Environmental Monitoring Report

PUBLIC

6 Semestral Report
August 2025

Pakistan: Balochistan Water Resources Development Sector Project

Prepared by Balochistan Irrigation Department and the Agriculture and Cooperatives Department for the Islamic Republic of Pakistan and the Asian Development Bank (ADB).

NOTES

I. The fiscal year (FY) of the Government of the Islamic Republic of Pakistan and its agencies ends on 30 June.
II. In this report "$" refer to US dollars.

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Abbreviations

ADB	Asian Development Bank
BOD	Biological Oxygen Demand
BWRDP	Baluchistan Water Resources Development Project
BEQS	Baluchistan Environmental Quality Standards
CAP	Corrective Action Plan
CDC	Centre for Disease Control
EIA	Environmental Impact Assessment
EMP	Environmental Management Plan
EMR	Environmental Monitoring Report
EPA	Environmental Protection Agency
ERP	Emergency Response Plan
ERT	Emergency Response Team
ESMMC	Environmental and Social Management and Monitoring Cell
FCC	Flood Carrier Channel
GRM	Grievance Redress Mechanism
HSE	Health, Safety and Environment
HTV	Heavy Transport Vehicle
IFC	International Finance Corporation
IEE	Initial Environmental Examination
ILO	International Labor Organization
LTV	Light Transport Vehicle
NEQS	National Environmental Quality Standards
PIC	Project Implementation Consultant
PM	Particulate Matter
PMO	Project Management Office
PPE	Personal Protective Equipment
RD	Reduced Distance
RoW	Right of Way
SAEMR	Semi Annual Environmental Monitoring Report
SFA	Social Framework Agreement
SOP	Standard Operating Procedure
SSEMP	Site Specific Environmental Management Plan
TMP	Traffic Management Plan
TSS	Total Suspended Solid
WHO	World Health Organization

1. Introduction

1.1. Preamble

1. All the Donor Agencies in including ADB and the country itself are now coming together under a shared approach to project safeguard policies, a comprehensive strategy to ensure that environmental and social risk and impact management capacity development support is delivered more holistically is becoming more important.

2. This report represents the 6th Semi - Annual Third-Party Environmental Monitoring Review for Baluchistan Water Resources Development Sector Project (BWRDP) from July to December, 2024. This report indicates, the project documentation review, site visits, meetings with contractors, consultants and overall findings etc.

1.2. Key challenges for safeguards

3. There are many interlaced and overlapping issues and hurdles to effective implementation of environmental impact management in Pakistan, especially in Baluchistan/KP Provinces. Challenges exist at the country and project level, as well as with/for development partners. Despite their complexity, the key issues need to be adequately understood in order for the proposed strategy to gain traction, add value, and be sustainable. An indicative list of key challenges is below.

4. Challenges to successful environmental impact management include:

   a. A lack of suitable or available national safeguards consultants to assist on projects.
   b. Remoteness and difficult geographical spread.
   c. Ongoing, frequent natural disasters, like flood, storm, earthquake etc.
   d. Limited infrastructure development experience outside development partner funded projects.
   e. Government agencies lacking qualified staff.
   f. Lack of institutional capacity due to small size and populations.
   g. Little incentive for regulators to properly assess or monitor projects.
   h. Inconsistency in standards and approaches for externally financed projects depending on whether they are publicly or privately funded; this exacerbates confusion around safeguards application and requirements.
   i. Lack of understanding of project specific safeguard requirements which results in the under-resourcing of safeguards personnel and budget within contractors, supervision consultants and regulatory agencies
   j. Limited environmental and social management expertise and systems.

1.3. Key objectives

5. To perform intermittent independent Third Party Monitoring BWRDP, in such a way to provide reliable assurance that all contractual obligations, for the construction contracts in perspective of environmental and social aspects as delineated in EMP or any other project document, have been met, during project life cycle, and to perform evaluation of preventive and corrective action plans and make disclosure

of all activities and end results needs for the improvement of safeguards implementation and management across project over time.

1.4. Scope of Work

6. The detailed scope of work is as follows:

   a. The scope broadly covers the survey of the project location, associated facilities to cover the following stages of the construction phase;
   b. The independent Monitoring covered the environmental status of the potential negative impacts of the construction phase of the project cycle and not the impacts of the project overall. The site visits covered document review, waste management, environmental monitoring parameters if any for noise, water quality, air etc., and review of the existing site conditions and OHS practices.
   c. Implementation- Waste Management, Reporting and Audits
   d. Verifying the project's environmental performance to ensure that it complies with the national environmental legislation, requirements under Pakistan Environmental Protection Act, ADB's environmental safeguards as stipulated in SPS 2009 and EIA/IEE, Contractor's Site -Specific Environmental Management Plan (SSEMP), BOQs and other related documents;
   e. Monitor and evaluate all the contractual obligations related to the environmental and social safeguard compliance are met by the contractors of civil works.
   f. Oversee the compliance of all the monitoring programs as given in EMP of each civil works contract;
   g. Select the most critical areas of the EMP implementation such as "having significant impacts including cumulative ones", "located near sensitive receptors/areas", "having potential for residual impacts", etc. based on the EIA/IEE/
   h. Arrange and conduct instrumental monitoring of environmental parameters by certified concerned Environmental Protection Agency (EPA) (if required- in case of any unprecedented observed pollution or additional parameters required with consent of PMO/ADB)
   i. Document and disclose monitoring results and identify necessary corrective and preventive actions in the periodic monitoring reports (Semiannual reporting), and make follow-up on these actions to ensure progress towards the desired outcomes;
   j. Monitor both critical environmental as well as health and safety areas including (i) incidents relating to Community Health and Safety (ii) Worker's Safety & Health issues including accidents and lost time, during the reporting period; and comment for avoidance of such incidents.
   k. Monitor Grievance Redress Mechanism (GRM) database and prioritized resolution of significant complaints along with others in time.
   l. Coordinate with PMO/ADB the working schedule and inputs so as to be on-site when construction activities with potentially significant impacts are going on, and immediately inform them in case of unpredicted potentially significant impacts;
   m. In the case of unpredicted environmental impacts, providing guidance on the preparation of a corrective action plan, and monitor its implementation in coordination with the Supervision consultants;
   n. Document the results of the monitoring activities and submit a report providing details related with (but not limited to) EMP compliance, monitoring of significant environmental impacts, as well as details on unanticipated impacts with mitigation measures. Details on GRM as well as any Health & Safety issues encountered at site will also be provided;

o. The Consultant will maintain the confidentiality of any commercial or proprietary information of the project that he/she may have received from the PMO and its consultants or any other government entity.
p. Environmental Team, Role and Responsibilities
q. Identification of Construction Impacts, Risk Assessments of the Impacts and Remediation Measures
r. Status of Site-specific Environmental Management Plans (SEMP)

1.5. Key stakeholders

2. For the purposes of the strategy development, the key stakeholders are categorized at two different levels:

i. ADB
iii. Executing Agency i.e Irrigation Department
iv. Project Management Office - project specific management body
v. Project Implementation Office (PIO) in Agriculture and Cooperatives Department – vi. project specific implementing agency
vii. Project Steering Committee
viii. Project Working Committee

3. **Asian Development Bank (ADB) outlines** an approach for development partners to environmental and social issues that are common in the delivery of Infrastructure Projects, recognizing a number of challenges and conditions unique to the region. The intention is that the strategy will support the roll-out and implementation of the Shared Approach.

