of work performed, the conditions under which it is performed and national.

3.3.6 International Conventions

130. The RoY is party to a number of international environmental agreements that are relevant to the Project, including:

- World Heritage Convention (UNESCO)
- International Convention on Civil Liability for Oil Pollution Damage (CLC)
- The Convention on Biodiversity (CBD)
- The Convention on the Conservation of Migratory Species (CMS)
- The United Nations Framework Convention on Climate Change (UNFCCC)
- Kyoto Protocol (Yemen is not yet a party to the Paris Climate Agreement)
- The Environmental Modification Convention (ENMOD)
- The Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal
- Convention on Wetlands of International Importance Especially as Waterfowl Habitat
- The Montreal Protocol on Substances that Deplete the Ozone Layer
- Stockholm Convention on Persistent Organic Pollutants

131. In general, national agencies are not currently able to handle the technical complexities and reporting requirements of international agreements. Project activities are not expected to be in breach of any international agreement to which the RoY is a party.

3.4 Comparison between World Bank and Yemeni Requirements

132. Annex 2 compares World Bank environmental and social requirements with Yemeni Requirements, identifies gaps and suggests recommended actions.

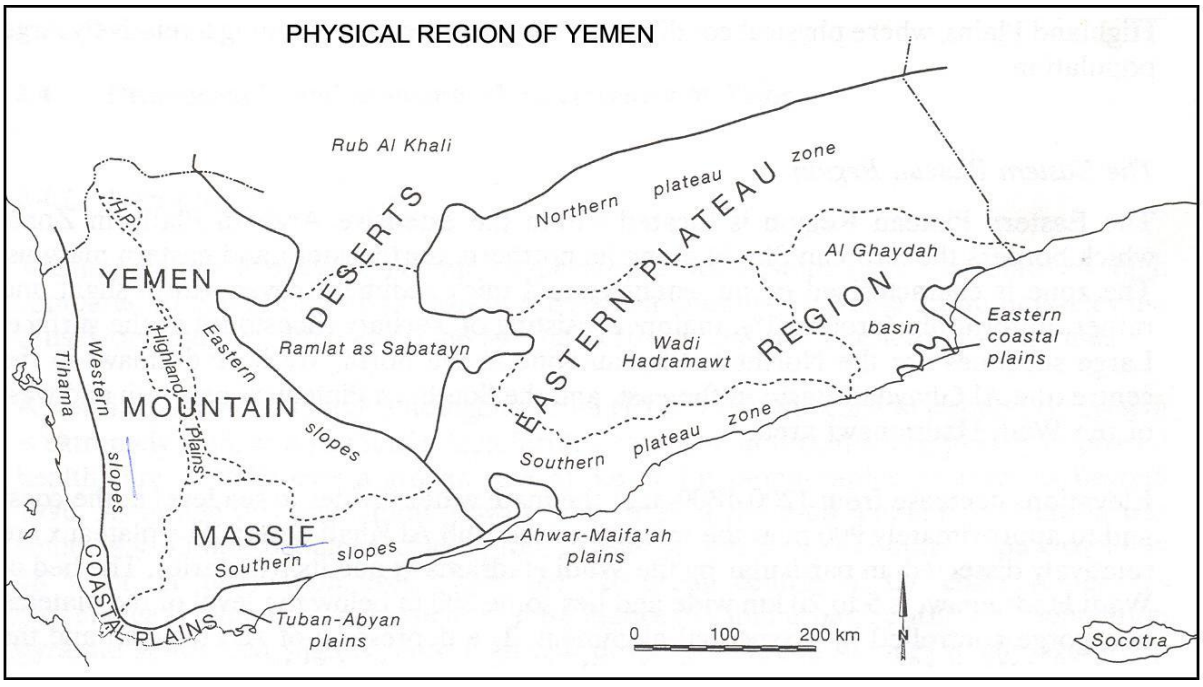
Chapter 4
Environmental and Social Baseline

4.1 Geography of Yemen

4.1.1 Topography

133. The country's mountainous interior is surrounded by narrow coastal plains to the west, south, and east and by upland desert to the north along the border with Saudi Arabia. The Tihamah is a long, semidesert coastal plain that runs along the Red Sea and is part of the Arabian Peninsula coastal fog desert ecoregion. The highland regions are interspersed with wadis, or river valleys, that are dry in the winter months. Most notable is the Wadi Hadhramaut in eastern Yemen, the upper portions of which contain alluvial soil and floodwaters and the lower portion of which is barren and largely uninhabited. Both the eastern plateau region and the desert in the north are hot and dry with little vegetation.

134. In the northeastern Empty Quarter, sands highlight the region, being the largest expanse of sand in the world. It receives little to no rain for extensive periods of time and vegetation is scarce. The central highlands are drier than the western highlands because of rain-shadow influences, but still receives sufficient rain in wet years for extensive cropping. Water storage allows for irrigation and the growing of wheat and barley while the western highlands are famous for sorghum, coffee, and some tropical fruits like bananas and mangos.



4.1.2 Elevation

135. Yemen is a continuously elevated country, with only the coastal plains being the lowest-lying areas. Jagged peaks and plateaus cover most of Yemen, and the average elevation in the country is about 2,000 meters. The interior mountains have elevations ranging from a few hundred meters to the highest point in the country and the Arabian Peninsula, Jabal An-Nabi Shu'ayb, which is 3,666 m above sea level, within the Harazi subrange of the Sarawat. The western highlands have peaks reaching around 3,000 meters, with relatively fertile soil and sufficient and plentiful rainfall. In

contrast the central highlands is a plateau of 2,000–3,200 meters, with rolling hills, small knolls, and some very prominent peaks.

4.1.3 Climate

Temperatures are lower in most of Yemen than in most of the Arabian Peninsula due to high elevations. Furthermore, rainfall is higher at higher elevations. The highlands enjoy a temperate, rainy summer with an average high temperature of 21°C and a cool, moderately dry winter with temperatures occasionally dipping below 0°C. The climate of the Tihamah (western coastal plain) is tropical; Tihamah is one of the hottest locations on earth and temperatures have occasionally exceeded 54°C, and the humidity ranges from 50 to 70 percent. Rainfall, which comes in irregular heavy torrents, averages 130 millimeters annually. In Aden the average temperature is 25°C in January and 32°C in June, but with highs often exceeding 37°C. Average annual rainfall is 127 millimeters. The higher mountainous areas of southern Yemen receive from 520 to 760 mm of rain a year. Some areas of the western highlands, most notably Ibb and Taiz, receive from about 1,000–1,500 millimeters of rain each year. The capital, Sana'a, receives around 300 mm a year, and it is not uncommon for the northern and eastern sections of the country to receive no rain for five years or more. The Wadi Hadhramaut in the eastern part of Yemen is arid and hot, and the humidity ranges from 35 percent in June to 64 percent in January.

4.2 Climate

136. Yemen is a largely arid subtropical country with rainfall characterized by seasonally intense and short-lived heavy storms that often lead to flash floods with implications for soil erosion and degradation of agricultural terraces. Heavy rainfall is frequently followed by long dry periods. Although high year-to-year variability makes it difficult to detect a trend in precipitation, summer precipitation totals appear to have declined across the Yemen Highlands since the 1950s, although local data for Yemen are lacking, and there are inconsistencies between data sets.

137. Climate-related hazards in Yemen include extreme temperatures, floods, landslides, sea level rise, sea water intrusion and drought. Most of these risks exacerbate the country's water scarcity, pose serious threats to development and food security, and their intensity and frequency are likely to increase due to climate change.

4.2.1 Climate change[33]

138. Climate change poses a significant threat to Yemen's development across many sectors, including:

(i) Short-burst, intense rainfall which often leads to flash floods, which can result in significant damage and high losses in urban areas due to their concentrated physical assets and population. Rainfall intensity, and therefore flooding, is projected to increase with climate change.

(ii) Greater rainfall variability could result in prolonged drought periods. Yemen's water crisis ranks among the worst in the world, and water stress is observed to be increasing, with groundwater reserves likely to be mostly depleted in two to three decades regardless of climate change.

(iii) A vast majority of the urban poor is vulnerable to rockslide and landslide risk as they typically live on marginal and environmentally sensitive land

(iv) A rise in sea levels would result in increased coastal flooding and possible damage to infrastructure and

[33] This subsection combines elements from:
1. World Bank Group. Climate Change Country Brief: Yemen. Retrieved from http://globalpractices.worldbank.org/climate/Pages/CountryBriefs/Yemen.aspx
2. World Bank Group. Climate Change Knowledge Portal: Yemen Dashboard. Retrieved from http://sdwebx.worldbank.org/climateportal/index.cfm?page=country_historical_climate&ThisRegion=Asia&ThisCCode=YEM
3. World Bank Group. (2011, April). Climate Risk and Adaptation Country Profile: Yemen.

groundwater quality and supply. In response to these threats, improved urban infrastructure, water and waste management are key priorities. The project will help mitigate the potential impacts of these threats in relevant activities.

4.3 Water and Sanitation

139. Even before the ongoing conflict, Yemen suffered from acute water scarcity. The water crisis has been exacerbated during the last three decades due to rapid population growth and excessive withdrawal of the limited fossil groundwater for irrigation use. This is a consequence of many factors including government policy that encourages farmers to shift from traditional rain-fed to irrigated agriculture, mismanagement of scarce water resources. Before the conflict started, the public water supply covered approximately half of the urban population. The other half of the population was supplied with water through unstructured private sector interventions, at a high cost, and with poor water quality.

140. The systemic water and sanitation crisis in Yemen has been exacerbated by the ongoing conflict, internal displacement, COVID-19 pandemic, and natural disasters. According to UNICEF, as of October 2020, about 18 million people lack adequate access to clean water and sanitation in Yemen. Only about one third of the population is connected to piped water. The armed conflict has seriously affected infrastructure and led to an almost complete stoppage of water service delivery. In addition, according to the 2020 Update of the Yemen DNA, an estimated 38 % of water and sanitation facilities in major cities are currently damaged and have lost functionality. An assessment conducted in 2016[34] also demonstrated how the inability to pay basic salaries of Water and Sanitation Local Corporations' (WSLCs)[35] staff has further limited the operation of water facilities and services. Although the WSLCs, their branch offices, and associated utilities have maintained a skeleton staff, they continue to face significant challenges, including financial sustainability, infrastructure replacement or repair, customer demands and work force remuneration. Thus, a significant portion of the urban population is relying on unregulated private water tankers. Due to the lack of functioning water and sanitation services, many cities in Yemen, including Aden and Sana'a, are currently confronted with a significant cholera outbreak.

4.3.1 Water Resources

141. Due to its geographical location within an arid to semi-arid zone, Yemen suffers from acute water scarcity. The current annual renewable freshwater resources in Yemen are estimated at 80 m 3 per capita, compared to a global average of 8,900 m3 per capita and below the absolute scarcity threshold of 500 m 3 per capita. The total water quantity used each year in Yemen is about 3.9 billion m 3, of which 90 percent is used for agricultural activities, 8 percent for municipal water supply sector, and 2 percent for the industrial sector. Several major cities are already bearing the brunt of water scarcity: Taiz experiences extreme water stress; the Local Water and Sanitation Corporation of Sana'a is closing six existing deep wells on average each year, and expansion is constrained by the lack of new sources. In addition, the coastal cities, including Aden and Hodeidah - the economic and commercial hubs - lack safe drinking water, mainly due to sea water intrusion and deterioration of water quality due to the seepage of untreated wastewater from manholes, septic tanks, and non- operational wastewater treatment plants. An estimated 90 per cent of Yemen's water is used for agricultural production, mainly through irrigation from groundwater wells. This has led to the rapid abstraction of fossil/non-renewable groundwater particularly in the upper highlands water basins and regions

[34] Conducted by Deutsche Gesellschaft fuer Internationale Zusammenarbeit (GIZ).
[35] In the water and sanitation sector in Yemen, the Local Corporations are the utility providers operating in various urban centers.

surrounding Sana'a. The main groundwater aquifers supplying some major cities, including the capital Sana'a, are at risk of being fully depleted in the foreseeable future.

4.3.2 Water Supply and Sanitation

142. Access to improved water has declined for several years, and significant access gaps persist in sanitation. Even before the ongoing conflict, access to clean water sources between 1990 and 2010 declined from 96 percent to 72 percent in urban areas, and from 59 percent to 47 percent in rural areas.

143. Overall, nationwide access to improved water sources declined from 66 percent to 55 percent during the same period. Moreover, reliance on private water trucks as a source of water supply has increased over time. Fifty-three percent of the population has access to improved sanitation which includes flush toilets, piped sewer systems, septic tanks, flush or pour flush to pit latrines, ventilated improved pit latrines (VIP), pit latrines with slab, and composting toilets. Access to improved sanitation has improved in both rural and urban areas over time, increasing from 24 percent in 1990 to 53 percent in 2010 nationally. Open defecation, which was mostly prevalent in rural areas, substantially declined from 44 percent of the rural population in 1990 to 22 percent in 2010. However, these figures may not accurately depict the current situation due to the absence of reliable Water Sanitation and Hygiene (WASH) data particularly during the conflict.

144. - Much of the water infrastructure is in poor condition and physical losses are high. The private sector supplies the needs of unconnected households through tankers, local networks and water shops, and also meets the shortfalls in supply to households connected to the network. However, water from a private tanker can cost up to ten times as much as network water. It is predominantly the poor who are not connected to networks, and who have therefore to pay these high prices.

145. -Shortages meant that expanded networks have resulted in reduced per capita supply, with pre-crisis average per capita supply in some large towns as little as 30 liters per capita per day. Evidently, these utilities are running in order to stand still. They are also conflicted between three, at times, incompatible mandates: affordable service expansion and provision, a business approach, and protection of the poor, all of which are to be served by a scarce water resource. In all cities, tariffs remain below operation and maintenance cost-recovery levels.

146. With large and visible installations in the heart of population centers, urban water utilities proved exceptionally vulnerable to the unrest. In addition, water services are dependent on energy, materials, and spare parts, supplies of which suffered widespread disruption. In all urban centers, utilities suffered from lack of electricity and diesel, which caused reduced production from wells, as well as persistent problems in distribution. Reduced supply performance and overall chaotic conditions also reduced both billing and customer payments, resulting in a cash flow crisis, which in turn impacted on service delivery performance. Non-revenue water increased as the number of illegal connections rose.

147. The conflict has exacerbated service gaps and institutional challenges in the water and sanitation sector. Access to improved drinking water sources has declined by up to 50 percent as a result of the conflict. Service delivery, which used to be intermittent in most cities before the conflict, has become even more uneven, forcing consumers to seek costly alternative sources of water supply with questionable quality, including private water tankers. In addition to the destruction of water and sanitation facilities, many water utilities have partially or totally halted services because of physical damages, lack of fuel, electrical outages, inadequate revenue collection, water theft, tampering of water meters, and high absenteeism among unmotivated technical staff who have not received salaries in over three years. In addition, there has been a dramatic increase in the number of sewage system breakdowns since the armed conflict began due to lack of maintenance caused mainly by the reduction of revenues to pay workers. The deteriorating water supply and sanitation situation significantly contributed to the cholera crisis, which began in October 2016, subsided by January 2017, only to be reactivated in April 2017. By July 27, 2019, a cumulative total of 1,920,526 suspected cholera cases

and 3,504 cholera-associated deaths had been reported. The Ministry of Public Health and Population reported a decline in the number of suspected Cholera/AWD suspected in 2022 when compared with 2020 and 2021. A total 4,158 suspected cases were reported between 1 January and 15 March 2022, compared to 13,038 suspected cases of AWD/Cholera reported in the same period of 2021. Districts reporting the highest cases include Hajjah, al-Salw, Taiz, Al Makhadir, Ibb, Belad Al Roos, Sana'a, Al Kanawes and Hodeidah.

4.3.3 Water Scarcity and Social Conflicts

148. The ongoing conflict has aggravated chronic water scarcity, which was already a driver of fragility. Even before the conflict, an unpublished report indicated that about 4,000 people were killed each year due to social conflicts related to water scarcity. While a comprehensive assessment has not been done to date on the impact of the conflict on water resources and water uses, the conflict has clearly affected the implementation of the water law and its bylaws, weakened water sector institutions, and led to increased illegal drilling as well as over abstraction of limited fossil groundwater. Private water tankers have emerged as alternative water providers who buy water of questionable quality but at high price directly from the owners of shallow wells. Some of these wells are registered with the responsible authorities (e.g., in Sanaa, a survey found that 75% of private well owners were registered with the Ministry of Water and Environment (MoWE) and The General Authority for Rural Water and Sanitation Projects (GARWSP), while some others are not registered (e.g., in Aden, the same survey found that none of the well owners were registered). While water tankers have filled a wide gap in water service delivery particularly during the conflict, there have been indications that tankers can be a source of water contamination due to lack of sanitary inspection and contaminated water sources. In recent years, United Nations Children Fund (UNICEF) has implemented a small inspection program, and many water tankers in Sana'a have been subjected to inside and outside painting in addition to adding chlorine pills. Recently, the WASH cluster reported drastically reduced boreholes capacity and pumping hours (from 22 hours to 2 hours) and completely dried up wells in Hajjah governorate which caused tensions between the Internally Displaced persons (IDP) and the host community. Salinity and Total Dissolved Solids (TDS) have significantly increased in shallow wells and deep boreholes, above the World Health Organization (WHO) limit (some tests show up to 6,000 ppm, while the last test in 2015 showed 800). Similarly, in Ibb city, several serious conflict cases over water have been reported as well. Given that groundwater resources were already being depleted at an alarming rate particularly in the main basins of the highlands, including Sana'a,

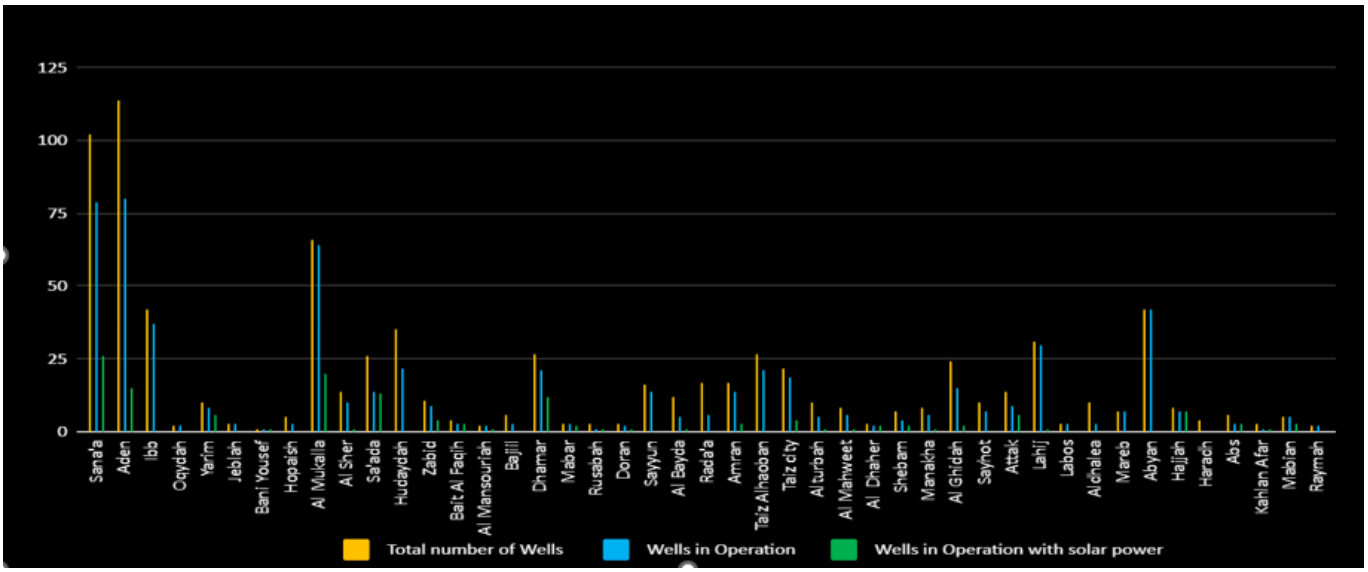
149. Taiz, Amran, Saadah, and Radaa, the continued unmonitored and uncontrolled abstraction of limited groundwater resources is a cause for concern, especially in light of the link between water resources, fragility, conflict and violence.

150. Additional areas that will benefit from diesel supply are: Al-Mansuriyah City, Al-Salif, Yareem City, Dhi Assufal, Jeblah City, Hubaish City, Bani Saif, Rada'a City, Abs&Ashshil, Mabyan City, Kuhlan City

151. In coordination with General Authority for Rural Water Supply Projects (GARWAP), Water and Sanitation Local Corporations, National Water and Sanitation Authority -Branches (NWASA UNOPS has recently conducted a rapid assessment inventory to count the situation and numbers for drinking water wells in 17 Governments for the rural area and in 45 cities within Yemen urban areas.

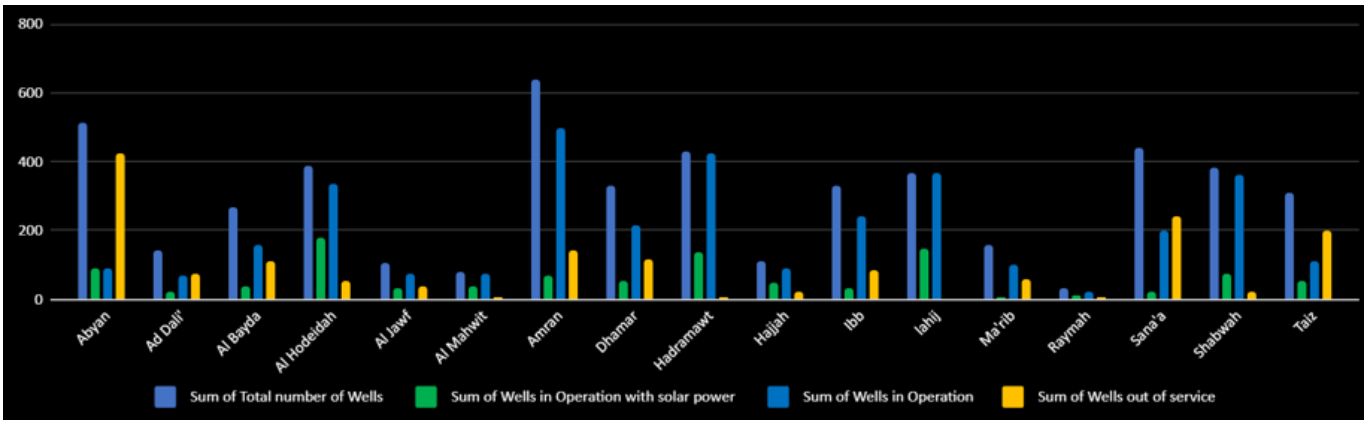
152. The assessment estimates a total number of 795 drinking-water wells in urban areas, of which 75% are currently in operation and only 18% of them are powered by solar energy.

Figure 1. Inventory of wells in urban areas



153. The assessment also estimates a total number of approximately 5,000 drinking wells in rural areas, of which 68% are currently in operation, with only 21% powered by solar energy.

Figure 2. Inventory of wells in rural areas



4.3.4 Public Sanitation System[36]

154. The public sanitation system in Yemen is in general poorly developed; the extension of sewer systems has been neglected in the past due to various reasons. Out of 23 investigated utilities only 12 operate a public sewer collection system. Saada, Mansouria, the affiliated branches of Hajja have no sewerage system and the Abyan, Lahij, system consists only of a few sewer lines under the responsibility of the local council. Furthermore, most of the LCs that have sanitation systems have connected less than 50% of the urban population to the network. The percentage of urban population connected to the public sewer system varies significantly among the utilities. The lowest coverage is in Amran, Taiz and Al Shehr with about 36 to 40%. The highest coverage is reached in Zabid

[36] GIZ- Damage Needs Assessment – Phase Three (DAS III) 2018

followed by Aden with 74% and 69% respectively. The residents not connected to the public sewer system have to discard their wastewater to private cesspits or other means.

155. For households and other customers connected to the sewer system, their wastewater is collected and transported by gravity or pumping via lifting stations to the WWTP or directly to the wadi or sea. Some utilities, like Aden, Hudaydah and Mukalla require several sewer pump stations which increase not only the maintenance works but also the operational cost. Besides, the pump station operation depends on the availability of electricity. At times of power cuts some areas are likely to get flooded with wastewater.

Wastewater characteristic

156. The low water availability and consumption affects wastewater characteristics. The current BOD5 of wastewater influent to the WWTP in the mountains reaches 1000-1200mg/l while in coastal areas it reaches between 500-700 mg/l which is classified to be double to triple of the recommended concentration by Mecalf and Eddy.[37]

Existing treatment systems

157. There are seventeen wastewater treatment plants in the assessed utilities operating:

(v) Stabilization pond as in Dhamar, Taiz, Aden, Bajil, Bait Al-Faqi, Amran, Mukalla and Al-Hudaydah;
(vi) Imhoff tanks followed by trickling filters as in Hajjah;
(vii) Activated sludge –Extended aeration as in Sana'a and Ibb;
(viii) Imhoff tanks followed by Stabilization ponds as in Zabid.

158. The operators of the wastewater treatment systems face several challenges and problems. The frequent power cuts, unexpected nature of wastewater (high BOD5) and sludge causing poor treatment efficiencies. The treatment systems employing Activated Sludge Extended Aeration process consume high energy. On the other hand, the so-called low-cost treatment systems, which comprises the stabilization ponds and Imhoff tanks followed by trickling filters as applied in most LCs have proved to operate satisfactory due to the simplicity and flexibility of the processes.

159. Some of the WWTP have exceeded the nominal flow capacity limit. The inflow amount exceeds by far the acceptable amount, e.g., in Sana'a, Ibb and Hajjah (secondary treatment method). The result is that the WWTP is not able to treat the sewerage effectively causing beside environand bad odors which are affecting the population in the surrounding areas.

Wastewater reuse

The possibility of using low-cost reclaimed wastewater for irrigation depends on the topography of the served cities: while the LCs located at coastal areas discharge the treated wastewater directly into the sea, those cities placed in the mountain area could probably use the treated wastewater without high pumping cost.

Table 1. Wastewater treatment facilities

	Corporation	City /Utility	Wastewater Treatment Technology	WWTP Design Capacity m3/d	Inflow to WWTP m3/d
1	Abyan	(Ja'ar/Zinjibar)	The collected wastewater is discharged untreated in Ja'ar directly to the valley and in Zinjibar to a large lagoon located in the city center		
2			Waste stabilization pond	500	250

[37] Wastewater Engineering: Treatment and Reuse, by Metcalf & Eddy

	Corporation	City /Utility	Wastewater Treatment Technology	WWTP Design Capacity m3/d	Inflow to WWTP m3/d
3	Aden	Aden	waste stabilization pond	70,000	18,000
4			waste stabilization pond	25,000	35,000
5			waste stabilization pond	5,000	5,000
6	Al-Dhalea	Al-Dhalea	Septic tank + wsp	250	No data
7	Amran	Amran	waste stabilization pond	2100	2000
8	Dhamar	Dhamar	Waste stabilization pond	15,000	5,200
9	Hadramout	Mukalla	waste stabilization pond	15,000	8,000
10		Al Sehr	there is no treatment system, the collected wastewater is discharged directly to the sea without any treatment.		
11	Hudeidah	LC Hodeida	waste stabilization pond	54000	
12		Al-Mansouriah	There is neither a collection system nor a treatment system.		
13		Bait Al-Faqih	waste stabilization pond	3,816	904
14		Bajil	waste stabilization pond	3,700	990
15		Zabid	Imhoff tank followed by waste stabilization pond	1500	840
16	Ibb	Ibb	Activated sludge	3,200	11,322
17	Lahij	(Alhotah /Toban)	There is neither a collection system nor a treatment system.		
18	Sa'adh	Sa'adh	There is neither a collection system nor a treatment system.		
19	Sana'a	Sana'a	Activated sludge	50,000	55,000
20			Activated sludge	500	0
21	Taiz	Taiz	waste stabilization pond	17,000	No data
22		Al-Mokha	There is neither a collection system nor a treatment system.		
23		Turbah	There is neither a collection system nor a treatment system.		

160. In order to update the individual Assessment Reports of the five target LCs to cover 2019, the UNOPS team has collected and analyzed all relevant data of the target LCs through the conduct of interviews, questionnaires, and desk review of relevant studies. The following sections present the up-to-date status, institutional needs, and recommendations of the five target LCs under the YEHCP based on the DAS III30.[38]

4.4 Water and Sanitation Profiles

4.4.1 Aden Water and Sanitation LC

161. The Aden Water & Sanitation Local Corporation was established by a Republican Decree no. (267) of 2000 as the public body for water supply and sanitation services in Aden city, making it the largest LC in the country. Aden city is the second largest city in Yemen and consists of eight districts: Al Buraiqeh, Al Mansura, Al Mualla, Ash Shaikh Outhman, Attawahi, Crater and Dar Sad with a total

[38] GIZ- Damage Needs Assessment – Phase Three (DAS III) 2018

population of 957,171.[39] About 86 % are connected to public water supply system and 69% are connected to the sanitation system.

162. The main and vital water resource is the groundwater from 116 water wells distributed over three well fields, 46 of them are located in the Bir Naser water field and about 41 in the Bir Ahmed water field. Additional wells are also located in the Al Manaserh water field. The nominal water production for Ade LC per year consists of the following:

- The Bir Naser field with 22,301,568 m³
- The Bir Ahmed field with 22,075,200 m³
- The Al Manaserh field with 11,672,640 m³

163. Customers obtain water through a transmission and distribution network with a total length of 1,111 km. The sanitation system consists of about 391 km of piping collection network and three wastewater treatment plants with a total capacity of 100, 000 m³ per day.

Table 2. Water and sanitation services overview of the Aden LC

Key parameter	2014	2017	2019[40]
Population Aden City	855,850	957,171	1,098,903
Nos. of water connection	123,513	128,850	134,295
Population served (water)	790,483	824,640	872,918
water service coverage	92%	86%	86%
Nos. of wastewater connection	105,345	103,169	118,972
Population connected (sanitation)	674,208	660,282	773,318
Water production m^3	41,375,088	39,273,017	43,603,998
Sanitation coverage	79%	69%	70%
Billed water m^3	24,507,612	20,302,259	21,882,066
Non-revenue water	41%	55%	50%
Water consumption lpcd	86	67	70

164. As per Table 2, there is a small increase of water connections (%4) in 2019 while the water service coverage remains the same at 86% even though the population within the service areas increased by 15% in the same year. Similarly, the numbers of wastewater connections increased by 15% in 2019 but with a small expansion of the sanitation coverage of 2%. These minor but important improved attributed to donor support and interventions; the World Bank in particular, that contributed to the restoration and improvement of the water and sanitation services in Aden city as evident from the increase of water production from 39 million m^3 in 2017 to 43.6 million m3 in 2019 (11% increase) and the increase of water consumption- Ipcd (per capita demand per day) from 67 liters per individual in 2017 to 70 liters in 2019, an increase by 4%.

Staffing

165. As of 2019, the LC employs a total staff of 2,025 including contracted and day workers and this represents a slight increase in the total number of staff from 2017. However, this number of staff suggests that the LC is overstaffed because there are 15 staff per 1,000 water and sanitation connections, which is higher than the NWS SIP (09/2007) benchmark of 7 staff per 1,000 connections.

[39] Population Projection Central Statistical Organization
[40] 2019 Annual financial Report and PIS of Sana'a LC & Resilience Emergency Indicators Sheet Jan-Dec 2019- GIZ

4.4.2 Sana's Water and Sanitation LC

166. Sana'a Water and Sanitation Local Corporation was established by a Republican Decree No. (35) of 2000 as the public body for water supply and sanitation services in Sana'a city. The decree identifies the task and responsibilities of all involved bodies; MWE, BoD and LC management. Sana'a LC is considered the second largest LC in the country.

167. The LC divides the city into six areas and has six offices in these areas; each of them is responsible for water distribution and customer service in their respective geographic district. The main and vital water recourse is the ground water from 120 water wells distributed over four well fields:

- 19 wells are located in the western well fields
- 35 wells are in the eastern wells' fields
- 37 wells are located in Musayek well field
- 29 wells are in Asser well field

168. The nominal annual water production for Sana'a LC comes from:

- The western well fields with 5,313,457m³
- The eastern well fields 5,890,029 m³
- The Musayek well field with 10,579,096 m³
- The Asser well fields with 7,665,104m³

169. Customers obtain water through a transmission and distribution network with a total length of 1,035 km. The table below summarizes the water and sanitation services overview of the LC since 2014.

Table 3. Water and sanitation services overview of the Sana'a LC

Key parameter	2014	2017	2019
Population Sana'a City	2,824,000	3,234,000	3,444,367
Nos. of water connection	94,120	94,935	95,918
Population served (water)	1,364,740	1,376,558	1,390,811
water service coverage	48%	43%	40%
Nos. of wastewater connection	88,252	88,851	91,675
Population connected (sanitation)	1279654	1,288,340	1,329,288
Sanitation coverage	45%	40%	39%
Water production m^3	16,578,183	4,770,511	12,363,984
Billed water m^3	9,074,637	3,018,814	6,569,019
Non-revenue water	45%	21%	47%
Water consumption lpcd	18	6	13

170. The water service coverage decreased from 48% in 2014 (pre-crisis) to 43% in 2017 to 40% in 2019. Similarly with the sanitation coverage, it was 45% in 2014 and decreased to 39% in 2019. One of the main factors attributing to these declines is the notable 22% growth rate of Sana'a population since 2014 and the inflected damages on the water and sanitation infrastructure as a result of the conflict.

