SUSTAINABILITY & ENVIRONMENTAL MANAGMENT PLAN

for

OPERATIONALIZATION

Of

KHYBER PAKHTUNKHWA MINERALS DEVELOPMENT AND MANAGEMENT COMPANY LIMITED (KP-MDMCL)

(A Public Limited Company formed under the relevant provisions of the Companies Act, 2017)

Submitted to

MINERALS DEVELOPMENT DEPARTMENT

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Disclaimer

This document has been prepared as a strategic guideline for Sustainability and Environmental Considerations, applicable to the Khyber Pakhtunkhwa Mineral Development and Management Company Limited (KP-MDMCL). It serves as both a guideline and a roadmap for the company, based on the laws, regulations, and best national and international practices available at the time of drafting. The information, recommendations, and guidelines provided herein are intended for planning and advisory purposes only. They do not constitute legal obligations or enforceable commitments unless formally adopted by KP-MDMCL when undertaking exploration, mining, and processing project(s) on an overall viability and sustainability basis. While every effort has been made to ensure the accuracy and relevance of the contents, KP-MDMCL, the authors, and contributors do not assume any responsibility for errors, omissions or for actions taken based on this document. Any policy, regulatory or operational decisions should be made in consultation with legal, technical, and institutional advisors. Furthermore, this report remains subject to periodic updates as the company's structure, strategy, or the regulatory context evolves.

Executive Summary

This Environment & Sustainability Section serves as a strategic guide for mainstreaming environmental and social governance within the operations of the Khyber Pakhtunkhwa Minerals Development and Management Company Limited (KP-MDMCL). As KP-MDMCL begins its institutional journey, this document provides a comprehensive framework to ensure that mineral development in the province adheres to principles of sustainability, compliance, risk management, and community welfare.

Khyber Pakhtunkhwa is rich in mineral resources but also ecologically fragile. Its mountainous terrain, water-sensitive catchments, forest ecosystems, and rural communities are highly vulnerable to the impacts of unsustainable mining. Recognizing these sensitivities, the report emphasizes that environmental and social safeguards must be integrated from the earliest planning stages through to mine closure and rehabilitation.

The document outlines legal and policy alignment with the KP Environmental Protection Act 2014, KP Environmental Assessment Rules 2021, Pakistan Climate Change Act 2017, and international instruments such as the IFC Performance Standards, GRI, and UN Guiding Principles on Business and Human Rights. It recommends that KP-MDMCL adopt a robust Environmental and Social Management System (ESMS) supported by a dedicated Environmental and Social Management Unit (ESMU) within the company structure.

A three-tier monitoring and audit system is proposed—comprising internal inspections, third-party audits, and community-based monitoring—to ensure transparency, accountability, and stakeholder engagement. The report also introduces Health, Safety, and Environment (HSE) protocols, Corrective and Preventive Action (CAPA) mechanisms, incident reporting, and emergency preparedness strategies.

Community engagement is given significant importance through the development of a Grievance Redress Mechanism (GRM) and guidelines for stakeholder consultation, FPIC (Free, Prior, and Informed Consent), and corporate social responsibility (CSR). A dedicated section also addresses gender inclusiveness, drawing on the recent Path to Gender Parity Report issued by the KP Government, and outlines steps to ensure equitable participation in the mining value chain.

The report concludes with a focus on climate resilience, carbon management, and alignment with provincial and national development agendas, including Vision 2025, SDG targets, and the KP Climate Change Policy 2022. It also defines institutional roles, key performance indicators (KPIs), enforcement mechanisms, and sustainability reporting structures.

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ADB	Asian Development Bank
BAP	Biodiversity Action Plan
CAP	Corrective Action Plan
CAPA	Corrective and Preventive Action
CBOs	Community-Based organizations
CDAs	Community Development Agreements
CEO	Chief Executive Officer
CERO	Climate and Environmental Resilience Officer
CHSRA	Community Health and Safety Risk Assessment
CoP	Code of Practice
CSR	Corporate Social Responsibility
DGMM	Directorate General of Mines & Minerals
DQAP	Data Quality Assurance Protocol
E&S	Environment and Social
EIA	Environmental Impact Assessment
EMP	Environmental Management Plans
EMR	Environmental Monitoring Reports
EMS	Environmental Management System
EMU	Environmental Monitoring Unit
EPA	Environmental Protection Agency
EPR	Emergency Preparedness and Response
ERA	Emergency Risk Assessment
ERP	Emergency Repones Plan
ESF	Environmental and Social Framework
ESG	Environmental, Social, and Governance
ESIA	Environmental and Social Impact Assessment
ESMIS	Environmental and Social Monitoring Information System
ESMP	Environmental and Social Management Plan
ESMU	Environmental and Social Management Unit
FGDs	Focus Group Discussion
FPIC	Free, Prior, and Informed Consent
GBV	gender-based violence
GHG	Greenhouse Gases
GIFP	Gender and Inclusion Focal Point
GIS	Geographic Information System
GLOFs	Glacial Lake Outburst Floods
GM	General Manager
GRI	Global Reporting Initiative
GRM	Grievance Redress Mechanism
HIRA	Hazard Identification and Risk Assessment
HR	Human Resource
HSE	Health, Safety, and Environment
ICMM	International Council on Mining and Metals

IEE	Initial Environmental Examinations
IFC	International Finance Corporation
ISO	International Organization for Standardization
KP	Khyber Pakhtunkhwa
KPIs	Key Performance Indicators
KP-MDMCL	Khyber Pakhtunkhwa Minerals Development & Management Company Limited
LARP	Land Acquisition & Resettlement Plan
LRIP	Livelihood Restoration Implementation Plan
LTIFR	Lost Time Injury Frequency Rate
MCP	Mine Closure Plans
MWMP	Mine Waste Management Plan
NEQS	National Environmental Quality Standards
NGOs	Non-Governmental Organizations
NOCs	No Objection Certificates
OECD	Organization for Economic Co-operation and Development
OHSMS	Occupational Health and Safety Management System
PIA	Project Influence Area
PPE	Personal Protective Equipment
PRA	Participatory Rural Appraisal
RAP	Resettlement Action Plan
SDGs	Sustainable Development Goals
SECP	Securities and Exchange Commission of Pakistan
SIA	Social Impact Assessment
SMP	Social Management Plan
SOP	Standard Operating Procedure
SPS	Safeguard Policy Statement
TBL	Triple Bottom Line
TORs	terms of references
UN	United Nation
UNDRIP	United Nation Declaration on the Rights of Indigenous Peoples
VLCs	Village Liaison Committees
WB	World Bank
WHO	World health Organization

1 Introduction

1.1 Background and Rationale for Establishing MDMCL-Khyber Pakhtunkhwa

The province of Khyber Pakhtunkhwa (KP) is located in the northwestern region of Pakistan. It is bordered by Baluchistan to the south; Punjab, Islamabad Capital Territory, and Azad Kashmir to the east; and Gilgit-Baltistan to the north and northeast. It shares an international border with Afghanistan to the west.

The province is known for its vast natural beauty, mountainous terrain, forest reserves, and rich deposits of strategic and industrial minerals. These include but are not limited to, dimension stones such as marble, granite, and slate, metallic ores such as chromite, manganese, and iron, non-metallic minerals like gypsum, phosphate, and graphite, precious and semi-precious stones including peridot, ruby, aquamarine, and topaz

Historically, these resources have been underutilized or exploited without structured planning, primarily due to informal mining practices, weak regulatory enforcement, and limited technical capacity in both public and private sectors. In many cases, mining activities have been carried out without appropriate geological surveys, site rehabilitation, or consultation with local communities resulting in:

- Environmental degradation (e.g., landslides, water pollution, deforestation)
- Occupational hazards and fatalities in unregulated mines
- Social un-rest arising from lack public engagement and benefit-sharing
- Economic inefficiencies and loss of government revenues

Recognizing these challenges and the growing global shift toward sustainable and responsible resource management[1], the Government of Khyber Pakhtunkhwa has established a dedicated KP-MDMCL.