4. In addition to inter-agency coordination, the larger development partners usually have safeguards specialists on staff - located at headquarters and increasingly in regional or country offices. This will allow for stronger relationships, greater understanding and support from development partners to develop a consistent approach to implementing the strategy and proposed capacity development activities.

5. **Executing Agency** Country-level stakeholders include the main government agencies directly involved in infrastructure development projects. This includes executing and implementing agencies, in this case it`s Baluchistan Irrigation Department).

6. While noting that managing contractors and civil works contractors are often involved in some aspects of project design, implementation and monitoring, these organizations are not responsible for implementing national regulations. Therefore, for the strategy, consultation with these stakeholders will not be included in this assignment. However, this does not preclude these stakeholders being involved in any future, wider initiatives for capacity development.

7. Limited consultation with non-government organizations (NGO) and civil society organizations (CSO), and experienced safeguard practitioners will be

undertaken as appropriate for strategy development and/or feedback on the draft strategy.

2. The Project

2.1. Background of the Project

7. The Asian Development Bank (ADB) is partnering with the Government of Balochistan (GoB), to undertake the Balochistan Water Resources Development Sector Project (BWRDSP) Zhob and Khuzdar Districts.

8. The BWRDSP will support the implementation of the integrated water resources management policy of the Government of Balochistan (GOB). The policy provides a comprehensive framework for the province to address the issues of water management and development in the context of basin approach, with water harvesting, and groundwater recharging as an integral part of watershed management.

9. About 11 potential subprojects out of the extensive list of over 300 possibilities were chosen in the Zhob and Mula river basins for potential ADB financing based on a set of criteria such as, water and land availability, economic viability, and a balanced approach to extending development support to different tribal groups. The project was approved by ADB on 31 August 2018 for a concessional loan of $100 million from ADB's ordinary capital resources (L3700-PAK), a grant of $3 million from the Japan Fund for Poverty Reduction (JFPR, G9197-PAK), and a grant of $2 million from the High-Level Technology Fund (HLTF, G0597-PAK). The loans and grants became effective on 7 March 2019. The physical completion of the project is expected on 30 July 2026.

2.2. Purpose of the Project

10. The purpose of the project will be as following:
    a) Construct new small dams and flood irrigation (spate) systems;
    b) Improve 276 km of canals, drains, and karezes (subsurface water channels);
    c) Develop a satellite-based water information system; and
    d) Build capacity of the local communities, the Baluchistan Irrigation Department (BID), and the Agriculture and Cooperative Department (ACD). The indicative outcome of the BWRDP project will be to improve land and water resources, agricultural production and farm income.

11. Government of Baluchistan has now hired the services of the Consultants for Project Design, Construction Supervision and Implementation Support for Baluchistan Water Resources Development Sector Project (hereinafter called 'the Consultants) will help GoB in preparing detailed design of three core sub- projects and also feasibility studies and detailed design of balance of eight non-core sub-projects. This External Environmental Monitoring Report is for Seri Toe Dam

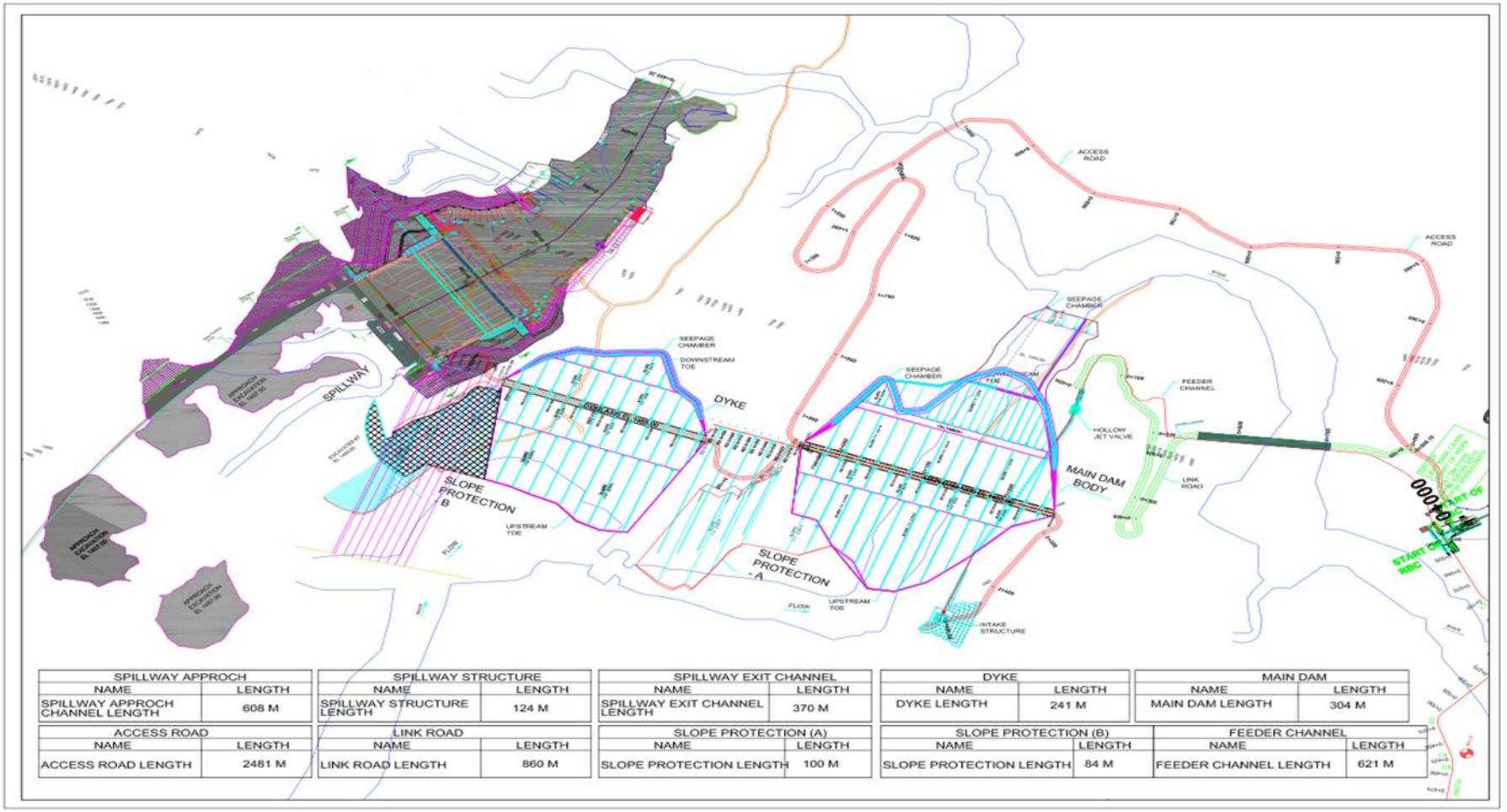
project, which is category A project, according to the categorization ADB Screening. The rest of the Sub projects are Category B projects.