171. The declines in the coverage services could have been worse if international donors had not supported the WASH sector in Sana'a. The World Bank support, in particular, significantly restored and improved the water and sanitation services in Sana'a as evident from the high increase of water

production from 4.7 million m3 in 2017 to 12.3 million m3 in 2019 (159% increase) and the increase of water consumption- Ipcd (per capita demand per day) from 6 liters per individual in 2017 to 13 liters in 2019, an increase by 116%. However, the achieved result of 13 liters (Ipcd) is still far below the international standards of 40 liters for Sana'a residents.

Staffing

172. The LC has a total of 1,460 staff (including contracted and day workers) in 2019 and this represents a slight decrease of 54 from the total number of staff in 2017 due to the retirement of staff. However, this number of staff suggests that the LC is overstaffed because there are 15 staff per 1,000 water and sanitation connections and this is higher than the NWS SIP (09/2007) benchmark of 7 staff per 1,000 connections.

4.4.3 Ibb Water and Sanitation LC

173. The Ibb Water and Sanitation Local Corporation was established by a Republican Decree No. (21) of 2001 as the official public body for water supply and sanitation services in urban areas of Ibb governorate. The LC service covers the city of Ibb as well as the autonomous utility of Al Yraim and the branches: Al Qaeda, Jibla, Hobaeesh, Al Me'shar and Bani Saif Aali.b.

174. The city of Ibb is one of the most important medium-sized cities in the country. It has a total population of 349,298 inhabitants, about 80 % are connected to public water supply system and 66% are connected to the sanitation system. The main and vital water resource is the groundwater from 29m water wells distributed over one major wellfield, the overall nominal water production of the wells is 7.4 million m3 per year.

175. Customers obtain water through a transmission and distribution network with a total length of 286 km. The sanitation system consists of about 195 km sewerage network, with one treatment plant with a daily capacity of 3,256 m³. The table below summarizes the water and sanitation services overview of the LC since 2014.

Table 4. Water and sanitation services overview of the Ibb LC

Key parameter	2014	2017	2019
Population Ibb City	324,358	349,298	572,666
Nos. of water connections	25,334	28,607	33,223
Population served (water)	248,273	280,349	348,842
Water service coverage	77%	80%	85%
Nos. of wastewater connections	20,225	23,500	27,872
Population connected (sanitation)	198,205	230,300	292,656
Sanitation coverage	61%	66%	72%
Water production m^3	4,940,540	5,219,242	4,495,706
Billed water m^3	3,764,445	3,948,691	3,689,261
Non-revenue water	24%	26%	18%
Water consumption lpcd	53	40	29

176. The LC employs a total staff of 318 (including contracted and day workers. Staff numbers were decreased by 55 in 2019. Nonetheless, the LC is currently slightly overstaffed with 10 employees per 1,000 water and sanitation connections, which is higher than the NWS SIP (09/2007) benchmark of 7 staff per 1,000 connections.

4.4.4 Mukalla Water and Sanitation LC

177. The Hadramout Water Supply and Sanitation Local Corporation (coastal areas) was established by a Republican Decree No 18 of 2001 as the official public body for water supply and sanitation services in the urban coastal areas of Hadramout Governorate. However, the LC services cover only the city of Mukalla as well as the utility of Al Shehr. Both cities represent about 28% of the total population in Hadramout Governorate.

178. The city's main water resource is ground water. The water system has a total length of 1,045 km and comprises 80 water wells and 5 major wellfields. The overall nominal water production of the well-fields is 16.7 million m3 per year. The sanitation system consists of 148 km sewerage network and one treatment plant with a daily capacity of 15,000 m³.

Table 5. Water and sanitation services overview for the Mukalla LC

Key parameter	2014	2017	2019
Population Mukalla City	322,353	351,427	415,643
No of Water connection	45,403	48,403	54,580
Water Coverage Mukalla City	300,568	320,428	382,060
water service coverage	93%	91%	92%
No of Wastewater connection	30,871	32,714	35,855
Population connected (sanitation)	204,366	216,567	250,985
Sanitation coverage	63%	62%	60%
Water production m^3	14,860,193	14,666,771	17,899,136
Billed water m^3	8,390,685	7,974,426	12,448,427
Non-revenue water	40%	42%	30%
water consumption lpcd	78	70	89

179. The water service coverage is improved by 19% in 2019 with 13% increase in the number of water connections. The increase of the water service seems in alignment with the increase of the population (18%) in Mukalla city. This also is accompanied by an increase in the water production by 22% and an increase of the water consumption - Ipcd (per capita demand per day) from 70 liters per individual in 2017 to 89 liters in 2019.

180. These improvements in 2019 are attributed to donor support and interventions; the World Bank in particular, which contributed to the restoration and improvement of the water and sanitation services in Mukalla city as evident from the increase of water production from 14.6 million m3 in 2017 to 17.9 million m3 in 2019 (22% increase) and the decline of Non-Revenue Water by 12%.

181. As of 2019, the LC employs 846 staff including contracted and day workers and this represents a slight increase of 74 in the total number of staff from 2017. The LC is currently overstaffed with 16 employees per 1,000 water and sanitation connections and this is higher than the NWS SIP (09/2007) benchmark of 7 staff per 1,000 connections.

4.4.5 Taiz Water and Sanitation LC

182. Taiz Water and sanitation Local Corporation was established by a Republican Decree no. (20) of 2001 as the public body for water supply and sanitation services in Taiz city. The decree that identifies the tasks and responsibilities of all involved bodies. (MWE), Board of D (BoD) and the LC management.

183. As the result of the ground fighting in Taiz city, the city has been divided into two sections controlled by the conflicting parties. A frontline has established in the city causing people to take up to 8 hours to travel from side to another instead of the usual 10 minutes trip before the conflict. The population of the area served by Taiz LC includes 654,330 inhabitants (2017) while only 38% of them are covered with public water supply connections and 30% with sewerage service.

184. The main water resource is groundwater, which is obtained from 86 wells:

- 39 of them are located within the town (inside residential neighborhoods),
- 23 in well field in Al-Haima, Habir & Shib Alrayhan areas north of Taiz city,
- 9 in Al Thabab well field west of Taiz city and
- 15 in Al-Hwjala - Al-Amerah well field.

185. The nominal annual water production for Taiz city comes from:

- The Middle City well fields is1,784,592 m3,
- The Al-Haima, Habir & Shib Alrayhan well field 2,892,672 m3
- The Al-Thabab well field1,539,648 m3,
- The Al-Hwjala - Al-Amerah well field 1,726,272 m3.

186. The households are served with water through transmission and distribution pipelines with a total length of 804 km. The sanitation system consists of about 241 km sewer network. The wastewater treatment plant in is in Al Buraihi.

Table 6. Water and sanitation services overview of the Taiz LC

Key parameter	2014	2017	2019
Population Taiz City	633,075	654,330	654,467
No of water connection	52,124	52,124	53,162
Water service coverage	80%	38%	N.A
No of wastewater connection	42,734	42,712	44,887
Sanitation coverage	70%	38%	N.A
Water production m^3	5,238,858	1,806,204	2,520,000
Billed water m^3	3,676,672	N.A	N.A
Non-revenue water	30%	N.A	N.A
water consumption lpcd	19	N.A	N.A

187. Water supply has been the most pressing problem in the city of Taiz since even prior to the conflict in mid-March 2015. The conflict has devastated much of Taiz city including most of the water and sanitation infrastructure. The LC common water resources are outside the affected areas and the LC is unable to transfer the water to the conflict zones inside the city. Subsequently, the LC is unable to supply water to areas within the conflict zones. However, each conflict zone has its own water wells, but these are shut down due to unavailable generators and fuel resources. It was agreed by the Humanitarian Organization to focus on supporting drinking water supply after each group confirmed acceptance to allow for operating water wells within each group's-controlled area in order to supply citizens of the same area with water.

4.5 Gender-based violence (GBV)[41]

188. The escalation of the conflict and the ensuing humanitarian repercussions have further weakened the position of women and girls in Yemeni society, leading to a near erosion of their protection mechanisms and increasing their vulnerability to violence and abuse. Women and girls remain acutely vulnerable. An estimated 80 percent of the 4.5 million people displaced in Yemen are women and children, while approximately 26 per cent of displaced households are now headed by women, compared to 9 per cent before the escalation of the conflict in 2015.

189. With limited shelter options, displaced women and girls tend to suffer most from lack of privacy, threats to safety and limited access to basic services, making them ever more vulnerable to violence and abuse. Displaced girls are more likely to lose access to schooling as families with limited resources de-prioritize their right to education.

190. Conflict-related loss of male breadwinners in Yemeni families adds to the economic burden women face, especially in the case of female-headed households. The pressure is even more severe where women or girls suddenly find themselves responsible for providing for their families when they themselves have been deprived of basic education or vocational training that would equip them for the labor market. In the absence of adequate empowerment and support, women and girls readily become vulnerable to negative coping strategies such as child marriage and child labor.

191. The cumulative impact of years of conflict and persistent humanitarian needs have also taken a heavy toll on the mental health of Yemenis, particularly its women and girls. An estimated 1 in 5 people suffer from mental health disorders, according to a 2017 study. However, mental healthcare remains scarce in Yemen. Mental illness is highly stigmatized, and the proportion of psychiatrists per population is insufficient.

[41] This section is adapted from:https://yemen.unfpa.org/en/node/22534

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Chapter 5

Potential Environmental and Social Risks and Mitigation

192. This chapter identifies the potential Environmental, Social (including labor), Health, and Safety (ESHS) risks and impacts associated with Project activities, and the matching mitigation measures. Project activities will have strong positive environmental, social, and health impacts by reestablishing urban services. Health and environmental impacts are generally of small size and should cause only minor negative environmental harm that can be readily addressed through proper design, construction, and operation and maintenance.

193. ***Component 2 of the Project will not finance activities that involve permanent land acquisition causing physical or economic displacement.*** Moreover, local contractors are expected to conduct all works using workers that already reside in the cities where the works will be conducted. Subprojects should trigger minimal labor influx, and contractors are not expected to build or operate residential labor camps to host such workers.

194. The selection of activities will be based on the priority needs to be identified by UNOPS, in consultation with the LCs, relevant District Local Authorities (DLAs), and local communities. The Project will only rebuild, restore, or rehabilitate existing infrastructure. There will be no expansion of existing facilities nor the creation of new ones, and rehabilitated facilities will be handed back to the competent authorities. The Project will not provide technical assistance to develop Operations and Maintenance (O&M) plans for the reconstructed or rehabilitated facilities. Thus, issues such as the siting of the facilities, and many of their operational impacts will be beyond the scope of the Project.

195. Nonetheless, the overall environmental and social risk rating of the Project is substantial due the social risks and the security risks. Component 2 could involve reconstruction and rehabilitation works that might involve excavation and earthworks. These activities might cause risk and impacts on workers, communities, as well as the environment, if sufficient mitigation measures do not accompany their implementation.

Table 7. Environmental and social risks by Project activity[42]

Activities	Environmental and Social Risks	Mitigation Measures
Component 1. Improving Access to Healthcare, Nutrition, and Public Health Services		
Subcomponent 1.1. Improving Access to MSP Services at Primary Healthcare Level		
Implemented by UNICEF		
Subcomponent 1.2. Improving Access to Essential Preventive and Curative Nutrition Services		
Implemented by UNICEF		
Subcomponent 1.3. Improving Access to the MSP at Secondary and Tertiary Healthcare Levels		
Implemented by WHO		
Subcomponent 1.4. Sustaining the National Health System Preparedness and Public Health Programs		
Implemented by WHO		
Component 2. Improving Access to Water Supply and Sanitation (WSS) and Strengthening Local Systems		
Sub-Component 2.1. Restoring Access to and Improving Quality of WSS Services in Selected Urban and Rural Areas		
• Rehabilitating and scaling up of medium to large scale facilities such as water and sanitation infrastructure, main water and sewerage pipelines and networks, water treatment plants, wastewater treatment plants, water wells, pumping and booster stations, related civil works of building and structures, all to improve service provision • Rehabilitating public laboratories for water and wastewater quality testing and enhancing capacity and strengthening the operational capacities of the WSLCs and their branches, autonomous utilities, branches of	*The support provided by UNOPS under this subcomponent has been limited to the procurement and installation of parts and equipment and minor rehabilitation works. Solar PV systems were procured under AF 1, but are not planned under AF2.* • SEA/SH by Project workers • Poor working conditions for contracted workers • Work accidents • Impacts on neighboring residents • Complaints by PAPs	UNOPS will: • Prepare subproject specific ESMPs • Take into account the ESHS Guidelines on Water and Sanitation when relevant • Require contractors to prepare subproject specific Contractor ESMPs that meet ESHS requirements prior to the beginning of works • Require contractors to meet ESHS requirements and Contractor ESMP during works • Ensure implementation of the Project LMP • Ensure implementation of the Project SEP

[42] Adapted from the Project Appraisal Document of the Project

Activities	Environmental and Social Risks	Mitigation Measures
NWSA and GARWSP in the target areas in the delivery of water and sanitation services by ○ installing small decentralized wastewater treatment plants on a pilot basis ○ purchasing and installing electrical generators ○ purchasing, installing and storing operating and maintenance materials ● Supporting the operation of main water and wastewater facilities by providing electrical materials; and (iv) supporting alternative sustainable energy solutions, in particular, solar panels to provide a clean, cost effective, and reliable energy source for disadvantaged areas.		
Subcomponent 2.2. Emergency Support for WASH Interventions to Prevent and Respond to Communicable Diseases		
● Addressing basic needs of water, sanitation hygiene requirements and purchasing related supplies ● Providing personal protective equipment (PPE) and water, sanitation hygiene non-food items, WASH consumable for water and sanitation staff ● Ensuring **water trucking services** to key health facilities and IDP camps ● Providing spare parts, equipment and necessary supplies **(including fuel)** for the WSLCs for the benefit of the priority areas for water and wastewater systems (through a combination of sewerage network and non-network solutions in the areas not included under subcomponent 2.1) ● Carrying out wastewater evacuation through water sucking (evacuation) trucks ● building or repairing bathrooms for public use in public areas to encourage appropriate hand washing to encourage appropriate hand washing and behavior changes on hygiene in close coordination with UNICEF ● Constructing and operating water distribution points, providing water tanks and water pumps to help the	*The support provided by UNOPS under this subcomponent will mainly focus on water trucking services and the provision of fuel.* ● SEA/SH by Project workers ● Poor working conditions for contracted workers ● Work accidents ● Impacts on neighboring residents ● Complaints by PAPs	UNOPS will: ● Prepare subproject specific ESMPs ● Require contractors to prepare subproject specific Contractor ESMPs that meet ESHS requirements prior to the beginning of works ● Require contractors to meet ESHS requirements and Contractor ESMP during works ● Ensure implementation of the Project LMP ● Ensure implementation of the Project SEP

Activities	Environmental and Social Risks	Mitigation Measures
vulnerable communities better adapt to climate change shocks and risk from natural disasters • Rehabilitating water and sanitation systems within facilities' premises, including connection of water and sanitation system of the facilities to public networks, cleaning of facilities, provision of water tanks, water pipes/pumps/taps, handwashing basins, and installation of solar-powered system • Supporting through technical assistance, active water user associations (WUAs) and/or District Local Authorities (DLAs) especially those having women on the management committee to facilitate ownership and management of the rehabilitated systems and ensure sustainability of service delivery and maintenance of assets		
Subcomponent 2.3. Enhanced Capacity Building of Water and Sanitation Institutions at the Local Level		
• Capacity building to the local water and sanitation institutions in selected rural areas and WSLCs in urban and pre-urban cities, including provision of travel cost (per diems and transportation cost), procurement and contract management, social and environmental standards, low carbon and climate resilient infrastructure, technical design, asset management, grievance redress and gender-sensitive citizen engagement and employment. • Capacity building and training to local implementing partners, contractors and other agencies at the local level in key project areas, with specific focus on technical skills. It will mainly target local water and sanitation institutions that are not covered under YIUSEP-II. It will build WSLCs' capacity in achieving gender parity in recruitment, in reaping the advantages of gender diversity in the workplace, and in other critical areas which may be identified.	• SEA/SH by Project workers • Poor working conditions for contracted workers • Work accidents • Impacts on neighboring residents • Complaints by PAPs	UNOPS will: • Prepare subproject specific ESMPs • Require contractors to prepare subproject specific Contractor ESMPs that meet ESHS requirements prior to the beginning of works • Require contractors to meet ESHS requirements and Contractor ESMP during works • Ensure implementation of the Project LMP • Ensure implementation of the Project SEP

Activities	Environmental and Social Risks	Mitigation Measures
Component 3. Project Support, Management, Evaluation and Administration		
• Implementation, administration, management, monitoring and evaluation, and environmental and social aspects of the Project, including: (i) Direct Cost; (ii) Indirect Cost; (iii) provision of consultancy services required for Project monitoring, evaluation and coordination at the local level; (iv) conducting independent audits of Project activities; (v) audit; and (vi) Third-Party Monitoring. • The provision of technical assistance for system strengthening and service delivery improvement.	• SEA/SH for Project workers • Poor working conditions for contracted workers	UNOPS will ensure: • The effective implementation of the Project grievance Mechanism • The signature, implementation, monitoring and control of the Code of Conduct for contracted and direct workers
Component 4. Contingent Emergency Response Component (CERC)		
• Emergency response when an eligible disaster arises	To be determined when the CERC is triggered	To be determined when the CERC is triggered

196. The following sections first address three cross-cutting risks, namely labor management, SEA/SH/GBV and Stakeholder Engagement. The following four sections deal with the risks and mitigation measures specific to four types of Project activity that UNOPS and its Implementing Partners must assume for subcomponents in Component 1, namely: (i) Tertiary Municipal Services and Solid Waste Management; (ii) Urban Water and Sanitation; (iii) Urban Roads; and (iv) Energy for Critical Services. This is followed by a section on the risks associated with contractors and a section regarding the risks associated with the Performance Grants with the City Cleaning and Improvement Funds (CCIFs).

5.1 Labor management

197. UNOPS and its Implementing Partners will recruit direct workers to implement Component 3 of the Project. UNOPS will also mobilize contractors to rehabilitate key infrastructure. Finally, contractors recruited by the Project will use primary suppliers for equipment and supplies.

198. The table below identifies the mitigation measures for management of workers funded by the Project.

Table 8. Risks and matching mitigation measures for labor management

Risks	Mitigation measures
The management of workers financed by the Project could be compromised because they work without a contract, their working conditions are poor or dangerous, or their remuneration (wages and allowances) is unduly delayed.	• UNOPS and its Implementing Partners will implement the updated Labor Management Procedures prepared for the second AF. • UNOPS and its Implementing Partners will select individual workers through a transparent process that is based on the skills required and will avoid any discrimination on the basis of gender, ethnicity, religion, or political beliefs. • All Project workers will receive a contract specifying the type of work to be performed, their remuneration, and their conditions of service. • All Project workers will be trained in the Code of Conduct (CoC), which they will be required to sign for recruitment. • No workers under the age of 18 or forced laborers will participate in Project-financed activities. • UNOPS and its Implementing Partners, as well as contractors and their subcontractors, will set up worker grievance mechanisms to address worker complaints related to working conditions or occupational health and safety (OHS).
Contractors could make use of child labor	• UNOPS and its Implementing Partners will require contractors to verify the age of workers before they are recruited

199. Given the nature of the Grant agreements with the CCIF under subcomponent 2.4, UNOPS will not be able to ensure that the CCIFs manage their labor force in accordance with the updated LMP or with ESS2 requirements. Nonetheless, UNOPS will include labor related indicators as part of the Grant agreements with each CCIF. ***This will be done once the institutional assessment of the CCIFs is completed, which is a prerequisite to the preparation of the Grant Agreements.***

5.2 Gender-based violence

200. The World Bank examined GBV risks during Project preparation and deemed them substantial. The risks are associated with the prevalence and acceptance of gender-based violence (GBV), as well as Project-specific risks related to the capacity of UNOPS and its implementing partners to deal with EAS/HS, the absence of a code of conduct prohibiting EAS/HS and of grievance mechanisms adapted to EAS/HS complaints, and risks associated with the scale and scope of Project activities, particularly during construction works.

5.2.1 Definitions

201. The term Gender-Based Violence (GBV) refers to any harmful act perpetrated against a person's will and based on social differences between men and women. It includes acts that inflict physical, sexual or mental suffering, threats of such acts, coercion and other deprivations of liberty. Such acts may occur in public or in private.

202. The types of GBV most likely to be linked to project activities are EAS/HS defined as[43]:

- **Sexual exploitation**. Any actual or attempted abuse of a position of vulnerability, differential power, or trust, for sexual purposes, including, but not limited to, profiting monetarily, socially or politically from the sexual exploitation of another.
- **Sexual abuse**. Actual or threatened physical intrusion of a sexual nature, whether by force or under unequal or coercive conditions.
- **Sexual harassmen**t. Any unwelcome sexual advance, request for sexual favor, verbal or physical conduct or gesture of a sexual nature, or any other behavior of a sexual nature that might reasonably be expected or be perceived to cause offense or humiliation to another, when such conduct interferes with work, is made a condition of employment or creates an intimidating, hostile or offensive work environment.

203. Other types of GBV[44] that could be linked to project activities or accumulation in project implementation areas:

- **Rape:** non-consensual penetration (however slight) of the vagina, anus or mouth with a penis or other body part. Also includes penetration of the vagina or anus with an object.
- **Sexual Assault:** any form of non-consensual sexual contact that does not result in or include penetration. Examples include attempted rape, as well as unwanted kissing, fondling, or touching of genitalia and buttocks. FGM/C is an act of violence that impacts sexual organs, and as such should be classified as sexual assault. This incident type does not include rape, i.e., where penetration has occurred.
- **Physical Assault:** an act of physical violence that is not sexual in nature. Examples include: hitting, slapping, choking, cutting, shoving, burning, shooting or use of any weapons, acid attacks or any other act that results in pain, discomfort or injury. This incident type does not include FGM/C.
- **Forced Marriage:** the marriage of an individual against her or his will.
- **Denial of Resources, Opportunities or Services:** denial of rightful access to economic resources/assets or livelihood opportunities, education, health or other social services. Examples include a widow prevented from receiving an inheritance, earnings forcibly taken by an intimate partner or family member, a woman prevented from using contraceptives, a girl prevented from attending school, etc. Reports of general poverty should not be recorded.
- **Psychological/Emotional Abuse:** infliction of mental or emotional pain or injury. Examples include: threats of physical or sexual violence, intimidation, humiliation, forced isolation, stalking, harassment,

[43] The definitions are taken from the Good Practice Note on SEA/SH in IPF involving Major Civil Works https://thedocs.worldbank.org/en/doc/6f3d9ddc6010c4221315dd1282958e41-0290032022/original/SEA-SH-Civil-Works-GPN-Third-Edition-Final-October-12-2022.pdff

[44] From the GBV classification tool http://gbvims.com/wp/wp-content/uploads/Annex-B-Classification-Tool.pdf

unwanted attention, remarks, gestures or written words of a sexual and/or menacing nature, destruction of cherished things, etc.

- **Child Abuse (CA)** is defined as physical, sexual, emotional and/or psychological harm, neglect or negligent treatment of minor children (under 18), including exposure to such harm, which results in actual or potential damage to the child's health, survival, development or dignity in the context of a relationship of responsibility, trust or power. This includes the use of children for profit, labor, sexual gratification, or other personal or financial advantage. It also includes other activities such as the use of computers, cell phones, video and digital cameras or any other means to exploit or harass children or to access child pornography.

204. In line with the United Nations Convention on the Rights of the Child, the World Bank considers that consent cannot be given by children under the age of 18, even if the country's national legislation stipulates a lower age. An erroneous belief concerning the age of the child and the child's consent is not a defense.

205. Unless there is full consent from all parties involved in the sexual act, sexual interactions between Project workers and members of the communities surrounding the work sites are prohibited. This includes relationships involving the withholding or promise of actual benefit (monetary or non-monetary) to community members in exchange for sex.

5.2.2 Mitigation measures

206. The Project has prepared an EAS/HS Prevention and Response Plan including:

1. A Code of Conduct
2. A complaints management mechanism with procedures for recording and managing SEA/HS complaints in an ethical manner
3. Information and education campaigns on the risks of EAS/HS

Code of Conduct

207. UNOPS and its Implementing Partners will meet the requirements of paragraph 13 of NES 2 regarding harassment, intimidation and/or exploitation in the workplace, including sexual exploitation and abuse (SEA) and sexual harassment (SH), by requiring all direct and contract workers to sign a Code of Conduct (CoC) upon recruitment. Regular training sessions will be organized on the content of the CoC to ensure that all staff and workers fully understand the prohibited behaviors and the sanctions that can be applied.

208. The Code of Conduct applies to all workers financed by the Project, including those recruited by UNOPS, the Implementing Partners, contractors and their subcontractors. Failure to comply with the Code of Conduct may lead to disciplinary action or even loss of employment.

209. The purpose of the Code of Conduct is to ensure an environment in which unsafe, offensive, abusive, or violent behavior is not tolerated, and where all people should feel comfortable raising issues or concerns without fear of reprisal.

210. UNOPS and its Implementing Partners will be required to respond to all complaints from survivors regarding violations of the Code of Conduct. Survivors may be either Project workers or persons affected by Project activities.

211. UNOPS and its Implementing Partners will engage a local organization that has the experience and capacity to support GBV survivors (referred to as GBV service providers) to offer support to survivors, and will refer them to appropriate medical, psychosocial and legal assistance should the need arise. UNOPS and its Implementing Partners may request the assistance of the GBV service provider when verifying the complaint and planning actions and recommendations for corrective

measures or sanctions that the UNOPS and its Implementing Partners will follow up with the individuals or providers concerned.

5.3 Stakeholder engagement

Table 9. Risks and matching mitigation measures for stakeholder engagement

Risks	Mitigation Measures
Exclusion of vulnerable groups	As indicated in Section 40.5 of the updated SEP: "*UNOPS and its Implementing Partners will carry out targeted stakeholder engagement with vulnerable groups to understand their concerns and needs in terms of receiving information, accessing urban services, and other challenges they might face at home, at workplaces or in their communities. Special attention will be paid to engage with women as intermediaries.*"
PAPs are not informed about subproject activities	UNOPS and its Implementing Partners will engage with stakeholders as indicated in Table 5 and 7 of the updated SEP, including during the preparation and implementation of each subproject
Poor design because of the lack of meaningful consultations	UNOPS will use meaningful consultations to collect the concerns and expectations of PAPs
Grievances are not addressed	UNOPS and its Implementing Partners will implement the Grievance Mechanism as detailed in Chapter 6 of the SEP, including a dedicated pathway for GBV related complaints, as further detailed in the SEA/SH Prevention and Response Action Plan

5.4 Improving Access to Water Supply and Sanitation (WSS) and Strengthening Local Systems Urban Water and Sanitation

212. UNOPS, PWP and UW-PMU will take into account the EHS Guidelines for Water and Sanitation when designing or implementing water and sanitation activities. Annex 3 details the non-contractor related environmental and social risks that might need to be addressed, as well as matching mitigation measures. These sector-specific risks and impacts are additional to the generic contractor-related risks described in Annex 4.

213. UNOPS will determine when the requirements of the EHS Guidelines for Water and Sanitation are appropriate in view of the technical and financial constraints of the WSLCs, as indicated in paragraph 18 of ESS1[45], as well as the FCV context.

[45] Paragraph 18 of the ESF states that:
"*The project will apply the relevant requirements of the Environmental Health and Safety Guidelines (EHSGs). When host country requirements differ from the levels and measures presented in the EHSGs, the Borrower will be required to achieve or implement whichever is more stringent. If less stringent levels or measures than those provided in the EHSGs are appropriate in view of the Borrower's limited technical or financial constraints or other specific project circumstances, the Borrower will provide full and detailed justification for any proposed alternatives through the environmental and social assessment. This justification must demonstrate, to the satisfaction of the Bank, that the choice of any alternative performance level is consistent with the objectives of the ESSs and the applicable EHSGs, and is unlikely to result in any significant environmental or social harm.*"

5.5 Contractor Related Risks

214. The environmental and social risks associated with the contractors who will rebuild, rehabilitate, and restore the targeted facilities represent the bulk of the E&S risks of the Project. Annex 4 describes these risks, with references to the relevant portions of the ESF or of national laws and regulations. The nomenclature for describing the risks closely follows the nomenclature of the ESF, most particularly the General EHS Guidelines, which are directly referenced in ESS1, ESS2, ESS3 and ESS4.[46] It also incorporates elements of ESS1, ESS2, ESS3, ESS4, ESS6, ESS8 and ESS10, as well as take into account the Good Practice Notes developed by the World Bank in the context of the ESF.

215. Annex 4 provides risk profiles for contractor related activities of the Project. Although the importance of specific risks might vary between subprojects, the overall risk profiles remains analogous.

216. UNOPS and its Implementing Partners will cascade their environmental and social obligations to their contractors by requiring contractors to meet a set of Environmental, Social, Health, and Safety (ESHS) requirements (Annex 5) that directly match (mitigate) the risks listed in Annex 4. They represent the requirements that contractors must meet to be in accordance with the ESF.

217. UNOPS and its Implementing Partners will incorporate the ESHS requirements in bidding documents and as technical clauses in contracts, while indicating that the ESHS requirements do not limit the applicability of the ESF or of the EHS Guidelines, which will remain the documents of reference against which the environmental and social performance of contractors will be assessed.

[46] As indicated in the Project's ESCP, the Project must be implemented in accordance with the ESSs, which by reference also include the EHS Guidelines.

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Chapter 6
Procedures to address environmental and social risks

218. This section sets out in detail the procedures to be followed in addressing the environmental and social risks and impacts of subprojects.[47]

219. UNOPS prepared initial investment plans which were submitted to the World Bank as part of the preparation of the parent project, the first AF and the second AF, following consultations with the relevant stakeholders. These plans were then reviewed and approved by the Project Committee. Once approved, the investment plans are translated into a procurement plan that is reviewed and cleared by the World Bank.

6.1 Exclusion List and Screening

6.1.1 Exclusion list

220. The UNOPS ESSO will review the proposed procurement plan before it is submitted by UNOPS to the World Bank and flag as ineligible for Project support subprojects that include any of the following attributes:

- Activities that would require physical or economic displacement or involuntary land acquisition
- Activities in areas with security risks because of the ongoing conflict
- Activities that would significantly convert natural habitats or alter potentially important biodiversity or cultural heritage areas
- Activities involving harmful or exploitative forms of forced labor or child labor
- Activities deemed illegal under Yemeni laws or regulations or international conventions and agreements
- Trade in weapons and munitions
- Production, trade, storage, or transport of significant volumes of hazardous chemicals, or commercial scale usage of hazardous chemicals
- Use of pesticides or herbicides subject to international phase outs or bans

6.1.2 Screening

221. The UNOPS ESSO will also prepare and sign subproject specific screening forms (Template in Annex 7) indicating the proposed environmental and social risk rating of the subproject (Substantial, Moderate or Low) with justifications.

222. The risk rating will determine the environmental and social risk management instruments to be prepared:

Low Risk	Environmental and Social Checklist (ESC)

[47] As indicated in Annex 6, a subproject is a set of activities that are regrouped for the purpose of assessing environmental and social risks and impacts, and of defining appropriate and sufficient mitigation measures. Whenever possible and efficient, UNOPS and its Implementing Partners will synchronize the organization of activities into subprojects for the purpose of environmental and social risks management with the bundling of activities for the purpose of procurement. Subprojects could thus be a cluster of sites. However, subprojects should not cover multiple cities unless they involve a single contractor. Clustering activities with many sites in different cities is likely to increase the risk rating and thus delay the review and clearance process.

Moderate Risk	Proportionate Environmental and Social Management Plan (ESMP)
Substantial Risk	Full ESIA and ESMP

223. UNOPS will submit the proposed risk ratings for subprojects to the World Bank together with the procurement plan or procurement plan updates.

6.2 Environmental and Social Risk Management Instruments

6.2.1 Subprojects requiring an Environmental and Social Checklist (low risk)

224. The ESSO for UNOPS or the relevant Implementing Partner will ensure that an Environmental and Social Checklist is prepared for low-risk subprojects as described in Annexes 8, before the subproject can be implemented. The UNOPS ESSO will review the checklists prepared by Implementing Partners to ensure that they are in accordance with Annex 8.

6.2.2 Subprojects requiring a proportionate ESMP (moderate risk)

225. The ESSO for UNOPS or the relevant Implementing Partner will ensure that a proportionate ESMPs is prepared for moderate risk subprojects as described in Annexes 9 and 10. In line with the April 2023 ESMF Template, the first 10 ESMPs will be submitted to the World Bank Assigned Environmental and Social Specialists for prior review and no objection before the subproject can be implemented. After this first 10, the World Bank and UNOPS will reassess whether prior review is needed for activities exceeding a certain budget, or for certain types of activities). The UNOPS ESSO will review and ensure the quality of all ESMPs before they are sent to the World Bank by the Project Manager. Only the Bank Assigned Environmental and Social Specialists of the project will review and submit for disclosure to their respective managers.

6.2.3 Subprojects requiring a full ESIA and ESMP (substantial risk)

226. When subprojects require a full Environmental and Social Impact Assessment (ESIA) and Environmental and Social Management Plan (ESMP), the ESSO, in collaboration with the ESSO of the concerned Implementing Partner, will prepare draft ToRs as per the outlines in Annexes 11 and 12. The UNOPS Program Manager will submit the ToRs to the World Bank for review and clearance.

227. UNOPS will competitively select consultants to prepare the full ESIAs and ESMPs for the subprojects that require them. The UNOPS ESSO will supervise their preparation and interact with the consultants. On completion of the instruments, the Program Manager will submit the draft ESIAs and ESMPs to the World Bank for their review, clearance and disclosure.