Why Now?

This strategic move is not just timely but necessary. As KP positions itself to attract investment, modernize infrastructure, and reduce regional disparities, the mining sector holds the potential to:

- Serve as a pillar of economic diversification
- Create job opportunities for youth in remote districts
- Generate public revenues for social services
- Support industrial development (e.g., cement, construction, fertilizer)

However, this opportunity will only be realized if mineral development is carried out responsibly, with a clear institutional mandate and a comprehensive sustainability framework.

[1] United Nations (2015). *Transforming Our World: The 2030 Agenda for Sustainable Development*. https://sdgs.un.org/2030agenda

Hence, KP-MDMCL must be built not as a traditional bureaucracy or extractive venture, but as a modern, transparent, and environmentally conscious enterprise.

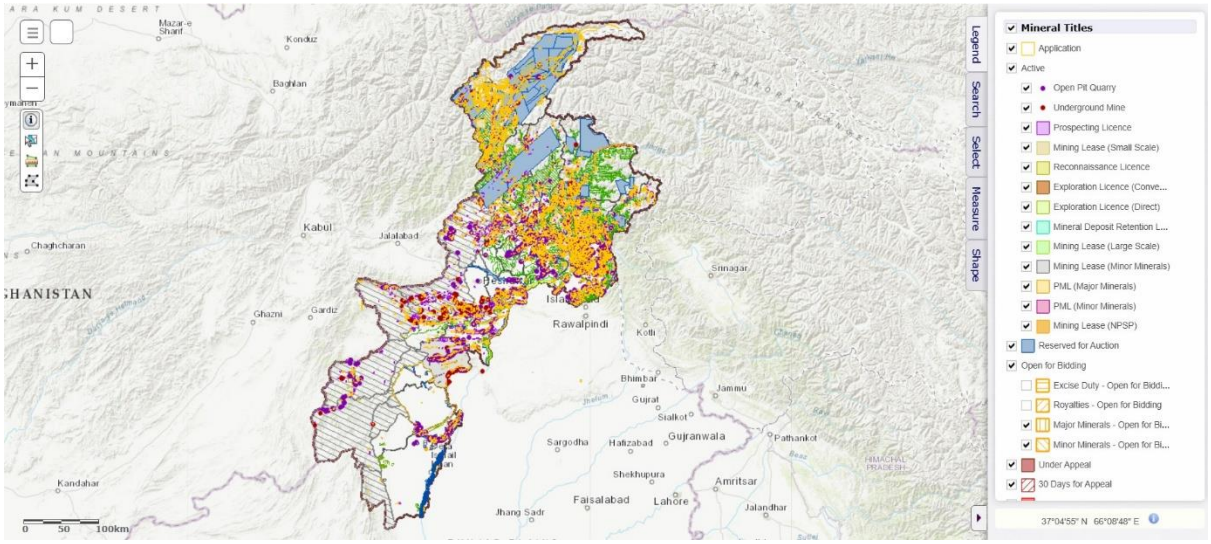

Figure 1-1: Map showing active mining in Khyber Pakhtunkhwa [2]

1.2 Purpose of the environment and social management guidelines

This document is designed as a living manual, a foundational guide to help the newly established KP-MDMCL design its internal systems, project policies, and operational strategies in line with sustainability principles. Unlike standard technical reports, this document combines:

- Strategic vision
- Policy and legal interpretation
- Practical tools and examples
- KP-specific challenges and solutions
- Operational templates and indicators

The primary purpose of this document is to help KP-MDMCL:

- Build internal capacity to manage environmental and social risks
- Integrate sustainability considerations into mineral project lifecycles
- Align with both national regulations and global best practices
- Foster public trust, transparency, and investor confidence
- Ensure that mineral wealth translates into equitable and inclusive development

[2] https://portal.kpminerals.gov.pk/Portal/MapPage.aspx?PageID=5d4bfcf9-1fb6-45a8-8fac-3ef929410de1

1.3 Scope of the environment & social guidelines

These guidelines span the entire mineral development value chain, screening/scoping, selection of the suitable option, planning, implementation, monitoring and site rehabilitation.

Table 1-1: Key Environmental and Social Considerations at Each Stage of Mining

Stage	Stage	Covered Aspects
Exploration	Upstream	Environmental screening, community consultation, risk mapping
Mining and Extraction	Upstream	Air, water, land management; worker safety, emission control
Processing and Beneficiation	Midstream	Waste handling, tailings management, energy use
Transport and trade	Downstream	Road safety, local access, spill prevention, emission reduction
Closure and Rehabilitation	Downstream	Land restoration, reforestation, post-mining livelihoods restoration/improvement

The scope also includes cross-cutting areas, such as:

- Climate change and disaster risk resilience
- Gender mainstreaming and community inclusion
- Local economic development and value addition
- Policy development and institutional structure

This ensures that sustainability is not treated as a one-time requirement (e.g., during environmental assessment) but embedded into daily operations, long-term planning, and corporate governance.

1.4 Methodology and Information Sources

The development of this guideline report followed a structured and systematic methodology to ensure that the recommendations are:

- Contextually relevant to the province of KP
- Legally grounded in Pakistani frameworks
- Aligned with global best practices in responsible mining
- Technically robust and actionable for a newly formed organization

The methodology comprised the following core steps:

1.4.1 Review of Terms of Reference (TORs)

A detailed review of the TORs issued by the Minerals Development Department (MDD) was conducted to understand the intended scope, mandate, and expected deliverables of the KP-MDMCL. This provided the framework around which the structure of this guideline document has been developed. The TORs emphasized:

- Sustainable development as a core principle
- Environmental compliance and management systems
- Social responsibility, community engagement, and benefit-sharing
- Legal and institutional setup
- Capacity building and training
- Business strategy, investment, and governance

1.4.2 Legal and Policy Analysis

The guidelines are rooted in a critical analysis of national and provincial regulations relevant to mining and environmental protection. Key instruments reviewed include:

- Khyber Pakhtunkhwa Mineral Development Policy 2022
- Khyber Pakhtunkhwa Mines and Minerals Act, 2017 (Amended 2019)
- Khyber Pakhtunkhwa Environmental Protection Act, 2014
- Pakistan Environmental Protection Act, 1997
- KP Mine Safety, Inspection and Regulation Act, 2019
- Excise Duty on Minerals (Labour Welfare) Act, 1967
- State-Owned Enterprises (Governance and Operations) Act, 2023
- KP Public Private Partnership Act, 2020
- The Khyber Pakhtunkhwa occupational safety and health Act, 2022

Where gaps were identified, references were drawn from best practices in other provinces (e.g., Punjab Mineral Company, Sindh Engro Coal Mining Company) for comparative insights.

1.4.3 Benchmarking Against Global Standards

The report incorporates guidance from globally recognized frameworks and sustainability standards in the extractive sector. These include:

- IFC Performance Standards on Environmental and Social Sustainability[3]
- International Council on Mining and Metals (ICMM) 10 Principles[4]

[3] IFC (2012). *Performance Standards on Environmental and Social Sustainability*. https://www.ifc.org
[4] https://www.icmm.com/en-gb/our-principles

- UN Guiding Principles on Business and Human Rights[5]
- OECD Due Diligence Guidance for Responsible Supply Chains[6]

These frameworks are not only helpful for compliance but also enhance KP-MDMCL ability to access international finance, ensure export eligibility, and attract Environment, Social & Governance (ESG)-conscious investors.

1.4.4 Expert Consultation and Institutional Experience

The report reflects insights from a team of environmental engineers, mining specialists, sociologists, and public sector reform advisors, particularly those with experience in federal and provincial environmental review processes, mineral concession administration and enforcement & community development in extractive contexts

While formal consultations may evolve after the company's establishment, these expert contributions provide a strong foundational direction for KP-MDMCL.

