

Environmental Monitoring Report

Semesteral Report July-December 2022

Pakistan: National Disaster Risk Management Fund (NDRMF)

Prepared by NDRMF Environmental Safeguard Team for Asian Development Bank

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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Table of Contents

| | |
|---|-----------|
| 1. Introduction | 1 |
| 1.1. Preamble | 1 |
| 1.2. Background | 1 |
| 1.3. Purpose of the Report | 2 |
| 2. Screening and Review Procedures | 2 |
| 2.1. Accreditation of FIPs | 2 |
| 2.2. Review of Project Proposals-Environmental Safeguards | 2 |
| 2.3. Screening and Categorization of Proposals/Projects | 4 |
| 2.4. Due Diligence and Environmental Assessment | 4 |
| 2.5. Field Visits | 5 |
| 2.6. Training and Capacity Building | 5 |
| 3. Reporting | 5 |
| 3.1. Environmental Approvals | 6 |
| 3.2. Information Disclosure | 6 |
| 4. Projects' Implementation Status | 7 |
| 5. EMP Compliance Status | 15 |
| 6. Instrumental Monitoring | 18 |
| 7. Corrective Action Plan (CAP) | 19 |
| 8. Health and Safety | 19 |
| 9. Waste Management | 20 |
| 10. Material Utilization | 20 |
| 11. Traffic Management Plan | 20 |
| 12. Grievance Redress Mechanism | 21 |
| 13. Lessons Learned | 22 |
| 14. Way Forward | 22 |
| ANNEXURE – 1. FIELD VISIT PICTURE | 23 |
| Annexure-2 TMP Layout | 24 |
| Annexure.3 Instrumental Monitoring Reports | 25 |

Table of Figures

List of Tables

| | |
|---|----|
| <i>Table 1: ESMS Categorization</i> | 4 |
| <i>Table 2: Approved Projects Status (GIA, DDR and IEE)</i> | 8 |
| <i>Table 3: Project Wise Work Progress</i> | 11 |
| <i>Table 4: EMP Compliance Status</i> | 15 |

List of Acronyms

| | |
|-------|--|
| ADB | Asian Development Bank |
| AKF | Agha Khan Foundation |
| CAP | Corrective Action Plan |
| CBDRM | Community Based Disaster Risk Management |
| CEMP | Construction Environmental Management Plan |
| DDMA | District Disaster Management Authority |
| DDRs | Due Diligence Reports |
| DRR | Disaster Risk Reduction |
| EAL | Emergency Assistance Loan |
| EMP | Environmental Management Plan |
| EPAs | Environmental Protection Agencies |
| ESMS | Environmental and Social Management System |
| FIPs | Fund Implementing Partners |
| GB | Gilgit-Baltistan |
| GIA | Grant Implementation Agreement |
| GoP | Government of Pakistan |
| GRM | Grievance Redress Mechanism |
| IEE | Initial Environmental Examination |
| IPPC | Initial Project Proposal Concept |
| IRP | Islamic Relief Pakistan |
| ISPC | Initial Subproject Concepts |
| KP | Khyber Pakhtunkhwa |
| MAP | Muslim Aid Pakistan |
| NDMP | National Disaster Management Plan |
| NDRMF | National Disaster Risk Management Fund |
| NFPP | National Flood Protection Plan |
| NGOs | Non-Government Organization |
| NPSE | Non Public Sector Entities |
| PAM | Project Implementation Manual |
| PDMA | Provincial Disaster Management Authority |

| | |
|-------|---|
| PEPA | Pakistan Environmental Protection Act |
| PIAL | Prohibited Activities Investment List |
| PID | Punjab Irrigation Department |
| PMD | Pakistan Meteorological Organization |
| PPAF | Pakistan Poverty Alleviation Fund |
| PPE | Personal Protective Equipment |
| PRCS | Pakistan Red Crescent Society |
| REA | Rapid Environmental Assessment |
| SAEMR | Semi Annual Environmental Monitoring Report |
| SGU | Safeguards Unit |
| SID | Sindh Irrigation Department |
| SPS | Safeguard Policy Statement |
| TA | Technical Assistance |
| TMP | Traffic Management Plan |
| UN | United Nations |

1. Introduction

1.1. Preamble

1. This report presents the Semi-annual Environmental Monitoring Report of NDRMF's first phase projects, for the period of July - December 2022. Preliminary compliance in terms of preparation of safeguards documentation and implementation has been ensured to meet the ESMS requirements.
2. During the reporting period, substantial progress was achieved on projects by FIPs such as Agha Khan Foundation (AKF), Islamic Relief Pakistan (IRP), Muslim Aid Pakistan (MAP) and Pakistan Red Crescent Society (PRCS).
3. Environmental safeguards compliance has been ensured by the FIPs during execution phase through liaison by the NDRMF safeguards to guide them and build their capacity.
4. This report covers all performance aspects and provides detailed explanation and status update for the reporting period.
5. Subprojects were not subjected to design changes during the reporting period and sites were executed with the approved design parameters.

1.2. Background

6. The Government of the Islamic Republic of Pakistan (GoP) has established National Disaster Risk Management Fund (NDRMF) to institutionalize a mechanism to enhance Pakistan's resilience against disasters by strengthening the government's ability for quick response to future disasters triggered by natural hazards. The Fund focuses on: (i) Disaster Risk Reduction; (ii) Design, development and seeding of disaster risk financing strategies and instruments; and (iii) partnerships with other organizations to provide relief and recovery support, including livelihood restoration initiatives and reconstruction and rehabilitation of key public infrastructure. NDRMF provides a common mechanism to pool various contributions from a diverse base of contributors and serves as a vehicle for donor coordination on disaster risk management by the government.
7. The NDRMF supports existing government entities and civil society organizations, involved in Disaster Risk Management, including the National Disaster Management Authority (NDMA), Provincial Disaster Management Authorities (PDMA) and District Disaster Management Authorities (DDMA), etc. The Fund is in line with existing policies and strategies of the GOP to address disasters, including (i) the Disaster Risk Reduction Policy (2013); (ii) Climate Change Policy (2013); (iii) Vision 2025; (iv) National Disaster Management Plan 2013-2022 (NDMP); (v) the draft National Flood Protection Plan IV (NFPP) (2016-2025); and (vi) Post-2015 Sendai Framework for Disaster Risk Reduction, 2015-2030.
8. The environmental and social policies of the Fund adhere to the requirements of national legal and regulatory, and international ratified conventions and agreement. It has helped establish a good reputation of the Fund among donors, civil society, Fund Implementing Partners (FIPs) and other national and international stakeholders. The Fund strives to ensure its E&S practices are in line with international standards and international best practices such as ADB requirements for financial intermediaries. In addition to this, the Fund also complies with environment and social policies of the respective Financing Source(s).

9. The purpose of NDRMF's environment and social management system (ESMS) was to integrate environment safeguards into the overall management system and provide operational guidance to the Fund staff and FIPs in preparing subprojects and develop mechanism for effective monitoring/auditing and compliance.

1.3. Purpose of the Report

10. This is a consolidated report on implementation of environmental safeguards for activities carried out during the reporting period and has been prepared in compliance with the ADB and NDRMF policies. The benchmark for performance is the ongoing compliance against the applicable environmental safeguard's requirements in the approved projects.
11. Report is substantiated with the information furnished by the FIPs in the quarterly progress reports along with the Fund's compliance monitoring tools i.e., formal meetings, project documents review and field visits.

2. Screening and Review Procedures

2.1. Accreditation of FIPs

12. FIPs (Fund Implementing Partners) for NDRMF can be government and non-government entities, international donors, civil society and academia. The FIPs are accredited through a detailed process consisting of a rigorous review of the applicant entity for its organizational procedures and guidelines including safeguards (environment, social and gender).
13. The main purpose of accreditation is to assess the FIP's overall project management capacity including safeguards (environment, social and gender). Comprehensive accreditation guidelines were developed by the Fund and disclosed on the website to ensure easy access of potential partners. Following are the core environmental assessment requirements for FIP accreditation:

- Environmental safeguards policy
- Status of FIP's policy & approval
- Policy implementation arrangements

14. During the reporting period, accreditation activities were not carried out.

2.2. Review of Project Proposals-Environmental Safeguards

15. All newly proposed projects are subject to screening and review by environmental safeguards team through a rigorous process. This screening process validates the environmental category and identifies potential adverse impacts associated with the proposed project interventions. Following are the major aspects that are considered during this initial screening:
 - Scope of work details (Limited to environmental category B), including type, nature and scale of interventions.

