PROJECT IMPLEMENTATION UNIT
PIU (IFRAP)

INTEGRATED FLOOD RESILIENCE AND ADAPTATION PROJECT (IFRAP- COMPONENT - I)

ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN (ESMP)

PACKAGE-II

RESTORATION OF FLOOD PROTECTION EMBANKMENT U/S OF NURG HINGRI WEIR (SHURLI & FAIZO BUND), DISTRICT LASBELA

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TABLE OF CONTENTS

EXECUTIVE SUMMARY 2
1 INTRODUCTION 7
1.1 PROJECT BACKGROUND 7
1.2 PROJECT OBJECTIVES 7
1.3 PROJECT SCOPE 8
1.4 OBJECTIVES OF ENVIRONMENTAL & SOCIAL MANAGEMENT PLAN (ESMP) 8
1.5 APPROACH AND METHODOLOGY 10
1.6 SUB-PROJECT AREA 10
1.7 PROPOSED ACTIVITIES 12
1.8 WORKPLAN AND IMPLEMENTATION OF THE SUB-PROJECT 14
1.8.1 Bidding and Award of Contract 14
1.8.2 Mobilization of Contractor 14
1.8.3 Restoration of Flood Protection Embankment (Shurli & Faizo Bund / Nurg Hingri Weir) 14
1.8.4 Environmental and Social Management Plan (ESMP) Implementation 14
1.8.5 Schedule of Deliverables 14
1.8.6 Project Completion and Handover (At Project End) 15
1.9 STUDY TEAM 15
2. LEGAL AND POLICY FRAMEWORK 18
2.1 LEGAL AND APPLICABLE REQUIREMENTS 18
2.2 ENVIRONMENTAL & SOCIAL STANDARDS (ESSs) AND NATIONAL REGULATIONS 18
2.2.1 World Bank Environmental and Social Framework (ESF) 18
2.2.2 World Bank Occupational Health & Safety (OHS) Guidelines 26
2.2.3 National/Provincial Guidelines and Policies 26
2.2.4 International Treaties and Conventions 27
3. DESCRIPTION OF THE SUBPROJECT 30
3.1 LOCATION OF SUB-PROJECT 30
3.2 Geology 31
3.2.1 Flood Protection Embankment U/S of Nurg Hingri Weir 31
3.3 DESIGN CRITERIA 32
3.4 RAW MATERIAL SOURCE AND AVAILABILITY 33
3.4.1 Borrow Area 34
3.4.2 Contractor's Camp 35
3.4.3 Camp Standards and Management 35
3.4.4 Standards for Workers' Accommodation 36
3.5 MACHINERY YARD AND OTHER FACILITIES 37
3.5.1 Workshop and Equipment Yard 37
3.5.2 Healthcare Facilities 37
3.6 SECURITY ARRANGEMENTS AND HEALTHCARE FACILITIES 38
3.6.1 Security Arrangements 38
3.6.2 Site Security 38
3.7 LABOUR REPORTING OFFICE 40
4. BASELINE DESCRIPTION 42
4.1 CORRIDOR OF IMPACT (COI) 42
4.2 PHYSICAL ENVIRONMENT 43
4.2.1 Geography and Climate 43
4.2.2 Land and Water Resources 43

4.2.3 Land Use and Soil Erosion....43
4.2.4 Seismology....44
4.2.5 Hydrology....44
4.2.6 Ambient Air Quality....46
4.2.6.1 Analysis....47
4.2.7 Water Quality....47
4.2.8 Noise Level....49
4.3 ECOLOGICAL ENVIRONMENT....50
4.4 SOCIO-ECONOMIC BASELINE....52
4.4.1 General....52
4.4.2 Data Source and Methodology of Baseline Survey....52
4.4.3 Evaluation Approach....52
4.4.4 Sampling Strategy and Tools....53
4.4.5 Survey Instruments and Data Collection Tools....53
4.4.6 Short Profile of Lasbela District....53
4.4.7 Sensitive Receptors....54
4.4.8 Key Social Indicators....55
5. STAKEHOLDER CONSULTATIONS....63
5.1 OBJECTIVES OF STAKEHOLDER CONSULTATION....63
5.2 STAKEHOLDER IDENTIFICATION....63
5.2.1 Institutional stakeholders....63
5.2.2 Non-institutional stakeholders....64
5.3 CONSULTATION PROCESS....64
5.4 KEY ISSUES RAISED BY NON-INSTITUTIONAL STAKEHOLDERS....64
5.5 INSTITUTIONAL CONSULTATIONS....65
5.6 FUTURE CONSULTATIONS AND DISCLOSURE....65
6. IMPACT ASSESSMENT AND MITIGATION MEASURES....67
6.1 GENERAL....67
6.2 ASSESSMENT METHODOLOGY....67
6.3 SCREENING OF POTENTIAL E&S IMPACTS....68
6.3.1 Impact Matrices....68
6.4 CUMULATIVE IMPACTS....69
6.5 ENVIRONMENTAL AND SOCIAL IMPACTS AND MITIGATION MEASURES....74
6.5.1 Environmental Impacts....74
6.5.2 Social Impacts....84
6.5.3 Social and Cultural Impacts....97
7. ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN....100
7.1 INSTITUTIONAL ARRANGEMENTS FOR E&S IMPLEMENTATION....100
7.1.1 Federal Level (FPMU / MoPD&SI)....100
7.1.2 Provincial Level (PIU / Component-I)....100
7.2 ROLES AND RESPONSIBILITIES OF ENTITIES INVOLVED IN E&S MANAGEMENT....101
7.2.1 Project Implementation Unit (PIU)....101
7.2.2 Construction Supervision Consultants (CSC)....101
7.2.3 Construction Contractor (CC)....102
7.2.4 Contractor's Organizational Framework....102
7.2.5 Reporting and Documentation....103
7.3 INCLUSION OF ESMP IN CONTRACT DOCUMENTS....103
7.4 GRIEVANCE REDRESS MECHANISM (GRM)....103

7.4.1 Proposed GRM (Project Mechanism to be followed) 104
7.4.2 Receiving and Recording Grievances 104
7.4.3 Grievance Handling and Resolution Process 105
7.4.4 Record Keeping, Reporting, and Periodic Review 105
7.4.5 Role of Women in the GRM 105
7.4.6 Worker Grievance Redress Mechanism (W-GRM) – SST-2 106
7.4.7 Grievance Focal Points (GFPs) 106
7.4.8 Public Complaints Centre 107
7.4.9 Role and Responsibilities of PCC 107
7.4.10 Grievance Redress Committee (GRC) 107
7.4.11 GRM Steps and Timeframe 107
7.4.12 The budget of GRM Implementation 108
7.5 ENVIRONMENTAL AND SOCIAL MITIGATION AND MONITORING PLAN 108
7.5.1 Reporting and Non-Compliance Management 117
7.5.2 ESMP Budget 117
7.5.3 Training and Skill Development 118
7.6 DEVELOPMENT OF OTHER E&S PLANS / INSTRUMENTS 119
8 REFERENCES 120

LIST OF TABLES

Table 1-1: Methodology for ESMP Preparation 10
Table 1-2 Details of villages of Nurg Hingri FPB 11
Table 1-3: List of Construction Activities 13
Table 1-4 Consultant's Team 15
Table 2-1: World Bank ESSs 19
Table 2-2: International Treaties 28
Table 3-1: Design Parameters of Nurg Hingri Weir (Shurli & Faizo Bund) 32
Table 3-2: Availability of construction material 33
Table 3-3: Impact Characterization-Site Security 38
Table 4-1: Rainfall (mm) and temperature (◦C) of the project area 43
Table 4-2: Characteristics of catchment 45
Table 4-3: Summary of Baseline Ambient Air Quality Results 46
Table 4-4: Summary of Baseline Surface Water Quality Results 47
Table 4-5: Summary of Baseline Groundwater Quality Results 48
Table 4-6:: Summary of Baseline Noise Monitoring Results 50
Table 4-7: List of Mammals, Avi-Fauna, Reptiles and Amphibians at Nurg Hingri Weir (Shurli & Faizo Bund) 51
Table 4-8: Tehsil-Level Population (Census -2023) 54
Table 4-9: Sensitive receptors near the proposed project areas 55
Table 4-10: Education Facilities 56
Table 4-11: Health facilities 56
Table 4-12: Average Family Size 58
Table 4-13: Family System 58
Table 4-14: Marriages 58
Table 4-15: Type of Agriculture Tools and Machinery 60
Table 4-16: Estimated Expenses per Year per Acre 60
Table 4-17: Average Seasonal Earnings/acre 60
Table 4-18: Community Cultural Properties 61
Table 5-1 Details of Non-Institutional Consultations 64

Table 6-1: Stepwise Methodology for Impact Assessment 67
Table 6-2: Stepwise Methodology for Impact Assessment 68
Table 6-3: Characterization of E&S Impacts for Construction Phase 71
Table 6-4: Characterization of Potential E&S Impacts for Operation Phase 71
Table 6-5: E&S Impacts Evaluation during Construction Phase 72
Table 6-6: E&S Impacts Evaluation during Operation Phase 73
Table 7-1: Distribution of Periodic Reports 103
Table 7-2: Environmental and Social Management Plan 109
Table 7-3: ESMP Cost Breakdown 117

LIST OF FIGURES

Figure 1-1: Location map showing the sites of sub-projects, (Shurli and Faizo is highlighted) 8
Figure 1-2: Map showing proximity to the project site 11
Figure 1-3: Project Activities 12
Figure -1-4: Photographs of damaged Faizo & Shurli Bund 13
Figure -1-5: Implementation Workplan of Faizo & Shurli Bund 15
Figure-3-1: Location Map of Nurg Hingri Weir (Shurli & Faizo Bund) 31
Figure-3-2: Alluvial/riverbed deposits along the washed-out bund. 31
Figure-3-3: Alluvial deposits (Clayey Silt, Silty Clay and Gravely Silt) along the riverbank. 32
Figure 3-4: Surface geological map of the proposed FP Embankment U/S of Nurg Hingri Weir. 32
Figure-3-5: Borrow Area & Material map of the Nurg-Hinjri (Shuli & Faizo) bund 35
Figure-4-1: Map showing Buffer Zone along with receptors 43
Figure-4-2: Seismic map of Balochistan showing the location of the sub-project area. 44
Figure-4-3: Catchment area map of Shurli & Faizo Flood Protection Bunds 46
Figure-4-4: Map showing Sensitive receptors near the sub-project area 54

LIST OF ANNEXURES

Annexure-A: Code of Conduct for Contractor's Staff
Annexure-B: Training Plan
Annexure-C: Environmental and Social Monitoring Checklist
Annexure-D: Environmental Code of Practices (ECoPS)
Annexure-E: Chance Find Procedures for Cultural Heritage Finds
Annexure-F: Format of Monthly Monitoring Report
Annexure-G: Certificate of Environmental Monitoring Lab
Annexure-H: E&S Risk Screening Table (as per ESS1 & ESS4)
Annexure-I: Lab Test Reports (Water Quality, Air Quality & Noise Record)
Annexure-J: Gender Action Plan (GAP)
Annexure-K: Environmental & Social Screening Checklist (B)
Annexure-L: Community Consultation at Site of Shuli & Faizo FPB
Annexure-M: List of Participants in Consultative Meeting with District Administration
Annexure-N: Labour Influx Plan
Annexure-O: Camp Management Plan
Annexure-P: Traffic Management Plan
Annexure-Q: OHS Plan
Annexure-R: Contingency and Emergency Response Plan
Annexure-S: Waste Management Plan
Annexure-T: Security Management Plan
Annexure-U: Contractor's Covid -19 Compliance Guidelines
Annexure-V: Tree Re-plantation Plan
Annexure-W: Stakeholder Engagement Plan
Annexure-X: Pictorial View of Community Consultation
Annexure-Y: Workplan for Implementation of Project

ABBREVIATIONS AND GLOSSARY

BEPA	Balochistan Environmental Protection Agency
BIWRMDP	Balochistan Integrated Water Resource Management and Development
BLEP	Balochistan Livelihood and Entrepreneurship Project
BOQs	Bill of Quantities
CSC	Construction Supervision Consultant
CWD	Communication and Works Department
EMP	Environmental Management Plan
EPA	Environmental Protection Agency
ESIA	Environmental and Social Impact Assessment
ESHS	Environmental, Social, Health and Safety
ESMF	Environmental and Social Management Framework
WB-ESSs	World Bank Environmental and Social Standards
FPMU	Federal Project Management Unit
GBV	Gender Base Violence
GDP	Gross Domestic Product
GIS	Geographic Information System
GoB	Government of Balochistan
GRM	Grievance Redressal Mechanism
ICT	Information and Communication Technology
IEE	Initial Environmental Examination
IFRAP	Integrated Flood Resilience and Adaptation Project
IUCN	International Union for Conservation of Nature
LMP	Labor Management Plan
MGD	Millennium Development Goal
MIS	Management Information System
MoPDSI	Ministry of Planning, Development and Special Initiatives
NOC	No Objection Certificate
NSER	National Socio-Economic Registry
OHS	Occupational Health and Safety
PCC	Public Complaints Centre
PDNA	Post-Disaster Needs Assessment
PDO	Project Development Objective
PIS	Project Implementation Strategy
PIU	Project Implementation Unit
PMD	Pakistan Meteorological Department
PPE	Personal Protective Equipment
PSC	Project Steering Committee
SEP	Stakeholder Engagement Plan
STAT	Social Technical Assistance Team
SWMPs	Solid Waste Management Plans
VRCs	Village Reconstruction Committees
WB	World Bank
SEP	Stakeholder Engagement Plan
FPMU	Field Project Management Unit
PSIA	Poverty and Social Impact Analysis
CFP	Community Feedback Process

EXECUTIVE SUMMARY

EXECUTIVE SUMMARY

1. PROJECT BACKGROUND

Balochistan, the largest province of Pakistan, remains one of the most water-stressed and climate-vulnerable regions of the country. Its fragile irrigation infrastructure, arid climate, and dispersed rural settlements make it highly susceptible to both droughts and floods. The catastrophic monsoon floods of 2022 caused extensive damage to dams, irrigation systems, and flood protection infrastructure, disrupting livelihoods, destroying crops, and endangering rural communities.

In response, the Government of Pakistan, with financial assistance from the World Bank, launched the Integrated Flood Resilience and Adaptation Project (IFRAP) under the broader *Post-Flood 2022 Reconstruction Programme: Resilience Enhancement and Livelihood Diversification in Balochistan*. IFRAP aims to restore and strengthen the province's water and flood management systems, enhance agricultural productivity, and integrate climate resilience into infrastructure planning and implementation.

Initially, 55 sub-projects were included in the PC-I under the Integrated Flood Resilience & Adaptation Project (IFRAP). During initial surveys twenty (20) sub-projects couldn't meet the World Bank's selection criteria given in Project Appraisal Document (PAD), hence, dropped, whereas the remaining thirty five (35) sub-projects were shortlisted for detailed design.

These Thirty-five (35) shortlisted sub-projects as shown in Figure -1-1 below are located in 19 Districts of Balochistan, including Districts Awaran, Lasbela, Hub, Naseerabad, Jaffarabad, Sohbat Pur, Jhal Magsi, Harnai, Musakhel, Sibi, Kachhi, Killa Saifullah, Pishin, Ziarat, Kalat, Mastung, Kharan, Nushki, and Washuk. The portfolio consists of 11 dams /storage structures, 11 Perennial/ Flood Irrigation schemes, and 13 flood protection structures, which have been grouped in thirteen Packages. The Flood Protection Bunds of Shurli and Faizo in District Lasbela is one of the sub-projects being implemented under Package-II of IFRAP to protect local settlements and agricultural lands from recurrent flood events.

The Flood Protection Bund lies near villages Goth Haji Saleh, Goth Ahed Jamat at coordinate's 26°20'2.82"N 66°13'24. 76"E. The proposed bund would be homogenous compacted earth-fill embankment, approximately 632 meters (Faizo Bund) and 588 (Shurli) meters in length, designed to protect the area from floodwaters originating from the Porali River and its tributaries. The sub-project will rehabilitate and strengthen the existing damaged structure with improved design standards and materials to withstand future hydrological extremes.
The project aims to:

- Protect agricultural lands and human settlements from future flood risks.
- Enhance climate resilience through strengthened flood protection infrastructure.
- Promote sustainable land use and agricultural productivity; and
- Support socio-economic recovery of flood-affected communities in Lasbela District.

The proposed works will be confined to previously disturbed areas and do not intersect with any protected areas, wetlands, or ecologically sensitive zones.

2. OBJECTIVES OF THE ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN (ESMP)

The main objective of the ESMP is to ensure that anticipated environmental and social impacts and risks are effectively managed during the construction, operation, and closure of the project. The ESMP specifies the mitigation measures which are to be implemented by the contractor.
The Environmental and Social Management Plan (ESMP) has been prepared in line with the World Bank Environmental and Social Framework (ESF), the Environmental and Social Commitment Plan (ESCP), and relevant national and provincial environmental legislation. The

ESMP provides a practical framework for identifying, mitigating, and monitoring potential environmental and social risks during project planning, construction, and operation. Its primary objectives are to:

1. Ensure that environmental and social impacts are effectively managed and mitigated.
2. Promote compliance with World Bank Environmental & Social Standards (ESS 1–10).
3. Enhance occupational health, safety, and welfare of workers and nearby communities.
4. Maintain stakeholder participation and transparency through effective consultation and grievance mechanisms; and
5. Ensure long-term sustainability, climate resilience, and community safety of the flood protection infrastructure.

The ESMP will form part of the tender and contract documents to ensure that the Construction Contractor (CC) and Construction Supervision Consultant (CSC) fully integrate environmental and social compliance requirements into their respective roles.

3. LEGAL AND POLICY FRAMEWORK

The ESMP is guided by the following frameworks and instruments:

- World Bank Environmental and Social Standards (ESS 1–10), covering risk management, labor and working conditions, pollution prevention, community health and safety, biodiversity, and stakeholder engagement.
- IFC and World Bank Group Occupational Health and Safety Guidelines.
- Pakistan Environmental Protection Act, 1997, and Balochistan Environmental Protection Act, 2012.
- National Environmental Policy, 2005, National Conservation Strategy, Pakistan Climate Change Act, 2017, and National Disaster Management Act, 2010; and
- Relevant international conventions on biodiversity, climate change, labor standards, and cultural heritage to which Pakistan is a signatory.

4. ENVIRONMENTAL AND SOCIAL BASELINE

The Shurli and Faizo project area lies within the Porali River basin in a semi-arid setting with low to sparse vegetation, active flood pathways, alluvial riverbed deposits, and agriculture-dependent settlements in the wider influence area. Environmental baseline conditions for ambient air, surface water, groundwater, and noise have been documented in the ESMP and supported by Annexure-I laboratory and field monitoring records; in case of any discrepancy between summary tables or body text and Annexure-I, the annexed published reports shall be treated as the final source of baseline data for the sub-project.

No protected area, notified wetland, or legally designated ecological conservation area is identified within the immediate project footprint based on the current ESMP; however, the presence of mapped receptors and the riverine setting requires continued control of dust, noise, waste, runoff, material sourcing, and work-site safety during construction and early operation.

5. IMPACT ASSESSMENT AND MITIGATION

The main environmental and OHS risks for Shurli & Faizo Bund during construction are: dust and exhaust emissions from earthworks and haulage; noise from machinery; spoil, waste, fuel, and wastewater mismanagement; erosion and sediment movement during excavation and bund works; unsafe movement of vehicles and equipment; worker exposure to excavation,

compaction, lifting, and near-water hazards; and community exposure to traffic, open work fronts, and restricted access near active construction areas.

- These risks are manageable, but only if the Contractor implements an approved C-ESMP supported by a site-specific OHS Plan, Traffic Management Plan, Emergency Preparedness and Response Plan, Waste Management Plan, Camp Management Plan, Materials Sourcing Plan, and Vehicle and Machinery Management Plan. The ESMP monitoring framework shall use site-specific and measurable indicators, and all environmental monitoring values shall be cross-checked against the annexed lab reports and field records.

6. INSTITUTIONAL ARRANGEMENTS

Environmental and social management will be coordinated through the Project Implementation Unit (PIU) under the Irrigation Department, Government of Balochistan, with oversight by the World Bank. The Construction Contractor will implement the ESMP on-site, under supervision of the Construction Supervision Consultants (CSC) and periodic audits by the PIU.

Capacity building, training, and awareness programs will be conducted for project staff to ensure effective ESMP implementation. A dedicated Environmental and Social Specialist Team has been mobilized to oversee compliance and reporting.

7. GRIEVANCE REDRESS MECHANISM (GRM)

A transparent and accessible Grievance Redress Mechanism will be operational throughout the project lifecycle to address concerns of both workers and community members. The GRM includes a Public Complaint Cell, Grievance Redress Committee (GRC) at site and PIU level, and clear timelines for acknowledgment, investigation, and resolution of complaints.

8. ENVIRONMENTAL AND SOCIAL MANAGEMENT BUDGET

The ESMP budget shall be treated as an implementation budget, not only a narrative estimate. It shall clearly cover, at minimum, contractor environmental and OHS staffing, personal protective equipment, training, emergency preparedness materials, environmental quality monitoring, dust control and water sprinkling, waste handling, reporting, and a reasonable contingency for corrective action. Where environmental and OHS measures are included in the Contractor's BOQ, the ESMP shall state that these costs are mandatory and enforceable through the contract and monthly ESHS reporting.

9. CONCLUSION

The Nurg-Hinjri (Shurli & Faizo) Flood Protection Bund subproject can proceed under the current ESMP framework provided that environmental and occupational health and safety (OHS) provisions are strengthened at the document stage and fully translated into the Contractor's C-ESMP and method statements before commencement of works.

With the proposed revisions on climate-resilient design, construction water sourcing, vehicle and machinery control, emergency preparedness, measurable monitoring indicators, and baseline data management, the ESMP will serve as a more complete and auditable basis for compliance with World Bank Environmental and Social Standards (ESS) and applicable environmental and OHS requirements.

The subproject's implementation must also ensure that environmental, social, community health and safety, labor, and OHS commitments are fully integrated into the Contractor's C-ESMP, supervision arrangements, and monitoring records. With strengthened provisions on stakeholder engagement, budget allocation, grievance handling, climate resilience, material sourcing, machinery operation, and emergency response, the ESMP provides a robust framework for safe, sustainable, and socially inclusive execution of the works.

1

INTRODUCTION

1 INTRODUCTION

1.1 PROJECT BACKGROUND

Balochistan, Pakistan's largest but driest province, has historically grappled with acute water scarcity, fragile irrigation networks, and inadequate flood protection systems. Its arid climate, rugged terrain, and dispersed rural settlements create inherent vulnerabilities in water management. The catastrophic monsoon floods of 2022 further exposed these weaknesses. Intense rainfall, combined with rapid runoff from steep hill catchments, overwhelmed natural drainage systems and caused widespread destruction of hydraulic infrastructure across the province.

The floods severely damaged dams, perennial and flood irrigation schemes, and flood protection structures. Irrigation supplies were disrupted, agricultural lands and crops were destroyed, and rural communities already living with limited resources were exposed to unprecedented flood risks. These impacts were compounded by systemic issues: aging and poorly maintained structures, outdated design standards, lack of flood protection coverage, weak institutional capacity, and insufficient weather monitoring, forecasting, and disaster preparedness. Collectively, these factors intensified both the scale of damages and the long-term vulnerability of communities.

Recognizing the urgent need for resilience, the Government of Pakistan, with financial support from the World Bank, initiated the Integrated Flood Resilience and Adaptation Project (IFRAP) under the broader Post-Flood 2022 Reconstruction Programme: Resilience Enhancement and Livelihood Diversification in Balochistan. IFRAP aims to rehabilitate and strengthen irrigation and flood management systems across the province, restoring agricultural productivity, protecting rural livelihoods, and embedding climate resilience into future infrastructure.

Initially, 55 sub-projects were included in the PC-I under the Integrated Flood Resilience & Adaptation Project (IFRAP). During initial surveys twenty (20) sub-projects couldn't meet the World Bank's selection criteria given in Project Appraisal Document (PAD), hence, dropped, whereas the remaining thirty five (35) sub-projects were shortlisted for detailed design.

These Thirty five (35) shortlisted sub-projects as shown in Figure -1-1 below are located in 19 Districts of Balochistan, including Districts Awaran, Lasbela, Hub, Naseerabad, Jaffarabad, Sohbat Pur, Jhal Magsi, Harnai, Musakhel, Sibi, Kachhi, Killa Saifullah, Pishin, Ziarat, Kalat, Mastung, Kharan, Nushki, and Washuk. The portfolio consists of 11 dams /storage structures, 11 Perennial/ Flood Irrigation schemes, and 13 flood protection structures, which have been grouped in thirteen Packages.

1.2 PROJECT OBJECTIVES

The overall objectives of the "Post-flood 2022 Reconstruction Programme: Resilience Enhancement and Livelihood Diversification in Balochistan" is to support, finance and incentivize post-flood reconstruction, resilience enhancement and livelihood diversification initiatives of the Federal and Balochistan government with a primary and upfront focus on flood-ravaged and resource-constrained province of the country. The main objectives of the IFRAP (Irrigation Component) of the Programme are as under:

i. Urgent rehabilitation of the Irrigation System for restoring irrigation water supplies to irrigate the command areas and to achieve desired production in the affected areas for reviving the livelihoods of the population.
ii. Reconstruction/rehabilitation of FIS/PIS and irrigation infrastructure to ensure regular and sustainable water supplies to crops to safeguard food security and livelihood of the concerned population.

iii. Reconstruction, rehabilitation and improvement of flood protection facilities for preventing future flood damages to private and public infrastructure, besides, losses to human lives.

iv. Rehabilitation of the storages structures/dams and strengthening/remodeling of their allied components, especially Spillways to ensure sustained water availability for the command area.

v. To restore the productivity of the irrigation system back to the desired levels.

1.3 PROJECT SCOPE

Overall, thirty-five (35) Sub-projects have been picked up under the World Bank funded IFRAP for reconstruction/rehabilitation, which are located in 19 Districts of Balochistan Province. Details of sub-projects are mentioned in Section 1.1 above. A map showing the location of sub-projects is given in the following Figure-1.1.

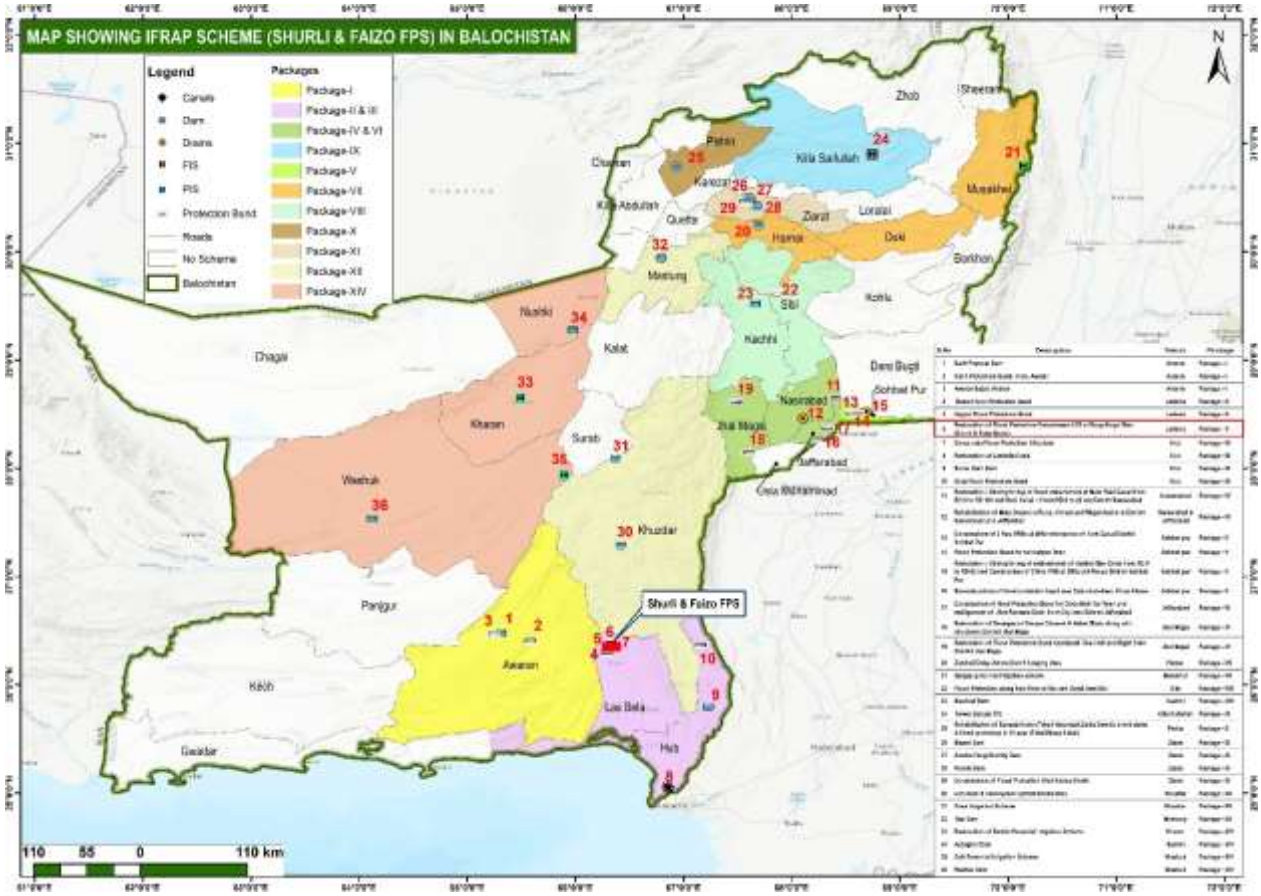


Figure 1-1: Location map showing the sites of sub-projects, (Shurli and Faizo is highlighted)

1.4 OBJECTIVES OF ENVIRONMENTAL & SOCIAL MANAGEMENT PLAN (ESMP)

The main objective of the ESMP is to ensure that anticipated environmental and social impacts and risks are effectively managed during the construction, operation, and closure of the project. The ESMP specifies the mitigation measures which are to be implemented by the contractor.

The Environmental and Social Management Plan (ESMP) has been prepared in compliance with Bank's Environmental and Social Framework (ESF) requirements including ESS Standards (ESS). ESMP provides a framework for implementing and managing the mitigation and monitoring measures recommended against the project activities. ESMP identifies environmental and social management measures to be implemented throughout the project. The purpose of the ESMP is to consider and develop adequate measures and controls to minimize

and mitigate the potential environment and social risks to manage adverse impacts identified during the project implementation.

This ESMP would be included in the tender/contract as an integral part of the bid document. The specific sections of ESMP such as introduction to IFRAP; regulatory and policy reviews; institutional and implementation arrangements; grievance redress mechanism; and, contractor requirements i.e. staffing, Contractors Environment and Social Management Plan (CESMP) and Health & Safety Plan (HSP) as part of this document. Data and information pertaining to the engineering activities have been provided in specific sections of this ESMP, i.e., engineering activities; environmental and social baselines (ambient air/noise/water quality), impact and mitigation, community and stakeholder consultation, and implementation budget. The ESMP has been completed in accordance with provincial and national legislation, and the World Bank's Environmental and Social Framework (ESF). Stepwise objectives, which can be contractual obligations of contractor are as under:

Familiarity with World Bank Safeguard Policies: This is a donor funded project, contractor must be familiar with the World Bank Environmental and Social Commitment Plan (ESCP) and other safeguards policies, guidelines, and standards.

Site selection for Facilities: To ensure the environmental performance, site selection for different project facilities e.g., campsites, batching and/or crushing plant, workshop and or machine yard need to be carefully selected as per the guidelines. All the activities within these facilities along with construction work on site also need to be in line with the requirements.

Human Resource: ESMP identifies the human resource required for environmental compliance, better reporting and enhanced environmental performance. Mitigation Measures: Mitigation measures identified against each activity will maximize potential project benefits and control negative impacts.

Climate Resilient infrastructure: ESMP emphasizes to combine grey and green infrastructure. Contractor needs to integrate Environmental measures during the construction process for a sustainable, resilient, and socially inclusive execution.

Defining roles and responsibilities of Project Actors: ESMP also defines liabilities of project actors like CC, Construction Supervision Consultant (CSC).

Environmental Trainings: Need and frequency of Environmental trainings to the contractor and other project staff is also comprehended and included in the plan.

Environmental Budgeting: ESMP also calculates overall budget estimate along with its breakup for sustainable execution.

Documentation requirements: This also explains the requirements for communication and reporting during the project life.

Inspection and Supervision: This document also mentions inspection and monitoring frequency by CC, CSC, implementing body and donor agency to make sure compliance to ESMP document.

Contractor ESMP: The contractor will be required to prepare CESMP inclusive:

- Campsite management plan
- Waste Management Plan
- Occupational Health & Safety Plan

- Emergency Response Plan
- Traffic Safety and Diversion Management Plan
- Solid & Liquid Waste Management Plan
- Air Quality, Noise & Dust Management Plan
- Biodiversity Management Plan (Flora & Fauna)

1.5 APPROACH AND METHODOLOGY

Table 1-1: Methodology for ESMP Preparation

Sr. No.	Component	Description
1	Data Collection & Literature Review	Sub-project documents including ESMF of the project and other published and unpublished information/data was gathered.
2	Review of Legal and Institutional Framework	Reviewed all applicable national environmental and social regulations, including World Bank (WB) Environmental and Social Framework (ESF), IFC Performance Standards and assessed institutional capacity, roles and responsibilities at all stages of the project.
3	Baseline Environmental & Social Survey	Carried out environmental and social baseline studies. For example, ambient air, water (surface, ground), soil, noise, socio-economic and ecological environment etc.), identified sensitive receptors and consulted with the local communities.
4	Impact Assessment & Analysis	Determined likely impacts, both positive and negative during implementation and operation and classified impacts as direct, indirect, long-term, short-term and cumulative.
5	Mitigation and Enhancement Measures/Options	Planed the mitigation options like pollution reduction, biodiversity management, waste management, occupational and community health & safety plan and other mandatory options for continual environmental and social improvement and applied the mitigation hierarchy at different stages of the project. Further, also included enhancement strategies for positive E&S impacts.
6	Stakeholder Consultation & Disclosure	Carried out the initial participatory meetings with affected communities and other stakeholders and integration of feedback into final ESMP will continue during the project, as ESMP being the standalone and living document.
7	ESMP Document	Tabulated the mitigation measures in detail and monitoring plan has been formulated, including the methodology, frequency and responsibilities. Training needs and capacity building and stakeholder engagement and grievance mechanism has been incorporated. Furthermore, budget and resource allocation for E&S monitoring has been made part of the plan.

1.6 SUB-PROJECT AREA

The sub-project irrigation scheme Restoration of Flood Protection Bund is located in district Lasbela, located 26°20'2.82"N 66°13'24. 76"E. Nearby villages are Goth Haji Saleh, Goth Ahed Jamat. The proposed scheme of Restoration of Flood Protection Embankment U/S of Nurg Hinjri Weir (Shurli & Faizo Bund) is homogenous compacted earth fill Bund, with a proposed length of 1279 meters, providing a catchment area of 2190 sq. km., with a river side slope length of pitching of 1.14 - 6.85 meters. The Restoration of Flood Protection Embankment U/S of Nurg Hinjri Weir (Shurli & Faizo Bund) Neighboring regions are Khuzdar to the north, the Arabian Sea

to the south, Hub to the East, Awaran to the West. Wadh, Bela, and Uthal are the major cities that lie within the catchment boundary of the restoration bund.

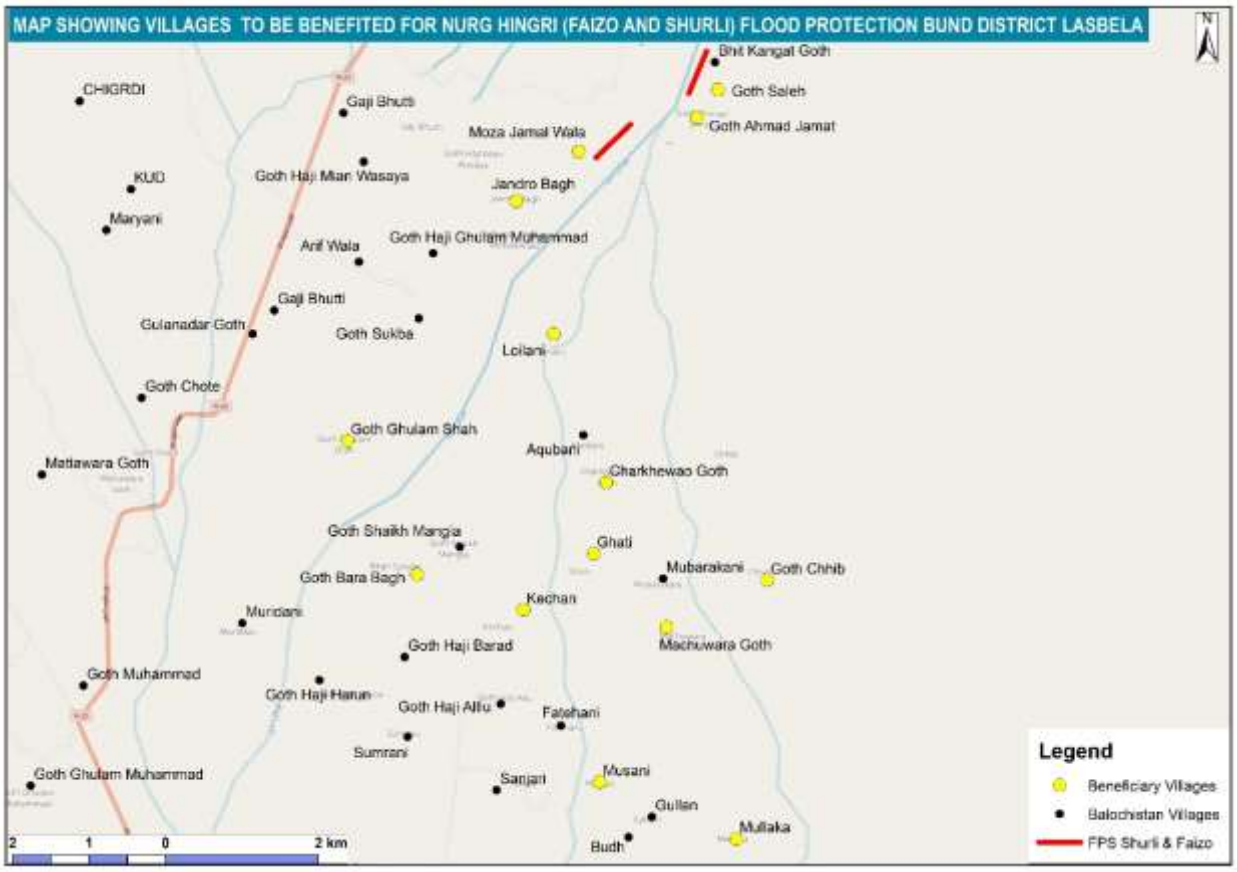


Figure 1-2: Map showing proximity to the project site

Table 1-2 Details of villages of Nurg Hingri FPB

Sr. #	Village(s)	Households	Population	Distance from the subproject area, (Km)
1	Wakeel chib	200	1,600	3
2	H.Saleh Chib	250	2000	5
3	Me modani Bhit	90	720	7
4	Hijrani Goat	60	480	11
5	Esakai	2000	16,000	3.5
6	Sardar M.H Ghat	2200	17,600	4
7	Sardar Goat Makohna	500	4000	9
8	Mashwani	200	1,600	2.5
9	Charaka Ghat	230	1,840	3.9
10	Mula Ahmed Ghat	270	2,160	12.5
11	Ferozai Goat	120	960	3
12	Bug Chat	130	1,040	2
13	Milan Rakhan Goat	920	7,360	2.9
14	Mirwani Ghat	800	6,400	3.6
	Total	**7,970**	**63,760**	

The sub-projects are intended exclusively for flood protection purposes, focusing on the rehabilitation and strengthening of the existing damaged bund to ensure effective flood management and safeguard adjoining areas from potential inundation. The proposed interventions will help protect agricultural lands and nearby settlements, promote sustainable land use, and significantly enhance the socio-economic resilience and safety of local

communities. He proposed Subproject does not lie at or near by any protected area, conservation area, wetlands, buffer zone and vulnerable area. The damage is shown clearly in the site images Figure 1.2.

1.7 PROPOSED ACTIVITIES

The proposed intervention includes the rehabilitation of two existing flood protection bunds located within the project area to enhance flood resilience and safeguard adjacent communities, agricultural lands, and infrastructure. The rehabilitation works will involve re-sectioning and strengthening the existing embankments, filling the breached/eroded sections with compacted soil, and providing stone pitching over the slopes of Earthen Bund to control erosion, besides, apron in gabion crates along the toe of Bunds to check the scouring action during high-flow events. These activities aim to restore the structural integrity and hydraulic efficiency of the bunds, thereby reducing flood-related risks and contributing to the long-term stability of the project area.

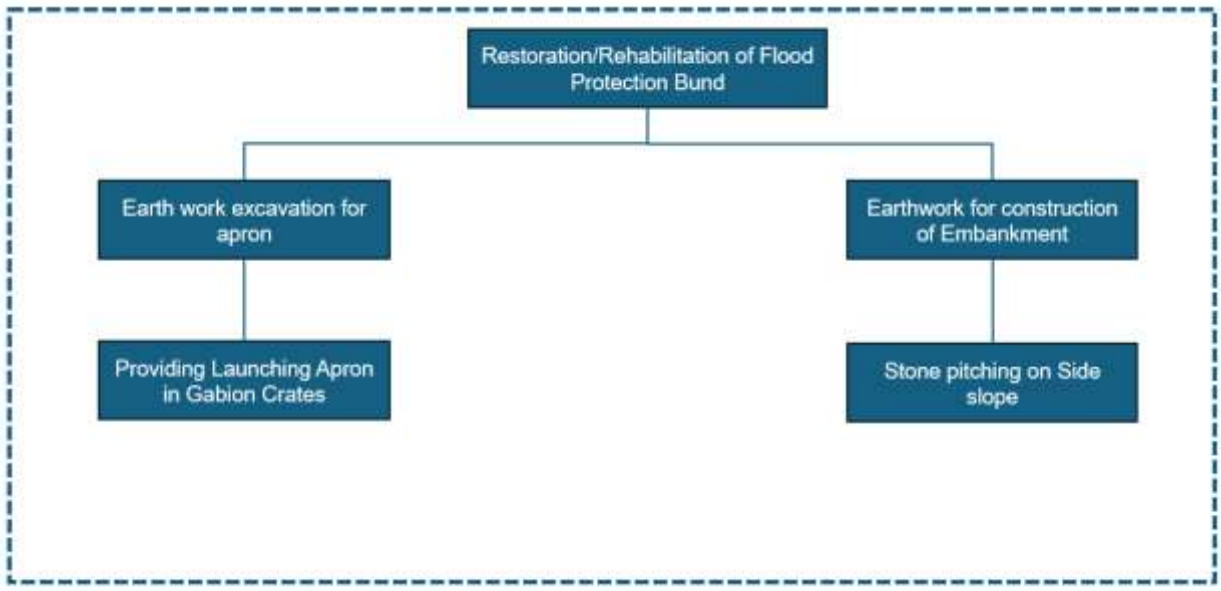


Figure 1-3: Project Activities

The following works have been proposed to restore and enhance the operational efficiency of Flood Protection Embankment (Shurli & Faizo Bund) U/S of Nurg Hingri Weir.

Shurli Flood Protection Bund

The Shurli Flood Protection Bund is restoration/extension of existing Protection Bund situated at upstream left side of Nurg Hingri Wier length of 636 m and tied with the existing Flood Protection Bund to increase the protected area Length. Flood Protection Bund is earthen embankments armored along the slope through stone pitching and by providing apron in G.I Wire Crates along the toe on Bunds. These are constructed parallel to the existing river channel and designed to protect the area behind it from bank erosion and overflow of floods.

Faizo Flood Protection Bund

The Faizo Flood Protection Bund is extension of existing Protection Bund situated at downstream right side of Nurg Hingri Wier length of 607 m and tied with existing Flood Protection Bund to increase the protected area Length. Flood Protection Bund is earthen embankments armored along the slope through stone pitching and toe by providing apron in G.I. Wire crates. The Bund is being constructed parallel to the existing river channel and designed to

protect the area behind it from spill and erosive action of flood flows of the river. The details of engineering activities are provided in Table 1-4 below.

Figure -1-4: Photographs of damaged Faizo & Shurli Bund

Table 1-3: List of Construction Activities

Sr. No	Work Activities	List of Associated Construction Activities
1	Pre-construction activities	• Joint survey by the Consultant's and Contractor teams • Selection of suitable site for the establishment of contractor's camp • Construction of contractor camp • Relevant staff deployment for start of Work • Mobilization of machinery and equipment

Sr. No	Work Activities	List of Associated Construction Activities
2	During Construction Activities	• Site clearance/Grubbing Clearance and stripping. • Dismantling / Removal of Existing Bund, if needed. • Construction of Earthen Bund, dressing top and side slopes as per Construction Drawings. • Compaction of Earth Bunds • Providing and laying stone pitching of required Thickness on Bund side slopes • Earthwork Excavation for providing Apron along Toe of Bund. • Providing and laying Apron at toe of bund. • Providing & weaving G.I wire and placing stones in GI Wire crates.

1.8 WORKPLAN AND IMPLEMENTATION OF THE SUB-PROJECT

1.8.1 Bidding and Award of Contract

The project commenced with the bidding and award phase, during which comprehensive tender documents were prepared in accordance with prescribed procurement procedures. The tender was floated publicly to ensure transparency and competitiveness. Bids received were subjected to detailed technical and financial evaluation. Upon completion of the evaluation process, the contract was awarded to the most responsive bidder, and a formal agreement was executed, thereby initiating the project within the stipulated timeframe.

1.8.2 Mobilization of Contractor

Following the award of the contract, the contractor undertook mobilization activities over a period of 45 days. This phase involved deployment of manpower, machinery, and construction materials to the project site. A camp office was established along with necessary support infrastructure, including labor accommodation, storage facilities, and utilities. The site was formally handed over, and preliminary surveys and layout marking were conducted to ensure readiness for construction activities.

1.8.3 Restoration of Flood Protection Embankment (Shurli & Faizo Bund / Nurg Hingri Weir)

The major component of the project consisted of restoration and strengthening of the flood protection embankment, executed over a duration of approximately 610 days. This phase involved extensive earthwork operations, including excavation, filling, and compaction in layers to achieve the required design specifications. The embankment was shaped, leveled, and stabilized with appropriate slope protection measures such as pitching and river training works. All construction activities were carried out in compliance with approved engineering standards and were verified through rigorous quality control testing and inspections to ensure structural integrity and long-term durability.

1.8.4 Environmental and Social Management Plan (ESMP) Implementation

The Environmental and Social Management Plan (ESMP) was implemented concurrently with construction activities over a period of approximately 610 days. Key measures included dust suppression through regular water sprinkling, effective waste management, and noise control. Worker health and safety protocols were strictly enforced, and precautions were taken to minimize impacts on the surrounding community. Continuous monitoring ensured full compliance with environmental and social safeguards, with no significant issues reported throughout the project lifecycle.

1.8.5 Schedule of Deliverables

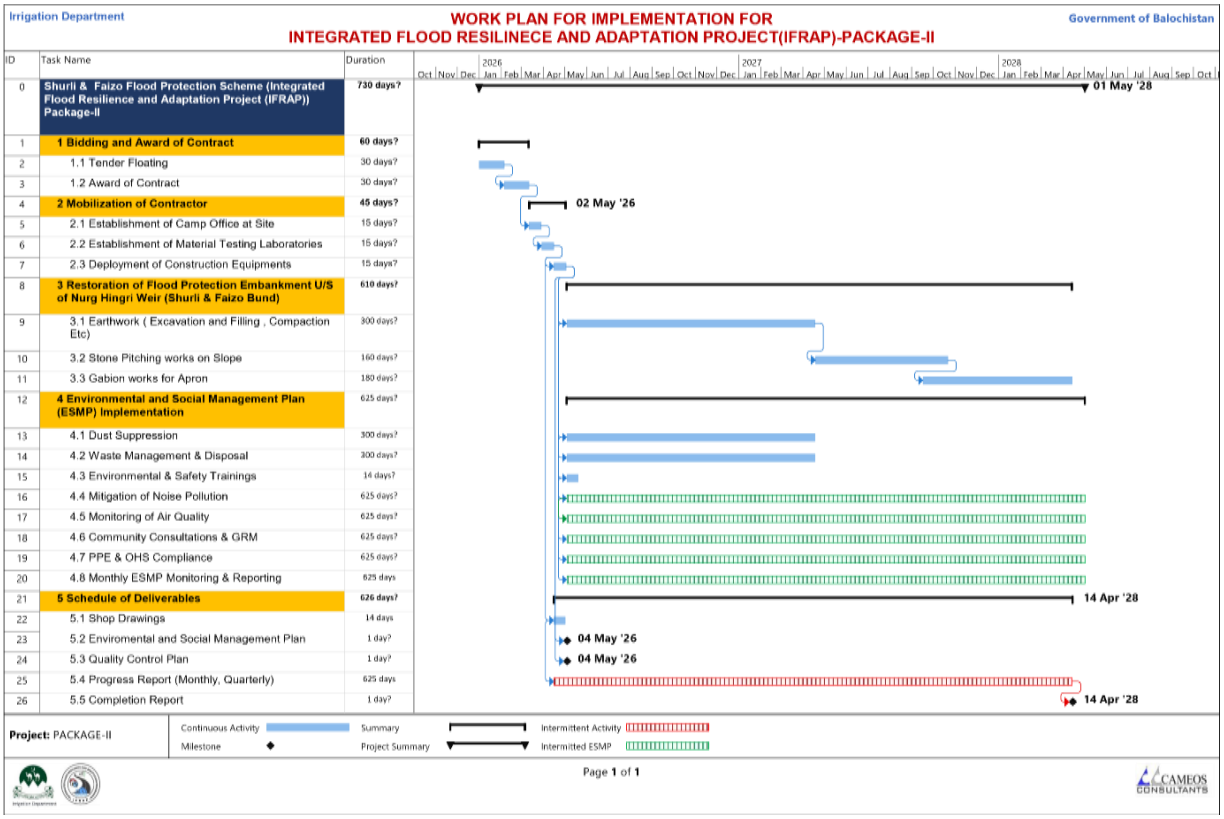
Project deliverables were prepared and submitted throughout the execution period, spanning approximately 610 days. Shop drawings were developed and approved prior to commencement of respective works, ensuring adherence to design requirements. Regular progress reports and technical documentation were submitted to track project performance. Upon completion, as-built

drawings were prepared to accurately reflect executed works, and all quality assurance and quality control records were compiled and verified as part of the final documentation.

1.8.6 Project Completion and Handover (At Project End)

Upon completion of all project activities, final inspections will be conducted to ensure compliance with design specifications and quality standards. The site will be restored to a satisfactory condition, and upon completion of all contractual obligations, The project will be formally handed over to the relevant authorities, along with submission of completion certificates, and ESMP compliance reports, and all required documentation.
The project will be successfully completed within the overall duration of approximately 730 days.