1.5 Alignment with KP-MDMCL Corporate Mandate and Development Vision

The vision behind KP-MDMCL is not just to explore and exploit mineral resources but to do so in a manner that delivers long-term value for the province, its people, and the environment. The guidelines presented in this document are tightly aligned with the company's mandate, which is centered on the following pillars:

1.5.1 Value Creation Through Sustainability

Sustainability is not a cost it's a value proposition. By embedding responsible practices into all stages of the mining lifecycle[7], KP-MDMCL can:

- Reduce the environmental footprint of its operations
- Improve operational efficiency through waste reduction and energy savings
- Avoid legal and reputational risks that often delay or cancel projects
- Gain a competitive edge in global markets where compliance with ESG norms is now mandatory

1.5.2 Institutional Credibility and Public Trust

Trust is a critical asset in the mining sector, especially in regions like KP where resource conflicts, historical neglect, and community grievances are common. This report recommends measures that ensure accountability, transparency, and fairness such as:

- Early community consultation
- Public disclosure of mining impacts and revenues

[5] https://www.ohchr.org/sites/default/files/documents/publications/guidingprinciplesbusinesshr_en.pdf
[6] https://www.oecd.org/en/publications/2016/04/oecd-due-diligence-guidance-for-responsible-supply-chains-of-minerals-from-conflict-affected-and-high-risk-areas_g1g65996.html
[7] International Council on Mining and Metals (2022). *Mining Principles: Performance Expectations*. https://www.icmm.com

- Participatory grievance redress systems
- Annual reporting

By acting transparently and engaging stakeholders respectfully, KP-MDMCL can secure a social license to operate arguably more important than the legal license alone.

1.5.3 Integration of Sustainability Across the Organization

Sustainability must be institutionalized, not left to one department or a single officer. This report advocates for:

- Creation of a dedicated Environment and Social Management Unit
- Integration of sustainability indicators into corporate performance frameworks
- Mandatory training for staff and contractors on environmental and safety protocols
- Inclusion of environmental and social (E&S) performance in board-level reporting

This will ensure that every function whether finance, procurement, engineering, or marketing supports sustainable outcomes.

1.5.4 Alignment with Provincial and National Development Agendas

KP-MDMCL operational strategies are aligned with Pakistan's broader development agendas, ensuring that mineral development contributes to long-term national and provincial priorities. Specifically:

- **Vision 2025 (Pakistan):** outlines goals for inclusive economic growth, energy and mineral resource development, environmental protection, and social equity. KP-MDMCL supports these by promoting responsible mining, creating local jobs, and integrating environmental safeguards into all phases of mineral operations.
- **National Climate Change Policy 2021:** calls for climate-resilient infrastructure and low-carbon development. KP-MDMCL aligns with this through the adoption of sustainable mining technologies, energy-efficient practices, and adaptation measures that reduce vulnerability to climate-related risks
- **KP Climate Change Policy 2022:** emphasizes sustainable land use, forest protection, watershed conservation, and regulation of environmentally sensitive industries like mining. KP-MDMCL aligns by integrating biodiversity conservation into its Environmental and Social Management Plans (ESMPs), reforestation in mined-out areas, and enforcing compliance with provincial environmental standards.

Through these efforts, KP-MDMCL ensures that its projects do not operate in isolation but are directly contributing to the strategic national and provincial goals on environment, economy, and social welfare.

1.6 Job creation and industrial development under KP's growth strategy

By following this guideline, KP-MDMCL can serve as a model for sustainable resource-based enterprise in Pakistan demonstrating that public sector companies can lead by example in managing resources responsibly.

2 Understanding Sustainable Mineral Development

2.1 What is Sustainable Mineral Development?

Sustainable mineral development refers to the responsible extraction, processing, and use of mineral resources in a manner that meets the needs of the present generation without compromising the ability of future generations to meet their own needs. This concept goes beyond merely minimizing environmental harm it emphasizes the integration of economic efficiency, ecological protection, and social equity into all phases of the mining value chain.

Mining, by nature, is an extractive and finite activity. The goal of sustainable development in this sector is to maximize the developmental benefits of mining while minimizing the environmental, social, and health-related risks associated with it. Sustainable mineral development means that mining:

- Is based on scientific planning and environmental safeguards[8,9]
- Provides equitable benefits to host communities
- Ensures safe and dignified employment for workers
- Contributes to economic diversification and local industrialization
- Leaves a positive legacy, including post-mining land restoration

For KP-MDMCL, this means moving beyond "resource extraction" to "resource stewardship," ensuring that mining activities are aligned with broader developmental goals of the province and country.

2.2 Why It Matters for KP and KP-MDMCL

The Khyber Pakhtunkhwa (KP) is vulnerable to the impacts of mining if it is being carried out unsustainably due to the presence of ecological diversity, water-sensitive catchments, forested landscapes and mountainous terrain in the province. Disruption of these natural features can lead to severe environmental consequences such as landslides, deforestation, river siltation, and water scarcity. In such cases, mining practices in the region must be carefully managed to prevent long-term environmental and social harm.

Without sustainability measures in place, mining can lead to:

- Environmental degradation that affects agriculture and water sources
- Community displacement without proper compensation or consent
- Loss of biodiversity and ecosystem services critical to rural life
- Health issues due to dust, noise, chemical use, and water pollution
- Social conflicts over land use, benefits, and decision-making rights

[8] https://www.ifc.org/en/insights-reports/2000/ehs-guidelines-oil-gas-mining
[9] https://www.ifc.org/content/dam/ifc/doc/2000/2007-mining-ehs-guidelines-en.pdf

For KP-MDMCL, the adoption of a sustainable mineral development framework is not only a matter of compliance or ethics it is a business imperative. Sustainable operations help:

- Build trust with communities and regulators
- Ensure long-term access to mining areas
- Improve project approval and reduce delays
- Enhance investor confidence and financial performance
- Avoid reputational risks and legal liabilities

2.3 The Triple Bottom Line: People, Planet, and Profit

The Triple Bottom Line (TBL)[10] is a globally accepted framework for sustainability. It emphasizes that true success is measured not only by financial profit but also by a company's impact on people and the planet. For KP-MDMCL, this means:

2.3.1 People – Social Responsibility

- Respect local communities' rights, traditions, and voices
- Offer fair wages, safe workplaces, and skill-building opportunities
- Invest in health, education, and infrastructure in host regions
- Engage women, youth, and marginalized groups in mining value chains
- Design and implement effective grievance redress mechanisms

2.3.2 Planet – Environmental Stewardship

- Conduct rigorous Environmental Assessments (EAs)
- Prevent air, water, and soil pollution through pollution control systems
- Conserve water, forests, and biodiversity in and around mining sites
- Plan for responsible mine closure and land rehabilitation
- Minimize carbon emissions and adopt low-energy technologies

2.3.3 Profit – Economic Viability and Reinvestment

- Ensure projects are financially sound and deliver public value
- Reduce material and energy waste through operational efficiency
- Add value to raw minerals through beneficiation and local processing
- Re-invest a portion of profits into environmental and community development
- Comply with national tax, royalty, and investment obligations

[10] World Bank. (2020). *Mining for Sustainable Development: Addressing Social and Environmental Impacts*. Washington, D.C.

Balancing these three pillars is essential to earning a social license to operate, maintaining long-term access to resources, and contributing to KP's prosperity.

2.4 Principles of Responsible Mining for KP-MDMCL

To translate the concept of sustainability into action, KP-MDMCL will adopt the following core principles, which are globally recognized and locally relevant:

2.4.1 Precautionary Principle

In cases where scientific data is uncertain or incomplete, KP-MDMCL should act in such a way to minimize the potential risks. For example, if a mineral deposit lies in an ecologically sensitive area, exploratory drilling should be preceded by rigorous environmental and social risk assessments.

2.4.2 Polluter Pays Principle

KP-MDMCL must recognize that it bears the cost of preventing and cleaning up pollution caused by its activities. This includes proper waste disposal, effluent treatment, and remediation of contaminated sites.