- Locations of subprojects with detailed project specifications including preliminary technical designs.
 - Details of potential impacts as per Rapid Environmental Checklist (REA).
 - Budgetary provisions for EMP implementation including human resource.
 - Budgetary provision for air, water and noise quality monitoring.
 - GRM, compliance monitoring and reporting.
16. During the reporting period, preliminary environmental appraisal was carried out for the following sub-projects:
- “Construction of flood mitigation structures along Kabul, Naghuman and Shah Alam Rivers, Peshawar KPK”
 - “Construction of flood mitigation structures along Brandu and Swat Rivers KPK”
 - “Construction of flood mitigation structures along Tujko & Mastuj River, Uper Chitral KPK”
 - “Construction of flood mitigation structures along Lutko & Chitral River, Lower Chitral KPK”
 - “Construction of flood mitigation structures along Muqam Nullah Mardan KPK”
 - “Construction of flood mitigation structures along Muqam Nullah Mardan KPK”
 - “Construction of flood embankment from Kheshki Village to Motorway Bridge at Kabul River (Reach-II) District Charsadda KPK”
 - “Construction of flood and erosion mitigation structures on Kalpani Nullan district Mardan KPK”
 - “National Master Plan for flood telemetry Network (Phase-I) by Water and Power Development Authority”
 - “Restoration of 2022 and 2015 flood damages along U/S left guide bund of Thatta Sujawal Bridge” Sindh Province.
 - “Constructing Stone Apron and Stone Pitching Along SM Bund from Mile 70/7 to 72/0 in Moro Bund Sub Division” Sindh Province.
 - “Raising and Strengthening of Spurs Along Surjani Complex Bund” Sindh Province
 - “Filling in Toe of Bund Providing Stone Apron Mile 1/1+360 to 1/2 and Stone Pitching Mile 0/0 to 2/4 Along Baiji Bund” Sindh Province.
 - “Raising & Strengthening Along R.N loop Bund Mile 0/0 to 3/0 & Garkino Loop Bund Mile 0/0 to 2/6, Providing Stone Pitching Along R.N Bund Mile 5/0 to 6/0 and Providing Stone Apron Along Baiji Bund Mile 7/5 to 7/6” Sindh Province.
 - “Construction of Stud/Apron along SM Bund at Mile 12/0 to 12/7 and Bakhri Loop Bund Mile 0/0 to 0/1 in Kandiaro Bund Sub Division” Sindh Province.
 - “Construction of Stone Pitching and Strengthening Earth Work along SM Bund Mile 38/2 to 40/0 and 42/0 to 42/5, Recoupmnt of Stone Pitching from Mile 40/0-42/0 and Stone Apron 41/5 to 42/5 (Dad Wah) including earthwork, stone pitching and Apron” Sindh Province.
 - “Recouping of Stone Spur Mile 142/3 and Stone Studs Mile 136/1 Along S.M Bund in Hala (Irrigation) Division Hala” Sindh Province.
17. The aforementioned sub-projects were reviewed and assessed based on the aspects mentioned under para 14 of this section.
18. Subsequently, environmental safeguards review was carried out for individual subproject documents and safeguards requirements were fulfilled to ensure ESMS eligible categorization.

19. The aforementioned reviewed projects are under consideration and DDRs will be shared with ADB once the funding is secured.

2.3. Screening and Categorization of Proposals/Projects

20. All subproject/schemes documents were reviewed and assessed individually with respect to environmental safeguards by cross referencing information provided by the FIP with in-house analysis. Field visits along with desk observational tools e.g. satellite imagery analysis were used for assessment, and validation of the category. Table 1 shows the applicable environmental categories as mentioned in NDRMF's ESMS.

Table 1: ESMS Categorization

| Category (Risk Rating) | Environmental Safeguards |
|--|---|
| Category A (with potential significant impacts) | |
| Category B (with less significant impacts) | Comply with national laws and PIAL and Funding Source specific international laws |
| Category C (with minimal or no impacts) | Comply with national laws and PIAL and Funding Source specific international laws |

21. The details of the three types of environmental and social categorization ensured during the reporting period is given as:

Category 'A': Project proposals are classified as category A for environment, potentially having significant impacts or located in environmentally sensitive or protected area. All such projects are screened out/deferred for current phase funding.

Category 'B': Projects with less significant environmental impacts are classified as category B. Impacts are reversible in nature and have less magnitude.

Category 'C': Projects with minimal or no impacts such as CBDRM trainings and retrofitting of public buildings (schools and health units) are classified as environmental category C. Impact of this category projects are highly localized and have low magnitude.

22. During the reporting period, aforementioned newly proposed projects given under para 15 were categorized in the same way as stated in this section. Categorization (DDR) of these subprojects will be shared with ADB in next reporting period.

2.4. Due Diligence and Environmental Assessment

23. The environment unit conducts its own due diligence on all projects and validates the data provided by the FIP through tools such as satellite imagery analysis, field visits and community consultations. This process has been conducted for all newly proposed projects.
24. For the newly proposed projects, FIPs were guided to prepare the environmental safeguards documents and get approved from the ADB prior to commencement of civil works on the ground.

2.5. Field Visits

25. During the reporting period of July - December 2022, NDRMF's environmental safeguards team visited Punjab and Khyber Pakhtunkhwa newly identified projects for site assessment. Field visits were restricted by 2022 floods across the country, particularly in the project areas. However, the FIPs were oriented to share the progress from the field activities particularly on the environmental safeguards compliance.
26. Field visits will continue during implementation phase in next reporting periods for EMP compliance monitoring and CAPs (Corrective Action Plan), if required.
27. Moreover, environmental safeguards team has a comprehensive plan for field visits to ensure ESMS compliance and capacity building of FIPs including the Contractor's staff.

2.6. Training and Capacity Building

28. Since most of the projects are near to completion and the FIPs were oriented on all the pertinent environmental safeguards requirements at completion phase. Project completion report templates have been shared the FIPs in the month of December 2022 to collect the required data for timely submission to the ADB in next reporting period.
29. Training and capacity building of FIPs will remain an ongoing process throughout the project's life cycle. Moreover, continuous support and guidance will be required for FIPs during implementation and completion phases as well so that partner's understanding could be improved.

3. Reporting

30. Environmental safeguards compliances are assessed on quarterly as well as bi-annual basis. FIPs submit quarterly progress reports with dedicated sections on environment along with an environmental and social compliance monitoring report on semi-annual basis.
31. Fund's staff are required to develop an overarching semi-annual environmental performance report containing detailed information on compliance status of all projects. This report is compiled from the quarterly progress reports and compliance monitoring reports submitted by implementing partners during the reporting period.
32. Moreover, detailed field visit reports were prepared after each compliance monitoring visit and EMP compliance summaries are given in the section 5.

3.1. Environmental Approvals

33. Approvals from respective Environmental Agencies (EAs) of the proposed project regions is mandatory for all NDRMF projects. To acquire these approvals, NDRMF has played a vital part in coordination between the FIPs and the EAs. Several virtual meetings were arranged and conducted between the FIPs and EPA officials to discuss environmental category and seek approval under the legal provisions of respective EAs.
34. Most of the approvals were granted by the EPA under Category “C” with no requirement of safeguards documents; however, in some cases e.g. (PPAF, PRCS, IRP and MAP from NPSE & AJK PWD from PSE), EPAs demanded concise Environmental and Social Management Plans (ESMPs) and Initial Environmental Examination Reports in order to grant approvals for projects. FIPs prepared and submitted these required reports to the EPA for getting NOC.
35. The overall status of EPA approvals for all projects is given in table 3.

3.2. Information Disclosure

36. In line with ADB’s Public Communications Policy, Fund is committed to working with the FIPs to ensure that relevant information of environmental safeguards is disclosed. Pursuant to the ADB’s policy and ESMS, DDRs and IEES of approved/financed projects are disclosed on the Fund’s website. Using the link <https://www.ndrmf.pk/disclosure> all the stakeholders have timely and easy access to the information on environmental safeguards.
37. Approved SAEMRs are disclosed on the fund’s website as per ADB requirements.

3.3. Institutional Arrangements

3.3.1. Safeguards Unit (SGU) of NDRMF

38. The overall responsibilities of the SGU is to assess the subprojects concepts for applicable environmental category and aligned the extended project proposal/PC-1 with ESMS at appraisal phase. During execution phase of the subprojects, the SGU conduct field visits to construction sites and assess the CEMP compliance on the ground. The feedback is shared with FIP on noncompliance (if any) along with measures and monitor these particular sites for required actions.
39. Quarterly progress reports of the FIPs are reviewed for environmental safeguards compliance against the physical progress plan for field visits to the construction sites for monitoring and validation purpose and situation analysis is presented in the semi-annual reports.

3.3.2. Fund Implementing Partners

40. The Project Directors (PDs) of FIPs have an overall responsibility for the environment management plans development and implementation of the subproject’s areas through the environment specialist/focal persons. PDs through environment specialists are held responsible for screening of subproject through specific REA checklists and their effective implementation, internal monitoring and progress reporting. Additionally, the environmental safeguard specialist maintains close coordination with the SGU of

NDRMF, EPA and other line departments to address their concerns regarding subproject interventions.