Figure -1-5: Implementation Work plan of Faizo & Shurli Bund



1.9 STUDY TEAM

Table 1-4 Consultant's Team

Sr. No.	Name	Position
1	Mr. Alamgir Khan	Project Coordinator-CAMEOS consultant
2	Mr. Idrees Khan	Environment specialist
3	Mr. Sanaullah Khan	Water Management Specialist
4	Mr. Shoaib Suleman	Design Engineer
5	Ms. Almas Khurshid	Environmental Specialist
6	Mr. Naqeeb Ullah	Social Specialists Socio Economic baseline and Consultations
7	Mr. Shakoor Kakar	
8	Ms. Sidra	Gender Specialist
9	Mr. Zarak Khan	Environment field staff (Baseline Data collection)
10	Waqar Ahmed	Surveyor
11	Mr. Safdar Chana	Environmental Baseline Monitoring's

2

LEGAL AND POLICY FRAMEWORK

2. LEGAL AND POLICY FRAMEWORK

2.1 LEGAL AND APPLICABLE REQUIREMENTS

ESMP is developed as per the World Bank Environment & Social Framework -ESF, Environment and Social Standards (ESS), Environmental and Social Commitment Plan (ESCP). Environmental and Social Management Framework (ESMF) of the project and relevant provision of Environmental Policies laid out by the Government of Pakistan along with the national and international guidelines. The Project proponent will be required to adhere to these regulations throughout the course of the proposed Project.

2.2 ENVIRONMENTAL & SOCIAL STANDARDS (ESSs) AND NATIONAL REGULATIONS

The sub-project has been carefully reviewed against the World Bank's Environmental and Social Standards (ESS1–ESS10) and the corresponding national regulatory framework, including the Balochistan Environmental Protection Act (BEPA 2012), Pakistan Environmental Protection Act, 1997 (PEPA), National Environmental Quality Standards (NEQS), and other relevant sectoral laws such as the Factories Act 1934, Land Acquisition Act 1894, and Antiquities Act 1975. This cross-referencing ensures that the Environmental and Social Management Plan (ESMP) is fully compliant with both international requirements and national legislation. By integrating World Bank ESS obligations with Pakistan's regulatory provisions, the sub-project demonstrates a commitment to responsible environmental management, protection of community and worker rights, and transparent stakeholder engagement. This dual compliance framework provides assurance that the project will be implemented sustainably, with due consideration for people, biodiversity, and the environment.

2.2.1 World Bank Environmental and Social Framework (ESF)

The World Bank Environmental and Social Standards (ESSs) are a set of policies designed to ensure that projects financed by the World Bank are environmentally and socially sustainable. These standards are part of the Environmental and Social Framework (ESF), which has been in effect since October 01, 2018. The ESF replaces the earlier safeguard policies and introduces a more comprehensive and integrated approach to risk management in development projects. Ten ESS are as under;

Table 2-1: World Bank ESSs

Environmental and Social Standards (ESS	Project Relevance	Relevant National Provincial Regulations and Laws	Gaps Identified in the Context of Local Laws	Gaps Addressed in ESMF
ESS1: Assessment and Management of Environmental and Social Risks and Impacts	**Relevant:** The Project activities will involve a wide range of civil works from medium to relatively large scale which could have potential environmental and social risks. The ESMF and the related site-specific E&S instruments will be implemented throughout the project to comply with ESS1.	• Balochistan Environmental Protection Act, 2012 • Guidelines for Environmental Assessment, Pakistan EPA • Review of IEE and EIA Regulations, 2020	The criteria mentioned in the Act for classifying environmental and social impact/risk is different than in the ESF. The categorizes the risk level of a project indirectly – mostly by project type and size. Furthermore, it does require commitment from the proponents for E&S measures implementation but not in the form of a separate environmental and social commitment plan. The different methods and tools (ESIA, environmental and social audit, cumulative impact assessment, ESMP, ESMF, regional and sectoral ESIA, SESA etc.) for environmental and social impact assessments, referenced in the ESF, are not part of the National and Provincial legislation. The ESF highlight to consider the environmental and social risks and impacts associated with primary suppliers and disadvantaged or vulnerable groups while the local	E&S risk categorization of the Augmentation Works has been done on the basis of ESS-1 guidelines but also aligned with the BEPA requirements. The environmental and social assessment will be/is carried out as per ESS-1 for the proposed Project. In addition, Resettlement Policy Framework (RPF), Labor Management Procedures (LMP) and Stakeholder Engagement Plan (SEP) have been prepared as part of this Project. Mitigations proposed in this ESMF and the other E&S tools (e.g, RPF, LMP and SEP) have taken into consideration the marginalized and vulnerable groups.

Environmental and Social Standards (ESS	Project Relevance	Relevant National Provincial Regulations and Laws	Gaps Identified in the Context of Local Laws	Gaps Addressed in ESMF
			relevant laws do not. ESS-1 specifically mentions disadvantaged or vulnerable groups, the Act does not touch upon this theme directly.	
ESS2 – Labor and Working Conditions	**Relevant:** The Project will involve direct workers, contracted workers, primary supply workers and community workers. Locally hired labor will be preferred where possible, except for skilled workers who may not be available in project locations. The project may create some labor related risks and impacts, which may include lack of skills and compliance with relevant laws and regulations, unsafe and unhealthy working conditions, and GBV/SEA/SH. To comply with the ESS-2, a Labor Management Procedure (LMP) and SEA/SH Action Plan will be developed as a part of the project.	• Balochistan Occupational Safety and Health Act, 2022 • Employment of Child Act 1991 • Balochistan Employment of Children (Prohibition & Regulation) Act, 2021 • The Balochistan Bonded Labour System (Abolition) Act, 2021 • Factories Act 1934 • Balochistan Factories Act, 2021 • Workmen Compensation Act 1923 and Rules 1961. • Balochistan Payment of Wages Act, 2021 • The Balochistan Minimum Wages Act, 2021 • The Balochistan Shops and Establishment (Amendment) Act, 2022 • The Balochistan Employees' Social Security Act, 2022 • Road Transport Workers Ordinance, 1961 • The Balochistan Industrial Relations Act, 2022	National and Provincial laws regarding labour rights address most of the requirements of the ESS2. However, the implementation of these laws and the management of certain issues addressed under ESS-2, such as OHS, GBV/SEA and Violence Against Children (VAC), prohibition of children in hazardous work and child labor in general and protection against discrimination of religious minorities (many formal sector workers belong to religious minority groups) are not done effectively as detailed coverage of certain requirements is partial. There is no specific requirement for employers to establish a workers' grievance mechanism except grievance redress mechanisms are available	All the relevant risks and measures have been considered in this ESMF. Labor Management Procedures (LMP) have been developed for the proposed Project to mitigate the risks related to OHS issues. The LMP will be noted in the legal agreement and in the Environmental and Social Commitment Plan (ESCP). All of this has been done in accordance with the provincial and national laws and ESS-2 requirements.

Environmental and Social Standards (ESS	Project Relevance	Relevant National Provincial Regulations and Laws	Gaps Identified in the Context of Local Laws	Gaps Addressed in ESMF
			within relevant government departments for citizens to lodge complaints i.e., chief minister complaint cell and citizen portal.	
ESS3 – Resource Efficiency and Pollution Prevention and Management	**Relevant:** The project is planned to have significant investment in re-construction of infrastructure which may cause generation of generate solid waste, dust issues, soil erosion, water pollution and include use of construction materials (like asphalt, sand, cement, gravel stone etc.). However, the project is adopting a 'building back better' approach with plans to include nature based solutions (such as wetland restoration, vegetative riverbank protection, and other watershed protection measures), green techniques and includes activities for restoration and sustainable use of natural resources. Resource efficiency and pollution prevention measures have been included in the ESMF to comply with requirements of ESS3.	• National Energy Efficiency and Conservation Act, 2015 • Balochistan Environmental Protection Act, 2012 • Pakistan Climate Change Act, 2017 • National Environmental Policy, 2005	National and provincial laws address most of the requirements of ESS3, particularly on pollution prevention	The project is planned to have significant investment in re-construction of infrastructure which may cause generation of generate solid waste, dust issues, soil erosion, water pollution and include use of construction materials. Resource efficiency and pollution prevention measures have been included in the ESMF to comply with requirements of ESS3.
ESS4 – Community Health and Safety	**Relevant:** The project may cause community health and safety risks during civil works which include exposure to physical hazards, the traffic and road safety hazards, potential of GBV/SEA/SH risks	• Balochistan Occupational Safety and Health Act, 2022 • Pakistan Penal Code, 1860 • National Disaster Management Act, 2010 • Balochistan Environmental Protection Act, 2012	Local laws address most of the requirements of the ESS-4. However, detailed coverage has not been provided in the local laws (national and provincial) in	Relevant measures have been included in the ESMF to ensure the compliance with ESS4 that community health and safety is adequately

Environmental and Social Standards (ESS	Project Relevance	Relevant National Provincial Regulations and Laws	Gaps Identified in the Context of Local Laws	Gaps Addressed in ESMF
	from presence of project workers, spread of different transmittable communicable diseases, exploitation of economically disadvantaged or otherwise vulnerable individuals by project staff involved in the implementation of the programs, or by other project beneficiaries etc. Relevant measures have been included in the ESMF to ensure the compliance with ESS4 that community health and safety is adequately protected.		comparison to ESS-4.	protected.
ESS5 – Land Acquisition, Restrictions on Land Use and Involuntary Resettlement	**Relevant:** Land acquisition and resettlement is not anticipated, However, Resettlement Policy Framework (RPF) will be developed prior to commencement of civil works or infrastructure activities to respond to risks and impacts related to land acquisition and resettlement (if any), land-use, temporary economic and/or physical displacement, Anti Encroachment Drives/forced evictions along with relevant management and mitigation measures.	• Land Acquisition Act 1894 The Land Acquisition (Amendment) Act, 2009	Screening is limited to physical survey of land, there is no consideration of social risks in the LAA. No formal stakeholder consultations required by the LAA, or in host communities in case of resettlement No provisions for livelihood restoration and improvement, and no additional assistance beyond compensation for land acquired and loss of livelihood in the LAA. No compensation for non-titleholders in the LAA, while ESS5 requires all parties affected by land acquisition to be compensated.	RPF has been prepared as a part of this project, to address issues related to land acquisition, voluntary land donation, restrictions on land use and involuntary resettlement (if any) ESS5. Moreover, a GRM has been established.

Environmental and Social Standards (ESS	Project Relevance	Relevant National Provincial Regulations and Laws	Gaps Identified in the Context of Local Laws	Gaps Addressed in ESMF
ESS6 – Biodiversity Conservation and Sustainable Management of Living Natural Resources	**Relevant:** Most of the infrastructure investments are rehabilitation works and anticipated to exist within the existing built environment. However, it is assumed that some forests and protected areas have been damaged by floods. The activities proposed under component-4 are proposed to support watershed management and restore damaged rangelands which is expected to overall benefit the biodiversity of the area. Physical investments that could have significant adverse impacts to natural and critical habitats will be excluded from the project.	• National Forest Policy, 2015 • The Forest Act, 1927 • Balochistan Wildlife preservation protection conservation and management Act 2014 (BWPPCMA) • The Balochistan Forest Act 2022	Local laws address most of the requirements of the ESS-6 except the categorization of habitats (natural, critical and modified).	Most of the infrastructure investments are rehabilitation works and anticipated to exist within the existing built environment. The activities proposed under Component-I (Community Infrastructure Rehabilitation) are proposed to support watershed management and restore damaged rangelands which is expected to overall benefit the biodiversity of the area. Physical investments that could have significant adverse impacts to natural and critical habitats will be excluded from the project.
ESS7 – Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities	**Not relevant:** Pakistan's only recognized Indigenous Peoples, the Kalash, live in three valleys in the Chitral district of Khyber Pakhtunkhwa, which is not included in the Project Area.	NA	There is no law, national or provincial, dealing with the rights and protection of Indigenous Peoples	This ESS is not relevant as no indigenous people are found in the Project Area. Pakistan's only recognized Indigenous Peoples, the Kalash, live in 3 valleys in Chitral district of KP province, and Chitral is not

Environmental and Social Standards (ESS	Project Relevance	Relevant National Provincial Regulations and Laws	Gaps Identified in the Context of Local Laws	Gaps Addressed in ESMF
				included in the Project districts.
ESS8 –Cultural Heritage	**Relevant:** Since project investments include significant amount of civil works which includes excavation, ESMF will include chance find procedures and screening checklist which will guide the handling of cultural heritage discovered during commencement of Project activities. In addition, in case there are impacts recorded on a notified cultural heritage within the project implementation, a Cultural Heritage Management Plan (CHMP) will be prepared accordingly.	• Antiquities Act, 1975 • The Antiquities Act, 1975 (amended in 1990) • Balochistan Antiquity Act, 2014	The provincial legislation is silent regarding the Development of Physical Cultural Resource Management Plan. There is no provision related to tangible and intangible cultural properties. The provincial legislation is silent about the disclosure of information regarding cultural heritage due to the safety or integrity of the cultural heritage or would endanger sources	This ESMF however, has developed "Chance Find Procedure" to be followed during project implementation in case of any chance find physical culture resource.
ESS10 – Stakeholder Engagement and Disclosure	**Relevant:** Effective stakeholder engagement and information disclosure will be crucial to the project. This ESMF follows a structured approach to stakeholder engagement and public outreach that is based upon meaningful consultation and disclosure of appropriate information. A standalone SEP has been prepared, which will be periodically updated through the Project life.	• Review of IEE and EIA Regulations, 2000 • Balochistan Environmental Protection Act, 2012 • Guideline for Public Consultation, 1997	Stakeholder engagement in public sector development projects is not done effectively. The regulations do not demand continued stakeholder engagement after the NOC has been granted, leading to a potential disconnect between the project and the affected people during construction and operations phases. Also, there is no proper mechanism to record the	The SEP and GRM have been developed as a part of this ESMF as per ESS10. The SEP outlines the process and frequency of stakeholder engagement at all project stages, and also establishes the contours of an effective GRM

Environmental and Social Standards (ESS	Project Relevance	Relevant National Provincial Regulations and Laws	Gaps Identified in the Context of Local Laws	Gaps Addressed in ESMF
			grievances.	

2.2.2 World Bank Occupational Health & Safety (OHS) Guidelines

Contractor will follow the Occupational Health and Safety Guidelines of International Finance Corporation (IFC) and World Bank Group during project's implementation stage. These guidelines are as under:

Occupational Health and Safety:

- General Facility Design and Operation
- Communication and Training
- Physical Hazards
- Chemical Hazards
- Radiological Hazards (if any)
- PPEs
- Special Hazard Environments
- Monitoring

Community Health and Safety:

- Water Quality and Availability
- Structural Safety of Project Infrastructure
- Life and Fire Safety (LFS)
- Traffic Safety
- Transport of Hazardous Materials
- Disease Prevention
- Emergency Preparedness and Response

Construction and Decommissioning:

- Environment
- Occupational Health and Safety
- Community Health and Safety

2.2.3 National/Provincial Guidelines and Policies

The ESMP also complies with the national/provincial environmental requirements defined through Pakistan Environmental Protection Act (PEPA) 1997 and subsequent Balochistan Environmental Protection act, 2012. The ESMP will consider the natural environment (air, water, and land); human health and safety; social aspects, transboundary and global environmental aspects including climate change and its implications, and induced impacts as well as the cumulative impacts of other development projects in the area.

National Environmental Policy (NEP), 2005

The National Environmental Policy (NEP) identifies a set of sectoral and cross-sectoral guidelines to achieve its goal of sustainable development. Section 5 of the policy commits for integration of environment into development planning as instrument for achieving the objectives of National Environmental Policy. Management of proposed project will ensure that the project will not add to the aggravation of the environmental issues identified in NEP and mitigation measures will be adopted to minimize or avoid any contribution of the project in these areas.

National Conservation Strategy (NCS)

The National Conservation Strategy (NCS) has 68 specific programs in 14 core areas in which policy intervention is considered crucial for the preservation of natural and physical environment. The core areas that are relevant in the context of the proposed project are pollution prevention and abatement, restoration of rangelands, conserving biodiversity, supporting plantations, and the preservation of cultural heritage.

Pakistan Climate Change Act 2017

The Project activities will involve a wide range of civil works from medium to relatively large scale, which would contribute to the significant use of natural resources, and generation of waste. The proposed project will ensure efficient use of resources through implementation of measures. This act is applicable in the sub project.

National Disaster Management Act, 2010

The Subproject involves re-construction of infrastructure, affected in Balochistan by the 2022 floods. The aim of the project is to build back better with improved infrastructure based on climate risks, improved engineering design standards, and improved construction and maintenance to enhance resilience. However, this act is applicable in the proposed sub project.

Balochistan Wildlife Preservation Protection Conservation and Management Act 2014 (BWPPCMA)

Direct impacts on the biodiversity and natural resources is not anticipated as most of the infrastructure investments are rehabilitation works and anticipated to exist within the existing built environment. Physical investments that could have significant adverse impacts to natural and critical habitats will be excluded from the project.

Balochistan Antiquity Act, 2014

The Project investments include significant amount of civil works which includes excavation, the site specific ESMP will include chance find procedures and screening checklist which will guide the handling of cultural heritage discovered during commencement of Project activities. In addition, in case there are impacts recorded on a notified cultural heritage within the project implementation, a Cultural Heritage Management Plan (CHMP) will be prepared accordingly.

Balochistan Employment of Children (Prohibition & Regulation) Act, 2021

Project interventions will involve different contractors and sub-contractors for the execution of the project; however, children may involve in direct or indirect employment with the contractors. Hence, the act is applicable in the proposed sub project.

Balochistan Payment of Wages Act, 2021

The workforce (direct workers, contracted workers, primary supply workers and community workers) in the proposed sub project will be involved during implementation stage. The project proponent will respect the provision of relevant sections of this act.

The Protection against Harassment of Women at the Workplace Act, 2010

In case of females are involved in the project activities, this act will be applicable. However, the proponent of the project will ensure the relevancy of this act to involvement of women.

Balochistan Factories Act, 2021

The sub project will involve in multi-dimensional works and the workers (direct workers, contracted workers, primary supply workers and community workers) which may involve in occupational and health related risks during construction phase. Hence, this act is applicable to provide safety to the workers.

2.2.4 International Treaties and Conventions

Pakistan is signatory to several multilateral environmental and social agreements. The proposed sub project is obliged to respect the applicable agreements. The following are the relevant international treaties and conventions to which Pakistan is a party:

Table 2-2: International Treaties

Sr. No	Environmental Obligations	Social Obligations
1	Convention on the Conservation of Migratory Species of Wild Animals	International Covenant on Economic, Social and Cultural Rights
2	Convention on International Trade in Endangered Species (CITES)	Convention on the Elimination of all Forms of Discrimination against Women, 1979.
3	United Nations Convention on Biological Diversity (UNCBD)	Discrimination (Employment and Occupation) Convention, 1958 (No. 111).
4	United Nations Framework Convention on Climate Change (UNFCCC)	Elimination of forced and compulsory labour (conventions 29 and 105)
5	Convention concerning the Protection of World Culture and Natural Heritage	Abolition of child labour (conventions 138 and 182)
6	Kyoto Protocol to the Convention United Nations Framework on Climate Change	International Covenant on Civil and Political Rights, 1966.
7	Stockholm Convention on Persistent Organic Pollutants	Elimination of discrimination in respect of employment and occupation (conventions 100 and 111)
8	Convention on Wetlands of International Importance	Hours of Work (Industry) Convention, 1919 (No. 1)
9	Paris Agreement, 2015.	Indigenous and Tribal Populations Convention, 1957 (No. 107)
10	Vienna Convention, 1985	Convention for Safeguarding the Intangible Cultural Heritage, 2003.

3

DESCRIPTION OF THE SUBPROJECT

3. DESCRIPTION OF THE SUBPROJECT

This chapter describes the salient features of the Subproject scheme that falls under Sub-Irrigation component of IFRAP. This component involves the restoration/rehabilitation of Flood Protection Embankment U/S of Nurg Hingri Weir (Shurli & Faizo Bund) under Package – II of IFRAP.

Shurli Flood Protection Bund

The Shurli Flood Protection Bund is restoration/extension of existing Protection Bund situated at upstream left side of Nurg Hingri Wier length of 636 m and tied with the existing Flood Protection Bund to increase the protected area Length. Flood Protection Bund is earthen embankments armored along the slope through stone pitching and by providing apron in G.I Wire Crates along the toe on Bunds. These are constructed parallel to the existing river channel and designed to protect the area behind it from bank erosion and overflow of floods.

Faizo Flood Protection Bund

The Faizo Flood Protection Bund is extension of existing Protection Bund situated at downstream right side of Nurg Hingri Wier length of 607 m and tied with existing Flood Protection Bund to increase the protected area Length. Flood Protection Bund is earthen embankments armored along the slope through stone pitching and toe by providing apron in G.I. Wire crates. The Bund is being constructed parallel to the existing river channel and designed to protect the area behind it from spill and erosive action of flood flows of the river. The details of engineering activities are provided in annexure:

3.1 LOCATION OF SUB-PROJECT

Nurg Hingri Weir (Shurli & Faizo Bund) is located in Lasbela District. Location map of Nurg Hingri Weir (Shurli & Faizo Bund) is shown in Figure 3.1.

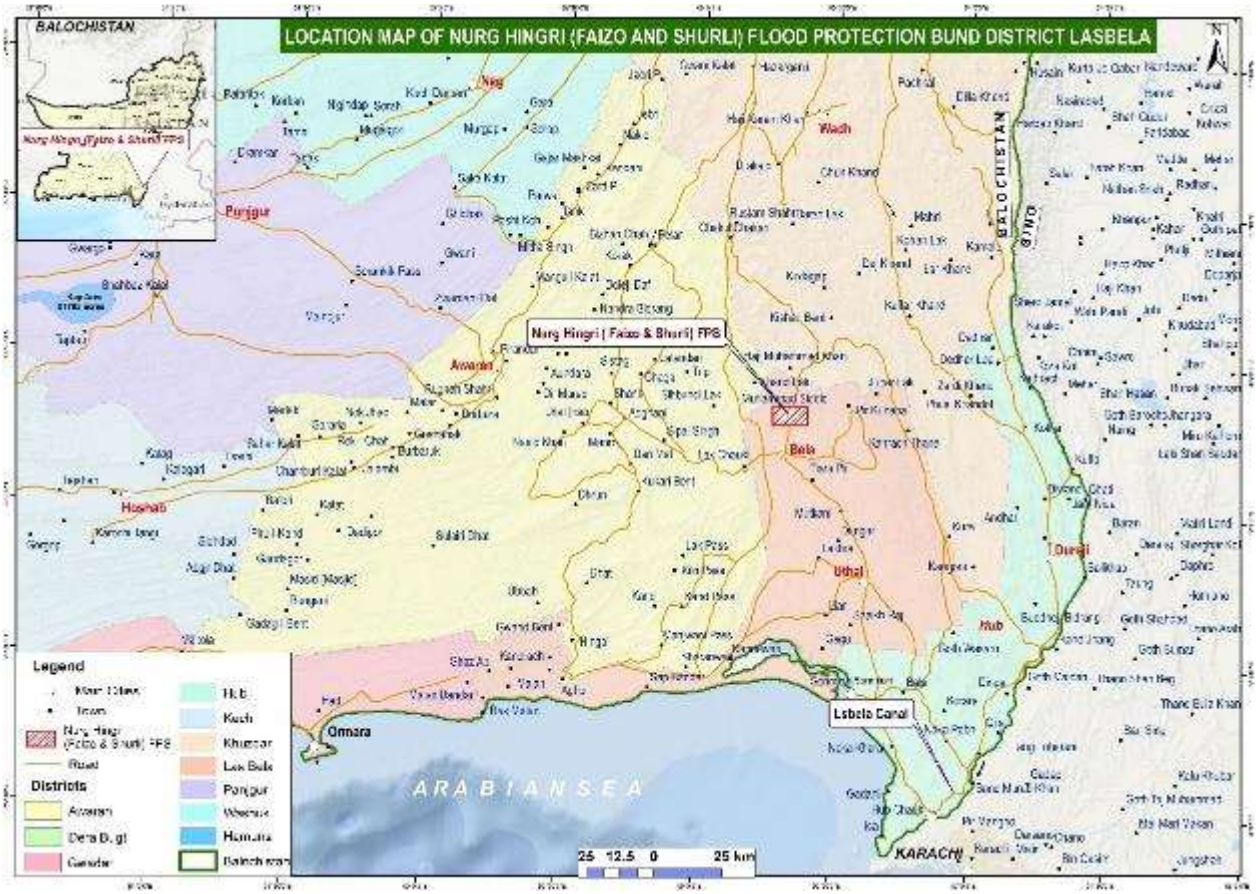


Figure-3-1: Location Map of Nurg Hingri Weir (Shurli & Faizo Bund)

3.2 Geology

Geologically, the project area, which includes the site of Nurg Hingri Weir (Shurli & Faizo Bund), lies within the Porali Trough tectonic zone. This trough is a prominent structural depression in southwestern Balochistan, representing a foredeep basin formed due to regional compressional tectonics. The Porali trough is bounded by the Makran Coastal Trough towards the southwest and the Khude Range Fold Belt towards the northeast.

The regional geology reflects a complex tectonic setting shaped by the interaction of the Indian Plate and Eurasian Plate, leading to the development of ophiolitic belts, fold-and-thrust belts, and flysch zones. To the west of the project area, the Makran Coastal Trough is characterized by deep marine sediments and tectonic accretionary prisms, while the Bela Ophiolite Belt occurs nearby, representing remnants of obducted oceanic lithosphere. Furthermore, the Chaman-Nal Ornach Fault and Flysch Zone, located northeast of the project area, is a major tectonic boundary accommodating significant crustal displacement.

Overall, the project area falls in a geologically dynamic region influenced by foreland basin development, tectonic deformation, and ophiolitic emplacement, making it an integral part of the western tectonic framework of Pakistan.

3.2.1 Flood Protection Embankment U/S of Nurg Hingri Weir

The Nurg Hingri Weir site is located centrally within the Porali Trough, a structurally controlled depression characterized by alluvial and fluvial deposits derived from the surrounding highlands. The subsurface conditions are expected to comprise unconsolidated sediments, clay, silt, and gravels, deposited under the influence of seasonal runoff. The tectonic setting suggests relatively low rock exposure, with the basin geometry controlled by compressional forces between adjacent fold belts.

Figure-3-2: Alluvial/riverbed deposits along the washed-out bund.

Figure-3-3: Alluvial deposits (Clayey Silt, Silty Clay and Gravely Silt) along the riverbank.

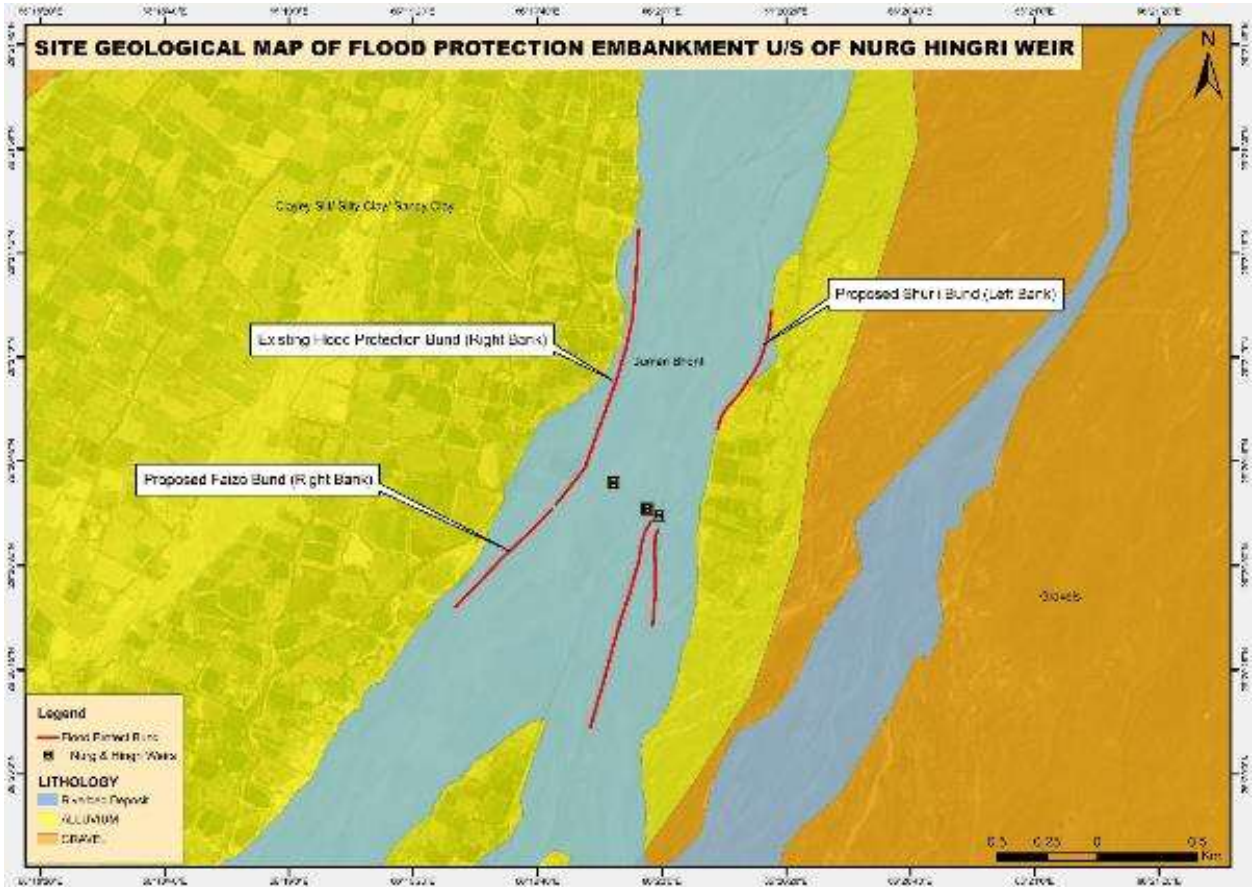


Figure 3-4: Surface geological map of the proposed FP Embankment U/S of Nurg Hingri Weir.

3.3 DESIGN CRITERIA

Table 3-1: Design Parameters of Nurg Hingri Weir (Shurli & Faizo Bund)

Sr. No.	Parameters	Findings
1	Catchment area (Sq. Km)	4446
2	Longest stream length (m)	219
3	Slope	0.0057

Sr. No.	Parameters	Findings
4	Crest width (m)	6.0
5	Earthen Bund slope length, m	Faizo FPB (5.18 – 7.58) Shurli FPB (5.79 – 9.22)
6	Thickness of Stone Pitching (m)	0.75
7	Scour Depth, m	3.29
8	Silt factor	4.75

For the Subproject, the following design criteria shall be applied.

Codes and Practices (Design):

- USACE EM 1110-2-1913 Design and Construction of Levees
- USACE EM 1110-2-2300 General Design and construction considerations for Earth & Rock-Fill Dams
- USACE EM 1110-2-1911 Construction Control for Earth and Rock-Fill Dams
- USACE EM 1110-2-1901 Seepage Analysis and Control for Dams
- USACE EM 1110-2-1902 Slope Stability
- USBR Design Standard No. 13, Chapter 2 & 4 Embankment Dams: Design and Material Selection
- FEMA Technical Manual – Filters for Embankment Dams (2011) Best Practices for Filter Design and Construction
- Pakistan Building Code (2021) Seismic

Standards (Material Testing Codes):

- Sieve Analysis D422
- Atterberg Limits D4318
- Moisture-Density (Proctor) D698
- Field Density (Compaction) D6938
- Permeability D2434/D5084
- Stone Specific Gravity & Absorption C127/C128
- Stone Abrasion C131

3.4 RAW MATERIAL SOURCE AND AVAILABILITY

Borrow areas, quarries, and all other construction material sources shall be obtained only from licensed, legally authorized, and environmentally acceptable sources approved through the Contractor's materials sourcing procedures and subject to review by the CSC and PIU. No unlicensed extraction, indiscriminate riverbed removal, or material sourcing from environmentally or socially sensitive locations shall be permitted. Where project-linked borrow areas are used, the Contractor shall implement site management, drainage, slope stabilization, safety control, and rehabilitation measures so that post-use conditions do not create erosion hazards, water ponding, or public safety risks.

Sources of different raw materials required for restoration of flood protection bund are given in the Table 3.2 below.

Table 3-2: Availability of construction material

Sr. No.	Raw material	Availability in the surrounding
1	Borrow material	The contractor will identify the site and get that approved by CSC.
2	Stones for retaining walls and rip rap.	The contractor will identify the most viable site for stones and CSC will approve accordingly.

Sr. No.	Raw material	Availability in the surrounding
3	Stone for sub-base, aggregate base course,	The site will be identified by the CC.
4	Sand	The contractor will identify the viable site for sand duly approved by the CSC.
5	Water for compaction and sprinkling.	Availability of water for construction activities will be a problem at the Subproject area. However, the CC will fix it with the approval of CSC.
6	Cement & Reinforcement materials	Since Nurg Hingri Weir is in the Lasbela district, therefore the access of market and availability of material will not be difficult. However, the CC will be responsible with the approval of CSC.

All construction materials shall be obtained only from existing licensed or otherwise PIU/CSC-approved sources that hold valid permits and environmental clearances, where such permits are required by law.

3.4.1 Borrow Area

The Borrow Area Map for Package-II identifies six potential material sources (S-1 to S-6) located within and around the project area. These borrow areas provide essential construction materials, including clay, embankment fill, sand, and aggregate, required for the development of the proposed schemes.

Clay sources (S-1 and S-2) are situated southwest of the project alignment. S-1 is located at coordinates 26°13'20.69"N, 66°15'32.89"E, with an estimated lead distance of 17–30 km from the proposed schemes. S-2, located at 26°15'57.57"N, 66°14'23.72"E, provides a relatively shorter haul distance of 12–22 km, making it a viable clay borrow option.

Sand and aggregate sources (S-3, S-4, S-5 and S-6) are positioned along the main drainage channels within the project vicinity. Their locations—S-3 (26°23'04.44"N, 66°19'42.81"E), S-4 (26°22'19.87"N, 66°19'37.63"E), S-5 (26°20'44.37"N, 66°19'47.76"E) and S-6 (26°18'05.49"N, 66°18'16.37"E) fall within the project site, ensuring easy accessibility and reduced transportation costs. These borrow areas contain natural alluvium and riverbed materials suitable for embankment construction and general fill.

Overall, the borrow areas are well distributed across the project region, providing sufficient quantities of clay, embankment fill, sand, and aggregate.

Before commencement of works, the Contractor shall submit a Materials Sourcing Plan to the CSC/PIU identifying each proposed material source, its location, ownership, permit or licensing status, approximate quantities, and haul routes to site. No material shall be extracted, transported, or used until written approval is obtained from the CSC/PIU. If the Contractor proposes to open any new borrow area or quarry specifically for the project, it shall first obtain all required permissions and prepare a site-specific Borrow Pit / Quarry Management Plan covering erosion control, drainage, dust, noise, access safety, slope stability, community safety, and rehabilitation/closure measures.

The CSC/PIU shall verify through site inspection and document review that materials are being sourced only from approved locations and that no extraction is taking place from unauthorized, ecologically sensitive, or community-conflict areas. These requirements shall be cross-referenced in the ESMP monitoring matrix under materials sourcing, spoil management, traffic safety, and site restoration.

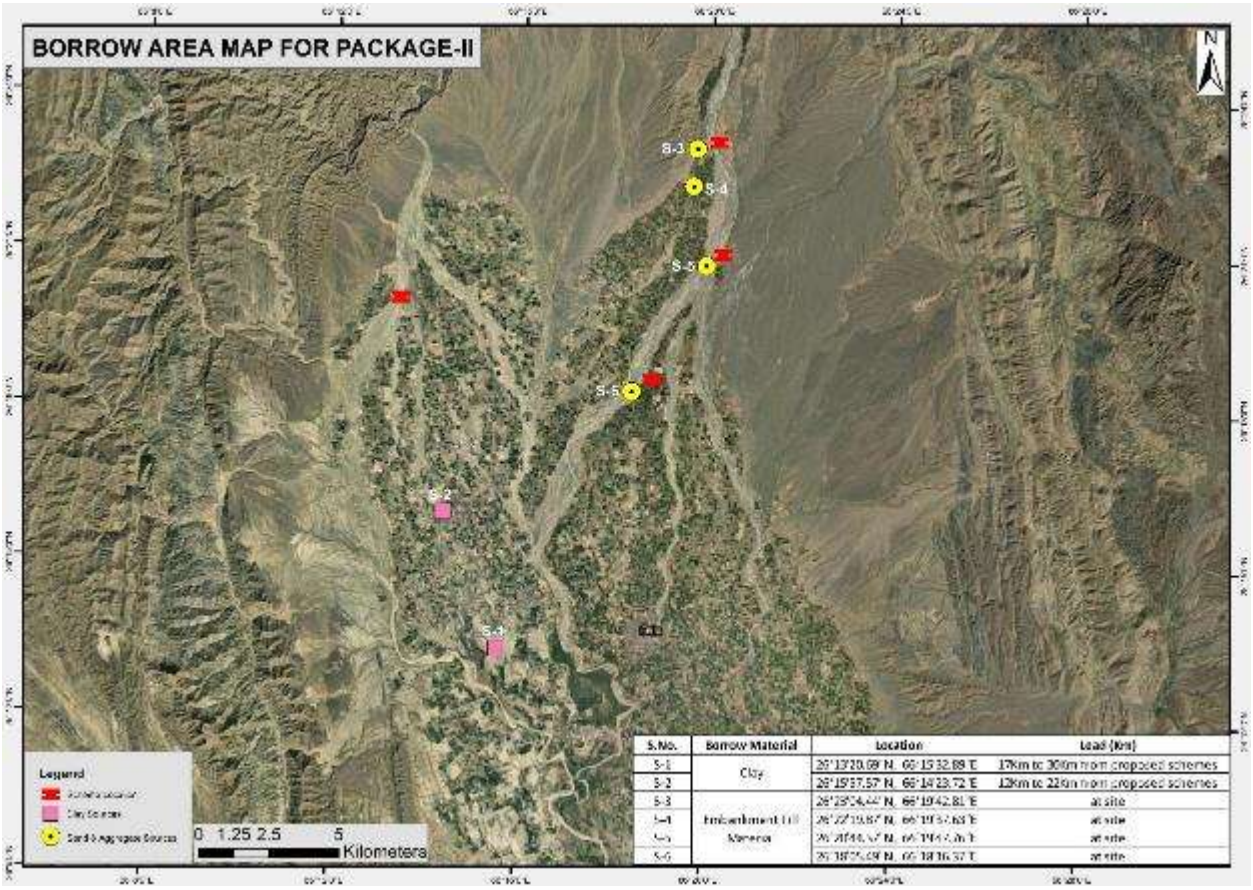


Figure-3-5: Borrow Area & Material map of the Nurg-Hinjri (Shuli & Faizo) bund

3.4.2 Contractor's Camp

The contractor's camp shall be located at least 500 meters away from any residential dwellings or sensitive receptors. As the subproject area has no population within a 100-meter radius, the site is considered free from immediate social, physical, and ecological sensitivities. Therefore, establishment of the camp is not expected to pose challenges for the Contractor.

The Construction Contractor (CC) will be contractually required to maximize employment of local residents from Nurg-Hinjri Weir and nearby villages. Machinery and equipment will be accommodated either in an open yard or a rented facility in Goth Haji Saleh, Goth Ahed Jamat, or nearby areas, ensuring sufficient storage, haulage, and operational space.

Approximately 30 laborers will be required for construction. Priority will be given to local inhabitants for both skilled and unskilled positions. It is anticipated that about 75% of the workforce will be recruited locally, while 25% of skilled labor may be hired from outside the subproject area. This moderate labor influx may influence local social norms, culture, and economy. The scheme will require only a single labor camp for its implementation.

3.4.3 Camp Standards and Management

Where contractor camps or worker accommodation facilities are established, they shall be planned, approved, operated, and demobilized in accordance with good international industry practice and applicable project requirements. Camps must provide:

- Safe drinking water
- Hygienic sanitation and drainage systems
- Waste collection and disposal facilities

- Adequate ventilation, lighting, and electricity
- Proper sleeping arrangements
- Cooking and eating areas
- First aid and emergency response arrangements
- Fire safety equipment
- Separate and private sanitation facilities for male and female users, where relevant

The Contractor shall also ensure:

- Effective housekeeping and vector control
- Proper wastewater management
- Restoration of camp areas after demobilization

3.4.4 Standards for Workers' Accommodation

3.4.4.1 Provision of Camp Facilities

- Lined washing areas and septic tanks with soak pits
- Solid waste management systems
- Fire prevention and firefighting equipment
- Sheltered kitchen area separate from living quarters
- Safe drinking water supply meeting national standards
- Protection against heat, cold, damp, noise, fire, and disease-carrying animals
- Adequate lighting, electricity, and ventilation
- Internal roads and paths paved to suppress dust and prevent muddy surfaces during monsoon
- Toilets and sanitary fittings (minimum 1 toilet, 1 hand wash basin, and 1 bathroom per 10 persons)
- Separate latrines and bathing facilities for males and females, clearly marked to avoid miscommunication
- Treatment facilities for sewerage and domestic waste

3.4.4.2 Cooking Facilities

- Sheltered, ventilated kitchen area separated from living quarters
- Provision of alternative fuels (natural gas or kerosene) to discourage biomass use

3.4.4.3 Health and Hygiene

- Adequate drainage to prevent stagnant water and disease vectors
- Display boards promoting hygiene practices
- Initial health screening for external labor
- Training on sanitation, health care, and safety hazards
- On-site health care facilities and round-the-clock first aid
- Emergency transport to nearby hospitals
- Regular awareness programs on GBV, SEA/SH, HIV, and STIs

3.4.4.4 Safety Measures

- Fire extinguishers and firefighting equipment
- Clearly displayed emergency contact numbers
- Flameproof construction materials for housing and site offices
- Monthly safety meetings to communicate roles and responsibilities
- Security personnel and enclosures to prevent unauthorized entry
- Evacuation plans and safety drills

3.4.4.5 Drainage

- Regular inspection and maintenance of drains
- Adequate storm-water drainage capacity
- Diversion of rainfall runoff around camp sites
- Wastewater and rainwater drainage lines to nearby recipient water bodies

3.4.4.6 Site Restoration

- Backfilling of waste and sewage pits
- Seeding of restored areas to provide protective canopy
- Advance notice to workers before camp demolition
- Noise control during demolition activities
- Reuse of camp materials where possible; disposal of debris at designated sites
- Restoration of site to original or agreed condition with landowner
- Removal of all camp facilities, fencing, and gates after completion
- Decommissioning of drinking water wells unless otherwise agreed
- Phased dismantling of camps as work decreases

3.5 MACHINERY YARD AND OTHER FACILITIES

All vehicles, construction machinery, and mobile equipment deployed under the subproject shall be roadworthy, fit for purpose, and operated only by duly licensed, trained, and authorized personnel. The Contractor shall:

- Maintain valid registration, fitness, maintenance, and inspection records for all vehicles and equipment
- Conduct pre-start checks and routine preventive maintenance
- Immediately withdraw unsafe equipment from service until rectified
- Implement speed control and traffic marshaling where required
- Ensure safe parking, refueling controls, and spill prevention measures
- Provide reverse alarms, adequate lighting, and safe equipment movement procedures

These requirements shall be consolidated in the Contractor's Vehicle and Machinery Management Plan and reflected in the C-ESMP, traffic management arrangements, and monthly ESHS reporting.

3.5.1 Workshop and Equipment Yard

A repair workshop is essential to maintain vehicles and machinery required for project construction. The Contractor may establish its own workshop at a location approved by the PIU prior to establishment. The designated machinery maintenance and equipment yard shall:

- Be used exclusively for workshop purposes
- Prohibit parking of construction vehicles on public roads
- Be located at a sufficient distance from residential populations to minimize social and environmental impacts
- Provide adequate space for storage, haulage, and safe movement of equipment

3.5.2 Healthcare Facilities

With a large workforce engaged in construction activities, minor accidents are anticipated. To address this, the Construction Contractor (CC) shall:

- Establish a dispensary within the base camp, staffed by full-time paramedics

- Maintain adequate stocks of medicines and first aid supplies
- Provide round-the-clock first aid services
- Arrange emergency transport facilities for workers requiring referral to hospitals

For serious cases, patients will be transferred to the District Headquarters Hospital under a pre-arranged coordination mechanism.

Most unskilled labor will be recruited locally from Nurg-Hinjri Weir villages (e.g., Goth Haji Saleh, Goth Ahed Jamat, Lasbela), which will reduce pressure on worker camps and ensure they remain manageable. A referral mechanism shall be established to ensure timely transfer of patients in case of health emergencies.

3.6 SECURITY ARRANGEMENTS AND HEALTHCARE FACILITIES

3.6.1 Security Arrangements

Given the prevailing security conditions in the project area, deployment of security staff is essential. Adequate security shall be maintained at:

- Contractor's camp
- Material storage areas
- Equipment yards
- Active work sites

Close coordination with nearby law enforcement agencies will be required to ensure effective protection.

Site security arrangements shall be designed to safeguard workers, nearby communities, equipment, and project materials without imposing unnecessary restrictions or creating conflict. The Contractor shall implement appropriate measures including:

- Controlled site access
- Warning signage and adequate lighting where required
- Visitor registration and display of contact information
- Emergency contact arrangements
- Coordination with local administration and law enforcement, as necessary

Security provisions must remain proportionate to prevailing site conditions and be implemented in a manner consistent with community safety, complaint handling, emergency response, and applicable project codes of conduct.

3.6.2 Site Security

The mitigation measures and security recommendation are provided in the security management plan and will be implemented to strengthen the security of staff, workers and project facilities. The following mitigation measures will be implemented at all work sites.

Table 3-3: Impact Characterization-Site Security

Nature	Duration	Reversibility	Likelihood	Consequence	Impact Significance
Direct	Short Term	Irreversible	Rare	Severe	High adverse

3.6.2.1 Mitigations

All the work carried out by or on behalf of the contractor (sub-contractor) in the performance of the work shall be in accordance with high standards of safety at all times and shall, inter alia, comply with local laws, and ensure strict adherence. The following mitigation measures shall be adopted by the contractor and project to deal with site security issues and emergencies at site:

3.6.2.2 Management Steps

The following are the management steps will be adhered:

- The project shall hire a security manager (Individual Consultant) who will supervise the implementation of recommended security measures and will help the project develop further plans policies and procedures related to security for the project.
- Where possible it will be ensured that the locals or those conversant with the area and customs must be hired for the guarding duties and thorough background checks will be done by the security company before deploying any guards at the site.
- It shall be ensured that physical measures such as a fence, barriers, gates, warning signage, and surveillance system are in place to prevent access to or passage through work areas, camps, and offices.
- The project shall ensure that the security personnel should be stationed at the entry and exit points of the sites, offices, and camps around the clock.
- Perimeter walls and entry points to all facilities should be well-lit at night and where electricity is not available solar/generator-backed-up lights can be used.
- The contractor will issue cards to the staff which will be checked at the entry points. The record of all the visitors will be maintained and will be checked by the OHS staff.
- The contractor shall maintain communication through employer with local police and other law enforcement agencies in the area about his construction activities especially if the construction area is near any sensitive place and movement of staff.
- In case of any suspicious activity observed at the camp or worksite, the contractor staff shall immediately inform about the situation to the management and private security personnel. The private security personnel will immediately observe, report, and record the suspicious activity.
- In case of emergency, the private security personnel and site/camp management will contact police control, police station and patrolling parties of law enforcement agencies in the respective area to tackle the issue.
- The contractor shall not permit unauthorized person to enter the working site or camp areas. Only authorized persons will be allowed to enter the work site and in the camps.
- The contractor shall prepare emergency evacuation procedures under their health and safety management plan. Training should be provided to all staff on different emergency situations and drills should be conducted periodically.
- The emergency contact numbers of police department, fire department, nearby hospitals, rescue department shall be displayed at the camp sites and work areas.
- The project has developed a grievance redressal mechanism for the project to resolve complaints of public and project people. A public complaint center (PCC) and a grievance redressal committee has been established for this project. The public and project staff can register their complaints related to social issues, security issues and other aspects related to project in the complaint centre. Their complaint will be received and resolved within a given time frame. The complaints which were not resolved by PCC will be forwarded to grievance redressal committee (GRC) for resolution.

3.6.2.3 Emergency Preparedness and Response Procedures

i. Emergency Evacuation & Transfer

- The Contractor will nominate an incident response team which will be headed by HSE Manager. This team can be activated by verbal communication or radio. This will be the most rapid response in the camps and on site.
- In case of emergency, the emergency disaster siren will be blown to alert the staff and stop the work immediately. The security staff will ensure that all project personnel and workers leave the site by a safe route. The assembly area shall be marked in main camp area and work sites.
- Information related to (key persons to be contacted & telephone numbers) medical support during an emergency shall be made available to all on the project site to save time in communication.
- A close liaison will be maintained by the health and safety officer with a nearby hospital and Emergency response centers for assistance during an emergency.

ii. Emergency Drills

- All site personnel/members (PIU/ /Contractor) will follow emergency drills that shall be periodically tested through exercises. The frequency of these drills shall be every quarter which includes fire Fighting, medical evacuation and patient transfer. The schedule of these drills shall be planned on-site in accordance with site activities and be made part of the contractor health and safety plan.
- The finding of the observations and debrief notes of the emergency drills shall be recorded. The health and safety officer shall analyze the findings and identify any remedial actions required.
- The emergency procedure shall be updated from time to time to reflect observations made.
- Training shall be conducted on regular basis for emergency response teams.
- During toolbox talk, the supervisor must emphasize how to raise an emergency and emergency response protocol associated with the work shall also be discussed with it.

3.6.2.4 Residual Impact

By applying the above mitigations, the impact significance shall be medium during the duration of the sub project implementation.

3.7 LABOUR REPORTING OFFICE

Designated labour gathering areas will be established along access roads and within the work bases of the contractor's camp. These areas will be used for worker pick-and-drop, emergency assembly, and routine briefings. Each location will be clearly marked, kept clean and unobstructed, and equipped with a public-address system when required.

The Labour Reporting Office, however, will be located separately - close to and adjacent to the contractor's main camp office-to facilitate easy movement, supervision, and daily reporting.

In addition, the contractor will ensure that all labour gathering points are safe, well-maintained spaces where workers can assemble for transport, respond during emergencies, or receive awareness and toolbox trainings.

4

BASELINE DESCRIPTION

4. BASELINE DESCRIPTION

This chapter provides a description of the physical, ecological, and socioeconomic conditions of the proposed subproject. The baseline has been prepared using both primary data collection tools and published/unpublished information sources.