6.3 Incorporating ESHS requirements in contracts

228. UNOPS or its Implementing Partner will ensure that:

- Requests for Proposals for contractors reference the ESHS requirements in Annex 5
- Bidders submit a preliminary environmental and social plan as part of their bids, describing the principles and methodology they will use to address environmental, social, health and safety issues under the contract, and will include all costs associated with managing environmental and social issues in their bids.

- The quality of the preliminary environmental and social plan, the bidders' past environmental and social performance, and their ability to manage environmental and social issues will be considered in the selection of contractors.[48]
- The selected contractor prepares a Contractor Environmental and Social Management Plan (C-ESMP), detailing how the ESHS requirements will be implemented, including personnel
- It approves the C-ESMP before the start of activities
- The C-ESMP serves as the benchmark for monitoring and evaluating the contractor's environmental and social performance

6.4 Consultation and Disclosure Requirements

229. UNOPS consulted with public authorities and the Implementing Partners during the preparation of the parent project and AF1 and AF 2 to ensure that YEHCP activities responds to the identified needs. Further details regarding consultations during the preparation of the Project are found in the Project Stakeholder Engagement Plan (SEP).

230. For each subproject, the UNOPS ESSO or the ESSO of the concerned Implementing Partner will engage with affected communities, including host communities, through the process of stakeholder engagement described in the Project Stakeholder Engagement Plan (SEP). UNOPS and its Implementing Partner will initiate consultations with individuals and communities that might be affected by the subproject, as soon as subproject screening has been completed. The consultations will: (i) inform them about the activities to be undertaken, the timetable and possible impacts, and; (ii) document and address their concerns. As indicated in Annex 10, consultation summaries will be included in ESMPs, including who was consulted, where and when, what concerns were expressed, and how these concerns were addressed. The records of consultations are kept in the Project Office.

6.5 Grievance Mechanism

231. UNOPS will apply the Project Grievance Mechanism detailed in Section 5 of the Project SEP to all subprojects. Each ESMP will include a subproject specific Grievance Mechanism, with procedures relevant to its specific context.

232. Subproject related grievances can be brought up by affected people in case of: (i) non-fulfillment of contracts or agreements; (ii) compensation entitlements; (iii) types and levels of compensation; (iv) disputes related to destruction of assets or livelihoods; or (v) disturbances caused by construction activities, such as noise, vibration, dust or smell. Anonymous complaints will be admissible.

233. The UNOPS Program Manager based in the Sana'a Office will ensure that Project activity-related complaints and inquiries from Project affected communities or individuals regarding any environmental or social impacts due to subproject activities are addressed. The UNOPS ESSO will handle Project activity-related complaints, with the assistance of the UNOPS City Engineers in the target cities. The ESSO in each of the Implementing Partners will handle complaints related to their activities. UNOPS will coordinate with the local Implementing Partners and will set a unified timeframe for reporting grievances. UNOPS and the Implementing Partners will present and explain the mechanism to all subproject affected persons subproject preparation.

[48] IFC's Good Practice Note on Managing Contractors' Environmental and Social Performance It is recommended that the following be considered grounds for disqualification (paragraph 37).

i. Failure to provide information on past E&S performance, including health and safety records;
ii. Reports of past performance deemed unacceptable for the current project;
iii. Notices of material labor issues between workers and management;
iv. Fines and sanctions imposed by E&S and labor regulators and authorities;
v. Poor security management records from previous projects; and
vi. Material community grievances and high-profile adverse press reports on E&S matters.

234. UNOPS is providing multiple access points to the ESSO for beneficiaries to voice their concerns. These access points will be advertised at subproject level, and include: complaint box at Project activity sites, at UNOPS' offices in Sana'a, Aden and Mukalla, by directly contacting Project affiliated staff, and by mail, telephone, email, and UNOPS 'website:

Address	Haddah Street, former European Union Office Building, Sana'a
Telephone	+967 1 504914 and +967 1 504915
Email	gm-yemen@unops.org
Website	www.unops.org

Chapter 7
Monitoring and Reporting

235. UNOPS will monitor and report on the implementation of the ESMF, with input from implementation partners and the TPM agent. The UNOPS ESSO will ensure that monitoring of E&S risk management is included in the Project's quarterly reports to the World Bank, including an implementation status report. He will incorporate into the reports the contributions from the Gender Mainstreaming Officer, a Health and Safety Officer,

7.1 Roles and responsibilities

7.1.1 Environmental and Social Standards Officer

236. The UNOPS ESSO, in partnership with the Gender Mainstreaming Office and the Health, Safety, Social and Environmental Officer, will monitor the overall implementation of the ESMF and its Implementing Partners, most particularly the:

(i) timely preparation of environmental and social screening forms for all subprojects (list of subprojects by risk category by date)
(ii) timely preparation and clearance of subproject ESIAs and ESMPs, as needed (list of instruments with dates)
(iii) management of prior review requirements of the World Bank (non-objection requests with dates)
(iv) preparation and monitoring of ESMP implementation, including monitoring of mitigation measures and monitoring of contractors environmental and social performance (indicators)
(v) training of Project staff, of Implementing Partners, and contractors (list of persons, dates and places)

237. The ESSO will prepare:

(i) Quarterly reports summarizing monitoring results, to be included in the Project's quarterly Reports to the World Bank
(ii) Reports that aggregate and analyze monitoring results ahead of regular "reverse" World Bank implementation support missions with UNOPS
(iii) An annual evaluation of all environmental and social monitoring results, which will be submitted to the World Bank as part of overall project implementation reporting

238. UNOPS Health, Safety, Social and Environmental (HSSE) Officer based in Sana'a will:

- Prepare and/or update health, safety, social and environmental management plans, review them on a regular basis and keep them up to date at all times.
- Advise and instruct project staff, contractors, consultants and other stakeholders on various safety, health, social and environmental related matters related to project implementation.
- Support the Project Manager in raising awareness on health and safety issues among project staff, consultants, contractors and other stakeholders and within UNOPS in general, working closely with all related sections.
- Conduct risk assessment and enforce preventative measures on HSSE.
- Initiate, organize and conduct HSSE training for UNOPS project team, contractors, consultants and other stakeholders.
- Inspect work sites and the work of personnel on a regular basis to identify issues or non-conformity, and enforce necessary actions where unsafe acts or processes that seem dangerous or unhealthy are detected.

- Oversee installations, maintenance and disposal of substances, plant and equipment etc. to ensure they are done in conformity with applicable laws and industry best practice.
- Record and investigate incidents (including near misses) to determine the cause and to propose improvements to processes in the future.
- Prepare reports on incidents (including near misses) and compile statistical information to present to upper management on HSSE matters.
- Ensure a safe workplace environment is maintained at all times without risk to health and safety of everyone including workers, UNOPS staff, other stakeholders and general public.
- Ensure that all Health & Safety policies, procedures, rules and regulations are adhered to and are regularly reviewed, updated and communicated.
- Ensure the contractor meets its statutory obligations in all areas pertaining to health, safety and welfare at work, including statutory training and reporting.
- Ensure that safety inspections, risk assessments, working procedures are managed, and contractors and employees are aware of their responsibilities in relation to health and safety issues.
- Coordinate the development of HSSE policies, systems, procedures and guidelines.
- Ensure full and accurate health and safety training records are documented.
- Establish a full programme of documented HSSE inspections, audits and checks.
- Establish and conduct a structured programme of health & safety training (including a well-developed induction program) for project staff, contractors, consultants and other stakeholders.
- Establish an HSSE Committee, manage and devise the agenda for, chair and formulate & distribute minutes for the Health & Safety Committee meetings.
- Keep up to date with all aspects of relevant health, safety & welfare at work legislation and communicate relevant changes to the stakeholders.
- Provide regular reports to the Project Manager on relevant health and safety activities.

7.1.2 Local councils

239. Local councils are the administrative body which have been elected by the local community for each governorate/ directorate. They cooperate with governmental offices in implementing, operating and supervision of projects. They are likely to play an important role as a contact point for the interaction between implementing agencies and community members.

7.1.3 Third party Monitoring Agent

240. Environmental and social risk management aspects are also part of the scope of the Third-Party Monitoring (TPM) services contracted by UNOPS. As per their Terms of Reference, the:

"Specific Requirements for Safeguards Compliance Verification include two phases of subprojects' implementation:

- *Phase 1 includes compliance check with the environmental and social safeguards requirements per Project documents (PAD; ESMP; RAP; other) regarding the subprojects preparation/design and existence of these requirements in the bid and contract documents or other related implementation arrangements;*
- *Phase 2 includes verification of conformity with safeguards' requirements during implementation of subprojects; and compliance check with all environmental and social safeguards requirements per the Project documents (PAD; ESMP; RAP; other)."*

7.2 Subproject Environmental and Social Risk Management Database

241. The UNOPS ESSO will establish, maintain, and update a database of all subprojects that will be shared with the Implementing Partners. The database will include the following fields for each subproject:

1. Subproject code (unique identifying number)
2. Subproject title
3. Project subcomponent
4. Implementing Partner
5. Estimated value of the contract
6. Name of person who prepared the ESMP for the subproject
7. Date of first submission to UNOPS review
8. Date of first submission to the World Bank for review
9. Date and nature of all exchanges with the World Bank
10. Date of last submission to the World Bank
11. Date of World Bank clearance
12. Date of disclosure
13. Date of signature of the contract

242. The UNOPS ESSO will update the database on a weekly basis and share the updates with the Program Manager

243. UNOPS and its Implementing Partners will use the unique identification code for the subproject to cross-reference with the database for monitoring the E&S performance of contractors, and the Project Grievance Mechanism.

7.3 Monitoring of ESMPs

244. The following table details a set of indicators that UNOPS and its Implementing partners must directly document

Table 10. List of non-contractor indicators for subprojects

Indicator	Frequency of Verification	Responsibility
Labour Management		
• Number of complaints in the GM log for each subproject site	Biweekly	UNOPS Implementing Partners
• Number of unresolved complaints for each subproject site	Biweekly	UNOPS Implementing Partners
Gender Based Violence		
• Level of implementation of the SEA/SH Prevention and Response Action Plan	Monthly	UNOPS Implementing Partners
• Proof of signature of the Code of Conduct by all contracted workers	At contract signing by workers	UNOPS Implementing Partners
• Number of cases registered through the GM	Daily	UNOPS
• Number of cases recognized and addressed	Daily	UNOPS
Stakeholder engagement		
• Records of subproject specific stakeholder engagement for each subproject sites	Biweekly	UNOPS Implementing Partner

Indicator	Frequency of Verification	Responsibility
• Number of grievances recoded through the Grievance Mechanism (by subproject site)	Biweekly	UNOPS Implementing Partners
Improving Access to Water Supply and Sanitation (WSS) and Strengthening Local Systems Urban Water and Sanitation		
Water Treatment		
• Evaluation of the vulnerability of the treatment system and implementation of appropriate security measures for each subproject site	During the design of the activity	UNOPS ESSO UW-PMU ESSO
• Confirm that procedures are in place for sludge disposal in accordance with Annex 3 for each subproject site	During the design of the activity	UNOPS ESSO UW-PMU ESSO
Water Distribution		
• Confirm that the water distribution system rehabilitation is designed in accordance with applicable national requirements and internationally accepted environmental standards for each subproject site	During the design of the activity	UNOPS ESSO UW-PMU ESSO
• Confirm that the rehabilitated distribution system acts as a barrier and prevent external contamination from entering the water system for each subproject site	During the design of the activity	UNOPS ESSO UW-PMU ESSO
Wastewater and Sludge Treatment		
• Confirm that the rehabilitation will ensure, when possible, adequate wastewater treatment to remove contaminants and, especially, microorganisms and pathogens for each subproject site	During the design of the activity	UNOPS ESSO UW-PMU ESSO
• Confirm that the rehabilitation restricts access to waste management facilities by implementing security procedures* for each subproject site	During the design of the activity	UNOPS ESSO UW-PMU ESSO
Sewerage		
• Confirm that the rehabilitation will, if possible, improve the capacity to separate domestic wastewater and storm water runoff for each subproject site	During the design of the activity	UNOPS ESSO UW-PMU ESSO
Wastewater and Sludge Treatment and Discharge		
• Confirm that bypass of the treatment system is minimized by using separate storm water and wastewater systems, if possible, and providing capacity sufficient to treat peak flows	During the design of the activity	UNOPS ESSO UW-PMU ESSO
• Assess and confirm that risks to human health and the environment of land application of wastewater treatment plant residuals for each subproject site	During the design of the activity	UNOPS ESSO UW-PMU ESSO

7.4 Monitoring of Contractors

245. As part of their regular activities, UNOPS and its Implementing Partners will monitor and document (including pictures) the environmental and social performance of contractors for each subproject throughout the contract period using the indicators in Annex 6. This will involve both spot check visits to work locations by Project staff, reviews of records kept by the contractor and of reports submitted by the contractor as indicated in the ESHS requirements. The frequency of site visits

should be commensurate with the magnitude of activities and their associated environmental and social impacts. Each construction site should be visited at least once every two weeks during subproject implementation, and every week or more often for larger subprojects. The ESSOs will ensure that an update of all the indicators in the table is prepared every two weeks and filed, indicating for each indicator if the indicator is met.

246. For any incident or accident that causes or has the potential to cause material or significant environmental and/or social harm, the site supervisor/designated officer shall notify the responsible party's senior management and the Project Manager as soon as possible, and no later than 24 hours. UNOPS or its Implementing Partner will visit sites where a serious accident is recorded within one working day of the accident or incident, and report any significant accident or incident to the World Bank within 48 hours.

247. UNOPS and its Implementing Partners will document in a database each visit and interaction with a contractor, including identification of contractor noncompliance with the ESHS Requirements, the significance of the non-compliance, and guidance provided on actions to be taken. The ESSOs within UNOPS and Implementing Partners will follow up as needed to ensure timely resolution of issues of noncompliance with environmental and social clauses. This may include additional visits to the contractor's site or offices, further communications with contractor personnel, issuance of notices of deficiency or warnings to the contractor, and other actions as needed.

248. At any stage of construction or other works, if the contractor has not taken appropriate action to achieve compliance with the environmental and social clauses after repeated notices of violation and warnings of noncompliance, and significant environmental or social impacts are occurring or imminent, UNOPS should order the contractor to stop work until environmental and social performance is brought under control and up to acceptable standards.

7.5 Completion Reports

249. Upon subproject completion, the responsible ESSO, with inputs from the HS and Gender Specialist, will prepare a subproject completion report that flags any unresolved environmental or social risk, with recommended remedial action. This report will be shared with the Program Manager who will decide the way forward. For subprojects with significant environmental or social impacts, the completion report might recommend periodic routine inspections/monitoring during operation of the facility by dedicated environmental and social specialists.

Chapter 8
Capacity

250. This chapter reviews the capacity and skills available within UNOPS and its Implementing Partners to implement and monitor the ESMF and proposes measures to enhance this capacity.

8.1 UNOPS

251. UNOPS' Environmental and Social Standards Officer (ESSO) based in the UNOPS Sana'a Office will oversee the management of environmental and social risks for the Project. The ESSO will:

- Review and clear environmental and social screening forms for all subprojects that are prepared by the Implementing Partners
- Prepare ToRs for all full ESIAs and ESMPs that might be required
- Provide the draft ToRs for full ESIAs and ESMPs to the World Bank for their prior review
- Supervise the preparation of ESIAs and ESMPs by the consultants selected by UNOPS
- Provide draft full ESIAs and ESMPs to the World Bank for review and clearance
- Monitor subproject compliance with their ESMP, including field visits and spot checks
- Work closely with UNOPS engineers and procurement officers to incorporate environmental and social requirements into subproject design, appraisal and resource mobilization
- Closely coordinate with ESSOs in the Implementing Partners.
- Compile quarterly, biannual and annual reports on environmental and social risk management performance of the Project that will be incorporated into the Project reports
- Provide assistance and deliver capacity building trainings to UNOPS staff, Implementing Partners, and contractors
- Organize and oversee the preparation, production and distribution of training manuals and awareness materials

252. UNOPS will also maintain the Gender Mainstreaming Officer and a Health and Safety Officer based in its Sana's office. These officers will contribute to the ESSO's tasks outlined above as relevant, e.g., contributions to the various reports or the preparation of ToRs.

253. UNOPS will also maintain the part time international expert[49], to be available - on a needs basis - to oversee the overall implementation, monitoring, and reporting of environmental and social risk management aspects.

8.2 Public Works Project (PWP)

254. PWP currently employs an environmental expert and a social expert who cover environmental and social issues in PWP' s current portfolio of projects. These two experts will jointly serve as the ESSO for the subprojects implemented by PWP, including the preparation of environmental and social screening forms, the preparation of proportionate ESMPs for subprojects that do not require a full ESIA and ESMP, and the monitoring of contractor compliance with subproject ESMP requirements. As necessary, PWP will recruit additional staff or employ local consultants.

[49] This consultant is unrelated to the international officer currently being recruited by UNOPS for its World Bank funded portfolio of projects in Yemen

8.3 UW-PMU

255. The environmental and social officer in UW-PMU will serve as its ESSO for the Project. The ESSO will prepare the environmental and social screening forms for all subprojects implemented by UWS, and monitor on-site contractor compliance with subproject ESMP requirements, including the Environmental and Social Requirements for contractors.

8.4 Capacity Development

256. UNOPS will ensure that the ESSO, the Gender Mainstreaming Officer, and the Health and Safety Officer within UNOPS, as well as the ESSOs and Health and Safety Officers of the Implementing Partners receive training on the ESF and its implementation.

257. The UNOPS ESSO, jointly with the ESSOs in the Implementing Partners, will organize the training sessions detailed in the table below The UNOPS HSSE Unit might be involved in the capacity building activities.

258. UNOPS will also finance the production of training manuals and awareness materials as needed.

Table 11. Indicative costs of capacity building activities

Capacity Building Measures	Unit Cost (USD)	Costs (USD)
Workshop with UNOPS engineers and technical staff to explain the ESF, ESMF, the LMP, the SEA/SH Action Plan and the SEP and their implementation	2,000	2,000
Workshop with the staff and engineers of each Implementing Partner to explain the ESF, ESMF, the LMP, the SEA/SH Action Plan and the SEP and their implementation	2,000/session	6,000
Mandatory training of consultants and Implementing Partner staff preparing ESMPs 2 sessions X 3 days	3,000/session	6,000
3 X 2-day training sessions on ESMF implementation for staff and consultants involved in monitoring the implementation of ESMPs ● Identification and assessment of E&S risks ● Selection and application of relevant E&S risk management measures/instruments ● E&S monitoring and reporting ● Incident and accident reporting ● Application of LMP, including Code of Conduct, incident reporting, and SEA/SH	2,000/session	6,000
20 X 1-day sensitization of local councils and key stakeholders involved in subprojects	1,000/session	20,000
10 X 1-day training of potential contractors regarding the ESMF and the ESHS requirements, including the grievance mechanism for workers, SEA/SH, grievance mechanism, and worker OHS	2,000/session	20,000
40 toolbox talks for contractors regarding: ● On-site risk identification and mitigation ● Use of PPEs ● Emergency Prevention and Preparedness	1,000/session	40,000
Production of environmental and social awareness materials (brochures, posters, fliers)	5,000	5,000

TOTAL		**105,000**

8.5 Budget

- UNOPS is fully covering, as part of the fee that it charges the Bank, the cost of the ESSO, the Gender Mainstreaming Officer, and the Health and Safety Officer, as well as any associated operational costs. such as site visit
- The Implementing Partners are covering the cost of their respective ESSOs and Health and Safety Officers as part of their respective Project Cooperative Agreement (PCA) with UNOPS. Although specific ESSOs might not work full time on YEHCP activities, as each Implementing Partner has partnered with several projects, each Implementing Partner will, as needed, recruit additional staff to provide the necessary support.
- The cost of environmental and social subproject screening can vary from USD 1,000 to USD 20,000 depending on the type of activity, the number of sites involved, the location of these sites, and the nature of the environmental and social risks.
- The cost of due diligence for specific subprojects (preparation of the screening form, consultations, GM, preparation of ESMPs and Resettlement Plans, and monitoring) are included in the management costs/budget for each subproject which can vary from thousands of dollars to millions of dollars. These costs are scalable to the level and scope of the potential risks and impacts and might include the costs of consultants recruited by UNOPS or an Implementing Partner to assist on specific tasks.

UNOPS

Chapter 9
Consultations

259. UNOPS has carried out a number of consultations with relevant stakeholders to identify priority WASH needs of 27 preselected areas (11 urban cities and 16 peri-urban and rural areas) under YEHCP with emphasis on the following:

- Supporting national emergency responses to COVID-19 pandemic and flood damages.
- Restoring public services and access to markets with focus on water supply and sanitation services.
- Improving the institutional capacities of local implementing partners and local institutions.
- Ensuring job creation and economic activities for people who lost their work and business as a result of the ongoing conflict, COVID-19, and the flash floods.

260. Multiple technical consultations and assessments were intensively carried out that aimed at identifying and selecting "urgent" WASH priorities to be implemented on an emergency basis that need to complement the planned interventions in the Yemen Integrated Urban Services Emergency Project - second phase (YIUSEP II). As a result, UNOPS carried out the following main activities:

- Assessing the institutional needs of the urban Water and Sanitation Local Corporations (LCs) while considering the needs of peri-urban and rural LCs.
- Re-assessing the institutional capacity of its Implementing Partners (PWP and UW-PMU) to implement multiple WB funded projects (i.e., YIUSEP II and YEHCP) simultaneously.
- Identifying WASH priority needs of preselected urban, peri-urban, and rural areas.
- Preparing initial investment plans for the YEHCP WASH Component based on the approved investment plan of YIUSEP II, which targets 11 urban areas out of 27 pre-selected areas under YEHCP.

261. Consultations and coordination with line ministries, local authorities, and other development partners also took place to ensure local and national participatory planning in the identification and selection of priority needs. Those consultations were carried out during field missions and official meetings, virtual meetings, and by phone calls between April and May 2021.

262. UNOPS carried out consultations with its Implementing Partners (PWP and UW-PMU) and selected Yemeni civil society organizations to discuss and seek their inputs and feedback on the environmental and social risk management instruments of YIUSEP II and YEHCP. During 28 and 29 April 2021, consultations were carried out with selected Yemeni civil society organizations. These CSOs have strong presence in most of cities and rural areas in Yemen and have recognized partnerships with International NGOs and UN agencies such as King Salman Center and UAE Red Crescent and UNDP, IOM, UNFPA, OCHA, and UN Women. Due to the current COVID-19 situation and the poor internet connection in Yemen, those consultations were carried out by phone.

263. To prevent the transmission of COVID-19, the following measures were taken when face-to-face consultation meetings were held:

- Provide a briefing on COVID-19 and the measures that were taken to make the consultation event safe for participants.
- Wearing a mask that covers the nose and mouth and fits snugly against the sides of the face.
- Display dispensers of alcohol-based hand rub prominently around the venue.
- Arrange seats so that participants are at least one meter apart.
- Open windows and doors whenever possible to make sure the venue is well ventilated.

9.1 Updated consultations for the preparation of the parent project

264. UNOPS conducted several consultation meetings for the preparation of the parent project and project kick- off and during the project disclosure, in addition to the consultations with the local communities to confirm the selection criteria and sub-project list.

265. The consultations during the implementation at the subproject level. It is conducted along with the preparation of the ESMP of each sub-project, which is usually shared with the WB team for review and approval. The update will be done in sequence once we receive the WB team clearance.

266. On **1st June 2021**, UNOPS conducted a consultation meeting with the Supreme Council for Management and Coordination of Humanitarian Affairs (SCAMCHA) and the Ministry of Water and Environment (MoWE) to inform and discuss:

(i) the objective and scope of YEHCP, whose Component 2 (WASH component) is being implemented by UNOPS and its local implementing partners,
(ii) the emergency water and sanitation need of northern governorates,
(iii) YEHCP investment selection criteria in preselected/ targeted areas/sites, and
(iv) enhancing effective coordination between UNOPS, SCAMCHA, MoWE, and local WASH partners.

267. On **22 June 2021**, UNOPS conducted a consultation meeting with the Minister of MoWE in Aden and the Urban Water and Sanitation Project Management Unit (UWS-PMU) management team in to inform and discuss:

(i) the objective and scope of YEHCP, whose Component 2 (WASH component) is being implemented by UNOPS and its local implementing partners;
(ii) the emergency water and sanitation need across the country and the possibility of updating the investment plan according to the new information and assessment;
(iii) YEHCP investment selection criteria in preselected/ targeted areas/sites;
(iv) enhancing effective coordination between UNOPS, MoWE, and local WASH partners;
(v) enhancing and building capacity of Aden UWS-PMU, to fulfil the WB and UNOPS Health, Safety, and Environment (HSE) new requirements; and
(vi) the emergency sanitation needs in Aden city.

268. UNOPS conducted 10 public stakeholder consultations workshops in Sana'a, Aden, Ibb, and Mukalla between 9 June and 11 November 2021 to ensure effective stakeholder participation relevant to targeted urban cities and peri-urban and rural areas under the project. Various stakeholder representatives were invited and 926 participants; of whom 340 females (37%), attended the consultation workshops; including:

- The MoWE Ministers, Vice Minister, and Deputy Ministers.
- The MoHP Minister and Deputy Ministers;
- Water and Sanitation Local Corporations (WSLCs) representatives;
- The Urban Water PMU and its local teams;
- The MoPIC Deputy Minister and General Directors of local offices;
- The SCMCHA General Secretary, Deputies, and General Directors of local offices;
- The MoE Vice Minister and Deputy Ministers
- The MoLA Deputy Minister;
- Governors and their Deputies;
- Local council members and local district General Directors;
- Representatives of local authority, civil society, and women's associations;
- Local IDPs and beneficiaries; and
- Public Works Project (PWP) team and its local representatives.

269. UNOPS has also consulted its local implementing partners; namely, the Public Works Project (PWP) and the Urban Water and Sanitation Project Management Unit (UWPMU) on the proposed investment plan for YEHCP Component 2, the implementation arrangements, and the final draft of the UNOPS Partnership Cooperation Agreement (PCA), which would be signed with both local partners in September 2021.

270. All of these consultation meetings were attended by participants of both sexes and from a range of relevant age groups.

9.1.1 Main Consultation Outcomes:

- The YEHCP proposed funding and interventions for WASH were not sufficient to meet the local increasing priority needs (i.e., the WASH infrastructure of Sana'a Old City and Khanfer).
- Project-affected parties needed additional gender-sensitive engagements and consultations to enhance their awareness of the project institutional arrangements, needs selection and prioritization and the importance of the project GM and its confidentiality.
- Stakeholders appreciated the prior disclosure and dissemination of relevant project information and requested more consultations that support active and inclusive engagement with project-affected parties.
- UNOPS implementing partners (PWP and UW-PMU) reaffirmed their understanding of the ESF objectives and their plans to have adequate resources to implement them (for example by recruiting a full-time Gender Officer). However, they also expressed concerns regarding: the complexity of these instruments, particularly the requirements for GBV/SEA awareness raising stipulated in the SEA/SH Prevention and Response Action Plan, the Security management Plan (SMP), and the Labour Management Procedures (LMP). The "long list" of requirements and the "need to build implementing partners' capacity" to comply with these requirements.
- The main outcomes of the CSOs' consultations were:
  - The CSOs have a good understanding and experience in adopting and implementing safeguard plans and engagements.
  - The CSOs' capacity to comply and deliver environmental and social requirements, including consultation, is subject to donors' (or main partners') enforced policies and guidelines, and to the extent of capacity support provided by donors.
  - They hoped that UNOPS could implement the project SEP as planned because the increasingly challenging situation in Yemen (i.e., ground fighting, limited access, and the pandemic) could hinder its smooth implementation.
  - They recommended that UNOPS organize SEP consultations based on the WASH sector and CSO specialization, to ensure relevant productive discussion and feedback during SEP consultations. UNOPS has taken this recommendation into consideration.
  - All CSOs expressed their "huge interest" to participate in capacity training and stakeholder consultations that mutually benefit them and local communities under YEHCP. UNOPS indicated that it would notify these CSO (and others) regarding any upcoming ESF training opportunities, as well as stakeholder consultations in the different target areas.
- Feedback forms were distributed to 926 participants for the parent project to capture the views and suggestions from persons who may have refrained from expressing their views or concerns in public. The main outcomes suggested that they were generally in favor of the project with:
  - 97.5% of the participants were satisfied with the participatory approach in the project and,
  - 2.5% of the participants were not satisfied and recommended the inclusion of per diems to enhance stakeholder participation.

9.1.2 Key Agreed Actions:

- UNOPS to update the investment plan according to the received feedback and to finalize the project procurement plan. For instance, the investment plans for Lahj and Aden governorates were updated by: (a) replacing the supply of diesel Generators to Tuban and Saber with the rehabilitation of Alhoutah sanitation network in Lahj and, (b) by replacing the metal clad with vacuum circuit breaker (VCB), 11Kv, 1600A, needed at Bir Nasser water well field in Aden with the supply and installation of solar systems for the same water wells field.
- Once the project is effective, UNOPS would ensure the distribution and the availability of the Project information Booklet (the hard copy of the PAD and ESF) at the local offices of implementing partners, local authorities, MoPIC and SCHMCHA in targeted areas.
- UNOPS will carry out additional follow-up consultations with the project-affected parties including local CSOs to address received local feedback and comments. Additional consultations will be planned to take place during the preparation of sub-projects-specific ESMPs and through upcoming consultation workshops.
- UNOPS and its implanting partners would keep stakeholders informed as the project develops, including reporting on project environmental and social performance, and implementation of the stakeholder engagement plan and grievance mechanism through information disclosure through the UNOPS web site and public meetings.

9.2 Updated Consultations for the Additional Financing

271. Despite the emergency situation and the COVID-19 pandemic, UNOPS consulted with public authorities between February and March 2022 as per the table 1 below. The consultations were carried out during field missions and official meetings, virtual meetings, and phone calls.

Table 12. List of meetings held during the preparation of the first Additional Financing

Date	Category	Organization	Meeting methodology
2 February 2022	Central Authority	Minister of Public Health and Population-Sana'a	Face-to-face in general meetings
27 March 2022	Central Authority	Ministry of Water and Environment Aden	Face-to-face in general meetings
29 March 2022	United Nations	National WASH cluster coordination team	Virtual meeting
29 March 2022	Central Authority	Minister of Public Health and Population-Aden	Face-to-face in general meetings
31 March 2022	Local Authority	with Local authorities of Abyan, Lahij and Al-Dhale'e	Face-to-face in general meetings
16 April 2022	Central Authority and Local Authority	Ministry of Water and Environment Sana'a, UWS-PMU Sana'a, and SWSLC.	Face-to-face in general meetings

272. On **2 February 2022**, UNOPS conducted a consultation meeting with the Minister of Public Health and Population and management of the Technical Cooperation and International Relations team at MoPHP, Sana'a. UNOPS health interventions were discussed with the Ministry of health as well as the new projects funded by the World Bank-IDA such as YEEAP- II and YEHCP. Participants included:

- The Minister of Public Health and Population-Ministry
- General Manager of Technical Cooperation and International Relations at Ministry of Public Health and Population- Sana'a

- Programme Manager- Head of Office- UNOPS
- Programme Advisor-UNOPS
- YEHCP Deputy project manager-UNOPS
- YEEAP Project Manager- UNOPS

273. Current interventions in health facilities were discussed as part of the exit strategy of the water trucking. The Minister highlighted the need for more areas to be covered such as Health facilities, wastewater disposal and requested its team to provide a preliminary list of the health care districts and hospitals, UNOPS appreciated receipt of the list and clarified that the nominations be considered as a long list of potential interventions in case of materialization of the additional financing under YEHCP.

274. On **27 March 2022**, UNOPS conducted a consultation meeting with the Minister of MoWE in Aden and the Urban Water and Sanitation Project Management Unit (UWS-PMU) management team to inform and discuss. The participants included:

- The Minister of Water and Environment Ministry Aden
- General Manager of UWS-PMU Aden
- YEAP Project Manager, UNOPS
- Programme Advisor, UNOPS
- Aden city UNOPS engineer, UNOPS
- Energy specialist, UNOPS

275. The meeting discussed:

- The implementation progress of YEHCP, whose Component 2 (WASH component) is being implemented by UNOPS and its local implementing partners and the scope of the newly additional financing;
- YEHCP additional intervention (Fuel provision) selection criteria in preselected/ targeted areas/sites;
- The Increasing of fuel price and the emergency water and sanitation need for alternative energy source across the country and the possibility of updating the investment plan according to the new information and assessment to be part of the exit strategy of the fuel provision;
- Enhancing effective coordination between UNOPS, MoWE, and local WASH partners;
- The establishment of rural water implementation unit;
- Enhancing and building capacity of Aden UWS-PMU, to fulfil the WB and UNOPS Health, Safety, and Environment (HSE) new requirements.

276. On **29 March 2022**, UNOPS conducted a virtual consultation meeting with the UN national WASH cluster coordination national team (with five participants). The participants included:

- The Minister of Water and Environment Ministry Aden
- General Manager of UWS-PMU Aden
- YEAP Project Manager, UNOPS
- Programme Advisor, UNOPS
- Aden city UNOPS engineer, UNOPS
- Energy specialist, UNOPS

277. The meeting discussed the scope and funding of YEHCP in which UNOPS implement Component 2 of the project and to discuss the following points:

- WASH Cluster response gaps (extremely underfunded circumstances),
- The Additional fund for YEHCP-WASH component (water trucking for health facility and provision of fuel to some of Water and sanitation local corporation,
- The huge need in water supply and sanitation services across the country.
- The importance of effective women participation in the project life cycle.
- UNOPS priority target areas to address acute WASH response needs in the country,

- Enhancing effective coordination and collaboration among the UN agencies and WASH partners to avoid any potential duplication of efforts.