41. The FIP internal monitoring ensures environmental safeguards compliance through field visits during sites execution and share the site specific issues with the project team for compliance. Keeping in view the nature of subprojects, adverse impacts are very limited and main rectified through on job instructions to the construction team/contractors. During reporting period no such cases have been identified that could lead to formal lettering and need for corrective action plan. Moreover, the FIP prepare quarterly progress reports and share with SGU of NDRMF for review including the safeguards which provide the base for preparing the semi-annual monitoring repots.

4. Projects' Implementation Status

42. The matrix provided below (Table 2) presents the status of all projects along with their respective environmental categories and required safeguards documents that have been prepared in order to comply with the ESMS of NDRMF.

Table 2: Approved Projects Status (GIA, DDR and IEE)

| S. No. | Title of Project | Scope of Work | FIP | Cycle | GIA Status | Environmental Category | DDR | IEE | EPA Approval Status |
|--------|--|---|------------|-------|------------|------------------------|-----------|-----------|---------------------|
| 1. | Rehabilitation of Old Deg Nullah from Deg diversion Channel to QB Link Canal RD 0+000 to 103+000 | Flood Protection Wall | PID | I | Signed | B | Completed | Completed | Cleared |
| 2. | Restoration of Jalala Flood Protection Bund from Rd 0+000 To Rd 26+700 | Rehabilitation of Flood Protection Bund | PID | I | Signed | B | Completed | Completed | Cleared |
| 3. | Protecting Village Abadied Shahapur Changora, Fatehpur Gujran, Suko Chak, Chakra, Negota, Khosa & Gole against Erosive Action of Bein Nullah | Flood Protection Wall | PID | I | Signed | B | Completed | Completed | Cleared |
| 4. | Rehabilitation of Hajipur Gujran Flood Protection Bund from Rd 0+000 to Rd 37+750 | Rehabilitation of Flood Protection Bund | PID | I | Signed | B | Completed | Completed | Cleared |
| 5. | Resilient and Adaptive Population in Disaster (RAPID) | <ul style="list-style-type: none"> Flood Protection works in Quetta Water conservation structures in Chagai | IRP | I | Signed | B | Completed | Completed | Cleared |
| 6. | Promoting Integrated Mountain Safety in Northern Pakistan (PIMSNP) | Flood Protection Wall | AKF | I | Signed | | Completed | Completed | Cleared |
| 7. | Vulnerability to Resilience (V2R) | <ul style="list-style-type: none"> Flood Protection walls Land stabilization | PRCS | I | Signed | B | Completed | Completed | Cleared |
| 8. | Landslide Control and Management and Mitigation Along Major Roads in AJK (4 Sub-Projects) | <ul style="list-style-type: none"> Landslide mitigation Remedial works | C&W AJK | II | Signed | B | Completed | Completed | Cleared |

| S. No. | Title of Project | Scope of Work | FIP | Cycle | GIA Status | Environmental Category | DDR | IEE | EPA Approval Status |
|--------|--|--|-----------|-------|------------|------------------------|-----------|-----------|---------------------|
| 9. | Recoupment of Damaged T-Head Spur along Agani Akil Loop Bund 2/6+250, Stone Apron at Mole of 0/4 and 0/7 Mole Spurs and 09 Nos. Stone Studs in Larkana Subdivision Sindh | <ul style="list-style-type: none"> • Earthwork • Stone pitching • Recoupment of T-Head spurs with stones. | SID | II | Signed | B | Completed | Completed | Cleared |
| 10. | Providing Stone Apron, Stone Pitching and Earth Work Along LS Bund Mile 18/0 to 20/0 N Dadu Division Larkana | <ul style="list-style-type: none"> • Stone Apron • Stone Pitching • Earth Work | SID | II | Signed | B | Completed | Completed | Cleared |
| 11. | Mitigation of disaster risks in collaboration with NDRMF in Gilgit-Baltistan | <ul style="list-style-type: none"> • Reducing the vulnerability of communities by naturally induced disasters. • Protection of highly flood prone areas along Indus River and its tributaries • Protection of existing agricultural lands and public sector infrastructures | GB PWD | II | Signed | B | Completed | Completed | Cleared |
| 12. | Strengthening of GB Emergency Services (Rescue 1122) at all districts of GB | <ul style="list-style-type: none"> • Purchase of Emergency Vehicles | GB | II | Signed | C | Completed | N. A | N. A |

| S. No. | Title of Project | Scope of Work | FIP | Cycle | GIA Status | Environmental Category | DDR | IEE | EPA Approval Status |
|--------|---|---|------|-------|------------|------------------------|-----------|------------------------------|---|
| | | <ul style="list-style-type: none"> Control Rooms Solutions and equipment and training Rescue Emergency equipment PPEs for Rescuers | | | | | | | |
| 13. | Building Resilience to Disasters & Climate Change | Flood Protection Works | PPAF | II | Signed | B | Completed | Being updated for 100% sites | Cleared by GB, Balochistan and KP and Sindh, In process for Punjab |
| 14. | Building resilience by strengthening the community through inclusive Disaster Risk Management | <ul style="list-style-type: none"> Flood protection Works Water conservation structures for drought mitigation | MAP | II | Signed | B | Completed | Completed | Separate IEE document for both project regions has been submitted to EAP as per request and formal approval is awaited. |

43. Table 3 below shows the implementation status of all public and non-public FIPs for preparing IEE, EPA NOC, civil works, etc.

Table 3: Project Wise Work Progress

| S. No. | Organization | Status |
|-----------------------------------|--|--|
| Non-Public Sector Entities | | |
| 1 | Agha Khan Foundation Pakistan | <ul style="list-style-type: none"> • IEE has been updated for 100% sites • EMP has been revised for COVID-19 guidelines • CEMP has been prepared by the FIP for construction works. • EPA NOCs from the respective target areas/regions have been acquired well before commencement of civil works. • Civil works are in progress and schemes will be completed in the next reporting period • CEMP has been implemented on all working sites to avoid and control the undue harm to local environment and sites were managed for air, water and noise pollution through applying mitigation measures proposed in IEE/CEMP of the project. The overall status of CEMP compliance on the AKF sites were found satisfactory during reporting period and instrumental monitoring was carried. |
| 2 | Pakistan Red Crescent Society (PRCS) | <ul style="list-style-type: none"> • IEE update is in process for 100% sites. • CEMP has been prepared by the FIP for construction works. • EPA NOC has been acquired before commencement of civil works • Civil works are in progress and schemes will be completed in the next reporting period • CEMP has been implemented on all working sites to avoid and control the undue harm to local environment and sites were managed for air, water and noise pollution through applying mitigation measures proposed in IEE/CEMP of the project. The overall status of CEMP compliance on the PRCS sites were found satisfactory during reporting period. |
| 3 | Islamic Relief Pakistan | <ul style="list-style-type: none"> • IEE has been updated for 100% sites • EMP revised for COVID-19 guidelines • CEMP has been prepared by the FIP for construction sites. • EPA approval has been acquired • Civil works are in progress and schemes will be completed in the next reporting period • CEMP has been implemented on all working sites to avoid and control the undue harm to local environment and sites were managed for air, water and noise pollution through applying mitigation measures proposed in IEE/CEMP of the project. The overall status of CEMP compliance on the IRP sites were found satisfactory during reporting period and instrumental monitoring was carried. |
| 4 | Pakistan Poverty Alleviation Fund (PPAF) | <ul style="list-style-type: none"> • IEE update is in process for 100% sites. • COVID-19 guidelines are shared with PPAF for incorporating in EMP. • CEMP has been prepared and finalized • EPA NOCs for all regions has been acquired. • Civil work has not been started till date. |

| | | |
|-------------------------------|---|--|
| 5 | Muslim Aid Pakistan | <ul style="list-style-type: none"> • IEE has been updated for 100% sites • COVID-19 guidelines are shared with MAP for incorporating in EMP. • CEMP has been prepared by the FIP for construction works. • EPA NoC has been acquired. • Civil works are in progress and schemes will be completed in the next reporting period |
| Public Sector Entities | | |
| 1 | Punjab Irrigation Department | |
| 1.1 | Rehabilitation of Old Deg Nullah from Deg Diversion Channel to Q.B Link Canal | <ul style="list-style-type: none"> • Civil work has been started after clearance of all prior requirements. • EPA has been consulted by PID with no IEE and EIA requirement for the project. • CEMP is prepared and approved by NDRMF's environment unit. • <i>Against 100% of the project elapsed time period (Addendum Nov 2022); The cumulative financial progress is 34%. An average 38% of the physical target is achieved till last reporting quarter. The project is left with 66% of the financial and 62% of the physical target unachieved.</i> • CEMP has been implemented on all working sites to avoid and control the undue harm to local environment and sites were managed for air, water and noise pollution. through applying mitigation measures proposed in IEE/CEMP of the project. The overall status of CEMP compliance was found partial satisfactory due to site specific minor issues as given in the table.4 against PID projects. |
| 1.2 | Rehabilitation of Hajipur Gujran Flood Protection Bund from Rd 0+000 to Rd 37+750 | <ul style="list-style-type: none"> • Civil work has been started after clearance of all prior requirements. • EPA has been consulted by PID with no IEE and EIA requirement for the project. • CEMP is prepared and approved by NDRMF's environment unit. • <i>Against 100% of the project elapsed time period (Addendum Nov 2022); The cumulative financial progress is 55%. An average 89% of the physical target is achieved till last reporting quarter. The project is left with 45% of the financial and 11% of the physical target unachieved.</i> • CEMP has been implemented on all working sites to avoid and control the undue harm to local environment and sites were managed for air, water and noise pollution. through applying mitigation measures proposed in IEE/CEMP of the project. The overall status of CEMP compliance was found partial satisfactory due to site specific minor issues as given in the table.4 against PID projects. |
| 1.3 | Restoration of Jalala Flood Protection Bund from Rd 0+000 To Rd 26+700 | <ul style="list-style-type: none"> • Civil work has been started after clearance of all prior requirements. • EPA has been consulted by PID with no IEE and EIA requirement for the project. • CEMP is prepared and approved by NDRMF's environment unit. |