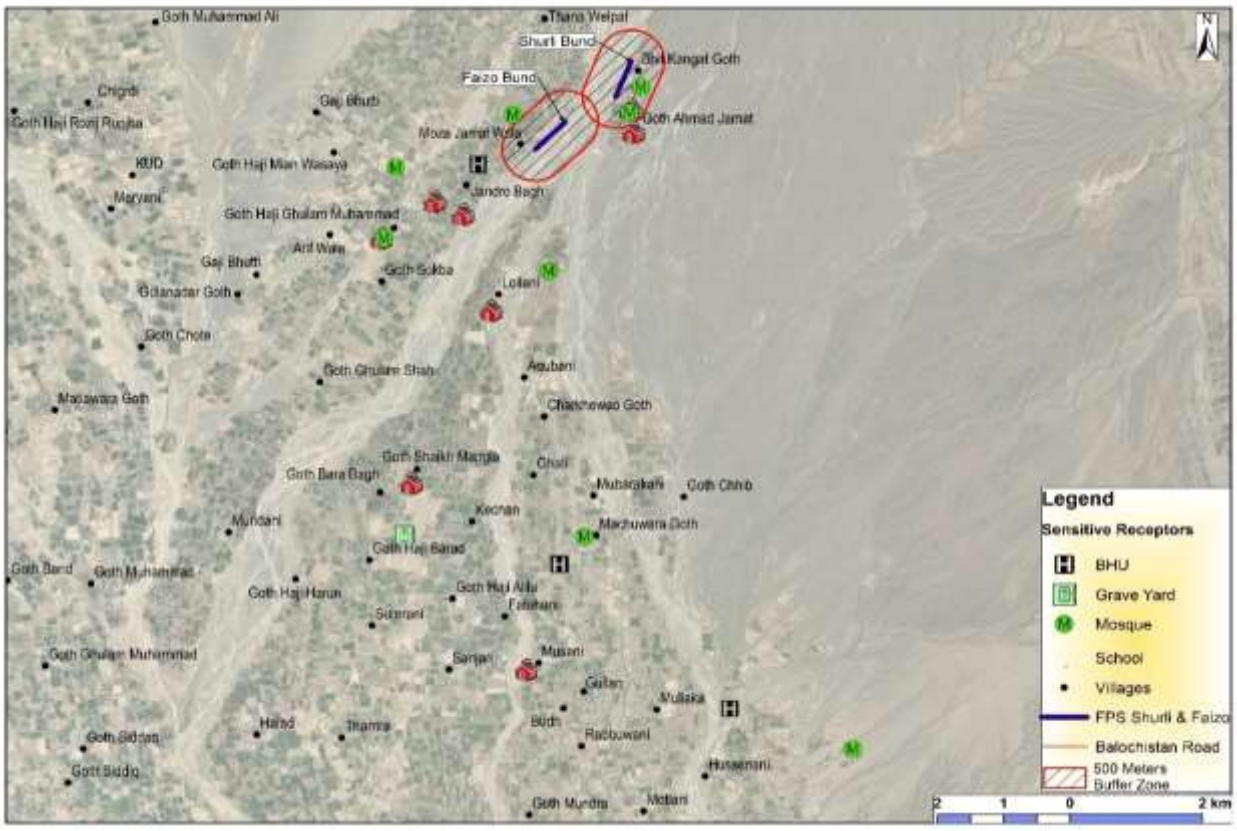
Environmental baseline conditions for ambient air, surface water, groundwater, noise, and other relevant parameters have been documented in the ESMP and supported by annexed laboratory and field records. In the event of any discrepancy between the summary tables, body text, and annexed monitoring records, the annexed laboratory reports and field records shall serve as the controlling source of baseline data for the subproject.

Where required by site conditions or timing of construction, pre-construction verification monitoring shall be undertaken before commencement of works. The results of such monitoring shall be incorporated into site records and reflected in monthly ESHS reporting.

4.1 CORRIDOR OF IMPACT (COI)

The Corridor of Impact (COI) comprises the subproject Right of Way (RoW) and the surrounding areas where both positive and negative impacts are anticipated during project execution, including construction camps, borrow pits, and disposal sites. For the purpose of impact assessment and baseline survey, a buffer zone of 500 m (250 m on each side of the centreline) has been defined as the primary Area of Influence and sensitive receptor zone.

As illustrated in Figure 4.1, this 500 m buffer (hatched area within the red circle) was assessed to capture potential direct impacts such as dust, noise, and vibration, as well as indirect and cumulative effects. The survey findings indicate that within this defined COI, no settlements, public infrastructure (e.g., schools or hospitals), or environmentally sensitive features were



identified.

Figure-4-1: Map showing Buffer Zone along with receptors

Accordingly, the ESMP adopts this 500 m COI to ensure a practical yet comprehensive framework for impact assessment and management, while maintaining compliance with applicable environmental and social safeguard requirements.

4.2 PHYSICAL ENVIRONMENT

4.2.1 Geography and Climate

The Subproject area lies in District Lasbela of Balochistan. Lasbela district of Kalat division, Balochistan province, Pakistan. A former princely state. Lasbela area of 7,048 Sq. miles (18,254 Sq. km) and is bounded north by Khuzdār district, east by the Kīrthar Range (separating it from Sindh), south by the Arabian Sea, and west by the Hāla Range. The climate of Lasbela can be categorized as “warm summer and mild winter”. The southern area of the district is warmer than the northern part. Annual average rainfall indicates semi-aridity in the area. Annual rainfall records are shown in table 4.1.

Table 4-1: Rainfall (mm) and temperature (◦C) of the project area

Month	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Average Rainfall	18.27	22.80	20.24	6.24	3.35	9.04	4.80	4.48	1.13	1.69	3.75	17.20
Maximum Temperature	24	26	30	35	38	39	37	36	35	34	30	26
Minimum Temperature	8	9	14	18	22	25	25	24	21	17	13	9
Average temperature	16	17	22	26	30	32	31	30	28	26	21	18

Source: ERA 5 – Land data

4.2.2 Land and Water Resources

District Lasbela lies on a flat alluvial plain, with gentle slopes from north to south, i.e. elevation around 50–170 m. The region is based on Indus Basin Irrigation System, especially through the Pat Feeder and Khirthar canals. Historically, abundant irrigation was allowed up to two cropping cycles annually. However, persistent water scarcity has reduced it to just one cycle per year, affecting land productivity. It has been noted that land of the Subproject area is a mix of both agricultural in small and barren in large.

4.2.3 Land Use and Soil Erosion

Nurg Hingri Weir (Shurli & Faizo Bund) command area lies in Lasbela district. The agriculture data shows a lot of activity in canal irrigated area, however there is constraint of irrigation water supply for transforming uncultivated lands to productive area.

The Nurg Hingri Weir (Shurli & Faizo Bund) lies within the cultivated floodplain of the Porali River in District Lasbela, Balochistan. The surrounding landscape is characterized by agricultural land interspersed with shallow drainage channels and patches of barren or fallow ground. The alignment of the bund, as shown in satellite imagery, passes through productive farmland where crops are raised mainly through flood-recession farming and groundwater irrigation from shallow tube wells and dug wells.

The soil in the project area consists predominantly of recent alluvial deposits, including sandy silt, silty clay, and fine sand derived from riverine sedimentation. These soils are fertile and moderately cohesive, but due to their loose structure and limited vegetation cover, they are highly prone to erosion during high-flow conditions. Floodwater frequently causes bank cutting, sheet erosion, and sediment deposition, resulting in the loss of cultivable land and damage to standing crops.

Construction of the Nurg Hingri Weir (Shurli & Faizo Bund) will protect approximately 750 acres of productive agricultural land and adjoining rural infrastructure from recurring flood damage. The embankment will confine floodwaters within a controlled channel, reducing soil erosion and the lateral spread of inundation across farmlands. The design includes stone pitching on the river slope and gabion launching aprons at the toe, which will provide effective protection against scouring and hydraulic erosion.

4.2.4 Seismology

Seismic activity in Pakistan has been the source of destructive earthquake. These earthquakes have originated from sedimentary cover at shallow depth as well as from deep basement rocks. These earthquakes have been recorded and there are two kinds of records; historic or pre-instrumented data consisting of felt intensity based on recorded damage and instrumented data collected by various national and international seismic networks. Based on earthquake data and geological faults, the Building Code of Pakistan (BCP) has prepared a map showing seismic zones of Pakistan.

The maximum magnitude of each source is calculated, and Peak Ground Acceleration (PGA) values based on the maximum credible earthquake of the relevant source are obtained. According to the Building Code of Pakistan (BCP-2021), the project structures are situated in a Seismic Zones with Peak Ground Acceleration (PGA) in the range of 0.24 to 0.28g.

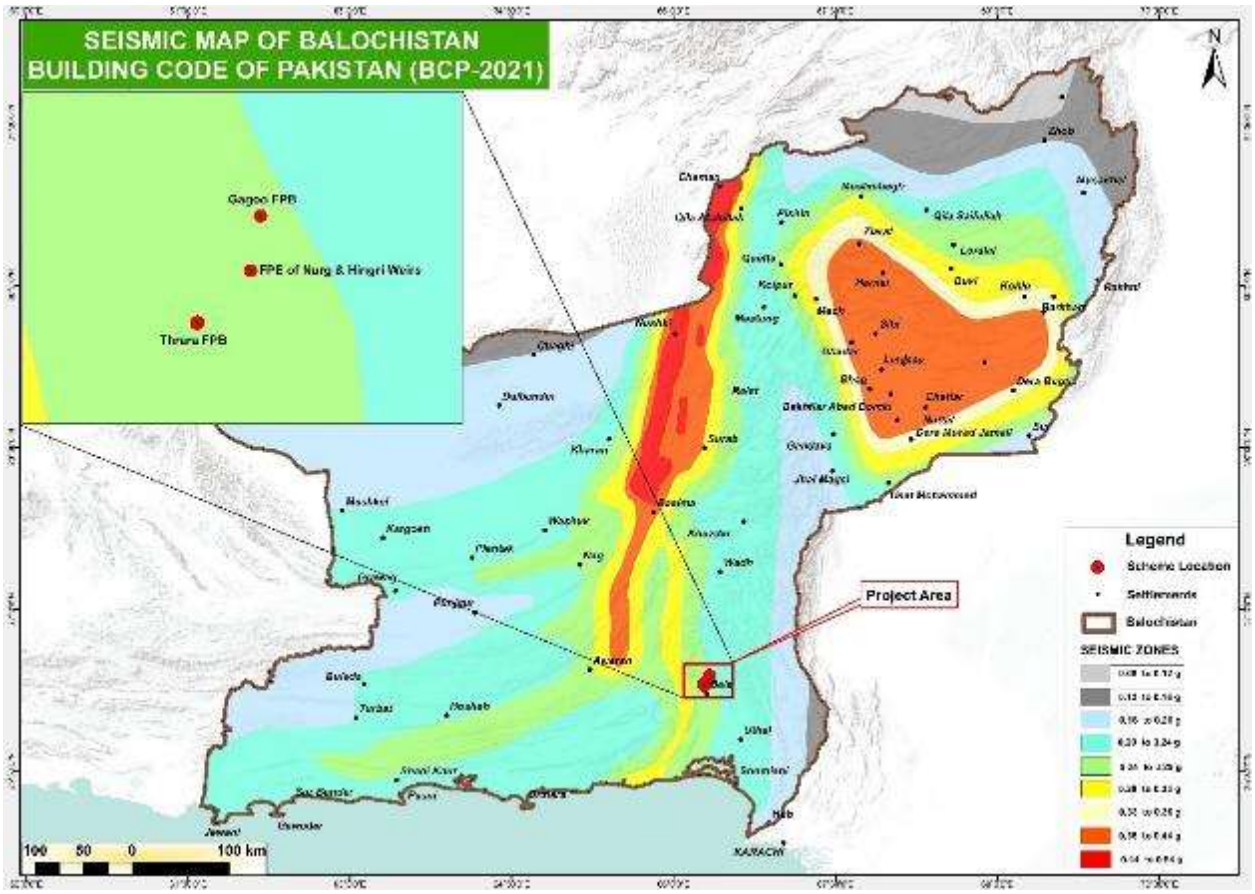


Figure-4-2: Seismic map of Balochistan showing the location of the sub-project area.

4.2.5 Hydrology

4.2.5.1 Floodplain and Drainage Context

The ESMP shall recognize the broader floodplain and drainage context of the subproject, including relevant upstream and downstream receptors, nearby settlements, agricultural areas,

access routes, and other sensitive locations that may be affected by construction-stage disturbance or temporary alteration of runoff pathways during works.

As the proposed activity involves rehabilitation and strengthening of an existing flood protection structure, no intentional modification of the overall river flow regime or storage pattern is envisaged. However, site planning, material handling, runoff management, and work sequencing shall be carefully managed to avoid:

- Localized erosion
- Ponding
- Unsafe diversions
- Avoidable nuisance to nearby receptors

4.2.5.2 Hydrological Studies

Hydrological studies are intended to estimate the key parameters of the subproject area. These studies form the basis for:

- Estimation of water availability
- Hydraulic design of proposed works
- Assessment of watershed characteristics

The watershed characteristics of the proposed structures shall be documented to ensure that design and construction measures are aligned with the hydrological behavior of the catchment and contribute to climate-resilient flood protection.

Table 4-2: Characteristics of catchment

Sr. No	Scheme Name	Catchment Area Km^2	Length of Longest Stream (m)	Slope (m/m)
1	Restoration of Flood Protection Embankment U/S of Nurg Hingri Weir (Shurli & Faizo Bund)	4446	223.73	0.0076

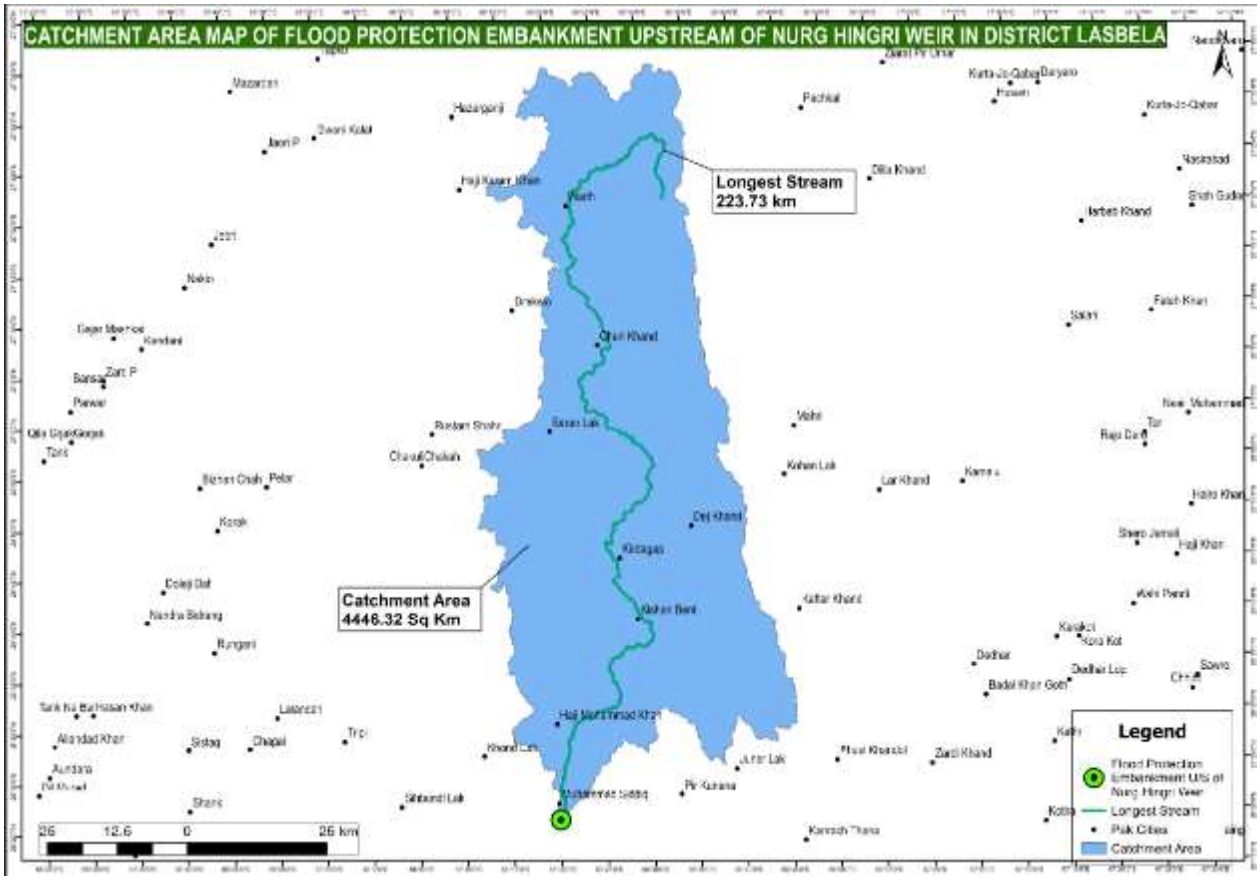


Figure-4-3: Catchment area map of Shurli & Faizo Flood Protection Bunds

4.2.6 Ambient Air Quality

Ambient air quality was monitored at the Shurli & Faizo sub-project area over a 24-hour period. The monitoring covered nitrogen oxides, sulfur dioxide, carbon monoxide, particulate matter, suspended particulate matter, and ozone. The detailed hourly readings are provided in Annexure-I: Lab Test Reports and summarized in Tables 4-3.

The baseline results show that all monitored parameters remained within the comparison limits presented in the ESMP summary table. Gaseous pollutants were generally low, while particulate matter was relatively higher than the gaseous parameters but still remained within the listed limits. This indicates that the baseline air environment is not heavily polluted, although dust is a relevant local issue because of dry ground conditions, exposed soil, unpaved access tracks, and traffic movement near the site.

Table 4-3: Summary of Baseline Ambient Air Quality Results

Parameter	Average Result	Comparison Value Used in ESMP	Baseline Interpretation
Nitric oxide (NO)	12.18 ug/m3	NEQS 40 ug/m3 (24 hrs)	Within listed limit; low baseline concern
Nitrogen dioxide / oxides as NO2	29.47 ug/m3	WHO 25 ug/m3 (24 hrs); NEQS 80 ug/m3 (24 hrs)	Low to moderate baseline level; still within ESMP-listed comparison range
Sulfur dioxide (SO2)	4.63 ug/m3	WHO 40 ug/m3 (24 hrs); NEQS 120 ug/m3 (24 hrs)	Very low baseline concern

Parameter	Average Result	Comparison Value Used in ESMP	Baseline Interpretation
Carbon monoxide (CO)	0.0414 mg/m3	WHO 4 mg/m3 (24 hrs); NEQS 5 mg/m3 (8 hrs)	Very low baseline concern
PM2.5	26.55 ug/m3	WHO 15 ug/m3 (24 hrs); NEQS 35 ug/m3 (24 hrs)	Moderate dust sensitivity; within ESMP-listed NEQS value
PM10	77.59 ug/m3	WHO 45 ug/m3 (24 hrs); NEQS 150 ug/m3 (24 hrs)	Key baseline dust parameter; within ESMP-listed NEQS value
Suspended particulate matter (SPM)	103.03 ug/m3	NEQS 500 ug/m3 (24 hrs)	Within listed limit
Ozone (O3)	5 ug/m3	WHO 60 ug/m3 peak season; NEQS 130 ug/m3 (1 hr)	Very low baseline concern

4.2.6.1 Analysis

The main baseline air-quality concern is dust rather than combustion gases. PM2.5 and PM10 are not reported as exceedances in the ESMP summary table, but they are the most relevant parameters for this sub-project because bund rehabilitation will involve earth movement, haul traffic, exposed fill, and dry working conditions.

This baseline means that construction-phase controls should focus on dust suppression, covering of transported material, speed control on unpaved access routes, minimizing unnecessary exposed surfaces, and keeping machinery in good working order to control smoke and exhaust emissions. For detailed hourly readings and original records, see Annexure-I: Lab Test Reports (Air Quality Record).

4.2.7 Water Quality

Baseline water quality monitoring was carried out for the sub-project area, and the detailed records are included in Annexure-I: Lab Test Reports. The following interpretation is based on the baseline tables presented in the ESMP. However, where any difference exists between the body text/tables and Annexure-I, the annexed published reports shall be treated as final.

a) Surface Water Quality

The surface-water results show that most physico-chemical parameters were within the listed comparison limits used in the ESMP summary table. The recorded pH, turbidity, color, total dissolved solids, hardness, fluoride, chloride, nitrate, nitrite, and most trace metals were reported within the stated limits. At the same time, the bacteriological results show contamination, including total coliform, fecal coliform, and E. coli, which is an important baseline issue for the project.

Table 4-4: Summary of Baseline Surface Water Quality Results

Parameter Group	Key Result(s)	Interpretation
General appearance	Taste non-objectionable; odor non-objectionable; color 2 TCU	No significant aesthetic issue reported in the summary table
Turbidity	0.07 NTU	Very low turbidity at time of

Parameter Group	Key Result(s)	Interpretation
		sampling; within listed limits
pH	7.63	Neutral to slightly alkaline; within listed acceptable range
TDS	341 mg/L	Fresh to moderately mineralized water; within listed limit
Total hardness	98 mg/L	Within listed limit; not a major baseline concern
Chloride	125 mg/L	Within listed limit
Fluoride	0.79 mg/L	Within listed limit
Nitrate / Nitrite	4 mg/L / 0.09 mg/L	Within listed limits
Residual chlorine	0.8 mg/L	Higher than the comparison range shown in the summary table; should be confirmed against Annexure-I
Metals and toxic parameters	Most reported as ND or within listed limits, including phenol, cyanide, arsenic, barium, chromium, cadmium, lead, manganese, mercury, selenium	No significant baseline heavy-metal issue indicated in the summary table
Total coliform	216 count/mL	Indicates microbiological contamination
E. coli	148 count/mL	Indicates fecal contamination
Fecal coliform	75 count/mL	Indicates fecal contamination

Surface water analysis

The baseline surface-water results are chemically acceptable in most respects based on the comparison values listed in the ESMP, but they are not microbiologically clean. The elevated coliform and E. coli results indicate exposure to fecal contamination or other open-source contamination pathways. This matters for project management because construction activities must not worsen water quality through wastewater release, fuel and oil spills, cement wash water, waste dumping, or sediment-laden runoff into active drainage paths.

b) Groundwater Quality

The groundwater results show a mixed but broadly manageable baseline condition. Several general parameters and metals are within the listed limits in the ESMP summary table. However, dissolved solids are relatively high, and a few indicators such as BOD, COD, cadmium, and hexavalent chromium are reported close to the listed comparison values. This means groundwater quality should be treated as environmentally sensitive during construction.

Table 4-5: Summary of Baseline Groundwater Quality Results

Parameter Group	Key Result(s)	Interpretation
Temperature	33.1 C	Normal field condition for local climate
pH	7.91	Slightly alkaline; within listed

Parameter Group	Key Result(s)	Interpretation
		range
BOD	72.5 mg/L	Within listed limit but relatively high; low compliance margin
COD	145 mg/L	Within listed limit but close to threshold; low compliance margin
TDS	2021 mg/L	High dissolved solids but within listed limit; indicates mineralized groundwater
TSS	115.1 mg/L	Within listed limit
Oil and grease	0.07 mg/L	Very low; no baseline oil contamination issue indicated
Chloride	520 mg/L	Elevated but within listed limit
Sulfate	216 mg/L	Within listed limit
Ammonia	15.6 mg/L	Within listed limit
Cadmium	0.04 mg/L	Within listed limit but close to threshold
Hexavalent chromium	0.048 mg/L	Within listed limit but very close to threshold
Lead	0.1 mg/L	Within listed limit
Other metals and parameters	Many reported as ND or within listed limits, including phenol, detergents, selenium, mercury, nickel, silver, arsenic, aluminum, barium	No broad heavy-metal exceedance pattern shown in the summary table

Groundwater analysis

The groundwater sample does not indicate a severe baseline contamination event in the summary table, but it is not strongly buffered against further deterioration. The relatively high TDS and the narrow margin for a few pollution-related indicators mean the project should apply strict controls on machinery maintenance, fuel storage, spill response, waste handling, camp sanitation, and wastewater management.

If any complaint, spill, or abnormal field observation arises during implementation, follow-up water-quality testing should be carried out in line with the ESMP monitoring provisions and referenced against the certified lab-report format in Annexure-I.

For detailed parameter values and certified records, see Annexure-I: Lab Test Reports (Surface Water and Groundwater Records).

4.2.8 Noise Level

Baseline noise monitoring was carried out over a 24-hour period in the project area, and the detailed readings are presented in Annexure-I: Lab Test Reports and summarized in Table 4-6. The results show normal variation between daytime and nighttime conditions, with higher readings during periods of daytime activity and lower readings during late-night and early-morning hours.

Table 4-6:: Summary of Baseline Noise Monitoring Results

Minimum recorded level	47.6 dB at 12:00 AM	WHO 55 dBA night; NEQS 65 dBA night	Low nighttime baseline level
Maximum recorded level	66.4 dB at 1:00 PM	WHO 65 dBA day; NEQS 75 dBA day	Slightly above WHO daytime value at one point, but within listed NEQS daytime value
Average noise level	55.24 dB	WHO/NEQS comparison values as listed in Table 4-7	Moderate overall baseline noise environment
General daytime range	Mostly high-50s to mid-60s dB	WHO 65 dBA day; NEQS 75 dBA day	Typical daytime activity/traffic influence
General nighttime range	Mostly upper-40s to upper-50s dB	WHO 55 dBA night; NEQS 65 dBA night	Lower night-time background condition

Analysis

The baseline noise environment is moderate rather than silent. The readings suggest that local traffic and normal outdoor activity are the main contributors, not a permanent industrial source. Most readings remain within the listed comparison values used in the ESMP, although one daytime reading is marginally above the WHO daytime value while still remaining within the listed NEQS daytime value.

This baseline means that construction noise may become noticeable if heavy equipment operates close to receptors or outside normal daytime working periods. During construction, noisy activities should be limited to daytime as far as practicable, silencers and mufflers should be maintained, unnecessary horn use should be avoided, and complaint-based spot monitoring should be carried out if works are close to receptors identified in the ESMP.

For detailed hourly readings and the original monitoring record, see Annexure-I: Lab Test Reports (Noise Record).

For this ESMP, the certified laboratory and field monitoring records presented in Annexure-I: Lab Test Reports (Water Quality, Air Quality, Noise Record) shall be treated as the authoritative source of baseline environmental data. The narrative text and summary tables in Sections 4.2.7 to 4.2.9 are interpretive summaries only. If any inconsistency is identified between the body text/tables and Annexure-I, the Annexure-I values and observations shall prevail, and the main text shall be corrected accordingly before final issuance of the ESMP.

4.3 ECOLOGICAL ENVIRONMENT

Different types of land use exist beyond the RoW of the Polari River Basin, such as; agricultural land, barren land, rocky areas, grassland, shrubs herbs, and grass mix. While within RoW, the bed of the PRB basin contains piedmont plains, the large size of gravels, sand deposits, and scattered vegetation cover. The lifeline of this different vegetation cover is based

on rainwater or flood water. The different type of vegetation found is: Aerua javanica (Gujo), Grewia tenex (chill), Heliotropium crispum (Kharsan), Euphorbia caducifolia (Thuar), H. europeum (Uth Charo), Capparis deciduas (Kirar), Cassia italic (Ghora wal), Convolvulus spinosus (Dolako), Tamarix dioica (khagal), Aristida sp (nadak), Prosopis glandulosa (Devi), Calotropis procera (Aak). While there are no trees found in the sub-project. The routes from the main highway to project area are not motor-able. The sub-project structure site is located away from populated areas. Unpaved Kacha (dirt paths) leads to construction area including weir and guide bunds.

Fauna

The details of faunal species along with their status in BWPPCM, Act 2014 and IUCN red list.

Conservation Status of Fauna

This section provides brief information about the fauna present in the sub-project area. These key species are classified according to the following criteria.

- Listed as Least Concern, Near Threatened, Vulnerable, Endangered or Critically Endangered, Extinct in Wild Life, in the IUCN Red List.
- Listed as protected species in the Balochistan wildlife protection, preservation, conservation and management Act, 2014 (BWPPCM).

Mammals, Avi-Fauna, Reptiles and Amphibians

The mammals, birds, reptiles and amphibians identified from the surrounding of the sub-project area are listed below. The identified spices are classified in accordance with the IUCN list and Balochistan wildlife protection, preservation, conservation and management Act, 2014.

Table 4-7: List of Mammals, Avi-Fauna, Reptiles and Amphibians at Nurg Hingri Weir (Shurli & Faizo Bund)

Mammals	Avi-Fauna	Reptiles & Amphibians
House rat (rattus rattus)	Wheatears (Oenanthe deserti oreophila)	Indus toad (Bufo stomaticus)
Asiatic Jackal (Canis aureus)	Eastern Pied Wheatear (Oenanthe picata)	Spotted Indian House Gecko (Hemidactylus brookii)
Little Indian Field Mouse (Mus booduga)	Greter Spotted Eagle (Aquila clanga)	Spiny -tail Lizard (Uromastyx)
Sindh Wild Goat (Capra aegagrus)	Red-wattle Lapwing (Vanellus indicus)	Yellow Bellied House Gecko (Hemidactylus flaviviridis)
Five stripped Palm Squirrel (Funambulus pennanti)	Little Grebe (Tachybaptus ruficollis)	Common Krait (Bungarus caeruleus)
Indian Crested Porcupine (Hystrix indica)	See-see Partridge (Ammoperdix griseogularis)	Sindh Sand Gecko (Crossobamon orientalis)
House mouse (Mus musculus)	Brown-necked Raven (Corvus ruficollis)	Gecko, Mountain Dwarf (Tropioclotes depressus)
Indian Desesrt Grebil (Merioners hurrianae)	Indian Grey Partridge (Francolinus pondicerianus)	Saw scaled Sand Viper (Echis carinatus)
Jungle cat (Felis chaus)	Bank Myna (Acridotheres ginginianus)	Fringe-fingered lizard (Acanthodactylus cantoris)
Desert Cat (Felis libyca)	Indian House Sparrow (Passer domesticus)	Indus toad (Bufo stomaticus)

4.4 SOCIO-ECONOMIC BASELINE

4.4.1 General

As part of the Environmental and Social Management Plan (ESMP) preparation, a comprehensive socio-economic baseline study was conducted for the Nurg Hingri, Shurli and Faizo Bund sub-project area to document prevailing demographic characteristics, livelihood patterns, and availability of basic infrastructure and services. To further assess the current socio-economic conditions and potential project-related impacts within and around the sub-project area, a supplementary sample household survey was carried out in September 2025.

4.4.2 Data Source and Methodology of Baseline Survey

- The Secondary data pertaining to various environmental and socio-economic parameters were gathered through the literature review and from the approved project documents.
- The Primary data for this study was collected with an inclusive approach by involving male, female and vulnerable through field visits, walk-through surveys, quantitative household surveys, and in-depth qualitative interviews during field visits, and community consultations. Women were also included in the quantitative household survey. In view of cultural norms, female enumerators were specially trained and then mobilized to interview female respondents in separate qualitative consultation sessions.

The socio-economic baseline survey for the Shuli & Faizo Bund (Nurg-Hingiri) was conducted to:

- Assess prevailing demographic, livelihood, and infrastructure conditions in the project area.
- Estimate household income sources, asset ownership, poverty incidence, and vulnerabilities.
- Evaluate access to basic services such as education, health, water, sanitation, communication, and energy.
- Provide a benchmark for measuring future socio-economic impacts of flood protection interventions.

A total of 500 male, 217 female, and 19 vulnerable household members were interviewed. In the areas of Nurg Hingri, Shurli, and Faizo FPB, 738 households were surveyed out of a total of 7,387 households, representing approximately 10% household coverage. The total population of the surveyed area is approximately 66,483 (2023 Census). The survey design ensured gender-disaggregated data collection and inclusive representation of community perspectives, incorporating information on children and persons with disabilities/vulnerable groups within the project area to strengthen inclusivity and ensure diverse community perspectives are represented.

4.4.3 Evaluation Approach

The socio-economic baseline for Shuli and Faizo bund were conducted prior to the start of construction activities to record/note the existing social and economic conditions of the local communities. The evaluation approach follows a baseline and post-implementation comparison framework, allowing changes to be assessed over the course of the project. Primary data were collected through household surveys, key informant interviews, and field observations from different villages of the proposed project areas, supported by secondary information from local sources.

4.4.4 Sampling Strategy and Tools

The sampling process was carried out in two distinct phases using structured survey instruments. In the initial phase, UC Shomali-2 and Union Tehsil Bela - covering the Shuli and Faizo Bund project areas - were chosen through a random selection method to secure unbiased geographic coverage. In the subsequent phase, 738 households were identified through proportional sampling. This ensured balanced inclusion of households across socio-economic categories, including poor, vulnerable, middle-income, and relatively better-off groups, reflecting their actual distribution within the community.

In compliance with the requirements of the World Bank Environmental and Social Framework (ESF), particularly for stakeholder engagement, baseline assessment, and risk identification, the following tools and instruments were utilized:

- Structured Household Socio-Economic Survey Questionnaire (for quantitative baseline data collection)
- Key Informant Interview (KII) Checklists (for consultations with local leaders, community representatives, and relevant government officials)
- Focus Group Discussion (FGD) Guides (separate sessions conducted with men, women, and vulnerable groups to ensure inclusive participation in line with ESS10 requirements)
- Stakeholder Mapping and Analysis Matrix
- Vulnerability Assessment and Screening Format
- Observation Checklist (for ground-truthing and physical verification of settlement patterns and infrastructure)
- Secondary Data Review, including data from the Pakistan Bureau of Statistics, District Administration records, and Union Council records

The survey instruments covered the following key thematic areas:

- Agriculture and Natural Resources
- Primary Sources of Income and Livelihood
- Housing and Living Conditions
- Sanitation Facilities
- Health and Nutrition
- Education

4.4.5 Survey Instruments and Data Collection Tools

In line with the World Bank Environmental and Social Framework, multiple survey tools were applied to gather primary social baseline data for the ESMP. Structured interview guides supported key informant and observation-based interviews with community elders, individuals and disable and vulnerable groups to capture local knowledge and concerns. Project-approved screening checklists were also used during site visits to record site-specific information.

4.4.6 Short Profile of Lasbela District

According to the Census-2023 conducted by the Pakistan Bureau of Statistics (PBS), District Lasbela has a total population of 680,977, consisting of 350,392 rural residents (51.46%) and 330,585 urban residents (48.54%). With an annual growth rate of 2.82% since 2017, the district

currently maintains a population density of 44.9 persons per square kilometer and comprises a total of 115,539 households.

Further distribution of the district population into tehsil level is given below:

Table 4-8: Tehsil-Level Population (Census -2023)

Tehsil	Population
Bela	129,264
Uthal	88,933
Lakhra	46,744
Liari	17,155
Kanraj	15,996

4.4.7 Sensitive Receptors

The sensitive receptors within the project influence area primarily include nearby rural settlements located at varying distances from the subproject site. These settlements comprise villages such as Sain Lateef Shah, Faizo Dora, Kilirai Ghot, Bandigha, Sholi (Shuli Bhent), Wakeel Chib, Haji Saleh Chib, M. Modani Bhit, Hijrani Goat, Esakai, Sardar Muhammad Hassan Ghat, Sardar Goat Makohna, Mashwani, Charaka Ghat, Mula Ahmed Ghat, Ferozai Goat, and Bug Chat. Collectively, these villages account for approximately 7,387 households with an estimated population of about 66,483 persons, situated within average distance range of 1 km to 12.5 KM from the subproject area.

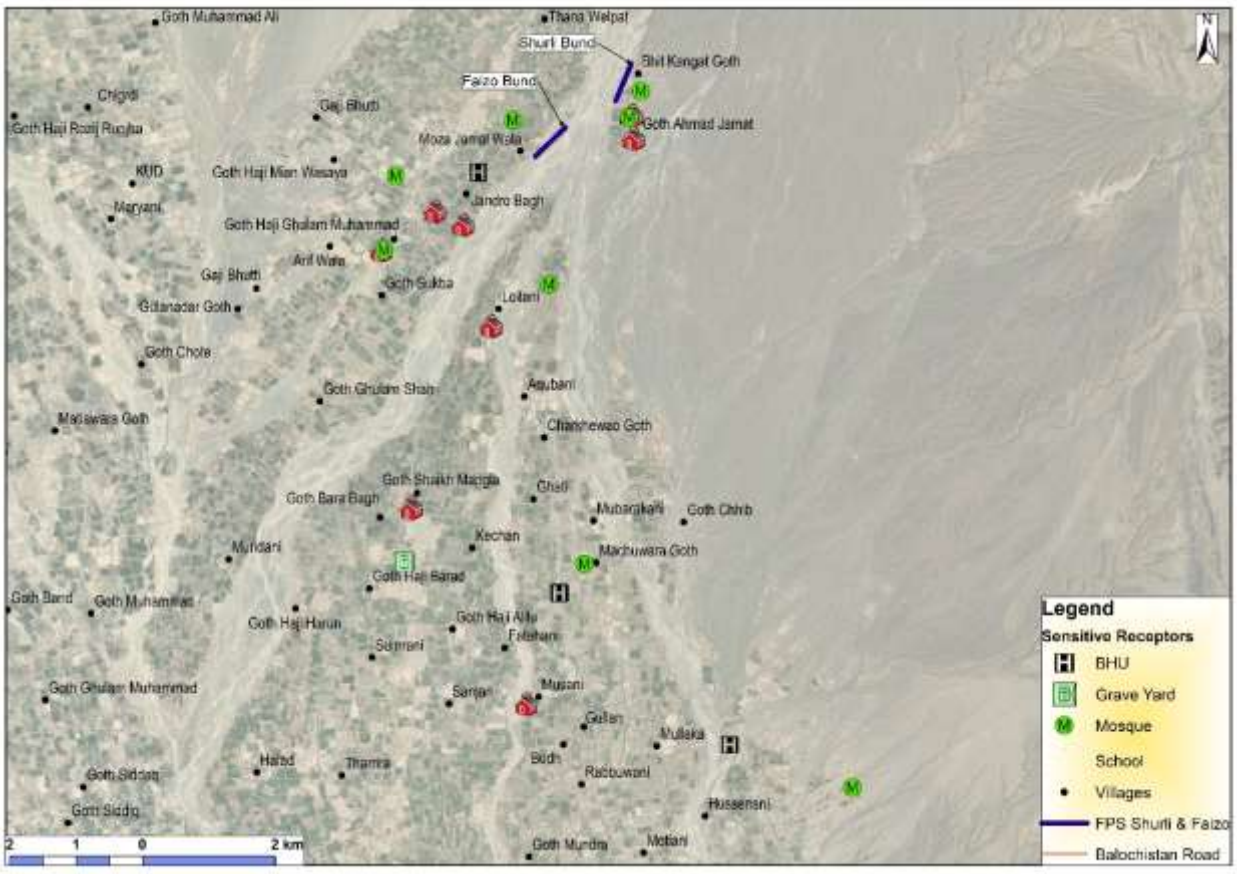


Figure-4-4: Map showing Sensitive receptors near the sub-project area

Due to their proximity, these communities may experience temporary construction-related impacts such as dust emissions, noise, increased movement of construction machinery, and short-term access limitations. Simultaneously, scattered mature trees were observed along the Shuli Bhent scheme; however, these trees are located at a considerable distance from the proposed works and do not directly fall within the project Right of Way (RoW). As such, no direct impacts on these trees are anticipated during project implementation. No other ecological sensitive features or protected sites were identified in the immediate surroundings of the subproject area.

Table 4-9: Sensitive receptors near the proposed project areas

Village(s)	Households	Population	Distance from the subproject area
Near to Faizo			
Sain Lateef Shah	15	135	1.5 km
Faizo Dora	25	225	1 km
Kilirai Ghot	35	315	2 km
Bandigha	12	108	2.5 km
Shuli Bhent			
Sholi	170	1530	1.5 km
Nurg-Hinjri			
Wakeel chib	200	1,800	3Km
H.Saleh Chib	90	810	5km
M.Modani Bhit	60	540	7km
Hijrani Goat	2000	18,000	11km
Esakai	2200	19,800	3.5km
Sardar M.H Ghat	500	4500	4km
Sardar Goat Makohna	200	1,800	9km
Mashwani	230	2,070	2.5km
Charaka Ghat	270	2,430	3.9km
Mula Ahmed Ghat	120	1080	12.5km
Ferozai Goat	130	1,170	3km
Bug Chat	920	8,280	2km
Total	**7387**	**66483**	-

4.4.8 Key Social Indicators

Key social indicators of the proposed project areas are described as below:

4.4.8.1 Language

Four languages, Lasi, Balochi, Sindhi and Brahvi languages are spoken by the communities living in the Nurg Hingri, Shurli and Faizo area. Urdu is also spoken by most of the communities in the sub-project area.

4.4.8.2 Literacy Rate

As per the initial baseline survey, the overall proposed project areas (shuli & Faizo) are defined by a total literacy rate of 40.98%, reflecting a community in transition where nearly two-thirds of the population still lacks formal education. This figure masks a stark gender divide, as male literacy has reached 51.87%, while female literacy lags significantly behind at just 29.17%. This disparity highlights a critical social gap, where men are nearly twice as likely to be literate as women.

4.4.8.3 Poverty Rate in Proposed Project Areas

Poverty in the project-influenced areas remains a serious concern, marked by widespread

multidimensional deprivation. Despite existing economic potential, communities continue to face inadequate basic infrastructure, limited access to safe drinking water, and high illiteracy levels, which collectively perpetuate chronic poverty.

4.4.8.4 Education Facilities

The area has five primary schools for boys, while two primary schools for girls are available. At the middle level, two middle schools serve both male and female students. Access to higher education is constrained, as only one high school for boys and girls exists within the vicinity of the proposed project area. The majority of these institutions for both boys and girls only provide up to High level education. The dropout ratio in both boys and girls is high after the High section due to the non-availability of College and University. This scarcity of institutions forces many students to discontinue their education after primary school or travel long distances to Bela Tehsil or Lasbela city. The average distance to schools from the project villages is about 1.5 kilometers, which further discourages attendance. The details of available education facilities for both boys and girls are given in the table below:

Table 4-10: Education Facilities

Gender	Educational Institutes				
	Primary	Middle	High	College	University
Boys	05	02	01	---	---
Girls	02	---		---	---

4.4.8.5 Health Facilities

There are one functional Basic Health unit (BHU) available for both channel villages. The available health unit can only provide minor health treatments to patients and has very bad infrastructure and services. It is located 0.5km away from the sub-project area. Therefore, in case of emergency and better health treatment for serious health care needs, patients are either need to be transported to Bela Tehsil, Lasbela District Headquarters or then to Karachi City.

Table 4-11: Health facilities

Goth Haji Village	Hospital	Rural Health Center	Basic Health Unit	Dispensary	Midwifery/Lady health workers
	-------	-------	01	--------	--------

4.4.8.6 Health problems

In the proposed project area of Nurg-Hinjri, only one Basic Health Unit (BHU) is operational, providing basic services such as maternal and child health care, treatment of common illnesses and injuries, control of endemic diseases, and essential medicines. The facility, located approximately 0.5 km away, offers only limited services with inadequate infrastructure. For emergency or specialized medical care, residents must travel to Bela Tehsil, Lasbela District Headquarters, or Karachi.

4.4.8.7 Water Supply and Sanitation

There are 04 water supply schemes in all in sub-project area. A total of six water supply schemes were identified in the sub-project area. Out of these, four are functional and currently providing drinking water to local households, while two are non-functional due to technical faults and lack of maintenance. Details on the type, coverage, and functionality of each scheme have been included in the social baseline to reflect the community's existing water access conditions. Both surface water and groundwater are expected to be used for the subproject, depending on

the contractor's requirements and availability.

4.4.8.8 Communication and Electricity

Telephone landline facility does not exist in the sub-project area; however, mobile network service providers are available in the nearest areas like Bella Tehsil which is on the distance of about 13 km. They get signals from Bella city and using mobile phones for communication. The houses in the Haji Goth village area are connected to the national grid for electricity supply (K-Electric) for their domestic as well as agricultural purposes. In addition, load shedding of the electricity was observed at the peak during the survey, where only 4 out of 24 hours in a day of electricity is available for the whole area and villages. Natural piped gas supply is not available in channel villages. The residents of these villages use gasoline, LPG, bushes and firewood to meet their domestic needs.

4.4.8.9 Means of Transport

The sub-project area is located 13 km away from Bela City. The community travels to these cities in minibuses, Chinkchi rickshaws, and pickups. Individuals in the community often use their own source of transport (mainly motorbikes). Link roads of these four villages are Katcha tracks and also are in very poor condition and in need of construction/rehabilitation.

4.4.8.10 Social Conflicts

The sub-project area has no history of tribal disputes. Conflict resolution is managed through long-standing community and tribal mechanisms led by elders, which are often more effective than formal government channels. Baseline survey results confirmed the scheme remains free of tribal conflicts.

4.4.8.11 Household Information

The socio-economic baseline survey reveals that due to proposed sub-project the positive impact will be expected on the overall population of entire command area Nurg Hingri, Shurli and Faizo village of 09 villages.

4.4.8.12 Age of Respondents (Male and Female)

The male and female respondents for the socioeconomic baseline survey are classified in accordance with the age groups as detailed in the table below.

Male: The survey reveals that 15.0% of respondents are between 21-30 years, 30.0% are between 31-40 years, 10.0% are between 41-50 years, 30.0% are between 51-60 years, 5.0% are between 61-70 years and 10.0% are 70 and above years of age.

Female: The survey reveals that 13.04% of respondents are between 21-30 years, 26.08% are between 31-40 years, 8.6% are between 41-50 years, 26.08% are between 51-60 years, 4.3% are between 61-70 years of age, and 8.6% are 70 and above.

4.4.8.13 Respondent's Relationship with Head of Household

During the survey, 75% of the respondents or heads of households were personally available for an interview, 10% of the respondent were brothers, 10% were sons and 05% were wives. There was no female respondent's head of households.

4.4.8.14 Family Size

The survey data reveals that the average family size in: 10% of households is 1-5 persons; 29.2

households are 5-10 persons; 24.7% households are 10-15 persons, and 36% of households are 15 & above persons.

Table 4-12: Average Family Size

Family Size	Nurg Hingri, Shurli and Faizo (in %)
1 to 5	10.0
5 to 10	29.2
10 to 15	24.7
15 & above	36.0

4.4.8.15 Family System

Approximately 75.3 % of the communities prefer to live in a joint family arrangement while 24.7% prefer to live in nuclear family arrangements. In the joint family system, the eldest male member takes care of all the family members and is the final decision-making authority particularly for issues regarding the public domain. This system also provides social security for family members during periods of individual unemployment and financial crisis especially to poor women, elderly, infirm or ill, orphans etc. These communities believe that the joint family system is a more economical way of living as they often work together on the same land and are able to share their joint incomes to support the entire family, including elderly, orphans, single women living alone and infirm oi ill who are unable to work. The family arrangements (nuclear and joint) are illustrated in table below.

Table 4-13: Family System

Family System	Nurg Hingri, Shurli and Faizo (in %)
Joint	75.3
Nuclear (Single)	24.7

4.4.8.16 Marriage

Data from the below table shows that residents of the sub-project area prefer marriages within families. The trend of marriage outside the family but within the same tribe is also increasing. The percentage of marriages inside and outside the families is presented below:

Table 4-14: Marriages

Marriage System	Nurg Hingri, Shurli and Faizo (in %)
Outside family marriage	15.6
Inside family marriage	84.15

4.4.8.17 Money Lending

In the sub-project area, capital is not borrowed from banks for agricultural purposes. If, money is borrowed from middlemen (artis) for agricultural inputs (seeds, fertilizers, etc.) and health treatment, (i.e., illness). In times of need, community members take loans from relatives and friends.

4.4.8.18 Common Needs to Visit Nearest City

Family members visit the nearest city for various purposes. 75.2% of family members visit the nearest city to meet relatives, 100% for business purposes, 46% for educational purposes, and 24.7% visit for health services.

4.4.8.19 Source of Livelihood and Income

The initial baseline survey reveals that agriculture is the primary source of livelihood for households in Nurg Hingri, Shurli, and Faizo villages, with average monthly incomes ranging between PKR 20,000 and PKR 30,000. In addition to farming, all surveyed households reported having secondary sources of income, including livestock rearing, transportation services, small businesses, and salaried employment, contributing an additional PKR 10,000 to PKR 15,000 per month. At the broader district level, major livelihood activities include horticulture, cold storage-related services, fruit and vegetable dehydration units, greenhouse and tunnel farming, marble mining and warehousing, stone crushing operations, livestock fattening (cattle, sheep, and goats), as well as dairy and poultry farming. Despite the presence of these diverse economic opportunities, employment patterns indicate that the local workforce is largely engaged in unskilled labor, whereas skilled labor requirements are predominantly met by workers from other districts of the province.

4.4.8.20 Vulnerable Groups in the Proposed Project areas.

The field survey identified several vulnerable groups within the project area, including landless people and daily wage laborers (10 households), women-headed households (7 households), and persons with disabilities (9 individuals). These groups are considered vulnerable due to limited and insecure income sources, social constraints, and reduced access to basic services. Some members of these vulnerable groups were directly interviewed during the household survey, while information on the remaining cases was collected through consultations with community elders and key informants, ensuring that their presence, conditions, and concerns were adequately documented in the socio-economic baseline.

4.4.8.21 Main Crops its production and other Economic Activities

In Tehsil Bela**,** the local economy of the surrounding communities is primarily agrarian**,** with agriculture and daily wage labor forming the main sources of livelihood. The principal crops grown in the area include wheat, rice, and seasonal vegetables, produced mainly under rain-fed conditions with limited irrigation facilities. Agricultural activities provide both direct income to landowners and employment opportunities for landless laborers who work on farms on a daily wage basis. In addition to agriculture, a significant portion of the population earns income through daily wage work in Bela city**,** including employment in small businesses, construction, transport, and service-related activities. Due to limited local employment opportunities, some community members also migrate temporarily or permanently to other districts or urban centers in search of better livelihood options, contributing remittances to household incomes.

However, in the overall district Lasbela, farming practices are largely dependent on labor wells and traditional irrigation systems, which sustain both seasonal and perennial crops. Agriculture remains the backbone of local livelihoods, complemented by industrial activity in the district, most notably the Byco International oil refinery. Wheat is the dominant cereal crop, cultivated over 12,495 hectares with an annual production of 25,588 tons, followed by barley (300 hectares, 359 tons), jowar (883 hectares, 815 tons), maize (68 hectares, 1,373 tons), rice (1,375 hectares, 173 tons), and onion, which is a major cash crop with 2,341 hectares yielding 39,797 tons.

Fruit cultivation contributes significantly to the district's agricultural economy, with coconut and papaya being the highest-yield crops, producing over 8,000 and 4,300 tons respectively. Banana and guava are also widely grown, adding around 2,500 and 1,500 tons to local production. Smaller but important contributions come from citrus fruits (566 tons) and dates (117

tons), which hold cultural and dietary value. Overall, fruit farming diversifies local livelihoods, supplements household nutrition, and supports small-scale trade alongside staple crops.