2.4.3 Free, Prior, and Informed Consent (FPIC)

Communities living near mining sites must be consulted before operations begin, in a manner that is transparent, inclusive, and voluntary. FPIC means that communities have the right to say "no," or to negotiate conditions under which mining can occur. This is especially critical in areas with indigenous or tribal populations[11].

2.4.4 Transparency and Accountability

The company should publicly share information about its projects, impacts, and benefits. This can be done through community meetings, annual reports, and disclosure of environmental monitoring results and revenue distribution.

2.4.5 Adaptive Management and Continuous Improvement

Sustainability is not a one-time action but a continuous journey. KP-MDMCL will establish systems for regular monitoring, auditing, and learning, so that policies and operations evolve based on outcomes, stakeholder feedback, and new technologies.

2.5 Linkages with the UN Sustainable Development Goals (SDGs)

The United Nations Sustainable Development Goals (SDGs)[12] represent a global consensus on 17 goals and 169 targets that aim to end poverty, protect the planet, and ensure prosperity for all by 2030[13].

[11] FAO, IIED & IUCN. (2010). *Free, Prior and Informed Consent: A Best Practice Guide for Companies*.
[12] https://sdgs.un.org/goals
[13] https://sdgs.un.org/2030agenda

While the SDGs are not legally binding, they provide a valuable framework for companies like KP-MDMCL to assess and improve their sustainability impact. Below are key SDGs relevant to KP-MDMCL:

Table 2-1: Alignment of KP-MDMCL Sustainability Commitments with Relevant UN Sustainable Development Goals

SDG	Goal Title	Relevance to KP-MDMCL
1	Clean Water and Sanitation[14]	Prevent contamination of local water bodies; promote water reuse
2	Decent Work and Economic Growth[15]	Create safe jobs, promote labour rights, and invest in skills
3	Industry, Innovation, and Infrastructure[16]	Use innovative and efficient mining technologies
4	Responsible Consumption and Production[17]	Reduce waste and use resources efficiently
5	Climate Action[18]	Reduce emissions and strengthen resilience to climate risks
6	Life on Land[19]	Protect ecosystems, forests, and biodiversity

KP-MDMCL should aim to map its projects and policies against these goals, and report annually on contributions and progress. This alignment will support provincial development targets, attract development finance, and improve the company's international credibility.

2.6 From Compliance to Commitment

Traditionally, many mining companies have approached sustainability through a lens of regulatory compliance doing only what the law requires. However, global trends now reward companies that go beyond compliance to demonstrate voluntary leadership, innovation, and commitment to sustainability.

For KP-MDMCL, this means:

- Institutionalizing a culture of sustainability across all levels of the company
- Using environmental and social performance as part of project evaluation not just economic returns
- Ensuring that each department from procurement to HR has sustainability-linked responsibilities
- Designing business models that generate long-term shared value, not just short-term profit

[14] https://sdgs.un.org/goals/goal6
[15] http://sdgs.un.org/goals/goal8
[16] https://sdgs.un.org/goals/goal9
[17] https://sdgs.un.org/goals/goal12
[18] https://sdgs.un.org/goals/goal13
[19] https://sdgs.un.org/goals/goal15

3 Legal, Policy, and Institutional Framework

3.1 Introduction

For a newly established company (KP-MDMCL), a clear understanding of the legal, regulatory, and institutional landscape is essential. Not only does this ensure compliance, but it also helps the company make informed decisions about licensing, land acquisition, environmental assessments, revenue sharing, and stakeholder engagement.

This chapter outlines the core legal and policy instruments that govern mineral exploration, extraction, and environmental protection in Khyber Pakhtunkhwa.

3.2 Overview of Legal Instruments Relevant to Mining and Environment

KP-MDMCL must operate in accordance with both provincial and federal laws. Below is a summary of the key legal frameworks that define the responsibilities, rights, and limitations of mineral development in KP.

3.2.1 The Khyber Pakhtunkhwa Mines and Minerals Act, 2017 (Amended 2019)

This is the primary law governing the management of mineral resources in the province. It delegates authority to the Directorate General of Mines and Minerals and provides legal guidelines on:

- Prospecting licenses and mining leases
- Royalty and fee structures
- Safety obligations for mine operators
- Dispute resolution mechanisms
- Powers of inspection, suspension, and revocation

3.2.2 Khyber Pakhtunkhwa Mineral Development Policy, 2022

This policy sets strategic direction for the mineral sector in KP and provides a non-legally binding, but influential, framework for sector growth. It emphasizes:

- Value addition and downstream processing
- Sustainable and environment-friendly mining
- Community development and corporate social responsibility
- Promotion of private and foreign investment
- Establishment of model mining zones and mineral parks

Implications for KP-MDMCL:

- Align business planning with policy targets
- Prioritize operations in mineral zones with high socio-environmental standards
- Use this policy as a basis for stakeholder collaboration and donor engagement

3.2.3 Khyber Pakhtunkhwa Environmental Protection Act, 2014

This is the main law for environmental regulation at the provincial level, overseen by the KP Environmental Protection Agency (EPA). It requires:

- Mandatory Environmental Impact Assessments (EIAs) or Initial Environmental Examinations (IEEs) for all mining projects
- Development and implementation of Environmental Management Plans (EMPs)
- Submission of environmental monitoring reports
- Compliance with National Environmental Quality Standards (NEQS)

Key Compliance Requirements for KP-MDMCL:

- Obtain EPA approval before starting any mineral operation
- Appoint qualified environmental consultants for EIAs
- Conduct public consultations as part of the EIA process
- Ensure post-approval environmental compliance and reporting

3.2.4 The Khyber Pakhtunkhwa Environmental Assessment Rules, 2021

These regulations provide the legal procedure and criteria for environmental assessments under the KP Environmental Protection Act, 2014. They guide the classification, review, approval, and monitoring of all development projects in the province, including mining.

Key Provisions:

- Categorization of mining projects into Schedule I (IEE) or Schedule II (EIA) based on scale and sensitivity
- Prescribed formats and timelines for submission and review of reports
- Requirement for scoping, baseline data collection, and impact prediction
- Mandatory public consultations and documentation
- Clearance conditions and post-approval monitoring procedures

Key Compliance Requirements for KP-MDMCL:

- Follow correct classification (IEE or EIA) based on mining scale and location
- Submit complete reports with GIS maps, baseline data, and mitigation plans
- Conduct and record stakeholder consultations as per guidelines
- Submit Environmental Monitoring Reports (EMRs) regularly after approval

3.2.5 Pakistan Environmental Protection Act, 1997

Although the 18th Amendment has devolved environmental functions to provinces, this federal act remains influential, especially when dealing with international investors or projects with inter-provincial impacts. It supports:

- National environmental planning
- Federal-level EIA requirements
- Environmental tribunals for legal action
- Oversight by the Pakistan Environmental Protection Council

KP-MDMCL may still need to coordinate with federal agencies for large-scale or transboundary projects.

3.2.6 KP Mine Safety, Inspection and Regulation Act, 2019

Worker safety is a legal and ethical obligation. This Act mandates:

- Periodic mine inspections
- Installation of safety infrastructure (e.g., ventilation, warning systems)
- Worker training in handling hazardous materials
- Maintenance of health and safety records
- Reporting of incidents, injuries, and near-misses

For KP-MDMCL:

- Develop a strong internal Health, Safety, and Environment (HSE) unit
- Implement a site-level Occupational Health and Safety Management System (OHSMS)
- Train employees and contractors on KP mine safety requirements

3.2.7 State-Owned Enterprises (Governance and Operations) Act, 2023

This Act provides the governance framework for KP-MDMCL. It emphasizes:

- Transparent board structures and appointment processes
- Performance accountability for executive management
- Risk management, internal audits, and reporting
- Avoidance of political interference in commercial decisions

KP-MDMCL should structure its governance in accordance with this law, including:

- Creating board subcommittees for audit, ethics, and sustainability
- Publishing regular financial and ES performance reports
- Instituting mechanisms for whistleblower protection and corporate accountability

3.2.8 Khyber Pakhtunkhwa Public Private Partnership Act, 2020

As KP-MDMCL may enter joint ventures or investment partnerships, this Act will govern such arrangements. It provides a legal basis for:

- Risk-sharing between public and private partners
- Transparent tendering and contract award processes
- Monitoring of partner performance and financial returns
- Conflict resolution and exit strategies

When structuring any PPP in mining, KP-MDMCL should ensure:

- Environmental and social safeguards are included in contracts
- Community engagement clauses are legally binding
- All partners adhere to national labour and environmental laws

3.2.9 Excise Duty on Minerals (Labour Welfare) Act, 1967

This federal legislation ensures that a portion of mineral royalties and taxes is allocated to labour welfare schemes. These include:

- Worker housing
- Medical care
- Educational facilities for miners' children

KP-MDMCL should ensure that such excise duties are paid promptly and consider supplementing these benefits through its own CSR programs.