2.3. Salient Feature of the project

12. This Semi-Annual Environmental Monitoring Report External (SAEMR) has been prepared for the Sri Toi Dam project, based on the site visit, project safeguards document and Internal Monitoring Report (2nd half IMR) 2024. Location map of the Project is shown in Fig: 1 (Dam Site), while **Salient** features of Sri Toi Dam Subproject are shown below Table 2.1:

Table 2.1: Salient features of Sri Toi Dam Subproject

Feature Description	**Detailed Design**	**Feasibility Design**
Type of structure	Central Clay Core Earth fill Dam	Central Clay Core Earth fill Dam
Location	N 3496638.09, E 525794.05.96	N 3496638.09, E 25794.05.96
Dam Height (m)	72.00	66.00
Storage Capacity (MCM)	42.32	36.49
Catchment Area (sq.km)	961.00	961.00
Spillway Crest Length (m)	148.00	135.00
Spillway Type	Ogee ungated overflow	Ogee ungated overflow
Spillway Design Flood	PMF/10,000 years return period	PMF/10,000 years return period
Dyke/Saddle (No.)	1	1
Right Bank Main Canal and Distributaries (km)	29.00	58.87
Left Bank Main Canal and Distributaries (km)	45.40	
Intake Structure Height (m)	3	10.00, 20.00 & 30.00
Steel outlet Pipe (m)	34	1600
Khushkaba Area (Ha)	361	361
Design Command Area (Ha)	3,948	3,948
Watershed Development Area (Ha)	3750	3750
Average Annual Available Water (MCM)	32.16	57.00



SPILLWAY APPROCH	
NAME	LENGTH
SPILLWAY APPROCH CHANNEL LENGTH	608 M

SPILLWAY STRUCTURE	
NAME	LENGTH
SPILLWAY STRUCTURE LENGTH	124 M

SPILLWAY EXIT CHANNEL	
NAME	LENGTH
SPILLWAY EXIT CHANNEL LENGTH	370 M

DYKE	
NAME	LENGTH
DYKE LENGTH	241 M

MAIN DAM	
NAME	LENGTH
MAIN DAM LENGTH	304 M

ACCESS ROAD	
NAME	LENGTH
ACCESS ROAD LENGTH	2481 M

LINK ROAD	
NAME	LENGTH
LINK ROAD LENGTH	860 M

SLOPE PROTECTION (A)	
NAME	LENGTH
SLOPE PROTECTION LENGTH	100 M

SLOPE PROTECTION (B)	
NAME	LENGTH
SLOPE PROTECTION LENGTH	84 M

FEEDER CHANNEL	
NAME	LENGTH
FEEDER CHANNEL LENGTH	621 M

Figure 2-1: Location Map of the Project Area (Dam Site)

2.4. Components of the Project

13. The following works are proposed under Sri Toi dam sub-project:
    1) A 287 m long and 67m high earth fill dam with clay core on Sri Toi River.
    2) A 235 m long and 32m high earth fill dyke with clay core on side ridge to plug the reservoir.
    3) A spillway in a length of 148 m on the left abutment of the dyke.
    4) A total length of 345m steel pipeline from intake structure of the dam up to start of the command area followed by irrigation main canal, left, right canals of a total length of 74km for the design command area
    5) Necessary cross drainage works including aqueducts, super-passages, RCC-pipe crossings, and other minor hydraulic structures
14. **Selection of dam axis:** The dam axis has been selected after reviewing the general topography of the area through site visits and analysis of satellite-based imagery and terrain. The selected dam axis has good rock on abutments and the foundation geology.
15. **Reservoir characteristics:** The reservoir Area-Elevation-Capacity curve has been developed. Terrain of the area is very steep and narrow and the storage volume at lower elevation is quite insignificant. This necessitates the design of a dam with a height of 67 m in order to store 30 MCM, required to fulfil the needs of the design command area. The river downstream of the dam location opens to vast flat lands about 1.5 kms downstream of the proposed dam, where sporadic human settlements exist.
16. **Spillway design discharge:** The spillway design flood is estimated for 10,000yrs return period and checked for Probable Maximum Flood (PMF) for Sri Toi River. Flood discharges for 10, 25 and 50 years return period has been computed for diversion arrangements during construction.
17. **Spillway location:** The proposed spillway is located towards the left abutment of the dyke. The spillway width is 148m, at which it will safely pass 10,000-year design flood with 4-5 m head. The spillway has a USBR Type-II stilling basin which is adequately sized to dissipate the erosive energy. An earthen channel from the stilling basin will convey the flood water back to the river and away from the dam.
18. **Command Area:** Construction of the proposed dam will cover the command area up to 3,948 ha, beside of sustained water supply to the present command area being cultivation seasonal basis by growing vegetables and grains. The proposed reservoir would recharge the subsurface flow of karezes, shallow wells and tube wells, protect the agriculture land and human settlements from devastation of floods during flood seasons and develop grazing zones for livestock. The stored water will support drinking, agriculture purpose and other domestic uses.

2.5. Project Activities during Reporting period

19. The Siri Toi Dam camp is located at a considerable distance from the local community/settlement (Pir Hazrat village).

20. The construction activities are shown in the below Table: 2.2 physical progress till Dec, 2024, where more than 60% construction works of Spillway have been completed.

Table 2.2: Siri Toi Dam Subproject ICB-01 works progress till December, 2024

Sr. No	Activity	Status % June, 2024	Status % December, 2024
1.	Main Dam	-	0 %
2.	Dyke	0.96	1.26 %
3.	Slope Protection	8.95	9.85 %
4.	Curtain and consolidation grouting	3.65	4.73 %
5.	Spillway	25	65.43 %
6.	Intake Structure and Irrigation conduit	-	13.72 %
7.	Feeder Channel	-	5.06 %
8.	Irrigation System and related Structures	-	0.27 %
9.	Access Road	3	32.1 %
10.	Under Draining Spillway	-	94.94 %
11.	General Items	-	68.67 %

2.6. Project Contracts and Management

21. The GOB, through its Irrigation Department, is the executing agency, and the Agriculture and Cooperatives Department (ACD) is the implementing agency, are wholly responsible for the Project implementation, as agreed jointly between the borrower and ADB, and in accordance with the policies and procedures of the government and ADB. The Project Management Office has been established in Quetta for overall project implementation and coordination.

22. The environmental management teams for this project and their respective roles are as provided below as Table 2.4.

Table 2-4: Project Environment Team

Organization	Discipline/ Designation	Deployed Team	Location	Contact No	Email Id
PMO	Project Director	Sufyan Durrani	Quetta	0333 5172464	pd.bwrdsp@gmail.com
Consultants	Environment Specialist	Dr Akhtar Iqbal	Lahore	0300-8381968	enviro@rehmanhabib.com
Consultants	Environment Specialist	Ahmad Hassan	Quetta	0336 8311968	ahmed_env06@yahoo.com
Contractor HSE	HSE In charge	Asfand Yar	At dam site Siri Toe	0312 8385251	Asfand.nasar@gmail.com

23. The GoB, through the Irrigation Department, is the executing agency of the project and the Agriculture and Cooperatives Department (ACD) is the implementing agency, with active support from relevant departments (Forestry and Wild Life, and Livestock and Dairy). A project management office (PMO) has been established in Quetta for overall project implementation and coordination. The PMO, led by a Project Director, have direct responsibility for Output 1 and Output 3. A project implementation office (PIO) has been established in the ACD to implement the Output 2. For Output 1, the PMO has been supported by Deputy Director Irrigation in Zhob and Khuzdar districts, and by District Forest Officers and their staff in Zhob and Khuzdar districts (for implementation of watershed protection measures). For Output 2, the PIO has been supported by Deputy Directors on farm water management and their staff in Zhob and Khuzdar districts. Output 3 will be implemented by the PMO with support from the PIO.