278. On **29 March 2022**, UNOPS conducted a consultation meeting with the Minister of MoPHP in Aden and his Deputy. The YEHCP social and environmental framework was further discussed in which UNOPS would ensure the distribution of the hard copies of the ESF in Arabic for easy reference. UNOPS additional Health interventions (Water trucking) was discussed with the Ministry of Health as well as additional projects funded by the World Bank-IDA as part of the exit strategy of current water trucking scheme. Participants included:

- The Minister of Public Health and Population- Ministry Sana'a
- Deputy Minister for Health Care Sector at of Public Health and Population- Ministry
- Deputy Minister for Population Sector at of Public Health and Population- Ministry
- Deputy Minister for Planning and Health Development Sector at of Public Health and Population- Ministry
- Deputy Minister for Therapeutic Medicine Sector at Public Health and Population- Ministry
- Director General of the Minister's Office at Public Health and Population- Ministry
- General Manager of the Medical Services Department at Public Health and Population- Ministry
- General Manager of the Equipment Department of Public Health and Population- Ministry
- General manager of engineering department at Public Health and Population- Ministry
- YEAP Project Manager UNOPS
- Programme Advisor UNOPS
- Aden city UNOPS engineer UNOPS
- Energy specialist UNOPS

279. The Minister highlighted the need for more areas to be covered such as the wastewater disposal of the central Hospitals and the need of water trucking activities; the table 4 below shows the attendance to the consultation meeting from UNOPS and MoPHP as the following:

280. On **31 March 2022**, UNOPS conducted a consultation meeting with Local authorities of Abyan, Lahij and Al- Dhale'a (with 6 participants) to discuss YEHCP additional intervention (Fuel provision) selection criteria in preselected/ targeted areas/sites. The Increasing fuel price and the emergency water and sanitation need for alternative energy sources (solar systems) to operate the water and sanitation facilities and the possibility of updating the investment plan according to the new information and assessment to be part of the exit strategy of the fuel provision. Participants highlighted the urgent need for sanitation services at these governorates.

281. On **16 April 2022**, UNOPS conducted a consultation meeting with the Minister of MoWE in Sana'a, Urban Water and Sanitation Project Management Unit (UWS-PMU) management team and Sana'a water and sanitation management to inform. Participants included:

- The Deputy Minister of Water and Environment Ministry
- General Manager of UWS-PMU Sana'a
- YEHCP Deputy project Manager UNOPS
- Programme Advisor UNOPS
- Manager Sana'a Water and sanitation local cooperation
- WASH officer at UWS-PMU Sana'a

282. The meeting discussed:

- The implementation progress of YEHCP, whose Component 2 (WASH component) is being implemented by UNOPS and its local implementing partners and the scope of the newly additional financing;
- YEHCP additional intervention (Fuel provision) selection criteria in preselected/ targeted areas/sites;

- The Increasing of fuel price and the emergency water and sanitation need for alternative energy source across the country and the possibility of updating the investment plan according to the new information and assessment to be part of the exit strategy of the fuel provision;
- The Ministry requests UNOPS to not adopt the Fuel provision as its main activity unless UNOPS has a clear exit strategy.

283. On **16 April 2022**, UNOPS conducted a consultation meeting with the Minister of MoWE in Sana'a, Urban Water and Sanitation Project Management Unit (UWS-PMU) management team and Sana'a water and sanitation management to inform. Participants included:

- The Deputy Minister of Water and Environment Ministry
- General Manager of UWS-PMU Sana'a
- YEHCP Deputy project Manager UNOPS
- Programme Advisor UNOPS
- Manager Sana'a Water and sanitation local cooperation
- WASH officer at UWS-PMU Sana'a

284. The meeting discussed:

- The implementation progress of YEHCP, whose Component 2 (WASH component) is being implemented by UNOPS and its local implementing partners and the scope of the newly additional financing;
- YEHCP additional intervention (Fuel provision) selection criteria in preselected/ targeted areas/sites;
- The Increasing of fuel price and the emergency water and sanitation need for alternative energy source across the country and the possibility of updating the investment plan according to the new information and assessment to be part of the exit strategy of the fuel provision;
- The Ministry requests UNOPS to not adopt the Fuel provision as its main activity unless UNOPS has a clear exit strategy.

285. Between **26 to 30 June 2022**, UNOPS conducted a mission to Aden to follow up with UNOPS IPs UWS-PMU, MWE, and Aden WASLC.

- On 12 August 2022, UNOPS conducted a consultation meeting with the Rural Water Projects
- Authority in Sana'a. During the meeting, UNOPS discussed
- YEHCP scope and the synergy between it and YEHCP AF as both target rural areas. The nomination process of water wells
- The SCMCHA request for 700 water wells to be shared with MOW to provide their feedback.

286. Between **17 and 19 August 2022**, UNOPS conducted a mission to Saada, a Coordination meeting with the governorate/local authorities to discuss the ongoing and planned sub-projects.

287. On **23 August 2022**, UNOPS conducted a consultation meeting with the Local authorities of Taiz -Alhouban, to discuss the progress of the implementation of the project activities in addition to presenting the scope of the additional financing activities.

288. Between **27 August and 3 September 2022** UNOPS conducted a mission to Sana'a and held several meetings with internal and external stakeholders to discuss the implementation progress and challenges.

289. On **9 September 2022**, UNOPS conducted a consultation meeting with the Minister of MoWE in Aden and the Urban Water and Sanitation Project Management Unit (UWS-PMU) management to discuss:

- The implementation progress of YEHCP and the scope of the additional financing.
- YEHCP additional intervention (Fuel provision) selection criteria in preselected/ targeted areas/sites.

- The increasing fuel prices and the emergency water and sanitation need for alternative energy sources across the country and the possibility of updating the investment plan according to the new information and assessment to be part of the exit strategy of the fuel provision;
- Enhancing effective coordination between UNOPS, MoWE, and local WASH partners.
- The establishment of a rural water implementation unit.

290. On **16-17 January 2023**, UNOPS held a meeting with the Aden governorate-UWS-PMU, MoWE. The meetings aimed to coordinate with the local partner (6 technical team in addition to the PMU management and deputy minister) and discuss technical issues related to the sub-projects including:

- Review / update the procurement plan with the UWS-PMU for 2023
- Verify the current situations on the subprojects under YIUSEP II, AF and YEHCP.
- The capacity building needs assessment and preparation of the MIS and Manuals ToRs by MetaMeta and the PMU feedback and comments on the initial reports delivered by MetaMeta so far. During the meeting UNOPS Capacity building officer emphasized that all the reports of MetaMeta will be accepted by UNOPS only after approval from the partner and ensure that it addresses the real needs of the unit and fulfils the requirements and goals as specified in the ToRs. The officer also encouraged the PMU team for more cooperation with the consultants through fast response to the submitted reports to speed up the process.
- The planned rehabilitation of the sewage pumping stations and network in the four districts (Sira, Al- Mualla, Al-Tawahi, and Khormaksar) and connect it to the treatment basins in AlArish. and the involvements and needed arrangements from different authorities before and during the implementation process.
- The climate change aspects

9.3 Consultations for the second Additional Financing

291. On 14 June 2023, UNOPS conducted a virtual consultation meeting with the Minister of MoWE in Sana'a and the Urban Water and Sanitation Project Management Unit (UWS-PMU) management to discuss the implementation progress of YEHCP, and the scope of the second additional financing.

- YEHCP additional intervention (Fuel provision) selection criteria in preselected/ targeted areas/sites.
- The increasing fuel prices and the emergency water and sanitation need for alternative energy sources across the country and the possibility of updating the investment plan according to the new information and assessment to be part of the exit strategy of the fuel provision.
- Enhancing effective coordination between UNOPS, MoWE, and local WASH partners.

292. On 18 June 2023, UNOPS conducted a virtual consultation meeting with the Minister of MoWE in Aden and the Urban Water and Sanitation Project Management Unit (UWS-PMU) management to discuss

- The implementation progress of YEHCP, and the scope of the second additional financing.
- YEHCP additional intervention (Fuel provision) selection criteria in preselected/ targeted areas/sites.
- The increasing fuel prices and the emergency water and sanitation need for alternative energy sources across the country and the possibility of updating the investment plan according to the new information and assessment to be part of the exit strategy of the fuel provision.
- Enhancing effective coordination between UNOPS, MoWE, and local WASH partners.

UNOPS

Annex 1

Yemeni environmental quality standards

Table 13. Permissible limits for key air pollutants

Pollutant	Time Period	Value
Carbon Monoxide and Dioxide gas (CO/CO_2)	8 hours	10 micrograms\m^3
Nitrogen oxide (NO_x)	24 hours	150 micrograms\m^3
Sulphur oxide (SOX)	24 hours	250 micrograms\m^3
Ozone ($O_{3)}$	8 hours	120 micrograms\m^3
Particulate Matter (PM)	24 hours	70 micrograms\m^3
Lead (Pb)	Annually	1 micrograms\m^3

The Yemeni standards for air quality do not specify sources of industrial emissions; they are also less strict than those in the World Bank Group EHS Guidelines.

Table 14. Maximum noise level allowed in different environments (Decibel Unit dB)

Environment	Time		
	7h00-18h00	18h00-23h00	23h00-07h00
Rural housing and entertainment places	45	40	25
Suburban housing areas	50	45	40
Urban housing areas	55	50	45
Housing areas in city centers	60	55	50
Industrial and commercial areas	70	70	70

Table 15. Physical Characteristics of drinking water

Characteristic	Unit	Optimal limit	Maximum limit
Taste		Acceptable to consumers	
Odor		Acceptable to consumers	
Color	Platinum Cobalt	5	25
Turbidity (NTU)	Turbidity Unit	1	5
Temperature	Degree Celsius	-	25
pH (Potential of hydrogen)		6.5-8.5	5.5- 9
Electrical Conductivity EC	Micro mohs/cm	450-1000	2500

Table 16. Inorganic substances in drinking water

Substance	Symbol	Optimal limit (mg/L)	Maximum limit (mg/L)
Total Dissolved Salts	TDS	650	1500
Bicarbonate	HCO_3	150	500
Chloride	Cl^-	200	600
Sulphate	SO_4	200	600
Fluoride	F^-	0.5	1.5
Calcium	Ca	75	200
Magnesium	Mg	30	30-150
Barium	Ba	0.1	0.15
Sodium	Na	200	400
Potassium	K	0-12	12
Nitrate	NO_3	10	50
Iron	Fe	0.3	1
Manganese	Mn	0.1	0.5
Copper	Cu	0 1	1.5
Zinc	Zn	5	15
Total Hardness (as Calcium Carbonate)	TH	100	500
Aluminum	Al	0.2	0.3
Nickle	Ni	0.05	0.1
Boron	B	0.50	1
Silica	SiO_2		40

Total residual chlorine concentration in treated water reaching the consumers should be between 0.2 to 0.5 ppm. It might be increased in the event of an epidemic to the level determined by the related authorities and international organizations.

Table 17. Maximum limits for organic pollutants in drinking water

Substance	Maximum limit (mg/L)
Aldrin	0.0002
Lindane	0.004
Methoxine	0.01
Toxaphene.	0.002
2,4 Dichlorophenoxy acetic acid	0.1
Propionic acid	0.01
Malathion	0.19
Parathion	0.035
Permethrin	0.01
Dimethoate	0.002
Diazinon	0.002

Table 18. Maximum limits for toxic substances in drinking water

Substance	Unit	Maximum limit
Lead (Pb)	mg/L	0.05
Selenium (Se)	//	0.01
Arsenic (As)	//	0.01
Chromium (Cr)	//	0.05
Cyanide (CN)	//	0.01
Cadmium (Cd)	//	0.005
Mercury (Hg)	//	0.001
Antimony (Sb)	//	0.005
Barium (Ba)	//	0.5-1.0
Silver (Ag)	//	0.01-0.1
Halogenated methane group (TTHM) includes: Chloroform, Bromoform, Bromodichloromethane and Dibromochloromethane	µg/L	150

The amount of radioactive materials in water should not exceed the limits mentioned below:

The microbiological pollutants in treated public water supplied through the distribution network or any other distribution means must be free of Total Coliform and Colon Bacillus form as mentioned below:

Table 19. Bacterial Pollutants

Bacteria	Unit	Maximum limit
Total coliforms	CFU/100 ml	Zero
Fecal coliform	CFU/100 ml	Zero

Microbiological pollutants in untreated public water conveyed into the distribution network

- 98% of the annually tested samples must be free of total coliforms
- The fecal coliform must not exceed three in any one isolated sample and not successive samples
- Water not supplied through the distribution network such as: wells, springs, rain water reservoirs the Fecal coliform that found in a 100 ml water sample must not exceed 10-15 coliform

Biological Pollutants

The drinking water must be free from the following:

- Protozoa harmful to health
- Parasitic worms (Helminths) that can involve human as a host during its life cycle and transfer infection to human
- Parasites including fungi that affect health or produces toxic materials that affect human health

Waste Water

Physical Standard physical requirements:

- Maximum temperature should not exceed 45 C^{o}
- Should not contain substances susceptible to freezing, settling or become viscous in temperature ranging from 0-40 C^{o}
- Should not contain solid or liquid hazardous and explosive materials

Table 20. Maximum levels of chemical substances in industrial and commercial waste water discharged in the public sewerage network

Compound/Substance	Symbol	Unit	Maximum limit
Chemical Oxygen Demand	COD	mg/L	2100
Biochemical Oxygen Demand	BOD	mg/L	800
Power of Hydrogen	pH	---	5.5-9.5
Maximum Temperature Degree	C°	C	45
Total Suspended Solids	TSS	mg/L	1100
Total Dissolved Solids	TDS		2000
Oil and Grease	---		100
Phenolic Compounds	---		10
Sulphate	$S0_4$		1000
Phosphorus	P		50
Cyanide	CN		5
Sulphur	S		1
Hydrogen Sophie	H_2S		10
Iron	Fe		50
Chloride	Cl		600
Fluoride	F		8
Arsenic	As		5
Tin	Sn		10
Barium	Ba		5
Boron	B		5
Cadmium	Cd		1
Chromium (VI)	Cr		5
Copper	Cu		5
Lead	Pb		0.6
Mercury	Hg		0.01
Nickel	Ni		5
Selenium	Se		0.1
Silver	Ag		1
Manganese	Mn		10
Beryllium	Be		5
Zinc	Zn		15
Cobalt	Co		0.05
Lithium	Li		5
Vanadium	V		0.1
Aluminum	Al		5

Wastes that must be handled with control set up by the administration under the competent authority of which wastes lie:

Clinical wastes generated from medical care in hospitals, clinics and medical centers.

1. Wastes generated from pharmaceutical preparations and products
2. Wastes generated from medicaments and drugs
3. Wastes generated from production of biological insecticides, preparation of medicaments from plants and shrubs and its usage
4. Wastes generated from wood chemical protective materials and their preparation and utilization
5. Wastes generated from organic solvent materials and their preparation and usage
6. Wastes generated from thermal processing and printing processes which contains cyanide
7. Wastes from unusable mineral oil
8. Wastes from oil/water and mixes of hydrocarbons etc.
9. Wastes from substances and compounds containing alkaline phenol with multitude bonds (PCBs) and/or phenyls of multiple chlorine bonds
10. Wastes from tar sediments resulting from refining and distillation and any thermal processing analysis
11. Wastes from production of links, paints, coloring materials, lacquers, varnishes and their preparation and usage
12. Wastes left from the production of resins, gingival, plastics, furs, sticking materials and their preparation and usage
13. Wastes from chemical materials generated from research and development activities or from any uncategorized/ or new educational activities the effects of which on human beings and the environment are not known
14. Wastes of explosive nature not subjected to any other legislation
15. Wastes left from production of chemical, processing and photographic materials and their usage and preparation and usage
16. Wastes from surface treatment of plastics and metals
17. Residues resulting out of disposing of industrial wastes

Hazardous wastes for which transportation and handling is prohibited except with a permission from the Competent Authority include:

Wastes that include the following materials in their composition:

1. Carbonic metal
2. Barium and barium compounds
3. Chrome hexa equivalence compounds
4. Copper compounds
5. Zinc compounds
6. Arsenate, arsenic compounds
7. Selenium, selenium compounds
8. Cadmium, cadmium compounds
9. Antimony, antimony compounds
10. Tellurium, tellurium compounds
11. Mercury, mercury compound
12. Thallium, thallium compounds
13. Lead, lead compounds
14. Fluorine inorganic compounds except calcium fluoride
15. Cyanide inorganic compounds
16. Acid solutions or acids in solid state

17. Alkaline solutions or alkalines in solid state
18. Rock silk (Asbestos) (fiber dust)
19. Phosphorous organic compounds
20. Cyanide organic compounds
21. Phenol, phenol organic compounds including chlorophenol
22. Organic compounds of Ether/air
23. Halogenic organic solvents
24. organic solvents expect halogenic solvents
25. Any similar substance to bi-benzene of multiple chlorine bonds
26. Any substance similar to dioxin-pho-bi-benzene of chloride bonds
27. Most organic halogen compounds

Pesticides and home insecticides.

Petroleum substances.

Substances from which ionic radiations are emitted.

Inflammable and explosive substances.

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Annex 2

Comparison between World Bank and Yemeni environmental and social requirements

World Bank Requirements	*Yemeni Requirements*	*Recommended Action*
ESS1. Environmental Assessment		
Identify, evaluate and manage the environment and social risks and impacts of the project in a manner consistent with the ESSs.	The Environment Protection (EPL, 26/1995) requires the preparation of an EIA during the preparation of all projects and the inclusion of mitigation measures in the project's capital and recurrent costs (Cabinet Decree 89/1993). The EIA should describe: (i) proposed project activities, design of activity, the surrounding environment that may be affected, including a land use map of the adjacent areas, the requirement and types and source of energy, raw material and infrastructure services and roads emergency plan and safety, waste disposal etc.; (ii) and (iii) alternatives using less polluted inputs, as well as consideration of the 'no-project alternative (EPL Article 37 Para (b)). The EIA guidelines require that ESIAs consider the social acceptability or refusal of the local communities to the proposed project, with evidence and record of public consultations and, if it is accepted, should include baseline data, indicators and monitoring plan. It also includes requirements for monitoring, capacity building, verification of monitoring results and findings (EPL Article 60).	National requirements and ESF objectives are aligned, an complement each other. UNOPS will apply both the ESF and national requirements
To adopt a mitigation hierarchy approach to anticipate and avoid risks and impacts; Where avoidance is not possible, minimize or reduce risks and impacts to acceptable levels; Once risks and impacts have been minimized or reduced, mitigate; Where significant residual impacts remain, compensate for or offset them, where technically and financially feasible.	Yemeni law has no equivalent to the mitigation hierarchy. National law gives priority to the principle of environmental protection and pollution prevention, and not only to the mitigation or compensation of impacts. All new projects must carry out EIAs to prevent adverse impact and must obtain an environmental permit. No project or new structure that could harm, pollute or deteriorate the environment and natural resources is allowed and all new projects should use best available practices for clean production and apply environment protection/pollution prevention measures.	UNOPS will apply the ESF requirements
To adopt differentiated measures so that adverse impacts do not fall disproportionately on the disadvantaged or vulnerable, and they are not disadvantaged in sharing development benefits and opportunities resulting from the project.	Included in the EPL (26/1995)	National requirements and ESF objectives are aligned, and complement each other. UNOPS will apply both ESF and national requirements

World Bank Requirements	Yemeni Requirements	Recommended Action
To utilize national environmental and social institutions, systems, laws, regulations and procedures in the assessment, development and implementation of projects, whenever appropriate.	The Environmental Protection Council must inform the proposed projects proponents of the screening results within three months from submission of the project proposal and determines the appropriate EA instrument and required studies required to assess potential risks and impacts. The EIA guideline provides the possibility of using regional and international assessment procedures and norms when applicable. If the project is rejected, the rejection note should indicate the basis for the rejection, as well as the relevant sections of the regulatory framework. The EIA guideline also provides the possibility for project proponents to contest any rejection and to appeal to the special court, within a period of 60 days. The court is required to make a final judgment within six months (Chapter 1 Article 3, EPL 26/1995 - By-law 148/2000).	UNOPS will take into account national laws and regulations when applying the ESF requirements
To promote improved environmental and social performance, in ways which recognize and enhance Borrower capacity.	Include in the Environmental Protection Law No. 26/1995.	UNOPS will take into account national laws and regulations when applying the ESF requirements
ESS2. Labor and Working Conditions		
No equivalent in ESS2	To provide every employee with written particulars of employment Included in Yemen Labour Law Number 5/1995, Articles Number 27, 28, 29, 30, 31, 32, 33, 34	Contractors will be required to comply with national legislation when recruiting workers.

World Bank Requirements	Yemeni Requirements	Recommended Action
To promote safety and health at work.	Included in Yemen Labor Law Number 5/1995, Articles 113, 114, 115, 116, 117 and 118, Chapter 9 of the Labor Law (5/1995), Law Number 25/1997 and Law Number 25/2003 address Occupational Health and Safety and work environment in Articles 113 to 118. Chapter 10 covers worker's insurance. Employers are required to provide necessary occupational safety and health conditions, including: ventilation and lighting of workspaces; protection from emissions (gas, dust, etc.) hazards; protection from machine accidents and hazards; provision of gender-specific toilet facilities; provision of safe drinking water for workers; basic firefighting equipment and emergency exits; provision of appropriate personal protection equipment; fair compensation; access to periodic medical examinations; availability of first aid. The competent authority shall ensure the availability of the appropriate work environment and conditions for occupational safety and health. The Ministry of Labor is charged with advising employers in the field of occupational health and safety; organize and implement accident prevention training programs; exchange of technical information; identify and evaluate the means of accident prevention measures; etc. The Minister may establish sub-committees for occupational health and safety in the governorates and in the sectors and industries, which include the relevant bodies. The composition decision shall determine the functions of these committees, their terms of reference and the rules governing their work. Where employers fail to implement labor protection and labor safety regulations, they could receive a one week stop order from the Minister, until the reasons for the breach are explained. The Minister must refer the matter to the competent arbitration committee if the partial suspension is extended or if a total suspension is requested. If the risk is still not removed by the employer, the workers who have stopped working are entitled to full wages.	Each contractor will be required to have an OHS Officer and First Aider. Contractors required to keep logs of incidents and should be reported and investigated regularly. Contractors will do daily toolkit talk, and UNOPS will conduct weekly induction talks to workers and contractors.
To promote the fair treatment, non-discrimination and equal opportunity of project workers.	Included in Yemen Labor Law Number/1995, Articles 5, 42, and 67.	Contractors will be required to comply with national legislation when recruiting workers.

World Bank Requirements	Yemeni Requirements	Recommended Action
To protect project workers, including vulnerable workers such as women, persons with disabilities, children (of working age, in accordance with this ESS) and migrant workers, contracted workers, community workers and primary supply workers, as appropriate.	Included in Yemen Labor Law Number (5/1995), Articles 5, 15, 42, 43, 44, 45, 46, 47a, 47b and 89; the Law for the Organization of Workers' Unions (35/2002); the Law for Social Insurance (26/1991). The Labor Law regulates the rights and wages of workers, their protection, occupational health and safety. In addition, the Social Insurance Law regulates retirement compensation. **Gender** Yemen ratified the Convention on the Elimination of all Forms of Discriminations Against Women (CEDAW) in 1984, and prepared a National Strategy for Women Development in 1997, which was updated in 2015. Implementation of CEDAW is delegated to relevant ministries and authorities (Decree 55/2009). Based on amendments proposed by the Women National Committee, 24 laws were amended to ensure building gender balance in accordance with the convention. The Labor Law (Law 5/1995) states that women are equal to man in all aspects without any discrimination, and that equality should be maintained between women and men workers in recruitment, promotion, wages, training, social insurance. It also regulates work time for pregnant women.	National legislation will be applied. However, the World Bank standards will be enforced where there are gaps. The higher standard between the national legislation and World Bank standards will always prevail in case of uncertainty in applicable requirements.
To prevent the use of all forms of forced labor and child labor.	**Forced Labor** Included in Yemen Labor Law Number 5/1995, Articles 55 Child Labor Included in Yemen Labor Law Number 5 /1995, Article 49 Yemen has also ratified ILO Convention Number 138 on Minimum Age for Admission to Employment (Law 7/2001). The Convention establishes a minimum age for admission to employment. Yemen has also ratified the ILO Convention 182 on the Worst Forms of Child Labor. It refers to child labor as work that is mentally, physically, socially or morally dangerous and harmful to children; and interferes with their schooling by depriving them of the opportunity to attend school, by obliging them to leave school prematurely; or by requiring them to attempt to combine school attendance with excessively long and heavy work. Drawing a line between "acceptable" forms of work by children and child labor can prove difficult, as it depends on the child's age, the types of work performed, the conditions under which it is performed.	**Forced Labor** Contractors will be required to comply with national legislation and as precautionary measure to conduct an induction and random inspection will be done on a regular basis to ensure compliance **Child Labor** Contractor will be prohibited to employ anyone under the age of 18 years. Monitoring will be done through the National ID system that every employee is required to produce on employment. If a contractor is found to have engaged under age children in the project: - a formal case will be reported and the contract will be terminated.

World Bank Requirements	Yemeni Requirements	Recommended Action
To support the principles of freedom of association and collective bargaining of project workers in a manner consistent with national law.	Included in Yemen Labor Law (5/1995) Articles 151 and 152, and the Law for the Organization of Workers' Unions (35/2002)	Contractors must inform workers of their right to organize according to the law.
To provide project workers with accessible means to raise workplace concerns.	Included in Yemen Labor Law (5/1995) Articles 129, 130, 132 and 136.	Contractors will be required to comply with national legislation in this regard. Contractors will be required to have a grievance procedure and inform workers of the same during induction. UNOPS and TPM will require contractors to log worker's grievances in monthly reports
ESS3. Resource Efficiency and Pollution Prevention and Management		
To promote the sustainable use of resources, including energy, water and raw materials.	Included in the EPL, the Water Law (33/2002), the Law for Mines and Quarries (24/2002), the Electricity Law (1/2009), and the Renewable Energy Strategy.	National requirements and ESF objectives are aligned, and complement each other.
To avoid or minimize adverse impacts on human health and the environment by avoiding or minimizing pollution from project activities.	National law gives priority to the principle of environmental protection and pollution prevention, and not only to the mitigation or compensation of impacts. All new projects must carry out EIAs to prevent adverse impact and must obtain an environmental permit. No project or new structure that could harm, pollute or deteriorate the environment and natural resources is allowed and all new projects should use best available practices for clean production and apply environment protection/pollution prevention measures. Yemeni Law encourages related sectors and projects to provide institutional capacity and training for projects to enhance their capacity and knowledge in handling environmental issues. It also encourages research and development in all environmental aspects (EPL, Article 90).	UNOPS will apply both ESF and National requirements to the Project
To avoid or minimize project-related emissions of short and long-lived climate pollutants	Included in the EPL (26/1995), and is a Yemeni commitment under the Climate Change Convention.	Both World Bank ESF objectives and National requirements will apply to the Project
To avoid or minimize generation of hazardous and non-hazardous waste.	Included in the EPL (26/1995), the Pesticide Law (25/1999), the Public Cleaning Law (39/1999), and the Law Establishing Cleaning Funds (20/1999)	Both World Bank ESF objectives and National requirements will apply to the Project
To minimize and manage the risks and impacts associated with pesticide use	Included in the Pesticide Law (25/1999), and the EPL (26/1995)	Both World Bank ESF objectives and National requirements will apply to the Project
ESS4. Community Health and Safety		

World Bank Requirements	Yemeni Requirements	Recommended Action
To anticipate and avoid adverse impacts on the health and safety of project-affected communities during the project life cycle from both routine and nonroutine circumstances.	Yemeni Law does not specifically address community health and safety	UNOPS will follow ESF requirements
To promote quality and safety, and considerations relating to climate change, in the design and construction of infrastructure, including dams.	No equivalent in Yemeni law. However, IPCC National Contribution commitments and other various national laws (EPL Chapter 2 Article 5 and 7) address global environmental concerns, such as the ozone layer and climate change	UNOPS will follow ESF requirements
To avoid or minimize community exposure to project-related traffic and road safety risks, diseases and hazardous materials.	No equivalent in Yemeni law	UNOPS will follow ESF requirements
To have in place effective measures to address emergency events	Included in Yemen Labour Law Number 5 for 1995, Articles 119, 121	National requirements and ESF objectives are aligned, and no significant gaps are noted. Both World Bank ESF objectives and National requirements will apply to the Project.
To ensure that the safeguarding of personnel and property is carried out in a manner that avoids or minimizes risks to the project-affected communities.	No equivalent in Yemeni Law	UNOPS will follow ESF requirements
ESS5. Land Acquisition, Restrictions on Land Use and Involuntary Resettlement		
To avoid involuntary resettlement or, when unavoidable, minimize involuntary resettlement by exploring project design alternatives	Included in Yemeni laws, e.g., urban planning law	Both ESF and national requirements will be applied
To avoid forced eviction	Included in the Yemeni Constitution, and Civil Law.	Both ESF and national requirements will be applied
To mitigate unavoidable adverse social and economic impacts from land acquisition or restrictions on land use by: (a) providing timely compensation for loss of assets at replacement cost and (b) assisting displaced persons in their efforts to improve, or at least restore, their livelihoods and living standards, in real terms, to pre-displacement levels or to levels prevailing prior to the beginning of project implementation, whichever is higher	Public Eminent Domain Law addresses involuntary land taking resulting in relocation or loss of shelter and loss of assets or livelihood and fair and timely compensation. There is no measure for livelihood restoration in Yemeni law.	UNOPS will follow ESF requirements

World Bank Requirements	Yemeni Requirements	Recommended Action
To improve living conditions of poor or vulnerable persons who are physically displaced, through provision of adequate housing, access to services and facilities, and security of tenure.	Payment is made for disturbance, loss of accommodation, loss of profit and transport allowances. Compensation is on monetary basis only. Yemeni law does not recognize any vulnerable groups, but it does recognize squatters.	UNOPS will follow ESF requirements
To conceive and execute resettlement activities as sustainable development programs, providing sufficient investment resources to enable displaced persons to benefit directly from the project, as the nature of the project may warrant.	The Civil Law and Local Administration Law requires the prompt and fair payment of compensation on monetary basis to replace the lost land within a distance not more than 20 km from the project site. The governments in Sana'a and Aden provide adequate housing, access to service facilities, and security of tenure, to improve living conditions of poor and vulnerable persons who are physically displaced.	UNOPS will follow ESF requirements
To ensure that resettlement activities are planned and implemented with appropriate disclosure of information, meaningful consultation, and the informed participation of those affected.	In Yemeni law, PAPs must be informed about resettlement decisions through the compensation committees that negotiate with them and gather information about asset inventory, number of family members, etc. PAPs are to be informed about their rights, consulted on, provided FULL, FAIR and PROMPT compensation based on market value of the Property for lost assets attributable directly to the project. PAPs can dispute the amount to the Land Tribunal through the district commissioner to choose alternatives PAPs can first seek satisfaction through local customary practices for resolving conflicts. They can then initiate legal proceedings in accordance with national law.	UNOPS will follow ESF requirements
ESS6. Biodiversity Conservation and Sustainable Management of Living Natural Resources		
To protect and conserve biodiversity and habitats.	Included in the Environmental Protection Law No. 26/1995 and Yemen is a party in the Conservation of Biodiversity Convention.	No major gap between national, international requirements and ESF objectives. Both will be applied.
To apply the mitigation hierarchy and the precautionary approach in the design and implementation of projects that could have an impact on biodiversity.	Included in the Environmental Protection Law No. 26/1995 and Yemen is a party in the Conservation of Biodiversity Convention.	No major gap between national, international requirements and ESF objectives. Both will be applied.
To promote the sustainable management of living natural resources.	Included in the Environmental Protection Law No. 26/1995 and Yemen is a party in the Conservation of Biodiversity Convention.	No major gap between national, international requirements and ESF objectives. Both will be applied.
To support livelihoods of local communities, including Indigenous Peoples, and inclusive economic development, through the adoption of practices that integrate conservation needs and development priorities.	Included in the Environmental Protection Law No. 26/1995 and Yemen is a party in the Conservation of Biodiversity Convention.	No major gap between national, international requirements and ESF objectives. Both will be applied.