3.2.10 The Khyber Pakhtunkhwa Mine Safety, Inspection and Regulation Act, 2019

This Act was enacted to strengthen worker safety, occupational health, and regulatory enforcement in the mining sector of KP. It was introduced in response to a high number of accidents, fatalities, and unsafe working conditions in unregulated and small-scale mining operations across the province.

The Act empowers the Inspectorate of Mines (under the Directorate of Labour) to enforce mandatory safety requirements in both underground and surface mining operations.

Key Provisions of the Act:

i. **Registration and Inspection:**

- Every mine must be registered with the Inspectorate of Mines before beginning operations.
- The law mandates regular inspections by qualified mines inspectors.
- Mines with higher risks are subject to more frequent inspections, including surprise visits.

ii. Worker Health and Safety Standards:

- Operators must provide protective equipment (helmets, boots, respirators, etc.) to all workers.
- Adequate ventilation, lighting, and escape routes must be installed in underground mines.
- Mines must maintain first aid facilities, trained emergency response staff, and ambulances (for large operations).
- Workers must undergo periodic medical examinations to detect occupational illnesses such as silicosis and hearing loss.

iii. Accident Reporting and Investigation:

- All accidents, injuries, or fatalities must be reported within 24 hours to the relevant inspector.
- Investigations are mandatory for all fatal accidents, and the findings are legally binding.
- Employers must compensate injured workers or the families of deceased workers as per labour laws.

iv. Employment of Women and Children:

- The Act prohibits the employment of children under 18 years in mining operations.
- It places strict conditions on the employment of women, especially in hazardous environments.

v. Penalties for Non-Compliance:

- The Act introduces strict penalties and fines for mine owners who violate safety protocols.
- Repeated violations may lead to temporary suspension or permanent closure of mining operations.

3.3 Role of Key Regulatory Institutions

Understanding the institutional architecture in KP is essential for effective coordination and regulatory compliance. Key institutions KP-MDMCL will engage with include:

Table 3-1: Key Institutional Stakeholders and Their Roles in Mining and Environmental Governance

Institution	Key Roles & Functions
Directorate General of Mines & Minerals (DGMM)	Licensing, monitoring, geological surveys, policy enforcement
KP Environmental Protection Agency (EPA)	Environmental approvals, inspections, pollution control, compliance audits
Inspectorate of Mines (Labour Department)	Worker safety enforcement, accident investigations
Board of Revenue	Land records, leasing, and right-of-way permissions
Forest Department	Permissions for access through forest reserves
Local Government Bodies	Community consultations, grievance handling, local development
Federal Mineral Development Agencies (as needed)	Trans-provincial coordination, national strategy alignment

3.4 Gaps and Challenges in the Current System

Despite the presence of multiple laws and institutions, certain systemic gaps may hinder effective sustainable mineral development:

- Overlap of jurisdiction between environmental and mining authorities
- Capacity building issues
- Lack of digital databases for real-time monitoring of licenses and compliance
- Weak grievance redress systems at the local level
- Limited awareness among contractors and field staff about environmental laws
- Inadequate penalties for non-compliance, leading to repeat violations

KP-MDMCL has the opportunity to lead by example by going beyond minimum compliance and creating internal systems that reinforce good practices even where regulatory gaps exist.

3.5 Strategic Recommendations for KP-MDMCL

To strengthen legal compliance and institutional performance, the following strategies are recommended:

i. **Establish a Legal and Compliance Cell**: Include specialists in environmental law, labour law, and mining policy.

ii. **Develop a Compliance Tracker**: Maintain a digital tool that monitors permit validity, environment approvals, inspection schedules, and audit findings.

iii. **Conduct Regulatory Training for Staff**: Make legal awareness a core part of induction and capacity-building programs.

iv. **Engage in Policy Advocacy**: Work with the government to propose amendments or clarifications where the legal framework is ambiguous or outdated.

v. **Use Legal Due Diligence for All Partnerships**: Ensure that joint ventures, contractors, and sub-lessees follow all laws under KP-MDMCL watch.

4 Environmental Management Guidelines

4.1 Why Environmental Management Matters in Mining

Mining operations have the potential to generate significant negative environmental impacts these include:

- Soil erosion, deforestation, and habitat destruction
- Water pollution from chemical leaching, tailings, and wastewater discharge
- Air pollution from dust, fuel combustion, and chemical processing
- Loss of biodiversity in ecologically sensitive zones
- Visual blight and long-term land degradation

For KP-MDMCL, establishing a robust environmental management system (EMS) is essential not only for compliance with provincial and federal laws but also for protecting KP's natural ecosystems, improving community relations, and building international credibility.

4.2 The Environmental Management System (EMS): A Core Pillar of Sustainability

An Environmental Management System (EMS) is a structured framework that helps an organization identify, assess, mitigate, and monitor its environmental risks and impacts. For KP-MDMCL, the EMS must be integrated into every operational phase and managed by qualified personnel.

Core Components of an EMS for KP-MDMCL:

i. **Environmental Policy**:

A formal policy statement signed by the Board, affirming KP-MDMCL commitment to environmental protection, compliance, and continuous improvement.

ii. Risk Assessment and Impact Identification:

Site-specific assessments must be carried out to understand local environmental conditions, identify sensitive receptors, and anticipate potential negative impacts.

iii. Mitigation Planning:

Development of Environmental Management Plans (EMPs) with clear, measurable mitigation actions.

iv. Monitoring and Reporting:

Ongoing data collection on emissions, discharges, and ecological indicators, with internal and external reporting.

v. Training and Capacity Building:

Mandatory training of field staff, contractors, and supervisors on environmental protocols and emergency response.

vi. Review and Improvement:

Annual EMS audits and third-party evaluations to drive adaptive management.

4.3 EIA and IEE Requirements in KP

Under the KP Environmental Protection Act, 2014, all mining activities require either:

- An Initial Environmental Examination (IEE) for small to medium projects with low to moderate impact
- A full Environmental Impact Assessment (EIA) for large, high-risk, or ecologically sensitive operations

4.4 Pollution Control and Prevention Measures

Air Pollution Control

- Use of dust suppression systems, such as water spraying at roads and crushing plants
- Deployment of low-emission equipment and vehicle maintenance programs
- Installation of dust extraction systems at processing facilities

Water Management

- Design of closed-loop water systems to reduce consumption and discharge
- Construction of sedimentation ponds and treatment wetlands to manage runoff
- Monitoring of groundwater levels and quality around mining zones

Noise and Vibration Control

- Use of acoustic barriers, silencers, and dampers on heavy machinery
- Scheduling of blasting and drilling during daytime hours
- Monitoring with noise meters and seismographs

Soil and Land Degradation

- Construction of retaining walls and terracing to prevent erosion
- Immediate rehabilitation of topsoil after excavation
- Use of native vegetation for slope stabilization

4.5 Waste Management in Mining Operations

Mining generates various types of waste:

Table 4-1: Types of Mining Waste and Recommended Management Strategies

Waste Type	Examples	Management Strategy
Overburden	Soil and rocks removed	Stored separately and reused for rehabilitation
Tailings[20]	Fines and chemicals from processing	Stored in engineered tailings dams with monitoring
Hazardous Waste	Batteries, oils, chemicals	Stored in secure containers and disposed via licensed handlers
Domestic Waste	Camps, offices	Segregation, composting, and disposal at municipal sites

KP-MDMCL will prepare a Mine Waste Management Plan (MWMP) for each operational site, based on international standards such as International Council on Mining and Metals (ICMM's) Tailings Governance Framework.