24. The consultants Environment Team consists of Two Environment Specialist Dr Akhter Iqbal; and Mr. Ahmad Hasan; Junior Environment Specialist. The contractor have only one HSE Supervisor. The BWRDSP Consultants are tasked with specific responsibility to assist PMO in ensuring safeguard compliance of civil works – with emphasis on the monitoring of implementation of EMP through the Contractors SSEMP and related aspects of the project.

25. During the project visit, the existing staffing positions were reviewed, and it was determined that the current number of staff is adequate for the project's requirements. There is no need to hire additional staff or terminate existing members. All team members are effectively contributing to the project, and their inputs (measured in person-months) have been assessed as sufficient for the project's demands. However, for the project office capacity building, the ADB mission recently visited the project site and proposed to employee an Environmental Expert for PMU. The employment for this position is in progress.

26. The budget allocation for the project has been carefully reviewed and is sufficient to meet the project needs. The environmental budget includes comprehensive coverage for Occupational Health and Safety (OH&S) costs, ensuring that all safety standards are met. Additionally, all positions outlined in the Environmental Management Plan (EMP) are covered in the Bill of Quantities (BoQ).

27. Based on our analysis, the resources allocated, including staffing and budget, are adequate to meet the project's objectives. The measures taken in the planning and execution phases have ensured that the project's requirements are being met effectively.

2.7. Safeguard Documentation Status

28. As per ADB SPS, 2009 and EARF for the project, in both design and construction phases of the subprojects, the PMO with the support of CSC conducted Rapid Environmental Assessment (REA) Surveys of all the subprojects and submitted to ADB. All the REA's were approved by ADB and the project is falling in the category A of the ADB SPS categorization for the environmental safeguard. Subsequently the Environment Impact Assessment Report has been prepared and approved by the ADB and Baluchistan Environmental Agency.

29. SSEMP of Sri Toi Dam ICB 01 had been approved on 9th December 2022. The construction works on ICB 01 started in November 2022 respectively.

2.8. Relationship with Contractors

30. As discussed with the PMO, Consultant team, Contractors Safeguards personals and reportedly, a good working relationship is being maintained among the contractors and the consultants during the execution of the subprojects. No constraint with respect to working relationship have been noted. As reported in the environmental monitoring reports, training is arranged on site for the different Environment Compliance parameters occasionally, say very few and quite not as per requirement, however when working at site will be increased, it may be enhanced.

31. In last report we assessed that, the trainings quantum likely be improved, but is the same position and no improvement have been seen at site. The claimed position, according to the Internal Environmental Monitoring Report regarding Environment Compliance at site is opposite and not factual. For example, the Contractor HSE Manager visited the site once during the reporting period, The HSE supervisor is also nor regular stay at site. The record at site is not properly maintained. Like this, there is significant points of noncompliance. Therefore, the claimed and actual finding not corelated description of any Changes to Project Design

32. No change to project design of Siri Toe Dam project has been made during the reporting period. No change to agreed construction methods has been made during the reporting period.

3. Environmental Safeguards Activities

3.1. Environmental Management

33. The Management was carried out by Environmental Specialist in presence of contractor`s Environmental HSE through site inspections. The site inspection by Consultant Environmentalist were occasional and not adequate as per requirement during the reporting period. The Contractor's environmentalist /HSE manager performed the duty at site not regular. The HSE Inspector presence at site was also not full time. Activities carried out by Supervision consultant during the monitoring period are provided below:

- Constant communication with engineers on updates on the project design and works;
- CSC is responsible for supervision of EMP implementation at project sites.
- Preparation, approval and supervision of different Environment Management Plans
- Site inspection and provision of recommendations to the Contractor's personnel on constant usage of PPE improvement the situation with the solid waste containers and regular cleaning of the site.
- Participation in meetings arranged by the PMO and ADB.
- Preparation of Semi-Annual Environmental Monitoring Report;
- Reviewing the Cost Estimates for EMP implementation;
- Provision of training activities to the contractors on EMP implementation and SSEMP preparation;
- Support and consultation of contractor's environmental, health and safety personnel in implementation of environmental mitigation measures;
- Assistance and guidance in preparation of Contractor's Environmental Monthly Report;
- Supervision of the preparation of SSEMPs by the contractor;
- It is observed that, as per routine, Environment Specialist CSC conducts quarterly site visits or when some important meeting or ADB visit to ensure implementation of EMP.
- Besides ES visits, it is required that CSC site staff especially Resident Engineer (RE) should monitor EMP/SSEMP implementation on day-to-day basis and highlight the issues to the contractor's site manager. But at our site visits, the RE seems least interest in HSE day to day working.
- Contract agreements for the project bind the respective Contractor to appoint/ mobilise full-time staff for the implementation of EMP/SSEMP but situation is not appropriate.

1. Camp Site Arrangements, Borrow Area, Disposal Areas Etc.

34. The total area of the land for the camp is estimated to be 20 acres. The camp includes various facilities, such as consultant and contractor offices, consultant and contractor staff residences, accommodations for laborers, a mess for staff and labor, a residency

for FC, and a Mosque. The contractor staff will be accommodated in the camp, which also features worksite facilities capable of housing between 100 and 200 workers, with an average permanent staffing and workers on-site.

35. The construction camp has the accessibility to safe drinking water, as per water analyzing results. Utensils for labour drinking water are not proper Hygienic conditions.

36. The Sanitary and toilet facilities, washing facilities, Kitchen/mess exists but not proper facilitation and Hygienic conditions for the labor camps.

37. For the construction activities borrow areas have been selected for the extraction of materials which are already approved by the Engineers.

38. Borrow Area Management Plan has been prepared by contractor that pertains to the measures that need to be incorporated during identification of borrow area location, material extraction and rehabilitation. The borrow area sites are away from Dam site, mostly at the distance of 6 to 9 Km at barren/broken/uncultivable lands, owned by Government of Baluchistan. Borrow Management Plan indicates the re-dressing/management of the borrow sites. There will be no impact of Borrow sites on the local communities due to excavation/transportation, as the sites are far away from communities.

39. The SSEMP has been updated after incorporating Borrow Area plan, however the routes are not mentioned in it. The local communities are far away from these sites. The transportation routes are also not mentioned.

40. Waste disposal site has been established to cater the waste from labour camp and site office, adequate as per Waste Management Plan.

41. Types of waste generated and its source in project camp & working sites during the reporting period include:

    - Construction Waste – Excavated/Cut material;
    - Municipal solid waste from Labor Camps;
    - Medical Waste – limited to packing material only;
    - Hazardous waste – used oil; and
    - Wastewater – toilets/ bathrooms

42. The major activities performed at Spillway site pertained to levelling and excavation for main spillway, conduit, walls, and backfilling. A huge quantity is cut and disposed at the designated disposal points nearby sites, where required and dumped.

43. Municipal waste generated during the reporting period has been nominal.

44. Recyclables i.e., cardboards, papers, wood etc. within the municipal waste has been sold to the local scrap dealers. However, the minimal amount of organic material left is thrown in the open as it is consumed by cattle because of rural locality. The rest is

dumped in the open ditch and covered with soil, so that it may not cause any nuisance. The project is rural and do not have any landfill facility.