4.4.8.22 Agriculture Tools and Farm Machinery

The agriculture of the sub-project is dependent on rain and floods where the water is available for late Khareef (autumnal) to Rabi (spring) season crops. The farmers do not possess any of the equipment used in agriculture such as plough of oxen, plough of the tractor, tractor, and trolley for tractor and thresher due to poverty and cropping pattern. While only 24.5% of the farmers possess a spray machine. The other farm machinery such as tractor for plough and thrasher machines are available on rent.

Table 4-15: Type of Agriculture Tools and Machinery

Type of Equipment's	Nurg Hingri, Shurli and Faizo (in %)
Plough for oxen	00
Plough for tractor	03
Tractor	09
Spray Machine	24.5
Trolley for tractor	07
Thresher	00

4.2.1.1 Commonly Used Agriculture Inputs

The average agricultural expenses per acre, including seed, fertilizer, pesticide, ploughing and harvesting costs, is PKR 19,900 (126.5$) per crop.

Table 4-16: Estimated Expenses per Year per Acre

Items	Expenses/Acre	Expenses/Acre in USD
Ploughing	4,000	25.4
Cotton seeds /bag (10kg)	10,000	63.6
Urea DAP	1,450	9.2
DAP	3,050	19.4
Pesticides/Lit	1,400	8.9
Total cost	19,900 PKR	126.5 $

4.4.8.23 Seasonal Earnings from Crops

During the baseline survey, the following average seasonal earnings in rupees per acre were reported in the sub-project area.

Table 4-17: Average Seasonal Earnings/acre

Seasons	Average Seasonal Earning/Acre (in PKR)
Rabi (autumnal)	21,000
Kharif (Spring)	13,000
Rabi and Kharif (Both)	34,000

4.4.8.24 Land Ownership

The land ownership in the command area is distributed among shareholders (lineage based). The record of this ownership is available in the revenue department. During the survey, it was revealed that the sale of land is not common practice in Nurg Hingri, Shurli and Faizo villages. However, if the land is sold, the land transfer of ownership is done formally and is recorded with

the Revenue Department.

4.4.8.25 Customary Institutions

The tribal system is prevalent in the sub-project area and the only tribe is Roonjha.

4.4.8.26 Local Government and Administration

The elected members of provincial and national assemblies are now actively involved in the overall development works at their constituencies. Before these arrangements, the local government representatives such as Chairman, Vice-chairman and their Councillors were operating under the Balochistan Local Government Act 2013; and were responsible for the development works at the village, union councils and district levels respectively. At the village and union council level, union council Chairman and councilors were responsible for village and union council level development activities. At the district council level development works were the responsibility of the district council led by the Chairman. However, now this system is no longer prevailing in the area but because of being political workers, these councilors and chairmen are now jointly working with the members of national and provincial assemblies and supporting them to improve the development of their areas.

The district-level bureaucracy is also involved in this process as well, which consists of the Commissioner, Deputy Commissioner, Additional Deputy Commissioner, Assistant Commissioner, officers' in-charge of line departments, and revenue officials.

4.4.8.27 Law and Order Situation

The law and order in the sub-project area are under the control of the district administration and law enforcement agencies such as police in urban areas and levies in rural areas. They are also helping other agencies like Frontier Corps (FC) in inland areas and Coast Guards in the national highways and coastal/sea areas. The security situation is quite normal.

Table 4-18: Community Cultural Properties

Village	Grave Yard	Mosque	In RoW
Nurg-Hinjiri Prosed Areas	10	17	No

5

STAKEHOLDER CONSULTATIONS

5. STAKEHOLDER CONSULTATIONS

The objective of public consultation is to ensure that the sub-project proponent should share relevant information about the project interventions and the potential environmental and social impacts with all stakeholders. Consultation is a two-way process by which the knowledge and views of affected persons and other interested parties are considered for purposes of decision making. Information dissemination during public consultation by the project proponent or his representative is fundamental to meaningful consultation. Similarly, efforts are also made to mainstreaming women in all planned project activities as the GAP has also proposed the design and implementation of specialized projects and its interventions strategically to promote active engagement of men and women with the Project.

This section presents the process, outcomes, and key findings of stakeholder consultations carried out for the proposed Subproject in accordance with applicable national requirements, the World Bank Environmental and Social Framework (ESF), particularly ESS10 (Stakeholder Engagement and Information Disclosure), and the Project's preliminary Stakeholder Engagement Plan (SEP). The consultations were undertaken during the preparation of the ESMP to inform impact identification, refine mitigation measures, and enhance project acceptability among affected communities and institutions.

5.1 OBJECTIVES OF STAKEHOLDER CONSULTATION

- The stakeholder consultation process was undertaken with the following objectives:
- To disclose relevant information regarding the Subproject scope, activities, and anticipated environmental and social impacts to affected and interested stakeholders in a transparent and timely manner.
- To provide an opportunity for stakeholders, including those who may otherwise be underrepresented, to express their views, concerns, and priorities, thereby enabling informed consideration of mitigation measures and trade-offs.
- To support the identification of potential adverse impacts that may not have been captured through desk-based assessments alone, including local and traditional knowledge.
- To enable stakeholders to positively influence Subproject design and implementation arrangements, within the approved scope of the project.
- To strengthen transparency, accountability, and public confidence in project decision-making.
- To reduce the risk of conflict through early identification of concerns and incorporation of appropriate mitigation and communication measures.
- To foster a sense of ownership of the Subproject among local communities.

5.2 STAKEHOLDER IDENTIFICATION

Stakeholder identification was carried out during the ESMP scoping phase to ensure that all relevant stakeholder groups were appropriately consulted. The primary focus was on communities residing in and around the Subproject area, noting that there is no permanent population within a 500 m right-of-way (RoW) on either side of the proposed works.

Stakeholders were categorized as follows:

5.2.1 Institutional stakeholders

Relevant government departments and local administration, including district and tehsil-level officials.

5.2.2 Non-institutional stakeholders

Residents of nearby settlements, farmers, shopkeepers, local business owners, representatives of schools and basic health facilities, and women and vulnerable groups residing in the surrounding areas.

An initial round of stakeholder's consultation was done with the affected communities and an inclusive second round of consultations was done with Vulnerable, Female and male households.

Targeted consultations with women were conducted in line with the Gender Inclusion Framework, ESS1, ESS2, ESS10, and the SEP. Separate, culturally appropriate meetings were facilitated by female staff in the Nurg-Hinjri (Shuli and Faizo) areas. A total of seventeen women participated. Key concerns raised included household and child safety, access routes, water and sanitation, community infrastructure, construction-related disturbances, livelihood considerations, and timely information sharing. These concerns have been incorporated into the ESMP through gender-responsive mitigation measures, community health and safety provisions, traffic and construction safety controls, and monitoring indicators. Male consultations were done individually in shape of KII" s and FGD 's and community meetings were held with the Affected and interested communities as per projects SEP.

5.3 CONSULTATION PROCESS

Stakeholder consultations were carried out during ESMP preparation through a combination of public meetings, Key Informant Interviews (KIIs), and Focus Group Discussions (FGDs). Consultations were conducted in local languages and documented to ensure stakeholder views were accurately recorded. The consultation process adhered to national consultation guidelines as well as the requirements of the World Bank ESF and the Project SEP.

Details of non-institutional consultations conducted along the Subproject area are summarized in Table 5.1.

Table 5-1 Details of Non-Institutional Consultations

Location	No. of Respondents	Date
Nurg Hinjri Village	250	12-13-14-15 /09/2025
Shurli and Faizo Bund	250	13-14-15-16/09/2025
Vulnerable	19	14-15/09/2025
Women Consultations	217	13–14-15-16/09/2025

5.4 KEY ISSUES RAISED BY NON-INSTITUTIONAL STAKEHOLDERS

During consultations in Nurg Hinjri, Shuli, and Faizo areas, community members raised the following key concerns:

- Limited access to safe and reliable drinking water;
- Inadequate sanitation and sewerage facilities;
- Poor and flood-damaged access roads;
- Limited availability of nearby health facilities;
- Flood-related damage to agricultural land requiring restoration;
- Safety of children and women during construction;

- Respect for local customs, traditions, and community norms.

These issues were carefully reviewed during ESMP preparation. While some concerns (e.g., provision of social infrastructure such as schools, hospitals, electricity, and gas) fall outside the scope of the Subproject, construction-related risks and temporary impacts have been addressed through targeted mitigation measures, including traffic and construction safety management, community health and safety provisions, labor management measures, access management, and grievance redress mechanisms.

5.5 INSTITUTIONAL CONSULTATIONS

Separate consultation meetings were held with the Deputy Commissioner, Assistant Commissioner, Tehsildar, and other relevant government officials. The district administration was briefed on the IFRAP and the specific Subproject (Shuli & Faizo Flood Protection Scheme), including scope of works, implementation schedule, and environmental and social safeguards requirements. The Voluntary Land Donation (VLD) process was discussed, with clarification that no permanent land acquisition would be required. Law and order conditions were reviewed; while no immediate security concerns were identified, potential implementation risks were acknowledged. District officials confirmed their cooperation to support smooth implementation.

5.6 FUTURE CONSULTATIONS AND DISCLOSURE

Stakeholder engagement will continue throughout Subproject implementation. The draft ESMP will be disclosed to stakeholders prior to finalization to confirm that key concerns and mitigation measures have been adequately incorporated. The final ESMP will be made available at the construction site and PIU offices.

Regular consultations will be conducted before and during construction to keep communities informed of construction schedules, potential disruptions, and safety measures. As part of the Grievance Redress Mechanism (GRM), community meetings will be held periodically to receive feedback and address concerns in a timely and transparent manner. The GRM will provide accessible, time-bound, and culturally appropriate channels for stakeholders to raise environmental and social concerns related to Subproject implementation

Another round of consultation will be held at the start of the sub project implantation to update the community and awareness sessions will be a regular feature of the program for engagement with the community.

6

IMPACT ASSESSMENT & MITIGATION MEASURES

6. IMPACT ASSESSMENT AND MITIGATION MEASURES

6.1 GENERAL

The implementation and consequent operation of the Subproject is expected to impact the biophysical and social environment. These impacts will be minor, local, temporary, short-term and reversible as well positive impacts, since the scope is the rehabilitation of existing flood protection bund and embankments.

This section discusses the potential E&S impacts of the proposed Subproject activities, predicts the magnitude of the impact, assesses their significance, identifies mitigation measures to minimize the adverse impacts, and evaluates the residual impacts, if any, of the Subproject.

6.2 ASSESSMENT METHODOLOGY

The potential E&S impact of a development activity is identified on the basis of concerns raised by stakeholder, particularly the local community, technical guidelines, and professional opinion of the project team. The existing E&S conditions of the Subproject are categorized in the context of impact analysis by following a set of steps. The steps followed for impact assessment are described in Table 6.1.

Table 6-1: Stepwise Methodology for Impact Assessment

Step 1	**Criteria for Determining Significance**	The consequence of the proposed activity is evaluated by comparing it against recognized 'significance criteria'. The criteria are of the following types:
		Institutional: legislative requirements laid down by the environment for environmental protection including laws, standards, policies.
		Technical: guidelines, available technical or scientific knowledge, or judgment of experts.
		Public: social or cultural values in addition to views of a segment of society, especially the community directly affected by the Project.
Step 2	**Determine the magnitude of potential impacts**	Assessing the scale and describing the anticipated impacts either quantitatively (where possible) or qualitatively or both.
Step 3	**Identify of mitigation measures**	If the predicted impact is of significant nature when compared to the criteria for determining significance, suitable mitigation measures are identified. A range of mitigation measures can be applied to reduce the anticipated impact of a project, and these can be broadly classified into the following categories:
		Avoid the impact altogether by not taking a certain proposed activity or parts of an activity.
		Minimizing impacts by limiting the degree or magnitude of the activity.
		Rectifying the impact by repairing, rehabilitating, or restoring the affected environment and community.
		Compensating for the impact by replacing or providing substitute resources or environments.
Step 4	**Evaluating residual impact**	As the mitigation measures are implemented, the anticipated adverse impacts enter the acceptable limits. This step identifies the remaining impact after incorporation of mitigation measures, if any.
Step 5	**Identify monitoring requirements**	The final step in the impact assessment process is identification of minimum monitoring requirements. The scope and frequency of the monitoring required depends

		on the residual impact. The purpose of marching is to confirm that the impact is within the predicted limits and to provide timely information if an impact is exceeding acceptable limits.

6.3 SCREENING OF POTENTIAL E&S IMPACTS

The preliminary environmental assessment for the Subproject has been undertaken using the Rapid Environmental Assessment (REA) Checklist for Restoration and Rehabilitation of Flood protection bunds. The REA is used for identification and screening of likely E&S impacts. Table 6.2 lists impacts against different Subproject activities.

Table 6-2: Stepwise Methodology for Impact Assessment

Activities	Impacts
Construction camps, workshops etc.	Waste generation
Leveling/cutting of bushes & earthwork operations	Flora damage, soil erosion, ecosystem deterioration
Excavation operations at burrow & quarry areas	Dust pollution
Construction material, storage and handling	Fumes emissions, chemical infiltrations and slight ground water contamination
Operation of concrete batching plant	Air pollutants emissions, wastewater generation and solid waste generation
Use of bulldozers,	Noise pollution, vibration and dust emission
Use of generators	Particulate matter emission
Heavy equipment/machineries	Lubricants infiltration, noise and vibration.
Movement of vehicles	Dust emission
Generation of Wastewater	Contamination of soil and nearby vegetation, and disturbance of aesthetic
Generation of solid waste	Odor, disturbance of aesthetics

6.3.1 Impact Matrices

Leopold Matrix (LM) is a procedure for the evaluation of impact of a proposed development activity on the biophysical and socioeconomic environment. The LM provides a system for the analysis and numerical weighting of probable impacts. The analysis does not produce an overall quantitative rating; instead, it portrays many value judgments. A primary purpose is to ensure that the impact of alternative actions is evaluated and considered in the planning of Subproject.

This matrix has horizontal axis which has the impact characteristics, and the vertical axis has existing E&S components which may be affected during the Subproject implementation. This provides a format for comprehensive review of the interactions between proposed actions and environmental factors.

E&S impacts are evaluated against the existing environment and evaluating potential impacts through descriptions of how an environmental effect will occur, how the Subproject will interact with the E&S conditions, and how mitigation measures reduce or eliminate the effect. The anticipated impacts can be categorized as:

Direct Impacts: Direct impacts occur through direct interaction of an activity with E&S component. For example, a discharge of an effluent from project site may lead to slight contamination of the site or soil.

Indirect Impacts: Indirect impacts are not a direct result of the project, often produced away from or because of a complex impact pathway. The indirect impacts are also termed as

secondary or even third level impacts. For example, sulphurs in ambient air rise due to emissions during the project activities but in this restoration activity of flood protection bund there are no such impacts.

Induced Impacts: The cumulative impacts can be, due to induced actions of projects and activities that may occur if the action under assessment is implemented such as growth inducing impacts and other effects related to induced changes to the pattern of future land use or population density or growth rate. Increase in workforce and nearby communities contributes to this effect.

These groups of impacts can be further divided according to their nature into:

- Positive and negative impact
- Minor, major and moderate impact
- Local and widespread impact
- Temporary and permanent impact
- Short and long-term impact
- Reversible and irreversible impact

During construction and operation phases of Subproject the characterization of potential impact has been classified based on the above characteristics. The characterization of potential E&S impacts is given in Table 6.1 and Table 6.2 for both construction and operation phases.

Furthermore, to indicate the magnitude and frequency of impacts, both E&S impact evaluation matrices have also been formulated for construction and operational phase. The evaluation of E&S impacts during construction and operation phases is shown in Table 6.3 and Table 6.4. Thus, the following scale has been used in evaluation of potential impacts:

Negligible or No Impact: The impact which has obscure and negligible influence on physical, ecological and socio-economic environment

Low Adverse Impact: The impact that has a slight influence on the physical, ecological and socioeconomic environment during construction and operation phases

Medium Adverse Impact: The impact which can be eliminated or mitigated after applying appropriate mitigation measures

High Adverse Impact: The impact which can be partially, but not fully mitigated by applying the mitigation measure

Positive Impact: The impact that enhances natural and socio-economic environment will be positive impact

Identification of a significant E&S indicators/parameters has been carried out based on the existing E&S conditions into the project phases, e.g. design, construction and operation phases.

6.4 CUMULATIVE IMPACTS

In compliance with the requirements of ESS1 of the World Bank's Environmental and Social Framework (ESF), the assessment has examined the potential for cumulative environmental

and social impacts that could arise from the proposed sub-project in conjunction with other existing, ongoing, or reasonably foreseeable future developments within its Area of Influence (AoI). The analysis included consultations with relevant district and provincial departments, review of available development plans and records, and field reconnaissance to identify any parallel or planned infrastructure activities that may interact with the proposed interventions at Nurg Hingri Flood Protection Bund (FPB).

The review confirmed that no major infrastructure, industrial, agricultural, or settlement expansion projects currently exist or are planned in the vicinity that could result in additive or synergistic impacts when combined with the proposed works. The sub-project primarily involves the rehabilitation and strengthening of an existing flood protection embankment within an already disturbed corridor. Consequently, the potential environmental and social impacts are limited in spatial extent, short-term in duration, and readily mitigable through the measures prescribed in this ESMP.

Implementation of the mitigation and monitoring measures outlined in Sections 7 and 8 will further minimize any residual impacts that could arise during construction and operation phases. Based on the nature, scale, and location of the sub-project, as well as the absence of other significant concurrent activities in the surrounding area, no adverse cumulative impacts are anticipated. Conversely, the sub-project is expected to yield beneficial cumulative outcomes by improving regional flood resilience, protecting agricultural lands, settlements, and critical infrastructure, and thereby contributing to enhanced socio-economic stability and disaster preparedness within the project area.

Table 6-3: Characterization of E&S Impacts for Construction Phase

Environmental Component	Impact Characteristics														
	Direction		Duration		Location		Frequency		Extent		Significance			Reversibility	
	Positive	Negative	Long	Short	Direct	Indirect	Cont.	Intermittent	Wide	Local	High	Moderate	Low	Reversible	Irreversible
Topography	☆		●			●		●		●	●			●	
Surface water quality	☆		●		●			●		●		●		●	
Ground water quality	☆		●		●			●		●		●		●	
Ambient air quality		●		●	●			●		●		●		●	
Noise level		●		●	●			●		●		●		●	
Soil quality	☆			●	●			●		●		●		●	
Solid waste		●		●	●			●		●		●		●	
Construction Camps		●		●	●			●		●		●		●	
Flora:															
Shrubs		●		●	●			●		●			●	●	
Trees		●				●		●		●		●		●	
Fauna:															
Mammals		●		●		●		●		●		●		●	
Birds		●		●	●			●		●		●		●	
Health and safety	☆			●	●			●		●		●		●	
Community health and safety	☆			●	●			●		●			●	●	
Economic activity	☆		☆		☆		☆			☆	☆				
Legend: **Negative Impact (●) Positive Impact (☆)**															

Table 6-4: Characterization of Potential E&S Impacts for Operation Phase

Environmental Component	Impact Characteristics														
	Direction		Duration		Location		Frequency		Extent		Significance			Reversibility	
	Positive	Negative	Long	Short	Direct	Indirect	Cont.	Intermittent	Wide	Local	Large	Moderate	Small	Reversible	Irreversible
Air quality	☆		☆		☆		☆			☆	☆			☆	

Environmental Component	Impact Characteristics														
	Direction		Duration		Location		Frequency		Extent		Significance			Reversibility	
	Positive	Negative	Long	Short	Direct	Indirect	Cont.	Intermittent	Wide	Local	Large	Moderate	Small	Reversible	Irreversible
Water quality	☆		☆		☆		☆			☆	☆			☆	
Noise level	☆		☆		☆		☆			☆	☆			☆	
Road safety	☆		☆		☆		☆			☆	☆			☆	
Landscaping	☆		☆		☆		☆			☆		☆		☆	
Community development	☆		☆		☆		☆			☆		☆		☆	
Traffic condition	☆		☆												
Lifestyle of people	☆		☆		☆		☆			☆		☆		☆	
Flora:															
Shrubs	☆		☆		☆		☆			☆		☆		☆	
Trees	☆		☆		☆		☆			☆		☆		☆	
Fauna:															
Mammals	☆		☆		☆		☆			☆		☆		☆	
Birds	☆		☆		☆		☆			☆		☆		☆	
Legend: **Negative Impact (●) Positive Impact (☆)**															

Table 6-5: E&S Impacts Evaluation during Construction Phase

Sr. No.	Environmental Component / Project Activities	Physical Environment								Ecological Environment		Socio economic Environment					
		Topography	Soil quality	Landscape	Surface Water quality	Groundwater quality	Slope stability	Air quality	Noise & vibration	Flora	Fauna	Social disturbance	Disruption of Public utilities	Employment	Traffic issues	Economic activity	Health and safety
1	Construction camps, workshops etc.	LA	0	0	LA	MB	LA	LA	LA	LA	LA	LA	0	0	LA	0	LA
2	Levelling/tree cutting	LA	LA	0	LA	LA	LA	LA	LA	LA	LA	0	0	0	LA	0	LA
3	Excavation operations	LA	LA	LA	LA	0	LA	LA	LA	LA	LA	LA	0	0	LA	0	LA
4	Construction material, storage and handling	0	LA	0	0	LA	0	0	0	0	0	0	0	0	LA	0	LA
5	Open storage of construction materials, fuel etc.	0	LA	0	0	LA	0	LA	0	0	0	0	0	0	LA	0	LA
6	Solid waste generation and handling	LA	LA	LA	LA	LA	0	LA	0	LA	LA	LA	0	0	0	0	LA
7	Use of Chemicals	0	0	0	LA	LA	LA	LA	0	LA	LA	LA	0	0	0	0	0
8	Earthwork operations	LA	LA	LA	LA	0	0	LA	LA	LA	LA	LA	0	0	LA	0	LA

9	Operation of concrete batching plant	LA	LA	LA	LA	0	LA	0	LA	0	0	LA	0	0	0	0	LA
10	Use of generators	LA	LA	0	LA	0	LA	LA	MA	0	LA	LA	0	0	0	0	LA
11	Heavy equipment/machineries	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	0	0	0	0	LA
12	Plantation along RoW	LB	MB	MB	0	0	MB	MB	MB	MB	MB	0	0	0	0	0	0

Legend:
O = No impact LA = Low Adverse MA = Medium Adverse HA = High Adverse MB = Medium Beneficial HB = High Beneficial LB = Low Beneficial NA=Not Applicable

Table 6-6: E&S Impacts Evaluation during Operation Phase

Sr. No.	Environmental Components / Project Activities	Physical Environment								Ecological Environment		Socio Economic Environment					
		Topography	Soil quality	Landscape	Surface water quality	Groundwater quality	Slope stability	Air quality	Noise & vibration	Flora	Fauna	Land use	Population disturbance	Employment	Communication system	Public safety	Economic activity
1	Movement of vehicles	0	0	0	MB	MB	MB	HB	HB	0	0	0	0	MB	HB	HB	MB
2	Stormwater	0	LA	0	LA	LA	LA	LA	LA	LA	LA	LA	LA	0	LA	0	0
3	Solid waste	0	LA	LA	LA	LA	0	LA	0	LA	LA	LA	LA	0	0	LA	0
4	Traffic control	0	0	0	0	0	0	HB	HB	0	0	0	0	0	0	HB	MB
5	Maintenance of infrastructure	LA	LA	LA	LA	LA	LA	LA	LA	LA	LA	0	LA	0	LA	LA	0
7	Maintenance of road	0	LA	0	0	0	0	LA	LA	MB	0	0	0	0	0	0	0
8	Road accidents	0	0	0	0	0	0	0	0	0	0	NA	NA	NA	LA	MA	NA
9	Maintenance of flora species	0	MB	MB	0	0	0	HB	0	MB	0	0	0	0	0	NA	0
10	Conservation of faunal species	0	0	0	0	0	0	0	0	HB	HB	0	0	0	0	0	0

Legend:
O =No impact NA=Not Applicable LA = Low Adverse MA = Medium Adverse LB = Low Beneficial MB = Medium Beneficial HB = High Beneficial HA = High Adverse

6.5 ENVIRONMENTAL AND SOCIAL IMPACTS AND MITIGATION MEASURES

This chapter presents a comprehensive assessment of the Environmental and Social Risks and impacts associated with the Sub-project during the design, construction, and operation phases. The assessment follows a risk-based approach consistent with the World Bank Environmental and Social Framework (ESF) and applicable national regulations.

Environmental and social aspects are addressed under separate sections, and each impact category is discussed under a standalone heading, followed by clearly defined impacts and detailed mitigation measures. All mitigation measures are designed to be implementable, enforceable, and monitorable, similar in rigor to the Traffic and Construction Safety Management framework.

6.5.1 Environmental Impacts

6.5.1.1 Topography and Soil Stability

The Subproject involves reconstruction and rehabilitation of flood protection bunds and related structures. These works may result in localized changes to landform and soil characteristics within the project footprint

Impacts / Risks

- **Design Phase**
  - Modification of existing landform due to embankment alignment and slope geometry.
  - Increased erosion potential if slopes and drainage are inadequately designed.
- **Construction Phase**
  - Soil erosion and sediment transport due to excavation and earthworks.
  - Soil contamination from fuel, oil, and lubricant spills.
  - Land degradation, water ponding, and vector breeding due to unrehabilitated borrow pits.
- **Operation Phase**
  - No significant long-term impacts anticipated if construction is properly managed.

Mitigation Measures

Topography and soil-related risks shall be managed through design optimization and controlled construction practices, implemented by the Contractor and supervised by the Engineer.

Design Phase

- **Optimization of Alignment and Layout**

  The alignment and layout of flood protection bunds and associated structures shall be optimized during design to minimize cut-and-fill operations and disturbance to existing landforms. Designs shall, to the extent practicable, follow natural ground contours to reduce earthworks, material transport, and risks of slope instability.

- **Embankment Slope Design and Surface Protection**

  Embankment slopes shall be designed with stable, erosion-resistant gradients in accordance with applicable engineering standards. Suitable surface protection

measures, such as stone pitching, turfing, riprap, or geotextiles, shall be incorporated to protect slopes against rainfall runoff, flood flows, and surface erosion.

- **Integration of Adequate Surface Drainage**
  Adequate surface drainage systems shall be incorporated into the design, including side drains, toe drains, chutes, and cross-drainage structures, to safely convey runoff and prevent concentration of flows on embankment slopes. Proper drainage design shall reduce risks of erosion, waterlogging, gullying, and slope failure.

Construction Phase

Phased Excavation and Filling

- Excavation and filling works shall be carried out in a phased and controlled manner, limiting the extent of exposed soil surfaces at any given time. Construction sequencing shall be planned to reduce vulnerability to erosion, particularly during periods of rainfall.

Prompt Stabilization of Exposed Surfaces

- All exposed soil surfaces shall be stabilized promptly through compaction, temporary coverings, mulching, or other suitable protective measures. Temporary stabilization shall remain in place until permanent erosion protection works are completed.

Management of Fuel, Oil, and Lubricants

- Designated areas for fuel storage, refueling, and equipment maintenance shall be established away from watercourses and sensitive land uses. These areas shall be provided with impervious flooring, drip trays, and spill kits. Site personnel shall be trained in spill prevention and response, and any accidental spills shall be cleaned immediately and disposed of in accordance with approved procedures.

Borrow Material Sourcing and Rehabilitation

- Borrow material shall be sourced only from approved and authorized locations. Upon completion of use, borrow pits shall be rehabilitated through re-grading, drainage provision, and restoration to prevent land degradation, water ponding, and vector breeding. Where feasible, rehabilitated areas shall be returned to stable or productive land use.

Avoidance of Productive Agricultural Land

- Construction activities shall avoid productive agricultural land and adjacent areas to the maximum extent practicable. Where temporary disturbance is unavoidable, affected areas shall be restored to pre-construction conditions, including replacement of topsoil, re-grading, and drainage restoration.

Operation Phase

- No significant long-term impacts on topography or soil characteristics are anticipated during the operation phase, if construction is carried out in accordance with approved designs and embankments and drainage systems are regularly inspected and maintained.

6.5.1.2 Climate Change and Climate Resilience

The rehabilitation and strengthening of the Shurli and Faizo Flood Protection Bunds have been designed to improve resilience to future flood events through engineering measures embedded in the approved design. These measures include checking the bund geometry against updated hydrological and hydraulic design assumptions, maintaining or improving freeboard, restoring and strengthening bund sections where erosion and breach damage occurred, improving slope protection through stone pitching and apron works, and using compacted selected fill and protective materials to improve stability under high-flow and erosive conditions.

The climate-resilient function of the sub-project also depends on proper construction quality, compaction control, protection of bund toes and slopes, management of runoff during works, and timely repair of any defects during the initial post-construction period. Accordingly, climate resilience for this sub-project is not only a design matter but also a construction-quality and maintenance matter, and these commitments shall be reflected in the ESMP monitoring matrix and in the Contractor's method statements and quality control records.

The project area is water-scarce. Water for construction and dust suppression shall therefore be sourced in a manner that does not affect community drinking water supplies, local domestic needs, livestock water points, or irrigation uses. As far as practicable, the Contractor shall use non-potable and non-critical sources approved by the CSC/PIU. No abstraction shall be made from community drinking water sources unless specifically approved by the PIU and confirmed as sustainable. If local supply is constrained, the Contractor shall import water from an authorized external source and bear the full associated cost. Dust suppression shall be targeted and efficient, focusing on haul roads, active earthwork areas, and material handling points rather than broad uncontrolled spraying.

Impacts / Risks

- **Design Phase**
  - Reduced effectiveness of flood protection structures if future climate extremes are not considered.
- **Construction and Operation Phases**
  - No direct climate-induced impacts beyond those addressed through design.

Mitigation Measures

Climate resilience shall be systematically embedded into the project design, led by the Design Consultants and verified by the Employer/Client, to ensure the long-term effectiveness of flood protection structures under changing climate conditions.

The climate resilience design for the restoration of the flood protection embankments upstream of Nurg Hingri Weir (Shurli & Faizo Bund) has been upgraded to address increased flood risks under projected climate change scenarios. The existing embankments, originally designed using historical hydrological data, were exposed to significant stress during recent flood events, including the 2022 flood, indicating the need for enhanced design standards. Updated analysis under the SSP2-4.5 scenario shows a considerable increase in flood inflows, with the 50-year return period discharge rising from 59,476 cusec (historical) to 103,669 cusec, and the 100-year return period increasing from 70,512 cusec to 121,601 cusec. Accordingly, the restoration works under IFRAP have been designed to safely convey the 50-year return period flood under SSP2-

4.5 conditions, with an additional safety check for the 100-year return period to ensure structural robustness during extreme events. The design incorporates strengthened embankments, improved slope protection, and erosion control measures to enhance durability and reduce failure risks. This climate-informed approach significantly improves the resilience of the embankment system and ensures better protection against future high-magnitude flood events while accounting for climate uncertainties.

Design Phase

- **Design of Embankment Heights and Freeboard under Extreme Scenarios**

Embankment crest levels and freeboard shall be designed considering extreme rainfall and flood scenarios, including observed historical extremes and projected future climate variability. Design floods shall be assessed using conservative assumptions to account for uncertainty in climate projections, ensuring that embankments maintain adequate safety margins against overtopping under future conditions.

- **Increased Capacity of Drainage Channels and Culverts**

Drainage channels, cross-drainage structures, and culverts shall be designed with enhanced conveyance capacity to accommodate increased runoff resulting from higher rainfall intensities. Hydraulic design shall consider peak flows under climate-informed scenarios to prevent upstream ponding, overtopping, and erosion during extreme events.

- **Review of Hydrological Assumptions against Recent Events and Projections**

Baseline hydrological assumptions shall be reviewed and updated, as necessary, based on recent flood events, observed rainfall trends, and available climate projections. Where feasible, sensitivity analyses shall be undertaken to assess system performance under a range of plausible future scenarios, and design parameters shall be adjusted accordingly to enhance robustness.

Construction and Operation Phases

No additional climate-induced risks are anticipated during construction and operation beyond those addressed through climate-informed design measures, provided that structures are constructed in accordance with approved designs and maintained appropriately.

6.5.1.3 Ambient Air Quality

Construction activities may temporarily affect air quality due to dust generation and exhaust emissions, potentially impacting workers and nearby communities.

Impacts / Risks

- **Construction Phase**
  - Fugitive dust from excavation, hauling, and stockpiles.
  - Exhaust emissions from construction machinery, generators, and vehicles.
- **Operation Phase**
  - Minor increase in vehicular emissions along the improved corridor.

Mitigation Measures

Air quality impacts arising from construction and operation activities shall be managed through a combination of engineering controls, good construction practices, and routine monitoring, implemented by the Contractor and supervised by the Engineer.

Construction Phase

- **Regular Water Sprinkling**

The Contractor shall implement regular water sprinkling on exposed surfaces, haul roads, access routes, stockpiles, and excavation areas, particularly during dry and windy conditions. The frequency of sprinkling shall be adjusted based on site conditions to effectively suppress fugitive dust without causing waterlogging.

- **Covering of Construction Materials during Transportation**

All fine construction materials, including soil, sand, aggregates, and debris, shall be covered during transportation using tarpaulins or equivalent methods to prevent dust dispersion along haul routes and nearby settlements.

- **Maintenance of Machinery and Vehicles**

Construction machinery, generators, and vehicles shall be properly maintained and regularly tuned in accordance with manufacturer specifications to minimize exhaust emissions. Equipment emitting excessive smoke or noise shall be removed from service until repaired.

- **Respiratory Protection for Workers**

Workers exposed to dusty conditions shall be provided with appropriate respiratory protection, such as dust masks or respirators, depending on exposure levels. Workers shall be trained in the correct use and maintenance of respiratory protective equipment.

- **Prohibition of Open Burning**

Open burning of construction debris, excavated material, or camp waste shall be strictly prohibited. All waste shall be collected, stored, and disposed of through approved disposal methods in accordance with applicable environmental regulations.

Operation Phase

- **Roadside Plantation with Locally Suitable Species**

Roadside plantation shall be undertaken using locally suitable and native species to act as a natural dust barrier, improve microclimate, and enhance visual aesthetics. Plantation areas shall be maintained until vegetation is established.

- **Maintenance of Paved Surfaces**

Paved and improved surfaces shall be maintained in good condition to minimize dust generation during operation. Any damaged sections shall be repaired promptly to prevent surface degradation and dust emissions.

- **Enforcement of Vehicle Emission Standards**

Applicable vehicle emission standards shall be enforced during operation through coordination with relevant authorities. Regular inspection and maintenance of project-related vehicles shall be encouraged to minimize exhaust emissions.

Monitoring and Supervision

Air quality mitigation measures shall be monitored regularly by the Contractor and supervising Engineer. Visual inspections shall be carried out to assess dust levels, and corrective actions shall be implemented promptly where excessive emissions are observed.

6.5.1.4 Noise and Vibration

Noise and vibration generated by construction machinery may cause temporary disturbance to nearby settlements and sensitive receptors.

Impacts / Risks

- **Construction Phase**
  - Elevated noise levels from heavy machinery, generators, and transport vehicles.
  - Disturbance to schools, mosques, and residential areas.
- **Operation Phase**
  - Reduced noise levels due to smoother road surface and improved alignment.

Mitigation Measures

Noise and vibration impacts arising from construction activities shall be managed through appropriate equipment selection, controlled work scheduling, worker protection, and monitoring, implemented by the Contractor and supervised by the Engineer.

Construction Phase

▪ Use of Modern Equipment with Noise Control Features

The Contractor shall use modern, well-maintained construction machinery fitted with effective silencers, mufflers, and noise-dampening devices. Equipment generating excessive noise due to poor maintenance or defects shall be repaired or replaced promptly.

Scheduling High-Noise Activities

High-noise construction activities shall be restricted to daytime working hours and scheduled to avoid sensitive periods, including school hours, prayer times, and community events, to the extent practicable. Advance notice shall be provided to nearby communities when noisy activities are unavoidable.

▪ Prohibition of Pressure Horns near Sensitive Receptors

The use of pressure horns and unnecessary vehicle honking shall be strictly prohibited near settlements, schools, mosques, and other sensitive receptors. Appropriate signage shall be installed, and drivers shall be instructed accordingly.

▪ Provision of Hearing Protection to Workers

Workers exposed to high noise levels shall be provided with appropriate hearing protection, such as earplugs or earmuffs. Workers shall be trained in the correct use of hearing protection, and exposure durations shall be managed where necessary.

▪ Periodic Noise Monitoring

The Contractor shall conduct periodic noise monitoring at representative locations, particularly near sensitive receptors, to verify compliance with applicable national and international noise standards. Monitoring results shall be recorded and corrective actions taken if exceedances are identified.

Operation Phase

Noise levels during the operation phase are expected to be lower than during construction, due to smoother road surfaces and improved alignment. No additional mitigation measures are anticipated beyond routine maintenance.

6.5.1.5 Surface and Groundwater Quality

Surface water bodies and groundwater may be affected if fuels, chemicals, wastewater, or construction debris are not properly managed.

Impacts / Risks

Construction Phase

- Contamination from fuel, oil, lubricants, and sanitary wastewater.
- Pollution of irrigation channels and drains.

Operation Phase

- No significant impacts anticipated.

Mitigation Measures

- Protection of surface water bodies and groundwater resources shall be ensured through preventive, containment, and good housekeeping measures, implemented by the Contractor under the supervision of the Engineer.

Construction Phase

▪ Installation of Septic Tanks and Settling Ponds

- Construction camps shall be equipped with properly designed septic tanks and settling ponds to manage sanitary wastewater and runoff from washing areas. These facilities shall be sized appropriately for the workforce, regularly maintained, and desludged as required to prevent leakage, overflow, or contamination of surrounding soil and water bodies.

▪ Prohibition of Vehicle and Machinery Washing near Water Bodies

- Washing of vehicles, machinery, and equipment near rivers, canals, drains, or other water bodies shall be strictly prohibited. Designated washing areas shall be established away from water sources, provided with oil-water separators or sediment traps where necessary to prevent discharge of contaminants.

▪ Location of Camps, Workshops, and Fuel Storage Areas

- Construction camps, workshops, fuel storage, and refuelling areas shall be located at least 1 km away from surface water bodies and groundwater abstraction points, where practicable. These areas shall be provided with impervious surfaces, drainage controls, and spill containment measures to minimize the risk of contamination.

▪ Prevention of Construction Debris Entering Waterways

- The Contractor shall implement measures to prevent construction debris, excavated material, and waste from entering irrigation channels, drains, or natural watercourses. Temporary barriers, silt fences, and proper waste storage shall be used as required. Regular site housekeeping shall be maintained to keep waterways free of debris.

▪ Minimum OHS framework for Shurli & Faizo FPB

- For Shurli & Faizo FPB, OHS risks are associated mainly with excavation, bund formation and compaction, work near unstable slopes or eroded sections, lifting and

handling of stone and gabion materials, vehicle and plant movement, heat stress, dust exposure, noise exposure, and work near active or residual water pathways. The ESMP shall therefore require, as a minimum, an approved OHS Plan, task-based risk assessment, toolbox talks, high-risk work controls, first-aid arrangements, emergency communication, worker induction, PPE enforcement, incident and near-miss recording, and suspension of unsafe work where immediate risk is identified.

▪ **Vehicle, machinery safety, inspection and maintenance**

- The sub-project will use trucks, light vehicles, excavators, dozers, compactors, and other heavy machinery. To reduce environmental and OHS risks, all project vehicles and construction machinery shall be road-worthy, in good mechanical condition, and supported by valid registration, fitness, and insurance documents as required by law. As a general rule, no light vehicle or truck older than 15 years and no heavy construction equipment older than 20 years shall be deployed unless its safety and road-worthiness are certified in writing by a competent workshop and accepted by the CSC/PIU.

- Only licensed and trained drivers and operators shall operate project vehicles and machinery. The Contractor shall implement daily pre-start checks and monthly documented inspections covering brakes, steering, tires, lights, horn, mirrors, reverse alarms, hydraulics, emissions, and leaks. Any unsafe vehicle or machine shall be withdrawn from service until repaired and re-inspected. Parking, fueling, and minor maintenance shall take place only in designated areas with spill control arrangements. Site-specific speed limits, warning signs, flagmen, and traffic controls shall be enforced, especially near settlements, access points, and any receptor identified in the ESMP.
- The Contractor shall include these requirements in a simple **Vehicle and Machinery Management Plan (VMMP)** under the C-ESMP, and the CSC/PIU shall verify compliance through checklists, spot inspections, and monthly ESHS reporting.

▪ **Incident and accident protocol**

- The Contractor shall implement an **Incident and Accident Protocol** as part of the site Emergency Preparedness and Response Plan. In the event of any incident, accident, or near miss, the Contractor shall first protect life, provide first aid, arrange emergency medical assistance where required, secure the site, and take immediate action to prevent further harm to workers, communities, property, and the environment. Serious incidents shall be reported immediately to the CSC and PIU and no later than 24 hours after the Contractor becomes aware of them; the PIU shall notify the World Bank of any significant incident in line with the applicable ESCP / ESIRT requirements. The Contractor shall maintain an incident, accident, and near-miss register and shall not resume a suspended high-risk activity until corrective actions are completed and clearance is given by the CSC/PIU.

Operation Phase

- No significant impacts on surface water or groundwater quality are anticipated during the operation phase, provided that construction-phase mitigation measures are properly implemented and sites are restored following completion of works.

6.5.1.6 Waste Management

Construction activities will generate solid, hazardous, and oily waste requiring proper handling and disposal, waste management plan is provided as Annexure-S for reference.

Impacts / Risks

Construction Phase

- Soil and water contamination due to improper waste handling.

Operation Phase

- Minimal non-hazardous waste generation.

Mitigation Measures

- Solid, hazardous, and oily wastes generated during construction shall be managed through a structured waste management system, implemented by the Contractor under the supervision of the Engineer, to prevent contamination of soil, water, and the surrounding environment, waste handling described in waste management plan is provided as Annexure-S.

Construction Phase

▪ **Segregation of Hazardous and Non-Hazardous Waste at Source**

- All wastes shall be segregated at source into hazardous and non-hazardous categories. Clearly labelled containers shall be provided at construction sites and camps to ensure proper separation, storage, and handling of different waste streams.

▪ **Disposal at Approved Sites**

- Waste shall be disposed of only at sites approved by relevant local authorities. Disposal records shall be maintained to document quantities, types of waste, and disposal locations. Unauthorized dumping or burning of waste shall be strictly prohibited.

▪ **Management and Disposal of Used Oil**

- Used oil, lubricants, and oily waste shall be collected in sealed, leak-proof containers and stored in designated areas with secondary containment. Disposal shall be carried out through licensed recyclers or authorized waste handlers, in accordance with applicable regulations.

▪ **Spill Response Materials and Procedures**

- Fuel storage and handling areas shall be equipped with spill response materials, including absorbents, sand, and containment booms. Clear procedures shall be established for spill prevention, containment, and cleanup. Personnel shall be trained in spill response, and any spills shall be addressed immediately.

▪ **Reuse of Scarified or Milled Bituminous Material**

- Where feasible, scarified or milled bituminous material shall be reused in construction works, such as sub-base or shoulder layers, to reduce waste generation and demand for

new materials. Reuse shall comply with applicable technical specifications and quality standards.

Operation Phase

- During the operation phase, only minimal quantities of non-hazardous waste are anticipated. Such waste shall be managed through routine collection and disposal in accordance with local waste management practices.

6.5.1.7 Vegetation and Tree Removal

The project corridor includes agricultural land with scattered vegetation; no protected areas are present.

Impacts / Risks

Construction Phase

- Limited vegetation removal for camps and access routes.
- Dust deposition on crops and trees.

Operation Phase

- No adverse ecological impacts anticipated.

Mitigation Measures

Vegetation-related impacts shall be minimized through controlled clearing, protection of adjacent agricultural areas, and compensatory plantation measures e.g. with at least replacement of (3:1) ratio , implemented by the Contractor under the supervision of the Engineer.

Compensatory plantation shall be undertaken at a minimum ratio of 1:5, or higher in accordance with applicable regulatory requirements and World Bank standards. Preference shall be given to indigenous and site-specific species with high survival potential and ecological value. Plantation activities shall be carried out along the bund alignment (where feasible), in downstream areas, and on designated community or government land, in coordination with local stakeholders and the Forest Department, Government of Balochistan. A detailed tree plantation plan is provided in Annexure-V.

Construction Phase

▪ Limitation of Vegetation Clearance to Required Areas

Vegetation clearance shall be strictly limited to areas essential for construction activities such as camps, access routes, and work fronts. Clearing beyond the approved project footprint shall not be permitted. Trees and vegetation outside the construction boundary shall be clearly marked and protected to prevent accidental damage.

▪ Dust Suppression near Agricultural Fields

Dust suppression measures, including regular water sprinkling, shall be applied near agricultural fields, orchards, and roadside vegetation to minimize dust deposition on crops and trees. The frequency of dust control measures shall be increased during dry and windy conditions.

▪ Protection of Crops from Construction Activities

The Contractor shall take necessary measures to protect standing crops and vegetation adjacent to construction areas. These measures may include temporary fencing, controlled

movement of machinery, and clearly defined access routes to prevent encroachment onto cultivated land. Any accidental damage to crops shall be reported and addressed in accordance with applicable procedures.

▪ **Compensatory Plantation**

Compensatory plantation shall be undertaken to offset unavoidable vegetation loss, in consultation with local communities and relevant authorities. Plantation shall use locally suitable and native species, and locations shall be selected to enhance environmental and social benefits. Planted saplings shall be maintained until establishment to ensure survival.

Operation Phase

No adverse ecological impacts are anticipated during the operation phase, provided that construction-phase mitigation measures are effectively implemented, and plantation areas are properly maintained.

6.5.2 Social Impacts

6.5.2.1 Labour and Working Conditions (ESS2)

Construction activities will engage skilled and unskilled labour, exposing workers to occupational health and safety risks, OHS plan is annexed as Annexure-Q

Impacts / Risks

- Accidents involving machinery and equipment.
- Exposure to dust, noise, and vibration.
- Poor living conditions at labour camps if not properly managed.

Mitigation Measures

Provision of Personal Protective Equipment (PPE) and Safety Training

- The Contractor shall provide appropriate, task-specific PPE to all workers at no cost, including safety helmets, high-visibility vests, gloves, safety boots, eye protection, hearing protection, and respiratory masks where required. PPE shall comply with internationally recognized standards (e.g., ISO, ANSI, EN) and be replaced regularly.

- Comprehensive occupational health and safety (OHS) training shall be conducted, as per guidelines mentioned in Annexure-Q, prior to mobilization and periodically throughout construction. Training shall cover safe operation of machinery, hazard identification, emergency response, working at heights, excavation safety, and electrical safety. Attendance records shall be maintained and refresher training provided after incidents or near-misses.

Sanitation, Clean Water, and Waste Management at Labour Camps

- All labour camps shall be designed, constructed, and operated in accordance with national labour laws, WHO guidelines, and ESS2 requirements. Camps shall be provided with adequate potable drinking water, gender-segregated and hygienic sanitation facilities, bathing areas, and proper drainage, as mentioned in Labour Management and safety plan is provided as Annexure-N.

- Solid and liquid waste shall be collected, stored, and disposed of through approved systems to prevent environmental contamination and public health risks. Camps shall be maintained in clean and orderly condition, with routine inspections conducted by the Contractor and supervising Engineer, guidelines provided as Annexure – O.

Enforcement of Worker Code of Conduct

- The Contractor shall develop and implement a Worker Code of Conduct (CoC) , Annexure-A, applicable to all employees, subcontractors, and security personnel. The CoC shall clearly define acceptable behaviour, prohibit harassment, violence, discrimination, substance abuse, and sexual exploitation and abuse (SEA) / sexual harassment (SH). All workers shall be informed of the Code of Conduct in a language they understand and required to sign it prior to deployment. Violations shall be subject to disciplinary measures, including suspension or termination, in accordance with contractual and legal provisions.

First-Aid Facilities and Emergency Medical Arrangements

- Fully equipped first-aid kits shall be available at all construction sites, camps, and work fronts, and at least one trained first-aid responder shall be present per work shift. The Contractor shall establish emergency response procedures, including arrangements with nearby hospitals or health facilities for emergency treatment. Emergency contact numbers shall be displayed prominently, and transportation shall be available for rapid evacuation of injured workers. Regular drills shall be conducted to test preparedness.

Prohibition of Child Labour and Forced Labour

- The Contractor shall strictly prohibit child labour and forced or bonded labour, in full compliance with ESS2, national labour legislation, and ILO conventions. No person under the minimum legal working age shall be employed on the Project. Worker age verification procedures shall be implemented prior to hiring, and employment records shall be maintained (Annexure-N). Any violations identified shall be reported immediately to the Engineer and relevant authorities, and corrective actions shall be enforced without delay.

Dust, Noise, and Vibration Exposure Management

- To minimize occupational exposure, the Contractor shall implement dust suppression measures such as water spraying, provide hearing protection near noisy equipment, and limit exposure duration where vibration levels are high. Machinery shall be properly maintained to reduce excessive noise and vibration, and workers shall be rotated where necessary to reduce cumulative exposure.

Monitoring and Compliance

- The Contractor shall maintain OHS records, including incident logs, training registers, and inspection reports. Compliance with ESS2 requirements shall be monitored regularly by the Engineer, and corrective actions shall be implemented promptly where deficiencies are identified (Annexure Q)

6.5.2.2 Community Health and Safety (ESS4)

Construction activities may pose safety risks to surrounding communities.

Impacts / Risks

- Accidents involving community members and construction machinery.
- Unsafe access to construction zones and open excavations.

Mitigation Measures

Fencing and Clear Demarcation of Construction Areas

- All active construction zones shall be physically fenced or cordoned off using durable barriers such as metal fencing, barricades, or high-visibility tape, depending on the level of risk. Construction boundaries shall be clearly marked to distinguish work areas from public spaces. Temporary fencing shall be maintained in good condition and relocated as construction progresses to ensure continuous protection of surrounding communities.

Installation of Warning Signage and Lighting

- The Contractor shall install clearly visible warning signs at all access points, crossings, and high-risk locations, including near machinery movement routes and excavations. Signage shall use internationally recognized symbols, be bilingual where appropriate, and be understandable to local communities. (Annexure-P)

- Adequate night-time lighting shall be provided around construction sites, access roads, and hazards to ensure visibility and reduce the risk of accidents after dark, particularly in populated areas.

Barricading of Open Pits and Trenches

- All open excavations, pits, trenches, and foundation works shall be securely barricaded using rigid barriers or fencing. Where feasible, excavations shall be backfilled or temporarily covered when work is suspended. Warning tape alone shall not be used in high-risk areas. Regular inspections shall be conducted to ensure that barricades remain intact and effective.

Control of Public Access, Particularly by Children

- Uncontrolled access to construction areas shall be strictly prevented through fencing, guarded entry points, and clear exclusion zones. Special attention shall be given to preventing access by children, who may be attracted to construction equipment and excavations.