| | | |
|----------|---|--|
| | | <ul style="list-style-type: none"> • <i>Against 100% of the project elapsed time period (Addendum Nov 2022); The cumulative financial progress is 36%. An average 66% of the physical target is achieved till reporting quarter 12. The project is left with 64% of the financial and 34% of the physical target unachieved.</i> • CEMP has been implemented on all working sites to avoid and control the undue harm to local environment and sites were managed for air, water and noise pollution. through applying mitigation measures proposed in IEE/CEMP of the project. The overall status of CEMP compliance was found partial satisfactory due to site specific minor issues as given in the table.4 against PID projects. |
| 1.4 | Protecting Village Abadied Shahapur Changora, Fatehpur Gujran, Suko Chak, Chakra, Negrota, Khosa & Gole against Erosive Action of Bein Nullah | <ul style="list-style-type: none"> • Civil work has been started after clearance of all prior requirements. • Shahpur Changora, and Gole sub-projects have been completed. • EPA has been consulted by PID with no IEE and EIA requirement for the project. • CEMP is prepared and approved by NDRMF's environment unit. • <i>Against 100% of the project elapsed time period (Addendum Nov 2022); The cumulative financial progress is 46%. An average 69% of the physical target is achieved till reporting quarter 12. The project is left with 54% of the financial and 31% of the physical target unachieved.</i> • CEMP has been implemented on all working sites to avoid and control the undue harm to local environment and sites were managed for air, water and noise pollution. through applying mitigation measures proposed in IEE/CEMP of the project. The overall status of CEMP compliance was found partial satisfactory due to site specific minor issues as given in the table.4 against PID projects. |
| 2 | PWD Gilgit Baltistan | |
| 2.1 | Mitigation of Disaster Risks in Collaboration with NDRMF in Gilgit Baltistan, through flood protection structures in vulnerable areas. | <ul style="list-style-type: none"> • IEE updated for 100% sites along with Covid guidelines • EPA NOC has been received. • No civil work started on ground. • CEMP template has been shared and will be prepared before commencement of civil works. |
| 3 | C&W Department GoAJ&K | |
| 3.1 | Landslide Control and Management and Mitigation Along Major Roads in AJK (4 Sub-Projects) | <ul style="list-style-type: none"> • IEE has been updated on 100% sites information along with Covid-19 guidelines. • EPA NOC has been acquired by the FIP before commencement of civil works. • CEMP has been prepared by the FIP for construction sites. • <i>Against 100% of the project elapsed time period; The cumulative financial progress is 36.5% which includes 26.4% from NDRMF share while 10% from AJK share till end of quarter 12/12. On average 54% of the physical work has been completed till reporting quarter 12. Which includes 65% physical work on Mong Bajri, 86% physical work on Dhal Kot, 64% physical work on Guin River, 54%</i> |

| | | |
|----------|---|--|
| | | <p><i>physical work on Azad Patan A, 3% average physical work on Azad Patan Slide B.</i></p> <ul style="list-style-type: none"> • CEMP has been implemented on all working sites to avoid and control the undue harm to local environment and sites were managed for air, water and noise pollution. through applying mitigation measures proposed in IEE/CEMP of the project. The overall status of CEMP compliance was found partial satisfactory due to site specific minor issues as given in the table.4 against AJK land slide subprojects. |
| 4 | Sindh Irrigation Department | |
| 4.1 | <p>Recoupment of Damaged T-Head Spur along Agani Akil Loop Bund 2/6+250, Stone Apron at Mole of 0/4 and 0/7 Mole Spurs and 09 Nos. Stone Studs in Larkana Subdivision Sindh</p> | <ul style="list-style-type: none"> • Civil work has been started after clearance of all prior requirements. • EPA has been consulted by SID with no IEE and EIA requirement for the project. • <i>Against 100% (November 2022) of project elapsed time period; The cumulative financial progress is 28%; which includes 28% from FIP share while 0% from NDRMF share. The physical progress reported by the FIP is 100%. NDRMF team in process to validate the shared physical progress.</i> • CEMP has been implemented on all working sites to avoid and control the undue harm to local environment and sites were managed for air, water and noise pollution through applying mitigation measures proposed in IEE/CEMP of the project. The overall status of CEMP compliance on the SID sites were found satisfactory during reporting period. |
| 4.2 | <p>Providing Stone Apron, Stone Pitching and Earth Work Along LS Bund Mile 18/0 to 20/0 N Dadu Division Larkana</p> | <ul style="list-style-type: none"> • Civil work has been started after clearance of all prior requirements. • EPA has been consulted by SID with no IEE and EIA requirement for the project. • <i>Against 100% (November 2022) of project elapsed time period; The cumulative financial progress is 30%; which includes 30% from FIP share while 0% from NDRMF share. The physical progress reported by the FIP is 100%. NDRMF team in process to validate the shared physical progress</i> • CEMP has been implemented on all working sites to avoid and control the undue harm to local environment and sites were managed for air, water and noise pollution through applying mitigation measures proposed in IEE/CEMP of the project. The overall status of CEMP compliance on the SID sites were found satisfactory during reporting period. |

5. EMP Compliance Status

44. As discussed earlier in the report that EMP compliance visits were conducted on AJK land slide project and PID subprojects. Checklists were filled during the field visits and annexed, findings of which are discussed in the table 4. Field visit reports were prepared on EMP compliance and brief summary of compliance gaps, recommendation and corrective actions is given in the below table:

Table 4: EMP Compliance Status

| S. No. | FIP Name | Visited Sites | Issues/Constraints in EMP implementation | Recommendations | Actions Taken | Timeline |
|--------|---|--|---|---|--|---|
| 1. | Landslide Control and Management and Mitigation Along Major Roads in AJK (4 Sub-Projects) | <ul style="list-style-type: none"> • Bagh • Rawalkot | <ul style="list-style-type: none"> • The environment team visited completed mitigation schemes in land slide project in AJK, EMP compliance was monitored on construction sites. • Contractor was found using PPEs and safety measures on along the construction sites. • First Aid box and EMP copy was not available on working sites. • Waste management was found not up to the mark • Similarly, GRM register was not present and no log was being maintained for the complaints. | <ul style="list-style-type: none"> • The FIP and Contractor shall ensure provision of CEMP, first aid box, GRM register on working sites • Solid waste management shall be ensured • The FIP site engineer shall ensure frequent visits and instructions on the lacking aspects. | <ul style="list-style-type: none"> • Both the Contractor and FIP site engineer was briefed on the working sites requirements for environmental safeguards. • Contractor and FIP was instructed to ensure EMP, first aid box and GRM register on all working sites • Waste management issue was discussed and instructions were given to both for ensuring proper solid waste management on all working sites. | <ul style="list-style-type: none"> • FIP will report on the action required to ensure compliance of first aid box and site management for solid waste. • Site visit will be visited again and compliance status will be addressed in next reporting period. |

| S. No. | FIP Name | Visited Sites | Issues/Constraints in EMP implementation | Recommendations | Actions Taken | Timeline |
|--------|----------|----------------------------------|---|---|---|--|
| | | | <ul style="list-style-type: none"> Sites were found managed for dust control and road clearance | | | |
| 2. | PID | Narowal and Sheikhpura Districts | <ul style="list-style-type: none"> Use of PPEs was observed but complete gear was missing e.g., safety shoes. Proper solid waste management procedures were not in place e.g., use of bins; however, the camp site seemed tidy and no waste was observed No environmental monitoring record was being maintained at the site; However, the FIP has submitted quarterly reports based on the monthly checklist. Dust generation is satisfactorily managed but the record does not exist. | <ul style="list-style-type: none"> EMP compliance record needs to be maintained along with pictorial evidence on a daily basis. Although quarterly reports are being submitted regarding environmental compliance but they need to contain the incumbent evidences e.g., record of water sprinkling. Copies of CEMP need to be available on all sites along with all sub plans that have been prepared as part of it e.g., Emergency Response Plan and Occupation Health and Safety Plan. Currently, the CEMP was only present at some of the sites. Safety and warning signs in Urdu need to be placed at all sites | <ul style="list-style-type: none"> Field teams have been advised/oriented to comply with CEMP of the sub-project. Findings and gaps identified during the visit were shared with FIP for CAP and compliance | <ul style="list-style-type: none"> PID will report on the action required to ensure compliance on proper use of PPEs, site management for solid waste and dust control. Site visit will be visited again and compliance status will be addressed in next reporting period. |

| S. No. | FIP Name | Visited Sites | Issues/Constraints in EMP implementation | Recommendations | Actions Taken | Timeline |
|--------|----------|---------------|--|--|---------------|----------|
| | | | | <p>to ensure community safety.</p> <ul style="list-style-type: none"> • Water sprinkling needs to be conducted vigilantly on a daily basis and record needs to be maintained. | | |