World Bank Requirements	Yemeni Requirements	Recommended Action
ESS7. Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities		
Not Relevant		
ESS8. Cultural Heritage		
To protect cultural heritage from the adverse impacts of project activities and support its preservation.	EPL (26/1995, Chapter 3 Article 37) requires the establishment of a national list of all sites with important cultural heritage or environmental sensitivity such as wetland sites, coral reefs, protected areas and national parks. During projects planning in urban and rural areas, projects should plan for the protection of cultural heritage. If there is an indication of existence of any cultural heritage, the relevant authority must be consulted before commencement of project works. Project works should be located no closer than 500 m from the nearest known cultural heritage (Presidential Decree 21/1994, Parliament Decree 14/1994 and Law 8/1997 Amending the Antiquities Law 21/1994, Article 12). In the event of a chance find of above ground or underground cultural heritage, government authorities must be consulted and the site must be guarded safely until the related governmental authority experts came, investigate and have a hold on it, in return the finder is entitled to suitable reward regardless of the value and age of the cultural heritage. The General Organization for Antiquities and Museums (GOAM) has the mandate to stop any works that could damage antiquities and cultural heritage areas and to preserve cultural field work and excavation findings (Presidential Decree 21/1994, Parliament Decree 14/1994 and Law 8/1997 Amending article 9 of the Antiquities Law 21/1994). UNESCO, the Doha Office of GOAM and Oxford University agreed to jointly launch the Yemeni Heritage Management Platform Database in 2017	The Yemeni requirements are more specific. UNOPS will ensure that any cultural heritage encountered during the work will be reported to the GOAM and the Yemeni Heritage Management Platform Database National requirements and ESF objectives are aligned, and no significant gaps are noted. Both World Bank ESF objectives and National requirements will apply to the Project.
To address cultural heritage as an integral aspect of sustainable development	To conduct field-based surveys by specialists and describe the proposed site for project including map, borders and neighborhoods with design of infrastructures, facilities and services and all inputs and outputs (EPL and EIA Guideline).	National requirements and ESF objectives are aligned and complementary. UNOPS will apply both ESF and national requirements
To promote meaningful consultation with stakeholders regarding cultural heritage.	No comparable requirement under Yemeni law	UNOPS will apply ESF requirements
To promote the equitable sharing of benefits from the use of cultural heritage.	No comparable requirement under Yemeni law	UNOPS will apply ESF requirements
ESS9. Financial Intermediaries		

World Bank Requirements	Yemeni Requirements	Recommended Action
Not Relevant		
ESS10. Stakeholder Engagement and Information Disclosure		
To establish a systematic approach to stakeholder engagement that will help Borrowers identify stakeholders and build and maintain a constructive relationship with them, in particular project-affected parties.	Article 35 of the Yemeni Constitution declares that Environment protection is the responsibility of the state and the community and that it is a duty for every citizen. Community and NGO participation are considered an essential part of consultation while planning proposed projects, and is a continuous process before, during and after project implementation (EPA EIA Guideline). Furthermore, NGOs and individuals can directly sue any person or entity who causes harm to the environment and natural resources or participate in its deterioration and pollution (EPL Article 4, para 4 and Article 82).	UNOPS will follow ESF requirements
To assess the level of stakeholder interest and support for the project and to enable stakeholders' views to be taken into account in project design and environmental and social performance.	Included in the Local Administration Law	UNOPS will follow ESF requirements
To promote and provide means for effective and inclusive engagement with project-affected parties throughout the project life cycle on issues that could potentially affect them.	Included in the Local Administration Law	UNOPS will follow ESF requirements
To ensure that appropriate project information on environmental and social risks and impacts is disclosed to stakeholders in a timely, understandable, accessible and appropriate manner and format.	ESIAs should include a reference list and a non-technical summary for public use and disclosure in a form and language understandable to general public (EPA EIA guideline).	National requirements and ESF objectives are aligned, and no significant gaps are noted. Both World Bank ESF objectives and National requirements will apply to the Project.
To provide project-affected parties with accessible and inclusive means to raise issues and grievances, and allow Borrowers to respond to and manage such grievances	Article 51 of the Constitution allows for recourse to the courts. The Public Eminent Domain Law and the Local Administration Law provide for the right of grievance before the Estimation Committee/courts. To address grievances, PAPs can first seek satisfaction through local customary practices for resolving conflict. They can then initiate legal proceedings in accordance with provincial national law.	National requirements and ESF objectives are aligned, and no significant gaps are noted. Both World Bank ESF objectives and National requirements will apply to the Project.

Annex 3

Environmental and social risks and matching mitigation measures for urban water and sanitation subprojects[50]

Risks	Mitigation measures
Water Treatment	
The most significant potential community health and safety impacts associated with water treatment include: • Drinking water quality and supply • Hazardous chemicals	• Ensure that treatment capacity is adequate to meet anticipated demand; • Construct, operate and maintain the water treatment facility in accordance with national requirements and internationally accepted standards to meet national water quality standards or, in their absence, WHO Guidelines for Drinking Water Quality; • Evaluate the vulnerability of the treatment system and implement appropriate security measures, such • If a worst-case release scenario could affect the general public, prepare and implement a release prevention program for major hazards
Solid Waste Solid waste residuals generated by water treatment include process residuals, used filtration membranes, spent media and miscellaneous wastes	• Minimize the quantity of solids generated by the water treatment process through optimizing coagulation processes; • Dispose of lime sludges by land application if allowed, limiting application rates to about 20 dry metric tons per hectare (9 dry tons per acre) to minimize the potential for mobilization of metals into plant tissue and groundwater; • Dispose of ferric and alum sludges by land application, if allowed and if such application can be shown through modeling and sampling to have no adverse impacts on groundwater or surface water (e.g., from nutrient runoff). • Assess the potential impact on soil, groundwater, and surface water, in the context of protection, conservation and long-term sustainability of water and land resources, when land is used as part of any waste or wastewater treatment system; • Sludges may require special disposal if the source water contains elevated levels of toxic metals, such as arsenic, radionuclides, etc.; • Regenerate activated carbon (e.g., by returning spent carbon to the supplier).
Wastewater Wastewater from water treatment projects include filter backwash, reject streams from membrane filtration processes, and brine streams from ion	• Land application of wastes with high dissolved solids concentrations is generally preferred over discharge to surface water subject to an evaluation of potential impact

[50] This table is based on the EHS Guidelines for Water and sanitation

Risks	Mitigation measures
exchange or demineralization processes. These waste streams may contain suspended solids and organics from the raw water, high levels of dissolved solids, high or low pH, heavy metals, etc.	on soil, groundwater, and surface water resulting from such application; • Recycle filter backwash into the process if possible; • Treat and dispose of reject streams, including brine, consistent with national and local requirements. Disposal options include return to original source (e.g., ocean, brackish water source, etc.) or discharge to a municipal sewerage system, evaporation, and underground injection.
Hazardous Chemicals Water treatment may involve the use of chemicals for coagulation, disinfection and water conditioning.	• Store sodium hypochlorite in cool, dry, and dark conditions for no more than one month, and use equipment constructed of corrosion-resistant materials; • Store calcium hypochlorite away from any organic materials and protect from moisture; fully empty or re-seal shipping containers to exclude moisture. Calcium hypochlorite can be stored for up to one year; • Isolate ammonia storage and feed areas from chlorine and hypochlorite storage and feed areas; • Minimize the amount of chlorination chemicals stored on site while maintaining a sufficient inventory to cover intermittent disruptions in supply; • Develop and implement a prevention program that includes identification of potential hazards, written operating procedures, training, maintenance, and accident investigation procedures; • Develop and implement a plan for responding to accidental releases.
Water Distribution	
Even if water is effectively treated to remove contaminants and destroy pathogens, waterborne diseases outbreaks can occur because of deficiencies in the water distribution system.	• Construct, operate, and manage the water distribution system in accordance with applicable national requirements and internationally accepted standards • Construct and maintain the distribution system so that it acts as a barrier and prevents external contamination from entering the water system • Maintain adequate water pressure and flow throughout the system • Prevent introduction of contamination from the distribution system itself
Water System Leaks and Loss of Pressure Water system leaks can reduce the pressure of the water system compromising its integrity and ability to protect water quality (by allowing contaminated water to leak into the system) and increasing the demands on the source water supply, the quantity of chemicals, and the amount of power used for pumping and treatment. Leaks in the distribution system can result from improper installation or maintenance, inadequate corrosion protection, settlement, stress from traffic and vibrations, frost loads, overloading, and other factors.	• Ensure construction meets applicable standards and industry practices • Conduct regular inspection and maintenance • Implement a leak detection and repair program (including records of past leaks and unaccounted-for water to identify potential problem areas) • Consider replacing mains with a history of leaks of with a greater potential for leaks because of their location, pressure stresses, and other risk factors

Risks	Mitigation measures
Recommended measures to prevent and minimize water losses from the water distribution system include:	
Water Discharges Water lines may be periodically flushed to remove accumulated sediments or other impurities that have accumulated in the pipe. Flushing is performed by isolating sections of the distribution system and opening flushing valves or, more commonly, fire hydrants to cause a large volume of flow to pass through the isolated pipeline and suspend the settled sediment. The major environmental aspect of water pipe flushing is the discharge of flushed water, which may be high in suspended solids, residual chlorine, and other contaminants that can harm surface water bodies.	• Discharge the flush water into a municipal sewerage system with adequate capacity • Discharge the flush water into a separate storm sewer system with storm water management measures such as a detention pond, where solids can settle and residual chlorine consumed before the water is discharged • Minimize erosion during flushing, for example by avoiding discharge areas that are susceptible to erosion and spreading the flow to reduce flow velocities
Wastewater and Sludge Treatment	
Potential community health and safety impacts associated with wastewater and sludge treatment facilities include: • Liquid effluents • Air emissions and odors • Physical hazards	• Ensure adequate wastewater treatment to remove contaminants and, especially, microorganisms and pathogens • Avoid siting facilities near densely populated neighborhoods and installations with potentially sensitive receptors, such as hospitals and schools. Site facilities downwind from potential receptors, if possible. • Restrict access to waste management facilities by implementing security procedures,
Sewerage	
Domestic Wastewater Discharges Uncontrolled discharge of domestic wastewater, including sewage and greywater, into aquatic systems can lead to, among other things, microbial and chemical contamination of the receiving water, oxygen depletion, increased turbidity, and eutrophication. Wastewater discharge onto streets or open ground can contribute to spread of disease, odors, contamination of wells, deterioration of streets,	• Provide systems for effective collection and management of sewage and greywater (separately or combined); • If greywater is managed separate from sewage, implement greywater source control measures to avoid use and discharge of problematic substances, such as oil and grease, large particles or chemicals.
Industrial Wastewater Discharges Industrial users of a sewerage system can discharge industrial wastewaters to the sewer system. Some industrial wastes can cause fire and explosion hazards in the sewerage system and treatment facility, disrupt biological and other processes at the treatment facility or affect worker health and safety; some waste components may not be effectively treated, and may be stripped to the atmosphere, discharged with treated effluent or partition into	• Treatment or pre-treatment to neutralize or remove toxic chemicals should ideally take place at the industrial facility itself, prior to discharge of the effluent to the sewer or water body. Consider collaboration with public authorities in the implementation of a source control program for industrial and commercial users to ensure that any wastewater discharged to the sewer system can be effectively treated. Examples of problematic discharges include: flammable, reactive, explosive, corrosive, or radioactive substances; noxious or malodorous materials;

Risks	Mitigation measures
treatment plant residuals rendering it potentially hazardous.	medical or infectious wastes; solid or viscous materials that could cause obstruction to the flow or operation of the treatment plants; toxic substances; non-biodegradable oils; and pollutants that could result in the emission of hazardous gases; • Collaborate with public authorities in the regular inspection of industrial user facilities and collect samples of wastewater discharges to the sewerage system to ensure compliance with the source control program; • Conduct surveillance monitoring at sewer maintenance and of the influent to the wastewater treatment facilities; • Investigate upstream sources of pollutants causing treatment plant upsets or interference; • Facilitate public reporting of illicit discharges and connections.
Leaks and Overflows Leaks and overflows from the sewerage system can cause contamination of soil, groundwater, and surface water. Depending on the elevation of groundwater, leaks in gravity mains may also allow groundwater into the sewer system, increasing the volume of wastewater requiring treatment and potentially causing flooding and treatment bypass. Overflows occur when the collection system cannot manage the volume of wastewater, for example due to high flows during rain events or as the result of power loss, equipment malfunctions, or blockages. The excess flows may contain raw sewage, industrial wastewater, and polluted runoff.	• Consider the installation of separate sewer systems for domestic wastewater and storm water runoff in the overall planning and design of new sewerage systems; • When on-site sanitation systems where excreta are mixed with water predominate, consider use of small-diameter sewerage system to collect water effluent from septic systems or interceptor tanks; • Limit the sewer depth where possible (e.g., by avoiding routes under streets with heavy traffic). For shallower sewers, small inspection chambers can be used in lieu of manholes; • Use appropriate locally available materials for sewer construction. Spun concrete pipes can be appropriate in some circumstances but can suffer corrosion from hydrogen sulfide if there are blockages and/or insufficient slope; • Ensure sufficient hydraulic capacity to accommodate peak flows and adequate slope in gravity mains to prevent buildup of solids and hydrogen sulfide generation; • Design manhole covers to withstand anticipated loads and ensure that the covers can be readily replace if broken to minimize entry of garbage and silt into the system; • Equip pumping stations with a backup power supply, such as a diesel generator, to ensure uninterrupted operation during power outages, and conduct regular maintenance to minimize service interruptions. Consider redundant pump capacity in critical areas; • Establish routine maintenance program, • Conduct repairs prioritized based on the nature and severity of the problem. Immediate clearing of blockage or repair is warranted where an overflow is currently occurring or for urgent problems that may cause an imminent overflow (e.g., pump station failures, sewer line ruptures, or sewer line blockages); • Review previous sewer maintenance records to help identify “hot spots” or areas with frequent maintenance problems and locations of potential system failure, and

Risks	Mitigation measures
	conduct preventative maintenance, rehabilitation, or replacement of lines as needed; • When a spill, leak, and/or overflow occurs, keep sewage from entering the storm drain system by covering or blocking storm drain inlets or by containing and diverting the sewage away from open channels and other storm drain facilities (using sandbags, inflatable dams, etc.). Remove the sewage using vacuum equipment or use other measures to divert it back to the sanitary sewer system.
Wastewater and Sludge Treatment and Discharge	
Liquid effluents Treated wastewater (liquid effluents) may be reused for irrigation or other purposes or disposed subject to regulatory oversight. If not re-used, treated wastewater can be discharged to the sea; rivers; large surface water bodies; smaller, closed surface water bodies; and wetlands and lagoons.	• Minimize bypass of the treatment system by using separate storm water and wastewater systems, if possible, and providing capacity sufficient to treat peak flows; • Implement an industrial source control program which includes monitoring and effective regulatory enforcement; • Collaborate with public officials to select appropriate treatment technologies, considering factors such as the quality and quantity of raw wastewater and its variability; available land area for the treatment facility; and resources for capital expenditures, operation, maintenance, and repair; availability of skilled operators, operator training, maintenance personnel, treatment chemicals, and replacement parts; • Design, construct, operate, and maintain wastewater treatment facilities and achieve effluent water quality consistent with applicable national requirements or internationally accepted standards and consistent with effluent water quality goals based on the assimilative capacity and the most sensitive end use of the receiving water; • Consider discharge of treated wastewater to natural or constructed wetlands, which can buffer the impact from discharge on the aquatic environment, unless the wetland itself would be degraded by the discharge; • Treat greywater, if collected separately from sewage, to remove organic pollutants and reduce the levels of suspended solids, pathogenic organisms and other problematic substances to acceptable levels based on applicable national and local regulations. Greywater lines and point of use stations should be clearly marked to prevent accidental use for potable water quality applications; • Based on an assessment of risks to human health and the environment, consider re-use of treated effluent, especially in areas with limited raw water supplies. Treated wastewater quality for land application or other uses should be consistent with the relevant public health-based guidance from the World Health Organization (WHO)18 and applicable national requirements.

Risks	Mitigation measures
Solid waste Solids removed from wastewater collection and treatment systems may include sludge and solids from cleaning of drainage and sewer collection systems (including seepage systems), screening solids, and sludge from various unit operations used for wastewater treatment.	• Select appropriate sludge treatment technologies, considering, for example, the quantity and sources of sludge; available resources for capital expenditures, training, operations and maintenance; availability of skilled operators, maintenance personnel, etc.; and the desired disposal methods or end uses of the treated solids. • Land application or other beneficial re-use of wastewater treatment plant residuals should be considered but only based on an assessment of risks to human health and the environment. Quality of residuals for land application should be consistent with the relevant public health-based guidance from the World Health Organization (WHO)19 and applicable national requirements; • Processing, disposal and re-use of wastewater treatment plant residuals should be consistent with applicable national requirements or, in their absence, internationally accepted guidance and standards.
Air emissions and odors Air emissions from wastewater treatment operations may include hydrogen sulfide, methane, ozone (in the case of ozone disinfection), volatile organic compounds (such as from industrial discharges), gaseous or volatile chemicals used for disinfection processes (e.g., chlorine and ammonia), and bioaerosols. Odors from treatment facilities can also be a nuisance to workers and the surrounding community.	• Cover emission points (e.g., aeration basins, clarifiers, sludge thickeners, tanks, and channels), and vent emissions to control systems (e.g., compost beds, bio-filters, chemical scrubbers, etc.) as needed to reduce odors and otherwise meet applicable national requirements and internationally accepted guidelines; • Where necessary, consider alternate aeration technologies or process configurations to reduce volatilization.
Other measures	
Improved water supply can increase the quantities of wastewater	• UNOPS and UW-PMU will ensure that the water supply subprojects are accompanied by sanitation subprojects, if the increased wastewater exceeds current capacity
Demand side management and efficient allocation of water by the LCs might be necessary to conserve scarce water resources, but could lead to higher prices for poorer segments of the population. Furthermore, cost recovery for sanitation and wastewater treatment services may adversely impact the poorer segments of the society	• UNOPS will ensure that any Technical Assistance regarding tariffs for water supply (production distribution and maintenance) or sanitation (including sewer networks, wastewater treatment, and maintenance) do not adversely impact the poorer or vulnerable segments of the population.
Rehabilitated wastewater treatment plants might negatively impact neighboring communities that have expanded over the years, for example by increasing unpleasant odors or reducing property values	• Depending on the scope of the issues, UNOPS and UW-PMU will explore whether it can implement sufficient mitigation measures to address the concerns of these neighboring communities.

UNOPS

Annex 4

ESHS risks associated with the activities of Contractors

	Reference
General Provisions	
Contractor Environmental and Social Management Plan (C-ESMP)	
• Poorly prepared C-ESMPs can lead to poor contractor E&S performance	Annex 3 of ESS1
Communication and Training	
ESHS Training	
• Inadequate ESHS training can lead to poor contractor E&S performance, as well as accidents and incidents	ESS2, Section 2.2 of the General ESHG
Area Signage	
• The absence of appropriate signage and precautionary measures can lead to accidents	ESS2, Section 2.2 of the General ESHG
Labeling of Equipment	
• The absence of labels and warning signs can lead to accidents and incidents	ESS2, Section 2.2 of the General ESHG
Construction Site Management	
Vegetation	
• Construction activities can unnecessarily destroy, scar, or deface the natural surroundings in the vicinity of the construction site	ESS6, paragraphs 8-9
Damage to Existing Installations	
• Existing installations, such as buildings, structures, works, pipes, cables, sewers, or other services may be damaged	ESS4, paragraph 5
• Owners, tenants or occupiers of properties may be disturbed or inconvenienced by the construction works	ESS4, paragraph 5
Cultural Heritage	
• Project activities might unearth unknown cultural heritage (chance finds)	ESS8, paragraph 11

	Reference
• Project activities might indirectly affect existing cultural heritage, for example by cracking masonry	ESS8
Borrow Pits and Quarries	
• Quarry operations will produce noise and dust that will impact on nearby inhabitant	ESS4, paragraph 5
• Quarries used by primary suppliers could lead to the significant conversion or degradation of natural or critical habitats	ESS6, paragraph 8-9
• Improperly sited quarries can pollute the ground and surface water	ESS3
• Unfenced borrow pits and quarries are a hazard to people and livestock	ESS4, paragraph 5
• Blasting operation can damage property.	ESS4, paragraph 5
• Borrow pits and quarries can deface the landscape	ESS3, ESS4
Location of Worker Camps	
• Poorly located camps can be prejudicial to local communities, and cause conflicts	ESS4, ESS5
Decommissioning of Camps, Worksites and Plants	
• Construction sites might include contaminated patches, waste, and abandoned equipment that are a health hazard to neighboring communities	ESS3, ESS4
Environment	
Noise and Vibration	
• Construction activities, the operation of pile drivers, earth moving and excavation equipment, concrete mixers, cranes and the transportation of equipment, materials and people. may cause noise and vibration.	ESS3, Section 4.1 of the General EHS Guidelines
Soil Erosion	
• The exposure of soil surfaces to rain and wind during site clearing, earth moving, and excavation activities may cause soil erosion. The mobilization and transport of soil particles may, in turn, result in sedimentation of surface drainage networks, which may result in impacts to the quality of natural water systems and ultimately the biological systems that use these waters.	ESS4, ESS6 Section 4.1 of the General EHS Guidelines
Air Quality	
• Construction activities may generate emission of fugitive dust caused by a combination of on-site excavation and movement of earth materials, contact of construction machinery with bare soil, and exposure of bare soil and soil piles to wind.	ESS3, Section 4.1 of the General EHSG

	Reference
• A secondary source of emissions may include exhaust from diesel engines of earth moving equipment, as well as from open burning of solid waste on-site.	ESS4, ESS3, Section 4.1 of the General EHSG
Hazardous and Toxic Waste	
• Construction activities may release petroleum-based products, such as lubricants, hydraulic fluids, or fuels during their storage, transfer, or use in equipment.	ESS3, Section 4.1 of the General EHSG
Waste from Construction Activities	
• Construction debris and spoils might contaminate soils and groundwater	ESS3
• Transport of waste might litter roads	ESS3
• Solid waste and debris might be disposed of improperly	ESS3
Occupational Health and Safety	
Severe Weather and Facility Shutdown	
• Workers can be injured or become ill if required to work in severe weather	ESS2, Section 2.1 of the General ESHG
Lavatories and Showers	
• Inadequate lavatories and showers can lead to worker illness or disease	ESS2, Section 2.1 of the General ESHG
Potable Water Supply	
• Inadequate supply of potable water on site can lead to worker illness and disease	ESS2, Section 2.1 of the General ESHG
Clean Eating Area	
• The absence of a clean eating area can lead to worker illness and disease	ESS2, Section 2.1 of the General ESHG
First Aid	
• Lack of first provisions can aggravate the impact of injuries or illnesses	ESS2, Section 2.1 of the General ESHG
Noise	
• High noise levels can permanently affect the hearing of workers • Increased levels of noise and vibration due to heavy vehicles and construction equipment, which are a nuisance to the community around the site	ESS2, footnote 18 Section 2.3 of the General ESHG

	Reference
Electrical	
• Exposed or faulty electrical devices, such as circuit breakers, panels, cables, cords and hand tools, can pose a serious risk to workers. Overhead wires can be struck by metal devices, such as poles or ladders, and by vehicles with metal booms. Vehicles or grounded metal objects brought into close proximity with overhead wires can result in arcing between the wires and the object, without actual contact.	ESS2, Section 2.3 of the General ESHG
Industrial Vehicle and Site Traffic	
• Poorly trained or inexperienced industrial vehicle drivers have increased risk of accident with other vehicles, pedestrians, and equipment. Industrial vehicles and delivery vehicles, as well as private vehicles on-site, also represent potential collision scenarios.	ESS2, Section 2.3 of the General ESHG ESS4, Paragraph 13
• Vehicle traffic and use of lifting equipment in the movement of machinery and materials on a construction site may pose temporary hazards, such as physical contact, spills, dust, emissions, and noise.	ESS2, ESS4, Section 4.2 of the General ESHG
Working Environment Temperature	
• Exposure to hot or cold working conditions in indoor or outdoor environments can result temperature stress-related injury or death. Use of personal protective equipment (PPE) to protect against other occupational hazards can accentuate and aggravate heat-related illnesses.	ESS2, Section 2.3 of the General ESHG
Over-exertion	
• Over-exertion, and ergonomic injuries and illnesses, such as repetitive motion, over-exertion, and manual handling, are among the most common causes of injuries in construction and decommissioning sites.	ESS2, Section 4.2 of the General ESHG
Slips and Falls	
• Slips and falls on the same elevation associated with poor housekeeping, such as excessive waste debris, loose construction materials, liquid spills, and uncontrolled use of electrical cords and ropes on the ground, are also among the most frequent cause of lost time accidents at construction sites	ESS2, Section 4.2 of the General ESHG
Work in Heights	
• Falls from elevation associated with working with ladders, scaffolding, and partially built or demolished structures are among the most common cause of fatal or permanent disabling injury at construction or decommissioning sites	ESS2, Section 4.2 of the General ESHG
Struck by Objects	

	Reference
• Construction activities may pose significant hazards related to the potential fall of materials or tools, as well as ejection of solid particles from abrasive or other types of power tools which can result in injury to the head, eyes, and extremities.	ESS2, Section 4.2 of the General ESHG
Welding/Hot Work	
• Welding creates an extremely bright and intense light that may seriously injure a worker's eyesight. In extreme cases, blindness may result. Additionally, welding may produce noxious fumes to which prolonged exposure can cause serious chronic diseases.	ESS2, Section 2.3 of the General ESHG
Personal Protective Equipment (PPE)	
• The lack of appropriate PPE, and of training in its use, can lead to injuries	ESS2, Section 2.7 of the General ESHG
Excavations	
• Excavation dewatering, poor side-walls support, and slope gradients can result in collapse, entrapment, or even drowning	ESS2, Section 4.2 of the General ESHG
Confined Spaces	
• Serious injury or fatality can result from inadequate preparation to enter a confined space or in attempting a rescue from a confined space	ESS2, Section 2.8 of the General ESHG
Lone and Isolated Workers	
• Lone and isolated workers are at increased risk should an accident or injury occur, because they are out of verbal and line of sight communication with a supervisor, other workers, or other persons capable of providing aid and assistance	ESS2, Section 2.8 of the General ESHG
Working in Sewers	
• Working in sewers can lead to suffocation and even death, if the necessary precautions are not taken	ESS2, World Bank request to fatal incident of YIUSEP I
Solar PV Systems	
Chemical Hazards	
• Sulfuric acid (electrolyte) in lead-acid batteries is highly corrosive and acid exposure can lead to skin irritation, eye damage, respiratory irritation, and tooth enamel erosion.	World Bank review comment
Community Health and Safety	
General Site Hazards	

	Reference
• Risks to the community may arise from inadvertent or intentional trespassing, including potential contact with hazardous materials, contaminated soils and other environmental media, buildings that are vacant or under construction, or excavations and structures which may pose falling and entrapment hazards	ESS4, Section 4.3 of the General ESHG
Traffic Safety	
• Traffic accidents have become one of the most significant causes of injuries and fatalities among members of the public worldwide.	ESS2, ESS4, Section 3.4 of the General ESHG
Communicable Diseases	
• Construction sites can facilitate the spread of communicable diseases	ESS2, ESS4, section 3.6 of the General ESHG
Vector-Borne Diseases	
• Poorly managed construction sites can favor vector borne diseases, particularly if pools of stagnant water are not avoided	ESS2, ESS4, section 3.6 of the General ESHG
COVID-19	
• Construction sites can increase the spread of COVID-19	ESS2, ESS4 World Bank COVID-19 LMP Template, April 16, 202
Emergency Preparedness and Response	
• The loss of control of a situation may result in risks to human health, property, or the environment, either within the facility or in the local community.	ESS4, Paragraph 19 Section 3.7 of the General ESHG
Stakeholder Engagement	
• The lack of engagement with neighboring communities affected by Project activities might cause tensions, and result in complaints	ESS10
Labour Force Management	
Labour Influx	
• Labor influx to work on Project activities can have major negative impacts on local communities	ESS2, ESS4
Labor Conditions	

	Reference
• Contractors might not provide workers with the terms and conditions they are entitled to under Yemeni Labor Legislation, most particularly Decree 5/1995, and applicable International Labour Organization conventions on workplace conditions.	ESS2, paragraphs 10-12
Insurance	
• Contractors might not compensate workers and their families for workplace injuries or deaths	ESS2, Chapter X of the Yemeni Labor Code
Grievance Mechanism for Workers	
• Contractors might not act on worker grievances	ESS2, paragraphs 21-23, 33
Protection from Sexual Exploitation and Abuse	
• Workers might sexually abuse of exploit women or children	ESS2, paragraph 13
Protection from Child Labor	
• Contractors might unknowingly employ workers under the age of 18.	ESS2, paragraphs 17-19
Protection from forced labor	
• Contractors might employ forced laborers	ESS2, Paragraph 20
Code of Conduct	
• The behavior of workers can be prejudicial to neighboring communities, and to fellow workers	ESS2, GPN on Addressing (SEA/SH) in Investment Project Financing involving Major Civil Works
Contractor Environmental and Social Reporting	
• Lack of E&S monitoring by contractors facilitates their poor E&S performance	As suggested in Paragraph 79 of IFC's GPN on Managing Contractors' Environmental and Social Performance[51]

[51] https://www.ifc.org/wps/wcm/connect/87197a95-1b7f-4f57-ac1e-ee961730ce4d/p_GPN_ESContractorManagement.pdf?MOD=AJPERES&CVID=mcsUYYc

UNOPS

Annex 5

Environmental and Social Requirements for Contractors

These Environmental, Social, Health and Safety (ESHS) requirements detail the requirements that contractors must meet to be in accordance with the ESF. Since the Environmental and Social Standards -ESS) of the World Bank (most particularly ESS1, ESS2, ESS3, and ESS4) directly refer to the World Bank Group EHS Guidelines, the EHS Guidelines are also part of the ESF requirement.

These ESHS requirements include the relevant actions detailed in the General EHS Guidelines[52], as well as requirements derived from the ESSs of the World Bank, and actions detailed in the relevant World Bank ESF Good Practice Notes (GPN).

UNOPS and its Implementing Partners will incorporate the ESHS requirements in bidding documents and also as technical clauses in contracts, while indicating that the ESHS requirements do not limit the applicability of the ESF or of the EHS Guidelines, which will remain the documents of reference against which UNOPS and its Implementing Partners will assess the environmental and social performance of contractors.

The ESHS requirements include 11 sections

12. General Provisions
13. Communication and Training
14. Construction Site Management
15. Environment
16. Occupational Health and Safety (OHS)
17. Solar PV Systems (Code of Practice)
18. Community Health and Safety
19. Emergency Preparedness and Response
20. Labour Force Management, including the Code of Conduct
21. Stakeholder Engagement
22. Contractor Environmental and Social Reporting

General Provisions

Contractor Environmental and Social Management Plan (C-ESMP)

The Contractor shall:

- Prepare and submit to UNOPS for approval a Contractor Environmental and Social Management Plan (C-ESMP), including the following sections or subplans:[53]
  - Communication and Training
  - Construction Site Management
  - Environment
  - Occupational Health and Safety (OHS)
  - Solar PV Systems (Code of Practice)
  - Community Health and Safety

[52] Significant portions of the General EHS Guidelines are not directly relevant to Project activities.
[53] UNOPS may recommend or require that contractors use the guidelines and templates of its HSSE System when preparing their C-ESMPs

- Emergency Preparedness and Response
- Labour Force Management, including the Code of Conduct
- Stakeholder Engagement
- Contractor Environmental and Social Reporting

- Include in the C-ESMP a detailed explanation of how the contractor's performance will meet the ESHS requirements as defined in the contract bidding documents
- Include in the C-ESMP an organization chart of the personnel assigned to environmental and social management
- Ensure that sufficient funds are budgeted to meet the ESHS requirements, and that sufficient capacity is in place to oversee, monitor and report on C-ESMP performance.
- Put in place controls and procedures to manage their ESHS performance

The C-ESMP will be a contractual document that will serve as a reference during the monitoring and evaluation of the environmental and social performance of the Contractor.

National Laws and Regulations

The Contractor shall:

- Know, respect and apply the laws, regulations and standards in force in Yemen relating to the environment, as well as to social, health and safety aspects
- Assume full responsibility for any claims related to activities under their control that do not comply with these laws, regulations, or standards

Contractual obligations

The Contractor shall:

- Get prior written approval from UNOPS Engineers before starting any activities
- Designate a ESHS Officer who will ensure that ESHS requirements are rigorously followed by all and at all levels of execution, both by the Contractor's workers and by any persons in contact with the Contractor's activities
- Comply with ESHS requirements and its C-ESMP until final acceptance of the work by UNOPS
- Remedy any defect, failure, or non-performance of the ESHS requirements or its C-ESMP that is duly notified to it by UNOPS or its representative
- Assume the costs associated with any delay or interruption of works, as well as any additional work resulting from non-compliance with the ESHS requirements or its C-ESMP

In accordance with the contractual provisions, failure to comply with the ESHS requirements or the C-ESMP may be grounds for termination of the contract. The Contractor who has been terminated for failure to comply with ESHS requirements or its C-ESMP may be subject to sanctions up to and including suspension of the right to bid for a period determined by UNOPS, as well as a freeze on the holdback.

Failure by the Company to comply with one or more ESHS requirements or its C-ESMP may expose it to refusal of final acceptance of the work by UNOPS.

The Contractor's obligations with respect to ESHS requirements run until final acceptance of the contracted activity, which will only be given by UNOPS after all the measures required by the ESHS requirements have been met.

The Contractor shall:

- Prepare and submit to UNOPS for approval a Contractor Environmental and Social l and Social Management Plan (C-ESMP)
- Include in the C-ESMP a detailed explanation of how the contractor's performance will meet the ESHS requirements

- Ensure that sufficient funds are budgeted to meet the ESHS requirements, and that sufficient capacity is in place to oversee, monitor and report on C-ESMP performance.
- Put in place controls and procedures to manage their ESHS performance
- Get prior written approval from UNOPS Engineers before starting construction or rehabilitation activities

Communication and Training[54]

The Contractor shall:

- Determine ESHS training needs in collaboration with UNOPS
- Maintain records of all ESHS training, orientation, and induction
- Ensure, through appropriate contract specifications and monitoring that service providers, as well as contracted and subcontracted labor, are trained adequately before assignments begin
- Demonstrate that its employees are competent to carry out their activities and duties safely. For this purpose, the Contractor shall issue a Competence Certificate for every person working on site (relative to trade and aspect of work assignment) that specifies which tasks can be undertaken by which key personnel

Orientation Training

The Contractor shall:

- Provide ESHS orientation training to all employees, to ensure that they are apprised of the basic site rules of work at/on the site and of personal protection and preventing injury to fellow employees
- As part of the orientation training, Include basic hazard awareness, site-specific hazards, safe work practices, and emergency procedures for fire, evacuation, and natural disaster, as appropriate. Any site-specific hazard or color coding in use should be thoroughly reviewed as part of orientation training.