- Community awareness measures, including briefings to local residents and coordination with community leaders, shall be undertaken to inform the public about construction hazards, restricted areas, and safe alternative routes.

Maintenance of Emergency Response Arrangements

- The Contractor shall maintain site-specific emergency response procedures to address accidents involving community members, including traffic incidents and falls into excavations. Emergency contact numbers shall be displayed prominently at the site, and site personnel shall be trained to respond promptly and effectively.

- Coordination shall be established with local emergency services, health facilities, and authorities to ensure rapid response in case of incidents affecting the public.

Monitoring and Compliance

- Community safety measures shall be regularly inspected and monitored by the Contractor and the supervising Engineer. Any deficiencies identified shall be rectified immediately. Community grievances related to safety shall be recorded and addressed through the Project's Grievance Redress Mechanism (GRM).

6.5.2.3 Traffic and Construction Safety Management

Traffic and construction safety risks are anticipated during the construction phase due to increased movement of heavy construction vehicles, operation of machinery, temporary road diversions, and interaction between construction activities and the general public. If not properly managed, these risks may result in traffic congestion, accidents involving vehicles or pedestrians, and unsafe access to active construction zones. (Annexure -P)

Construction Phase Impacts / Risks

During construction, the following traffic and safety risks may arise:

- Increased traffic volume due to construction vehicles transporting materials and equipment
- Disruption of normal traffic flow and temporary congestion
- Risk of accidents involving pedestrians, cyclists, and local traffic
- Unsafe public access to construction zones, including open pits and machinery operating areas
- Limited visibility and safety risks during night-time or low-visibility conditions

Mitigation Measures

Traffic and construction safety risks will be managed through a site-specific Traffic and Construction Safety Management Plan (TCSMP) prepared, implemented, and enforced by the Contractor, with oversight by the Supervision Consultants and the Employer.

- **Contractor-prepared Traffic and Construction Safety Management Plan**
  The Contractor shall prepare a comprehensive Traffic and Construction Safety Management Plan prior to mobilization. The Plan will define construction traffic routes, haulage schedules, material transport procedures, temporary road closures, diversion routes, pedestrian safety measures, emergency vehicle access, and coordination with local traffic police. The Plan shall also include construction site safety controls such as fencing, barricading, and access restrictions. The Plan will be submitted to the Supervision Consultant for review and approval and updated as construction progresses.
- **Traffic Control Personnel**

Trained traffic personnel shall be deployed at all active work fronts, intersections, haul road crossings, and diversion points. Their responsibilities will include controlling construction vehicle entry and exit, guiding public traffic safely through or around construction areas, assisting pedestrians in crossing active routes, and immediately responding to unsafe traffic situations. Marshals will be equipped with high-visibility clothing, flags, whistles, and two-way communication devices.

- **Clearly marked diversions**
  All temporary traffic diversions shall be clearly designed, marked, and maintained for the duration of construction. Diversions will be provided with advance warning signs, directional signage, reflective barricades, cones, and night-time lighting where required. Diversion routes will be kept free of obstructions, regularly inspected, and adjusted as necessary to ensure safe and continuous movement of traffic, pedestrians, and emergency vehicles.

- **Speed limits near settlements and sensitive receptors**
  Reduced speed limits shall be enforced in construction zones and near settlements, schools, mosques, markets, and other sensitive receptors. Speed limit signage will be installed at appropriate intervals, supported by warning signs and speed calming measures such as rumble strips where feasible. All construction vehicle drivers will receive induction training on speed restrictions, and repeated violations will result in disciplinary action or removal from site.

- **Demarcation and access control of construction areas**
  All active construction zones shall be clearly demarcated using fencing, barricades, warning tape, and signage to prevent unauthorized public access. Entry points to construction sites will be controlled, and security personnel will be deployed where necessary to restrict access by non-project personnel, particularly children.

- **Management of open excavations and hazardous areas**
  Open pits, trenches, and excavations shall be securely barricaded and clearly marked at all times. Where excavations remain open overnight, reflective barriers and warning lights shall be installed. Excavations near public access routes will be covered or protected to prevent accidental falls.

- **Night-time and low-visibility safety measures**
  Adequate lighting shall be provided at construction sites, diversions, and access roads during night-time or poor visibility conditions. Reflective signage and barriers will be used to enhance visibility of hazards and guide traffic safely.

- **Coordination with local authorities and communities**
  The Contractor shall coordinate with local traffic police, district administration, and community representatives to manage traffic disruptions and address safety concerns. Advance notice will be provided to communities regarding planned road closures, diversions, or high-risk construction activities.

Operation Phase Impacts

No significant traffic or construction safety risks are anticipated during the operation phase, as construction activities will have ceased and normal traffic conditions restored.

Residual Risk

With effective implementation of the Traffic and Construction Safety Management Plan and associated mitigation measures, residual traffic and construction safety risks are expected to be low and manageable.

6.5.2.4 Land Acquisition, Access Restriction and ESS5 Risks

Description

Although permanent land acquisition is not anticipated, temporary impacts covered under ESS5 may arise.

Impacts / Risks

- Temporary loss of access to land or livelihoods.
- Impacts on informal users or encroachments.
- Disproportionate impacts on vulnerable households.

Mitigation Measures

ESS5-related risks shall be managed proactively and in coordination with local authorities and affected communities, even where permanent land acquisition is not required. Volunteer land donation (VLD) will be avoided to the maximum extent possible, and a resettlement plan for temporary displacement is provided for any temporary, physical or economical displacement at the project site. (Annexure-R)

- **Avoidance of Private Land and Livelihoods Where Feasible**
  Project design and construction planning shall prioritize avoidance of private land, economic activities, and livelihood sources to the maximum extent practicable. Construction methods, work sequencing, and access routes shall be optimized to remain within the existing right-of-way and public land. Where avoidance is not feasible, impacts shall be minimized in duration and extent.

- **Provision of Temporary Alternative Access Arrangements**
  Where construction activities temporarily disrupt access to land, houses, shops, farms, or community facilities, the Contractor shall provide safe and functional alternative access arrangements. These may include temporary paths, crossings, ramps, or access bridges, designed to ensure continued movement of people, livestock, and vehicles during construction.
- **Advance Notice to Affected Persons**
  All potentially affected persons shall be given timely advance notice prior to the commencement of activities that may restrict access or livelihoods. Notifications shall clearly explain the nature, duration, and timing of the impacts, as well as available mitigation measures and grievance channels. Information shall be communicated in a language and manner understandable to the affected communities.

- **Maintenance of a Functional Grievance Redress Mechanism (GRM)**

The project-level Grievance Redress Mechanism shall be maintained and made accessible to all affected persons, including informal users. The GRM shall allow for the timely registration, assessment, and resolution of complaints related to access restrictions, livelihood impacts, or other ESS5-related concerns. Grievance records shall be maintained, and resolutions shall be communicated transparently to complainants.

- **Targeted Assistance to Vulnerable Households**
  Vulnerable households including female-headed households, the elderly, persons with disabilities, landless persons, and low-income groups shall receive targeted assistance to avoid disproportionate adverse impacts. Assistance may include additional consultations, priority restoration of access, livelihood support, or other context-appropriate measures identified in consultation with the affected persons.

- **Monitoring and Documentation**
  Temporary land access restrictions and associated mitigation measures shall be documented and monitored by the Contractor and supervising Engineer. Any unanticipated impacts shall be promptly addressed in accordance with ESS5 principles, and corrective actions shall be implemented without delay.

Impact on Downstream Population (Technical Assessment – Shurli & Faizo Flood Protection Bund)

The restoration and strengthening of the Shurli & Faizo Flood Protection Bund is expected to induce measurable modifications in the downstream hydraulic regime of the project area. Based on the spatial distribution illustrated in the project map, downstream receptors include a series of rural settlements such as Jandro Bagh, Goth Ahmad Jamat, Bhit Kangat Goth, Lollain, Aqibani, Kechan, Musani, and adjoining agricultural clusters, along with identified sensitive receptors (mosques, schools, graveyards, and community infrastructure) located within the defined 500-meter buffer corridor.

All the areas are flood prone areas; however, the risks and impacts associated with flood risks and mitigation measures are incorporated in this section.

No population is living on the upstream of the proposed sub project and details of Downstream population is as under:

Downstream Population	
Right Side	**Left Side**
2,673.00	63,810.00

From a hydraulic perspective, the intervention will function as a flood attenuation structure, reducing peak discharge magnitudes and delaying flood wave propagation. This will result in a decrease in floodplain inundation frequency, depth, and duration in downstream reaches. Consequently, the project is expected to provide enhanced protection to residential settlements, cultivated lands, and local infrastructure networks (including access roads and irrigation

systems), thereby improving the adaptive capacity and resilience of downstream communities to recurrent flood events.

However, the alteration of the natural flow regime may give rise to localized hydrological and geomorphological adjustments. These may include modification of flow distribution patterns, changes in sediment transport equilibrium, and potential reduction in overbank flooding during low to moderate flow events, which could affect natural soil moisture recharge processes in adjacent agricultural fields. Additionally, channel confinement may lead to localized increases in flow velocity and shear stress, particularly in constricted downstream sections.

In extreme hydrological scenarios (e.g., design exceedance floods), there exists a residual risk of flow concentration, localized backwater effects, or increased stage levels downstream, especially in proximity to critical nodes near the Shurli–Faizo bund alignment. In the unlikely event of structural overtopping or partial failure, downstream exposure could temporarily increase. Nevertheless, such risks have been systematically addressed through hydraulic modeling, provision of adequate freeboard, slope stabilization measures, energy dissipation arrangements, and conservative structural safety factors incorporated into the design.

During the construction phase, short-term and reversible impacts on downstream communities may occur. These include elevated turbidity levels, localized sediment deposition, temporary obstruction of access routes to water sources, and disturbances associated with construction traffic and equipment operation, particularly near settlements such as Jandro Bagh and adjacent Goths. These impacts will be effectively mitigated through implementation of the Environmental and Social Management Plan (ESMP), including sediment control measures, controlled material handling, traffic management protocols, occupational health and safety (OHS) compliance, and continuous environmental monitoring. Furthermore, stakeholder engagement and a functional Grievance Redress Mechanism (GRM) will ensure timely resolution of community concerns.

Overall, the intervention is anticipated to yield substantial net positive impacts by significantly reducing downstream flood hazard exposure while maintaining environmental and social safeguards. The project will enhance the long-term hydraulic stability, socio-economic security, and climate resilience of downstream populations within the Shurli & Faizo project influence area.

6.5.2.5 Labor Influx and Social Conflict

Influx of non-local workers may lead to social tension if unmanaged. (Annexure-N)

Impacts/Risks

Community worker conflicts during construction.

Mitigation Measures

Potential social risks arising from the influx of non-local workers shall be managed through inclusive employment practices, clear behavioral standards, and proactive community engagement.

- **Preference for Local Labour Where Feasible**

The Contractor shall give priority to hiring local workers for both skilled and unskilled positions where such skills are available, in coordination with local authorities and community representatives. This approach will help reduce labour influx, promote local economic benefits, and minimize potential tensions between workers and host communities.

- **Enforcement of Worker Code of Conduct**

All project workers, including subcontractors and security personnel, shall be required to adhere to a Worker Code of Conduct that defines acceptable behaviour and explicitly prohibits harassment, intimidation, discrimination, substance abuse, and any form of gender-based violence. Workers shall receive orientation on the Code of Conduct upon engagement, and violations shall result in disciplinary action in accordance with project and legal requirements.

- **Appointment of a Community Liaison Officer**

The Contractor shall appoint a Community Liaison Officer (CLO) responsible for maintaining regular communication with affected communities. The CLO shall facilitate information sharing, address community concerns related to construction activities and worker behavior, and support conflict prevention by ensuring that community feedback is communicated promptly to site management.

- **Prompt Resolution of Grievances through the GRM**

Community concerns and complaints related to labor influx or worker behavior shall be registered and addressed promptly through the Project's Grievance Redress Mechanism. The GRM shall be accessible, transparent, and responsive, with clear procedures for submission, review, and resolution of grievances. Records of grievances and actions taken shall be maintained for monitoring and reporting purposes.

- **Monitoring and Oversight**

The Engineer shall monitor the effectiveness of labor influx management measures and ensure that corrective actions are implemented where community-worker conflicts are identified or anticipated.

As majority of the labor is local and from the nearby cities so they know the local dynamics and cultural norms and values so its impact will be minimal and in case of more outside labor then labor influx plan will be made available in the CESMP as per the projects Labor influx plan.

6.5.2.6 Cultural and Community Impacts

Construction activities may temporarily disrupt local routines and cultural practices.

Impacts / Risks

Temporary disturbance to daily life and social norms.

Mitigation Measures

Temporary social disturbances arising from construction activities shall be managed through early engagement, adaptive work planning, and culturally appropriate conduct.

- **Conduct Community Consultations**

The Contractor, in coordination with the Client and local authorities, shall conduct regular and meaningful consultations with affected communities prior to and during construction. Consultations shall inform communities about planned activities, timelines, and potential temporary disruptions, and shall provide opportunities for community members to raise concerns and suggest mitigation measures. Feedback from consultations shall be documented and incorporated into construction planning where feasible.

- **Scheduling of Works to Avoid Sensitive Times**
  Construction activities shall be scheduled to avoid sensitive periods, including religious events, cultural ceremonies, market days, harvest seasons, and community gatherings, to the extent practicable. Where avoidance is not possible, advance notice shall be provided to affected communities, and work hours shall be adjusted to minimize disruption to daily routines.

- **Respect for Local Customs and Traditions**
  All project workers shall be required to respect local customs, traditions, and social norms. Cultural awareness shall be included in worker induction training, emphasizing appropriate behavior, dress codes, interaction with community members, and respect for religious and cultural sites. Any culturally sensitive issues raised by the community shall be addressed promptly through the Community Liaison Officer or GRM.

- **Monitoring and Adaptive Management**
  The effectiveness of social disturbance mitigation measures shall be monitored through community feedback, consultations, and the Grievance Redress Mechanism. Construction practices shall be adjusted as needed to address concerns and minimize social disruption.

Residual Impacts

With full implementation of the above mitigation measures, residual environmental and social impacts are expected to be low, localized, reversible, and manageable, while the Subproject will deliver long-term benefits in flood protection, agricultural productivity, and community resilience.

6.5.2.7 GBV / SEA / SH Risks

Labor influx may increase the risk of Gender-Based Violence (GBV), Sexual Exploitation and Abuse (SEA), and Sexual Harassment (SH) incidents. GBV & SEA guidelines attached in Annexure-J to be followed by the contractor. In general, presently the prevalence of SEA/SH doesn't exist in the area but due to the influx of local and non-local labor and during the peak of construction activities under all packages, there may be a risk of gender-based violence or sexual exploitation and abuse among women and children and other vulnerable population groups (poor women, single women living alone, elderly, infirm or ill, orphans, etc). The project Grievance Redressed Mechanism (GRM) has a mandate to cover the aspects of SEA/SH in the area if occurred during the construction period. This can contribute to enduring physical and mental harm, while undercutting the ability of survivors, and often their families, to engage in meaningful, productive lives.

Impacts / Risks

Potential SEA/SH incidents during construction.

Mitigation Measures

Risks related to GBV, SEA, and SH associated with labour influx shall be managed through preventive, responsive, and enforcement-based measures.(Annexure-J)

- **Enforcement of GBV-Inclusive Codes of Conduct**
  All project workers, including contractors, subcontractors, and security personnel, shall be required to sign and comply with a GBV-inclusive Code of Conduct. The Code shall clearly prohibit all forms of GBV, SEA, and SH, define unacceptable behaviours, and outline disciplinary actions for violations. The Code of Conduct shall be communicated in languages understood by workers and communities and enforced consistently throughout the construction period.

- **Mandatory Worker Training**
  All workers shall receive mandatory induction and refresher training on GBV, SEA, and SH risks prior to deployment and periodically during construction. Training shall cover expected standards of behaviour, consequences of violations, respectful engagement with communities, and awareness of reporting mechanisms. Training records shall be maintained as part of project compliance documentation.

- **Establishment of Confidential Reporting Mechanisms**
  The Project shall establish safe, confidential, and survivor-centred reporting mechanisms for GBV, SEA, and SH incidents. Reporting channels may include designated focal persons, hotlines, or confidential complaint boxes, ensuring privacy and protection from retaliation. Information on reporting options shall be widely disseminated to workers and affected communities.

- **Referral to Support Services**
  Survivors of GBV, SEA, or SH incidents shall be referred promptly to appropriate support services, including medical care, psychosocial counselling, legal assistance, and protection services, in coordination with local service providers. Referrals shall respect survivor consent, confidentiality, and dignity, in line with World Bank good practice.

- **Zero-Tolerance Enforcement**
  A zero-tolerance approach shall be applied to any confirmed incidents of GBV, SEA, or SH. Disciplinary measures, including suspension, termination of employment, or referral to authorities, shall be enforced in accordance with national law and contractual provisions. Failure by the Contractor to implement GBV risk mitigation measures shall be treated as a contractual non-compliance.

- **Monitoring and Compliance**
  Implementation of GBV risk mitigation measures shall be regularly monitored by the Contractor and supervising Engineer. Records of training, Code of Conduct compliance, and grievance handling (without compromising confidentiality) shall be maintained and reviewed to ensure effectiveness.

Gender-based violence or sexual exploitation and abuse

Nature	Duration	Reversibility	Likelihood	Consequence	Impact Significance
Direct	Short term	Reversible	Likely	Moderate	Medium adverse

Mitigation

- Adequate training to especially for migrant workers will be provided on the cultural norms of the local community.
- The project GRM has already mandated to uptake SEA/SH related grievances of the project, and its other related issues.
- Priority will be given to mitigate the risk of gender-based violence, sexual exploitation, and abuse.
- Appropriate transportation for vulnerable groups.
- The Contractor shall ensure that a code of conduct is developed for all staff and labor describing acceptable and prohibited behaviors (guidelines are given below):
- Inequality, discrimination, and marginalization, including on the basis of gender and or vulnerability, is avoided.
- Labor and or other staff engaged by the contractor are educated and made aware of the civil, social, and legal rights of women and vulnerable groups (poor women, single women living alone, elderly, infirm or ill, orphans), and about the action that can be taken in the event of GBV and SEA. Community members including poor women, single women living alone, elderly, infirm or ill, orphans should be made aware of the risks of GBV and SEA and redress measures, including case management support, health services, psychosocial support, police support and security, access to legal services, and shelter, if needed.
- Strive to reduce at-risk groups' exposure to GBV and SEA violence.
- Respect for human rights, gender balance, eradication of child and bonded labor
- Promotion of social dialogue among the stakeholders
- The contractor will be required to provide workers with documented information about the norms and local culture to be followed
- Culturally appropriate consultation mechanisms are followed by the contractor.

To achieve the above-mentioned mitigation measures and guidelines, training will be organized and conducted on GBV and SEA at the field level.1 These trainings will be organized for the contractor and CSC staff, and it will be the responsibility of the Contractor. The contractor will hire services of a qualified professional Resource Person of GBV & SEA from the open market and an agreement will be signed between the contractor and Resource Person, under the supervision of PIU and CSC. At the end of each training, the Resource Person will produce a training report and other relevant material, submit to the concerned section of CSC with a cumulative report to PIU. This process will complete under the overall supervision and

[1] Gender-based violence (GBV) (with reference to WB Note on GBV available at: http://pubdocs.worldbank.org/en/399881538336159607/Good-Practice-Note-Addressing-Gender-Based-Violence.pdf

monitoring of the Social Safeguard Specialist and Gender Specialist of PIU and M&E consultants.

The bidders will be required to submit Codes of Conduct of acceptable and prohibited behaviors with their bids. The CoCs will set clear boundaries for acceptable and unacceptable behaviors of all individuals and companies and will be signed by companies, managers, and individuals.

- Construction Contractor will specify respect for the local community and its cultural norms;
- Presentation of professional behavior and integrity when dealing with the local community;
- Discrimination is prohibited such as gender, age, ethnic or national origin, religion, disability, sexual orientation;
- Respect privacy, particularly among women;
- CoCs will specify sanctions, including for any incidents of SEA;
- The CoC will include specific prohibitions against SEA with children defined as anyone younger than 18 and commensurate sanctions;
- The contractor will be required to establish anti-sexual harassment policies that govern conduct in the workplace;
- The contractor's contract will include provisions for mandatory reporting of SEA incidents - links to GRM;
- The Contractor will demonstrate that they have the capacity to manage SEA risks, including SEA prevention and response action plan/s and key staff with appropriate experience;
- The contractor will be required to provide mandatory and repeated training to workers on sexual exploitation and abuse, and HIV/AIDS prevention and on the content and obligations derived from the code of conduct;
- Inappropriate behavior such as sexual harassment, gender-based violence, and sexual abuse is strongly prohibited;
- Zero tolerance for any form of harassment, bullying, or other offensive physical or verbal treatments.

Residual Impact

Following the implementation of these mitigation measures, the impact shall reduce to low adverse in the short term, reducing to neutral following completion of the works.

6.5.2.8 Archaeological and Cultural Heritage Site

As per the initial screening/assessment, there is no archaeological and cultural heritage site at the proposed sub-project area of Shurli & Faizo flood protection works. However, in the event of any discovery of an unidentified archaeological or cultural heritage site, following a chance finding procedure as given in Annexure-E will be implemented.

On the discovery of archaeological or cultural resources, the contractor will stop work in the area immediately. The Contractor will inform the Supervisory consultant and PMU of the discovery immediately. Immediately, the contractor will submit a brief report with photographs

and a layout plan, identifying the location of the known resource to the Supervisory consultant and copy it to Project management Unit.

In case of any chance find in terms of cultural heritage, the requisite Cultural Heritage Management Plan will be prepared and accordingly procedures will be followed.

Physical Resettlement

Based on the current design and scope, the proposed Shurli & Faizo Flood Protection Works will be implemented along the existing alignment, with no deviation from the original design. Therefore, no physical resettlement is anticipated, and no residential or commercial structures will be affected.

Land Acquisition

The proposed Flood Protection Works will be implemented entirely within the existing alignment of the Porali river basin. As such, there is no requirement for permanent land acquisition at this stage of the project. This is the rehabilitation of the existing scheme and no land acquisition is required.

However, during consultations with local stakeholders, the possibility of any unforeseen land needs was discussed. In such cases, the Voluntary Land Donation (VLD) process aligned with WB's Safeguard Policy Statement and national guidelines was clearly explained to the community. This includes procedures for documentation, verification of voluntary consent, and ensuring that no vulnerable persons are adversely affected.

- The ownership of the land and evidence indicating the voluntary nature of the donation
- The appropriateness of the donation for the intended purpose
- The economic status of the donor that he/she is above the poverty line or whose remaining holdings are economically viable
- No encumbrances on the land
- No negative livelihood impact on any vulnerable groups
- No compensation to be paid, and
- That the owner gives up all claims on the land and the title will be transferred to the recipient through procedure prescribed by the law of the state.

At present, no private land acquisition is anticipated, and all construction activities are expected to remain within the designated right-of-way.

6.5.3 Social and Cultural Impacts

The proposed Subproject is anticipated to contribute positively to the socio-economic fabric of the region, particularly due to its strategic location near the border of Balochistan province. By stimulating local employment opportunities and enhancing connectivity, the project is likely to catalyse ancillary economic activities such as small-scale trade, transport services, and hospitality support for the workforce. These benefits, while indirect, are expected to uplift the livelihoods of nearby communities over time.

However, during the construction phase, certain temporary and localized social and cultural impacts may arise, primarily due to the interaction between local residents and incoming labourers (workforce). These impacts include:

- **Cultural Sensitivity and Lifestyle Shifts:** The presence of non-local workers may introduce different customs, languages, and social behaviours, which could lead to misunderstandings or discomfort among local populations, particularly in conservative or close-knit communities.

- **Potential for Social Tensions:** In rare cases, disputes may emerge due to differences in work ethics, communication barriers, or perceived inequities in employment opportunities. These tensions, if not managed proactively, could affect community cohesion.

- **Pressure on Local Resources:** A temporary increase in population may place additional demand on local water sources, sanitation facilities, and communal infrastructure, especially in smaller or resource-constrained settlements.

Despite these considerations, the overall magnitude of social and cultural impacts is assessed as minor and reversible, given the short-term nature of construction activities and the limited scale of workforce influx. These impacts are not expected to result in any long-term adverse effects on the local cultural identity or social structure.

Mitigation Measures

Although no significant mitigation is deemed necessary, the following good practice measures are recommended to pre-emptively address potential concerns and foster positive community relations:

- **Cultural Orientation for Workers:** Contractors shall provide basic orientation sessions to all incoming workers on local customs, traditions, and community expectations to promote mutual respect and minimize cultural friction and relevant training as mentioned in section-6

- **Code of Conduct:** A clear and enforceable Code of Conduct shall be implemented for all site personnel, emphasizing respectful behaviour, prohibition of harassment, and obedience to local norms.
- **Grievance Redress Mechanism (GRM):** the project GRM/LGRC shall be displayed to allow community members to voice concerns or complaints related to social interactions or workforce behaviour.

- **Community Engagement:** Regular consultations and information-sharing sessions with local stakeholders shall be conducted to maintain transparency, trust, and ensure that any emerging issues are addressed on time.

7

ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN

7. ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN

The Environmental and Social Management Plan (ESMP) defines the arrangements, procedures, and monitoring requirements for managing environmental and social risks and impacts associated with the rehabilitation/reconstruction of flood-damaged infrastructure under the Sub-project. The ESMP translates the mitigation measures identified in Section 6 (Environmental and Social Impacts and Mitigation Measures) into **implementable actions**, including (i) institutional roles and responsibilities, (ii) monitoring and reporting requirements, (iii) grievance redressal mechanisms, and (iv) contractor obligations and budget provisions.

The ESMP ensures that the Subproject is implemented in accordance with applicable national environmental regulations, the project ESMF and site-specific instruments, and relevant international standards including the World Bank Environmental and Social Framework (ESF). Through strict implementation and supervision, the ESMP supports resilient recovery by minimizing adverse impacts, protecting workers and communities, and enhancing long-term sustainability of flood protection assets.

7.1 INSTITUTIONAL ARRANGEMENTS FOR E&S IMPLEMENTATION

The Subproject will be implemented through coordinated arrangements at the Federal and Provincial levels, consistent with the overall IFRAP institutional setup. Environmental and social (E&S) implementation responsibilities will be embedded within existing project implementation structures to ensure effective oversight, timely reporting, and accountability.

7.1.1 Federal Level (FPMU / MOPD&SI)

The Ministry of Planning, Development & Special Initiatives (MoPD&SI), through the Federal Project Management Unit (FPMU), will have overall responsibility for ensuring that the project is implemented in compliance with the ESMF and all site-specific E&S instruments, including this ESMP. An Environment and Social Management Unit (ESMU) may be established within the FPMU, staffed with designated E&S personnel/focal persons.

The ESMU will:

- Provide oversight and coordination for ESF compliance across provinces and components.
- Review consolidated E&S performance and incident reports and ensure timely escalation where required.
- Provide guidance, tools, and templates (e.g., monitoring checklists and reporting formats) for consistent field implementation.

7.1.2 Provincial Level (PIU / Component-I)

The Provincial Project Implementation Unit (PIU) will be responsible for implementation of Component-I (Community Infrastructure Rehabilitation) and for ensuring effective implementation of the ESMP at the Subproject level. PIU will deploy E&S specialists and/or focal persons at district/field levels as required.

The PIU E&S team will:

- Supervise implementation of the ESMP and contractor obligations using approved monitoring checklists.

- Coordinate with CSC and Contractor to ensure corrective actions are implemented in a timely manner.
- Maintain liaison with FPMU/ESMU to ensure consistent ESF compliance, reporting, and incident management.

7.2 ROLES AND RESPONSIBILITIES OF ENTITIES INVOLVED IN E&S MANAGEMENT

7.2.1 Project Implementation Unit (PIU)

The PIU is responsible for oversight, quality assurance, and reporting of ESMP implementation. Specifically, PIU shall:

- Provide technical support, oversight, and quality control to field E&S focal persons and implementing teams.
- Review, approve, and maintain records of E&S screening checklists and site-specific ESMPs/updates, as applicable.
- Ensure all bidding documents, BOQs, and contracts include relevant ESMP requirements and applicable E&S clauses.
- Ensure that Subproject activities do not fall under the exclusion list and remain within the approved scope.
- Compile site monitoring information (from CSC and Contractor) and submit consolidated E&S progress reporting to FPMU and the World Bank as per reporting schedule.
- Track grievances and beneficiary feedback in accordance with the SEP (Annexure-W) and GRM procedures and use this as a monitoring tool for ESMP implementation.

Serious Incident Notification:

If the PIU/FPMU becomes aware of a serious incident associated with the Subproject that may have significant adverse impacts on the environment, communities, the public, or workers, the PIU/FPMU shall notify the World Bank within **48 hours** of becoming aware and provide a subsequent detailed report and corrective actions within **30 days** (or earlier as required).

Completion and Site Restoration:

At Subproject completion, PIU shall verify that all ESMP measures have been implemented, including restoration of work areas, camps, borrow areas, and disposal sites to at least pre-project conditions. Any pending issues shall be resolved before works are certified as complete and contracts are closed.

7.2.2 Construction Supervision Consultants (CSC)

The CSC will provide day-to-day supervision and compliance verification of ESMP implementation and Contractor obligations. The CSC shall:

- Review the Contractor's Environmental & Social Management Plan (C-ESMP/CESMP) and confirm that it is consistent with the ESMP and contract requirements before construction begins.
- Supervise implementation of mitigation measures at all work sites and ancillary sites (borrow areas, camps, workshops, disposal sites, haul routes).

- Conduct routine inspections and verify compliance through checklists, photo records, and corrective action tracking.
- Require, verify, and monitor corrective actions in cases of non-compliance, and where necessary, prepare and submit corrective action plans for enforcement by the PIU.
- Submit monthly and quarterly E&S compliance monitoring reports to PIU in accordance with the reporting schedule.
- Notify PIU of serious incidents within 48 hours of awareness and support incident investigation and reporting.

Note: Internal audits may be conducted by the CSC at least once during the construction period (e.g., at 6 months) to evaluate compliance trends and recommend systemic improvements.

7.2.3 Construction Contractor (CC)

The Contractor is primarily responsible for implementing all ESMP mitigation measures and preparing detailed site-specific plans as part of the Contractor's ESMP (C-ESMP/CESMP). The Contractor shall:

- Prepare and submit the C-ESMP prior to mobilization, including site layout plans and method statements addressing E&S risks.
- Prepare sub-plans (as applicable) including OHS Plan, Waste and Spoil Management Plan, Traffic and Construction Safety Management Plan, Camp Management Plan, Emergency Response Plan, Community Health and Safety Plan, Labor Management Plan, and GBV/SEA/SH prevention measures as required by the ESMP and contract.
- Select camps, yards, material storage areas, and waste disposal sites in accordance with ESMP siting requirements.
- Conduct E&S induction and periodic training (including toolbox talks) for workers and staff and maintain training records.
- Arrange baseline and periodic environmental monitoring (air, noise, water) as required, through qualified laboratories.
- Maintain records of incidents, non-compliance, corrective actions, grievances, and monitoring results and submit monthly reports to CSC and PIU.
- Ensure availability and proper use of PPE, safety signage, firefighting equipment, and spill response materials.

7.2.4 Contractor's Organizational Framework

The Contractor shall designate qualified staff to manage ESHS compliance and reporting. At minimum, the Contractor shall appoint:

- Occupational Health and Safety Officer / Safety Supervisor
- Paramedic / First Aid Staff (as required by site risk profile)
- Environmental/Social Officer (or Environmental Engineer where required)

- Community Liaison Officer
- Gender Mobilizer (where relevant and as directed by the PIU.)

CVs and experience evidence shall be submitted to CSC for review prior to mobilization. The appointed staff must meet contract specifications and ESMP requirements.

7.2.5 Reporting and Documentation

7.2.5.1 Meetings

A pre-construction meeting will be held after contract award and prior to mobilization to confirm reporting formats, monitoring procedures, escalation protocols, and corrective action workflows. Participants shall include PIU Team, CSC and Contractor staff.

7.2.5.2 Communications

Routine site communications may be verbal; however, formal instructions related to ESMP compliance, corrective actions, or repeated non-compliance shall be issued in writing by CSC under the civil works contract and copied to PIU.

7.2.5.3 Reporting Frequency and Distribution

The Contractor and CSC shall produce monthly reports summarizing compliance status, non-compliances, corrective actions, and monitoring results. Where an independent M&E consultant is engaged, third-party monitoring reports shall also be submitted. The report distribution is provided in Table 7-1.

Table 7-1: Distribution of Periodic Reports

S. No	Report	Prepared by	Frequency	Reviewed by	Distribution
1	Monthly CSC Compliance Report (see report template in Appendix -E)	CSC	Monthly	ES PIU	PMU, Contractor
2	Monthly Contractor's ES Mitigation and Management Compliance Report	Contractor's Environmental Coordinator/ Officer	Monthly	ES CSC	PIU & CSC
3	Monthly M&E ESMP Monitoring Report	M&E Consultant	Monthly	ES PIU	ES PIU
4	Quarterly ESMP Progress Report	CSC	Quarterly	PIU and World Bank	PIU and World Bank

7.3 INCLUSION OF ESMP IN CONTRACT DOCUMENTS

The approved ESMP shall form part of the bidding/contract documents and shall be binding on the Contractor. ESMP requirements shall be reflected in technical specifications, BOQs, and contractual clauses to ensure adequate resources are allocated and that compliance is enforceable through contractual remedies.

Implementation shall be coordinated with the construction program so that mitigation measures are applied at the appropriate stage, supported by adequate staffing, equipment, and budget.

7.4 GRIEVANCE REDRESS MECHANISM (GRM)

An effective Grievance Redress Mechanism (GRM) is essential to ensure that concerns, complaints, and feedback from project-affected persons and other stakeholders are addressed in a timely, transparent, and fair manner. The Project has an established GRM under the

overarching implementation arrangements, and the Subproject will adopt and follow the same GRM mechanism. The purpose of applying the Project GRM at Subproject level is to (i) provide an accessible channel for raising concerns, (ii) resolve issues early to avoid escalation and implementation delays, and (iii) strengthen accountability and community trust throughout implementation.

GRM will work at different levels as Workers GRM, Community level GRM and their committees at local level for both Male and Female Community members and then for any other like institutional stakeholders or any one including civil society etc. Mechanism is established and is shared with the community and civil society and will be shared with the workers as well.

The GRM will be available to all stakeholders, including local communities, vulnerable households, women, and workers, and will be implemented in line with the Stakeholder Engagement Plan (SEP) and relevant requirements of the World Bank Environmental and Social Framework (including ESS2, ESS4 and ESS10). The GRM will operate alongside routine consultation and community liaison arrangements and will be publicized in local language(s) through culturally appropriate means.

7.4.1 Proposed GRM (Project Mechanism to be followed)

The Subproject will implement the Project GRM as already established under IFRAP. Complaints may be submitted through multiple channels, including in-person submission at designated project offices, through telephone/mobile contact, written applications, email, or through community representatives/focal persons where such arrangements exist under the Project. Information about grievance channels, submission requirements, expected timelines, and escalation options will be shared with communities prior to mobilization and during implementation, including special outreach for women and vulnerable groups.

7.4.2 Receiving and Recording Grievances

All grievances received under the Subproject will be recorded in a grievance log/register maintained by the PIU in accordance with the Project GRM procedures. Each complaint will be assigned a unique tracking number, and the following information will be recorded as applicable:

- Unique grievance tracking number
- Name and contact information of the complainant (unless anonymous)
- Date of submission
- Mode of submission (in-person/phone/email/written/through representative)
- Location of the issue (Subproject site/segment/settlement, as relevant)
- Description of the grievance and any supporting evidence
- Category/type of grievance (e.g., access, construction impacts, safety, labour, GBV, etc.)
- Action taken, responsible person/entity, and resolution status

The grievance register will be maintained systematically and will be available for review by relevant Project authorities and monitoring entities, consistent with confidentiality requirements (particularly for sensitive cases).

7.4.3 Grievance Handling and Resolution Process

Grievances will be addressed following the Project GRM timelines and steps, as summarized below:

Stage 1: Acknowledgement and Logging

Upon receipt, the grievance will be acknowledged and logged. Confirmation of receipt will be sent to the complainant within two working days (where contact information is available).

Stage 2: Preliminary Review and Investigation

A preliminary review and investigation will be carried out to determine the cause and appropriate corrective action. Where required, additional information may be sought from the complainant. The preliminary investigation will be completed within seven working days of receipt, and an interim response will be communicated to the complainant describing the findings and proposed actions.

Stage 3: Resolution and Corrective Action

Corrective actions will be implemented by the responsible entity (Contractor/CSC/PIU, as applicable) and tracked to closure. Where the complainant is satisfied, the grievance will be recorded as resolved and closed in the grievance log.

Stage 4: Escalation

If the complainant is not satisfied with the proposed resolution, the grievance will be escalated in accordance with the Project GRM procedures for further review and decision-making. A hearing/ meeting may be arranged where necessary to facilitate resolution, including mediation where appropriate. Escalated grievances will be addressed within fifteen working days of escalation, where practicable.

Stage 5: Recourse to Legal System

If the complainant remains dissatisfied after exhaustion of the Project GRM process, they retain the right to pursue the matter through the appropriate judicial system.

7.4.4 Record Keeping, Reporting, and Periodic Review

Maintaining accurate grievance records is critical for transparency, accountability, and corrective action tracking. The PIU will compile grievance statistics (received/resolved/pending), including trend analysis and recurring issues, and include these in regular Project monitoring reports. Grievance data will be maintained in a manner that enables disaggregation (e.g., by gender and vulnerability), while ensuring confidentiality where required.

The GRM performance will be reviewed periodically under the Project's overall monitoring arrangements to assess effectiveness, responsiveness, and accessibility, and to identify opportunities for improvement. Corrective actions (e.g., improved communication, additional outreach, strengthened response time, or contractor enforcement) will be initiated where recurring issues are identified.

7.4.5 Role of Women in the GRM

To ensure inclusivity and gender-responsive access, GRM information will be shared with women through culturally appropriate means and local language(s). Where required, a female focal person and outreach visits will be used to facilitate women's access to grievance channels. Women-related concerns including safety, access constraints, water and sanitation concerns,

livelihood disruption, and other construction-related impacts will be addressed with priority and sensitivity.

GBV/SEA/SH-related grievances, if any, will be handled through confidential and survivor-centred procedures consistent with the Project GRM arrangements. Such cases will not be recorded in public registers with identifying information; instead, they will be managed through secure channels and referral pathways to appropriate services (health, psychosocial support, legal aid, and protection services), as applicable.

7.4.6 Worker Grievance Redress Mechanism (W-GRM) – SST-2

In addition to the Project GRM for communities, the Contractor will establish and maintain a dedicated Worker GRM in line with ESS2 and the Project's labour management requirements. The Worker GRM will provide workers with a confidential, accessible, and non-retaliatory mechanism to raise concerns related to working conditions, wages, OHS issues, discrimination, harassment, or other workplace grievances.

Key features of the Worker GRM include:

- Confidentiality: Complaints handled discreetly to prevent retaliation
- Multiple access channels: Verbal, written, anonymous submissions (e.g., drop-box at site offices)
- Timely response and escalation: If unresolved at site level, escalation to CSC/PIU as per Project procedures
- Documentation: Worker grievances recorded and tracked to closure, with confidentiality maintained for sensitive matters

It is proposed to establish the following prior to commencing project implementation activities including pre-construction activities:

a. Grievance Focal Points (GFPs), which will be educated people from each community. The GFPs should be community members who are easily approached by the community. The GFPs will be provided training by the Social Section of the PSIAC and PMU;

b. A Public Complaints Centre (PCC) will be established in the project office and will be responsible to receive, log, and investigate complaints;

c. A Grievance Redress Committee (GRC) will be established in the PMU office, responsible to address grievances forwarded by the PCC.

7.4.7 Grievance Focal Points (GFPs)

The GFPs will be educated/literate people from each community that will assist and facilitate the community members in reporting grievances resulting from project activities. The GFPs will be provided training by the PMU/ CSC in facilitating grievance redress. The project team will facilitate the process and the GFPs (a female and male) will be selected for the sub-project area

7.4.8 Public Complaints Centre

In its capacity as the project proponent, the PIU in consultation with the Irrigation Department, Balochistan has established a Public Complaints Centre (PCC) in the PIU office. The PIU / CSC/CC will inform the community within the project area about the Grievance Redress Mechanism. The PCC's phone number, fax, address and email address will be displayed at the office of the Deputy Commissioners Lasbela.

The PCC will be responsible for receiving, log, and investigating grievances at PCC level. However, If the PCC is unable to resolve the grievances, the grievances will be referred to GRC.

7.4.9 Role and Responsibilities of PCC

The responsibilities of the PCC are:

a. The PCC will log the complaint and date of receipt onto the complaint database and inform the CSC and the Contractor;

b. The PCC will instruct contractors and CSC to refer to any complaints that they have received directly to the CSC. Similarly, the CSC will coordinate with local government to "capture" complaints made directly to them;

c. The PCC, with the CSC and the Contractor, will investigate the complaint to determine its validity and to assess whether the source of the problem is due to project activities, and identify appropriate corrective measures. If corrective measures are necessary, PCC, through the CSC will instruct the Contractor to take necessary action; The PCC will inform the Complainant of investigation results and the action is taken;

d. If the complaint is transferred from local government agencies, the CSC will submit an interim report to local government agencies on the status of the complaint investigation and follow-up action within the time frame assigned by the above agencies;

e. The PCC will review the Contractors response on the identified mitigation measures and the updated situation;

f. The PCC will undertake additional monitoring, as necessary, to verify as well as review that any valid reason for complaint does not recur.

During the complaint investigation, the CSC should work together with the Contractor and the CSC. If mitigation measures are identified in the investigation, the Contractor will promptly carry out the mitigation. CSC will ensure that the measures are carried out by the Contractor.

7.4.10 Grievance Redress Committee (GRC)

The GRC will function as an independent body that will regulate PCC and the grievance redress process. At the sub-project level, a GRC will be headed by the Project Director and will be comprised of a Social Specialist, Senior Engineer from PIU, and representative from the community.

7.4.11 GRM Steps and Timeframe

Procedures and timeframes for the grievance redress process are as follows:

Stage 1: When a grievance arises, the affected person may contact the contractor/operator or GFP, directly to resolve the issue of concern. If the issue is successfully resolved, no further follow-up is required;

Stage 2: If no ad hoc solution can be found, the affected person/s will submit an oral or written complaint to the PCC by themselves or through GRM entry points (the CFP, CSC and Contractor/Operator). For an oral complaint, the PCC must make a written record. For each complaint, the PCC must investigate the complaint, assess its eligibility, and identify an appropriate solution. It will provide a clear response within five (5) working days to the complainant CSC and Contractor. The PCC will, as necessary, through CSC instruct the Contractor to take corrective actions. The PCC will review the Contractor's response and undertake additional monitoring. During the complaint investigation, the PCC will work in close consultation with the Contractors, and the Supervising Engineer (during construction), and the PMU representatives (during operation). The contractors during construction and the CSC during operation should implement the redress solution and convey the outcome to the PCC within seven (7) working days;

Stage 3: If no solution can be identified by the PCC or if the complainant is not satisfied with the suggested solution under Stage 2, the PCC will organize, within two (2) weeks, a multi-stakeholder meeting through GRC under the auspices of the PD-PIU, where all relevant stakeholders (i.e., the complainant, CSC, contractor/operator, relevant local government offices) will be invited. The meeting should result in a solution acceptable to all, and identify responsibilities and an action plan. The contractors during construction and the CSC during operation should implement the agreed-upon redress solution and convey the outcome to the PCC within seven (7) working days;

Stage 4: If the affected people are still not satisfied with the reply in Stage 4, he or she can go through to local judicial proceedings.

7.4.12 The budget of GRM Implementation

The cost for the implementation of GRM activities of the sub project is included in the ESMP implementation budget

7.5 ENVIRONMENTAL AND SOCIAL MITIGATION AND MONITORING PLAN

The mitigation and monitoring plan (Table 7-2) is the core implementation tool for tracking compliance with the ESMP. It identifies impacts, mitigation measures, implementing responsibilities, monitoring locations, frequencies, parameters, and reporting responsibilities.

Table 7-2: Environmental and Social Management Plan

Activities	Environmental / Social Impact	Mitigation Measures	Implementing Entity	Monitoring Location	Monitoring Frequency / Duration	Monitoring Parameter (for compliant action)	CSC	PIU	M&E C
Environmental and social screening, application of ESF	Incomplete identification of risks, receptors and ESS applicability	Carry out site screening, confirm activities are within existing footprint/ROW, identify sensitive receptors and water users, and confirm applicable ESSs before works approval	PIU / Design Consultant	PIU office, site	Once per sub-project and if design changes	Screening completed; applicable ESSs and sensitive receptors identified; ESS5 trigger noted as “not expected” under current design	✓	✓	
Design of embankments and drainage (including climate resilience)	Reduced effectiveness under extreme rainfall; increased erosion and flood risk	Climate-resilient design with adequate freeboard, stable erosion-resistant slopes, and enhanced drainage; review hydrology against recent flood events and available climate projections	Design Consultant / PIU	Design office / PIU	Once during design approval	Climate-resilient design parameters incorporated (freeboard, drainage capacity, hydraulic checks documented)	✓	✓	
Earthworks, embankment construction, borrow areas	Soil erosion, sedimentation, landform alteration	Optimize alignment; minimize cut-and-fill; phased excavation; promptly stabilize exposed soil; provide surface drainage; rehabilitate borrow areas; avoid productive agricultural land and restore any	Contractor	Work fronts, embankments, borrow areas	Weekly during construction and after heavy rainfall	No visible erosion or gullying; embankment slopes stable; drains functional; borrow areas progressively rehabilitated	✓	✓	

Activities	Environmental / Social Impact	Mitigation Measures	Implementing Entity	Monitoring Location	Monitoring Frequency / Duration	Monitoring Parameter (for compliant action)	CSC	PIU	M&E C
		temporarily used areas							
Fuel storage and equipment maintenance	Soil and groundwater contamination	Provide bunded and impervious fuel storage and maintenance areas; designate refuelling points; provide spill kits; train workers; immediately clean up any spills and dispose of contaminated material appropriately	Contractor	Camps, machinery yards, refuelling areas	Weekly visual checks; monthly record review	No oil/fuel staining outside contained areas; spill kit available and used; all spills recorded and closed out	✓	✓	
Construction activities and material transport	Dust emissions and exhaust pollution	Regular water sprinkling; cover material during transport; maintain machinery; avoid unnecessary idling; provide masks to exposed workers; prohibit open burning of waste	Contractor	Construction sites, haul routes, camps, near receptors	Daily visual checks; formal review monthly	No excessive dust observed beyond ROW; water sprinkling carried out; machinery maintained; no open burning	✓	✓	
Operation of construction machinery and generators	Noise disturbance to communities and workers	Use well-maintained low-noise equipment; restrict high-noise activities to daytime; prohibit pressure horns near settlements; provide hearing protection; conduct spot noise	Contractor	Work fronts near settlements, schools, mosques	Weekly; spot measurements as per ESMP / upon complaint	Noise levels generally consistent with baseline context and applicable limits; no unresolved noise complaints	✓	✓	

Activities	Environmental / Social Impact	Mitigation Measures	Implementing Entity	Monitoring Location	Monitoring Frequency / Duration	Monitoring Parameter (for compliant action)	CSC	PIU	M&E C
		monitoring where needed							
Construction camps and works near water bodies	Surface and groundwater contamination	Provide septic tanks/soak pits and settling ponds; prohibit washing or mixing near water bodies; locate camps and fuel storage away from water sources; manage runoff and debris to prevent discharge into canals/drains	Contractor	Camps, drains, irrigation channels, river banks	Monthly; additional checks after rainfall	No untreated wastewater or cement slurry discharged to water bodies; drains functional; no visible contamination	✓	✓	
Water quality monitoring (where required by ESMP / risk)	Unnoticed deterioration of surface/groundwater quality	Conduct sampling at baseline-equivalent locations and compare with Annexure-I lab baseline and applicable standards; trigger investigation and corrective actions if deterioration attributable to works is detected	Contractor (through accredited lab)	Upstream / downstream surface water; representative groundwater source(s)	At least quarterly during active construction where risk exists, and incident/complaint-based	Key parameters (e.g. pH, EC, TDS, TSS/turbidity, DO, BOD, COD, oil/grease and relevant ions) within applicable limits or not significantly worse than Annexure-I baseline; corrective actions implemented where triggers are exceeded	✓	✓	✓
Construction and camp waste generation	Soil and water pollution; visual nuisance	Segregate waste at source; provide bins; avoid burning; transport waste to approved	Contractor	Camps, work sites, disposal locations	Weekly; disposal records reviewed monthly	No uncontrolled dumping or burning; bins provided and used; disposal	✓	✓	✓

Activities	Environmental / Social Impact	Mitigation Measures	Implementing Entity	Monitoring Location	Monitoring Frequency / Duration	Monitoring Parameter (for compliant action)	CSC	PIU	M&E C
		disposal sites; send used oil and recyclables to licensed facilities; reuse bituminous material where acceptable				receipts/licenses maintained			
Camp establishment and access routes	Loss of vegetation; dust on crops and property	Limit vegetation clearance to minimum required; protect trees where feasible; implement dust suppression near crops/houses; plan and implement compensatory plantation with local communities	Contractor	Camps, access routes, adjacent fields	Monthly during construction; plantation survival checked seasonally	Vegetation clearance confined to approved footprint; no significant dust damage to crops; plantation established and maintained	✓	✓	
Employment of construction workforce	Occupational injuries; poor working conditions	Implement OHS Plan; provide task-specific PPE; conduct induction and regular toolbox talks; provide safe drinking water, sanitation and rest areas; enforce Code of Conduct; prohibit child and forced labour	Contractor	Work sites and camps	Daily supervision; formal review monthly	High PPE compliance at work fronts; induction and toolbox records maintained; no child/forced labour; OHS incidents investigated with corrective actions	✓	✓	✓
Construction near communities and sensitive receptors	Accidents; unsafe access; community safety risks	Fence and demarcate work areas; barricade open pits; provide warning signs and lighting; maintain safe pedestrian	Contractor	Work sites near settlements, schools, mosques, roads	Weekly; more frequent where risk is high	No unauthorized access to hazardous zones; safe crossings in place; no serious	✓	✓	

Activities	Environmental / Social Impact	Mitigation Measures	Implementing Entity	Monitoring Location	Monitoring Frequency / Duration	Monitoring Parameter (for compliant action)	CSC	PIU	M&E C
		and livestock crossings; implement emergency response arrangements				community accidents attributable to works			
Construction traffic and site activities	Traffic congestion; traffic accidents; public safety risks	Implement Traffic and Construction Safety Management Plan (TCSMP); use traffic control personnel; provide clear diversions and signage; enforce speed limits; coordinate with local authorities	Contractor	Haul routes, work sites, settlement approaches	Daily during construction on active routes	Approved TCSMP implemented; signage and flagmen present where required; no serious traffic incidents attributable to project	✓	✓	✓
Temporary access restriction (if any)	Livelihood disruption; disproportionate impact on vulnerable groups	Avoid use of private land where possible; maintain temporary access to houses, shops, fields; give advance notice of disruptions; use GRM; provide targeted assistance where ESS5 is triggered	Contractor / PIU	Affected locations in project area	Monthly; more frequent during critical activities	Access maintained or promptly restored; any complaints recorded and resolved within agreed timeframe; if ESS5 triggered, RPF procedures followed	✓	✓	
Labour influx	Community–worker conflict; social tension	Prioritize local hiring where feasible; enforce Code of Conduct; appoint Community Liaison Officer; brief workers on	Contractor	Camps, work sites, nearby communities	Monthly	No significant unresolved community–worker conflicts; concerns recorded and addressed	✓	✓	

Activities	Environmental / Social Impact	Mitigation Measures	Implementing Entity	Monitoring Location	Monitoring Frequency / Duration	Monitoring Parameter (for compliant action)	CSC	PIU	M&E C
		local customs; use GRM for community concerns				through GRM			
Labour influx – GBV / SEA / SH risks	GBV / SEA / SH incidents affecting workers and community members	Implement GBV-sensitive Code of Conduct; conduct GBV/SEA/SH awareness and training; ensure confidential reporting and referral pathways; apply zero-tolerance for breaches	Contractor (with PIU/CSC oversight)	All camps and work sites	Quarterly and after any incident	Codes of Conduct signed and explained; trainings conducted; any GBV/SEA/SH cases managed confidentially in line with project GBV Action Plan	✓	✓	✓
Construction activities near culturally important practices or sites	Disturbance to cultural practices and community events	Conduct consultations; plan noisy or disruptive works to avoid prayer times and key events where practicable; respect local customs; apply Chance Find Procedure if physical cultural resources are encountered	Contractor	Project area, including mosques and community gathering places	Monthly; and as schedule changes	Community concerns recorded and addressed; no works carried out at agreed “no-work” times; any chance finds managed as per procedure	✓	✓	
Stakeholder engagement and GRM (construction phase)	Community concerns and grievances not captured or addressed	Disclose GRM contacts at site; maintain grievance register; acknowledge and resolve complaints within specified	Contractor / PIU	Site offices, villages, GRM points	Monthly and ongoing	GRM signage displayed; complaints logged and resolved; no long-pending grievances	✓	✓	✓

Activities	Environmental / Social Impact	Mitigation Measures	Implementing Entity	Monitoring Location	Monitoring Frequency / Duration	Monitoring Parameter (for compliant action)	CSC	PIU	M&E C
		time; feed recurring issues into ESMP implementation and CESMP updates				without documented action			
Overall ESMP implementation and reporting	Residual environmental and social risks not managed; weak documentation	Implement this ESMP and CESMP; use Annexure-C checklist for routine inspections; maintain records of permits, monitoring, incidents, training and lab results; prepare and submit monthly ESHS reports	Contractor / PIU / CSC	Entire project footprint; PIU records	Throughout project implementation	ESMP/CESMP available on site; monitoring and reporting carried out as per Section 7.5; residual impacts remain low and manageable; documentation complete	✓	✓	✓
Post-construction restoration and demobilization	Residual impacts from temporary facilities, waste and access routes	Remove temporary facilities and waste; rehabilitate disturbed areas; restore drainage and access; confirm closure of borrow areas and camps	Contractor	All temporary facilities, access routes, borrow/camp areas	At demobilization and during defect-liability period follow-up	No residual waste or unsafe features; disturbed areas stabilized and restored; temporary impacts closed out	✓	✓	✓
Operation and maintenance of flood protection bund	Long-term bund performance; residual community safety and environmental risks	Conduct routine inspections and maintenance of embankment, pitching and drains; maintain warning signage; manage vegetation and waste along bund; respond to	Irrigation Department / PIU	Bund, drains, adjacent communities	Pre- and post-flood season; after major events	Inspection and maintenance carried out; signage maintained; no unmanaged defects or persistent complaints related to bund		✓	✓

Activities	Environmental / Social Impact	Mitigation Measures	Implementing Entity	Monitoring Location	Monitoring Frequency / Duration	Monitoring Parameter (for compliant action)	CSC	PIU	M&E C
		complaints through GRM				condition			

7.5.1 Reporting and Non-Compliance Management

The Contractor shall submit monthly compliance reports to CSC. CSC shall verify compliance, document non-compliances, and submit verified reports to PIU. The PIU shall apply contractual enforcement measures where repeated or material non-compliance occurs, including withholding payments, requiring corrective actions, or work stoppage in serious cases.