45. First aid facilities have been provided by Contractor at site. The facilities have been limited to providing basic services for common illnesses i.e., normal headaches, stomach related illnesses, blood pressure etc. Therefore, the waste originated from established first aid facilities has been limited to packing material that has been dumped at the designated sites during the reporting period.

46. Used oil has been the only hazardous waste generated from site construction activities. Used oil collected in drums has been sold to the vendors involved in this business.

47. Septic tanks have been constructed to treat the wastewater at appropriate locations i.e., offices and labour camps, during the reporting period.

2. Emergency Response Arrangements

48. Emergency response plans are comprised of the following mandatory work plans as per the requirements of the approved EMP/SSEMP and are being implemented

- Health, Safety and Environment Plan
- Risk Assessment Plan
- Construction Safety Plan
- Emergency Preparedness Response Plan

49. Emergency response procedures and contact details were not displayed at the at project sites, indicating whom to contact in the event of a fire as elaborated here, and advised to display for below contact details:

- Site Supervisor
- Environmentalist
- Fire Brigade
- Nearby Doctor
- Nearby Hospital

50. The Emergency Response Plan (ERP) has been elaborated in plain language, and subsequently, all prone areas and dangerous spots will be monitored on a daily basis. Monitoring safety observation cards will be produced for inspection, and if any unsafe act or unsafe condition is observed in the project, it will be promptly mitigated. With these revisions, the sentence reads more smoothly and clearly describes the elaboration of the Emergency Response Plan (ERP) and the daily monitoring of prone areas and dangerous spots. Additionally, the use of safety observation cards for inspection and prompt mitigation of any unsafe acts or conditions to be highlighted effectively.

3. Traffic Management & Diversion Plan (TMP)

51. Pursuant to the EMP and SSEMP, project site are located in remote areas. To ensure smooth traffic flow during the execution of construction works and in cases of partial or full closure of roads for the safety of transporters, road users, assets, and the general public, the Contractor is committed to be delivering the following:

- Ensure that vehicular movement does not cause any adverse impacts.
- Ensure that vehicular movement does not result in disturbances for the local community residing in the vicinity of the project as far as possible.
- Ensure that site activities adhere to the guidelines of TMP and all regulatory requirements.
- Flagmen/signboards were observed near diversions to guide the vehicles and visitors.

4. Natural Habitat Protection

52. The contractors are advised to avoid damaging the natural habitats and to replant the damaged plants, if unavoidable, after construction. Also, the native wildlife and habitats should not be disturbed. However, no tree has been cut during construction processes on any of the sub-project. Similarly, no native species are being disturbed due to the construction activities.

53. Neither flora nor fauna was disturbed by the contractors at project area, since the project is located far from any known wildlife habitat. Wildlife sanctuary does not exist near project site. No hunting of birds or animals was observed in the reporting period. Continuous monitoring is carried out by environmental inspectors of CSC to check any hunting activity or activities damaging vegetation or wildlife habitat.

5. Grievance Redressal Mechanism (GRM)

54. A project-level Grievance Redress Mechanism (GRM) has been established to address grievances arising from environmental and social impacts. The GRM is prepared in English and Urdu and cleared by ADB.

55. No complaint has been received during reporting period, however in the previous reporting period, some notables of the surrounding villages filed the application directly to the ADB for some issues regarding construction of access road and harm to local animals. But the issues were resolved, PD himself visited at site and handled the situation.

56. It is suggested that the GRM committee to be involve and strengthen for resolving these issues in future.

6. SSEMP Documentation & Functioning

57. SSEMP is the driving force for the environmental staff in taking guidance on what to do and when to do ensuring that project poses minimal environmental risks. With respect to institutional arrangement for implementation/functioning and control of the SSEMP, Environmental and Social Management of PMO comprising One Environmental Environmentalist and the Contractors have one HSE Inspector been designated for EMP implementation.

58. The roles and responsibilities of each member have been clearly defined which enabled smooth functioning of Environment Compliance and implementing, but in view of site visit observation and record, the environmental compliance performance is not satisfactory.

59. The scope of work under SSEMP has been clearly defined and no deviation in scope of work has been reported/observed.

60. Moving ahead for implementation of SSEMP, checklists for daily, weekly and monthly monitoring of mitigation parameters have been partially (few) developed and put in practice, that the Contractor's Environmentalist is using/filling these few monitoring checklists.

61. SSEMP/EMMP required provision of training to workers and staff on key issues such as:

- ✓ Importance of compliance with EMP
- ✓ Potential environmental impact of construction activities
- ✓ Health, safety and environmental issues
- ✓ Emergency preparedness and response

62. SSEMP/EMMP contains measures as mentioned in the Project's EMP. Hence, SSEMP requires site inspections and implementation of all mitigation measures including control over dust, noise, emissions, traffic, safety, all types of pollutions in water, air and soils, etc. Keeping in view the measures in SSEMP, performance is not appropriate with regards to environmental compliance during reporting period.

63. SSEMP/EMMP requires instrumental monitoring for environmental parameters in for air, water and soil. SSEMP/EMP provides clear guidance in this regard.

64. SSEMP/EMMP also provides clear guidance on whom to involve for such instrumental monitoring. As such an EPA certified laboratory must be hired for conducting instrumental monitoring of environmental parameters.

65. No request made by implementing agency for changes to the current mitigation measures for consideration by ADB.

7. Security Management Plan

66. For Security Management, Frontier Constabulary unit (Pak Army sub unit) have been engaged for the following:

- To remain in contact by instantaneous Communication with Project Director, Deputy Commissioner Office/local administration and all other stake holders.
- To assume full responsibility of implementing security plan
- To coordinate and suggest measure of improvement to Project Control and establish instantaneous reporting system.
- Assigning security duties and duty Officers/guards for day/night supervision.
- To train the security staff.

3.2. Environment Compliance

1. Local Employment

67. At the BWRDP, the contractor has employed Managerial staff, technical staff/Engineers, Skilled Labour and Non-Skilled Labour are 259 Nos. About 53% employees are residents from neighboring communities/Ziarat region. Table 3.1 below shows the actual figures of local & Non Local employees of different categories. (Local employees are from Zhob Region including the surrounding area of the project, while Non local from entire country other than Zhob Region). Moreover, locals are also working with contractor as petty suppliers to provide different items as stones/vegetables and labors.

Table 3.1: Shows the Employees Local & Non local at Seri Toe Dam project

S No	Employees Category	Local Employees (Surrounding area of the project & Zhob region)		Non-Local (Entire from country other than Zhob region)	
		Local	%age	Non-Local	%age
1	Managerial Staff	4	57	3	43
2	Technical staff/Engineers	17	68	8	32
3	Skilled Labour	61	53	53	47
4	Unskilled Labour	56	49	57	51
Total		138	53.28	121	47.72

2. Environmental monitoring

70. Construction phase air quality and noise level water quality surveys were organized by BWRDP contractor at the project as required under EIA during the term under report.

i. Drinking Water Quality

71. EIA reports of the project suggested one-time drinking water quality testing during the pre-construction phase of the project. The contractor has organized the testing from EPA certified laboratory and the results were already presented in every SAEMR (internal) submitted to ADB.