4.6 Biodiversity Conservation and Ecosystem Protection

KP is home to unique and fragile ecosystems alpine meadows, rivers, pine forests, and diverse fauna. KP-MDMCL must avoid or minimize mining in areas with:

- Critical habitats or endangered species
- Protected areas (national parks, wildlife sanctuaries, protected forest, Game reserve, community reserves)
- Ecological corridors or migratory routes

[20] Leftover materials, a form of mining waste, that remain after the valuable components have been extracted from mined ore. They are typically a slurry of finely ground rock, water, and often chemicals used in the processing. Tailings are stored in designated facilities, such as tailings storage facilities (TSFs), and their management is crucial due to potential environmental and safety risks.

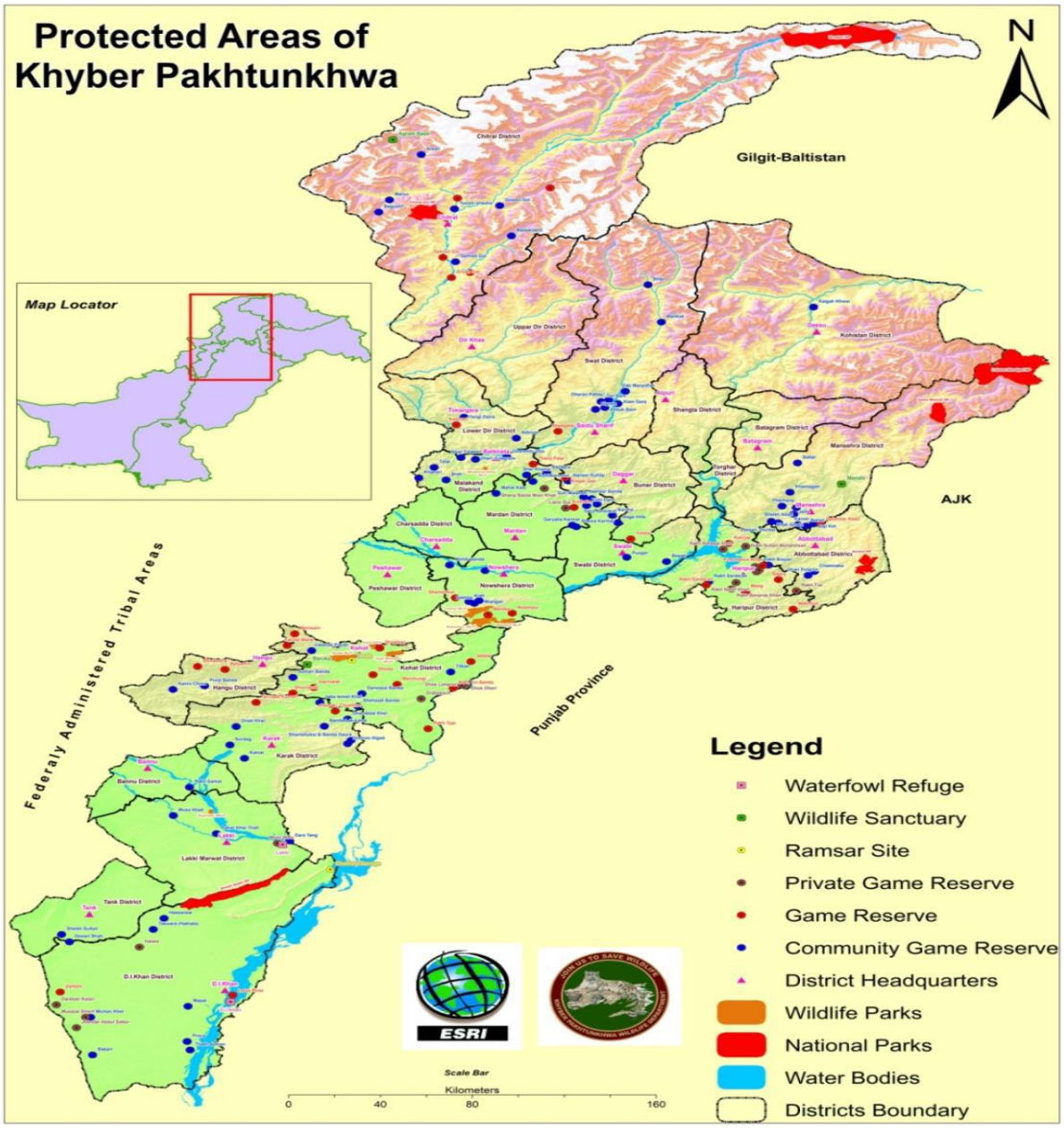

Figure 4-1: Protected Areas of KP, Source: Wildlife Department KP (Newly merged districts have not been mapped)

Recommended Actions:

- Conduct ecological assessments with qualified experts
- Prepare Biodiversity Action Plans (BAPs) for each mining site or for each zone
- Establish buffer zones between mining activities and ecologically sensitive areas
- Support offset programs (e.g., reforestation, wildlife monitoring) to compensate for unavoidable loss

4.7 Climate Change and Greenhouse Gas Management

Mining contributes to GHG emissions through fuel use, blasting, and material transport. Climate change also increases risks to operations including floods, heatwaves, and landslides.

Strategies for KP-MDMCL:

- Develop a Carbon Management Plan with annual emissions inventory
- Invest in energy-efficient machinery and hybrid vehicles
- Use solar plant for site-level energy needs where feasible
- Design climate-resilient infrastructure and floodproof access roads

4.8 Mine Closure and Land Rehabilitation Planning

Closure is not the end it is the beginning of site restoration and future land use. Without proper closure planning, mines often leave behind polluted water, unsafe pits, and unusable land.

KP-MDMCL must prepare Mine Closure Plans (MCPs) at the project design stage, including:

- Engineering design for slope stability and erosion control
- Re-contouring and topsoil replacement
- Replanting with native, non-invasive vegetation
- Post-closure monitoring for water quality, soil health, and biodiversity recovery
- Engagement with local communities to plan productive post-mining land uses

International best practice recommends financial assurance mechanisms (e.g., closure bonds[21]) to ensure closure is not neglected due to funding constraints.

4.9 Environmental Monitoring and Reporting

Environmental performance must be measured, analyzed, and transparently shared.

KP-MDMCL should establish a central Environmental Monitoring Unit (EMU) responsible for:

- Designing site-specific monitoring plans
- Installing and maintaining monitoring equipment (e.g., water sensors, air quality monitors)
- Collecting and analyzing data according to NEQS and KP EPA guidelines[22]
- Submitting quarterly Environmental Monitoring Reports (EMRs)
- Publishing an annual Sustainability and Compliance Report for public review

[21] A closure bond is an environmental surety bond used to guarantee that the owners of a landfill/facility will close the landfill/facility in accordance with the rules, regulations, and specifications of the permit/closure plan issued by the obligee.

[22] The "guidelines" mentioned refer to those outlined in the KP Environmental Protection Act, 2014, the KP Environmental Assessment Rules, 2021, and related provincial documents such as the KP Climate Change Act & Policy.

4.10 Digital Tools and Technologies for Environmental Management

Digital tools can enhance efficiency, accuracy, and transparency. KP-MDMCL is encouraged to use:

- GIS mapping to track land use, vegetation cover, and impact zones
- Remote sensing for erosion, deforestation, and landscape change detection
- Drone-based monitoring for inaccessible areas
- IoT sensors[23] for real-time air and water quality monitoring
- Digital dashboards for internal performance reviews and public transparency

[23] IoT sensors are devices that detect and measure physical quantities and convert them into data that can be transmitted and analyzed by other devices or systems via the internet. They are crucial components of the Internet of Things (IoT) ecosystem, enabling connectivity and communication between the physical world and the digital realm.