7.5.2 ESMP Budget

The ESMP budget shall be read together with the Contractor's BOQ and C-ESMP. Environment and OHS measures are mandatory implementation obligations, not optional administrative items. Accordingly, the budget shall clearly distinguish: (i) mitigation items embedded in construction quantities and BOQ rates; (ii) direct environment and OHS management costs such as staffing, monitoring, PPE, training, emergency preparedness materials, water sprinkling, waste handling, and reporting; and (iii) contingency for corrective action. Before final issuance, the ESMP budget table should be checked to ensure that contractor environment/OHS staff, routine monitoring frequency, emergency arrangements, and training commitments are fully reflected and that no environment or OHS obligation is left without either a direct budget line or a confirmed BOQ provision.

Table 7-3: ESMP Cost Breakdown

Sr. No.	Component	Description / Cost Basis	Qty	Unit Rate	Estimated Cost PKR
1	**Environmental Mitigation Measures**				
1.1	Contractor ESMP / Sub-plans	Preparation of C-ESMP, OHS Plan, Waste Management Plan, Emergency Response Plan, Traffic Management Plan, Labour Management Procedure, GRM and GBV/SEA/SH procedure	1 job	150,000	150,000
1.2	Waste management - solid/hazardous	Waste bins, segregation arrangements, disposal of construction/camp waste, minor hazardous waste handling, spill kits	12 months	--	220,000
1.3	Erosion control, noise and vibration control	Sandbags, temporary drains, silt traps, tarpaulin covers, slope protection at exposed areas, warning signage, barricading, maintenance of silencers/mufflers	12 months	--	220,000
1.4	Dust suppression	Water sprinkling through water bowser/truck during dry and active construction periods; assumed 96 trips @ Rs. 1,800/trip	96 trips	1,800	172,800
		Subtotal — Environmental Mitigation			**762,800**
2	**Social Mitigation Measures**				
2.1	Community consultation and GRM	Quarterly consultation meetings, GRM register, complaint documentation, community notices, local travel and communication	4 quarters	55,000	220,000
2.2	HSE / PPE cost	Safety helmets, reflective jackets, safety shoes, gloves, masks, goggles, first-aid kits, safety signage, barricading, fire extinguishers and replacement	1 job	388,000	388,000

Sr. No.	Component	Description / Cost Basis	Qty	Unit Rate	Estimated Cost PKR
		PPE			
		Subtotal — Social Mitigation			**608,000**
3	**Training and Capacity Building**				
3.1	Awareness campaigns and trainings	Training on traffic safety, OHS, emergency response, GBV/SEA/SH, GRM, gender and environmental protection; quarterly sessions plus toolbox talks	12 months	25,000	300,000
		Subtotal - Training and Capacity Building			**300,000**
4	**Monitoring and Reporting**				
4.1	Environmental quality monitoring	Quarterly monitoring of air, water and noise through qualified laboratory, including sample collection and reporting	4 rounds	70,000	280,000
4.2	Social and environmental impact monitoring	Field visits, community feedback, FGDs, photographic record, verification of mitigation measures	4 quarters	55,000	220,000
4.3	Reporting and documentation	Monthly ESMP compliance reports, photographic record, incident reporting, final compliance summary	12 months	--	146,000
		Subtotal — Monitoring and Reporting			**646,000**
5	**HR / ESMP Implementation Staff**				
5.1	HSE Officer	Part-time/site-visit basis; 4 visits/month @ Rs. 12,000/visit	48 visits	12,000	576,000
5.2	Community and Safety Liaison Officer	Part-time support for community coordination, GRM and safety communication	12 months	25,000	300,000
5.3	Paramedic / First-aid support	On-call/part-time medical support and first-aid management	12 months	18,000	216,000
		Subtotal — HR Cost			**1,092,000**
6	**Contingency**	For emergency incidents, additional mitigation, minor spill response, additional consultations or unforeseen ESMP requirements; 5% of subtotal	5%	--	170,440
		Total ESMP Budget			**3,579,240**

7.5.3 Training and Skill Development

Routine site-level environment and OHS trainings, including induction, toolbox talks, and task-specific briefings, shall be the responsibility of the Contractor. Formal ESMP, ESF/ESS, incident reporting, emergency preparedness, and thematic trainings for key Contractor staff and PIU/CSC personnel shall be organized by the CSC/PIU. Induction shall be given before any worker starts work; toolbox talks shall be held at least weekly at each active work front and before any high-risk activity; and formal refresher trainings shall be conducted at least every six months, or more often where performance, incidents, or risk conditions require refer Annexure-B.

7.6 DEVELOPMENT OF OTHER E&S PLANS / INSTRUMENTS

Before commencement of works, the Contractor shall prepare and obtain approval for a C-ESMP that is fully aligned with this ESMP and includes, at minimum: (i) OHS Plan; (ii) Emergency Preparedness and Response Plan; (iii) Traffic Management Plan; (iv) Waste Management Plan; (v) Camp Management Plan; (vi) Materials Sourcing Plan; (vii) Vehicle and Machinery Management Plan; (viii) Air, Noise, and Dust Management Plan; and (ix) site-specific method statements for high-risk activities. These plans shall not replace the ESMP; they shall operationalize it. The minimum obligations and monitoring indicators summarized in the ESMP and in the annexed IFRAP Component-1 Standard Monitoring Matrix shall remain binding on the Contractor throughout the project life cycle.

8 REFERENCES

The following documents were referred to during the preparation of ESMP.

1. Environment and social framework (ESMF)
2. Project Appraisal Document – IFRAP
3. Bidding Documents (Nurg-Hinjri (Shuli & Faizo) Flood Protection Bund).
4. Engineering Drawings (Nurg-Hinjri (Shuli & Faizo) Flood Protection Bund).
5. The Balochistan Environmental Protection Act, 2012.
6. The Pakistan Environmental Protection Act, 1997.
7. The Balochistan Wildlife Protection, Preservation, Conservation and Management Act, 2014.
8. The International Union for Conservation of Nature (IUCN) Red List of Threatened Species.
9. Guidelines for Public Consultation, Pakistan Environmental Protection Agency (Pak-EPA).
10. National Disaster Management Plan (NDMP), Government of Pakistan, 2012.
11. Balochistan Integrated water Resources and Development Project - BIWRMD

ANNEXURES

ANNEXURE -A

CODE OF CONDUCT FOR CONTRACTOR'S STAFF

1. Purpose
This Code of Conduct establishes mandatory standards of behavior for all contractor personnel engaged under the project. Compliance with this Code is a contractual obligation and applies to all staff, workers, subcontractors, and associated personnel.

All personnel are required to sign this Code of Conduct prior to commencement of work. Any refusal to sign must be documented in writing, including justification.

2. Social Conduct Requirements
All personnel shall:

- Maintain professional and respectful behavior toward local communities at all times.
- Respect local customs, traditions, and cultural norms.
- Refrain from any form of discrimination based on gender, age, ethnicity, nationality, religion, disability, or sexual orientation.
- Respect privacy and dignity, particularly of women and vulnerable groups.
- Strictly prohibit and refrain from sexual harassment, gender-based violence (GBV), sexual exploitation and abuse (SEA), and any form of inappropriate sexual conduct.
- Demonstrate responsible and discreet personal behavior, including adherence to public health awareness measures (including HIV/AIDS awareness).

3. Health and Safety Obligations
All personnel shall:

- Comply fully with site-specific Health and Safety Plans.
- Demonstrate commitment to workplace safety and accident prevention.
- Maintain zero tolerance for harassment, bullying, intimidation, or offensive physical or verbal behavior.
- Properly use Personal Protective Equipment (PPE) provided at all times.
- Participate in mandatory health and safety training sessions.

4. Environmental Protection Obligations
All personnel shall:

- Avoid any activity that causes environmental damage.
- Refrain from hunting, poaching, or harming wildlife.
- Prohibit illegal tree cutting or vegetation removal.
- Comply with all pollution prevention and waste management measures.
- Follow environmental rules and regulations applicable to the project site.

TEMPLATE FOR PROJECT WORKERS CODE OF CONDUCT

I, _____, acknowledge that preventing any misconduct as stipulated in this code of conduct, including sexual exploitation and abuse (SEA), sexual harassment (SH), and child abuse/exploitation are important. Any activity, which constitute acts of gross misconduct are therefore grounds for sanctions, penalties or even termination of employment. All forms of misconduct are unacceptable be it on the work site, the work site surroundings, or at worker's camps. Prosecution of those who commit any such misconduct will be pursued as appropriate. I agree that while working on this project, I will:

1. Consent to security background check;

2. Treat women, children (persons under the age of 18) and persons with disability with respect regardless of race, color, language, religion, political or other opinion, national, ethnic or social origin, property, birth or other status;

3. Not use language or behavior towards men, women or children/learners that is inappropriate, harassing, abusive, sexually provocative, demeaning or culturally inappropriate;

4. carry out his/her duties competently and diligently;

5. 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;

6. maintain a safe working environment including by: a. ensuring that workplaces, machinery, equipment and processes under each person's control are safe and without risk to health;

b. wearing required personal protective equipment;

c. using appropriate measures relating to chemical, physical and biological substances and agents; and

d. following applicable emergency operating procedures.

7. 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 danger to his/her life or health;

8. treat other people with respect, and not discriminate against specific groups such as women, people with disabilities, migrant workers or children;

9. 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;

10. Not participate in sexual activity with children/learners—including grooming or through digital media. Mistaken belief regarding the age of a child and consent from the child is not a defense;

11. Not exchange money, employment, goods, or services for sex, with community members including sexual favors or other forms of humiliating, degrading or exploitative behavior;

12. Attend trainings related to HIV and AIDS, SAE/SH, occupational health and any other relevant courses on safety as requested by my employer;

13. Report to the relevant committee any situation where I may have concerns or suspicions regarding acts of misconduct by a fellow worker, whether in my company or not, or any breaches of this code of conduct provided it is done in good faith;

14. Regarding children (under the age of 18):

a) Refrain from hiring children for domestic or other labor, which is inappropriate given their age, or developmental stage, which interferes with their time available for education and recreational activities, or which places them at significant risk of injury.

b) Comply with all relevant local legislation, including labor laws in relation to child labor.

15. Refrain from any form of theft for assets and facilities including from surrounding communities.

16. Remain in designated working area during working hours;

17. Refrain from possession of alcohol and illegal drugs and other controlled substances in the workplace and being under influence of these substances on the job and during workings hours;

18. Follow prescribed environmental occupation health and safety standards;

19. Channel grievances through the established grievance redress mechanism.

I understand that the onus is on me to use common sense and avoid actions or behaviors that could be construed as misconduct or breach this code of conduct. I acknowledge that I have read and understand this Code of Conduct, and the implications have been explained with regard to sanctions on-going employment should I not comply.

Name: _____

Signature: _____

Date: _____

For the Employer/Contractor

Name:_____

Signature:_____

Date: _____

ANNEXURE-B

TRAINING PLAN

The Contractor shall include a detailed Training Plan in the Contractor's Environmental and Social Management Plan (CESMP). The Training Plan shall describe the training topics, target groups, trainers, frequency, recordkeeping, and reporting arrangements. Training shall be provided to all relevant personnel at induction before starting work and shall be repeated throughout the project through refresher sessions, toolbox talks, drills, and task-specific briefings, as applicable.

Routine site-level training, including induction, toolbox talks, and task-specific briefings, shall be the responsibility of the Contractor. Formal trainings on ESMP requirements, World Bank ESF and ESS obligations, emergency preparedness, incident reporting, and other thematic modules for Contractor key staff and PIU staff shall be organized by the Construction Supervision Consultant (CSC) in coordination with the PIU at the frequencies defined below.

All training records, including agendas, attendance sheets, training materials, photographs where appropriate, and evaluation notes, shall be maintained by the Contractor and made available to the CSC, PIU, and the World Bank upon request. A summary of trainings conducted during the reporting period shall be included in the Contractor's monthly ESHS report and verified by the CSC.

Training Responsibilities and Frequency

S. No.	Topic / Training	Main Contents	Target Staff	Lead Responsibility	Minimum Frequency
1	Handling, use, storage, and disposal of hazardous materials	Types of hazardous materials and wastes; routes of exposure; labels and signs; safety data sheets; safe handling, storage, transport, spill prevention, emergency response, and disposal	All relevant construction staff, storekeepers, fuel handlers, mechanics	Contractor ESHS staff; specialist support as needed	At induction; refresher every 6 months; additional briefing before hazardous-material use
2	Waste management	Types of waste; waste segregation; collection, storage, transport, reuse, recycling, disposal; hazardous vs. non-hazardous	All construction staff, especially workers at camps, storage areas, and regulating structures	Contractor Environmental/Social Officer	At induction; toolbox talk monthly; refresher every 6 months

S. No.	Topic / Training	Main Contents	Target Staff	Lead Responsibility	Minimum Frequency
		waste; prohibited practices; housekeeping			
3	Efficient and safe driving practices, including road and vehicle restrictions	Causes of road accidents; journey planning; driver fitness; vehicle inspection; site traffic rules; speed limits; reversing; haul-route safety; community safety near settlements	Drivers, operators, supervisors, and other relevant staff	Contractor; CSC to verify	Before deployment of drivers/operators; toolbox talk monthly; refresher every 6 months
4	Pollution prevention and response to major or minor pollution incidents on land or near water	Types and causes of pollution; spill prevention; refueling controls; contaminated soil handling; response steps; reporting chain; use of spill kits; cleanup and disposal	All staff, with focus on supervisors, mechanics, fuel handlers, and camp staff	Contractor Environmental/OHS staff	At induction; refresher every 6 months; drill or briefing after any incident
5	Health and safety: safe way to work and hazard awareness	Site hazards; risk awareness; housekeeping; PPE; excavation safety; moving machinery; work permits; hazard reporting; worker responsibilities	All construction staff	Contractor OHS staff	At induction; weekly toolbox talks; refresher every 6 months
6	Health and safety: safe use of plant and equipment	Safe operating procedures; operator competence; machine guarding; inspection; maintenance;	Plant and equipment operators, mechanics, supervisors	Contractor OHS staff and equipment supervisors	Before first use; toolbox talk monthly; refresher every 6 months

S. No.	Topic / Training	Main Contents	Target Staff	Lead Responsibility	Minimum Frequency
		lockout/tagout where relevant; intended use of equipment; defect reporting			
7	Health and safety: working at height	Access and egress; ladders; edges and openings; fall prevention; harnesses; platforms; rescue arrangements; supervision	All staff engaged in work at height	Contractor OHS staff	Before start of work at height; task-specific briefing each time; refresher every 6 months
8	Health and safety: working near or on water	Drowning risks; unstable surfaces; contamination and biological hazards; weather conditions; accidental immersion; lone working; rescue equipment; emergency actions	All staff working near canals, drainage paths, ponds, flood channels, or water crossings	Contractor OHS staff	Before near-water works; toolbox talk before each such activity; refresher every 6 months
9	Health and safety: use of PPE	Types of PPE; when PPE is required; correct use; limitations; care and maintenance; replacement; enforcement	All construction staff	Contractor OHS staff	At induction; weekly toolbox reminders; refresher every 6 months
10	Emergency procedures and evacuation	Types of emergencies; emergency organization; roles and responsibilities; communication and reporting; alarms; evacuation routes; rescue support;	All staff	Contractor; CSC/PIU oversight	At induction; emergency drill every 6 months; refresher after major changes or incidents

S. No.	Topic / Training	Main Contents	Target Staff	Lead Responsibility	Minimum Frequency
		assembly points			
11	Fire prevention and firefighting	Fire causes; fire prevention; types of extinguishers; inspection; competency; response actions; do's and don'ts; fuel and electrical fire risks	All staff	Contractor OHS staff	At induction; drill every 6 months; refresher annually or after any fire event [
12	Site induction, CESMP requirements, and environmentally sensitive areas	Purpose of induction; ESMP/CESMP requirements; code of conduct; worker and community GRM; duty of care; environmental protection; sensitive receptors; no-go areas; waste, water, noise, and dust controls	All staff and visitors	Contractor, with CSC verification	Before access to site; repeated for all new staff and visitors
13	Awareness on HIV/AIDS, sexually transmitted infections, vector-borne diseases, and cultural sensitivity	Respect for local customs; community behavior; disease transmission and prevention; available treatment and referral; migration-related behavioral risks; vector-borne disease prevention; hygiene	All staff	Contractor with qualified health resource person where needed; CSC/PIU support for thematic sessions	At induction; refresher every 6 months; targeted awareness as needed
14	Labor management, code of conduct, worker	Worker rights and responsibilities; code of	All staff, supervisors, subcontractors	Contractor; CSC/PIU for formal ESF-ESS refresher	At induction; refresher every 6 months

S. No.	Topic / Training	Main Contents	Target Staff	Lead Responsibility	Minimum Frequency
	GRM, and prohibition of child and forced labor	conduct; worker grievance channels; non-retaliation; no child labor; no forced labor; non-discrimination; respectful behavior			
15	Community health and safety, stakeholder conduct, and traffic interface	Working near communities; advance notice; safe crossings; barricading; warning signs; conduct near settlements; grievance handling; communication with local people	Supervisors, drivers, machinery operators, community liaison staff, relevant workers	Contractor; CSC to verify and support	At induction; toolbox talk monthly and before work near settlements
16	ESMP, CESMP, World Bank ESF/ESS requirements, and reporting obligations	ESMP obligations; CESMP implementation; ESS requirements relevant to the subproject; incident and accident notification; monthly reporting; non-compliance correction	Contractor key staff, CSC staff, PIU and relevant Irrigation Department staff	CSC in coordination with PIU	Project start-up before construction; refresher at least every 6 months
17	GBV, SEA/SH prevention and response, respectful workplace conduct, and confidential grievance referral	Definitions and prohibited behavior; code of conduct; survivor-centered approach; confidential reporting; sanctions; referral pathways;	All staff; additional detailed session for supervisors and focal persons	CSC/PIU for formal sessions; Contractor to reinforce through induction and toolbox talks	At induction; refresher every 6 months; additional sessions as required

S. No.	Topic / Training	Main Contents	Target Staff	Lead Responsibility	Minimum Frequency
		respectful interaction with communities			
18	Incident and accident reporting and investigation	Immediate response; notification chain; serious incident reporting timelines; preservation of evidence; corrective action; lessons learned	Contractor key staff, supervisors, OHS staff, CSC staff	CSC/PIU for formal training; Contractor for site-level implementation	Before commencement; refresher every 6 months and after major incidents

Implementation Notes

- No worker shall be allowed to start work without induction training relevant to the assigned task.
- Toolbox talks shall be conducted at least once per week at each active workfront and additionally before any high-risk activity, including excavation, lifting operations, work at height, work near water, traffic diversions, fuel handling, or emergency recovery works.
- Task-specific briefings shall be delivered whenever work methods, locations, equipment, or risk conditions change.
- Emergency drills, including fire response, evacuation, rescue, and spill response, shall be carried out periodically and documented.
- Training materials shall be delivered in a language understood by the workforce and, where required, explained verbally for illiterate workers.
- Attendance records shall include the topic, date, trainer, names or signatures/thumb impressions of participants, and affiliation of participants, including subcontractor workers where applicable.

ANNEXURE-C

ENVIRONMENTAL AND SOCIAL MONITORING CHECKLIST

Project Name: _____ Activities Inspected_____

Location _____ Weather Condition_____

Date: _____ Time: _____

Sr. No	Performance Indicators	Yes	No	N/A	Des.	Remarks
1.	Heavy Dust					
2.	Excessive noise or vibration					
3.	Water sprinkling at the construction and disposal sites					
4.	Discharge of waste water to nearby water course/water body					
5.	Any spillage of fuel/oil observed					
6.	Dumping of solid waste at designated Site					
7.	Dumping of construction waste/spoil at designated Site					
8.	Protection of Flora/Fauna					
9.	Availability of Drinking water					
10.	Site housekeeping					
11.	Warning signs displayed near construction zone.					
12.	Use of PPEs by the beneficiaries and workers					
13.	Any incident/accident (use separate proforma)					
14.	Any GBV/SEA and privacy related complaints					
15.	Availability of first aid boxes at site					
16.	Any land ownership provided to women beneficiaries					
17.	Any involuntary resettlement under the project					
18.	Proportion of local labor in the project					
19.	Child/Force Labor					
20.	Is the GRM properly in place					
21.	Regular monitoring of complaint register is in practice					
22.	Any exclusion, specially to women, disadvantaged groups and marginalized people from project forums					
23.	Any elite capture related grievance					
24.	Participation of women, children, and vulnerable groups in consultations and project activities					
25.	Any Unusual Conditions (e.g., heavy rain, extreme weather)					
26.	Chance finds during construction					

Note If any:

Filled By:	**Extra Note if needed:**
_____ **Signature** **Name:** _____ **Position:** _____	

ANNEXURE-D

ENVIRONMENTAL CODE OF PRACTICES (ECOPS)

The basic objective of the ESMP exercise is to minimize the adverse impacts of project interventions on the environment of the sub-project areas. The following Environmental Code of Practices (ECoPs) provides the method by which the Contractor should comply with the mitigations contained in this ESMP. The objectives of these ECoPs are to provide the best guideline practices on environmental, health, and safety during the operation phase of the sub-project.

The following ECoPs be followed best practices:

- Water resource management
- Drainage
- Waste Management
- Management of fuel and hazardous material
- Management of soil quality
- Management of air quality
- Management of Noise and vibration
- Protection of flora
- Protection of Fauna
- Health and Safety
- Traffic Management
- Management of Contractor Camp
- Water Resource Management

ECoP for Water Resource Management

Activity	Environmental Impact	Environmental Management Guideline
Drinking water	Groundwater at shallow depths might be contaminated and hence not suitable for drinking purposes.	Tube wells will be installed with due regard to the surface environment, protection of groundwater from surface contaminants, and protection of aquifer cross-contamination. Control the quality of the groundwater to be used for drinking water on the basis of NEQS standards for drinking water. Safe and sustainable discharges are to be ascertained prior to the selection of pumps. All tube wells, test holes, monitoring wells that are no longer in use or needed shall be properly decommissioned
Construction activities in water bodies	Construction works in the water bodies will increase sediment and contaminant loading, and affect the habitat of fish and other aquatic biology.	Monitor the water quality in the runoff from the site, and improve work practices as necessary. Minimize the generation of sediment, oil and grease, excess nutrients, organic matter, litter, debris and any form of waste (particularly petroleum and chemical wastes). These substances must not enter waterways, stormwater systems or underground water tables. Use environment-friendly and nontoxic slurry during the construction of piles to discharge into the river. Reduce infiltration of contaminated drainage through stormwater management design. Do not discharge cement and water curing used for cement concrete directly into watercourses and drainage inlets.
Discharge from construction sites	During construction both surface and groundwater quality may be deteriorated	Install temporary sediment basins, where appropriate, to capture sediment-laden runoff from the site. Divert runoff from undisturbed areas around the construction site Stockpile materials away from drainage lines Prevent all

	due to construction activities in the river, sewerages from construction sites and work camps. The construction works will modify ground cover and topography changing the surface water drainage patterns, including infiltration and storage of stormwater. The change in the hydrological regime leads to increased rates of runoff and in sediment and contaminant loading, increased flooding, groundwater contamination, and affect the habitat of fish and other aquatic biology.	solid and liquid wastes entering waterways by collecting solid waste, oils, chemicals, Bhitumen spray waste and wastewaters from brick, concrete, and asphalt cutting where possible and transport to an approved waste disposal site or recycling depot. Wash out ready-mix concrete agitators and concrete handling equipment at washing facilities off-site or into approved bunded areas on site. Ensure that tires of construction vehicles are cleaned in the washing bay (constructed at the entrance of the construction site) to remove the mud from the wheels. This should be done in every exit of each construction vehicle to ensure the local roads are kept clean.
Soil erosion and siltation	Soil erosion and dust from the material stockpiles will increase the sediment and contaminant loading of surface water bodies.	Stabilize the cleared areas not used for construction activities with vegetation or appropriate surface water treatments as soon as practicable following earthwork to minimize erosion. Ensure that roads used by construction vehicles are swept regularly to remove sediment. Water the material stockpiles (where appropriate), access roads and bare soils on an as-required basis to minimize dust. Increase the watering frequency during periods of high risk (e.g. High winds)
Handling, use, storage & disposal of hazardous material and waste	Water pollution from the storage, handling, and disposal of hazardous materials and general construction waste, and accidental spillage	Follow the management guidelines proposed in ECoPs for Waste Management and Management of Fuels & Hazardous Substances. Minimize the generation of sediment, oil and grease, excess nutrients, organic matter, litter, debris and any form of waste (particularly petroleum and chemical wastes). These substances must not enter a watercourse or underground water tables

ECoP for Drainage

Activity	Environmental Impact	Environmental Management Guideline
Excavation and earthworks, and construction yards	Lack of proper drainage for rainwater, surface water, liquid waste or wastewater owing to the construction activities harms the environment in terms of water and soil contamination and mosquito growth.	Provide alternative drainage for rainwater if the construction works/earth-fillings cut the established drainage line. Rehabilitate road drainage structures immediately if damaged by contractors' road transports. Build new drainage lines as appropriate and required for wastewater from the construction yards connecting to the available nearby recipient water bodies. Ensure wastewater quality conforms to the relevant standards before being discharged into recipient water bodies. Ensure the internal roads/hard surfaces in the construction yards/construction camps have adequate stormwater drainage to accommodate high runoff during a downpour and that there will be no stagnant water remaining in the area at the end of the downpour. Construct wide drains instead of deep drains to avoid sand deposition in the drains that will require frequent cleaning. Protect natural slopes of drainage channels to ensure adequate stormwater drains. Regularly inspect and maintain all drainage channels to assess and alleviate any drainage congestion problem. Reduce infiltration of contaminated drainage through stormwater management design

ECoP for Waste Management

Activity	Environmental Impact	Environmental Management Guideline
Generation of hazardous wastes	Safety, health and environmental hazards due to improper waste Management practices	Collect chemical wastes in 200-liter drums (or similar sealed containers), appropriately labelled for safe transport to an approved chemical waste depot. Store, transport and handle all chemicals, avoiding potential environmental pollution. Collect hydrocarbon wastes, including lubricating oils, for safe transport off-site for reuse, recycling, treatment or disposal at approved locations. Construct concrete or other impermeable flooring to prevent seepage in case of spills. Store all hazardous wastes appropriately in Bunded areas away from watercourses. Make available Material Safety Data Sheets (MSDS) for hazardous materials on-site during construction.
General waste	Soil, surface water & groundwater pollution from the improper disposal of wastes.	Request suppliers to minimize packaging where practicable. Place a high emphasis on good housekeeping practice. Collect and transport non-hazardous wastes to all the approved disposal sites. Train and instruct all personnel in waste management practices and procedures as a component of the environmental induction process. Develop a waste management plan for various specific waste streams (e.g., reusable waste, flammable waste, Organize disposal of all wastes generated during construction in an environmentally acceptable manner. This will include consideration of the nature and location of the disposal site, so as to cause less environmental impact. Maintain all construction sites in a clean, tidy and safe condition and provide and maintain appropriate facilities for the temporary storage of all wastes before transportation and final disposal. Provide refuse containers at each worksite. Minimize the production of waste materials through the '3 Rs' (Reduce, Recycle and Reuse) approach. Segregate and reuse or recycle all the wastes, wherever practical.

ECoP for Management of Fuels & Hazardous Substances

Activity	Environmental Impact	Environmental Management Guideline
Activity	Environmental Impact	Environmental Management Guideline
hazardous goods	construction have the potential to be a source of contamination. Improper storage and handling of fuels, lubricants, chemicals and hazardous goods/materials on- site, and potential spills from these goods may harm the environment or health of construction workers.	marked areas, where they will not be run over by vehicles or heavy machinery. The area should preferably slope or drain to a safe collection area in the event of a spill. Train the relevant construction personnel in the handling of fuels and spill/pollution control procedures. Store dangerous goods in bunded areas on a top of a sealed plastic sheet or other impervious material away from watercourses. Refuelling should occur only within bunded areas. Make available MSDS for chemicals and dangerous goods on-site. Transport waste of dangerous goods, which cannot be recycled, to a designated & approved disposal site. Prepare pollution control procedures and submit the plan to the Engineer. Put containers and drums in permanent storage areas on an impermeable floor that slopes in a safe collection area in the event of a spill or leak.

ECoP for Management of Soil Quality

Activity	Environmental Impact	Environmental Management Guideline
Construction material stock piles	Erosion from construction material stockpiles may contaminate the soils	Protect the toe of all stockpiles, where erosion is likely to occur, protect with silt fences, straw bales or bunds
Storage of hazardous and toxic chemicals	Spillage of hazardous and toxic chemicals will contaminate the soils	Strictly manage the waste management plans proposed and the storage of materials. Construct appropriate spill contaminant facilities for all fuel storage areas. Establish and maintain hazardous materials, a register detailing the location and quantities of hazardous substances, including storage, use, and disposal. Train personnel and implement safe work practices for minimizing the risk of spillage. Identify the cause of contamination, if it is reported, and contain the area of contamination. The impact may be contained by isolating the source or implementing controls around the affected site. Remediate the contaminated land using the most appropriate available method

ECoP for Air Quality

Activity	Environmental Impact	Environmental Management Guideline
Construction machinery	Air quality can be adversely affected by emissions from machinery and the combustion of fuels.	Machinery causing excess pollution (e.g. visible smoke) will be banned from construction sites. Fit machinery with appropriate exhaust systems and emission control devices. Maintain these devices in good working condition. Focus special attention on containing the emissions from generators. Service all equipment regularly to minimize emissions

		Take all precautionary measures when handling and storing fuels and lubricants, avoiding environmental pollution. Avoid the use of material with greater potential for contamination by substituting them with more environmentally friendly material. Provide absorbent and containment material (e.g. Absorbent mats) where hazardous material is used and stored and train personnel in their correct use. Provide protective clothing, safety boots, helmets, masks, gloves, goggles, to the construction personnel, appropriate to materials in use. Make sure all containers, drums, and tanks that are used for storage are in good condition and label with an expiry date. Any container, drum, or tank that is dented, cracked, or rusted might eventually leak. Check for leakage regularly to identify potential problems before they occur. Store hazardous materials above flood plain level.
Construction activities	Dust generation from construction sites, material stockpiles, and access roads is a nuisance in the environment and can be a health hazard.	Minimize the extent and period of exposure of the bare surfaces Reschedule earthwork activities or vegetation clearing activities, were practical, if necessary, to avoid periods of high wind and if visible dust is blowing off-site Water the material stockpiles & access roads on an as-required basis to minimize the production of dust. Increase the watering frequency during periods of high risk (e.g. High winds). Restore disturbed areas as soon as practicable by vegetation/grass-turfing

ECoP for Noise & Vibration

Construction activity	Noise and vibration may have an impact on people, property, fauna, livestock and the natural environment.	Notify affected people if/when noisy activities will be undertaken Plan activities on-site and deliveries to and from site to minimize the impact. Monitor and analyze noise and vibration results and adjust construction practices as required. Notify adjacent residents prior to any typical noise event outside of daylight hours. Educate the operators of construction equipment on potential noise problems and the techniques to minimize noise emissions Employ the best available work practices on-site to minimize occupational noise levels. Avoid undertaking the noisiest activities at night near the residential areas
Construction vehicular traffic	Increased noise levels in the project area	Maintain all vehicles in accordance with manufactures maintenance procedures to ensure good working order. Make sure all drivers will comply with the traffic codes concerning the maximum speed limit, driving hours, etc.
Construction machinery	Noise and vibration may have an impact on people, property, fauna, livestock and the natural environment.	Appropriately site all noise-generating activities to avoid noise pollution to local residents. Install acoustic enclosures around generators to reduce noise levels. Fit high-efficiency mufflers to appropriate construction equipment. Use the quietest available plant and equipment. Modify equipment to reduce noise (for example, noise control kits, the lining of truck trays). Maintain all vehicles in accordance with manufactures maintenance procedures to ensure good working order

ECoP for Flora

Activity	Environmental Impact	Environmental Management Guideline
Vegetation clearance	Local flora is important to provide shelters for the fauna, offer fruits and/or timber/firewood and protect soil erosion. Such as damage to flora has a wide range of adverse environmental impacts.	Clear only the vegetation that needs to be cleared in accordance with the designs. These measures are applicable to both the construction areas as well as for any associated activities such as sites for stockpiles, disposal of fill and construction of diversion roads, etc. Do not burn cleared vegetation – where feasible, chip or mulch and reuse it for the rehabilitation of affected areas, temporary access tracks or landscaping. Mulch provides a seed source, can limit embankment erosion, retains soil moisture and nutrients, and encourages re-growth and protection from weeds. Reduce disturbance to surrounding vegetation Use appropriate type and minimum size of the machine to avoid disturbance to adjacent vegetation. Get approval from the supervision consultant for the clearance of vegetation. Make selective and careful pruning of trees where possible to reduce the need for tree removal. Control noxious weeds by disposing of at a designated dump site or burn on site. Provide adequate knowledge to the workers regarding nature protection and the need to avoid felling trees during construction Supply appropriate fuel in the work camps to prevent fuelwood collection. Return topsoil and mulched vegetation (in areas of native vegetation) to approximately the same area of the roadside it came from. Avoid work within the drip-line of trees to prevent damage to the tree roots and compacting the soil.

ECoP for Fauna

Activity	Environmental Impact	Environmental Management Guideline
Construction activities	The location of construction activities can result in the loss of wildlife habitat and habitat quality. Impact on migratory birds, habitat and active nests	The Contractor is not permitted to destruct active nests or eggs of migratory birds. Minimize the release of oil, oil wastes or any other substances harmful to migratory birds to any waters or areas frequented by migratory birds.
Construction camps	Illegal poaching	Provide adequate knowledge to the workers regarding the protection of flora and fauna, and relevant government regulations and punishments for illegal poaching.
Vegetation clearance	Clearance of vegetation may impact shelter, feeding and/or breeding and/or physical destruction and severing of habitat areas	Restrict the tree removal to the minimum required. Retain tree hollows on-site, where appropriate. Leave dead trees where possible as habitat for fauna. Fell the hollow-bearing trees in a manner that reduces the potential for fauna mortality. After felling, hollow trees will remain unmoved overnight to allow animals to move of their own accord.

Breeding Season & Nesting	During earth works and vegetation clearance	The contractor environment officer shall survey the construction sites to eliminate the potential risk of any incident to any terrestrial, reptilian, mammals, fauna species prior to the construction works. On identification of any such nest (on ground or trees), the contractor shall immediately cease works in the area and inform the Engineer and PMU. The contractor shall erect a fence within 50ft of the nest and prohibit any works within this area until approved by the Engineer who shall arrange for an ecologist from Consultant to visit the site and assess the impact. The contractor shall not fell a tree which houses an active nest or eggs. The breeding season of the following faunal species that are Vulnerable, Near Threatened and Protected are identified below: Avi-Fauna • Greter Spotted Eagle *(Aquila clanga)*-April and May • Houbara Bustard (*Chlamydotis undulata*)-March & October • Black-tailed Godwit (*Limosa limosa)*-March to August **Reptiles** • Bengal Monitor (Varanus bengalensis)-June to September • Tortoise Afghan *(Testudo horsfieldii*)-May or June **Mammals** • Common Hill fox (Vulpes vulpes)- December or February • Chinkara (Gazella bennetti-August to Ocotober & March *to April*
General construction works	Construction works may pose health and safety risks to the construction workers and site visitors leading to severe injuries and deaths. The population in the proximity of the construction site and the construction workers will be exposed to a number of) biophysical health risk factors, (e.g. noise, dust, chemicals, construction material, solid waste, wastewater, vector transmitted diseases, etc), i) risk factors resulting from human behavior (e.g. STD, HIV, etc) and (iii) Road accidents from construction traffic.	Implement suitable safety standards for all workers and site visitors, which should not be less than those laid down on the international standards (e.g. International Labor Office guideline on 'Safety and Health in Construction; World Bank Group's 'Environmental Health and Safety Guidelines') and contractor's own national standards or statutory regulations, in addition to complying with the national acts and rules of the Government of Pakistan. Provide the workers with a safe and healthy work environment, taking into account inherent risks in its particular construction activity and specific classes of hazards in the work areas, Provide personal protection equipment (PPE) for workers, such as safety boots, helmets, masks, gloves, protective clothing, goggles, full-face eye shields, and ear protection. Maintain the PPE properly by cleaning dirty, and replacing damaged, PPE. Safety procedures include the provision of information, training and protective clothing to workers involved in hazardous operations and proper performance of their job. Appoint an environment, health, and safety manager to look after the health and safety of the workers. Inform the local authorities responsible for health, religious and security before the commencement of civil works and establishment of construction camps so as to maintain effective surveillance over public health, social and security matters. The Contractor shall follow the ECoPs presented

		in the following tables to reduce health risks to the construction workers and nearby community

ECoP for Traffic Management

Activity	Environmental Impact	Environmental Management Guideline
Construction vehicular traffic	Increased traffic use of roads by construction vehicles will affect the movement of normal road traffics and the safety of the road-users. Accidents and spillage of fuels and chemicals	Restrict truck deliveries, where practicable, today time working hours. Restrict the transport of oversize loads. Operate road traffics/transport vehicles, if possible, at non-peak periods to minimize traffic disruptions. Enforce on-site speed limit. Prepare and submit a traffic management plan to Consultant for their approval. Include measures in the traffic management plan to ensure uninterrupted traffic movement during construction: detailed drawings of traffic arrangements showing all detours, temporary road, temporary diversions, necessary barricades, warning signs/lights, road signs, etc. Provide signs at strategic locations of the roads complying with the schedules of signs contained in the Pakistani Traffic Regulations. Install and maintain a display board at each important road intersection on the roads to be used during construction, which shall clearly show the following information in Urdu:

ECoP for Camp Management

Activity	Environmental Impact	Environmental Management Guideline
Safety	Inadequate safety facilities at the construction camps may create security	Provide appropriate security personnel (police /home guard or private security guards) and enclosures to prevent unauthorized entry into the camp area.
	problems and fire hazards	Maintain register to keep track of personnel present in the camp at any given time. Encourage the use of flameproof material for the construction of the labor housing/site office. Ensure that these houses/rooms are of sound construction and capable of withstanding storms/cyclones. Provide the appropriate type of firefighting equipment's suitable for the construction camps. Display emergency contact numbers clearly and prominently in strategic places in camps. Communicate the roles and responsibilities of labourers in case of an emergency in the monthly meetings with contractors.
Construction Camp Facilities	Lack of proper infrastructure facilities, such as housing, water supply, and sanitation facilities will increase pressure on the local services and generate substandard living standards and health hazards.	Adequate housing for all workers. Safe and reliable water supply. Water supply from tube wells that meets the national standards. Hygienic sanitary facilities and sewerage systems. Provide separate latrines and bathing places for males and females with total isolation by a wall or by location. Female toilets should be clearly marked in a language understood by the persons using them to avoid miscommunication. Treatment facilities for sewerage of toilet and domestic wastes Stormwater drainage facilities – shallow v drains should be provided on both sides of any camp roads to drain off stormwater. Pave the internal roads of at least haring-bond bricks to suppress dust and to work against a possible muddy surface during monsoon. Provide in-house community/common entertainment facilities. The dependence of local entertainment outlets by construction staff is to be discouraged/prohibited to the extent possible.
Disposal of waste	Management of wastes is crucial to minimize impacts on the environment, such as soil or water pollution.	Ensure proper collection and disposal of solid wastes within the construction camps. Encourage waste separation by source; organic wastes in one container and inorganic wastes in another container at the household level. Store inorganic wastes in a safe place within the household and clear organic wastes on a daily basis to waste collectors. Establish waste collection, transportation and disposal systems supported by adequate manpower and equipment/vehicles. Dispose of organic wastes in a designated safe place on a daily basis. At the end of the day cover the organic wastes with a thin layer of sand so that flies, mosquitoes, dogs, cats, rats, etc. are not attracted. Where waste is disposed of in a pit take care to protect groundwater from contamination by leachate formed due to decomposition. Cover the bed of the pit with an impervious layer of materials (clay, thin concrete) to protect groundwater from contamination. Locate the garbage pit/waste disposal site min 500 m away from the residence so that peoples are not disturbed with the odor likely to be produced from anaerobic decomposition of wastes at the waste dumping places. Encompass the waste dumping place with fencing to prevent access to children. Do not establish site-specific landfill sites. All solid

		waste will be collected and removed from the work camps and disposed of in the approval of waste disposal sites.

ANNEXURE -E

CHANCE FIND PROCEDURE FOR CULTURAL HERITAGE FINDS

(Archaeological and Others)

1. Identify the protected sites in the project areas and ensure that there is no protected monument within 200 feet from a proposed project site. If the proposed site is not located in a notified area, and there are no apparent archaeological values associated with the site, take no further action.
2. If, during the implementation of works, unlisted cultural heritage is encountered in any form, the Irrigation and Power Department shall contact:
   Directorate of Archaeology and Museums
   Culture, Tourism and Archives Department, Quetta Tel: 081-283 3595
3. If the site falls within the boundaries of a protected archaeological site or monument, then depending on its classification the relevant conservation authority (if federally protected, Department of Archaeology and Museums) will determine the level of development allowable, and the applicable conditions.
4. The Department for Irrigation and Power shall obtain written record of the assessment of the potential impacts on the site, by the Balochistan or federal Department of Archaeology and Museums – whatever the case might be.
5. The Irrigation and Power Department will liaise with the Provincial and/or Federal conservation authority to ensure that any chance finds are managed and protected.

Chance Find Procedure

Chance finding procedures which will be used during this scheme are as follows:

- Stop the construction activities in the area of the chance find;
- Delineate the discovered site or area;
- Secure the site to prevent any damage or loss of removable objects. In cases of removable antiquities or sensitive remains, a night guard shall be present until the responsible local authorities and the Antiquities Department take over;
- Notify the ESS team/supervisory Engineer who in turn will notify the Antiquities Department immediately (within 24 hours or less);
- Responsible local authorities and Antiquities Department would be in charge of protecting and preserving the site before deciding on subsequent appropriate procedures. This would require a preliminary evaluation of the findings to be performed by the archaeologists of the Antiquities Department (within 72 hours). The significance and importance of the findings should be assessed according to the various criteria relevant to cultural heritage; those include the aesthetic, historic, scientific or research, social and economic values;
- Decisions on how to handle the finding shall be taken by the authorities responsible and Antiquities Department. This could include changes in the layout (such as when finding an irremovable remain of cultural or archaeological importance) conservation, preservation, restoration and salvage;
- Implementation for the authority decision concerning the management of the finding shall be communicated in writing by the Antiquities Department; and Construction work could resume only after permission is given from the responsible local authorities and the Antiquities Department concerning safeguard of the heritage.

  These procedures must be referred to as standard provisions in construction contracts, when applicable. During project supervision, the Site Engineer shall monitor the above regulations relating to the treatment of any chance find encountered or observed.

ANNEXURE: F

FORMAT OF A MONTHLY MONITORING REPORT

Scope of Works

Provide a summary regarding the engineering activities as given in design documents.

Summary of non-compliances

This section summaries the findings of the Environmental Management Plan (ESMP) compliance monitoring completed by the supervisory consultant under this project.

Summary of Action Required

Summary of non-compliances

S. No	Non-Compliances	Actions Required	ending Since	Status of Previous Month Non-compliances
1	*Include Particular Non-Compliance Observed*	*Include Action Require, as per ESMP*	*Include Number of Months*	*Include so far progress made from the previous month*
	----	---	---	----

Historical Review of Non-Compliances

So far, the progress made and issues resolved by the contractor include a graph of the past three months. (Percentage Non-Compliance evaluated from monthly monitoring checklist)

Non-Compliances

Include specific social, Environmental Health and Safety Non-Compliances observed during the monitoring month

Provide Specific Non-Compliance (With Status)

- Provide details
- Provide Photographs

Action Required

- Provide a list of action required

ANNEXURE: G

CERTIFICATE OF ENVIRONMENTAL MONITORING LAB

GREEN

GRES-JV-SES

SES

Reference No: GRES-SES-JV/IFRAP/09 **Date:**25th October, 2025

FOR INTEGRATED FLOOD RESILIENCE AND ADPATION PROJECT (IFRAP)

This is to certify that the Green Environmental Services Private Limited (GRES) JV Sustainable Environmental Services (SES) Karachi has been conducted environmental baseline testing studies for the different schemes regarding Environmental and Social Management Plan & Checklist. The samples were collected in October 2025. The scope of Monitoring Activities by GRES-JV-SES follows:

Baseline Sampling Ambient Air, Noise, Surface Water and Ground Water					
S. No	Project Site	Ambient Air	Noise	Surface Water	Ground Water
1	Restoration of Flood Protection Embankment upstream of Nurg Hingri Weir (Shurli & Faizo Bund), PKG-II – Lasbela District	01	01	01	01

The Baseline Environmental Monitoring sampling as per above mentioned scope has been conducted by GRES JV SES as per requirement of the project. A comprehensive report of test conducted along with analysis and conclusion has been submitted to CAMEOS Consultant, Quetta Office.

Name: Zafarullah Channa
(Party of the first Part)

Signature: _____

Name: Zeeshan Khan
(Party of the second Part)

Signature: _____

HEAD OFFICE
Plot No: #233, Street No: #6 Sector 8-C, Hajra Masjid Muhammad Ali Gouth, Hazrat Bilal Colony, Korangi, Korangi Town, Karachi. Cell: 03327983594, 03302744735, Email: ges.karachioffice@gmail.com

NEW HEAD OFFICE-LAB
Plot No: SC-46, Block Commercial Sector 31/D P&T Society Korangi, Karachi. Cell: 03332699016, 03462225261, Email: info@sespaklab.com.

ANNEXURE: H

E&S RISK SCREENING TABLE (AS PER ESS1 & ESS4)

(This should be included as a technical annex to the Preliminary Site Assessment Report)

Purpose: To screen sub-projects for potential environmental and social (E&S) risks and determine the level of assessment required during detailed design.