72. According to the EIA Report, drinking water quality test should be conducted bi-annually and will be reported in the SAMER report. Results indicated that all of tested parameters were within Pak-EPA's prescribed National Environmental Quality Standards (NEQS) limits and WHO standards for drinking water.

ii. Air Quality and Noise

73. Air quality and noise level monitoring at project were carried from EPA certified lab. Laboratory report indicated that average concentrations of tested air quality parameters were within the EPA's permissible limits as prescribed under NEQS limits and WHO guideline levels.

74. It has been suggested that the contractor to mitigate the impacts on site construction activities at the air quality. Regular sprinkling to be required by the contractor on the roads. Vehicles and other heavy equipment using fuels (diesel & petrol) are being adequately maintained to reduce the emission of dark smoke from these machineries.

3. Implementation and Monitoring of H&S COVID-19 plan

75. SOPs mentioned in the approved H&S COVID-19 Plan to be followed by the contractor. No COVID-19 patient has been reported during the term under report in both sub-project's sites.

4. Sensitive Receptors

76. There are no sensitive receptor neither near camp site not near construction under progress. The camps and construction sites are away from population at least two Kms.

5. Workers Safety and Health

77. During the site visits, the provision of First Aid kit, medical room, ambulance and medical technician were present at site, but these facilities are adequate as per HSE practices. Construction activities in the camp have had minor impacts on the safety and health of workers. Prior to starting the project, the contractor implemented engineering and administrative control measures. For example, provision of Personal Protective Equipment's (PPE) to the work force was to some extant ensured on-site. Other safety measures were put in place to avoid accidents related to construction operations, vehicle movements and machinery operations. Additionally, the contractor has 4WD vehicles available to deal with any kind of emergencies. No significant incidents related to the workers' health and safety occurred during the current reporting period.

78. The contractor conducted the HSE training for their workers and administrative staff at a very limited scale in the reporting period and was also reported in the 5th SAEMR, but no records were found. It is suggested that records of every activity to be maintained, the trainer to be well qualified and having broad knowledge of handling HSE issues during construction. The laborers to be encouraged to participate in this training and to advise that safety should be ensured on priority. The training requirements are not adequate and need improvement, as the laborers & other staff is generally unaware about Environment compliance issues, especially Health and Safety. The training must be required as per EMP requirements.

6. Non-Conformance Practices

79. As per the status of non-compliances from July-Dec 2024, there is no records of Non-Conformances Notices in the HSE office at site. However, many issues were observed as per details below:

- Water coolers for labor at Unhygienic condition
- Capacity Building training"
- Laborers were found without foot protection
- Records keeping
- Some Workers were not using proper PPEs at construction site
- Transportation of construction material not covered at vehicles
- Toolbox Talks frequency
- Housekeeping needs attention
- Speed Limit Signs
- Unsafe work at heights
- Chemical Storage area proper Management

7. Community Health and Safety

80. According to the site records, there are no documented reports on Community Health and Safety. However, fencing and trenching have been installed around the camp to ensure its protection. The Frontier Constabulary watching guards were also on- site to ensure the safety of both the camp and the surrounding community. The SEMR (internal) stated that:

"The contractor's environmentalist is assisted by the consultant team in providing adequate training to staff for community health and safety. Signboards at designated spots and curves, as well as at the campsite, are installed at various locations to control vehicle speed limits. The campsite is barricaded and constantly monitored to ensure that local residents and domestic animals/livestock (cows, goats, sheep, and dogs) stay away from the construction area. However, no incident related to community health and safety could be reported.

The project site is cordoned-off, especially the areas where machinery is involved, with barricades and constant monitoring to ensure that local residents, particularly children, stay away from the construction area. Additionally, no machinery is being left unattended, especially in running condition. Drivers are provided orientation on safe driving practices to minimize accidents and prevent the spillage of hazardous materials. On access roads, several safety measures have been implemented. Signboards are properly installed at necessary locations along the access roads. A traffic management plan is effectively implemented at the sub-project site. Furthermore, entry points to the construction site are limited and monitored to prevent unauthorized access"

8. Toolbox Talks (TBTs)

81. The records of the TBT were observed at the site HSE office, but they were not maintained regularly or in an appropriate format, However, the internal SEMR reported as follows:

"*Daily Tool Box Talk (TBT) is conducted by the HSE Supervisor in the morning before starting any*

82. that daily TBT should be conducted for the laborers and the site staff, especially on the following topics:

- COVID-19 (Coronavirus) outbreak, its signs & symptoms, safety precautions,
- Use and Importance of PPE,
- Housekeeping,

- Safety from moving vehicles and machinery i.e., grader, roller, dumper etc.,
- Concrete Pouring Safety, activity on the site"
- It is advised
- Safety form Machinery,
- Excavation Safety
- Dust Control
- Safe use of electric machines
- Work at height
- Safe platform on shad
- Use of ladder
- Side railing safety
- Camp Management
- Heat Stroke
- Formwork Safety,
- Site Health and Safety Procedures, and
- Electrical Safety

9. Corrective Action Plan (CAP)

83. At site there was no record of CAP, However the SAEMP July, Dec, 2025 Internal reveals that: During the reporting period, the Environment Specialist of CSC conducted regular visits and monitored the project for the implementation of the Environmental Management Plan (EMP). As a result of these visits, Corrective Action Plans (CAPs) have been prepared for EMP non-compliance in for Siri Toi Dam. The details of these CAPs are provided in the Table below.

Table 3.2- Siri Toi Dam sub-project Corrective Action Plan (Issues Resolved)

Sr. No.	EMP Observations	Corrective Measures	Implementing Responsibility	Monitoring Responsibility	Timeline	Updated Status Closed/open
a)	Some Workers were not using PPE's	All workers and staff need to wear the required PPEs. A mechanism needs to be established to ensure usage of PPEs through training, incentives, or penalty.	Contractor	CSC	1 January 2025	Open
b)	Environment Specialist and HSE Officer are not present on site fulltime	Contractor shout depute fulltime Environment Specialist and HSE Officer and ensure their presence on site	Contractor	CSC	10 January 2025	Open
c)	Safety protocols for scaffolding were not adhered to, posing a potential risk	Ensure scaffolding meets safety standards and that workers are trained on proper usage	Contractor	CSC	5 January 2025	Open

Sr. No.	EMP Observations	Corrective Measures	Implementing Responsibility	Monitoring Responsibility	Timeline	Updated Status Closed/open
d)	Non-compliance with fall protection protocols was observed	Ensure the installation of fall protection systems and provide training to workers on fall hazards	Contractor	CSC	5 January 2025	Open
e)	Unwanted items were observed at the Assembly Point in the camp area, and waste was not properly disposed of	Ensure proper disposal of waste at designated areas and keep the assembly point clean	Contractor	CSC	5 January 2025	Open

(Issues Tracking (Based on Non-Conformance Notices)

a) During site inspections, several safety issues were identified, including sliding hazards due to uneven ground and inadequate housekeeping at the dam site area. The Contractor was instructed to level the ground, improve housekeeping, and implement safety measures. Additionally, waste disposal at the Assembly Point was improperly managed, requiring the Contractor to dispose of waste in designated areas and maintain cleanliness.

b) Non-compliance with safety protocols was found in excavator operations, scaffolding, and fall protection systems. The Contractor was directed to enforce safety protocols for excavators, ensure scaffolding meets safety standards, and install fall protection systems with worker training.

c) Finally, PPE non-compliance was observed, with instances of workers not using the required safety gear. The Contractor was tasked with ensuring strict enforcement of PPE usage on-site, conducting regular inspections, and providing ongoing training. This corrective action is ongoing and requires immediate attention to ensure compliance and

d) “During the monitoring process, non-compliances were identified, such as various safety hazards were identified like uneven ground and inadequate housekeeping at dam area. In response, the BWRDP Contractor was requested to implement appropriate corrective measures to address these non-compliances”.