5 Health, Safety, and Environment (HSE) Guidelines

5.1 KP-MDMCL Health, Safety, and Environment (HSE) Guidelines and Code of Practice

The following Health, Safety, and Environment (HSE) Guidelines and Code of Practice will be issued by the Board of Directors of KP-MDMCL and are binding upon all company staff, contractors, consultants, suppliers, and joint venture partners. These standards are to be implemented across all stages of mineral development and all operational locations within the province and beyond.

The guidelines aim to institutionalize a zero-harm philosophy, ensuring protection of human life, the environment, and company assets while fostering a proactive culture of safety, risk awareness, and environmental compliance.

5.1.1 Scope of Guidelines

This Code applies to:

- All KP-MDMCL managed exploration, mining, processing, transportation, and closure activities
- All employees (permanent, contractual, and casual), vendors, and service providers
- All leased sites, offices, field camps, storage yards, and logistics operations
- All joint ventures, PPPs, and subcontracted work under KP-MDMCL direct or indirect control

5.1.2 Mandatory HSE Principles

KP-MDMCL adopts the following non-negotiable HSE principles:

i. **Zero Tolerance for Unsafe Acts:**

   All work must be conducted safely, regardless of cost or schedule. Unsafe acts will not be tolerated.

ii. **Environmental Protection is a Core Duty:**

   Prevention of pollution, conservation of natural resources, and compliance with environmental limits are essential.

iii. **Compliance is Mandatory:**

   All internal policies, KP laws (e.g., Mine Safety Act 2019, Khyber Pakhtunkhwa Environmental Protection Act 2014), and international safety and environmental standards must be followed.

iv. **Contractor Accountability:**

   All external partners must comply fully with these guidelines. No exceptions will be allowed.

v. Transparent Reporting and Timely Correction:

Incidents and violations must be reported and corrected without delay.

vi. Workforce Empowerment:

All employees and contractors are encouraged and empowered to stop unsafe work without fear of reprisal.

Table 5-1: Minimum HSE Standards[24]

Area	Minimum Requirement
Personal Protective Equipment (PPE)	Mandatory for all site staff. Includes hard hats, boots, gloves, hearing and eye protection
Access Control	No unauthorized access to hazardous or restricted areas
Hazardous Materials	Labeled, stored, used, and disposed per Material Safety Data Sheets (MSDS)
Waste Management	Waste must be segregated and disposed through approved systems
Emergency Readiness	ERP, fire extinguishers, muster points, and trained response teams are required
Reporting	Immediate reporting of all incidents, accidents, and near misses

5.1.3 Contractor Code of Practice (CoP)

All contractors must sign a Contractor HSE Acknowledgment Form committing to:

- Submit a site-specific HSE Management Plan (HSE-MP) for approval before mobilization
- Assign an on-site HSE officer for daily compliance monitoring
- Supply full PPE to all workers at all times
- Participate in mandatory safety training and daily toolbox talks
- Allow inspections and provide access to records at all times
- Accept all enforcement actions including stop-work orders, fines, and blacklisting

5.1.4 Annual Review and Public Disclosure

These guidelines shall be:

- Reviewed annually and updated based on audit findings and legal revisions
- Disclosed to all employees, contractors, and stakeholders via orientation, contracts, and KP-MDMCL public communication platforms
- Monitored through performance audits and Board-level oversight

**No operational activity or contractual engagement may begin without formal compliance with this HSE Guideline and signed acceptance of the Code of Practice.*

[24] IFC Environmental, Health, and Safety Guidelines – Mining

5.2 Operationalizing HSE as a Core Compliance Area

The mineral sector's high-risk profile demands that Health, Safety, and Environmental (HSE) performance be central to business strategy and contract enforcement, not merely encouraged as a good practice. For KP-MDMCL, HSE is not optional it is a mandatory, non-negotiable requirement to protect workers, the environment, company assets, and public reputation.

5.3 HSE Governance: Structure, Mandate, and Internal Accountability

5.3.1 Corporate HSE Unit

KP-MDMCL will be establish a dedicated HSE Unit under the CEO's Office with the following powers and responsibilities:

- Formulate and update the company-wide HSE Management System (HSE-MS)
- Develop site-specific HSE Plans in coordination with project teams
- Audit and inspect all KP-MDMCL operations and partner sites
- Suspend operations if imminent safety or environmental threats are found
- Lead investigation of incidents, accidents, and environmental violations
- Report directly to the Board HSE & Risk Committee

5.3.2 Site-Level HSE Implementation

Each mining site must have an HSE Implementation Team, including:

- HSE Manager
- Safety Officer
- Environmental Officer
- Emergency Response Coordinator

The site HSE team reports to both the Project Manager and the Corporate HSE Unit.

5.4 HSE Compliance Requirements for Contractors and External Entities

Mandatory compliance notice

All contractors, sub-contractors, joint venture partners, suppliers, and service providers are legally and contractually required to comply with KP-MDMCL HSE Guidelines and Codes of Practice, without exception. This includes:

- International companies and local firms
- Engineering, transport, blasting, exploration, and labour contractors
- EPC (Engineering, Procurement, and Construction)
- Mining cooperatives or community-run mining units operating under KP-MDMCL umbrella

5.4.1 Binding HSE Clauses in All Contracts

All procurement, partnership, and project execution agreements must contain legally binding HSE clauses, including:

- A requirement to prepare and submit an HSE Management Plan (HSE-MP) aligned with KP-MDMCL standards
- A clause allowing suspension or termination of contract in case of HSE violations
- A requirement to submit monthly HSE performance reports to KP-MDMCL
- Mandatory incident reporting protocols for accidents, near misses, and environmental breaches
- Full cooperation with all internal and third-party HSE audits and inspections

5.4.2 HSE Prequalification and Approval Process

No contractor or vendor may be engaged without passing an HSE Prequalification process, including:

- Review of past safety performance (e.g., LTIFR, fatality record)
- Proof of trained safety personnel and equipment
- Availability of SOPs and emergency plans
- Commitment letter to comply with KP-MDMCL HSE standards
- Site-specific risk mitigation measures for the contract scope

Only those who pass this evaluation shall be entered in KP-MDMCL Approved Contractor Registry.

5.4.3 Onboarding, Training, and Supervision

Contractors must ensure that 100% of their personnel working at KP-MDMCL sites:

- Attend mandatory HSE Induction Training conducted by KP-MDMCL staff
- Participate in daily toolbox talks and weekly HSE briefings
- Use company-approved Personal Protective Equipment (PPE)
- Abide by site-specific environmental and safety protocols at all times
- Follow emergency response and evacuation plans without delay or deviation

Supervisors are required to monitor and document compliance daily. Failure to enforce discipline within contractor teams will result in penalties or dismissal.

5.5 Enforcement Mechanisms and Sanctions for Violations

KP-MDMCL will enforce its HSE protocols through:

5.5.1 Routine and Surprise Audits

To maintain a high standard of Environmental, Social, and Health & Safety compliance, KP-MDMCL will implement a tiered audit mechanism:

- **Monthly Internal Inspections:** Conducted by KP-MDMCL site-level HSE personnel to ensure routine compliance and early detection of non-conformities.
- **Quarterly Management Reviews:** Internal audits with participation from project leadership and corporate ESMU representatives to review site-level performance and address systemic issues.
- **Annual Third-Party Audits:** Independent external experts will be engaged on need based through a transparent procurement process to assess overall compliance, highlight gaps, and provide corrective recommendations especially for high-risk or complex operations.
- **Unannounced Spot Checks:** Surprise inspections may be conducted if complaints, incident trends, or risk indicators warrant immediate action.