Preliminary Site Assessment Report

No.	Sub-Project Name	District	Type	Key Environmental Risks	Key Social Risks	Proposed Mitigation / Management Measures	Preliminary Risk Category (Low / Moderate / Substantial / High)
1	Nurg Hingri Flood Protection embankment	PKG-II – Lasbela District:	Flood Protection	Sediment inflow, erosion, disposal of silt	Temporary land use for construction, community safety	Design silt trap, use borrow area rehabilitation plan, safety signage	Moderate
				Earth bund construction	Access disturbance for farmers	Timing of works, maintain access paths	Low
				Waste generation		Water sprinkling, gabion mesh coating	Low
				Dust emissions	Labor influx, GBV risk	Controlled spoil disposal, labor code of conduct	Moderate
				PPEs		Community awareness & fencing	Moderate

Summary:

- No major irreversible environmental or social impacts anticipated.
- All identified risks are manageable through C-ESMPs during design.
- PIU to coordinate with Environmental and Social Specialists for final risk classification in the next phase

ANNEXURE: I

LAB TEST REPORTS (WATER QUALITY, AIR QUALITY & NOISE RECORD)

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Analysis Report Ref # SES/Env/OCT/25/2913/3803 -A Date:20-OCT-2025

Description:

Job Location:	LASBELA	Testing Instrument	24 Hours Air Monitoring Station
Job Performed By:	Mr. Mohsin	Job Date :	15-10-2025 to 16-10-2025
Monitoring Duration:	(10:00 AM To 09:00 AM) 24 Hrs.		
Project:	INTEGRATED FLOOD RESILIENCE AND ADPATION DEVELOPMENT PROJECT (IFRAP)		
Site Location:	Restoration of Flood Protection Embankment upstream of Nurg Hingri Weir (Shurli & Faizo Bund) PACKAGES-II		
Client Name :	CAMEOS CONSULTANT, QUETTA OFFICE		

Air Quality Test Report

Parameters	Temp	NO	NO_2	SO_2	CO	$PM_{2.5}$	PM_{10}	SPM	O_3
NEQS &BEQS Limit	-	24 hrs. (40 µg/m³)	24 hrs. (80µg/m³)	24 hrs. (120µg/m³)	08 hrs. (5 mg/m³)	24 hrs. (35 µg/m³)	24 hrs. (150 µg/m³)	24 hrs. (500 µg/m³)	01 hr. (130µg/m
WHO Limit	-	-	24 hrs. (25 µg/m³)	24 hrs. (40 µg/m³)	08 hrs. (4 mg/m³)	24 hrs. (15 µg/m³)	24 hrs. (45µg/m³)	-	Peak Seaso (60µg/m
Time		**Results**							
10:00AM	35°C	17.4	36.8	4.9	0.051	28.5	82.5	111.0	05
11:00AM	35°C	15.6	31.5	5.6		26.9	84.1	111.0	-
12:00PM	35°C	16.3	35.1	6.7		24.8	95.6	120.4	-
01:00PM	35°C	19.5	38.7	7.1	0.047	26.2	92.4	118.6	-
02:00PM	34°C	16.0	40.3	6.8		27.0	91.7	118.7	-
03:00PM	35°C	17.5	37.5	5.7		25.3	100.8	126.1	-
04:00PM	37°C	15.8	40.9	6.3	0.060	22.7	102.6	125.3	-
05:00PM	36°C	18.4	37.1	7.2		21.8	104.4	126.2	-
06:00PM	35°C	13.2	39.3	5.8		28.3	94.2	122.5	-
07:00PM	35°C	13.6	33.7	5.1	0.042	26.1	93.9	120.0	-
08:00PM	29°C	11.9	32.6	5.0		25.6	96.1	121.7	-
09:00PM	28°C	10.6	29.4	6.2		22.9	87.2	110.1	-
10:00PM	27°C	12.1	31.5	4.6	0.037	28.6	85.5	114.1	-
11:00PM	25°C	9.5	25.9	3.5		29.2	82.3	111.5	-
12:00AM	26°C	8.9	22.6	4.0		23.9	79.4	103.3	-
01:00AM	29°C	10.8	23.9	3.3	0.031	24.2	75.5	99.7	-
02:00AM	28°C	8.3	22.2	2.8		22.5	72.8	95.3	-
03:00AM	27°C	7.6	26.4	2.9		25.4	67.2	92.6	-
04:00AM	28°C	6.1	21.1	2.1	0.027	28.1	63.1	91.2	-
05:00AM	26°C	7.1	23.3	2.6		25.1	61.5	86.6	-
06:00AM	27°C	8.2	22.7	2.2		30.2	58.4	88.6	-
07:00AM	28°C	9.8	21.9	1.9	0.036	28.3	57.6	85.9	-
08:00AM	29°C	11.6	24.2	3.5		27.5	62.8	90.3	-
09:00AM	29°C	12.8	26.8	3.8		27.9	67.9	95.8	-
AVERAGE	30.7°C	12.18	29.47	4.63	0.0414	26.55	77.59	103.03	05

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00094572

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Analysis Report — Ref # SES/Env/OCT/25/2913/3803 E. — Date:20-OCT-2025

Description:

Quantity of sample	1.0 Liter	Sampling Methodology	Grab	Sampling Date	15-10-2025
Analysis Type	Chemical Analysis			Sampling Location	Project Site
Project	INTEGRATED FLOOD RESILIENCE AND ADPATION DEVELOPMENT PROJECT (IFRAP)				
Site Location:	RESTORATION OF FLOOD PROTECTION EMBANKMENT UPSTREAM OF NURG HINGRI WEIR (SHURLI & FAIZO BUND) PACKAGES-II				
Client Name :	CAMEOS CONSULTANT, QUETTA OFFICE				

Ground Water Test Report

S.No	Measuring Parameter	Units	Testing Method	NEQS Limits	WHO Limits	BEQS Limits	Results
1	Temperature AT 40 +C	°C	By Calibrated Thermometer	40 + ≤ 03° C	40 + ≤ 03° C	40 + ≤ 03° C	33.1
2	pH @ 25 °C	pH	ASTM D-1293	6 to 9	6 to 9	6 to 9	7.91
3	Biological Oxygen Demand	BOD_5 (mg/L)	APHA 5210	80	80	80	72.5
4	Chemical Oxygen Demand	COD (mg/L)	ASTM D-1252	150	150	150	145
5	Total Dissolved Solids	TDS (mg/L)	APHA 2540-C	3500	3500	3500	2021
6	Total Suspended Solids	TSS (mg/L)	APHA 2540-D	200	200	200	115.1
7	Oil & Grease	O.Gr(mg/L)	ASTM D-4281	10	10	10	0.07
8	Chloride	Cl^- (mg/L)	ASTM D-512	1000	1000	1000	520
9	Phenolic compound	Phol (mg/L)	ASTM D-1783	0.3	0.3	0.3	ND
10	Fluoride	F^- (mg/L)	APHA 4500-F^-	10	10	10	4.5
11	Anionic Detergent	Det (mg/L)	ASTM D-6173	20	20	20	5.1
12	Selenium	Se^{-2} (mg/L)	APHA 4500 Se	0.5	0.5	0.5	ND
13	Sulfide	S^{-2} mg/L)	APHA 4500-S^{-2}	1.0	1.0	1.0	0.25
14	Ammonia	NH3(mg/L)	ASTM D-1426	40	40	40	15.6
15	Cadmium	Cd^{+2} (mg/L)	ASTM-D3557	0.1	0.1	0.1	<0.4
16	Chromium Trivalent	Cr^{+3} (mg/L)	APHA 3500-Cr	1.0	1.0	1.0	ND
17	Chromium Hexavalent	Cr^{+6} (mg/L)	APHA 3500-Cr	1.0	1.0	1.0	0.048
18	Lead	Pb^{+2} (mg/L)	ASTM-D3559	0.5	0.5	0.5	0.1
19	Mercury	Hg^{+} (mg/L)	Kit Method	0.01	0.01	0.01	ND
20	Nickel	Ni^{+2} (mg/L)	HACH Dimethylglyoxime Method	1.0	1.0	1.0	ND
21	Silver	Ag (mg/L)	ASTM-D3866	1.0	1.0	1.0	ND
22	Zinc	Zn^{+2} (mg/L)	HACH Zincon Method	5.0	5.0	5.0	0.8
23	Total Iron	Fe2+ (mg/L)	APHA 3500-Fe	8.0	8.0	8.0	0.4
24	Manganese	Mn^{+2}(mg/L)	APHA 3500-Mn	1.5	1.5	1.5	0.08
25	Boron	B(mg/L)	APHA 4500-Mn	6.0	6.0	6.0	0.9
26	Sulfate	SO_4 (mg/L)	APHA 4500-SO^{-4}	600	600	600	216
27	Arsenic	As (mg/L)	Palintest Kit	1.0	1.0	1.0	ND
28	Copper	Cu^{2+} (mg/L)	HACH Biquinoline Method	1.0	1.0	1.0	0.04
29	Chlorine	Cl2 (mg/L)	HACH DPD Method	1.0	1.0	1.0	ND
30	Aluminum	Al (mg/L)	HACH Eriochrome Cyanine R	1.0	1.0	1.0	ND
31	Total KjheldalNitrogen	(mg/L)	Kit Method	2.0	2.0	2.0	0.32
32	Barium	Ba (mg/L)	ASTM D-4382	1.5	1.5	1.5	0.21

Note:

BEQS=Baluchistan Environmental Quality Standards
The instruments used were dully calibrated.
The measurements were carried out on client's request.
The client is responsible for lawful usage of reports.
This report is not valid for Court evidence/ Judicial.
The measurement results based on the time of
WL= Within Limit

Field Analyst: Mr. Mohsin

Chief Chemist: (Kashif Ahmad)

ASCERT ISO 45001:2018 ASCERT ISO 14001:2015 ISO 9001

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00094576

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Analysis Report Ref # SES/Env/OCT/25/2913/3803 B Date:20-OCT-2025

Description:

Job Location:	LASBELA	Testing Instrument	24 Hours Air Monitoring Station
Job Performed By:	Mr. Mohsin	Job Date :	15-10-2025 to 16-10-2025
Monitoring Duration:	(10:00 AM To 09:00 AM) 24 Hrs.		
Project:	INTEGRATED FLOOD RESILIENCE AND ADPATION DEVELOPMENT PROJECT (IFRAP)		
Site Location:	RESTORATION OF FLOOD PROTECTION EMBANKMENT UPSTREAM OF NURG HINGRI WEIR (SHURLI & FAIZO BUND) PACKAGES-II		
Client Name :	CAMEOS CONSULTANT, QUETTA OFFICE		

Ambient Air Quality Monitoring

Sr.	Measuring Parameters	Unit	WHO Limit	NEQS & BEQS Limits	Average Test Result	Remarks
1.	Oxide Of Nitrogen as (NO)	$\mu g/m^3$	-	40 (24 hrs.)	12.18	WL
2.	Oxide Of Nitrogen as (NO_2)	$\mu g/m^3$	25(24 hrs.)	80 (24 hrs.)	29.47	WL
3.	Sulphur Dioxide (SO_2)	$\mu g/m^3$	40(24 hrs.)	120 (24 hrs.)	4.63	WL
4.	Carbon Monoxide (CO)	mg/m^3	4(24 hrs.)	5 (08 hrs.)	0.0414	WL
5.	Particulate Matter (PM 2.5)	$\mu g/m^3$	15(24 hrs.)	35 (24 hrs.)	26.55	WL
6.	Particulate Matter (PM 10)	$\mu g/m^3$	45(24 hrs.)	150 (24 hrs.)	77.59	WL
7.	SPM	$\mu g/m^3$	-	500 (24 hrs.)	103.03	WL
8.	Ozone (O_3)	$\mu g/m^3$	60(Peek Season)	130 (01 hr.)	5	WL

Note:
BEQS=Baluchistan Environmental Quality Standards
The instruments used were dully calibrated.
The measurements were carried out on client's request.
The client is responsible for lawful usage of reported data in future
This report is not valid for Court evidence/ Judicial knowledge
The measurement results based on the time of monitoring
WL= Within Limit

Field Analyst: _____
Mr. Mohsin

Chief Chemist: _____
Kashif Ahmed

ASCERT ISO 45001:2018 ASCERT ISO 14001:2015 ASCERT ISO 9001:2015

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Analysis Report — Ref # SES/Env/OCT/25/2913/3803 D — Date: 20-OCT-202

Description:

Quantity of sample	1.0 Liter	Sampling Methodology	Grab	Job Date	15-10-2025
Analysis Type	Chemical Analysis			Sampling Location	Project Site
Project:	INTEGRATED FLOOD RESILIENCE AND ADPATION DEVELOPMENT PROJECT (IFRAP)				
Site Location:	RESTORATION OF FLOOD PROTECTION EMBANKMENT UPSTREAM OF NURG HINGRI WEIR (SHURLI & FAIZO BUNI PACKAGES-II				
Client Name :	CAMEOS CONSULTANT, QUETTA OFFICE				

Surface Water Report

S.#	Parameters	Units	Testing Method	NEQS Limits	WHO Limits	BEQS Limits	Result	Remarks
01	Total Bacteria Count	TBC (count/ml)	Total Viable Count	----------	----------	----------	09	-
02	Total Coliform	TC (count/ml)	APHA 922 B	0/100 ml	0/100 ml	0/100 ml	ND	WL
03	b-Coli	EC(count/ml)	Total Viable Count	0/100 ml	0/100 ml	0/100 ml	ND	WL
04	Facial Coli	FC (count/ml)	APHA 922 B	0/100 ml	0/100 ml	0/100 ml	ND	WL
05	Turbidity	NTU	HACH Turbidity meter	<5	<15	<15	< 0.07	WL
06	Taste	Taste	Sensory Evolution	Obj/Non Obj	Obj/Non Obj	Obj/Non Obj	Non-obj	WL
07	Odour	Odor	Sensory Evolution	Obj/Non Obj	Obj/Non Obj	Obj/Non Obj	Non-obj	WL
08	Colour	TCU	Pt-Co method	≤ 15 TCU	≤ 15 TCU	≤ 15 TCU	< 2	WL
09	Phenolic Compounds	As Phenol (mg/L)	ASTM D-1783	-	-	-	ND	WL
10	Residual chlorine	Cl2 (mg/L)	HACH Method 8167	0.2-0.5	-	0.2-0.5	0.8	WL
11	pH @ 25 °C	PH	ASTM D-1293	6.5 to 8.5	6.5 to 8.5	6.5 to 8.5	7.91	WL
12	Total Dissolved Solid	TDS (mg/L)	APHA 2540-C	< 1000	< 1000	< 1000	341	WL
13	Total Hardness	As COCO3(mg/L)	APHA 2340-C	< 500	-	< 500	98	WL
14	Fluoride	F^{-1} (mg/L)	APHA 4500-F^{-1}	≤1.5	1.5	≤ 1.5	0.79	WL
15	Chloride	Cl^{-1} (mg/L)	APHA 4500-Cl^{-1}	< 250	250	< 250	135	WL
16	Cyanide	CN^{-1}(mg/L)	HACH Method 8027	< 0.05	0.07	≤ 0.05	ND	WL
17	Nitrate	NO_3^{-1} (mg/L)	HACH Method 8192	< 50	50	≤ 50	0.31	WL
18	Nitrite	NO_2^{-1} (mg/L)	APHA 4500-NO_2^{-}-B	≤ 3.0(P)	3	≤ 3.0(P)	0.04	WL
19	Antimony	Sb (mg/L)	ASTM D-3697	≤ 0.005	0.02	≤ 0.005	ND	WL
20	Aluminum	Al(mg/L)	ASTM D-857	≤ 0.2	0.2	≤ 0.2	0.10	WL
21	Arsenic	As (mg/L)	ASTM D-2972	≤ 0.05	0.01	< 0.05	ND	WL
22	Boron	B (mg/L)	ASTM D-3082	0.2	0.3	0.3	ND	WL
23	Barium	Ba(mg/L)	ASTM D-4382	0.7	0.7	0.7	0.007	WL
24	Chromium Total	Cr(mg/L)	ASTM D-1687	≤ 0.05	0.05	≤ 0.05	ND	WL
25	Copper	Cu (mg/L)	ASTM D-1688	2	2	2	<0.07	WL
26	Cadmium	Cd(mg/L)	ASTM D-3557	0.01	0.003	0.01	ND	WL
27	Lead	Pb(mg/L)	ASTM D-3559	≤ 0.05	0.01	≤ 0.05	ND	WL
28	Manganese	Mn(mg/L)	ASTM D-858	≤ 0.5	0.5	< 0.5	ND	WL
29	Mercury	Hg (mg/L)	ASTM D-3223	≤ 0.001	0.001	≤ 0.001	ND	WL
30	Nickel	Ni(mg/L)	ASTM D-3866	≤ 0.02	0.02	≤ 0.05	ND	WL
31	Selenium	Se(mg/L)	ASTM D-3858	0.01	0.01	0.01	ND	WL
32	Zinc	Zn (mg/L)	ASTM D-1691	5	3	5	0.15	WL

Note:
BEQS–Baluchistan Environmental Quality Standards
The instruments used were dully calibrated.
The measurements were carried out on client's request.
The client is responsible for lawful usage of reported data in fir
This report is not valid for Court evidence/ Judicial know
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Field Analyst: Mohsin — Mr. Mohsin

Chief Chemist: Kashif Ahmed

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Analysis Report — Ref # SES/Env/OCT/25/2913/3803 D — Date: 29-OCT-2025

Description:

Quantity of sample	1.0 Liter	Sampling Methodology	Grab	Job Date	15-10-2025
Analysis Type	Chemical Analysis		Sampling Location		Project Site
Project:	INTEGRATED FLOOD RESILIENCE AND ADPATION DEVELOPMENT PROJECT (IFRAP)				
Site Location:	RESTORATION OF FLOOD PROTECTION EMBANKMENT UPSTREAM OF NURG HINGRI WEIR (SHURLI & FAIZO BUND) PACKAGES-II				
Client Name :	CAMEOS CONSULTANT, QUETTA OFFICE				

Surface Water Report

S #	Parameters	Units	Testing Method	NEQS Limits	WHO Limits	BEQS Limits	Result	Remarks
01	Total Bacteria Count	TBC (count/ml)	Total Viable Count	----------	----------	----------	08	-
02	Total Coliform	TC (count/ml)	APHA 922 B	0/100 ml	0/100 ml	0/100 ml	216	OL
03	E-Coli	EC(count/ml)	Total Viable Count	0/100 ml	0/100 ml	0/100 ml	148	OL
04	Facial Coli	FC (count/ml)	APHA 922 B	0/100 ml	0/100 ml	0/100 ml	75	OL
05	Turbidity	NTU	HACH Turbidity meter	<5	<15	<15	< 0.07	WL
06	Taste	Taste	Sensory Evolution	Obj/Non Obj	Obj/Non Obj	Obj/Non Obj	Non-obj	WL
07	Odour	Odor	Sensory Evolution	Obj/Non Obj	Obj/Non Obj	Obj/Non Obj	Non-obj	WL
08	Colour	TCU	Pt-Co method	≤ 15 TCU	≤ 15 TCU	≤ 15 TCU	< 2	WL
09	Phenolic Compounds	As Phenol (mg/L)	ASTM D-1783	-	-	-	ND	WL
10	Residual chlorine	Cl_2 (mg/L)	HACH Method 8167	0.2-0.5	-	0.2-0.5	0.3	WL
11	pH @ 25 °C	PH	ASTM D-1293	6.5 to 8.5	6.5 to 8.5	6.5 to 8.5	7.91	WL
12	Total Dissolved Solid	TDS (mg/L)	APHA 2540-C	< 1000	< 1000	< 1000	341	WL
13	Total Hardness	As COCO3(mg/L)	APHA 2340-C	< 500	-	< 500	98	WL
14	Fluoride	F^{-1} (mg/L)	APHA 4500-F^{-1}	≤1.5	1.5	≤ 1.5	1.3	WL
15	Chloride	Cl^{-1} (mg/L)	APHA 4500-Cl^{-1}	< 250	250	< 250	135	WL
16	Cyanide	CN^{-1}(mg/L)	HACH Method 8027	≤ 0.05	0.07	≤ 0.05	ND	WL
17	Nitrate	NO_3^{-1} (mg/L)	HACH Method 8192	≤ 50	50	≤ 50	0.31	WL
18	Nitrite	NO_2^{-1} (mg/L)	APHA 4500-NO_2^{-1}-B	≤ 3.0(P)	3	< 3.0(P)	0.04	WL
19	Antimony	Sb (mg/L)	ASTM D-3697	≤ 0.005	0.02	≤ 0.005	ND	WL
20	Aluminum	Al(mg/L)	ASTM D-857	≤ 0.2	0.2	≤ 0.2	0.10	WL
21	Arsenic	As (mg/L)	ASTM D-2972	< 0.05	0.01	≤ 0.05	ND	WL
22	Boron	B (mg/L)	ASTM D-3082	0.3	0.3	0.3	ND	WL
23	Barium	Ba(mg/L)	ASTM D-4382	0.7	0.7	0.7	0.007	WL
24	Chromium Total	Cr(mg/L)	ASTM D-1687	≤ 0.05	0.05	≤ 0.05	ND	WL
25	Copper	Cu (mg/L)	ASTM D-1688	2	2	2	<0.07	WL
26	Cadmium	Cd(mg/L)	ASTM D-3557	0.01	0.003	0.01	ND	WL
27	Lead	Pb(mg/L)	ASTM D-3559	≤ 0.05	0.01	≤ 0.05	ND	WL
28	Manganese	Mn(mg/L)	ASTM D-858	≤ 0.5	0.5	≤ 0.5	ND	WL
29	Mercury	Hg (mg/L)	ASTM D-3223	≤ 0.001	0.001	≤ 0.001	ND	WL
30	Nickel	Ni(mg/L)	ASTM D-3866	≤ 0.02	0.02	≤ 0.05	ND	WL
31	Selenium	Se(mg/L)	ASTM D-3858	0.01	0.01	0.01	ND	WL
32	Zinc	Zn (mg/L)	ASTM D-1691	5	3	5	0.15	WL

Note:
BLQS=Baluchistan Environmental Quality Standards
The instruments used were dully calibrated.
The measurements were carried out on client's request.
The client is responsible for lawful usage of reported d
This report is not valid for Court evidence/ Judicial
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Field Analyst: Mr. Mohsin

Chief Chemist: Kashif Ahmed

ASCERT ISO 45001:2018 ASCERT ISO 14001:2015 ISO 9001:2015

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Analysis Report Ref # SES/Env/OCT/25/2913/3803 C Date: 20-OCT-2025

Description:

Job Location:	LASBELA	**Testing Instrument:**	Noise Meter
Job Performed By:	Mr. Mohsin	**Job Location :**	15-10-2025 to 16-10-2025
Monitoring Duration:	(10:00 AM To 09:00 AM) 24 Hrs.		
Project:	INTEGRATED FLOOD RESILIENCE AND ADPATION DEVELOPMENT PROJECT (IFRAP)		
Site Location:	RESTORATION OF FLOOD PROTECTION EMBANKMENT UPSTREAM OF NORG HIS GRE WEIR (SHURT & FADZO BUND) PACKAGES-II		
Client Name :	CAMEOS Consultant, Quetta Office		

Noise Test Report

S. No	Measuring Parameter	Testing Instrument	WHO Limit	NEQS & BEQS Limits	TIME	Results
01	Noise Level	Noise Meter	65 dB(A) (Day time)	75 dB(A) (Day time)	10:00AM	62.5
02					11:00AM	64.9
03					12:00PM	61.8
04					01:00PM	66.4
05					02:00PM	63.2
06					03:00PM	63.5
07					04:00PM	58.6
08					05:00PM	64.8
09					06:00PM	63.9
10					07:00PM	60.7
11					08:00PM	58.5
12					09:00PM	57.6
13					10:00PM	59.1
14			55 dB(A) (Night time)	65 dB(A) (Night time)	11:00PM	48.2
15					12:00AM	47.6
16					01:00AM	50.9
17					02:00AM	51.6
18					03:00AM	53.5
19					04:00AM	56.3
20					05:00AM	48.8
21					06:00AM	51.9
22			65 dB(A) (Day time)	75 dB(A) (Day time)	07:00AM	54.4
23					08:00AM	53.9
24					09:00AM	56.1
Average Result						55.24

Note:

BEQS–Balochistan Environmental Quality Standards
The instruments used were duly calibrated.
The measurements were carried out on client's request.
The client is responsible for lawful usage of reported data in future.
This report is not valid for Court evidence/ judicial knowledge.
The measurement results based on the time of monitoring.
WL– Within Limit

Field Analyst: Mr. Mohsin

Chief Chemist: Kashif Ahmed

ASCERT ASCERT AS

New Head Office: Plot No SC-46 Block Commercial Sector 31/D P&T Society Korangi, Karachi.
Mob: +92(0)346-2225261,0333-2699016 Tel # 02135121125 E-mail: info@sespaklab.com Web: www.sespaklab.com

00094574

ANNEXURE: J

GENDER ACTION PLAN (GAP)

Integrated Flood Resilience and Adaptation Project-(IFRAP) Component-1

1. Introduction

The 2022 floods in Balochistan disproportionately affected women and girls due to pre-existing gender inequalities, socioeconomic vulnerabilities, and limited access to resources. The Integrated Flood Resilience and Adaptation Project (IFRAP) seek to address these challenges through **Component 1,** which focuses on resilient infrastructure, community preparedness, and institutional strengthening. This **Gender Action Plan (GAP)** ensures that gender equality and women's empowerment are systematically integrated into Component 1 interventions, in line with the World Bank Gender Strategy, Environmental and Social Framework (ESF), PDNA, and the Resilient Recovery, Rehabilitation, and Reconstruction Framework (4RF).

2. Objectives of the Gender Action Plan

This Gender Action Plan (GAP) for Component 1 is prepared in accordance with the World Bank Environmental and Social Framework (ESF) and Environmental and Social Standards (ESS1–ESS10).

Specific Objectives

- It aims to ensure meaningful participation and leadership of women in project planning, implementation, and monitoring.
- Enhance women's access to gender-responsive infrastructure, services, and disaster risk management systems.
- Strengthen institutional capacity for gender-sensitive and inclusive project implementation.
- Reduce gender-based vulnerabilities and strengthen safeguards, including prevention of SEA/SH.
- Establish clear indicators and monitoring mechanisms for gender accountability.

3. Key Gender Issues in Component 1

- Limited participation of women in community-level disaster risk management and decision-making bodies.
- Inadequate consideration of women's needs in flood-resilient infrastructure and service delivery.
- Barriers to women's access to early warning information and disaster preparedness systems.
- Weak institutional capacity for gender mainstreaming and GBV risk mitigation.
- Lower literacy rates among women limit access to written project information.

Gender Action Matrix

Strategic Area	Activities	Indicators	Targets	Responsibility	Timeline
Institutional Strengthening &	• Ensure at least 40% women's representation in community-level FGDs and	• 40% women in DRMCs. • of personnel	• 40% women representation. • 100% CSC	PIU,CSC Gender/Social Specialist	Throughout project

Strategic Area	Activities	Indicators	Targets	Responsibility	Timeline
Participation	Consultations. • Provide gender-sensitivity, SEA/SH, and safeguards sessions to community • Engage local women's organizations for community outreach. •Provide gender-sensitivity, SEA/SH, and safeguards sessions to CSC and contractor staff	trained (gender-disaggregated). • of women-form groups and engaged in activities.	staff and contractors trained.		
Gender-Responsive Infrastructure and Services	• Integrate women-friendly design (Footbridges and/or passages in strategic locations of the irrigation system accessibility) in flood-resilient sub-project reconstruction. • Prioritize pregnant/lactating women and women with disabilities during service reconstruction-restoration.	• of facilities with gender-responsive design. • % women beneficiaries.	• 100% facilities compliant. • 50% women beneficiaries.	CSC and Contractor Infrastructure Specialist	Years 1–3
Disaster Risk Reduction & Climate Resilience	• Include women in early warning dissemination and community preparedness planning. • Conduct disaster preparedness awareness sessions targeting women and girls. • Promote women's engagement in climate-resilient water and land management.	• % women participating in DRR activities. • # women trained.	• 30% women participation. • Annual awareness sessions conducted.	PIU,CSC Social and Gender team	Years 1–3
Safeguards & GBV/SEA/SH Risk Prevention	• Establish GBV referral pathways and confidential reporting mechanisms. • Conduct community-level awareness on GBV Enforce a Code of Conduct for all workers addressing GBV, SEA, and SH. • Ensure labor influx and OHS plans integrate SEA/SH mitigation.	• GBV mechanism operational. • # awareness sessions conducted.	• Functional system in all project areas.	PIU Safeguards Specialist; Contractors;	Throughout the project
Gender responsive Grievance Redress Mechanism	• Establish women-friendly GRM access points, including female focal persons. •Conduct GRM awareness sessions, including women-only sessions.	• **% of project communities informed about the GRM**, disaggregated by gender • **Number of GRM awareness sessions conducted,** including women-only sessions	• 40% women participation. • Monthly and Quarterly awareness sessions conducted.	PIU,CSC Social and Gender team	Throughout project
Monitoring and Reporting	• Monthly ESMP Monitoring Reports • Quarterly Social Safeguards Reports	# of reports submitted; completeness source	Monitoring data will be sex-disaggregated and used to adapt	PIU Gender Specialist will oversee compliance, with third-party	Throughout project

Strategic Area	Activities	Indicators	Targets	Responsibility	Timeline
	• GAP Progress Reports • GRM records and community feedback		implementation as needed.	monitoring where required.	

Gender Action Matrix

Strategic Area	Activities	Indicators	Targets	Responsibility	Timeline
Institutional Strengthening & Participation	• Ensure at least 40% women's representation in community-level FGDs and Consultations. • Provide gender-sensitivity, SEA/SH, and safeguards sessions to community • Engage local women's organizations for community outreach. •Provide gender-sensitivity, SEA/SH, and safeguards sessions to CSC and contractor staff	• 40% women in DRMCs. • of personnel trained (gender-disaggregated). • of women-form groups and engaged in activities.	• 40% women representation. • 100% CSC staff and contractors trained.	PIU,CSC Gender/Social Specialist	Throughout project
Gender-Responsive Infrastructure and Services	• Integrate women-friendly design (Footbridges and/or passages in strategic locations of the irrigation system accessibility) in flood-resilient sub-project reconstruction. • Prioritize pregnant/lactating women and women with disabilities during service reconstruction-restoration.	• of facilities with gender-responsive design. • % women beneficiaries.	• 100% facilities compliant. • 50% women beneficiaries.	CSC and Contractor Infrastructure Specialist	Years 1–3
Disaster Risk Reduction & Climate Resilience	• Include women in early warning dissemination and community preparedness planning. • Conduct disaster preparedness awareness sessions targeting women and girls. • Promote women's engagement in climate-resilient water and land management.	• % women participating in DRR activities. • # women trained.	• 30% women participation. • Annual awareness sessions conducted.	PIU,CSC Social and Gender team	Years 1–3
Safeguards & GBV/SEA/SH Risk Prevention	• Establish GBV referral pathways and confidential reporting mechanisms. • Conduct community-level awareness on GBV Enforce a Code of Conduct for all workers addressing GBV, SEA, and SH. • Ensure labor influx and OHS plans integrate SEA/SH mitigation.	• GBV mechanism operational. • # awareness sessions conducted.	• Functional system in all project areas.	PIU Safeguards Specialist; Contractors;	Throughout the project
Gender responsive Grievance Redress Mechanism	• Establish women-friendly GRM access points, including female focal persons. •Conduct GRM awareness sessions, including women-	• **% of project communities informed about the GRM**, disaggregated by gender • **Number of**	• 40% women participation. • Monthly and Quarterly awareness sessions conducted.	PIU,CSC Social and Gender team	Throughout project

Strategic Area	Activities	Indicators	Targets	Responsibility	Timeline
	only sessions.	**GRM awareness sessions conducted,** including women-only sessions			
Monitoring and Reporting	• Monthly ESMP Monitoring Reports • Quarterly Social Safeguards Reports • GAP Progress Reports • GRM records and community feedback	# of reports submitted; completeness source	Monitoring data will be sex-disaggregated and used to adapt implementation as needed.	PIU Gender Specialist will oversee compliance, with third-party monitoring where required.	Throughout project

5. Stakeholder engagement and women's Consultation

Separate consultations were conducted with women in project-affected villages, facilitated by female social mobilizers. These consultations informed project design and the GAP, highlighting priorities such as access to clean water, safe washing facilities, livelihood support, and energy access.

Women Development Groups (WDGs) have been established to support sustained participation and leadership of women during project implementation

6. Budget Allocation

A minimum of 1% of the ESMPs of Component 1 budget will be allocated to Social, gender, and Environmental activities implementation, including training, community engagement, gender-responsive design features, and GBV prevention measures.

7. Conclusion

This Gender Action Plan provides a comprehensive, World Bank–compliant framework to ensure that Component 1 of IFRAP delivers equitable, inclusive, and safe outcomes for women and men. The GAP will be implemented as an integral part of the ESMP and updated as needed, based on monitoring results and World Bank guidance.

ANNEXURE: K

ENVIROMENTAL AND SOCIAL SCREENING CHECKLIST (B)

Component 1: Community Infrastructure Rehabilitation

A	General Information	
1	Subproject Location	**District:** Lasbela **Village:** Nurg Hinjri
2	Package	Package -2
3	Subproject Activities	Rehabilitation of Flood protection Embankment U/S of Nurg Hingri Weir
4	Proposed Date of Commencement of Work	
5	Important geographic / topographic feature (if any)	N/A
6	Important biological feature (if any)	Important biological feature observed.
7	Sensitive Receptors within 200 m	None within 200m

B: Environmental Issues

Sr. No	Issues	No/Yes	Risk Level				Remarks/Mitigation Measures
			Low	Moderate	Substantial	High	
1	Will the subproject involve significant land disturbance or site clearance?	Yes	✓				Minimize clearance (shrubs & bushes) proper site planning erosion and dust control measures will apply.
2	Will the subproject require the setting up of ancillary facilities?	Yes		✓			Facilities (camps, storage) to be located away from sensitive receptors ensure sanitation, drainage, and waste management.
3	Will the subproject require a large amount of raw or construction materials, energy and/or water?	No					The subproject will not require.
4	Will the subproject generate large amounts of residual wastes, construction material waste?	No					No residual waste, construction material waste is expected.
5	Is the sub-project expected to result in soil erosion?	No					Soil erosion is not anticipated.
6	Is the sub project expected to create borrow pits for construction material?	No					The sub project will not create borrow pits.

Sr. No	Issues	No/Yes	Risk Level				Remarks/Mitigation Measures
			Low	Moderate	Substantial	High	
7	Will the subproject result in potential soil or water contamination (e.g., from oil, grease and fuel from equipment yards)?	No					Not soil or water contamination expected.
8	Will the subproject involve the storage, handling, or transport of hazardous substances?	No					No, the subproject will not involve the storage, handling, or transport of hazardous substances.
9	Will the sub project disturb the ambient air quality and/or increase the level of harmful air emissions (due to generation of dust from construction activity, vehicular/ machinery exhaust emissions, etc.)	Yes	✓				Dust may be generated due to vehicle movement and construction activities.
10	Will the subproject increase ambient noise levels?	No					No any Noise pollution occur.
11	Are there any protected areas on or around the locations which could be affected by the subproject?	No					No protected areas nearby.
12	Will there be any adverse impact on the flora due to subproject activities?	No					Flora is not present at working place.
13	Will there be any adverse impact on the fauna due to subproject activities?	No					Fauna will not expect to effected by subproject.

C: Social Issues

Sr. No	Issues	No/Yes	Risk Level				Remarks/Mitigation Measures
			Low	Moderate	Substantial	High	

Sr.	Issues	No/Yes	Risk Level				Remarks/Mitigation Measures
1	Will the subproject activities involve a significant inflow of labor?	Yes	✓				Local labor will be engaged minimal risk of outside influx.
2	Will there be any social conflicts arising from the interaction of laborers with locals, particularly by the induction of outside labor and establishment of construction camps (if any)?	No					No social conflicts are expected as no outside labor or camps will be required.
3	Will the activities supported by the project anticipate the occurrence of child labor, forced labor, or bonded labor?	No					Project activities will not involve child, forced, or bonded labor
4	Will the subproject activities pose risks to nearby sensitive receptors (mosque, temple, church, graveyard, hospital, school/college/university), if any?	No					No sensitive receptors in the immediate vicinity
5	Will the sub project pose occupational health and safety risks?	No					No Any Occupational health risk.
6	Will the sub project pose community health and safety risks?	No					The subproject will not pose any community health and safety risks.
7	Risk of increase in traffic and pedestrian safety due to the construction vehicle movement, particularly near sensitive receptors.	No					No risk to traffic or pedestrian safety from construction vehicles near sensitive areas.
8	Will there be land acquisition? If yes, is the site for land acquisition and ownership status and current usage of land to be acquired known?	No	✓				Land acquisition process to follow legal procedures documentation and fair compensation required
9	Will there be a loss of shelter and residential land due to the land acquisition or clearance of the existing site?	No					No residential land or shelter will be affected
10	Are any informal settlers or flood-affected persons present on the subproject site where construction and rehabilitation activities will be carried out?	No					No informal settlers or flood-affected persons present at the site

Sr.	Issues	No/Yes	Risk Level				Remarks/Mitigation Measures
11	Has there been any Anti-Encroachment Drive to forcefully evict/move people at the site where the works are planned to be carried out?	No					
12	Will there be a loss of agricultural land, crops, trees, and fixed assets due to land acquisition?	No					Only shrubs and bushes may be cleared.
13	Will people lose access to natural resources, communal facilities and services due to involuntary land use restrictions or access to legally designated parks/protected areas?	No					No loss of access to natural resources
14	Any estimate of the likely number of persons affected by the subproject? If yes, approximately how many? Are any of them falling into disadvantaged/vulnerable groups such as Female/child headed households, Internally Displaced Persons (IDPs), Refugees, Ethnic and religious minorities, Persons with disabilities, Transgender communities, Senior citizens, or economically marginalized groups)?	No					No persons will be affected
15	Have there been any past security-related issues at the subproject site?	No					No security related issues.
16	Has stakeholder engagement taken place with relevant stakeholders (Provincial/District level Government Departments/Communities/NGOs/CSOs) for the subproject?	Yes	✓				Initial consultations carried out further engagement will continue during implementation
17	Is the subproject being implemented in an area with natural hazard risk? (e.g., floods, earthquakes, cyclones etc.).	No					No significant hazard risks identified

Sr.	Issues	No/Yes	Risk Level				Remarks/Mitigation Measures
18	Will there be any impact on women that may hinder their mobility during reconstruction and rehabilitation activities?	No					Women's mobility will not be hindered during activities
19	Will the proposed subproject potentially involve shifting of public utilities?	No					No required
20	Are any indigenous peoples (as per World Bank ESS7) present in the subproject area?	No					
21	Will the construction and rehabilitation activities cause socio-cultural issues and damage any cultural heritage site?	No					No cultural heritage site present

No Objection Certificate (NOC)

Balochistan Environmental Protection Agency (BEPA) NOC / Environmental Approval Required	Yes [ ] No, if Yes, select the required study from below
Type of Environmental and Social Study	EIA [ ], IEE [ ], Environmental Checklist [ ]
Any other NOC from Government of Balochistan (Gob)/ Government of Pakistan (Gop) Required	[ ] Yes, [ ] No, if Yes, please specify

For World Bank Approval

Further assessment required	[ ] Yes [ ] No, if Yes, select the required study from below
Type of Environmental and Social Assessment	ESIA [], ESMP s[ ], E&S Checklist shall suffice [ ], RAP [ ], PCRMP [ ], Water Balance Study [ ], GHG Estimation [ ], BAP [ ], E&S Audit [ ]

Conducted by:

Name ___Shakoor kakar_____ Designation _____Social Organizer_____

Signature__________Date_____

Reviewed and approved by:
Name_____ Designation_____

Signature_____ Date_____

ANNEXURE: L

COMMUNITIES CONSULTATIONS AT SITE OF SHULI & FAIZO FPB

مشاورتی اجلاس

تاریخ: 16 ستمبر 2025 مقام: بمقام [illegible] حفاظتی بند [illegible] ٹائم: 3 بجے دوپہر سے 4 بجے

ایجنڈا:

۱: نرگس، بچوری اور شولی حفاظتی بند کے فلڈ پروٹیکشن اسٹرکچرز کے بارے

۲: میں میٹنگ اور مشاورت اور فیصلہ۔

۳: Barow Areas کے بارے میں بات اور فیصلہ۔

۴: ----------

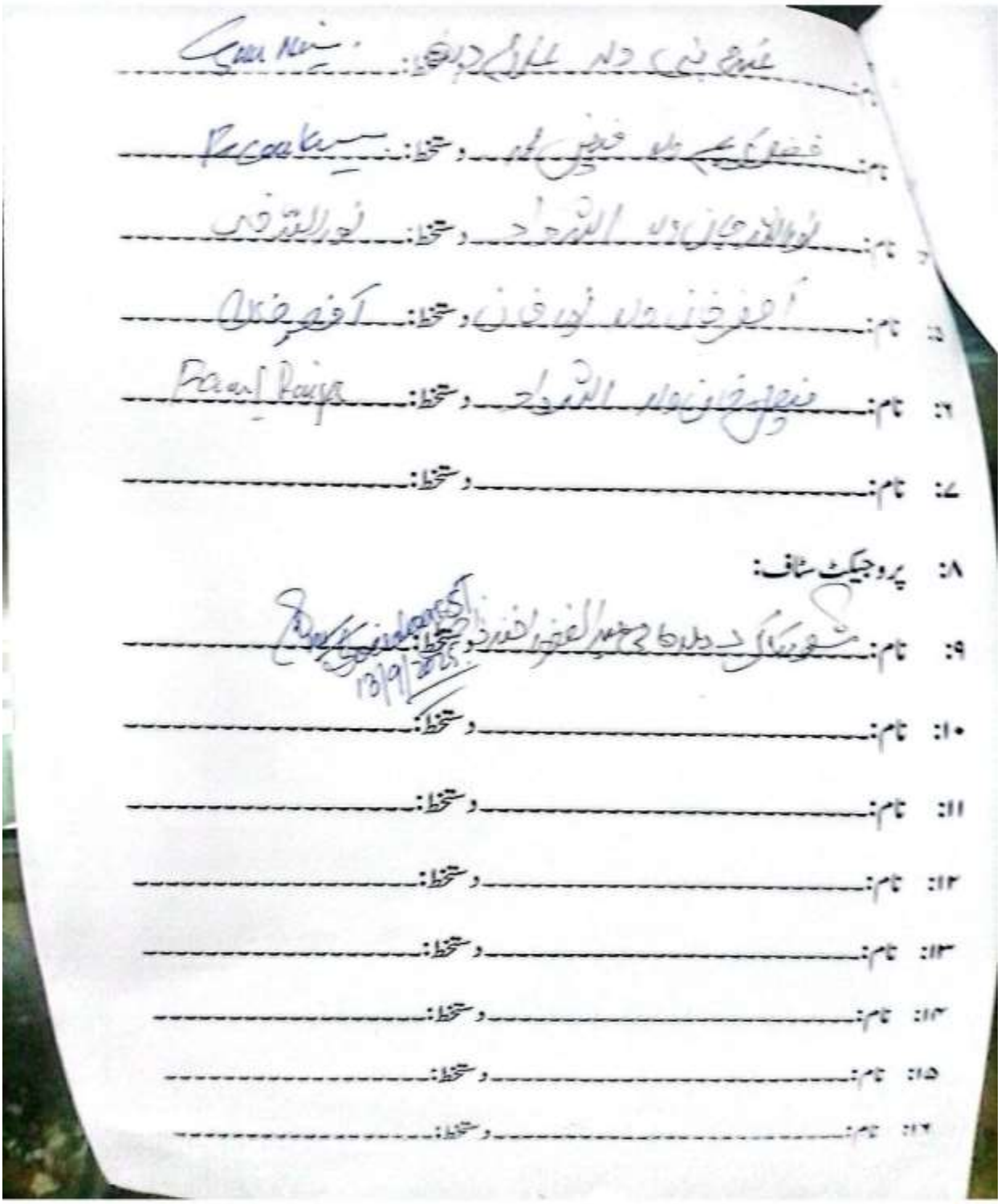
۵: ----------

تفصیل:

آج مورخہ 16 ستمبر 2025 کو نرگس، بچوری فلڈ بند اور شولی حفاظتی بند کے کسانوں اور زمین والوں کے ساتھ فلڈ پروٹیکشن پروجیکٹ اور سوشل [illegible] کے ساتھ میٹنگ ہوا۔ میٹنگ میں فلڈ بند کی پالیسی کے بارے میں تفصیل سے بات ہوئی اور پروجیکٹ کی افادیت کے بارے میں بات ہوئی اور کسانوں کو BA کے [illegible] کیا کہ فلڈ بند کی پالیسی اور فلڈ بند کے کاموں کے بارے میں [illegible] پروجیکٹ [illegible] BIORMAP [illegible] نرگس، بچوری اور [illegible] بنائے اور [illegible] شولی [illegible] بنائے گئے اور [illegible] آباد زمینوں کو سیلاب کے نقصان سے بچائیں۔ اور اچھا کام ہوا ہے۔

[illegible]

CamScanner



۸: پروجیکٹ سٹاف:

۹: نام: ..... دستخط: 13/9/2021

۱۰: نام: ..... دستخط: .....

۱۱: نام: ..... دستخط: .....

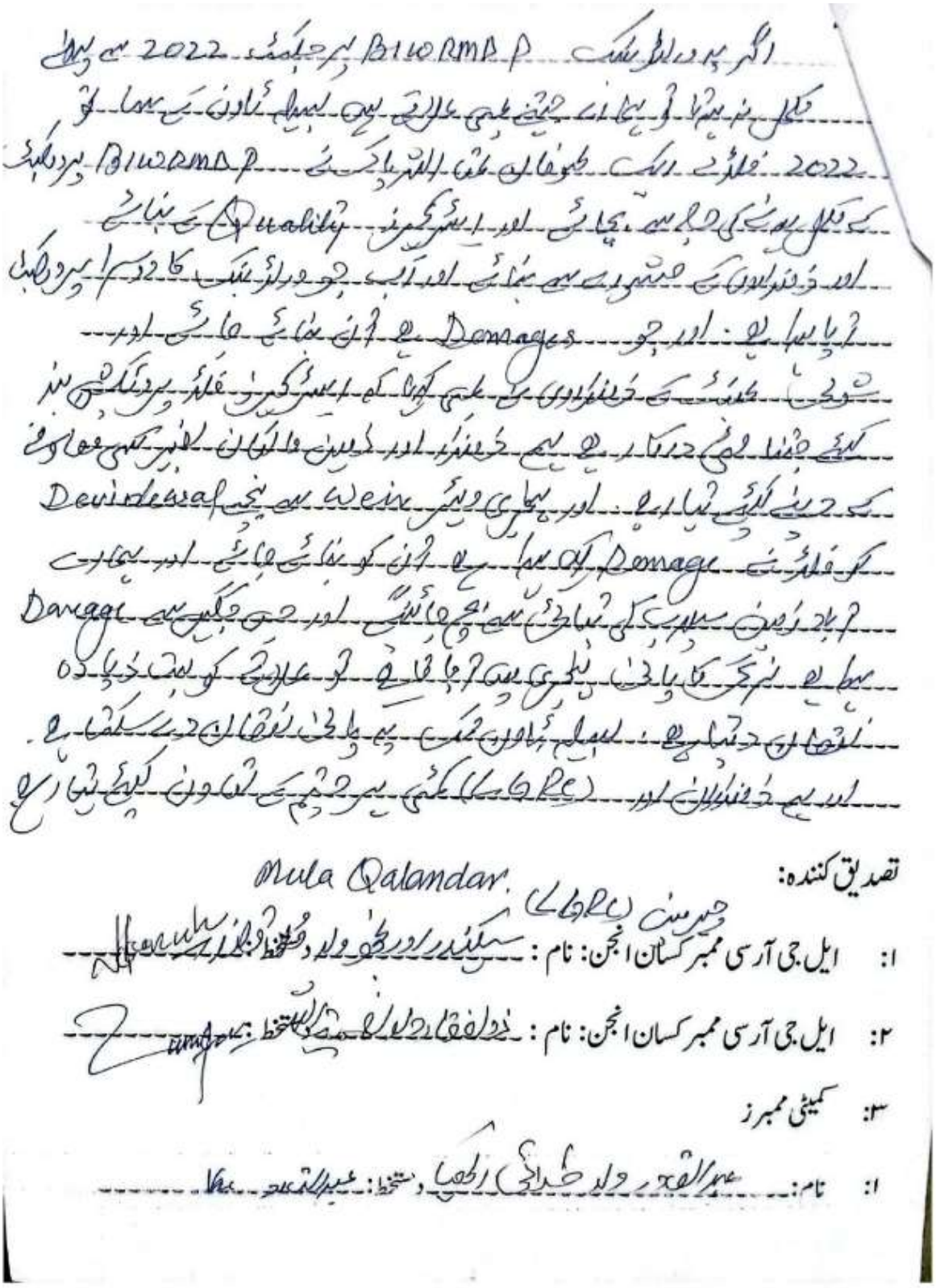
۱۲: نام: ..... دستخط: .....

۱۳: نام: ..... دستخط: .....

۱۴: نام: ..... دستخط: .....

۱۵: نام: ..... دستخط: .....

۱۶: نام: ..... دستخط: .....



تصدیق کنندہ:

Mula Qalandar. (LARC) چیرمین

۱: ایل جی آر سی ممبر کسان انجمن: نام: ____ دستخط: ____

۲: ایل جی آر سی ممبر کسان انجمن: نام: ____ دستخط: ____

۳: کمیٹی ممبرز

۱: نام: ____ دستخط: ____

ANNEXURE: M

LIST OF PARTICIPANTS IN CONSULTATIVE MEETING WITH DISTRICT ADMINSITRATION

S. No	Name	Department	Designation
1	Ms. Humaira Baloch	Administrative /Revenue Department	Deputy Commissioner Lasbela
2	Romil Naim Jan	Administrative /Revenue Department	Assistant Commissioner Bela
3	Muhammad Musa Roonja	Revenue Department	Tehsildar Bela
4	Abdul Ghafoor Roonja	Revenue Department	Naib Tehsildar Bela
5	Malik Ashraf	Revenue Department	SDO, Irrigation
6	Muhammad Ramzan Baloch	Revenue Department	Patwari
7	Shakoor Kakar	CAMEOS Project	Social Safeguard Specialist
8	Naqeeb Ullah Kakar	CAMEOS Project	Social Safeguard Specialist
9	Sidra	CAMEOS Project	Gender Specialist
10	Mir Zarak	CAMEOS Project	Junior Environment Specialists

ANNEXURE: N

LABOUR INFLUX PLAN

This plan identifies labour requirements and sets out the procedures for addressing labour conditions and risks associated with the proposed project, which is aimed at helping PIU to determine the resources necessary to address project labor issues.

SUB-CATEGORY	WORKER IMPACTS\RISKS	PROJECT IMPACTS\RISKS	MITIGATION MEASURES
Employment	Influx of many foreigners into project community	Competition on livelihood and job opportunity with locals	No of unskilled labour shall be from the project community. Where possible qualified skilled workers on contract shall also be sourced within the community
Housekeeping.	The general appearance of the camp deteriorates making camp life unpleasant.	The overall camp experience is compromised which in turn leaves workers demoralized and unproductive.	Ensure that camp grounds and common areas are routinely cleaned and organised with appropriate signage in place, and that grounds are maintained (e.g., grassed areas are regularly mown). Establish easily accessible, designated smoking areas which are clearly highlighted and regularly cleaned.
Recreation.	Workers spend most of their time in the camps and could become disenchanted and bored. They may want to leave the camps and go into the local towns and villages in search of recreation.	Tensions arise from the local communities as workers impact their activities in search of recreation. An increase in alcohol consumption and prostitution could result due to the influx of workers into local communities.	Provide appropriate recreational facilities and activities. These should be discussed with the camp residents committee.
Spiritual /Religion.	Workers will want access to places of worship for their chosen religion. They may leave the camps and go into the local towns and villages in search of an appropriate place of worship.	Tensions arise from the local communities as workers impact their activities.	Provide appropriate places of worship where residents express a need for this in accordance with cultural sensitivities, and assess transport arrangements on a case-by-case basis. Ensure that equipment and facilities are kept clean and well maintained.