Visitor Orientation

The Contractor shall:

- Establish an orientation program for visitors, including vendors, that could access areas where hazardous conditions or substances may be present
- Prohibit visitors from enter hazard areas unescorted
- Ensure that visitors are always be accompanied by an authorized member of the contractor, or a representative of UNOPS or of its Implementing Partners, who has successfully fulfilled the ESHS orientation training, and who is familiar with the project site construction hazards, layout, and restricted working areas

New Task Employee and Contractor Training

The Contractor shall:

- Ensure that all workers and subcontractors, prior to commencement of new assignments, have received adequate training and information enabling them to understand work hazards and to protect their health from hazardous ambient factors that may be present. The training should adequately cover the step-by-step process that is needed for Project activities to be undertaken safely, with minimum harm to the environment, including:
    - Knowledge of materials, equipment, and tools

[54] This section reflects the relevant requirements in section 2.2 of the General EHS Guidelines, Communication and Training

- Known hazards in the operations and how they are controlled
- Potential risks to health
- Precautions to prevent exposure
- Hygiene requirements
- Wearing and use of protective equipment and clothing
- Appropriate response to operation extremes, incidents and accidents

Basic OHS Training

The Contractor shall:

- Provide a basic occupational training program and specialty courses, as needed, to ensure that workers are oriented to the specific hazards of individual work assignments. Training should generally be provided to management, supervisors, workers, and occasional visitors to areas of risks and hazards.
- Provide dedicated training to workers with rescue and first-aid duties, so as not to inadvertently aggravate exposures and health hazards to themselves or their co- workers. Training would include the risks of becoming infected with blood–borne pathogens through contact with bodily fluids and tissue.
- Ensure, through appropriate contract specifications and monitoring, ensure that service providers, as well as contracted and subcontracted labor, are trained adequately before assignments begin.

Area Signage

The Contractor shall:

- Appropriately mark hazardous areas.
- Install warning signs
- Ensure that signage is in accordance with international standards and is well known to, and easily understood by workers, visitors and the general public as appropriate.
- Demarcate work sites with safety tape, fencing or barricades, as appropriate, to prevent unauthorized access to the construction sites
- Safeguard public safety by covering holes and by installing guardrails along temporary pathways.

Labeling of Equipment

The Contractor shall:

- Label all vessels that may contain substances that are hazardous as a result of chemical or toxicological properties, or temperature or pressure, as to the contents and hazard, or appropriately color coded.

Construction Site Management

Vegetation

The Contractor shall:

- Prevent any unnecessary destruction, scarring, or defacing of the natural surroundings in the vicinity of the construction site
- Protect all trees and vegetation from damage by construction operations and equipment, except where clearing is required for permanent works, approved construction roads, or excavation operations

- Revegetate damaged areas on completion of the Works, and for areas that cannot be revegetated, scarifying the work area to a condition that will facilitate natural revegetation, provide for proper drainage, and prevent erosion
- Use, as much as possible, local species for replanting and species that are not listed as a noxious weed
- Repair, replant, reseed or otherwise correct, as directed by UNOPS or its representative, and at the Contractor's own expense, all unnecessary destruction, scarring, damage, or defacing of the landscape resulting from the Contractors operations
- Transport labor and equipment in a manner to avoid as much as possible damage to grazing land, crops, and property

Protection of Existing Installations

The Contractor shall:

- Safeguard all existing buildings, structures, works, pipes, cables, sewers, or other services or installations from harm, disturbance or deterioration during construction activities
- Coordinate with local authorities to identify existing infrastructure that might not be visible
- Repair any damage caused by the Contractor's activities, in coordination with concerned authorities
- Take all reasonable precautions to prevent or reduce any disturbance or inconvenience to the owners, tenants or occupiers of properties to the construction activities, and more generally to the public
- Maintain safe access to public and private properties that might be affected by construction activities. If necessary, provide acceptable alternative means of passage or access to the satisfaction of the persons affected.

Cultural Heritage

The Contractor shall:

- Develop and adopt a Chance Find Procedure[55] that outlines the actions to be taken if previously unknown cultural heritage is encountered[56], including to:
  - Determine whether cultural heritage is expected to be found, either during construction or operations
  - Identify and implement actions consistent with the requirements of national law
  - Define clear criteria for potential temporary work stoppages required for rapid disposition of issues related to the finds.
  - Train construction crews and supervisors to spot potential archaeological finds, and to implement the chance find procedures
  - Fence-off the area of finds or sites to avoid further disturbance
  - Ensure that cultural heritage experts conduct an assessment of found objects or sites
  - Notify relevant authorities of found objects or sites by cultural heritage experts
  - Provide chain of custody instructions for movable finds
- Avoid indirect damage to existing cultural heritage, such as affecting masonry through vibration

[55] The requirement for a Chance Find Procedures is defined in paragraph 11 of ESS8
[56] Particular care must be taken when opening or operating quarries

Borrow Pits and Quarries[57]

Materials required for site fill, backfill or the construction of permanent works that are not available from the surface will be obtained from borrow areas and quarries that the Contractor will identify, subject to approval by the UNOPS or its Implementing Partners.

The Contractor shall adhere to the following standards when siting, developing, operating, and reinstating borrow pits and quarries:

- Obtain all necessary permits for borrow pits and quarry operations.
- Locate quarry sites as far away from settlements as possible. Quarry operations will produce noise and dust that will impact on nearby inhabitants even if controls are imposed.
- Fence and secure quarry sites. Steep quarry faces are a hazard to people and livestock.
- Locate borrow pits and quarries at least 100 m from watercourses or human habitations.
- Conduct a pre-blasting inspection/survey, in consultation with residents/property owners, prior to operating a quarry, to document the existing condition of buildings and identify any sensitive structures, building components or contents. The site conditions and the inspection information should be used to design the blasting operation to avoid any effects to property.
- Locate, to the extent possible, borrow pits on land that is not used for cultivation and is not wooded.
- Avoid areas of local historical or cultural interest and locate pits more than 25 m of grave sites.
- Hide, to the extent possible, pits from the road. Quarries and borrow pits should be designed to minimize visible scarring of the landscape.
- Develop a borrow pits and quarry management plan, including a plan to reinstate borrow pits and quarry sites as closely as possible to their original state

Location of Worker Camps[58]

The Contractor shall:

- Consult and negotiate with local stakeholders before proposing a location for its camps.
- Submit the proposed locations to UNOPS or its Implementing Partner for approval, including a justification for their location, as well proposed measures to mitigate the environmental and social risks and impacts around the camp and to enhance social benefits.

Decommissioning of Camps, Worksites and Plants

The Contractor shall:

- Clear construction sites of any equipment or waste, and ensure that the sites are free from contamination.
- Dispose of or recycle any equipment or waste in an appropriate and environmentally sound manner.
- Hand construction sites over to the original owners, taking into account his/her wishes and national legislation.

[57] Contractors should consider doing borrow pits on a willing-buyer willing-seller (renter) basis to avoid involuntary land acquisition.
[58] Based on information presented in the PAD labor camps do not seem to be required for this Project

Environment[59]

Noise and Vibration

Construction activities, the operation of pile drivers, earth moving and excavation equipment, concrete mixers, cranes and the transportation of equipment, materials and people. may cause noise and vibration.

The Contractor will:

- Plan activities in consultation with local communities so that activities with the greatest potential to generate noise are planned during periods of the day that will result in least disturbance
- Use noise control devices, such as temporary noise barriers and deflectors for impact and blasting activities, and exhaust muffling devices for combustion engines
- Avoid or minimize project transportation through community areas

Soil Erosion

The exposure of soil surfaces to rain and wind during site clearing, earth moving, and excavation activities may cause soil erosion. The mobilization and transport of soil particles may, in turn, result in sedimentation of surface drainage networks, which may result in impacts to the quality of natural water systems and ultimately the biological systems that use these waters.

Sediment mobilization and transport

The Contractor shall:

- Reduce or prevent erosion by:
  - Scheduling to avoid heavy rainfall periods (i.e., during the dry season) to the extent practical
  - Contouring and minimizing length and steepness of slopes
  - Mulching to stabilize exposed areas
  - Re-vegetating areas promptly
  - Designing channels and ditches for post-construction flows
  - Lining steep channel and slopes (e.g., use jute matting)
- Reduce or prevent off-site sediment transport through use of settlement ponds, silt fences, and water treatment, and modify or suspend activities during extreme rainfall and high winds to the extent practical

Clean runoff management

The Contractor shall:

- Segregate or divert clean water runoff to prevent it mixing with water containing a high solids content, to minimize the volume of water to be treated prior to release

Road design

The Contractor shall:

- Limit access road gradients to reduce runoff-induced erosion
- Provide adequate road drainage based on road width, surface material, compaction, and maintenance

Disturbance to water bodies

The Contractor shall:

[59] This section includes the requirements of section 4.1 of the General EHS Guidelines

- Depending on the potential for adverse impacts, install free-spanning structures (e.g., single span bridges) for road watercourse crossings
- Restrict the duration and timing of in-stream activities to lower low periods, and avoid periods critical to biological cycles of valued flora and fauna (e.g., migration, spawning, etc.)
- For in-stream works, use isolation techniques such as berming or diversion during construction to limit the exposure of disturbed sediments to moving water
- Consider using trenchless technology for pipeline crossings (e.g., suspended crossings) or installation by directional drilling

Structural (slope) stability

The Contractor shall:

- Provide effective short-term measures for slope stabilization, sediment control and subsidence control until long term measures for the operational phase can be implemented
- Provide adequate drainage systems to minimize and control infiltration

Air Quality

Construction activities may generate emission of fugitive dust caused by a combination of on-site excavation and movement of earth materials, contact of construction machinery with bare soil, and exposure of bare soil and soil piles to wind. A secondary source of emissions may include exhaust from diesel engines of earth moving equipment, as well as from open burning of solid waste on-site.

The Contractor shall:

- Minimize dust from material handling sources, such as conveyors and bins, by using covers and/or control equipment (water suppression, bag house, or cyclone)
- Minimize dust from open area sources, including storage piles, by using control measures such as installing enclosures and covers, and increasing the moisture content
- Implement dust suppression techniques, such as applying water or non-toxic chemicals to minimize dust from vehicle movements
- Selectively remove potential hazardous air pollutants, such as asbestos, from existing infrastructure prior to demolition
- Managing emissions from mobile sources
- Avoid open burning of solid waste

Hazardous and Toxic Materials

Construction activities may release petroleum-based products, such as lubricants, hydraulic fluids, or fuels during their storage, transfer, or use in equipment.

The Contractor shall:

- Label using easily understandable symbols, and provide material safety data sheets, for chemical substances and mixtures according to the Globally Harmonized System (GHS) of classification and labelling of chemicals.
- Store hazardous materials as per the statutory provisions of the Manufactures, Storage and Import of Hazardous Chemicals Rules (1989), under the Environment (Protection) Act, 1986.
- Provide adequate secondary containment for fuel storage tanks and for the temporary storage of other fluids such as lubricating oils and hydraulic fluids,
- Use impervious surfaces for refueling areas and other fluid transfer areas
- Train workers on the correct transfer and handling of fuels and chemicals and the response to spills
- Provide portable spill containment and cleanup equipment on site and training in the equipment deployment

- Assess the contents of hazardous materials and petroleum-based products in building systems (e.g., PCB containing electrical equipment, asbestos-containing building materials) and process equipment and remove them prior to initiation of decommissioning activities, and manage their treatment and disposal according to Sections 1.5 and 1.6 of the General EHS Guidelines
- Assess the presence of hazardous substances in or on building materials (e.g., polychlorinated biphenyls, asbestos- containing flooring or insulation) and decontaminating or properly managing contaminated building materials
- Treat hazardous waste separately from other waste

Waste from Construction Activities

The Contractor shall:

- Collect and properly manage all solid wastes resulting from the construction activities, including construction debris and spoils, to prevent the contamination of soil and groundwater
- Remove unneeded excavation material from construction sites as soon as possible
- Agree with relevant municipalities about construction waste disposal
- Carefully select waste disposal sites, to be approved by UNOPS or its Implementing Partner
- 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, and by sheeting the sides and tops of all vehicles carrying mud, sand, other materials or debris
- Transfer construction waste to assigned places in the selected waste disposal sites with documented confirmation.
- Properly dispose of solid waste and debris at designated permitted sites waste disposal sites allocated by the local authorities, and obtain a receipt of waste from the authorized landfill authority.

Occupational Health and Safety

Contractors will collaborate with other contractors in applying health and safety requirements, when workers from more than one contractor are working together in one location, without prejudice to the responsibility of each party for the health and safety of its own workers.

General Facility design and Operation[60]

Severe Weather and Facility Shutdown

The Contractor shall:

- Design and build workplace structures to withstand the expected elements for the region and designate an area designated for safe refuge, if appropriate.
- Develop Standard Operating Procedures (SOPs) for project or process shut-down, including an evacuation plan.

Lavatories and Showers

The Contractor shall:

- Provide adequate lavatory facilities (toilets and washing areas) for the number of people expected to work at the construction sites, and make allowances for segregated facilities, or for indicating whether the toilet facility is “In Use” or “Vacant”.
- Provide toilet facilities with adequate supplies of hot and cold running water, soap, and hand drying devices.

[60] This section reflects the relevant requirements in section 2.1 of the General EHS Guidelines, General Facility Design and Operation

- Where workers may be exposed to substances poisonous by ingestion and skin contamination may occur, provide facilities for showering and changing into and out of street and work clothes.

Potable Water Supply

The Contractor shall:

- Provide adequate supplies of potable drinking water from a fountain with an upward jet or with a sanitary means of collecting the water for the purposes of drinking
- Ensure that water supplied to areas of food preparation or for the purpose of personal hygiene (washing or bathing) meets drinking water quality standards

Clean Eating Area

The Contractor shall:

- Where there is potential for exposure to substances poisonous by ingestion, make suitable arrangements to provide clean eating areas where workers are not exposed to the hazardous or noxious substances

First Aid

The Contractor shall:

- Ensure that qualified first-aid by qualified personnel is always available. Appropriately equipped first-aid stations should be easily accessible throughout the place of work.
- Provide workers with rescue and first-aid duties with dedicated training so as not to inadvertently aggravate exposures and health hazards to themselves or their co- workers. Training would include the risks of becoming infected with blood–borne pathogens through contact with bodily fluids and tissue.
- Provide eye-wash stations and/or emergency showers close to all workstations where immediate flushing with water is the recommended first-aid response.
- Provide dedicated and appropriately equipped first-aid room(s) where the scale of work or the type of activity being carried out so requires.
- Equip first aid stations and rooms with gloves, gowns, and masks for protection against direct contact with blood and other body fluids.
- Make widely available written emergency procedures for dealing with cases of trauma or serious illness, including procedures for transferring patient care to an appropriate medical facility.
- Immediately report all accidental occurrences with serious accident potential such as major equipment failures, contact with high-voltage lines, exposure to hazardous materials, slides, or cave-ins to UNOPS.
- Immediately investigate any serious or fatal injury or disease caused by the progress of work by the Contractor, and submit a comprehensive report to UNOPS.

Physical Hazards[61]

Physical hazards represent potential for accident or injury or illness due to repetitive exposure to mechanical action or work activity. Single exposure to physical hazards may result in a wide range of injuries, from minor and medical aid only, to disabling, catastrophic, and/or fatal. Multiple exposures over prolonged periods can result in disabling injuries of comparable significance and consequence.

[61] This section reflects the relevant requirements in Section 2.3 of the General EHS Guidelines, Physical Hazards, as well as elements of section 4.2 of the General guidelines

Noise

The Contractor shall Institute appropriate measures to reduce the exposure of workers to construction noise, including but not limited to:

- Avoid exposure to a noise level greater than 85 dB(A) for a duration of more than 8 hours per day without hearing protection. In addition, no unprotected ear should be exposed to a peak sound pressure level (instantaneous) of more than 140 dB(C).
- Enforce the use of hearing protection should be enforced actively when the equivalent sound level over 8 hours reaches 85 dB(A), the peak sound levels reach 140 dB(C), or the average maximum sound level reaches 110 dB(A).
- Provide hearing protective devices capable of reducing sound levels at the ear to at most 85 dB(A).
- Reduce the "allowed" exposure period or duration by 50 percent for every 3 dB(A) increase in in excess of 85 dB(A).
- Perform periodic medical hearing checks on workers exposed to high noise levels.
- Rotate staff to limit individual exposure to high noise levels
- Install practical acoustical attenuation on construction equipment, such as mufflers.
    - Use silenced air compressors and power generators
    - Keep all machinery in good condition
    - Install exhaust silencing equipment on bulldozers, compactors, crane, dump trucks, excavators, graders, loaders, scrapers and shovels.
- Post signs in all area where the sound pressure level exceeds 85 dB(A).
- Shut down equipment when not directly in use

Electrical

Exposed or faulty electrical devices, such as circuit breakers, panels, cables, cords and hand tools, can pose a serious risk to workers. Overhead wires can be struck by metal devices, such as poles or ladders, and by vehicles with metal booms. Vehicles or grounded metal objects brought into close proximity with overhead wires can result in arcing between the wires and the object, without actual contact.

The Contractor shall:

- Mark all energized electrical devices and lines with warning signs
- Check all electrical cords, cables, and hand power tools for frayed or exposed cords and following manufacturer recommendations for maximum permitted operating voltage of the portable hand tools
- Double insulate/ground all electrical equipment used in environments that are, or may become, wet; use equipment with ground fault interrupter (GFI) protected circuits
- Protect power cords and extension cords against damage from traffic by shielding or suspending above traffic areas

Industrial Vehicle Driving and Site Traffic[62]

Poorly trained or inexperienced industrial vehicle drivers have increased risk of accident with other vehicles, pedestrians, and equipment. Industrial vehicles and delivery vehicles, as well as private vehicles on-site, also represent potential collision scenarios.

The Contractor shall:

- Train and license industrial vehicle operators in the safe operation of specialized vehicles such as forklifts, including safe loading/unloading, load limits
- Ensure that drivers undergo medical surveillance

[62] This subsection combines elements of 2.3, Physical Hazards, and 4.2 in the General EHS Guidelines

- Ensure that moving equipment with restricted rear visibility is outfitted with audible back-up alarms
- Plan and segregating the location of vehicle traffic, machine operation, and walking areas, and control vehicle traffic through the use of one-way traffic routes, establishment of speed limits, and on-site trained flag-people wearing high-visibility vests or outer clothing covering to direct traffic
- Ensure the visibility of personnel through their use of high visibility vests when working in or walking through heavy equipment operating areas, and training of workers to verify eye contact with equipment operators before approaching the operating vehicle
- Use inspected and well-maintained lifting devices that are appropriate for the load, such as cranes, and securing loads when lifting them to higher job-site elevations.

Working Environment Temperature

Exposure to hot or cold working conditions in indoor or outdoor environments can result temperature stress-related injury or death. Use of personal protective equipment (PPE) to protect against other occupational hazards can accentuate and aggravate heat-related illnesses.

The Contractor shall:

- Monitor weather forecasts for outdoor work to provide advance warning of extreme weather and scheduling work accordingly
- Adjust work and rest periods depending on the temperature and workloads
- Provide temporary shelters to protect against the elements during working activities or for use as rest areas
- Use protective clothing
- Provide easy access to adequate hydration such as drinking water or electrolyte drinks, and avoiding consumption of alcoholic beverages

Over-exertion

Over-exertion, and ergonomic injuries and illnesses, such as repetitive motion, over-exertion, and manual handling, are among the most common causes of injuries in construction and decommissioning sites.

The Contractor shall:

- Train workers in lifting and materials handling techniques in construction and decommissioning projects, including the placement of weight limits above which mechanical assists or two-person lifts are necessary
- Plan work site layout to minimize the need for manual transfer of heavy loads
- Select tools and design workstations that reduce force requirements and holding times, and which promote improved postures, including, where applicable, user adjustable work stations
- Implement administrative controls into work processes, such as job rotations and rest or stretch breaks

Slips and Falls

Slips and falls on the same elevation associated with poor housekeeping, such as excessive waste debris, loose materials, liquid spills, and uncontrolled use of electrical cords and ropes on the ground, are also among the most frequent cause of lost time accidents at construction and decommissioning sites.

The Contractor shall

- Implement good house-keeping practices, such as the sorting and placing loose materials or debris in established areas away from foot paths
- Clean up excessive waste debris and liquid spills regularly
- Locate electrical cords and ropes in common areas and marked corridors

- Ensure that workers use slip retardant footwear

Work in Heights

Falls from elevation associated with working with ladders, scaffolding, and partially built or demolished structures are among the most common cause of fatal or permanent disabling injury at construction or decommissioning sites.

The Contractor shall:

- Train workers on the proper use of ladders and scaffolds
- Use of temporary fall prevention devices, such as rails or other barriers able to support a weight of 200 pounds, when working at heights equal or greater than two meters or at any height if the risk includes falling into operating machinery, into water or other liquid, into hazardous substances, or through an opening in a work surface
- Provide training and use personal fall arrest systems, such as full body harnesses and energy absorbing lanyards able to support 5000 pounds (also described in this section in Working at Heights above), as well as fall rescue procedures to deal with workers whose fall has been successfully arrested. The tie in point of the fall arresting system should also be able to support 5000 pounds
- Use control zones and safety monitoring systems to warn workers of their proximity to fall hazard zones, as well as securing, marking, and labeling covers for openings in floors, roofs, or walking surfaces

Struck By Objects

The Contractor shall:

- Use a designated and restricted waste drop or discharge zones, and/or a chute for safe movement of wastes from upper to lower levels
- Conduct sawing, cutting, grinding, sanding, chipping or chiseling with proper guards and anchoring as applicable
- Maintain clear traffic ways to avoid driving of heavy equipment over loose scrap
- Use temporary fall protection measures in scaffolds and out edges of elevated work surfaces, such as handrails and toe boards to prevent materials from being dislodged
- As necessary, require workers to wear appropriate PPE, such as safety glasses with side shields, face shields, hard hats, and safety shoes

Welding/Hot Work

Welding creates an extremely bright and intense light that may seriously injure a worker's eyesight. In extreme cases, blindness may result. Additionally, welding may produce noxious fumes to which prolonged exposure can cause serious chronic diseases.

The contractor shall:

- Provide proper eye protection such as welder goggles and/or a full-face eye shield for all personnel involved in, or assisting, welding operations. Additional methods may include the use of welding barrier screens around the specific workstation (a solid piece of light metal, canvas, or plywood

Personal Protective Equipment (PPE) [63]

The Contractor shall:

- Consider the use of PPE as a last resort when it comes to hazard control and prevention, and always refer to the hierarchy of hazard controls when planning a safety process

[63] This section reflects the relevant requirements in section 2.7 of the General EHS Guidelines, Personal Protective Equipment (PPE)

- Ensure that the use of PPE is compulsory if alternative technologies, work plans or procedures cannot eliminate, or sufficiently reduce, a hazard or exposure
- Identify and provide at no cost appropriate PPE to workers, the workers of subcontractors, as well as to visitors, which give adequate protection without incurring unnecessary inconvenience to the individual
- Properly maintain PPE, including cleaning when dirty and replacement when damaged or worn out
- Provide sufficient training in the use, storage and maintenance of PPE to its workers and workers of its subcontractors
- Determine requirements for standard and/or task-specific PPE based on of Job specific Safety Analysis (JSA)

Objective	Workplace Hazards	Suggested PPE
Eye and face protection	Flying particles, molten metal, liquid chemicals, gases or vapors, light radiation.	Safety Glasses with side-shields, protective shades, etc.
Head protection	Falling objects, inadequate height clearance, and overhead power cords.	Plastic Helmets with top and side impact protection.
Hearing protection	Noise, ultra-sound.	Hearing protectors (ear plugs or ear muffs).
Foot protection	Falling or rolling objects, pointed objects. Corrosive or hot liquids.	Safety shoes and boots for protection against moving & falling objects, liquids and chemicals.
Hand protection	Hazardous materials, cuts or lacerations, vibrations, extreme temperatures.	Gloves made of rubber or synthetic materials (Neoprene), leather, steel, insulating materials, etc.
Respiratory protection	Dust, fogs, fumes, mists, gases, smokes, vapors.	Facemasks with appropriate filters for dust removal and air purification (chemicals, mists, vapors and gases). Single or multi-gas personal monitors, if available.
	Oxygen deficiency	Portable or supplied air (fixed lines). On-site rescue equipment.
Body/leg protection	Extreme temperatures, hazardous materials, biological agents, cutting and laceration.	Insulating clothing, body suits, aprons etc. of appropriate materials.

Special Hazard Environments[64]

Special hazard environments are work situations where all of the previously described hazards may exist under unique or especially hazardous circumstances. Accordingly, extra precautions or rigor in application of precautions is required.

Excavations

The Contractor shall!

- Control site-specific factors that may contribute to excavation slope instability including, for example, the use of excavation dewatering, side-walls support, and slope gradient adjustments that eliminate or minimize the risk of collapse, entrapment, or drowning
- Provide safe means of access and egress from excavations, such as graded slopes, graded access route, or stairs and ladders
- Avoid the operation of combustion equipment for prolonged periods inside excavations areas where other workers are required to enter unless the area is actively ventilated

[64] This section reflects the relevant requirements in section 2.8 of the General EHS Guidelines, Special Hazard Environment

Confined Space

Serious injury or fatality can result from inadequate preparation to enter a confined space or in attempting a rescue from a confined space.

The Contractor shall:

- Implement engineering measures to eliminate, to the degree feasible, the existence and adverse character of confined spaces.
- Permit-required confined spaces should be provided with permanent safety measures for venting, monitoring, and rescue operations, to the extent possible. The area adjoining an access to a confined space should provide ample room for emergency and rescue operations.
- Ensure that access hatches accommodate 90% of the worker population with adjustments for tools and protective clothing
- Ensure that prior to entry into a permit-required confined space:
  - Process or feed lines into the space should be disconnected or drained, and blanked and locked-out.
  - Mechanical equipment in the space should be disconnected, de-energized, locked-out, and braced, as appropriate.
  - The atmosphere within the confined space should be tested to assure the oxygen content is between 19.5 percent and 23 percent, and that the presence of any flammable gas or vapor does not exceed 25 percent of its respective Lower Explosive Limit (LEL).
  - Ventilate the confined space if the atmospheric conditions are not met, until the target safe atmosphere is achieved, or entry is only to be undertaken with appropriate and additional PPE.
- Include safety precautions such as Self-Contained Breathing Apparatus (SCBA), lifelines, and safety watch workers stationed outside the confined space, with rescue and first aid equipment readily available.
- Provide adequate and appropriate training in confined space hazard control, atmospheric testing, use of the necessary PPE, as well as verify the serviceability and integrity of the PPE, before workers are required to enter a permit-required confined space.
- Put in place, adequate and appropriate rescue and/or recovery plans and equipment before the worker enters the confined space.

Lone and Isolated Workers

A lone and isolated worker is a worker out of verbal and line of sight communication with a supervisor, other workers, or other persons capable of providing aid and assistance, for continuous periods exceeding one hour. The worker is therefore at increased risk should an accident or injury occur.

The Contractor shall:

- Develop and implement Standard Operating Procedures (SOPs for work under lone or isolated circumstances, to ensure all PPE and safety measures are in place before the worker starts work. SOPs should establish, at a minimum, verbal contact with the worker at least once every hour, and ensure the worker has a capability for summoning emergency aid.

Working in Sewers[65]

The Contractor shall:

- Ensure that a safety supervisor/officer is onsite at all times
- Supervise and control all access to sewers, and maintain logbook of all workers working in sewers, including worker's names, start time and finish time

[65] The requirements were put in place following a fatal incident during YIUSEP I, which combine requirements for *Confined Spaces* with the requirement for *Lone Workers*

- Control access to each sewer that is worked on, to ensure that only workers with a specific written permission and Permit to Work (PTW) in confined spaces can enter.
- Ensure that: (i) all workers in a sewer are in continuous communication with an above ground safety watcher at the top of the manhole and a safety supervisor; (ii) a trained first aid responder is always available on site, with ready access to a first aid kit and oxygen; (iii) the above ground crew has the means to rescue workers in the sewer in the event of an emergency and to transport affected workers ; (iv) the nearest well-equipped health facility has been identified, and the time required to reach it has been assessed
- Rotate all workers in a sewer after one shift
- Properly ventilate sewers and confirm that each sewer is free from any toxic and harmful gases, or any other risks, before allowing access to it
- Ensure that all workers entering a sewer are properly trained regarding the risks of working in a sewer and the required safety measures
- Ensure that all workers entering a sewer or other confined spaces wear appropriate PPE, including: (i) for above groundwork: full face respiratory cartridge, disposable coverall/overall, safety footwear with disposable boat cover.) for upper ground work; (ii) for underground work; a Self-Contained Breathing Apparatus, eye protection (safety goggles), hard hat/helmet, gloves, disposable overalls and boot cover, full body harness, and lifeline.
- Provide proper access and egress to sewers through sanitation manholes.
- Limit work in sewers to daytime only. Work in sewers at night is proscribed.
- Never allow a worker to be in a sewer by himself.
- Provide suitable lighting inside the sewers during work hours.
- Vaccinate all workers working in sewers against the diseases that might infect them because of working in sewers

Solar PV Systems (Code of Practice)[66]

Installation

The contractor shall:

- Ensure that solar PV systems are installed by qualified and experienced trades people, in order to avoid or minimize electrocution and other health and safety issues associated with working with hazardous materials

Life and Fire Safety

The Contractor shall implement life and fire safety measures as instructed by UNOPS

Beneficiary and User Awareness

The Contractor shall build awareness and provide training to beneficiaries and users of facilities with the aim of improving their understanding of the environmental and health issues associated with the battery lifecycle, including end-of-life management; most particularly:

- The safe handling of batteries including installation, removal, transport, storage and disposal
- The environmental and health aspects of poor battery disposal
- Information on the environmental and health issues associated with the highly toxic content of batteries and explanation as to why they must be stored, transported and disposed of in specific ways

Safe Handling of Batteries

The Contractor shall train beneficiaries on the following measures before they handle batteries:

[66] The requirements were recommended by the World Bank

- Prohibit unauthorized access to battery areas
- Consult battery owners' manuals for instructions on battery handling and hazard identification
- Wear personal protective equipment (PPE) such as chemical splash goggles and a face shield
- Wear acid-resistant equipment such as gauntlet style gloves, an apron, and boots
- Do not tuck pant legs into boots because spilled acid can pool in the bottom of your boots and burn your feet
- Place protective rubber boots on battery cable connections to prevent sparking on impact if a tool does accidentally hit a terminal
- Ensure that all metal tools (spanners, socket wrench drivers, etc.) that will come in contact with the battery terminals have metal handles taped with electrical tape or are protected by other means to help prevent inadvertent short circuits
- Clean the battery terminals with a plastic brush because wire brushes can create static and sparks
- Always remove watches and jewellery before working on a battery. A short-circuit current can weld a ring or strap to metal and cause severe burns.
- Cover maintenance tools with several layers of electrical tape to avoid sparking
- Replace batteries with a new one if they show signs of damage to the terminals, case or cover

Chemical Hazards

Lead Acid: Sulfuric acid (electrolyte) in lead-acid batteries[67] is highly corrosive and acid exposure can lead to skin irritation, eye damage, respiratory irritation, and tooth enamel erosion. The Contractor shall train beneficiaries to follow the following measures to minimize risk:

- Never lean over a battery while boosting, testing or charging it
- If acid splashes on your skin or eyes, immediately flood the area with cool running water for at least 15 minutes and seek medical attention immediately
- Always practice good hygiene and wash your hands after handling a battery and before eating
- Wash your hands properly if you handle the lead plates in a battery to avoid exposure to lead. Signs of lead exposure include mood swings, loss of appetite, abdominal pain, difficulty sleeping, fatigue, headaches and loss of motor coordination.
- The chemical reaction by-products from a battery include oxygen and hydrogen gas. These can be explosive at high levels. Overcharging batteries can also create flammable gases. For this reason, it is very important to store and maintain batteries in a well-ventilated work area away from all ignition sources and incompatible materials. Cigarettes, flames or sparks could cause a battery to explode.
- Disconnect the battery cables before working on a battery. Be careful with flammable fluids when working on a battery-powered system. The electrical voltage created by batteries can ignite flammable materials and cause severe burns. Workers have been injured and killed when loose or sparking battery connections ignited gasoline and solvent fumes during system maintenance.
- Before making wiring changes to the system, disconnect the battery, either through opening the circuit breaker or over-current device, or by disconnecting the cables. Adding distilled water or cleaning terminals can be done without disconnecting.

Safe Movement of Batteries

293. The Contractor shall inform beneficiaries of the following measures regarding the safe movement of batteries:

- Lifting and moving batteries must be undertaken with care to avoid personal and environmental harm
- Proper lifting techniques must be used to avoid back injuries
- Because battery casings can be brittle and break easily, they must be handled carefully to avoid an acid spill

[67] UNOPS will use gel lead-acid batteries, which are significantly safer that traditional lead-acid batteries, because they are sealed in a plastic encasement with a valve that removes excess pressure.

- Batteries must be properly secured and upright when handled or transported in a vehicle

Management and Disposal of Used Batteries

The Contractor shall prepare and submit to UNOPS a Battery Management Plan that details how batteries will be collected, transported, stored, recycled or disposed of. More specifically the Battery Management Plan shall:

- Define arrangements made with after sales service centers for the maintenance and reconditioning of batteries
- Identify centers or dealers authorized by local authorities to safely collect, store, transport and reexport used and end-of life batteries from beneficiary facilities.
- Ensure that these centers or dealers implement the relevant Project ESHS requirements, including the use of PPE, the use of proper drums for storing acid, the containment of spills during battery maintenance and collection, and adequate ventilation
- Outline how the contractor will include the end-user in the reverse-supply-chain management through training.