6. Instrumental Monitoring

45. During reporting period, post instrumental monitoring of IRP, MAP schemes sites has been carried out (Annexed.1) as per IEE/EMP requirements. The post results have not witnessed any increase in the contamination from the pretest readings.
46. The pretests analysis has already been presented in the previous reporting period for the IRP, MAP and AJK projects. The post project tests and results will be presented in the next reporting period. AJK land slide project execution phase tests have been conducted during reporting and presented in the below given table.5.
47. In case of AJJK landslide project, the high values of coliform (in water) and PM₁₀ and PM_{2.5} (in air) are due to existing pollution sources in the project areas, nevertheless the FIP was informed to maintain sites for such pollutants by mitigation measures proposed in the EMP of IEE. EPA AJK use the water and air quality standards which are based on the NEQS and the US standards, which allows to conducted the air quality tests at different timelines like 8 hrs, 12 hrs and 24 hrs depending upon the nature and scale of project work and therefore, the 24 hrs timescale has been selected for the project sites. Comparison with NEQS and WHO guidelines are given in the **table.5**.

Table.5 NEQS, WHO and Lab Results Comparison

| Site Name | NEQS | WHO | Baseline Results | Lab Results | Remarks |
|--|-----------------------|-----------------------------------|-----------------------|-------------------------|---|
| Water Quality Monitoring (WQM) | | | | | |
| Guin River Land Slide Azad Pattan site | 0 | 0 | +ive | +ive | E. coli was positive; t possible reason is the mixi sewerage effluents in t water source from t nearby communities. In comparison to t baseline the results of bo pre and post are the same |
| Air Quality Monitoring (AQM) | | | | | |
| Guin River Land Slide Azad Pattan site | 35 | 15 µg/m ³ ¹ | 43 µg/m ³ | 39 µg/m ³ | PM _{2.5} was high with t potential reason of priva crush plant present in t local areas. In comparison the po results are recorded le than baseline. |
| | 150 µg/m ³ | 20 µg/m ³ | 159 µg/m ³ | 173.6 µg/m ³ | PM ₁₀ was high with t potential reason of presen of private crush plants in t local area. |

¹ The updated WHO guidelines state that annual average concentrations of PM_{2.5} should not exceed 5 µg/m³, while 24-hour average exposures should not exceed 15 µg/m³ more than 3 - 4 days per year. While PM 10 should not exceed 20 µg/m³.

| | | | | | |
|--|--|--|--|--|---|
| | | | | | In comparison the po results are recorded hi than baseline, the ma reason is that few priva crush plants we nonfunctional at the time baseline study. |
|--|--|--|--|--|---|

7. Corrective Action Plan (CAP)

48. The ToRs for the ESMS revision has been prepared and finalized with support of ADB safeguards team. Budget has been prepared for the conducting the ESMS through third party consultancy firm. ESMS audit ToRs has been advertised and in the process of evaluation for competent firm.
49. The EMP compliance was ensured on all active projects by the FIPs no such deviation or breach has been observed and therefore no CAP was required during the reporting period.

8. Health and Safety

7.1 Community Health & Safety

50. Since sub-projects/schemes are near completion therefore formal EMP training and awareness sessions regarding community health and safety have not been conducted by the Fund, however FIPs delivered sessions with communities on schemes/subprojects sustainability through ownership.
51. During the reporting period, no community incidents have been reported by the FIPs and relevant measures are undertaken for COVID-19 prevention at construction sites as evident in the site pictures for use of PPEs in the annexure.1 of this report.
52. GRM system has been developed and in place for reporting community related health and safety issues and threats.

7.2 Worker Health and Safety

53. The focal person for worker safety and health was performing routine monitoring, induction and supervision of ongoing works according to the HSE standards of ADB and mentioned in the IEEs.
54. During field visit to AJK and PID sub-projects, workers were found using PPEs while first aid box were found missing and instructions have been given on site for correction. No positive case for COVID 19 has been reported on any of construction site during the reporting period.
55. During the reporting period no incident has been reported regarding the worker's health and safety.
56. Latest formats and guidelines provided by the ADB has been shared with the FIPs for compliance on HSE incident reporting.

7.3 Trainings

57. Since works on almost all sites are near to completion and in final stage therefore, formal trainings have not been conducted and the target for the trainings have been achieved.
58. Apart from the formal awareness session with community and Contractors FIP ensures routine personnel sessions and talks almost on daily basis and provides routine instructions and verbal trainings on community and workers health and safety matters.

9. Waste Management

59. Proposed schemes are of limited scope with no major excavation and camps establishment. However, improper waste management was observed at some sites of AJK land slide and PID project and the FIP was advised to manage the sites for solid waste.
60. The waste generated was of non-hazardous in nature and the FIPs were briefed on site on the importance of solid waste management on working sites.

10. Material Utilization

61. Schemes under construction are of limited scope and large quantity of material requirements has not been envisaged due to the fact that components of the schemes are scattered and not located in single site location.
62. Mitigation measures have been proposed in the IEE/EMP for material sourcing for earth work, stone pitching and other civil works. FIPs are bound to collect the required material from the designated environmentally safe (sites where damage/loss to the local flora and fauna is not expected, shall not generate dust or near to communal settlements) and feasible sites only.
63. The Non Public Sector Entities/FIPs site were of limited scope with dry stone masonry and the required material was obtained from the market and no quarry was opened for these schemes.
64. During field visit to PID, the required earth material was obtained from the Govt approved existing sources and no new quarries were used. AJK land slide project has no requirement for earth work material utilization.

11. Traffic Management Plan

65. Land slide projects proposed by AJK government was along the main connecting roads between districts with frequent traffic flow. Terrain is hilly and the challenge during works was anticipated to be the traffic management and ensuring safety to workers and travelers along with timely completion of project interventions.
66. Site specific Traffic Management Plans (TMPs) were therefore, prepared and implemented under implementation on the ground **(TMP Layout Annexed.2)**. Compliance of the TMPs has been ensured safe and smooth traffic flow on all working sites and till date no traffic incident happened.

12. Grievance Redress Mechanism

67. Pursuant to the ESMS requirements for Grievance Redress Mechanism (GRM), fund established an efficient system to maintain the working relationship with FIPs and stakeholders at the highest level of transparency, professional integrity, accountability and quality.
68. In order to receive and facilitate the resolution of affected people, grievance redress committee has been proposed in the IEE for category B projects with project specific focal person as shown in Figure 1 below.
69. ***Grievances have not been registered from any stakeholders during the reporting period.***