SUB-CATEGORY	WORKER IMPACTS\RISKS	PROJECT IMPACTS\RISKS	MITIGATION MEASURES
Security.	Inconsistent and aggressive behaviour of security personnel towards workers can result in tensions and conflict in the workplace and a perception of human rights abuses.	Insufficient training and control of security personnel can lead to the inappropriate use of force, while protecting Project workers and assets, or inappropriate behaviour towards local populations, resulting in human rights claims.	Ensure that camp security personnel meet at least the following requirements: • Have not been implicated in past abuses • Are trained in appropriate conduct towards workers and community members including: o Exercising constraint and caution and understand how force may be used o Respecting human rights o Behaving consistently o Knowing and abiding by applicable laws o Fostering good community relations through their interaction and behaviour towards the workforce and communities
Community relations.	Communities are negatively impacted by camp activities: noise, waste, traffic, lighting and so forth. This may result in negative actions towards camp operations such as road closures and the prevention of workers or suppliers from entering the worksite.	Workers are stopped from going to work, which affects productivity.	Implement control measures to avoid and minimise the impacts of camp and living conditions on communities. Limit foreign worker interaction with communities and provide cultural sensitivity awareness training to facilitate appropriate interaction with communities.

ANNEXURE: O

CAMP MANAGEMENT PLAN

Company X (the Company) has developed this Camp Management Plan as part of its Environmental and Social Management Plan (ESMP) outlining a range of mitigation measures designed to avoid or reduce undesired camp management impacts during construction. This document establishes a basis and template for use by the Contractor(s) to develop their own plans outlining not only mitigation measures but to also incorporate the roles and responsibilities described in the ESMP.

The objectives of the Camp Management Plan are:

Avoid or reduce negative impacts on the community and maintain constructive relationships between local communities and workers' camps; and

Establish standards on worker welfare and living conditions at the camps that provide a healthy, safe and comfortable environment.

This Plan should be read in conjunction with other environmental and social management plans (ESMPs), if available including:

- Traffic Management Plan
- Security Plan
- Stakeholder Engagement Plan

Legal Requirements and Grievances

The Contractor is required to operate within the parameters of the Pakistan's Standard Labor Laws & Policy and the International Labour Organization guidelines. The World Bank Performance Standards are applicable to IFRAP and its subprojects. Furthermore, the Grievance Redress Mechanism contained in this ESMF is required to be adhered to by the Contractor.

Contractor personnel shall conduct regular safety walks and an HSE committee will track performance against requirements stipulated in this plan. The Contractor will also have its grievance mechanism developed for the project.

Additionally, Contractor would be required to sign and acknowledge the Code of Conduct and agree to abide by its provisions.

ANNEXURE: P

PROJECT TRAFFIC MANAGEMENT PLAN (SAMPLE)

1. Introduction

This Traffic Management Plan describes procedures and protocols for site access, traffic routing and management, and contractor company guidelines with respect to vehicle and employee transportation in delivering their obligations on this intervention project. Public, employee and contractor safety is the primary goal of this plan. It is vital that the Contractor recognizes that the traffic within the project area will be dynamic throughout the course of execution of this works and the safety of other road users is absolutely essential during this time.

2. General Site Access

In the interest of site security and public safety, access to operational areas or locations where heavy-duty machinery would be operated in related to the execution of this contract will be restricted to authorized site personnel through the usage of signs and gates where appropriate. Facilities that potentially present danger to persons or wildlife such as the electrical substation, equipment staging area and workers camp will be fenced or barricaded as appropriate to prevent general access.

3. Traffic Management

- All traffic on routes to and from the site will be radio controlled. Where this is not possible, signage will be installed at appropriate locations in order to warn the public along these routes.
- In the event that temporary closure occurs, access to the sites will be further restricted through the use of fences and gates as appropriate. Access to work areas such as temporary excavated places, or confined spaces where work is ongoing will be securely blocked by means of a temporary but robust barrier or barricade. Buildings and ancillary facilities will be locked and secured. A number of additional general measures related to site access, road management and public safety and construction events notification are presented here:
- Private employee off-road vehicles or private transport buses will be prohibited from entry into the site.
- Signage will be posted near all construction sites.
- Notifications will be provided for activities that would be carried out over the weekend or public holiday periods. These would be disseminated through existing social institutions such as the village or district heads of communities, Local Government Councilors and NGO’s or CBO’s
- Speed limit maintained at 10 km/hr speed limit within or near the communities;
- Install reverse alarm fitted on all trucks, heavy duty equipment and off road vehicles
- Employ or engage the use of a minimum of two flagmen around excavated areas, one for traffic approach and one to direct traffic away from the sites

In accordance with the Occupational Health and Safety Regulations for public roads, use of flashing devices/trifactor on all vehicles/machinery and equipment that will cross, travel on or may otherwise pose a risk to users of public roads.

4. Employee Transportation

To the extent possible employees will use buses provided by the contractor as transportation to and from the site, thereby reducing overall vehicle traffic. Project vehicles or will be utilized by staff, only when necessary.

5. Speed Limits

Speed limits will be enforced to and from the site and signage(s) shall be posted along the access and site roads (maximum 40 km/hr, reduced to 20 km/hr at blind corners and bridge crossings. Traffic along other access roads will be radio controlled for safety and speed control. Furthermore, employees and contractors will be educated on safety including traffic protocols and speed limits during mandatory orientation. Routine traffic inspections and/or speed indicator signs will be used to encourage safe and responsible driving.

6.Communications And Notification Protocols

It is anticipated that the intervention project will require only single-lane temporary closures. Signage warnings of construction activities on the roads will be placed at appropriate distances from the construction site, in consultation with C&W Department, GoB. For significant work activity (those requiring more than one day to complete), written notification will be distributed to residents and other line departments. A public notice would be posted at multiple locations in the metropolis to communicate to residents any new activities that may be occurring or scheduled. Contact information for the Contractors senior management will be included in this notice and any concerns regarding the intervention work/project or traffic management can be forwarded through this notification system.

7. Traffic Routing and Volumes

Alternative traffic routing shall be mapped out and provided in the event that there will be complete closure of the road due to this intervention work activity. Traffic officers and appropriate road diversion signage(s) shall be deployed to ensure diversions routes are properly identified and traffic is directed along the mapped route. The flagmen shall be properly kitted in their Personal Protective Equipment (PPE), such as reflector vests and safety boots, to ensure that safety on the job is given due priority.

8. Reporting

Records on traffic management and implementation of this plan should be kept and updated by the contractor as evidence of ongoing mitigation compliance, which will be submitted to PIU as part of routine reports on progress of work.

ANNEXURE: Q

OCCUPATIONAL HEALTH & SAFETY (OHS) PLAN (SAMPLE)

Project Activity	Potential Impact	Proposed Mitigation Measures/ Actions	Responsibility for mitigation
I. Pre-Construction Phase			
Site clearing for staging area Mobilization of Excavation, dredging or grading, compaction, filling Plant & Equipment	Occupational accidents and injuries to workers and risk to community health and safety	Develop and implement a project specific Occupational Health and Safety Plan (OHSP). OHSP to include but not limited to: -Prohibition of drug and alcohol use by workers while on the job. - Provision of adequate first aid, first aiders, PPE, signage (English and Yoruba languages). - Restriction of unauthorized access to all areas of high-risk activities - Provision of specific personnel training on worksite OHS management - Ensure that staging areas for contractor equipment are adequately delineated and cordoned off with reflective tapes and barriers - Any uncovered work pits should have appropriate signage and protection around them - Workers should get a daily induction/toolbox before going on the site and a refresher of what happened on site a day before - Adequate safety signage on construction sites should be installed to alert community/drivers/pedestrians - lighting and/or reflective tapes and signage integrated in all worksites for safety at night - appropriate security measures in place to prevent harassment or kidnapping of workers - Ensure contractors employees are aware of security threats in work location by having in place a Security Management Plan and should refer to it at all times	**Contractor**
Mobilization of personnel, equipment, machinery, heavy duty vehicles for preparation of workers' camp	Exposure to and transmission of COVID-19	*Ensure implementation of the government established and PIU preparedness & Response protocols on COVID-19 by: *Preventing overcrowding on site by following govt. established regulations on social distancing *Provide wash hand basins for	

Project Activity	Potential Impact	Proposed Mitigation Measures/ Actions	Responsibility for mitigation
		proper and thorough and washing to enter and leave sites *carry out regular temperature checks at the beginning and end of each working day *use of minimum required PPE (face masks, gloves and face shields etc.) *Ensure disinfecting of tools with strong disinfectant (bleach etc.) after work *Provision of an isolation center or room on site	
Use of Workers Camp	Generation of sanitary waste from worker's camp	Ensure provision of sanitary facilities on site for workers and enforce usage. Ensure usage of approved waste vendor for waste evacuation & disposal.	Contractor
trucks for sand & materials supply	Public safety, road accidents leading to injuries and fatalities	Train drivers on defensive driving Conveyance of materials to site shall be by appropriate means of transportation to prevent damage or accidents Provide road signs and flag persons to warn of dangerous conditions of conveying materials such as the water trucks	Contractor PIU Safeguards Team

Project Activity	Potential Impact	Proposed Mitigation Measures/ Actions	Responsibility for mitigation
Excavation, grading, compaction, filling and other civil works for channelization Excavation and compaction activities through construction works will alter the soil properties including loss of valuable topsoil's Use of generators for power supply	Public safety, road accidents leading to injuries and fatalities affecting host community population, which could lead to conflict/ unrest and stoppage of activities.	Develop and implement a project specific Occupational Health and Safety Plan (OHSP). OHSP Ensure QA/QC control is established on inspection of materials, which are to be of best quality to • prevent defective outcomes on construction sites • Ensure workers are aware of inherent risks in use of pavement materials such as bitumen • Use of appropriate PPE to ensure risks to accidents & incidents are minimized or eliminated • Use tarpaulins to cover sand and other loose material when transported by trucks • Ensure excavation pits are used for extraction of material only for project purposes and not commercial • Ensure generators are operated by dedicated trained personnel • Carry out regular servicing of generator to reduce release of harmful emissions	Engineering Consultant/Ministry of Works & Transport Environmental Safeguards Specialist Excavation and compaction activities through construction works will alter the soil properties including loss of valuable topsoil's Use of generators for power supply
Use of workers camp	Sanitation issues and public health impacts	• Provide bins on site for temporary storage of domestic waste such as lubricant containers, drinking water sachets and carrier bags/packaging materials. • Dispose all construction and domestic waste at the approved dumpsites and in the approved manner. • Ensure all trenches or excavations made during the construction works do not collect stagnant water, which could breed mosquitoes. • Ensure access to toilets for construction crew or provide temporary toilets (mobile toilets) for use where there are no existing ones. • Ensure mobile toilets/sanitary provisions are provided to reflect gender types. • Ensure regular toolbox	Contractor/ Engineering Consultant Environmental Safeguards Specialist

Project Activity	Potential Impact	Proposed Mitigation Measures/ Actions	Responsibility for mitigation
		meetings are held among contractor workers to offer awareness on transmission of contagious or communicable diseases.	
Construction Machinery & Equipment Movement of materials Use of Compaction, filling & excavation equipment	Occupational accidents and injuries to workers and risk to community health and safety	Develop and implement a project specific Occupational Health and Safety Plan (OHSP). OHSP to include but not limited to: - Prohibition of drug and alcohol use by workers while on the job. - Provision of adequate first aid, first aiders, PPE, signage (English and Ibo languages). - Use only trained personnel for welding activities - Restriction of unauthorized access to all areas of high-risk activities - Provision of specific personnel training on worksite OHS management - Ensure that staging areas for contractor equipment are adequately delineated and cordoned off with reflective tapes and barriers - Any uncovered work pits should have appropriate signage and protection around them - Workers should get a daily induction/toolbox before going on the site and a refresher of what happened on site a day before - Adequate safety signage on construction sites should be installed to alert community/drivers/pedestrians - lighting and/or reflective tapes and signage integrated in all worksites for safety at night - appropriate security measures in place to prevent harassment or kidnapping of workers	Contractor
culverts, drainage basins Construction	Occupational accidents and injuries to workers and risk to community health and safety Erosion Risk of erosion and flood	• Ensure location is properly cordoned off before construction activities are carried out • Carry out proper levelling and setting out to ensure appropriate road gradient is achieved to prevent ponding/flooding issues • Create awareness in neighbouring communities to ensure road users are aware	Contractor

Project Activity	Potential Impact	Proposed Mitigation Measures/ Actions	Responsibility for mitigation
		of road intervention work • Use of biological control measures (tree planting) with tree roots that will bind soil and reduce erosion • As much as possible, ensure community minimises movement around the site and should be informed before this type of work is carried out • Use appropriate signage along road to show work in progress • Use of flagmen to divert traffic where required • Provide side-drains to promote effective run off channelization • Crosscheck design to ensure road gradient is adequate enough to avoid backflow runoff into residences	
Channelization & construction activities	Increase in spread of Communicable diseases, STDs such as HIV/AIDS and other STIs	• Ensure access into construction site is restricted • Vaccinating workers against common and locally prevalent diseases; • Monitoring of local population health data, in particular for transmissible diseases. • Implementation of HIV/AIDS education program; • Information campaigns on STDs among the workers and local community in collaboration WITH relevant HIV/AIDS management organizations	Contractor/ Engineering Consultant; Ekiti State Ministry of Health
Demobilisation of facilities, excavation, grading, compaction, filling plant & equipment	Risks of occupational accidents and injuries to workers.	Develop & implement a project specific Occupational Health and Safety Plan (OHSP) to include but not limited to: - Prohibition of drug and alcohol use by workers while on the job. - Provision of adequate first aid, first aiders, PPE, signage (English and Yoruba languages). - Restriction of unauthorized access to all areas of high-risk activities. - Provision of specific personnel training on worksite OHS management - Ensure that staging areas for contractor equipment are adequately delineated and	Contractor

Project Activity	Potential Impact	Proposed Mitigation Measures/ Actions	Responsibility for mitigation
		cordoned off with reflective tapes and barriers - Workers should get a daily induction/toolbox before going on the site and a refresher of what happened on site a day before - Adequate safety signage on construction sites should be installed to alert community/drivers/pedestrians - lighting and/or reflective tapes and signage integrated in all worksites for safety at night appropriate security measures in place to prevent harassment	
Excavation pit decommissioning	Public health	*Level out hollow area of pits to reduce ponding of water & stagnation *Revegetate area around the pit to re-introduce natural habitat formation *Planting of trees to replace felled vegetation Maintain drainage channels to reduce water collection in hollow *Use of brickets in stagnant pond formation areas to eliminate insect breeding *Carry out burrow pit reclamation according to remediation plan	Contractor

ANNEXURE: R

CONTINGENCY AND EMERGENCY RESPONSE PLAN (SAMPLE)

Introduction

An emergency is best described as a serious situation or unforeseen crisis that happens unexpectedly and requires or demands immediate/necessary action. This is often associated with danger. Therefore, this plan has been prepared to establish a process that has been adopted by our organization to respond to any emergency situation. This plan has the following fundamental objectives are:

To ensure that we can identify how to prepare for an emergency provide a checklist of actions that would enable our team prepare to handle such emergencies

The objective

The aim of this plan is therefore to examine a series of steps in the process, which is designed to ensure that any situation that necessitated that the status of emergency be apportioned, be managed in a manner that would ameliorate this condition.

Thus, this plan provides guidelines on the best approach that would be engaged by employees of the Contractor company in emergency situations, which may be as a consequence of the following:

- Medical (health)
- Safety
- Environmental
- Security
- Any other types of emergencies
- Emergency Response Team (ERT)

An emergency response team will be constituted for the project. These will be the group of persons that would have the responsibility of managing this emergency plan in a manner that would ensure the goals of this plan are achieved. For this reason, the members of the ERT are:

- Managing Director (or representative)
- HSEQ Officer
- Project Engineer
- Supervisor

- Support members (headmen from units – civil, mechanical, electrical etc.)
- Supervising Consultant representative
- PIU representative

Emergency Response Centre (ERC)
Due to the temporary nature of the facilities that would be utilized as workers camp & site office, for intervention projects, the site office will also be converted into the Emergency Response Centre (ERC), in cases of emergency. Therefore, appropriate communication equipment shall be available in the office, to ensure that the channels of contact are available, at all times.

In the minimum our ERC will have:

- A computer system with internet facilities available
- A telephone
- A public address system
- Activation of this Emergency Response Centre

The individual that receives the information that could potentially necessitate an emergency response should immediately convey the information to the Project Engineer.

Jointly, the project engineer and the Safety officer will review the situation/information, following which the managing director will be contacted (if not on site).

The managing director will hereafter take the decision of the gravity of the situation, following which it may be necessary to constitute an ERT and convert the site office into the ERC.

Core ERT and support members will be represented once the ERC is activated.
Checklist of Emergency Response Actions

These actions shall be implemented immediately the ERC is activated:

S. Nr	Actions
1	Verify status of emergency and likely exposure of other personnel to risk, ensure ERT members are fully equipped in emergency response equipment
2	Locate and account for all personnel on site (muster point) and if appropriate, implement the evacuation procedure, if necessary. Review
3	Establish and maintain close contact with relevant authorities related or connected to the resolving of this emergency. e.g. in case of medical emergency, a hospital, security emergencies will require a contact with government law enforcement agencies – police etc.
4	Inform supervising consultant & PIU representative as promptly as possible in order to establish interface link with Client
5	Transmit any information update or changes in situation status to emergency focal group; the managing director and members of the ERT and determine if there is a need to shut down critical on going operational activities
6	Depending on the type of emergency, any necessary follow up action should be determined and promptly acted upon, as may be required e.g. medical emergencies may require evacuation, environmental emergencies may require containment, safety emergencies may require prompt cordoning off of area etc.
7	Internal Communication channel with other personnel should be kept open, by means of public address system or telecommunication (walkie talkies) and updates provided to

S. Nr	Actions
	forestall any likely re-occurrences, where possible
8	Examine cross-cutting impact of emergency on liability issues and operational continuity. e.g. media involvement in security emergencies
9	Undertake an assessment of risk to review other potential liabilities and deploy mitigation measures, where necessary. e.g. workmen compensation insurances in case of accident emergencies
10	Review all cost implications of emergency response actions and make necessary budgetary provisions
11	Provide the PIU with updates immediately additional information is received.

Accident reporting

This accident report would be factual, free from hearsay, assumptions, gossips and / or preliminary conclusions. The report shall be duly signed by the Project engineer. The PIU shall be briefed about the accident in writing within 24 Hours.

Timing of investigation

The investigation should be carried out as soon as possible after the accident. The quality of evidence can deteriorate rapidly with time and delayed investigation are usually not as conclusive as those performed with dispatch. A prompt investigation is a good demonstration of management concern for safety.

Scope of Investigation

The scope of the investigation can be divided into four areas:

Personnel

Technique

The Environment

Organization

In each of these areas, actions of omission may be identified which could be a factor contributing to the accident or subsequent injury, damage or loss.

Establishment of the fact

In establishing the fact(s) of an accident, we would consider the followings as necessary factors:

Background information that would be considered,

the procedure for this type of operations

command structure

the person involved

Facts collection

Facts collection shall include but not limited to topography, weather, warning signs / notices, condition of the equipment, housekeeping, before interview can be conducted.

ACCIDENT REPORT AND INVESTIGATION

(Standard report form)

Date: ---------- Time: ----------/AM/PM ----------

Location: ---------- Department: ---------- ----------

Supervisor: ---------- ----------

Name of Victim: ---------- ----------

Nationality: ---------- Address: ---------- ----------

Marital Status: ---------- Occupation:---------- ----------

Date of Birth: ---------- Experience (years):---------- ----------

Equipment/tools being used when accident occurred:----------
---------- ----------

Description of accident:----------
---------- ----------

Name of Witness (if any): ----------
---------- ----------

Conditions during accident: weather- dry, rain, clear, dusk, dark etc.

Unsafe acts, actions and conditions (Please describe):----------
---------- ----------

Report verification by:

Name: ----------Date: ----------

ANNEXURE: S

WASTE MANAGEMENT PLAN (SAMPLE)

Project Activity	Potential Impact	Proposed Mitigation Measures/ Actions	Responsibility for mitigation
I. Pre-Construction Phase			
Use of Workers Camp/Site Office	Generation of sanitary waste	• Ensure provision of sanitary facilities on site for workers and enforce usage. • Ensure usage of Ekiti waste management agency • approved waste vendor for waste evacuation & disposal.	Contractor
Movement of plant & equipment to and from staging area to site	Soil contamination	• Develop and implement a site- specific Waste Management Plan (WMP) • Prepare and implement an Emergency Response Plan to respond to incident of spillage. Ensure fuel storage tanks are installed in a bonded area and checked daily. • Ensure regular maintenance of vehicles to avoid leaks of oil. Prevent unregulated dumping of fuel waste • Ensure local communities are sensitized on need to avoid tampering with waste bins	Contractor
Use of workers camp/site office	Sanitation issues and public health impacts	• Provide trash bins on site for temporary storage of domestic waste such as lubricant containers, drinking water sachets and carrier bags/packaging materials. • Dispose all construction and domestic waste at the approved dumpsites and in the approved manner. • Ensure all trenches or excavations made during the construction works do not collect stagnant water, which could breed mosquitoes. • Ensure access to toilets for construction crew or provide temporary toilets (mobile • toilets) for use where there are no existing ones.	Contractor/ Engineering Consultant Environmental Safeguards Specialist
		• Ensure mobile toilets/sanitary provisions are provided to reflect gender types. • Ensure regular toolbox meetings are held among contractor workers to offer awareness on transmission of contagious or communicable • diseases.	

Project Activity	Potential Impact	Proposed Mitigation Measures/ Actions	Responsibility for mitigation
Construction work activities	Generation of construction waste including spoils, debris and concrete	• Develop and implement a site- specific Waste Management Plan (WMP) to include the following: • Ensure segregation of waste to facilitate reuse and recycling opportunities. • Ensure no burning of waste on site. • Ensure usage of EKITI WAMA approved waste vendor for • waste evacuation, processing & disposal.	Contractor
Operation of workers camp/site office prior to demobilization of facilities	Generation of sanitary waste from worker's camp	• Ensure provision of sanitary facilities on site for workers and enforce usage. • Ensure usage of approved waste vendor for waste evacuation & disposal.	Contractor
Commissioning of library & buildings	Generation of construction waste and debris	• Develop and implement a site- specific Waste Management Plan (WMP) to include the following: • Ensure segregation of waste to facilitate reuse and recycling opportunities. • Site visit at the completion of project to ensure no waste is left behind.	Contractor

ANNEXURE: T

SECURITY MANAGEMENT PLAN (SAMPLE)

The contractor shall pay necessary attention to ensuring security of life & property during the execution of this contract according to the scope of works. In ensuring that this role is carried out, the following will be given priority:

1. Management Commitment and Responsibilities

Management is committed to ensuring that the following are in place:

- Providing up to date information regarding the security management mechanism, tools & updates in and around the work sites
- Ensure necessary early warning system is deployed to respond to security emergencies in the workplace by:
    - Development of a specific step-by-step approach to security response
    - Establish a security task force to respond to specific hazards, which is to be deployed in the case of security emergency (kidnapping, insurgency etc.)
- Employing appropriate personnel for the role of security personnel/advisor(s) and security staff
- Prioritize training of security personnel
- Enforcing disciplinary actions as needed to enforce security compliance
- Promoting interaction and assistance with regulatory and response agencies such as the Military armed forces.

2. Threat Assessment and Analysis

A vital component of this Security Management Plan is the identification of internal and external threats. The mechanisms for identifying threats shall comprise but will not be limited to:

- Have in place and periodically update a threat matrix that will be submitted to management for review and approval.
- Undertake periodic drills that will include responses to:
- Attacks from herdsmen
- Knife or gun threats
- A violence in the workplace situation - potential or actual
- Domestic violence occurring within our facilities
- General evacuation requirements due to a technical, human or natural threat
- Others may be determined by the General Manager or Security Management Committee

Threats will be qualified utilizing a threat matrix, or other tool that compares operations to threats, and their likelihood and severity. Where possible, mitigating actions and recommendations will be initiated.

3. The Role of the Security Focal Person or Manager

In the minimum, the contractor will have a security manager or focal staff that will be responsible for all security related issues in the workplace. The role of this security focal person includes:

4. Lead role in threat assessments

- Program maintenance and updates
- Incident response and coordination
- Chair of the Security Program Committee
- Training Responsibilities
- Coordination with other Departments
- Coordination with agencies and response units

5. Employee security education and training

The company-training security program will ensure:

- Employee duties and responsibilities
- Event-specific responsibilities
- Threat or event reporting
- Back-to-work/check-in requirements
- Potential disciplinary actions
- Dealing with the media, regulatory agencies, or other entities outside the company

6. Management and Supervisor Education and Training

For Managers and Supervisors, our program focuses upon:

- Individual or Department duties
- Knowledge and deployment of response protocols
- Assuring employee and other constituent welfare
- Threat or event reporting
- Back-to-work/check-in requirements
- Potential disciplinary actions
- Dealing with the media, regulatory agencies, or other entities outside the company

7. Program Exercises and Drills

The training and education activities that will be undertaken for the purposes of implementing this Security Management Plan shall be one of the following: case studies, table top exercises, or small and/or large scale exercises involving response pattern to adopt in the face of clear and present threats e.g. herdsmen or insurgent attacks.

ANNEXURE: U

CONTRACTORS COVID-19 COMPLIANCE GUIDELINES (SAMPLE)

1. Conduct off-site safety trainings to ensure all employees are aware of the job hazards. The emphasis of this training is on the COVID19 awareness.

2. Contractor is to carry out screening of personnel to determine if any of them is sick or showing any COVID19 related symptoms before any of them is allowed into the work site.

3. Proper education of workforce and enforcement of social distancing protocols on site. Effective social distancing practices must be included in the training plan prior to deployment of the workforce to site.

4. Education should include use of tools; Tools and equipment are not to be shared, where possible. Touch points on tools should be properly wiped down with disinfectant prior to hand over to next shift.

5. Workers are to be encouraged to wash hands comprehensively for at least 30 seconds immediately they are about to enter the worksite.

6. In addition, the following social distancing practices can be included in the workers camp:

    a. Break time can be staggered so that not all workers will be away to the canteen or eating area at the same time

    b. Use of the bathrooms and toilets need to be staggered to prevent crowding.

    c. Work hours can also be staggered to ensure no overcrowding

    d. Provision of entry and exit points from workers camp and site to ensure minimum contact during shift change.

    e. Prevention of visits from family and friends from workers camp and work site

    f. Improve access control to and from the workers camp and works site. Consider the use of personal identification cards that should be presented to grant access.

7. Education and enforcement of handwashing, sanitizing and other hygienic practices.

8. A record of who is on the work site and when needs to be available and with the shift supervisor at all times. This is so that in the event of a worker contracting COVID19, these records will be utilized to inform those who may have come into contact with this person (contact tracing).

9. Contractor to create an isolation area within the sick bay that can offer initial response.

10. Sick bay and health officers in the workers camp are to have the phone numbers and contact details of NCDC for confirmed cases that require evacuation from site.

11. Contractor should ensure the regular disinfecting and cleaning of the following surfaces several times a day; tables, chairs, doorknobs, Light switches, phones, toilets, taps and

sinks.

12. Remind workforce of need to follow the protocols, especially washing of hands and to keep common areas and tools, clean.

13. When departing the worksite, workers are to:
    a. Wash hands properly before departing site
    b. Retain PPE on site
    c. Maintain social distancing as you depart

ANNEXURE: V

TREE REPLANTATION PLAN (SAMPLE)

1. Objective

The Tree Replantation Plan aims to compensate for vegetation loss due to construction activities and to restore ecological balance in accordance with World Bank Environmental and Social Standard (ESS6: Biodiversity Conservation and Sustainable Management of Living Natural Resources). The plan also supports slope stabilization, erosion control, and improvement of local microclimatic conditions.

2. Tree Inventory and Clearance

Prior to commencement of works, a detailed tree inventory will be conducted within the project footprint, documenting species, size, location, and condition of trees likely to be affected. Tree removal will be minimized through design optimization and will only be undertaken after obtaining necessary approvals from relevant Forest and Environmental Authorities.

3. Compensatory Plantation Strategy

Compensatory plantation will be carried out at a minimum ratio of **1:5 (or higher as per regulatory and World Bank requirements).** Plantation will prioritize indigenous and site-specific species with high survival rates and ecological value. The plantation will be undertaken along the bund alignment (where feasible), downstream areas, and in designated community or government land in consultation with local stakeholders and Forest Department GoB.

4. Species Selection and Plantation Design

Selection of species will be based on local agro-climatic conditions, soil characteristics, and ecological suitability. Preference will be given to native, drought-resistant, and flood-tolerant species that contribute to bank stabilization and biodiversity enhancement. Proper spacing, pit preparation, and soil conditioning will be ensured to support healthy plant growth.

5. Implementation Arrangements

The Contractor will be responsible for implementation of plantation activities, including site preparation, procurement of saplings, planting, and initial maintenance. The Project Consultants (PCs) will oversee execution and ensure compliance with approved specifications. The Project Implementation Unit (PIU) will monitor overall implementation and reporting in line with ESMP requirements.

6. Maintenance and Survival Management

A maintenance period of minimum three (03) years will be ensured, including watering, weeding, mulching, fertilization, and protection through fencing or tree guards. Dead or unhealthy saplings will be replaced to achieve a minimum survival rate of 80% or above.

7. Environmental Monitoring and Reporting

Regular monitoring will be conducted to assess plantation progress, survival rates, and overall effectiveness. Monitoring indicators will include number of trees planted, survival percentage, and health condition. The Contractor will submit periodic reports, which will be verified by the Supervision Consultant and consolidated by the PIU for submission to the World Bank.

8. Community Participation and Awareness

Local communities will be engaged in plantation activities where feasible to enhance ownership and sustainability. Awareness programs will be conducted to promote environmental conservation and protection of planted areas.

9. Budget Provision

Adequate budgetary allocation will be ensured within the ESMP for plantation, maintenance, monitoring, and replacement of saplings throughout the defined maintenance period.

ANNEXURE: W

STAKEHOLDERS ENGAGMENT PLAN (SAMPLE)

1. Introduction

This Stakeholder and Worker Consultation Plan has been prepared as an annexure to the Environmental and Social Management Plan (ESMP) for the proposed subproject. The plan provides a structured approach for informing, consulting, and engaging local communities, project-affected persons, vulnerable groups, relevant institutions, contractor workers, subcontractor workers, and other project personnel during the pre-construction, construction, and post-construction stages.

Stakeholder and worker consultation is essential for identifying environmental, social, labour, occupational health and safety, and community health and safety concerns. It also supports effective implementation of mitigation measures, improves transparency, strengthens community acceptance, and provides a clear mechanism for recording and addressing grievances.

2. Objectives

The objectives of this plan are to:

1. Identify stakeholders and workers who may be affected by or have an interest in the project.
2. Disclose project information, including project scope, construction activities, expected impacts, mitigation measures, and grievance procedures.
3. Obtain feedback from local communities, affected persons, vulnerable groups, relevant departments, and project workers.
4. Ensure meaningful participation of women, poor households, elderly persons, persons with disabilities, daily wage workers, and other vulnerable groups.
5. Consult workers on labour conditions, occupational health and safety, welfare facilities, code of conduct, and worker grievance arrangements.
6. Link community and worker consultations with the respective grievance redress mechanisms.
7. Document issues raised during consultations and incorporate relevant feedback into ESMP implementation.

3. Stakeholder and Worker Identification

The key stakeholders and workers to be consulted are summarized below.

Category	Stakeholders / Workers
Primary community stakeholders	Local communities, nearby residents, affected persons/households, farmers, land users, shopkeepers/businesses, road users, women, children, elderly persons, persons with disabilities, vulnerable households, and local labour.
Institutional stakeholders	Local administration, relevant line departments, Environmental Protection Agency, local elected representatives, community elders, NGOs/CBOs where active, health and education facilities, police/traffic authorities where relevant.
Project implementation stakeholders	Project Implementation Unit / Executing Agency, Supervision Consultant, Contractor, subcontractors, suppliers and service providers.

Category	Stakeholders / Workers
Project workers	Contractor workers, subcontractor workers, skilled and unskilled labour, drivers, machine operators, security staff, camp staff, HSE staff, community liaison staff, and other site personnel.

4. Consultation Principles

Consultations shall be carried out in accordance with the following principles:

Principle	Application
Inclusiveness	All relevant groups, including affected persons, vulnerable groups, women, and workers, shall be provided an opportunity to participate.
Transparency	Project information shall be shared in a timely, clear, and understandable manner.
Cultural appropriateness	Consultations shall be conducted in the local language and in a socially acceptable manner.
Accessibility	Meetings shall be held at suitable locations and times convenient for communities and workers.
Gender sensitivity	Separate consultations with women shall be arranged where local conditions require.
Worker protection	Workers shall be allowed to raise concerns related to working conditions, safety, welfare, and grievances without retaliation.
Documentation	All meetings, issues raised, responses provided, and agreed actions shall be properly recorded.
Feedback integration	Relevant feedback shall be reviewed and incorporated into ESMP implementation, where appropriate.

5. Consultation Methods

The following methods shall be used depending on the stakeholder group, project stage, and nature of issues to be discussed.

Method	Purpose
Community meetings	Disclosure of project information and collection of feedback from local communities and affected persons.
Focus group discussions	Consultation with specific groups such as women, farmers, youth, vulnerable persons, local labour, or businesses.
Key informant interviews	Consultation with community elders, local representatives, government officials, teachers, health workers, and other informed persons.
Household consultations	Consultation with directly affected or vulnerable households who may not be able to attend public meetings.
Site meetings	Discussion of site-specific issues such as access, traffic, safety, dust, noise, spoil disposal, utility disruption, and temporary disturbance.
Worker induction sessions	Orientation of workers on ESMP requirements, OHS, PPE, code of conduct, emergency response, labour rights, and worker grievance procedure.
Toolbox talks / safety meetings	Regular communication with workers on activity-specific risks, safe work procedures, traffic safety, waste management, and incident reporting.
Awareness sessions	Information sharing with communities and workers on traffic safety, GBV/SEA/SH, GRM, OHS, waste management, and emergency response.

Method	Purpose
Information boards / notices	Disclosure of project details, construction schedule, safety instructions, contact persons, and grievance procedure.

6. Key Consultation Topics

6.1 Environmental Issues

Consultations with communities, local representatives, institutions, and workers shall cover the following environmental issues, as applicable:

- Dust generation and water sprinkling requirements.
- Noise and vibration from construction machinery and vehicles.
- Waste collection, segregation, handling, and disposal.
- Handling of fuel, oils, lubricants, and minor hazardous waste.
- Protection of water bodies, drains, irrigation channels, agricultural land, and community assets.
- Erosion control, spoil disposal, borrow areas, and site restoration.
- Tree cutting, vegetation disturbance, and restoration measures, where applicable.

6.2 Social and Community Issues

Community consultations shall cover the following social issues:

- Community health and safety during construction.
- Traffic management, access restrictions, and movement of machinery.
- Temporary disturbance to houses, shops, fields, roads, public facilities, or services.
- Employment opportunities for local labour.
- Labour influx and worker behaviour.
- Code of conduct for workers and site staff.
- Protection of women, children, elderly persons, and vulnerable groups.
- GBV/SEA/SH awareness and confidential complaint handling.
- Grievance Redress Mechanism for communities.
- Damage to private, public, or community assets, if any.

6.3 Worker Issues

Worker consultations shall cover the following:

- Terms and conditions of employment, wages, working hours, rest periods, leave, and payment arrangements.
- Occupational health and safety risks associated with assigned work.
- Use of personal protective equipment and safe work procedures.
- Emergency response, first aid, accident reporting, and incident investigation.

- Worker accommodation, sanitation, drinking water, rest areas, and welfare facilities, where applicable.
- Code of conduct, respectful behaviour, prevention of harassment, and GBV/SEA/SH awareness.
- Waste management, housekeeping, site access control, and traffic safety.
- Availability of a worker grievance mechanism.
- Right of workers to raise concerns without intimidation, discrimination, or retaliation.

7. Stakeholder and Worker Consultation Schedule

Project Stage	Stakeholders / Workers	Method	Key Topics	Frequency / Timing	Responsibility
Pre-construction	Local communities, affected persons, community elders, local representatives	Community meeting	Project scope, benefits, construction schedule, expected impacts, mitigation measures, community GRM	Before start of works	PIU / Supervision Consultant / Contractor
Pre-construction	Women, vulnerable households, elderly persons, persons with disabilities	FGD / household consultation	Access, safety, social concerns, gender issues, vulnerable group concerns, grievance process	Before start of works	Social Specialist / Community Liaison Officer
Pre-construction	Local administration and line departments	Coordination meeting	Permissions, traffic arrangements, utility coordination, public safety, emergency response	Before mobilization	PIU / Supervision Consultant
Pre-construction	Contractor workers, subcontractor workers, drivers, machine operators, security staff, camp staff	Worker induction / orientation	ESMP, OHS, PPE, code of conduct, emergency response, labour conditions, worker GRM, GBV/SEA/SH	Before deployment at site	Contractor / HSE Officer
Construction	Communities near active work sites	Community/site meetings	Dust, noise, access, traffic, safety, construction schedule, complaints	Monthly or as required	Contractor / Community Liaison Officer
Construction	Directly affected households, land users, road users, businesses	Household visit / site meeting	Temporary impacts, access arrangements, damages, restoration, traffic management	As required	Contractor / Supervision Consultant
Construction	Women and vulnerable groups	Separate FGD / targeted consultation	Safety, mobility, labour influx, harassment risks, access to GRM	Quarterly	Social Specialist / Community Liaison Officer
Construction	Contractor and subcontractor workers	Toolbox talks / safety meetings	OHS, PPE, activity-specific risks, first aid, emergency response, waste management, traffic safety	Monthly and before high-risk activities	Contractor / HSE Officer
Construction	Workers and camp staff, where applicable	Worker consultation / welfare meeting	Working conditions, accommodation, sanitation, drinking water, rest areas, complaints, worker welfare	Monthly or as required	Contractor / HSE Officer

Project Stage	Stakeholders / Workers	Method	Key Topics	Frequency / Timing	Responsibility
Construction	Local administration / relevant departments	Coordination meeting	Traffic, utilities, public complaints, emergency response, law and order	Quarterly or as required	PIU / Supervision Consultant
Post-construction	Local communities and representatives	Feedback meeting	Site restoration, residual impacts, pending grievances, project benefits	After completion of works	PIU / Supervision Consultant
Post-construction	Workers demobilized from site	Exit briefing / worker feedback	Final payments, grievance closure, safety close-out, return of camp/site facilities	At demobilization	Contractor
Post-construction	O&M agency / line department	Handover meeting	O&M-stage environmental and social responsibilities, unresolved issues, monitoring needs	At handover	PIU / O&M Agency

8. Consultation with Vulnerable Groups

Special attention shall be given to vulnerable and disadvantaged groups, including poor households, female-headed households, elderly persons, persons with disabilities, landless labourers, daily wage workers, and households living close to active construction areas.

The following measures shall be adopted:

1. Separate consultations shall be arranged where mixed public meetings may restrict participation.
2. Consultations shall be conducted in the local language.
3. Meeting venues shall be easily accessible and selected in consultation with the community.
4. Female participation shall be facilitated through female staff or local women facilitators, where required.
5. Views of vulnerable groups shall be separately recorded and considered in ESMP implementation.
6. Grievance registration shall be accessible, confidential where needed, and free from retaliation.
7. Project information shall be explained verbally where literacy levels are low.

9. Consultation with Workers

Workers engaged by the Contractor, subcontractors, suppliers, and service providers shall be treated as key project stakeholders. Worker consultation shall be carried out to identify and address labour-related risks, occupational health and safety issues, workplace concerns, welfare matters, and grievances during implementation.

Worker consultations shall be conducted through induction sessions, toolbox talks, safety meetings, awareness sessions, camp/welfare meetings, and confidential discussions where required. These consultations shall explain workers' responsibilities, rights, working conditions, health and safety requirements, code of conduct, emergency procedures, and access to the worker grievance mechanism.

The Contractor shall ensure that workers are informed about the following:

- Nature of assigned work and associated safety risks.
- Requirement to use PPE and follow safe work procedures.
- Availability of first-aid, emergency response, and accident reporting arrangements.
- Working hours, wage payment arrangements, rest breaks, and leave procedures.
- Site rules, camp rules, sanitation arrangements, drinking water, and welfare facilities.
- Prohibition of harassment, child labour, forced labour, discrimination, and misconduct.
- Worker grievance mechanism and confidential reporting channels.
- Right to raise workplace concerns without retaliation.

A separate worker grievance register shall be maintained at the project site. Sensitive complaints, including harassment or GBV/SEA/SH-related matters, shall be handled confidentially and referred to appropriate channels in accordance with the project's labour management and GBV/SEA/SH procedures.

10. Roles and Responsibilities

Institution / Person	Key Responsibilities
Project Implementation Unit / Executing Agency	Overall responsibility for stakeholder engagement, information disclosure, grievance redress, and incorporation of consultation feedback into ESMP implementation.
Environmental Specialist	Explain environmental impacts and mitigation measures, support environmental consultations, and assist in compliance monitoring.
Social Safeguards Specialist	Conduct social consultations, vulnerable group consultations, gender consultations, GRM awareness, and social impact monitoring.
Supervision Consultant	Supervise consultation activities, verify records, monitor implementation of agreed actions, and report compliance.
Contractor	Conduct site-level community and worker consultations, inform communities about construction schedules, maintain information boards, implement mitigation measures, and support grievance resolution.
HSE Officer	Conduct worker induction, toolbox talks, OHS awareness, emergency response drills, safety inspections, and accident reporting.
Community Liaison Officer	Maintain regular contact with communities, register complaints, support consultations, and assist in resolving local issues.
Worker Representative / Site Supervisor	Communicate worker concerns to Contractor management and support implementation of safety and welfare measures.
Local administration / community elders	Support community coordination, public meetings, local dispute resolution, and dissemination of information.

11. Information Disclosure

Project information shall be disclosed in a simple, understandable, and locally appropriate manner. Information shall be provided to communities, workers, and relevant institutions through meetings, notices, information boards, verbal briefings, and coordination with local representatives.

The following information shall be disclosed:

- Project name, location, and scope of works.
- Construction schedule and major activities.
- Expected environmental, social, and safety impacts.
- Mitigation measures proposed in the ESMP.
- Community health and safety precautions.
- Traffic and access management arrangements.
- Worker code of conduct and labour behaviour requirements.
- Community Grievance Redress Mechanism.
- Worker grievance mechanism.
- Contact details of responsible project staff.

Information boards shall be installed at visible locations near the work site and shall include emergency contact numbers, grievance focal person details, safety instructions, and basic project information.

12. Grievance Redress Linkage

The consultation process shall be linked with both the community Grievance Redress Mechanism and the worker grievance mechanism.

12.1 Community Grievance Mechanism

Communities and affected persons shall be informed about:

1. How and where to submit complaints.
2. Name and contact of the grievance focal person.
3. Expected timeline for complaint resolution.
4. Escalation procedure if the complaint is not resolved at site level.
5. Confidential handling of sensitive complaints, including GBV/SEA/SH-related matters.
6. Assurance that complaints can be submitted without fear of retaliation.

12.2 Worker Grievance Mechanism

Workers shall be informed about:

1. How to submit labour, wage, safety, welfare, or workplace-related complaints.
2. Availability of confidential reporting for sensitive issues.
3. Timelines for review and resolution.
4. Protection against retaliation for raising concerns.

5. Escalation procedure if complaints are not resolved by the Contractor.

Separate registers shall be maintained for community grievances and worker grievances. Each register shall include complaint number, date, complainant details if provided, nature of complaint, action taken, responsible person, resolution date, and status.

13. Documentation and Reporting

All consultation activities shall be documented and included in monthly or periodic ESMP compliance reports. Records shall include:

- Date, time, and venue of consultation.
- Type of consultation.
- List of participants, with gender-disaggregated data where possible.
- Worker category and number of workers consulted, where applicable.
- Photographs, where appropriate.
- Key issues raised.
- Responses provided by the project team.
- Agreed actions and responsible persons.
- Follow-up requirements.
- Status of community and worker grievances.
- Corrective actions taken.

The Supervision Consultant shall verify consultation records during site inspections and include consultation progress in ESMP compliance reporting.

14. Consultation Record Format

Item	Details
Project name	
Location / village / worksite	
Date and time	
Type of consultation	Community meeting / FGD / KII / household consultation / worker consultation / toolbox talk / site meeting
Participants	Men: ___ Women: ___ Workers: ___ Total: ___
Stakeholder / worker group	Community / affected persons / women / vulnerable group / workers / local administration
Main issues discussed	
Concerns raised	
Response provided	
Agreed actions	
Responsible person	
Timeline for action	
Follow-up required	Yes / No
Prepared by / signature	

15. Attendance Sheet Format

Sr. No.	Name	Designation / Village / Worker Category	Gender	Contact No.	Signature / Thumb Impression
1					
2					
3					
4					
5					

16. Monitoring Indicators

Indicator	Frequency	Responsibility
Number of community consultation meetings conducted	Monthly / quarterly	Social Specialist / Community Liaison Officer
Number of participants consulted, including women and vulnerable persons	Each consultation	Community Liaison Officer
Number of worker induction sessions conducted	At mobilization and new hiring	Contractor / HSE Officer
Number of toolbox talks and safety meetings conducted	Monthly / activity-based	Contractor / HSE Officer
Number of community grievances received and resolved	Monthly	Contractor / PIU
Number of worker grievances received and resolved	Monthly	Contractor / HSE Officer
Number of awareness sessions on OHS, GRM, traffic safety and GBV/SEA/SH	Monthly / quarterly	HSE Officer / Social Specialist
Public information boards installed and maintained	Monthly verification	Contractor
Consultation records included in ESMP reports	Monthly	Supervision Consultant

17. Budget Provision

The cost of stakeholder and worker consultation has been included under the ESMP budget heads for community consultation and GRM, worker awareness, social and environmental impact monitoring, training and capacity building, documentation, and community liaison support.

The budget shall cover meeting arrangements, local travel, communication, printing of notices, worker induction materials, awareness sessions, photographic documentation, grievance documentation, and follow-up consultations. Costs related to worker safety training, PPE

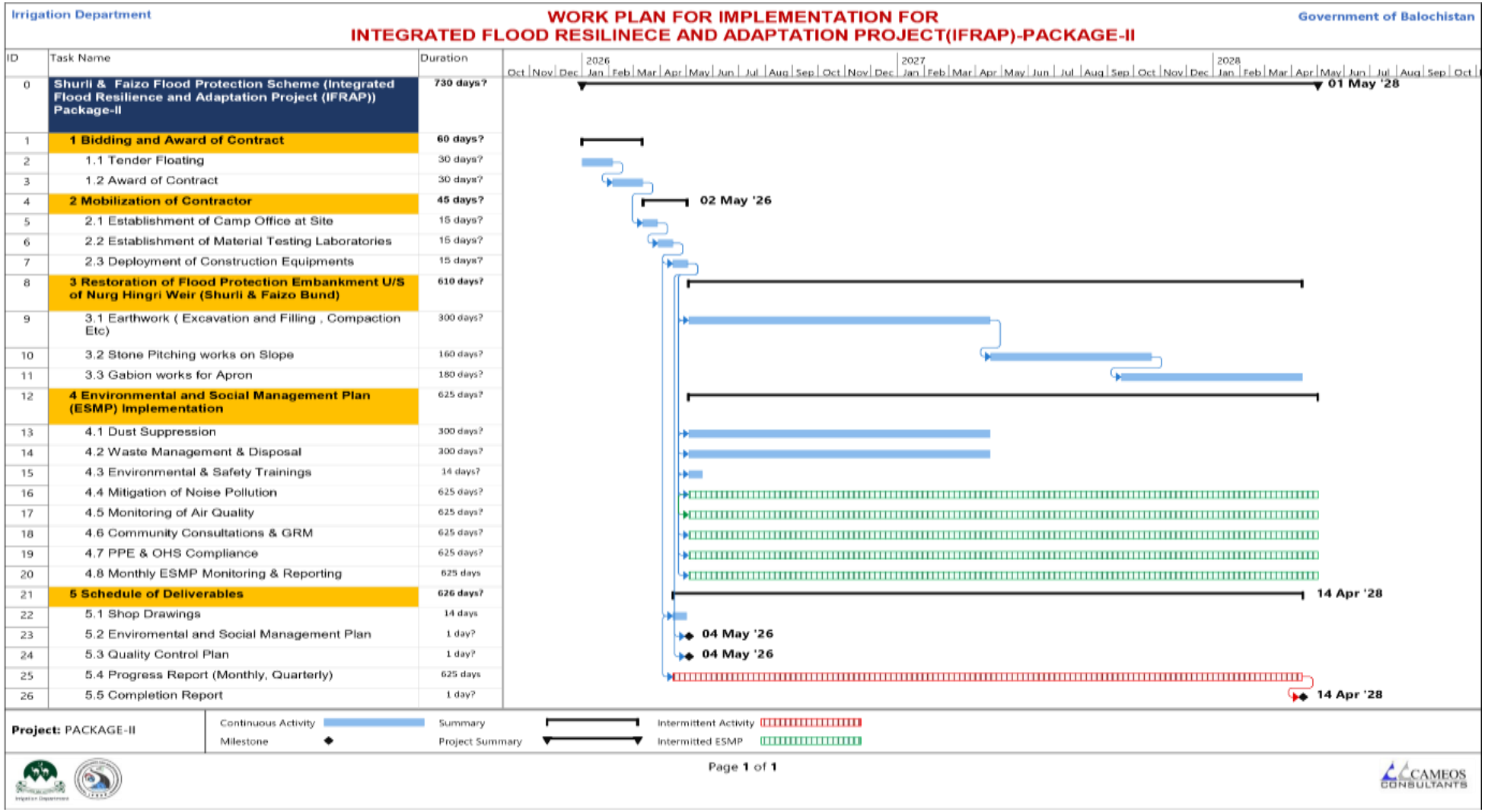
awareness, toolbox talks, and worker welfare communication shall be included in the Contractor's ESMP implementation obligations.

ANNEXURE: X

E&S CONSULTATION MEETING WITH LOCAL COMMUNITY MEMBERS

Community Consultations at Shurli and Faizo area

ANNEXURE: Y



WORK PLAN / IMPLEMENTATION SCHEDULE WITH TIME FRAME