Community Health and Safety

General Site Hazards[68]

Risks to the community may arise from inadvertent or intentional trespassing, including potential contact with hazardous materials, contaminated soils and other environmental media, buildings that are vacant or under construction, or excavations and structures which may pose falling and entrapment hazards

The Contractor shall:

- Restrict access to the site, through a combination of institutional and administrative controls, with a focus on high-risk structures or areas depending on site-specific situations, including fencing, signage, and communication of risks to the local community
- Remove hazardous conditions on construction sites that cannot be controlled affectively with site access restrictions, such as covering openings to small confined spaces, ensuring means of escape for larger openings such as trenches or excavations, or locked storage of hazardous materials

Traffic Safety[69]

Traffic accidents have become one of the most significant causes of injuries and fatalities among members of the public worldwide.

The Contractor shall:

- Ensure traffic safety by all project personnel during displacement to and from the workplace, and during the operation of project equipment on private or public roads
- Adopt safety measures that are protective of project workers and of road users, including those who are most vulnerable to road traffic accident
- Adopt best transport safety practices across all aspects of project operations with the goal of preventing traffic accidents and minimizing injuries suffered by project personnel and the public, including:
  - Emphasizing safety aspects among drivers
  - Improving driving skills and requiring licensing of drivers
  - Institute defensive driving training for all drivers prior to starting their job

[68] Adapted from section 4.3 of the General EHS Guidelines
[69] This section reflects the relevant requirements in section 3.9 of the General EHS Guidelines, Traffic Safety

  - Adopting limits for trip duration and arranging driver rosters to avoid overtiredness
  - Avoiding dangerous routes and times of day to reduce the risk of accidents
  - Use of speed control devices (governors) on trucks, and remote monitoring of driver actions
  - Require that drivers and co-passengers wear seatbelts, and duly sanction defaulters.
- Regularly maintain vehicles and use manufacturer approved parts to minimize potentially serious accidents caused by equipment malfunction or premature failure.

Where the project may contribute to significant changes in traffic along existing roads, the Contractor shall:

- Commence activities that affect public motorways and highways, only after all traffic safety measures necessitated by the activities are fully operational
- Arrange diversions for providing alternative routes for transport and/or pedestrians
- Minimize pedestrian interaction with construction vehicles, particularly at crossing points to schools, markets, and any animal crossing points of significance, through appropriate signage, engineered footpaths or traffic slowing devices
- Organize meaningful road accident awareness events at all roadside schools and communities within 150 meters of the road centerline, covering safe road crossing, road accident hazards from weather conditions and vehicle roadworthiness, overloading and driver alertness, dangers posed by parked and broken-down vehicles, etc.
- Collaborate with local communities and responsible authorities to improve signage, visibility and overall safety of roads, particularly along stretches located near schools or other locations where children may be present
- Collaborate with local communities on education about traffic and pedestrian safety (e.g., school education campaigns)
- Coordinate with emergency responders to ensure that appropriate first aid is provided to all affected persons in the event of accidents.
- Use locally sourced materials, whenever possible, to minimize transport distances, and locate associated facilities such as worker camps close to project sites
- Employ safe traffic control measures, including road signs, traffic cones, removable barriers, and flag persons to warn of dangerous conditions

Disease Prevention[70]

Communicable Diseases

Communicable diseases of most concern during the construction phase due to labor mobility are sexually-transmitted diseases (STDs), such as HIV/AIDS.

- Conduct Information, Education and Consultation Communication (IEC) campaigns, at least every other month, addressed to all construction site staff (including all Contractor's workers, all subcontractors of any tier, consultants' workers working on the site, truck drivers and crew making deliveries to the site, regarding the risks, dangers and impact, and the appropriate avoidance behavior of communicable diseases.
- Provide male or female condoms to all Site staff and workers, as appropriate.
- Provide surveillance and active screening and treatment of workers
- Prevent illness in immediate local communities by:
  - Implementing an information strategy to reinforce person-to-person counselling addressing systemic factors that can influence individual behavior as well as promoting individual protection, and protecting others from infection, by encouraging condom use
  - Training health workers in disease treatment

[70] This section reflects the relevant requirements in section 3.9 of the General EHS Guidelines, Traffic Safety

  - Conducting immunization programs for workers in local communities to improve health and guard against infection
  - Providing health services
  - Contracting an HIV service provider to be available on-site
- Provide treatment through standard case management in on-site or community health care facilities.
- Ensure ready access to medical treatment, confidentiality and appropriate care, particularly with respect to migrant workers.
- Promote collaboration with local authorities to enhance access of workers families and the community to public health services and ensure the immunization of workers against common and locally prevalent diseases.

Vector-Borne Diseases

Reducing the impact of vector-borne disease on the long-term health of workers is best accomplished by implementing diverse interventions aimed at eliminating the factors that lead to disease. The Contractor, in close collaboration with community health authorities, shall implement an integrated control strategy for mosquito and other arthropod-borne diseases that includes the following measures:

- Prevent of larval and adult propagation through sanitary improvements and elimination of breeding habitats close to human settlements
- Eliminate unusable impounded water
- Increase water velocity in natural and artificial channels
- Consider the application of residual insecticide to dormitory walls
- Implement integrated vector control programs
- Promote the use of repellents, clothing, netting, and other barriers to prevent insect bites
- Use chemoprophylaxis drugs by non-immune workers and collaborating with public health officials to help eradicate disease reservoirs
- Monitor and treat circulating and migrating populations to prevent disease reservoir spread
- Collaborate and exchange in-kind services with other control programs in the project area to maximize beneficial effects
- Educate project personnel and area residents on risks, prevention, and available treatment
- Monitor communities during high-risk seasons to detect and treat cases
- Distribute appropriate education materials
- Follow safety guidelines for the storage, transport, and distribution of pesticides to minimize the potential for misuse, spills, and accidental human exposure

COVID-19[71]

In the context of the COVID-19 pandemic, Contractors shall develop and implement measures to prevent or minimize an outbreak of COVID-19, and develop procedures indicating what should be done if a worker gets sick. The Contractor shall:

- Assess the characteristics of the workforce, including those with underlying health issues or who may be otherwise at risk
- Confirm that workers are fit for work, including temperature testing and refusing entry to sick workers
- Consider ways to minimize entry/exit to site or the workplace, and limit contact between workers and the community/general public
- Train workers on hygiene and other preventative measures, and implement a communication strategy for regular updates on COVID-19 related issues and the status of affected workers
- Treat workers who are or should be self-isolating and/or are displaying symptoms
- Establish a procedure to follow if a worker becomes sick (following WHO guidelines)

[71] This subsection is adapted from the World Bank COVID-19 LMP Template, April 16, 2020

- Implement a communication strategy with the community, community leaders and local government in relation to COVID-19 issues on the site.

Emergency preparedness and response

The loss of control of a situation may result in risks to human health, property, or the environment, either within the facility or in the local community.

The Contractor shall:

- Establish and maintain an emergency preparedness and response system, in collaboration with appropriate and relevant third parties including to cover: (i) the contingencies that could affect personnel and facilities of the project to be financed; (ii) the need to protect the health and safety of project workers; (iii) the need to protect the health and safety of the Affected Communities. The emergency preparedness and response system shall include:
  - Identification of the emergency scenarios
  - Specific emergency response procedures
  - Training of emergency response teams
  - Emergency contacts and communication systems/protocols (including communication with Affected Communities when necessary)
  - Procedures for interaction with government authorities (emergency, health, environmental authorities)
  - Permanently stationed emergency equipment and facilities (e.g., first aid stations, firefighting equipment, spill response equipment, personal protection equipment for the emergency response teams)
  - Protocols for the use of the emergency equipment and facilities
  - Clear identification of evacuation routes and muster points
  - Emergency drills and their periodicity based on assigned emergency levels or tiers
  - Decontamination procedures and means to proceed with urgent remedial measures to contain, limit and reduce pollution within the physical boundaries of the project property and assets to the extent possible.

Labour Force Management

Labour Influx

The Contractor shall:

- Establish worker camps when accommodation supply is insufficient for workers, including subcontractors and associated support staff
- Locate worker camps away from environmentally sensitive areas
- Build additional/separate roads to project and workers' camp sites
- Organize the commute from camp to project to reduce traffic
- Ensure workers' camp and associated facilities are connected to a septic tank or other wastewater systems that are appropriate and of sufficient capacity for the number of workers and local conditions
- Avoid contamination of fresh water sources
- Provide opportunities for workers to regularly return to their families
- Provide opportunities for workers to take advantage of entertainment opportunities away from rural host communities
- Ensure that children and minors are not employed directly or indirectly on the project, and keep registration and proof of age for all employees on-site.

- Pay adequate salaries for workers to reduce incentive for theft
- Pay salaries into workers' bank accounts rather than in cash
- Get an appropriate mix of locally and non- locally procured goods to allow local project benefits while reducing risk of crowding out of and price hikes for local consumers
- Create supervised leisure areas in workers' camp;
- Establish substance abuse prevention and management programs
- Hire workers through recruitment offices, and avoid hiring "at the gate" to discourage spontaneous influx of job seekers
- Identify authorized water supply source and prohibiting use from other community sources;
- Separate service providers for community and workers' camp/construction site;
- Put in place measures to reduce water and electricity consumption;
- Employ locals to the extent possible;
- Develop and adopt a Gender Action Plan to promote the transfer of construction skills to local women, to facilitate their employment at the Project site, including training and recruitment targets.

Labor Conditions

The Contractor shall:

- Implement the measures and commitments defined in the Labor Management Procedures. A copy of the LMP can be found in the Project ESMF
- Provide all workers with terms and conditions that comply with Yemeni Labor Legislation, most particularly Decree 5/1995) and applicable International Labour Organization conventions on workplace conditions.
- Put in place workplace processes for project workers to report work situations that they believe are not safe or healthy, and to remove themselves from a work situation which they have reasonable justification to believe presents an imminent and serious danger to their life or health. Project workers who remove themselves from such situations will not be required to return to work until necessary remedial action to correct the situation has been taken. Project workers will not be retaliated against or otherwise subject to reprisal or negative action for such reporting or removal.
- Avoid all forms of forced or compulsory labor, i.e., all work or service which is exacted from any person under the threat of a penalty and for which the person has not offered himself or herself voluntarily.

Insurance

The Contractor shall:

- Protect the health of workers involved in onsite activities, as indicated in Chapter X of Yemen's Labor Code
- Compensate any employee for death or injury

Grievance Mechanism for Workers

The Contractor shall put in place a Grievance Mechanism for its workers and the workers of its subcontractors that is proportionate to its workforce. The GM for workers shall be distinct from the Project level Grievance Mechanism described in the Project Stakeholder Engagement Plan (SEP) for affected individuals and communities, and shall adhere to the following principles:

- *Provision of information.* All workers should be informed about the grievance mechanism at the time they are hired, and details about how it operates should be easily available, for example, included in worker documentation or on notice boards.

- *Transparency of the process.* Workers must know to whom they can turn in the event of a grievance and the support and sources of advice that are available to them. All line and senior managers must be familiar with their organization's grievance procedure.
- *Keeping it up to date.* The process should be regularly reviewed and kept up to date, for example, by referencing any new statutory guidelines, changes in contracts or representation.
- *Confidentiality.* The process should ensure that a complaint is dealt with confidentially. While procedures may specify that complaints should first be made to the workers' line manager, there should also be the option of raising a grievance first with an alternative manager, for example, a human resource (personnel) manager.
- *Non-retribution.* Procedures should guarantee that any worker raising a complaint will not be subject to any reprisal.
- *Reasonable timescales.* Procedures should allow for time to investigate grievances fully, but should aim for swift resolutions. The longer a grievance is allowed to continue, the harder it can be for both sides to get back to normal afterwards. Time limits should be set for each stage of the process, for example, a maximum time between a grievance being raised and the setting up of a meeting to investigate it.
- *Right of appeal.* A worker should have the right to appeal to the World Bank or national courts if he or she is not happy with the initial finding.
- *Right to be accompanied.* In any meetings or hearings, the worker should have the right to be accompanied by a colleague, friend or union representative.
- *Keeping records.* Written records should be kept at all stages. The initial complaint should be in writing if possible, along with the response, notes of any meetings and the findings and the reasons for the findings. Any records on SEA shall be registered separately and under the strictest confidentiality.
- *Relationship with collective agreements.* Grievance procedures should be consistent with any collective agreements.
- *Relationship with regulation.* Grievance processes should be compliant with the national employment code.

Protection from Sexual Exploitation and Abuse[72]

The Contractor shall:

- Provide repeated training and awareness raising to the workforce about refraining from unacceptable conduct toward local community members, specifically women
- Inform workers about national laws that make sexual harassment and gender-based violence a punishable offence which is prosecuted
- Prohibit its employees from exchanging any money, goods, services, or other things of value, for sexual favors or activities, or from engaging any sexual activities that are exploitive or degrading to any person.
- Develop a system to capture gender-based violence, sexual exploitation and workplace sexual harassment related complaints/issues.
- Adopt a policy to cooperate with law enforcement agencies in investigating complaints about gender-based violence.

Protection from Child Labor

The Contractor shall:

- Verify that workers are older than 18 when hiring
- Exclude all persons under the age of 18.

[72] UNOPS has prepared an updated Sexual Abuse and Exploitation (SEA) and Sexual Harassment (SH) Prevention and Response Plan for the Project

- Review and retain copies of verifiable documentation concerning the age of workers

Protection from forced labor

The Contractor shall:

- Not engage, directly or indirectly, in "Forced Labor," i.e., by exacting work or service from any person under the threat of a penalty and for which the person has not offered himself or herself voluntarily
- Not engage, directly or indirectly, in "Trafficking in Persons," i.e., by recruiting, transporting, transferring, harboring or receiving persons by threat or use of force or other forms of coercion, abduction, fraud, deception, or abuse of power.
- Take all reasonable action to address or remove occurrences of forced labor as soon as reasonably practicable, including where relevant, by addressing any practices of other entities in its supply chain.

Code of Conduct

The Contractor shall ensure that all employees, including those of subcontractors, are informed about and sign the following Code of Conduct:

CODE OF CONDUCT FOR CONTRACTOR'S PERSONNEL

We the Contractor [enter name of Contractor] have signed a contract with UNOPS for [enter description of the activities]. These activities will be carried out at [enter the Site and other locations where the activities will be carried out]. Our contract requires us to implement measures to address environmental and social risks related to the activities, including the risks of sexual exploitation and assault and gender-based violence.

This Code of Conduct is part of our measures to deal with environmental and social risks related to the activities. It applies to all our staff, including laborers and other employees at the at all the places where the activities are being carried out. It also applies to the personnel of every subcontractor and any other personnel assisting us in the execution of the activities. All such persons are referred to as "Contractor's Personnel" and are subject to this Code of Conduct.

This Code of Conduct identifies the behavior that we require from all Contractor's Personnel.

Our workplace is an environment where unsafe, offensive, abusive or violent behavior will not be tolerated and where all persons should feel comfortable raising issues or concerns without fear of retaliation.

Required Conduct

Contractor's Personnel shall:

1. carry out his/her duties competently and diligently;
2. comply with this Code of Conduct and all applicable laws, regulations and other requirements, including requirements to protect the health, safety and well-being of other Contractor's Personnel and any other person;
3. maintain a safe working environment including by:
4. ensuring that workplaces, machinery, equipment and processes under each person's control are safe and without risk to health;
5. wearing required personal protective equipment;
6. using appropriate measures relating to chemical, physical and biological substances and agents; and
7. following applicable emergency operating procedures.
8. report work situations that he/she believes are not safe or healthy and remove himself/herself from a work situation which he/she reasonably believes presents an imminent and serious danger to his/her life or health;

9. treat other people with respect, and not discriminate against specific groups such as women, people with disabilities, migrant workers or children;
10. not engage in any form of sexual harassment including unwelcome sexual advances, requests for sexual favors, and other unwanted verbal or physical conduct of a sexual nature with other Contractor's or Employer's Personnel;
11. not engage in Sexual Exploitation, which means any actual or attempted abuse of position of vulnerability, differential power or trust, for sexual purposes, including, but not limited to, profiting monetarily, socially or politically from the sexual exploitation of another. In Bank financed projects, sexual exploitation occurs when access to or benefit from Bank financed Goods, Works, Consulting or Non-consulting services is used to extract sexual gain;
12. not engage in Sexual Assault, which means sexual activity with another person who does not consent. It is a violation of bodily integrity and sexual autonomy and is broader than narrower conceptions of "rape", especially because (a) it may be committed by other means than force or violence, and (b) it does not necessarily entail penetration.
13. not engage in any form of sexual activity with individuals under the age of 18, except in case of pre-existing marriage;
14. complete relevant training courses that will be provided related to the environmental and social aspects of the Contract, including on health and safety matters, and Sexual Exploitation and Assault (SEA);
15. report violations of this Code of Conduct; and
16. Not retaliate against any person who reports violations of this Code of Conduct, whether to us or the Employer, or who makes use of the Grievance mechanism for Contractor's Personnel or the project's Grievance Mechanism.

Raising Concerns

If any person observes behavior that he/she believes may represent a violation of this Code of Conduct, or that otherwise concerns him/her, he/she should raise the issue promptly. This can be done in either of the following ways:

1. Contacting the Individual designated by the Contractor [enter name of Contact)
2. In writing at this address [ ]
3. By telephone at [ ]
4. In person at [ ]
5. Calling [ ] to reach the Contractor's hotline and leave a message (if available)

The person's identity will be kept confidential, unless reporting of allegations is mandated by the country law. Anonymous complaints or allegations may also be submitted and will be given all due and appropriate consideration. We take seriously all reports of possible misconduct and will investigate and take appropriate action. We will provide warm referrals to service providers that may help support the person who experienced the alleged incident, as appropriate.

There will be no retaliation against any person who raises a concern in good faith about any behavior prohibited by this Code of Conduct. Such retaliation would be a violation of this Code of Conduct.

Consequences of Violating the Code of Conduct

Any violation of this Code of Conduct by Contractor's Personnel may result in serious consequences, up to and including termination and possible referral to legal authorities.

For Contractor's Personnel

I have received a copy of this Code of Conduct written in a language that I comprehend. I understand that if I have any questions about this Code of Conduct, I can contact [enter name of Contractor's contact person with relevant experience in handling gender-based violence] requesting an explanation.

Name of Contractor's Personnel: [insert name]
Signature: _____
Date: (day month year): _____

Countersignature of authorized representative of the Contractor:
Signature: _____
Date: (day month year): _____

A copy of the code shall be displayed in a location easily accessible to the community and project affected people. It shall be provided in languages comprehensible to the local community, Contractor's personnel (including subcontractors and day workers), Contractor, and affected persons.]

Stakeholder Engagement

As part of the overall Project Stakeholder Engagement[73], The Contractor will undertake a process of stakeholder engagement with representative persons and communities directly affected by the activities it undertakes, including if necessary, the public disclosure of its C-ESMP. The Contractor shall also maintain throughout the Project good relations with local communities and will give these communities prior notice of plans and schedules as they might affect local people.

The stakeholder engagement process will also be applicable in the event of land acquisition associated with changes in the footprint of activities.

Contractor Environmental and Social Reporting

The Contractor shall report major work-related incidents, accidents or loss of life to UNOPS or the relevant Implementing Partner within 24 hours of their occurrence.

The Contractor shall monitor, keep records and report on the following environmental and social issues at a minimum of every two weeks:

- *Safety:* hours worked, lost time injury (LTI), lost workdays, recordable incidents and corresponding Root Cause Analysis (lost time incidents, medical treatment cases), first aid cases, high potential near misses, and remedial and preventive activities required (for example, revised job safety analysis, new or different equipment, skills training, and so forth).
- *Environmental incidents and near misses:* environmental incidents and high potential near misses and how they have been addressed, what is outstanding, and lessons learned.
- *Major works:* those undertaken and completed, progress against project schedule, and key work fronts (work areas).
- *ESHS requirements:* noncompliance incidents with permits and national law (legal noncompliance), project commitments, or other ESHS requirements.
- *ESHS inspections and audits:* by Contractor, UNOPS and its Implementing Partners, or others—to include date, inspector or auditor name, sites visited and records reviewed, major findings, and actions taken.
- *Workers:* list of workers at each site, confirmation of ESHS training, indication of origin (expatriate, local, nonlocal nationals), gender, age with evidence that no child labor is involved, and skill level (unskilled, skilled, supervisory, professional, management).
- *Training on ESHS issues:* including dates, number of trainees, and topics.
- *Footprint management:* details of any work outside boundaries or major off-site impacts caused by ongoing construction—to include date, location, impacts, and actions taken.
- *External stakeholder engagement:* highlights, including formal and informal meetings, and information disclosure and dissemination—to include a breakdown of women and men consulted and themes coming from various stakeholder groups, including vulnerable groups (e.g., disabled, elderly, children, etc.).

[73] The overall process of stakeholder engagement is described in the Project Stakeholder Engagement Plan (SEP)

- *Details of any security risks:* details of risks the Contractor may be exposed to while performing its work—the threats may come from third parties external to the project.
- *Worker grievances:* details including occurrence date, grievance, and date submitted; actions taken and dates; resolution (if any) and date; and follow-up yet to be taken—grievances listed should include those received since the preceding report and those that were unresolved at the time of that report.
- *External stakeholder grievances:* grievance and date submitted, action(s) taken and date(s), resolution (if any) and date, and follow-up yet to be taken—grievances listed should include those received since the preceding report and those that were unresolved at the time of that report. Grievance data should be gender-disaggregated.
- *Major changes to Contractors environmental and social practices*.
- *Deficiency and performance management:* actions taken in response to previous notices of deficiency or observations regarding ESHS performance and/or plans for actions to be taken should continue to be reported to UNOPS until it determines the issue is resolved satisfactorily.

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Annex 6

Indicators for monitoring the ESHS performance of contractors

Indicator	Frequency of Verification
General Provisions	
Contractor Environmental and Social Management Plan (C-ESMP)	
• C-ESMP was prepared, submitted, and approved before the start of works	Start of works
• Designated ESHS Officer available on-site	Biweekly
Communication and Training	
ESHS Training	
• Proof that all workers, including the workers of subcontractors, daily workers and new works, received the basic ESHS training	Biweekly
Area Signage	
• Visual verification of adequate signage	Biweekly
Labeling of Equipment	
• Visual verification that vessels that may contain hazardous substances are properly labeled	Biweekly
Construction Site Management	
Vegetation	
• Inspection of site (before and after) to identify any destructing, scarring or defacing of natural surroundings	Biweekly
Damage to Existing Installations	
• Proof that existing installation (facilities and services) were identified before the start of works and taken into account (this in part will be done during the design phase)	Before the start of works
Cultural Heritage	
• Records of chance finds	Biweekly
Borrow Pits and Quarries	
• Confirmation that quarries have the necessary permits	Biweekly
• Verification that quarries used by the Contractor do not use child or forced labor	Biweekly
Location of Worker Camps	
• Poorly located camps can be prejudicial to local communities, and cause conflicts	When a new quarry is contracted
Decommissioning of Camps, Worksites and Plants	
• Visual verification that construction activities have not left contaminated patches, waste, or abandoned equipment	Once works are completed
Environment	
Noise and Vibration	

Indicator	Frequency of Verification
• On site inspection and number of complaints regarding excessive noise	Biweekly
Soil Erosion	
• Visual verification of the presence of erosion caused by Contractor activities	Biweekly
Air Quality	
• Number of complaints regarding excessive dust or foul smells	Biweekly
Hazardous and Toxic Waste	
• Visual verification that no petroleum-based products, such as lubricants, hydraulic fluids, or fuels leaked during their storage, transfer, or use in equipment.	Biweekly
Waste from Construction Activities	
• Proof of appropriate disposal of construction waste	Biweekly
Occupational Health and Safety	
Severe Weather and Facility Shutdown	
• Conformation that works were stopped during severe weather	Biweekly
Lavatories and Showers	
• Visual verification that clean lavatories and showers are available to all contracted workers	Biweekly
Potable Water Supply	
• Visual verification that an adequate supply of potable water on site is available	Biweekly
Clean Eating Area	
• Visual verification that a suitable eating area is available	Biweekly
First Aid	
• Visual verification that first-aid by qualified personnel is always available	Biweekly
Noise	
• Visual verification that acoustic dampeners are installed on work site machinery	Biweekly
• Number of complaints from surrounding communities regarding excessive noise	Biweekly
Electrical	
• Number and nature of accidents and incidents	Biweekly
Industry Vehicle and Site Traffic	
• Proof of training of industrial vehicle drivers (for new drivers)	Biweekly
Working Environment Temperature	
• Proof that measures were taken by Contractor during excessive heat spells	Biweekly
Over-exertion	
• Visual verification of signs of over-exertion, and ergonomic injuries and illnesses	Biweekly
Slips and Falls	
• Number and nature of accidents and incidents	Biweekly
Work in Heights	
• Number and nature of accidents and incidents	Biweekly
Struck by Objects	

Indicator	Frequency of Verification
• Number and nature of accidents and incidents	Biweekly
Welding/Hot Work	
• Number and nature of accidents and incidents	Biweekly
Personal Protective Equipment (PPE)	
• Visual verification that PPE are available and worn	Biweekly
Excavations	
• Visual verification of sufficient dewatering, good side-walls support, and appropriate slope gradients	Biweekly
Confined Spaces	
• Number and nature of accidents and incidents inc confined spaces	Biweekly
Lone and Isolated Workers	
• Proof that measures are in place for managing lone and isolated workers	Biweekly
Working in Sewers	
• Proof that measures to prevent sewer related incidents and accidents are in place	Biweekly
• Number and nature of sewer-related accidents and incidents	Biweekly
Solar PV Systems	
Chemical Hazards	
• Proof that measures are in place to prevent lead-acid battery related accidents or incidents, and that works are trained	Before the start of works
• Number and nature of battery related accidents of incidents	Biweekly
Community Health and Safety	
General Site Hazards	
• Number of incidents involving communities	Biweekly
Traffic Safety	
• Number of complaints from communities regarding the use of vehicles by contractors	Biweekly
• Number of traffic accidents or incidents	Biweekly
Communicable Diseases	
• Number of cases of communicable diseases amongst Project workers	Biweekly
Vector-Borne Diseases	
• Number of cases of vector borne diseases amongst Project workers	Biweekly
COVID-19	
• Number of reported COVID-19 cases amongst contracted workers and neighboring communities	Biweekly
Emergency Preparedness and Response	
• Proof that emergency management measures are in place, such as the existence of an emergency management plan that takes into account SMP commitments	Before the start of works
• Log of emergency management drills and training	Biweekly
• Log of events triggering an emergency situation	Biweekly

Indicator	Frequency of Verification
Stakeholder Engagement	
• Number and nature of stakeholder engagement activities undertaken by the Contractor	Biweekly
• Number of nature complaints by PAPs regarding Contractor activities	Biweekly
Labour Force Management	
Labour Influx	
• Verification of the origin of workers	Biweekly
Labor Conditions	
• Proof that all workers have signed a contract	Biweekly
Insurance	
• Proof that workers are insured	Before the start of works
Grievance Mechanism for Workers	
• Number and nature of grievances recorded in the worker GM log	Biweekly
Protection from Sexual Exploitation and Abuse	
• Number of SEA/SH cases reported through the Project Grievance Mechanism	Biweekly
Protection from Child Labor	
• Documentation showing that all contracted workers are over the age of 18	Biweekly
Protection from forced labor	
• Verification that there are no signs of forced labor[74]	Biweekly
Code of Conduct	
• Signed copies of the Code of Conduct for all contracted workers	Biweekly
Contractor Environmental and Social Reporting	
• Verification that biweekly monitoring reports have been prepared	Biweekly
• Number and nature of non-compliances with ESHS requirements	Biweekly

[74] The ILO has published a list of forced labor indicators that can be referred to: https://www.ilo.org/global/topics/forced-labour/publications/WCMS_203832/lang--en/index.htm

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Annex 7

Screening form for subprojects

This screening form is to guide UNOPS and its Implementing Partners in:

1. determining the proposed environmental and social risk category[75] for the subproject
2. assessing the various environmental and social risks and impacts that different subproject activities will pose
3. selecting the right environmental and social management plans that will be applicable to those subproject activities

Subproject activities will use preprepared management measures already included in the ESMF, most particularly the Environmental, Social, Health and safety requirements for contractors, as well as the LMP, the SEA/SH Prevention and response Plan, the Security Management Plan and the SEP.

The Screening Form excludes certain activities, such as activities that may pose significant or high risk, degrade critical habitats or involve economic or physical displacement.

The completed forms will be signed and kept in the Project ESF file. The World Bank may review a sample of the forms during implementation support visits.

Part 1. Subproject information

Subproject title	
Subproject location	
Implementing Partner	
Estimated cost	
Estimated Start/Completion Date	
Brief description of subproject	
Observations/Comments	

[75] **High Risk** subprojects are likely to generate a wide range of significant adverse risks and impacts on human populations or the environment, because of the complex nature of the Project, their large to very large scale, or the sensitivity of the subproject locations. Impacts are likely to be long term, permanent, irreversible, and impossible to avoid entirely due to the nature of the Project

Moderate Risk subprojects are likely to generate some significant adverse risks and impacts on human populations or the environment, because of their large to medium scale. They are not located in a highly sensitive area. Impacts are likely to be mostly temporary, predictable and reversible.

Moderate Risk subprojects have adverse risks and impacts on human populations and/or the environment that are not likely to be significant, because the subproject is not complex or large, do not involve activities that have a high potential for harming people or the environment, and are located away from environmentally or socially sensitive areas.

Low Risk subprojects have potential adverse risks to and impacts on human populations or the environment that are likely to be minimal or negligible. These subprojects do not require further ES assessment following the initial screening.

Part 2. Environmental and Social Screening Questionnaires[76]

Questions	Answer		Next Steps
	Yes	No	
ESS1			
1. Is the subproject likely to have significant adverse environmental impacts that are sensitive and unprecedented that trigger the 'Ineligible Activities' or other exclusion criteria?			If "Yes": Exclude from project.
2. Does the subproject involve new construction or significant expansion of ponds, solid waste management systems, shelters, roads (including access roads), community centers, schools, bridges and jetties?			If "Yes": 1 Prepare a site-specific E&S Assessment and/or ESMP for the proposed subproject, based on the template in Annex 3. 2 Include E&S risk management measures in bidding documents.
3. Does the subproject involve renovation or rehabilitation of any small-scale infrastructure, such as groundwater wells, latrines, showers/washing facilities, or shelters?			If "Yes": 1 Apply relevant measures described in ESHS requirements (Annex 5) 2 Include E&S risk management measures in bidding documents
4. Will construction or renovation works require new borrow pits or quarries to be opened?			If "Yes": 1 Prepare a site-specific ESMP for the proposed subproject, based on the outline in Annex 8. 2 Include E&S risk management measures in bidding documents.
5. Does the project lead to any risks and impacts on, individuals or groups who, because of their particular circumstances, may be disadvantaged or vulnerable.[77]			If "Yes": Apply relevant measures described in the ESMF and SEP.
ESS2			
6. Does the subproject involve uses of goods and equipment involving forced labor, child labor, or other harmful or exploitative forms of labor?			If "Yes": Exclude from project.
7. Does the subproject involve recruitment of workforce including direct, contracted, primary supply, and/or community workers?			If "Yes": Apply LMP
8. Will the workers be exposed to workplace hazards that needs to be managed in accordance with local regulations and EHSGs? Do workers need PPE relative to the potential risks and hazards associated with their work?			If "Yes": Apply LMP

[76] Adapted from the ESMF Template for Low to Moderate Risk Project, April 2023

[77] "Disadvantaged or vulnerable" refers to those individuals or groups who, by virtue of, for example, their age, gender, ethnicity, religion, physical, mental or other disability, social, civic or health status, sexual orientation, gender identity, economic disadvantages or ethnic peoples status, and/or dependence on unique natural resources, may be more likely to be adversely affected by the project impacts and/or more limited than others in their ability to take advantage of a project's benefits.

Questions	Answer		Next Steps
9. Is there a risk that women may be underpaid when compared to men when working on the project construction?			If "Yes": Apply LMP
ESS3			
10. Is the project likely to generate solid or liquid waste that could adversely impact soils, vegetation, rivers, streams or groundwater, or nearby communities?			If "Yes": 1 Prepare a site-specific ESMP for the proposed subproject, based on the template in Annex 3. 2 Include E&S risk management measures in bidding documents.
11. Do any of the construction works involve the removal of asbestos or other hazardous materials?			If "Yes": Apply asbestos guidance provide in the ESHS requirements (Annex 5)
12. Are works likely to cause significant negative impacts to air and / or water quality?			If "Yes": 1 Prepare a site-specific ESMP for the proposed subproject, based on the template in Annex 3. 2 Include E&S risk management measures in bidding documents.
13. Does the activity rely on existing infrastructure (such as discharge points) that is inadequate to prevent environmental impacts?			If "Yes": 1 Prepare a site-specific ESMP for the proposed subproject, based on the outline in Annex 9. 2 Include E&S risk management measures in bidding documents.
14. Is there any potential to have impact on soil or water bodies due to agro-chemicals (e.g., pesticides) used in farmlands due to the consequences of the subproject activities (e.g., development of irrigation system, agriculture related activities, seed and fertilizer assistance, procurement of pesticides)?			If "Yes": Exclude from the Project
ESS4			
15. Is there a risk of increased community exposure to communicable disease (such as COVID-19, HIV/AIDS, Malaria), or increase in the risk of traffic related accidents?			If "Yes": Apply LMP and relevant measures in SEP
16. Is an influx of workers, from outside the community, expected? Would workers be expected to use health services of the community? Would they create pressures on existing community services (water, electricity, health, recreation, others?)			If "Yes": Apply LMP in Annex 4
17. Is there a risk that SEA/SH may increase as a result of project works?			If "Yes": Apply LMP in Annex 4
18. Would any public facilities, such as schools, health clinic, church be negatively affected by construction?			If "Yes": Exclude from Project
19. Will the subproject require the government to retain workers to provide security to safeguard the subproject?			If "Yes": Exclude from the Project

Questions	Answer		Next Steps
ESS5			
20. Will the subproject require the involuntary acquisition of new land (will the government use eminent domain powers to acquire the land)?[78]			If "Yes": Exclude from the Project
21. Will the subproject lead to temporary or permanent physical displacement (including people without legal claims to land)?			If "Yes": Exclude from the Project
22. Will the subproject lead to economic displacement (such as loss of assets or livelihoods, or access to resources due to land acquisition or access restrictions)?			If "Yes": Exclude from the Project
23. Has the site of the subproject been acquired through eminent domain in the past 5 years, in anticipation of the subproject?			If "Yes": Exclude from the Project
24. Are there any associated facilities needed for the subproject (such as access roads or electricity transmission lines) that will require the involuntary acquisition of new land?			If "Yes": Exclude from the Project
25. Is private land required for the subproject activity being voluntarily donated to the project?[79]			If "Yes": Exclude from the Project
ESS6			
26. Does the subproject involve activities that have potential to cause any significant loss or degradation of critical habitats[80] whether directly or indirectly, or which would lead to adverse impacts on natural habitats[81]?			If "Yes": Exclude from project.