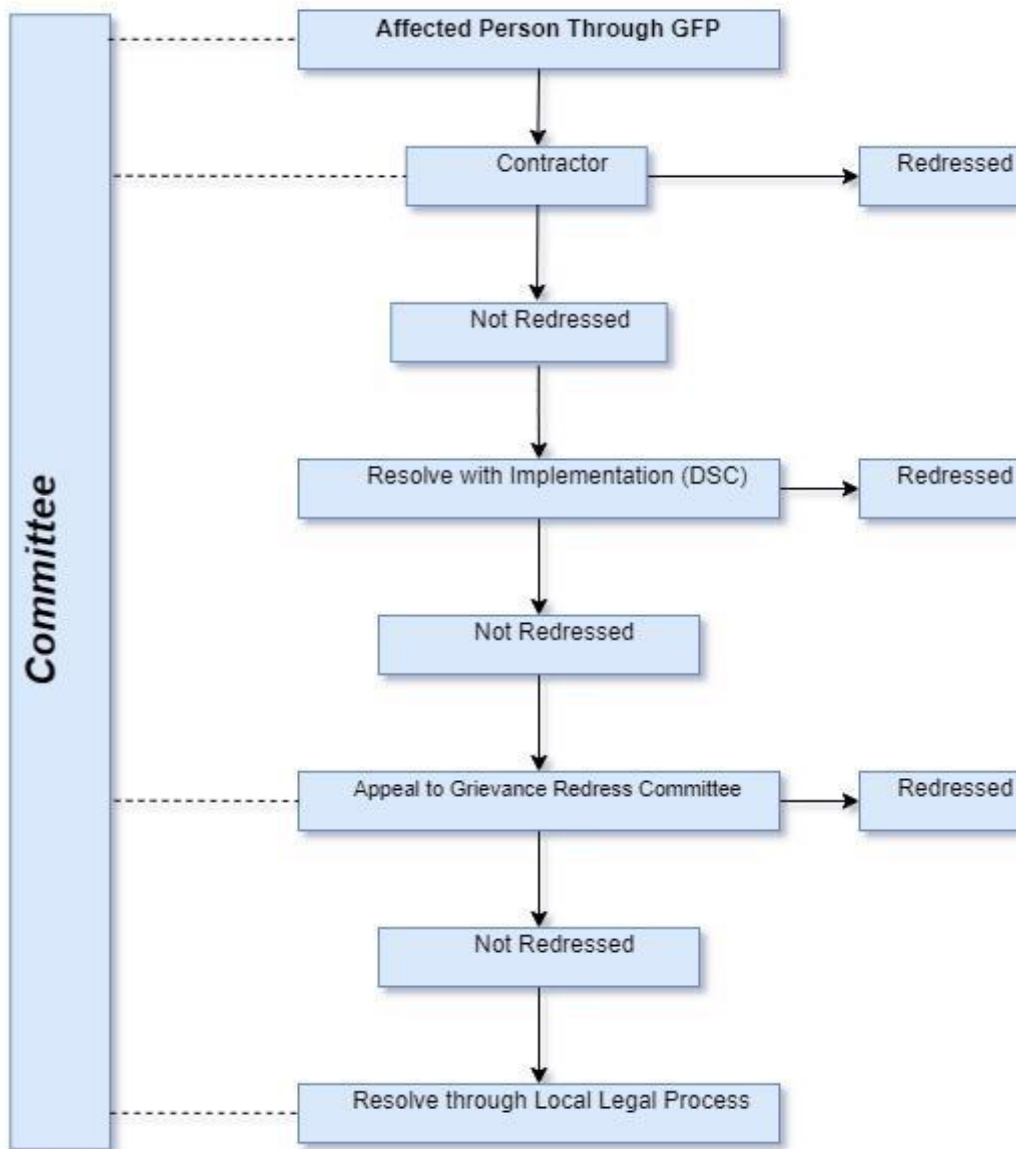


Figure 1: GRM System

13. Lessons Learned

70. The following lessons have been learnt during the reporting period:

- Lack of FIP's capacity to clear sites for post completion requirements
- Phasing out and ensuring ownership of the schemes by the community to ensure long term sustainability
- Project completion reports (environmental safeguards)

14. Way Forward

71. Following steps are planned to ensure environmental safeguards compliance:

- Awareness and capacity building of FIPs for site clearance after civil works completion
- Capacity building of FIPs to create ownership among the community for schemes to ensure its minor maintenance and sustainability
- Development and sharing of project completion report template with FIP by the Fund to ensure proper closure



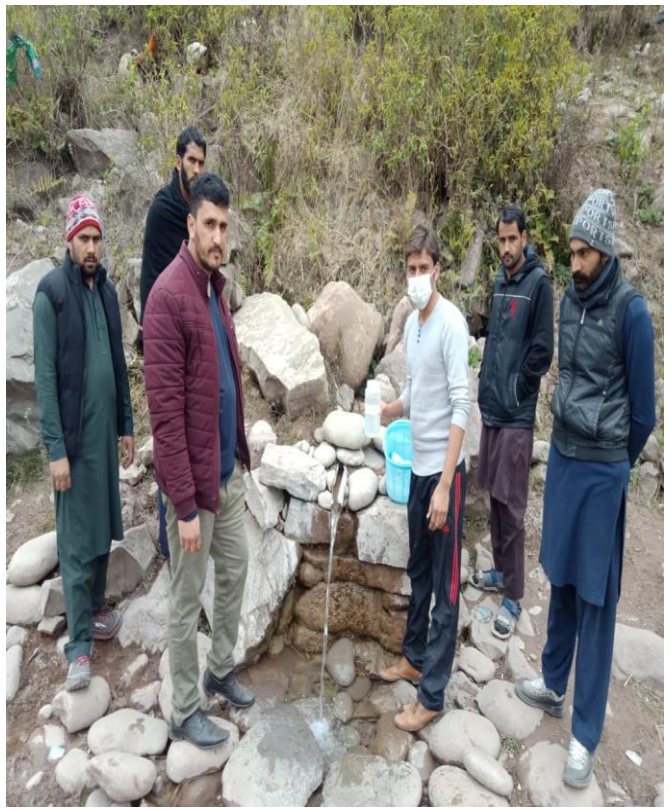
Community Session on Safeguards at Ayun AKF



Community Session on Safeguards at Reshun AKF



Air Quality Monitoring at AJK Land Slide Project



Water Quality Sample Collection from Springs AJK Land Slide Project

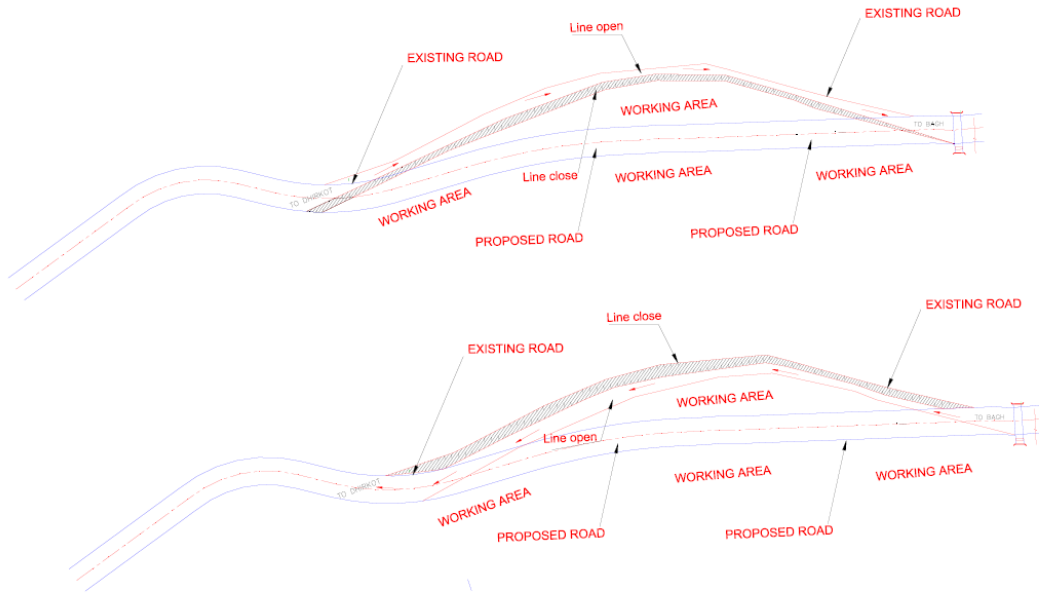


PPE use at AJK Land Slide Project



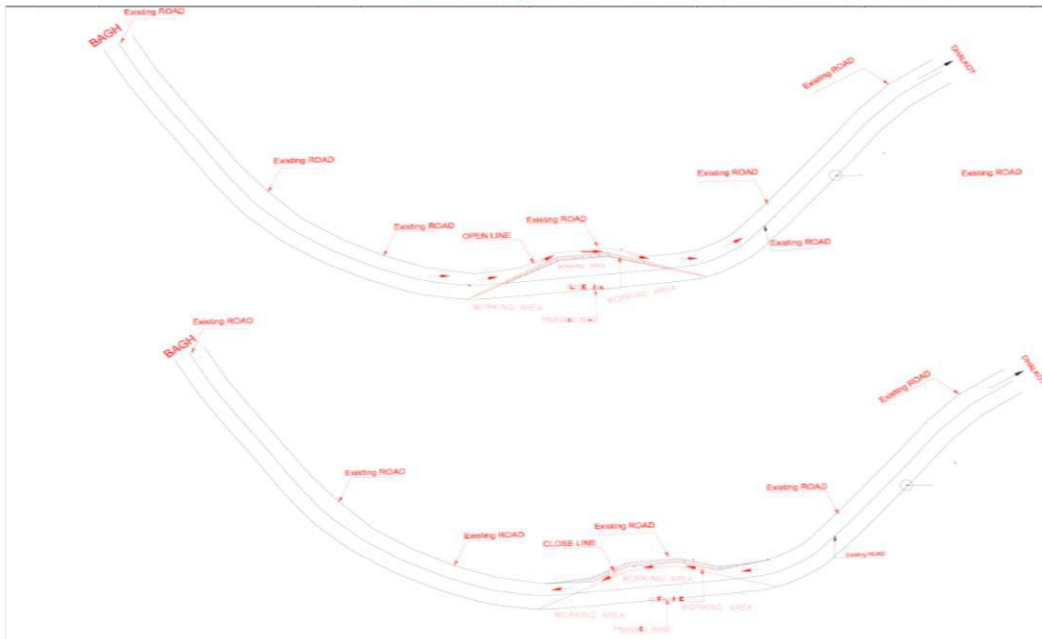
PPE use at PID Project

TRAFFIC PLAN OF MANG BAGRI SIDE



| CLIENT | CONSULTANT | CONTRACTOR | PROJECT | CONTRACTOR | CONSULTANT | CLIENT |
|------------------------------------|------------------------------------|---------------------------------|---|--------------|--------------------|---------------|
| COMMUNICATION AND WORKS DEPARTMENT | G3 ENGINEERING CONSULTANT (PVT)LTD | SARDAR ILYAS ALAM & CO.(PVT)LTD | LAND SLIDE CONTROL MANAGEMENT AND MITIGATION ALONG MAJOR ROADS IN AJAK MANG BAGRI LAND SLIDE AT ARJA BAGH ROAD DISTRICT BAGH. | PREPAID BY : | CHECKED & VERIFY : | APPROVED BY : |
| | | | | | | |