4. Watershed Management and Tree Plantation

84. The Construction of Siri Toi Dam Sub-Project is a critical component of the Zhob River Basin Watershed Management Plan. This project focuses on improving water retention, reducing soil erosion, and enhancing groundwater recharge through the construction of check dams (Gabion) and plantation activities in the sub- catchment area. The watershed area of the dam covers approximately 3,750 hectares and is divided into seven sub- catchments. The salient feature of the Watershed Management works i.e Gabion Check Dam, Storage Tanks, Percolation Tanks, Afforestation works are given below Table:

Table 4.1: Watershed Management works completed until December, 2024

S No	Catchment No	Gabion check dams (Nos)	Storage Tanks (Nos)	Peculation Tanks (Nos)	Afforestation (Acres)
1	**Sub-Catchment - 01**	8	6	8	2020
2	**Sub-Catchment - 02**	12	1	4	1291
3	**Sub-Catchment - 03**	1	1	4	819
4	**Sub-Catchment - 04**	19	7	43	1412

85. The following Table 4.2 shows nursery raising and tree plantation have been carried out in the project area, during the reporting period.

Table 4.2: Summary of Plants Available in Nursery and plantation

S Nos	Type of trees	Quantity available
Trees without bags/entire plants		
1	Fruit Trees	99,000
2	Arid Trees	479,699
3	Bushes/ Shrubs/Grasses	47,100
	Sub Total	625,799

Seed in plants bags		
1	Arid Trees	96,000
2	Arid Fruit Trees	16,000
3	Bushes/ Shrubs/Grasses	14,000
	Sub Total	126,000
	Grand Total	751,799

5. CSR Practice

86. The CSR activities focus on agricultural development in the area, supervised by the Deputy Director of Agriculture in the PMO office. The CSR budget for the project command area community is US$ 2,030,000, with US$ 1,599,320 disbursed by June, 2024. This budget is entirely allocated for solar-powered drip irrigation system and other agricultural development works.

87. Up to the reporting period, 64 solar-powered tube well have been installed in Zhob Region and 63 in Mola River Basin

6. Good practice and opportunity for improvement

a. Good Practices

- It was observed at site that the Flora and Fauna are not unnecessarily damaged. The plantation in the colony area has been done.
- Some of the observations were related to proper disposal of solid waste within the camp area. The staff was guided to carry out best practices pertaining to these issues.
- The installation of signboards is placed at some locations in the campsite and construction site. It needs further improvement to install sign boards at all the location, where necessary.
- The officers' mess has been established with good housekeeping of the offices but for labor say poor conditions.
- Cutting of trees for firewood is avoided as LPG is used instead of fuel wood.
- A good liaison should be established between PMO, Supervisory consultant and contractor to follow the environmental safeguard guidelines.

b. Opportunities for Improvement

- Environmental team should be more efficient in implementing mitigation measures in accordance with EMP. A good understanding to EMP has not been felt among the environmental team i.e. consultant and contractor of the project which is the key to successful implementation of EMP.
- Establishment of Contractor’s camp is not within the permissible standards and Parameters.
- Contractor`s Environmental staff not hold regular awareness and trainings including tool box talk, say occasionally. And this practice also not ensures that every worker is aware of the possible hazards and is, thus, able to avoid or mitigate the risks. The project recognizes that an ignorant worker is a danger at any construction site as the worker can put everyone else at risk.
- A proper level of housekeeping has not been observed at site. Good housekeeping ensured vector borne disease control, avoidance of foul smell in the area, control over accidents due to slip and overturning, wastewater management, solid waste disposal, etc.
- The contractor HSE staff have not maintained the record properly. Data to be stored in the folder separately for each project, when such single source point is created, the authorized personnel only will retrieve required information without wasting time. This folder will ensure safety of data and documents which will be the property of PMO and ADB.
- Construction sites should be appropriately barricaded and avoid contamination of Camp soil by oil leakage from machinery. HSE Supervisor should be present at site throughout construction period. All the concerned staff has been instructed to improve OHS performance levels including use of PPEs, implementation of working hours etc. Training sessions must be conducted frequently without any gap.
- Awareness training of workers to control the spread of COVID-19 epidemic and safety on construction site. Visitors / meetings in closed room should not be allowed or cancelled and safety signs regarding Covid-19 be displayed. Material transportation should be in the night time to avoid traffic issues. Entrance of public within project vicinity must be prohibited and more vigilance needed.
- The Contractors Environment Specialist should provide both off and onsite HSE training to the Contractor’s top/middle management, and workers for the capacity building and providing them necessary awareness on how to deal with HSE issues that arises on day-to-day basis.

Some suggestions for improvement regarding different Environmental aspects are as follows:

I. Safety and health hazards:

- Continuously carryout toolbox talks reminding workers at:
  i) Waste management procedures and put in place evaluation mechanism for waste management plan and procedures at the intake.
  ii) Specific safety rules and safe working procedures.
  iii) Occupational safety and health specifically drowning.
- Ensure to hoard off working areas with cautionary signage to prevent slips, trips, and falls.
- Drivers should endeavor to adhere to the road signage and policies put in place to ensure road safety
- All materials and equipment should be collected in one place after construction
- The audit exercise was also aimed at collecting information on the efficiency, effectiveness and reliability of available Occupational Health and Safety management system and drawing up plans for corrective action. The team also examined every step in the Occupational Health and Safety management system by measuring compliance with the controls has developed, with an aim of assessing their effectiveness and their validity.

II. Waste Management

- Ensure to implement existing waste management plan in place.
- Carryout due diligence to ensure that collected sewage from the septic tanks is properly disposed of accordingly.
- Include waste management awareness in daily toolbox talks to emphasize sorting as well as avoid littering of premises.
- Ensure continued sensitization of workers on proper waste management procedures.
- Consider perforating the bins to prevent collection of stagnant water in them

III. Safety Education and Training

- The Environment, Health and Safety trainings conducted at the site are not appropriate as per requirement. It should be improved by training staff in different aspects.
- Every individual should undergo an induction process on the safety procedures at the O&M camp before accessing the project site.
- Identify the different programs to train staff such as Occupational Safety and Health, Environment and Social Management Systems, Emergency Response Procedures among others.
- Ensure full and maximum participation of all staff in the training to be conducted.
- Keep record of trainings conducted and lists of staff attendance.

IV. Employee's participation in EHS Management

- The Consultant Environmentalist should regular monitor the EHS officer to ensure that all staff embed Occupational Health and Safety aspects in their operations.
- Rate employee's responsiveness to EHS and allocate prizes for good conduct and penalties for neglect.
- Carryout regular checks on employees to ensure implementation.

V. Emergency Preparedness

- There is an Emergency Preparedness Response Procedure (EPRP) designed to deal with any potential problem. The plan to be managed in conjunction with relevant authorities responsible for activities during natural disasters in the area in the interest of public safety.