[78] Environmental and Social Standard 5, Footnote 10: "In some circumstances, it may be proposed that part or all of the land to be used by the project is donated on a voluntary basis without payment of full compensation. Subject to prior Bank approval, this may be acceptable providing the Borrower demonstrates that: (a) the potential donor or donors have been appropriately informed and consulted about the project and the choices available to them; (b) potential donors are aware that refusal is an option, and have confirmed in writing their willingness to proceed with the donation; (c) the amount of land being donated is minor and will not reduce the donor's remaining land area below that required to maintain the donor's livelihood at current levels; (d) no household relocation is involved; (e) the donor is expected to benefit directly from the project; and (f) for community or collective land, donation can only occur with the consent of individuals using or occupying the land. The Borrower will maintain a transparent record of all consultations and agreements reached."

[79] Environmental and Social Standard 5, Footnote 10: "In some circumstances, it may be proposed that part or all of the land to be used by the project is donated on a voluntary basis without payment of full compensation. Subject to prior Bank approval, this may be acceptable providing the Borrower demonstrates that: (a) the potential donor or donors have been appropriately informed and consulted about the project and the choices available to them; (b) potential donors are aware that refusal is an option, and have confirmed in writing their willingness to proceed with the donation; (c) the amount of land being donated is minor and will not reduce the donor's remaining land area below that required to maintain the donor's livelihood at current levels; (d) no household relocation is involved; (e) the donor is expected to benefit directly from the project; and (f) for community or collective land, donation can only occur with the consent of individuals using or occupying the land. The Borrower will maintain a transparent record of all consultations and agreements reached."

[80] Environmental and Social Standard 6, paragraph 23: "Critical habitat is defined as areas with high biodiversity importance or value, including (a) Habitat of significant importance to Critically Endangered or Endangered species, as listed in the IUCN Red List of threatened species or equivalent national approaches; (b) Habitat of significant importance to endemic or restricted-range species; (c) Habitat supporting globally or nationally significant concentrations of migratory or congregatory species; (d) Highly threatened or unique ecosystems; and (e) Ecological functions or characteristics that are needed to maintain the viability of the biodiversity values described above in (a) to (d)."

[81] Environmental and Social Standard 6, paragraph 21: "Natural habitats are areas composed of viable assemblages of plant and/or animal species of largely native origin, and/or where human activity has not essentially modified an area's primary ecological functions and species composition."

Questions	Answer		Next Steps
27. Will the project involve the conversion or degradation of non-critical natural habitats?			If "Yes": Exclude from the Project
28. Will this activity require clearance of mangroves?			If "Yes": Exclude from project.
29. Will this activity require clearance of trees, including inland natural vegetation?			If "Yes": Exclude from the Project
30. Will there be any significant impact on any ecosystems of importance (especially those supporting rare, threatened or endangered species of flora and fauna)?			If "Yes": Exclude from project.
ESS7			
31. Are there any Indigenous Peoples or Sub-Saharan African Historically Underserved Traditional Local Communities present in the subproject area and are likely to be affected by the proposed subproject negatively?			If "Yes": Exclude from the Project
ESS8			
32. Is the subproject to be located adjacent to a sensitive site (historical or archaeological or culturally significant site) or facility?			If "Yes": Apply Chance Find Procedures in the ESHS requirements (Annex 5)
33. Locate near buildings, sacred trees or objects having spiritual values to local communities (e.g., memorials, graves or stones) or require excavation near there?			If "Yes": Apply Chance Find Procedures in the ESHS requirements (Annex 5)

Part 3. Conclusions of the screening

Based on the result from the screening above, please:

1. Indicate the proposed environmental and social risk ratings (Substantial, Moderate or Low), and provide justifications. High risk subproject are not eligible for Project funding.
2. List the environmental and social risk management instruments to be prepared, adopted and implemented for the subproject

Name and title of person who conducted screening:
Date of screening:

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Annex 8

Template for the preparation of checklists for low-risk subprojects

This following template assesses the risk of low-risk subprojects, as required by paragraph 24 of ESS. It is complemented by the ESHS requirements detailed in Chapter 8, which apply to all Project contractors and subcontractors.

	Issue	Yes	No	Proposed Mitigation Measures/comments
Discrimination and social inclusion				
1	Is there a likelihood that the activity would have inequitable or discriminatory adverse impacts on affected populations? or excluded individuals or groups?			
2	Will the project benefit different groups or individuals who are vulnerable or disadvantaged?			
3	Is the project likely to provide local employment opportunities for vulnerable beneficiaries, including women and youth?			
4	Does the activity include measures to facilitate access of vulnerable or disadvantaged persons to the benefits of the project?			
5	Has the role of women been considered in project design and implementation?			
6	Is there responsive grievance process available to workers in relation to GBV?			
Stakeholder engagement				
7	Is the subproject being designed with sufficient local stakeholders' engagement and consultation in the planning and design process?			
8	Is there a likelihood that the project would exclude any potentially affected stakeholders from fully participating in decisions that may affect them?			
Sexual exploitation and abuse/ sexual harassment (SEA/SH)				
9	Will the project increase the risk of SEA/SH?			
10	Is there responsive grievance process available to workers in relation to SEA/SH?			
Environmental risks - Pollution				
11	Will the activities potentially result in the generation of hazardous waste?			
12	Will the activities potentially result indirect generation of e -waste?			

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Annex 9

Cover notes for the proportionate ESMP Outline

16 February 2023

Clarity of Purpose

The proportionate ESMP outline[82] further clarifies the ESMP template in Section 7.3 of the ESMF for the Second AF. As described in the ESMF, proportionate SMPs are the instrument that UNOPS and its Implementing Partners[83] will use to address the environmental and social risks of YEHCP moderate risk subprojects.

Proportionate ESMPs differ in intent and content from the full ESMPs described in Annex 1, E of ESS1, which is also presented in 12 of this ESMF.

The objective of the outline is to keep ESMPs simple and practical, while meeting the requirements of the World Bank for managing Environmental and Social risks and impacts in an adequate manner:

- The preparation of ESMPs and the management of environmental and social issues should not become an administrative obstacle to the preparation and implementation of subprojects. Thus, ESMPs should be short, site-specific and proportionate, and should only include information that is required by the World Bank.
- The World Bank will only approve ESMPs that are deemed to meet relevant ESF requirements as detailed in the ESCP and the ESMF.

UNOPS understands that an ESMP prepared for moderate risk subprojects, in accordance with the Project ESMF, differs from an ESMP for substantial or high-risk projects or subprojects as described in Annex 1, E of ESS 1.[84]

UNOPS and its Implementing Partners will ensure that all ESMPs for YEHCP moderate risk subprojects are prepared in accordance with the sections and substance indicated in this outline. Agreement on the outline between UNOPS and the World Bank and its rigorous implementation by UNOPS will increase the consistency and predictability of both the ESMPs and of the ESMP review process.

ESMP Management Procedures

UNOPS intends to put in place the following accompanying management measures to improve the quality of future ESMPs:

[82] The outline is only applicable to low or moderate risk subprojects. A full ESIA/ESMP must be prepared for substantial risk subprojects using the outline include in Annexes 3 and 4 of the ESMF. High risk and substantial subprojects are not eligible. When appropriate, the environmental and social risks of low-risk subprojects might be addressed through contractual clauses.

[83] The project is implemented by UNOPS through direct implementation as well as project cooperation agreements between UNOPS and three local Implementing Partners: (i) the Public Works Project (PWP); (ii) the Road Maintenance Fund Implementation Unit (RMF-IU) (RMF-IU), and; (iii) Urban Water Project Management Unit (UW-PMU).

[84] The World Bank has raised the possibility of using Environmental and Social Actions Plans for moderate risk subprojects involving minor works, as the subsidiary instrument under an ESMF, to avoid confusion with full ESMPs and ensure proportionality.

- Implementing Partners will provide UNOPS with the list of consultants that they propose to prepare ESMPs
- UNOPS will provide training on the ESF, the ESMF and the ESMP outline to these consultants before they are allowed to prepare any new ESMP
- UNOPS will evaluate the capacity of each consultant at the end of the training. Any consultant who fails the training will not be authorized to prepare ESMPs
- Consultants must take into account the Project PAD, the ESMF and all other disclosed Project environmental and social instruments when preparing ESMPs
- Consultants must be familiar with the ESF and be able to use it
- Consultants must follow the ESMP outline as a condition of their contract
- UNOPS will withhold payment to consultants who prepare ESMPs that deviate from the outline

Subproject Definition

A subproject in the context of YEHCP is a set of activities that are regrouped for the purpose of assessing environmental and social risks and impacts, and of defining appropriate and sufficient mitigation measures. Whenever possible and efficient, UNOPS and its Implementing Partners will synchronize the organization of activities into subprojects for the purpose of environmental and social risks management with the bundling of activities for the purpose of procurement. Subprojects could thus be a cluster of sites. However, subprojects should not cover multiple cities unless they involve a single contractor. **Clustering activities with many sites in different cities is likely to increase the risk rating and thus delay the review and clearance process**.

Annex 10

Outline for the preparation of proportionate ESMPs[85]

16 February 2023

UNOPS and its Implementing Partners will prepare all ESMPs for moderate risk subprojects according to this outline, both in terms of organization and substance.

The outline for proportionate ESMPs differs from the outline for full ESMPs, that accompany full ESIAs for substantial and high-risk subproject, as required under Annex 1, E of ESS1. This is because is that proportionate ESMPs for low and moderate risk subprojects are by definition subordinate to the Project ESMF, which already identifies potential risks and defines appropriate mitigation measures for all Project activities, which allows for the preparation of more concise ESMPs that only include subproject specific aspects.

Summary Sheet

Subproject Name	
Subproject Location	
Implementing Partner	
Name of consultant preparing the ESMP	
Risk level (low or moderate)[86]	
Date of the field visit	
Estimated Subproject Investment	
Consultation dates and name of person conducting the consultations	
Observations/Comments	
Signature of responsible ESSO	
Date	

Cover Page

- Do not include the World Bank logo on the cover page. The ESMP is a UNOPS document that is submitted to the World Bank for approval. It is not a World Bank document.
- Indicate the version number and the actual date of the version

[85] Theis outline is a step-by-step list of instructions for the preparation of proportionate ESMPs. Although the outline is longer than the outline for full ESMPs in Annex 12, which accompany ESIAs, the proportionate ESMPs themselves are expected to be much shorter.

[86] The outline is only applicable to low or moderate risk subprojects. A full ESIA/ESMP must be prepared for substantial risk subprojects as indicated in annexes 4 and 5. High risk subprojects are not eligible. The environmental and social risks of low-risk subprojects might as appropriate be addressed through contractual clauses.

Table of Document Versions

- Include a table of the document versions, dates of submissions to the World bank, and date of reception of World Bank review comments
- Indicate the specialist or consultant who prepared the ESMP (by name)

Table of Contents

- Include a Table of Contents with 3 levels: Chapter, Section and Subsection
- Do not include an executive summary, but indicate that the ESMF will be made available in Arabic

Screening and the Exclusion List

- Include the completed subproject screening form (Annex 1 of the ESMF) as an annex to the ESMP
- Exclude all activities requiring monetary compensation due to economic or physical displacement, because the compensation cannot be funded by the World Bank, UNOPS or local authorities, however justified the resettlement.
- Exclude all activities involving permanent land acquisition causing physical or economic displacement
- Exclude activities "if there are encroachers or squatters within the proposed area of the activity, who would need to be relocated." (Paragraph 2 of the Project Resettlement Framework)

Chapter 1. Introduction

- Indicate that the subproject is part of YEHCP (the Project) which is implemented by UNOPS, and that the Development Objective of the

Project is to *"restore access to critical urban services of selected cities within the Republic of Yemen."* Do not provide additional information on the Project, but instead refer to the disclosed Project Appraisal Document (PAD) and the Project Operations Manual (POM).

- Identify the Implementing Partner, as well as the agency responsible for the infrastructure targeted by the subproject
- State that the ESMP was prepared to meet the requirements of the Environmental and Social Framework (ESF) of the World Bank, most particularly the Environmental and Social Standards (ESSs).
- Mention that the ESMP was prepared in accordance with the disclosed Project ESMF, as well as the other disclosed environmental and social (E&S) instruments, such as the Environmental and Social Commitment Plan (ESCP), the Labor Management Procedures (LMP), the Security Management Plan (SMP), the Sexual Exploitation and Abuse (SEA) and Sexual Harassment (SH) Prevention and Response Plan, and the Resettlement Framework (RF), and the Stakeholder Engagement Plan (SEP)
- List the relevant Environmental and Social Standards (ESSs) for the Project, as indicated in the ESCP
- Mention that the ESMP is subsidiary to the disclosed Project ESMF, and that it must be read jointly with the ESMF to be understood.
- Given that the ESMP is an instrument subsidiary to the ESMF, avoid replicating

information from the ESMF and other E&S Instruments, but rather indicate where stakeholders can consult the ESMF and other E&S instruments. In particular, refer to Chapter 3 of the ESMF, Legal and Regulatory Framework, rather than copy any of it.

- Mention that the ESMP will be publicly disclosed and indicate where and how.

Chapter 2. Subproject Description

- Describe the nature and scope of subproject activities, particularly for construction and rehabilitation works, with a level of detail sufficient to understand the environmental and social risks and impacts caused by the subproject. The description must include:
  - Presentation of the significance and function of the targeted infrastructure
  - Technical specifications of the proposed activities (construction/rehabilitation) as described in technical documents and the Bill of Quantities (BoQ), including size, quantities, or volumes with clear measurement units.
  - Associated facilities[87] such as quarries, depots or offices (location, size, access roads)
  - An identification of the tasks assigned to contractors, as described in the draft contract
  - The expected number and type of workers that will be recruited by the contractor
  - The expected duration of the works
- Indicate how many contractors will be involved in the subproject, and specify the number of lots
- Include the following maps or preferably annotated satellite images from Google Earth:
  - Map locating the targeted city in Yemen if different from Sanaa or Aden (half page)
  - Map locating all the subproject sites in the targeted city (half page)
  - Map or image for each subproject site (full page) with incorporated legend (please use PowerPoint to incorporate the legend within the map; maximize useful information by eliminating white border or adding legends at the border of the image). The map of the subproject site should **indicate all the localities mentioned in the ESMP**, including all named localities, neighborhoods, streets or roads likely to be directly affected by subproject activities
  - Provide the particulars of each location if the subproject includes multiple locations

[87] "Associated Facilities" means facilities or activities that are not funded as part of the project and, in the judgment of the Bank, are: (a) directly and significantly related to the project; and (b) carried out, or planned to be carried out, contemporaneously with the project; and (c) necessary for the project to be viable and would not have been constructed, expanded or conducted if the project did not exist"

- Provide the relevant and site-specific information required to understand the environmental and social risks and impacts of the subproject within its area of influence (direct and indirect impacts)[88], in particular the number and characteristics of people present, economic activities, the presence of IDPs or other vulnerable persons, the presence of archeological or cultural heritage sites, and site-specific security risks. For example, the baseline for solar PV on a hospital would describe the hospital (location, size, surface area, number of floors, presence of elevators, type of roof, immediate surroundings), whether it is public or private, and indicate the number of staff and the type of users.
- Include only information that is specific to the subproject. Avoid broader description of geology or climate that are not directly and specifically relevant to the subproject's environmental and social risks.
- Provide information on the current state of the infrastructure and illustrate with photographs. For example, if the subproject is about road repair describe the extent of degradation or damage, and explain how it connects to other roads, or if the subproject is about sewers, describe the issues that the rehabilitation will address.
- Describe any associated environmental risks such as recent flooding, landslides, or subsidence

[88] Although the term *"area of influence"* is not used in the ESF, it is taken here to mean the area of direct and indirect risks and impacts

- Indicate and map households, shops, informal occupants, schools, health facilities, or social facilities, particularly mosques or cemeteries, that might be directly affected by the proposed activities. Whenever possible, indicate how many individuals might be affected and in what manner.
- Indicate if any services (water supply, sanitation, electricity) might be directly affected or temporarily interrupted because of the proposed activities.
- Provide enough pictures to illustrate environmental and social issues, with appropriate legends.

Chapter 4. Environmental and Social Risks and Impacts

- Identify the risks associated with the selection, design, and siting of the subprojects, including site specific security risks, legacy issues, legacy issues, the risk that contract awards might disadvantage certain groups, and the risk that the rehabilitated services might not equally benefit potential service recipients, particularly to vulnerable groups or persons.[89]
- Highlight the most relevant risks and impacts specific to the subproject that are associated with the activities of YEHCP Contractors using Table 2 of the ESMF, as well as Section 6.3, Sector Specific Risks and Impacts. If necessary, provide further detail or add subproject specific risks if they are not included in Table 2 or require additional details.[90]

[89] These risks are the direct responsibility of UNOPS and its Implementing Partners.
[90] These risks are the direct responsibility of contractors. The role of UNOPS and its Implementing Partners is to monitor and control the E&S performance of contractors.

- Screen the subproject against the commitments in the Project Security Management Plan (SMP) and state if the subproject sites are safe and if there are security concerns that require specific additional attention.
- Indicate if there are suitable SEA/SH referral pathways for subprojects sites as indicated in the disclosed Project SEA/SH Prevention and Response Action Plan
- Identify subproject specific disadvantaged or vulnerable communities or persons that might be adversely affected by the subproject, as detailed in the Paragraph 35 of the disclosed Project Stakeholder Engagement Plan

Chapter 5. Consultations

The consultation section must:

- Detail how UNOPS or its Implementing Partner engaged with both subproject-affected parties (individuals or groups) and other interested parties of the subproject, through the process of stakeholder engagement described in the Project SEP

  UNOPS or its Implementing Partner must conduct meaningful and inclusive consultations that aim to inform all stakeholders about the proposed activities of the subproject **before the start of activities**, including their timetable and potential environmental and social risks and impacts, as indicated in the Project SEP.

  - Consultations must include all subproject-affected parties (individuals or groups) and other interested parties. Consulting only with beneficiaries and community representatives is not sufficient
  - The consultation process must take into account the sociocultural context of the subproject site. Consultations can take the form of focus groups, discussions with elders/community leaders, or interviews. If necessary, UNOPS or its implementing partner will directly contact all potentially affected households to ensure that they are informed.

- UNOPS or its Implementing Partner will conduct separate consultation for women, to ensure that any special concerns and needs are taken into account.
- Consultations must start with an introduction to the subproject, its objectives and its potential risks and impacts. For example, the objective for a road subproject could be improved access, while risks and impacts could include temporary restriction of access to businesses and households
- Consultations must include a presentation of the **subproject specific grievance mechanism** and its procedures, including the possibility to complain confidentially about Project related SEA/SH.
- UNOPS or its Implementing Partner will ensure that PAPs are not exposed to risks as part of their participation in subproject consultations.

- Document all subproject specific consultations, including dated, locations, list of participants and their affiliation for each consultation, gender and composition of participants (e.g., household members, business owners, key informants such as teachers, IDPs, or handicapped persons), the methodology used (focus groups, interviews, or large fora), the topics discussed, any comments, suggestions, concerns or expectations expressed by the participants, and any agreement regarding mitigation measures.
- Indicate how stakeholder comments, suggestions, concerns, and expectations were addressed in the site-ESMP
- Join photos of the consultations if the consulted stakeholders consent

Chapter 6. Mitigation measures

- Define mitigation measures to be implemented by UNOPS or the relevant its Implementing Partner to sufficiently and proportionately address the risks and impacts linked to the selection, design, and siting of the subproject, as identified in Chapter 4 above, while taking into account the mitigation hierarchy[91]. As necessary and

[91] Paragraph 27 of ESS 1 states that:
The environmental and social assessment will apply a mitigation hierarchy which will:
(a) Anticipate and avoid risks and impacts

applicable, incorporate the sector specific mitigation measures mentioned in Section 6.3 of the ESMF and its tables.

- Define differentiated measures to be implemented by UNOPS or the relevant Implementing Partner so that adverse impacts do not fall disproportionately on the disadvantaged or vulnerable, and that the disadvantaged and vulnerable have equal access to development benefits and opportunities resulting from the subproject
- Detail subproject specific measures required for the subproject to be in accordance to the Project Labor Management Procedures (LMP), including subproject specific worker Grievance Mechanism procedures
- Detail subproject specific measures required for the subproject to be in accordance with the Project SEA/SH Prevention and Response Action Plan
- Detail subproject specific measures for the subproject to be in accordance to the SEP during subproject implementation, including the subproject specific Grievance Mechanism procedures, as indicated in Section 7.6 of the ESMF)
- Indicate that the risk and impacts associated with subproject implementation identified in Table 2 are addressed though the Environmental, Social, Health and Safety (ESHS) requirements for contractors (Annex 8 of the ESMF).

(b) Where avoidance is not possible, minimize or reduce risks and impacts to acceptable levels
(c) Once risks and impacts have been minimized or reduced, mitigate
(d) Where significant residual impacts remain, compensate for or offset them, where technically feasible

- Indicate that the environmental and social risks and impacts of contracted entities will be mitigated by requiring them as part of their contract the ESMF) to meet a detailed set of Environmental, Social, Health, and Safety (ESHS) requirements[92] (Annex 5 of the ESMF) that match the risks and impacts listed in Table 2 of the ESMF. The ESHS requirements provide a set of instructions for contractors to prepare their Contractor ESMP, in accordance with ESF requirements. The ESHS requirements must be annexed to each ESMP.
- Highlight the ESHS requirements to which subproject contractors must pay the greatest attention because of their relevance to the subproject. If necessary, the ESMP will "proportionalize" the ESHS requirements to the subproject's nature, scope, the specific environmental and social risks, and the number of workers involved. Non relevant section of the ESHS requirements should be highlighted. For example, UNOPS might need to specify for small contracts the type of PPE, or the contents of First Aid Boxes.
- As necessary, indicate additional ESHS requirements that UNOPS will apply to the subproject contractor. For example, requirement regarding scaffolding, cranes or other types of machinery.
- Apply the requirements of Section 5.6 of the LMP regarding primary supply workers:
    - Contracts must indicate that contractors will require primary suppliers to identify the risk of child labor/force labor and serious safety risks in producing construction materials.

[92] The ESHS requirements are largely based on the General EHS Guidelines of the World Bank Group, and other World Bank Guidelines and Good Practice Notes.

- UNOPS or the concerned Implementing Partner will review and approve the purchase of primary supplies from the suppliers following such risk identification/assessment and any other relevant due diligence (such as the review of license for quarries).
- Where appropriate, the contractor will be required to include specific requirements on child labor/forced labor and work safety issues in all purchase orders and contracts with primary suppliers.
- If UNOPS of the concerned Implementing Partner identifies child labor/forced labor and/or serious safety incidents in relation to primary supply workers, UNOPS or the concerned Implementing Partners will require the primary supplier to take appropriate steps to remedy them. Such mitigation measures will be monitored periodically to ascertain their effectiveness. Where the mitigation measures are found to be ineffective, UNOPS or the concerned Implementing Partner will, within reasonable period, shift the project's primary suppliers to suppliers that can demonstrate that they are meeting the relevant requirements.

- Detail any training provided or to be provided by UNOPS or its Implementing Partner to the contractors and their workers.

Chapter 7. Monitoring Plan

- Indicate that the environmental and social reporting obligations of contractors are defined in the corresponding section of the ESHS requirements.
- Indicate that UNOPS and its Implementing Partner will monitor and control the environmental and social performance of contractors against the relevant ESHS requirements and the commitments made by contractors in their respective Contractor ESMPs (see also Section 8.3 of the ESMF)..
- Develop a subproject specific monitoring plan that indicates what parameters will be monitored by UNOPS or its Implementing Partner, how they will be monitored, who will monitor them, and how frequently they will be monitored (also see Section 8.2 of the ESMF). The monitoring plan should clearly indicate the linkages between impacts identified, measurement indicators, and detection limits (where appropriate).

Institutional arrangements

- Indicate that UNOPS and its Implementing Partners are responsible:
  - for implementing environmental and social mitigation measures that are not passed on to contractors
  - for designing the subproject in accordance with ESF requirements
  - for monitoring and controlling the environmental and social performance of their contractors
- Indicate that contractors are responsible for implementing environmental and social mitigation measures in accordance with the ESHS requirements and their respective Contractor ESMP.

Budget

- Provide a budget for the mitigation measures to be implemented by UNOPS and its implementing partners. The cost to contractors of meeting the ESHS requirements will be included in their respective contracts when issued.

Annexes

- Completed subproject screening form (Annex 1 of the ESMF)
- Environmental, Social, Health and Safety requirements for contractors (Annex 8 of the ESMF)
- Detailed consultation report
- Agreements with communities, such as agreement on land donation

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Annex 11
Indicative outline of a full ESIA[93]

As indicated in Annex 1, D of ESS1:

> *"Where an environmental and social impact assessment (ESIA) must be prepared as part of the environmental and social assessment of a subproject, it will include the following:"*

Executive Summary

- Concisely discusses significant findings and recommended actions.

Legal and Institutional Framework

- Analyzes the legal and institutional framework for the project, within which the environmental and social assessment is carried out, taking into account in an appropriate manner all issues relevant to the project, including: (a) the country's applicable policy framework, national laws and regulations, and institutional capabilities (including implementation) relating to environment and social issues; variations in country conditions and project context; country environmental or social studies; national environmental or social action plans; and obligations of the country directly applicable to the project under relevant international treaties and agreements; (b) applicable requirements under the ESSs; and (c) the EHSGs, and other relevant GIIP.
- Compares the Borrower's existing environmental and social framework and the ESSs and identifies the gaps between them.
- Identifies and assesses the environmental and social requirements of any co-financiers.

Subproject Description

- Concisely describes the proposed subproject and its geographic, environmental, social, and temporal context, including any offsite investments that may be required (e.g., dedicated pipelines, access roads, power supply, water supply, housing, and raw material and product storage facilities), as well as the project's primary suppliers.
- Through consideration of the details of the project, indicates the need for any plan to meet the requirements of ESS1 through 10.
- Includes a map of sufficient detail, showing the project site and the area that may be affected by the project's direct, indirect, and cumulative impacts.

Baseline Data

- Sets out in detail the baseline data that is relevant to decisions about project location, design, operation, or mitigation measures. This should include a discussion of the accuracy, reliability, and sources of the data as well as information about dates surrounding project identification, planning and implementation.
- Identifies and estimates the extent and quality of available data, key data gaps, and uncertainties associated with predictions.
- Based on current information, assesses the scope of the area to be studied and describes relevant physical, biological, and socioeconomic conditions, including any changes anticipated before the project commences.
- Takes into account current and proposed development activities within the project area but not directly connected to the project.

[93] For significant risk subprojects. These are unlikely to be funded by the Project

Environmental and Social Risks and Impacts

- Takes into account all relevant environmental and social risks and impacts of the project. This will include the environmental and social risks and impacts specifically identified in ESS2–8, and any other environmental and social risks and impacts arising as a consequence of the specific nature and context of the project, including the risks and impacts identified in ESS1, paragraph 28.

Mitigation Measures

- Identifies mitigation measures and significant residual negative impacts that cannot be mitigated and, to the extent possible, assesses the acceptability of those residual negative impacts.
- Identifies differentiated measures so that adverse impacts do not fall disproportionately on the disadvantaged or vulnerable.
- Assesses the feasibility of mitigating the environmental and social impacts; the capital and recurrent costs of proposed mitigation measures, and their suitability under local conditions; and the institutional, training, and monitoring requirements for the proposed mitigation measures.
- Specifies issues that do not require further attention, providing the basis for this determination.

Analysis of Alternatives

- Systematically compares feasible alternatives to the proposed project site, technology, design, and operation—including the "without project" situation—in terms of their potential environmental and social impacts.
- Assesses the alternatives' feasibility of mitigating the environmental and social impacts; the capital and recurrent costs of alternative mitigation measures, and their suitability under local conditions; and the institutional, training, and monitoring requirements for the alternative mitigation measures.
- For each of the alternatives, quantifies the environmental and social impacts to the extent possible, and attaches economic values where feasible.

Design Measures

- Sets out the basis for selecting the particular project design proposed and specifies the applicable EHSGs or if the EHSGs are determined to be inapplicable, justifies recommended emission levels and approaches to pollution prevention and abatement that are consistent with GIIP.

Key Measures and Actions for the Environmental and Social Commitment Plan (ESCP)

- Summarizes key measures and actions and the timeframe required for the project to meet the requirements of the ESSs. This will be used in developing the Environmental and Social Commitment Plan (ESCP).

Appendices

- List of the individuals or organizations that prepared or contributed to the environmental and social assessment.
- References—setting out the written materials both published and unpublished, that have been used.
- Record of meetings, consultations and surveys with stakeholders, including those with affected people and other interested parties. The record specifies the means of such stakeholder engagement that were used to obtain the views of affected people and other interested parties.
- Tables presenting the relevant data referred to or summarized in the main text.
- List of associated reports or plans.

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Annex 12

Indicative outline of a full ESMP

An ESMP consists of the set of mitigation, monitoring, and institutional measures to be taken during implementation and operation of a subproject to eliminate adverse environmental and social risks and impacts, offset them, or reduce them to acceptable levels. The ESMP also includes the measures and actions needed to implement these measures. It will:

1. Identify the set of responses to potentially adverse impacts
2. Determine requirements for ensuring that those responses are made effectively and in a timely manner
3. Describe the means for meeting those requirements.

As indicated in Annex 1, E of ESS1, the content of the ESMP will include the following:

Mitigation

- The ESMP identifies measures and actions in accordance with the mitigation hierarchy that reduce potentially adverse environmental and social impacts to acceptable levels.
- The plan will include compensatory measures, if applicable. Specifically, the ESMP:
  - (i) identifies and summarizes all anticipated adverse environmental and social impacts (including those involving indigenous people or involuntary resettlement);
  - (ii) describes - with technical details – each mitigation measure, including the type of impact to which it relates and the conditions under which it is required (e.g., continuously or in the event of contingencies), together with designs, equipment descriptions, and operating procedures, as appropriate;
  - (iii) estimates any potential environmental and social impacts of these measures;
  - (iv) takes into account, and is consistent with, other mitigation plans required for the project (e.g., for involuntary resettlement, indigenous peoples, or cultural heritage).

Monitoring

- The ESMP identifies monitoring objectives and specifies the type of monitoring, with linkages to the impacts assessed in the environmental and social assessment and the mitigation measures described in the ESMP. Specifically, the monitoring section of the ESMP provides (a) a specific description, and technical details, of monitoring measures, including the parameters to be measured, methods to be used, sampling locations, frequency of measurements, detection limits (where appropriate), and definition of thresholds that will signal the need for corrective actions; and (b) monitoring and reporting procedures to (i) ensure early detection of conditions that necessitate particular mitigation measures, and (ii) furnish information on the progress and results of mitigation.

Capacity Development and Training

- To support timely and effective implementation of environmental and social project components and mitigation measures, the ESMP draws on the environmental and social assessment of the existence, role, and capability of responsible parties on site or at the agency and ministry level.
- Specifically, the ESMP provides a specific description of institutional arrangements, identifying which party is responsible for carrying out the mitigation and monitoring measures (e.g., for operation, supervision, enforcement, monitoring of implementation, remedial action, financing, reporting, and staff training).
- To strengthen environmental and social management capability in the agencies responsible for implementation, the ESMP recommends the establishment or expansion of the parties responsible, the

training of staff and any additional measures that may be necessary to support implementation of mitigation measures and any other recommendations of the environmental and social assessment.

Implementation Schedule and Cost Estimates

- For all three aspects (mitigation, monitoring, and capacity development), the ESMP provides (a) an implementation schedule for measures that must be carried out as part of the project, showing phasing and coordination with overall project implementation plans; and (b) the capital and recurrent cost estimates and sources of funds for implementing the ESMP. These figures are also integrated into the total project cost tables.

Integration of ESMP with Project

- The Borrower's decision to proceed with a project, and the Bank's decision to support it, are predicated in part on the expectation that the ESMP (either stand alone or as incorporated into the ESCP) will be executed effectively. Consequently, each of the measures and actions to be implemented will be clearly specified, including the individual mitigation and monitoring measures and actions and the institutional responsibilities relating to each, and the costs of so doing will be integrated into the project's overall planning, design, budget, and implementation.