TRAFFIC PLANE OF DHALKOT SIDE



| CLIENT | CONSULTANT | CONTRACTOR | PROJECT | CONTRACTOR | CONSULTANT | CLIENT |
|------------------------------------|------------------------------------|---------------------------------|---|--------------|--------------------|---------------|
| COMMUNICATION AND WORKS DEPARTMENT | G3 ENGINEERING CONSULTANT (PVT)LTD | SARDAR ILYAS ALAM & CO.(PVT)LTD | LAND SLIDE CONTROL MANAGEMENT AND MITIGATION ALONG MAJOR ROADS IN AJAK DHALKOT LAND SLIDE DHALKOT ROAD DISTRICT PONGCH. | PREPAID BY : | CHECKED & VERIFY : | APPROVED BY : |
| | | | | | | |

Annexure.3 Instrumental Monitoring Reports



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CLEAN & GREEN KASHMIR

Azad Jammu & Kashmir Environmental Protection Agency

Ref #: EPA/ 1282-84 /2022
 Date: 21 -09-2022

To

✓ **The Project Director/ Superintending Engineer,**
 PWD Highways Circle,
Rawalakot.

SUBJECT: Ambient Air Quality & Water Quality Reports Gui River Landslide and Azad Patan Landslide Part (A+B)
Project: Landslide Control Management and Mitigation along major roads in AJ&K 04 No Slides District Poonch AJ&K

With reference to your office letter No. No. PD/SE/PWD/HWC/RWKT/2022/ 4588-90 dated 24-08-2022 on above subject and to state that the Ambient Air Quality and Water Quality reports of Land Slides mentioned in the subject has been prepared and attached herewith for your information, please.

Enclosed: As stated above

(Signature)
 21/2022
(Schrish Munsif Khan)

Assistant Director (Admin/Lab)

Copy to:

1. The Director General AJK-EPA Muzaffarabad.
2. Master File.

Assistant Director (Admin/Lab)

R-K-
 Plz update record.

(Signature)

Zohib Sb.
(Signature)
 26/9/22





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Azad Jammu & Kashmir Environmental Protection Agency

Ref #: EPA/1120/2022
 Date: 20-09-2022

Ambient Air Quality Monitoring (AQM) Report

| | |
|-------------------------------------|--|
| Name of Proponent /Applicant Agency | Project Director/Superintendent Engineer /PWD Highways Circle GoAJK, Rawalakot |
| Project Name | Landslide Control Management and Mitigation along major roads in AJ&K 04 Nos. Slides District Poonch AJ&K under PWD Highways Circle GoAJK, Rawalakot |
| Location: | Gui River Landslide, Rawalakot |
| Coordinates: | $E = 73^{\circ} 40' 01.2''$ $N = 33^{\circ} 46' 36''$ |
| Date of Monitoring: | 02-09-2022 |

| Met Parameters at site | |
|------------------------|---------|
| Relative Humidity | 31 % |
| Ambient Temperature | 25.5 °C |

| Sr. No. | Pollutant | Time-weighted average | SEQS Limit | Concentration in Ambient Air | Findings | AQI | AQI CATEGORY |
|---------|--------------------------------------|-----------------------|----------------------|------------------------------|------------------|-----|--------------|
| 1 | Carbon Monoxide (CO) | 24 hours | 5mg/m ³ | 0.51 mg/m ³ | Within Limits | 111 | Satisfactory |
| 2 | Sulphur Dioxide (SO ₂) | 24 hours | 120ug/m ³ | 59.43ug/m ³ | Within Limits | | |
| 3 | Ozone (O ₃) | 24 hours | 130ug/m ³ | 80.56ug/m ³ | Within Limits | | |
| 4 | Nitrogen oxide (NO) | 24 hours | 40ug/m ³ | 38.41 ug/m ³ | Within Limits | | |
| 5 | Nitrogen Oxide (NO ₂) | 24 hours | 80ug/m ³ | 45.42ug/m ³ | Within Limits | | |
| 6 | Particulate Matter PM _{2.5} | 24 hours | 35ug/m ³ | 34ug/m ³ | Within Limits | | |
| 7 | Particulate Matter PM ₁₀ | 24 hours | 150ug/m ³ | 173.6ug/m ³ | Above the Limits | | |

Reasons for higher level pollutants

Pollutants which are observed higher than permissible ranges are emitted by automobiles, trucks and various movements of vehicles on unpaved-road & Construction activities at site

Remarks:

The air quality index of this particular site is found satisfactory.

Abbreviations: SEQs: State Environmental Quality Standards, AQI: Air Quality Index

Disclaimer

⇒ The results analysis reported by The AJK- EPA AQM is verified, accurate and authentic only for the parameters analyzed.



⇒ This Analysis report is not valid for court use or business publicity. In case of any dispute in connection with authenticity of the report, the laboratory analysis record will be considered final.

Analyzed By: _____

Designation: Lab Assistant EPA

Checked By: _____

Designation: Assistant Director Lab EPA



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Azad Jammu & Kashmir Environmental Protection Agency

Ref #: EPA/1119/2022
 Date: 20-09-2022

Ambient Air Quality Monitoring (AQM) Report

| | |
|-------------------------------------|--|
| Name of Proponent /Applicant Agency | Project Director/Superintendent Engineer /PWD Highways Circle GoAJK, Rawalakot |
| Project Name | Landslide Control Management and Mitigation along major roads in AJ&K 04 Nos. Slides District Poonch AJ&K under PWD Highways Circle GoAJK, Rawalakot |
| Location: | Azad Pattan, Rawalakot |
| Coordinates: | $E = 73^{\circ} 36' 28''$ $N = 33^{\circ} 44' 48.1''$ |
| Date of Monitoring: | 31-08-2022 |

Met Parameters at site

| | |
|---------------------|-------|
| Relative Humidity | 29 % |
| Ambient Temperature | 24 °C |

| Sr. No. | Pollutant | Time-weighted average | SEQS Limit | Concentration in Ambient Air | Findings | AQI | AQI CATEGORY |
|---------|--------------------------------------|-----------------------|----------------------|------------------------------|------------------|-----|--------------|
| 1 | Carbon Monoxide (CO) | 24 hours | 5mg/m ³ | 0.51 mg/m ³ | Within Limits | 106 | Satisfactory |
| 2 | Sulphur Dioxide (SO ₂) | 24 hours | 120ug/m ³ | 59.43ug/m ³ | Within Limits | | |
| 3 | Ozone (O ₃) | 24 hours | 130ug/m ³ | 80.56ug/m ³ | Within Limits | | |
| 4 | Nitrogen oxide (NO) | 24 hours | 40ug/m ³ | 38.41 ug/m ³ | Within Limits | | |
| 5 | Nitrogen Oxide (NO ₂) | 24 hours | 80ug/m ³ | 45.42ug/m ³ | Within Limits | | |
| 6 | Particulate Matter PM _{2.5} | 24 hours | 35ug/m ³ | 39ug/m ³ | Above the Limits | | |
| 7 | Particulate Matter PM ₁₀ | 24 hours | 150ug/m ³ | 161ug/m ³ | Above the Limits | | |

Reasons for higher level pollutants

Pollutants which are observed higher than permissible ranges are emitted by automobiles, trucks and various movements of vehicles on unpaved-road & Construction activities at site

Remarks:

The air quality index of this particular site is found satisfactory.

Abbreviations: SEQs: State Environmental Quality Standards, AQI: Air Quality Index


Disclaimer

⇒ The results analysis reported by The AJK- EPA AQM is verified, accurate and authentic only for the parameters analyzed.