VI. Personal Protective Equipment

- More sensitization and supervision of workers is needed on the use of PPE onsite. Replace all worn out signage at project site.

- Ensure that workers follow safety operation procedures when running equipment such as cranes, pressurized equipment among others

VII. Community Safety, Health, and security

- Compliance to safeguards for Community safety health and security to be evaluated using ADB Guidelines[1]. These Standards address the client's responsibility to avoid or minimize the risks and impacts to community health, safety, and security that may arise from project-related activities, with particular attention to vulnerable groups.
- The risks are that a project could exacerbate an already sensitive local situation and stress scarce local resources should not be overlooked as it may lead to further conflict". It was observed that a conflict arose at access road, but the client resolved it appropriately.
- The performance standard on community health, safety, and security requires the client (Irrigation Department/project proponent) to evaluate the risks and impacts to the health and safety of the Affected Communities throughout the project life-cycle. It also mandates the establishment of preventive and control measures consistent with Good International Industry practice (GIIP).
- For projects that operate moving equipment on public roads and other forms of infrastructure, the client, consultant and contractor will seek to avoid the occurrence of incidents and injuries to members of the public associated with the operation of such equipment.
- Avoid or minimize the potential for community exposure to hazardous materials and substances like wood preservation, chemicals, petroleum, explosives etc that if released by the project. Where there is a potential for the public (including workers and their families) to be exposed to hazards, particularly those that may be life-threatening, the contractor will exercise special care to avoid or minimize their exposure by modifying, substituting, or eliminating the condition or material causing the potential hazards.
- Unanticipated acts of terror, such as terrors attacks, or natural hazards like landslides and flooding, require proper care and continuous visual monitoring within and around to ensure the safety of both the project and the community.
- A medical room is set up for first aid and emergency response, and an ambulance is available at the camp site.
- A mosque and a material testing laboratory is available in the camp, located close to the main entrance of the camp.
- The use of PPE's/safety boots, jackets, and safety helmets by workers has been noticed at most of the working sites.

[1] ADB Safeguard Policy Review and Update: Community and Occupational Health and Safety December 2021. Improving Safeguard Policy Applications in South Asia Developing Member Countries: Guidebook on Occupational Health and Safety for Urban and Water Projects August 2020

7. Summary and Recommendations

7.1 Summary

- Overall, the project seems an average implemented with mitigation measures and need much more improvement in performance. There is no major adverse impact on surface water quality and ensured regular water sprinkling. The use of PPE was non-satisfactory and working environment at the project area has been safe as no major incident/accident or casualty was reported.
- The Corrective Action Plan shown in the project records is not so satisfactory and needs further guidance and improvement. Trainings are required regularly to increase the perspective and capacity to cover all the Environmental Compliance Parameters. Contract clauses regarding health, safety, and environmental issues should be strictly followed.
- Use of PPE during masonry work and working at height is strictly enforced. At present, the PPE trend is limited and needs to be efficiently adopted during construction activities. The presence of a trained medical person and the contractor's environmental/HSE officer should be ensured during working hours. The stacking of construction materials on site should be according to EMP.
- Record of HSE cases and daily/weekly record of quantum of solid waste, usage of water other resources like fuel, water, materials etc. should be properly maintained by contractor. The records were checked and it was observed that these were not being maintained regularly and properly.
- Reflect all major findings and recommendations of this report in the next SAEMR. The Compliant register must be maintained and updated at camp.
- Regular training and site visits by Contractor and Consultant Environment Specialist at the regular basis are also required.
- The important Non-Compliance Issues identified are Proper disposal of solid Waste, unpaved surface, casual behavior towards the use of PPEs, absence of sign boards, well maintaining of oil room, covering of excavated material trucks, Records of checklists, HSE records, improvement required for laborers wash rooms and kitchen and absence of complaint register.
- The supply of drinking water to labor should maintained at proper hygienic condition.
- Proper safety signs should be installed by the Contractor near diversions and slopes.
- Site should be barricaded especially the camp site, borrow areas, and areas where construction activities are being conducted.
- Concrete base under generator and vehicle washing area should be established on priority.

7.2 Recommendations

- Trainings on Emergency Response and Preparedness, Workplace Safety Practices, Health and Hygiene to be included in the routine training to the workers and staff. (by the contractor).
- Trainings should be conducted with a photographic record and documentation in future report (by the supervision consultant),
- The use of PPE's during masonry work and while working at height should be strictly enforced (by the contractor).
- Strict compliance with SSEMP/EMP at the project site should be enforced.
- Before allowing any worker, regardless of their role or experience level, to enter a construction site, they must be fully aware of the potential hazards. Uninformed or ignorant workers can pose significant risks at a construction site, as their lack of knowledge can lead to mistakes that put everyone else in danger. It is crucial for all workers to understand the potential dangers and maintain a constant state of alertness to prevent accidents.

- The presence of a trained medical person and the contractor's environmental officer should be ensured during working hours.
- Timely submission of quarterly monitoring reports to the supervision consultant must be ensured, and there should be no delay in submission before June and December.
- Flagmen must be present near the construction site to avoid any accidents.
- Stacking of construction materials at the site should be done according to EMP/SSEMP guidelines.
- Warning signboards, diversion boards, and warning tapes should be mandatory at the construction sites.

Annexure: Photo log

Photo log 1: Dam construction area

Figure 2: Stock Piles at Site

Figure 3: Batching Plant

Figure 4: Spillway

Figure 5: Consultant Camp Office

Photo Log 2: On-Site Facilities

Figure 6: Consultant Site Office

Figure 7: FC Camp

Photo Log 3: Camp Facilities

Figure 8: Fire Extinguisher

Figure 9: Used oil drums storage yard

Figure 10: Labor Camps

Figure 11: Afforestation / Tree Plantation

Figure 12: Machinery Parking

Figure 13: Waste Bins

Figure 14: Generator Rooms

Photo Log 4: Facilities for Labor

Figure 15: Dining Area

Figure 16: Labor Washrooms

Figure 17: Labor W/C

Figure 18: Rest Area

Figure 19:Mess Facility

Figure 20: Water Storage

Figure 21: Hot /Cold Water Cooler

Photo Log 5: Medical facilities

Figure 22: Dispensary

Figure 23: Medicine Cupboard

Figure 24: First Aid Boxes

Figure 25: First Aid Box & its components

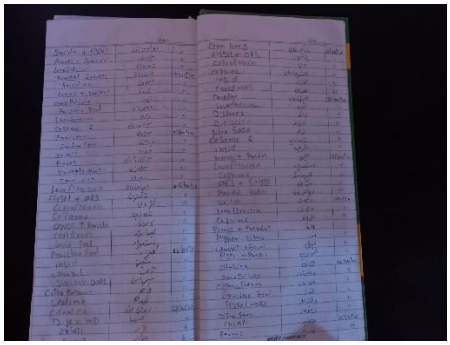


Figure 26: Dispensary Record

Figure 27: Medical Waste Bins

Photo Log 6: Site Store and office

Figure 28:Site Store Office

Figure 29:Store Record

Figure 30: Storage Area

Figure 31: Storage Area

Photo log 7: On-site Facilities

Figure 32: Fencing around the site area

Figure 33: Used Oil Drums Yard

Figure 34: Shuttering Yard

Figure 35: On-site Petrol pumping station