⇒ *This Analysis report is not valid for court use or business publicity. In case of any dispute in connection with authenticity of the report, the laboratory analysis record will be considered final.*

Analyzed By: 
Designation: Lab Assistant EPA

Checked By: 
Designation: Assistant Director Lab EPA



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Azad Jammu & Kashmir Environmental Protection Agency

Ref #: EPA/1122/2022
Date: 20-09-2022

Water Quality Testing (WQT) Report

Name of Proponent
/Applicant Agency

Project Director/Superintendent Engineer
/PWD Highways Circle GoAJK, Rawalakot

Project Name

Landslide Control Management and Mitigation
along major roads in AJ&K 04 Nos. Siides District
Poonch AJ&K under
PWD Highways Circle GoAJK, Rawalakot

Location:

Gui River Landslide, Rawalakot.

Date of Sampling:

01-02-2022

Problem Statement:

The project titled "Landslide Control Management and Mitigation along major roads in AJ&K" is being executed by NDRMF and PWD Government of AJK. There are four landslide areas in the said project. The proponent (NDRMF/PWD) requested to monitor & analyze two sites e.g. Azaad Pattan & Gui River landslide for parameters of Water Quality as per SEQs. This Water Quality Testing is mandatory for the project as per requirement of donor agency.

Equipment & Material Used:

| Water Quality Characterization Parameters and Instrumentation | | |
|---|--------------------------------------|--|
| Sr.# | Parameters | Analysis method |
| 1 | pH | pH Meter, Hanna Instrument, Model 8519, Italy |
| 2 | Conductivity | 2520-B, E.C meter, Hana, Standard Method (2004) |
| 3 | Turbidity | Turbidity Meter, Hanna Instrument Standard Method (2004) |
| 4 | Temperature | Glass Thermometer |
| 5 | Total Dissolved Solids (TDS) | HANNA HI 99300 Instrument |
| 6 | Hardness | Spectrophotometer XD 7500 |
| 7 | Chloride | Spectrophotometer XD 7500 |
| 8 | Nitrite NO ₂ ⁻ | Spectrophotometer XD 7500 |
| 9 | Nitrate NO ₃ ⁻ | Spectrophotometer XD 7500 |
| 10 | Sulphate | Spectrophotometer XD 7500 |
| 11 | Total Coliform | ReadyCult™ Water Check MERCK |

Sampling Procedure/ Methodology

Standard methods & practices were applied for recording and tabulation of field data, collection of water sampling, carriage & storage, physical, chemical & biological analysis, and reporting

Findings & Results:


| Sr. #. | Parameter analyzed | Results | SEQS Limit | Remarks |
|--------|--------------------|-------------------|-----------------|-----------------|
| 1. | Color | Unobjectionable | 15 TCU | Unobjectionable |
| 2. | Odor | Unobjectionable | Odorless | Unobjectionable |
| 3. | Taste | Unobjectionable | Unobjectionable | Unobjectionable |
| 4. | pH | 8.04 | 6.5-6.8 | Within Limit |
| 5. | Conductivity | 416.4 μ S/cm | NGVS | - |
| 6. | Temperature | 18 ⁰ C | NGVS | - |
| 7. | TDS | 299 mg/l | 1000 mg/l | Within Limit |
| 8. | Turbidity | 2.93NTU | 5 NTU | Within Limit |
| 9. | Hardness | 169 mg/l | 500 mg/l | Within Limit |
| 10. | Chloride | 21.5 mg/l | <250 mg/l | Within Limit |
| 11. | Nitrite | <0.01 mg/l | <3 mg/l | Within Limit |
| 12. | Nitrate | 23.6 mg/l | <50 mg/l | Within Limit |
| 13. | Sulphate | 11 mg/l | 200 mg/l | Within Limit |
| 14. | Total Coliform | -ive | 0/100 ml | Within Limit |

Results & Discussion

- ⇒ Out of 14 above parameters all are with concentration or value within permissible limits.
- ⇒ Water is found fit for drinking purposes.

Disclaimer

The EPA-AJK prepared this report exclusively for the client *Project Director/Superintendent Engineer /PWD Highways Circle GoAJK, Rawalakot*. The EPA believes that results are accurate in keeping in view the nature & standard of equipment used and approach applied. The quality of information, conclusions, and discussion contained herein are consistent with the level of effort of EPA-AJK involved in Water Quality Testing. Any other use of, or reliance on, this report by any third party is at that party's sole risk. This Analysis report is not valid for use in any Court case or business publicity.

Analysis done by: 
 Designation: Lab Assistant EPA

Checked by: 
 Designation: Assistant Director Lab EPA



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Azad Jammu & Kashmir Environmental Protection Agency

Ref #: EPA/1121/2022
 Date: 20-09-2022

Water Quality Testing (WQT) Report

Name of Proponent
/Applicant Agency

Project Director/Superintendent Engineer
/PWD Highways Circle GoAJK, Rawalakot

Project Name

Landslide Control Management and Mitigation
along major roads in AJ&K 04 Nos. Slides District
Poonch AJ&K under
PWD Highways Circle GoAJK, Rawalakot

Location:

Azaad Pattan Landslide, Rawalakot

Date of Sampling:

01-09-2022

Problem Statement:

The project titled "Landslide Control Management and Mitigation along major roads in AJ&K" is being executed by NDRMF and PWD Government of AJK. There are four landslide areas in the said project. The proponent (NDRMF/PWD) requested to monitor & analyze two sites e.g. Azaad Pattan and Gui River landslide for parameters of Water Quality as per SEQs. This Water Quality Testing is mandatory for the project as per requirement of donor agency.

Equipment & Material Used:

| Water Quality Characterization Parameters and Instrumentation | | |
|---|------------------------------|--|
| Sr.# | Parameters | Analysis method |
| 1 | pH | pH Meter, Hanna Instrument, Model 8519, Italy |
| 2 | Conductivity | 2520-B, E.C meter, Hana, Standard Method (2004) |
| 3 | Turbidity | Turbidity Meter, Hanna Instrument Standard Method (2004) |
| 4 | Temperature | Glass Thermometer |
| 5 | Total Dissolved Solids (TDS) | HANNA HI 99300 Instrument |
| 6 | Hardness | Spectrophotometer XD 7500 |
| 7 | Chloride | Spectrophotometer XD 7500 |
| 8 | Nitrite NO ₂ | Spectrophotometer XD 7500 |
| 9 | Nitrate NO ₃ | Spectrophotometer XD 7500 |
| 10 | Sulphate | Spectrophotometer XD 7500 |
| 11 | Total Coliform | ReadyCult™ Water Check MERCK |

Sampling Procedure/ Methodology

Standard methods & practices were applied for recording and tabulation of field data, collection of water sampling, carriage & storage, physical, chemical & biological analysis, and reporting.

Findings & Results:

| Sr. #. | Parameter analyzed | Results | SEQS Limit | Remarks |
|--------|--------------------|-------------------|-----------------|-----------------|
| 1. | Color | Unobjectionable | 15 TCU | Unobjectionable |
| 2. | Odor | Unobjectionable | Odorless | Unobjectionable |
| 3. | Taste | Unobjectionable | Unobjectionable | Unobjectionable |
| 4. | pH | 7.25 | 6.5-6.8 | Within Limit |
| 5. | Conductivity | 581.9 μ S/cm | NGVS | - |
| 6. | Temperature | 19 ^o C | NGVS | - |
| 7. | TDS | 289 mg/l | 1000 mg/l | Within Limit |
| 8. | Turbidity | 1.02 NTU | 5 NTU | Within Limit |
| 9. | Hardness | 161 mg/l | 500 mg/l | Within Limit |
| 10. | Chloride | <25 mg/l | <250 mg/l | Within Limit |
| 11. | Nitrite | 0.02 mg/l | <3 mg/l | Within Limit |
| 12. | Nitrate | 14.23 mg/l | <50 mg/l | Within Limit |
| 13. | Sulphate | 8.61 mg/l | 200 mg/l | Within Limit |
| 14. | Total Coliform | +ive | 0/100ml | Above the Limit |

Results & Discussion

- ⇒ Out of 14 above parameters only one parameter i.e., Total Coliform is found with concentration or value more than permissible. The reason for higher value of Total Coliform is certainly due to Sewage Mixing, Solid Waste Deposits near springs, Un hygienic practices near springs, Improper spring protection and lack of awareness in community.
- ⇒ Water is found **unfit** for drinking purposes.

Disclaimer

The EPA-AJK prepared this report exclusively for the client *Project Director/Superintendent Engineer /PWD Highways Circle GoAJK, Rawalakot*. The EPA believes that results are accurate in keeping in view the nature & standard of equipment used and approach applied. The quality of information, conclusions and discussion contained herein are consistent with the level of effort of EPA-AJK involved in Water Quality Testing. Any other use of, or reliance on, this report by any third party is at that party's sole risk. This Analysis report is not valid for use in any Court case or business publicity.

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