5.5.2 Graded Sanctions

The following penalties will be applied to contractor violations:

Table 5-2: Graded HSE Violations and Corresponding Enforcement Actions

Violation Type	Examples	Consequences
Minor Non-Compliance	Not wearing full PPE, unclean waste area	Verbal and written warning, site correction required
Moderate Non-Compliance	Missing safety signage, improper chemical storage	Fine deduction (1–2% of monthly invoice), retraining
Major Violation	Accident due to SOP breach, failure to report spill	Immediate stop-work, contract probation
Critical Breach	Fatality, environmental damage, falsified reports	Contract termination, blacklisting, legal prosecution

These sanctions must be clearly referenced in all contract documents.

5.5.3 Whistleblower Protection

KP-MDMCL will establish an anonymous HSE reporting mechanism to allow workers and community members to report safety or environmental violations without fear of retaliation. Investigations shall be handled confidentially and transparently.

5.6 Site-Specific HSE Plan Requirements

Before site mobilization, each contractor and internal project team must submit a Site-Specific HSE Plan, covering:

- Hazard Identification and Risk Assessment (HIRA)
- Task-specific Standard Operating Procedures (SOPs)
- Emergency Response Protocols (ERP) with contact persons and routes
- Spill Prevention and Waste Management Plan
- Community Safety Measures (e.g., fencing, blasting notices)
- COVID-19 and infectious disease prevention (as applicable)

All HSE Plans must be approved in writing by KP-MDMCL Corporate HSE Unit.

5.7 Integration with Environmental Safeguards and Sustainability

HSE is not only about worker protection—it is part of KP-MDMCL broader Sustainability and E&S framework. Therefore, the HSE Unit must coordinate with:

- The Environmental Management Unit (EMU) on air, water, and biodiversity monitoring
- The Community Relations Team on grievance redress and cultural sensitivities
- The Legal and Compliance Department for enforcement and documentation

A joint HSE-Environmental Review Committee should meet monthly to review trends, risks, and action plans.

5.8 Key Performance Indicators (KPIs) and Reporting Tools

To drive continuous improvement, KP-MDMCL will monitor:

Table 5-3: Key Performance Indicators (KPIs) for Health, Safety, and Environment (HSE) Compliance Monitoring

KPI	Target
% of contractor staff HSE-certified	100%
Monthly HSE audits completed	≥90% of sites
Lost Time Injury Frequency Rate (LTIFR)	<2 per million work hours
Safety violation penalties issued	Tracked for trend analysis
HSE Training Hours per Worker per Year	≥20 hours
Public grievances on safety resolved within 15 days	100%

These KPIs must be included in Quarterly HSE Reports submitted to the Board and Annual Sustainability Reports disclosed publicly.

6 Corporate Social Responsibility (CSR) Framework

6.1 KP-MDMCL Corporate Social Responsibility (CSR) Guidelines and Code of Practice

The Corporate Social Responsibility (CSR) Guidelines and Code of Practice prepared for the Board of Directors of KP-MDMCL to ensure that all mineral development activities contribute to inclusive, equitable, and sustainable local development. CSR is not a peripheral function at KP-MDMCL it is a central pillar of corporate performance, public accountability & local development.

6.2 Scope of CSR Application

The CSR framework applies to the full spectrum of KP-MDMCL activities and partnerships, including:

- All operational phases, from mineral exploration and site development to production, closure, and post-closure phases
- All company employees, departments, board members, consultants, and temporary staff
- All contractors, subcontractors, public-private partners, joint ventures, and affiliated entities
- All host communities, landowners, tenant farmers, vulnerable households, indigenous peoples, and stakeholders located within the Project Influence Area (PIA)

6.3 CSR Policy Statement

KP-MDMCL is committed to conducting its operations in a socially responsible, culturally respectful, and economically inclusive manner. The company recognizes that mineral development must create tangible, long-lasting benefits for local communities while minimizing or mitigating any potential adverse social impacts.

The CSR policy is built on the following pillars:

- Respect for human rights and community dignity
- Ethical engagement with vulnerable and indigenous populations
- Investment in local human capital, services, and livelihoods
- Accountability, transparency, and inclusivity in decision-making
- Alignment with national priorities and global sustainability standards

6.4 Mandatory CSR Principles

The following steps will be adopted for core principles to guide CSR operations:

i. Do No Harm

Projects must avoid or minimize adverse social impacts. All CSR plans must incorporate social impact assessments and risk mitigation strategies.

ii. Free, Prior, and Informed Consent (FPIC)

Especially for indigenous or tribal communities, CSR engagement shall be based on free, prior, and informed consent for any activity affecting land, livelihoods, or access to resources.

iii. Equitable Benefit Sharing

Local communities must benefit directly from mining projects through employment, infrastructure, livelihood support, or revenue-sharing mechanisms.

iv. Transparency and Participation

CSR projects must be designed, implemented, and evaluated with direct community input. Project information must be made publicly available.

v. Local Leadership and Cultural Sensitivity

Programs must respect local customs, decision-making structures, and leadership roles, especially in traditional or tribal areas.

vi. Contractual Accountability

CSR responsibilities are enforceable through contracts and procurement documents for all third-party partners.

6.5 Minimum CSR Requirements for All Projects

Every mining project, regardless of size or location, must comply with the following baseline CSR requirements:

- **CSR Implementation Plan**: Developed during the feasibility or EIA stage and updated annually, this plan must outline target beneficiaries, activities, budgets, timelines, and monitoring indicators.
- **Local Hiring and Skills Development**: At least 30% of project-level employment must be sourced locally, with a training component to build market-relevant skills.
- **Community Infrastructure**: Each project must contribute to at least one locally prioritized public service or infrastructure (e.g., clean water supply, school renovation, access road improvement).
- **Livelihood Restoration**: If the project results in economic or physical displacement, a detailed Livelihood Restoration Implementation Plan (LRIP) must be prepared, fully funded, and monitored for outcomes.

- **Annual CSR Budget**: A minimum allocation of 2% to 5% of annual operational expenditures must be set aside for CSR activities, reviewed and approved by the Board.
- **Reporting and Disclosure**: A semi-annual community bulletin and an annual CSR performance report must be produced and shared with stakeholders.

6.6 Contractor Code of Practice (CSR Responsibilities)

All contractors, service providers, and joint venture partners must sign a CSR Compliance Agreement, which includes the following obligations:

- Integrate CSR deliverables in project bids, including budget, personnel, and work plans
- Assign a designated CSR focal person to coordinate with KP-MDMCL Social Unit
- Employ community liaison officers or social mobilizers when operating in sensitive areas
- Maintain transparent communication with communities and document all engagements
- Submit quarterly CSR progress reports using KP-MDMCL standard templates
- Undergo CSR performance audits and address any non-conformance within agreed timelines

Contracts shall include penalty clauses for CSR non-compliance, including invoice deductions, contract suspension, or blacklisting.

6.7 Stakeholder Engagement and Consultation

Stakeholder engagement is a foundation of effective CSR. KP-MDMCL must ensure:

- **Comprehensive Stakeholder Mapping**: Identify all affected or interested groups including women, youth, elders, tenant farmers, nomads, minorities, and local institutions
- **Participatory Planning Workshops**: Use community dialogues and participatory rural appraisal (PRA) tools to prioritize development needs
- **Accessible Communication**: Translate key information into local languages and disseminate via meetings, mobile outreach, and printed materials
- **Respect for Traditional Structures**: In tribal or customary governance areas, engagement must respect the authority of elders and local jirgas
- **Ongoing Engagement**: Engagement is not a one-time event. Regular community meetings should be held at every phase: planning, implementation, and closure

Documentation of all consultations must be maintained and included in quarterly CSR reports.

6.8 Community Grievance Redress Mechanism (GRM)

KP-MDMCL shall operationalize a formal Grievance Redress Mechanism (GRM) that:

- Offers multiple channels for complaints: hotline, SMS, complaint box, email, and in-person submission
- Acknowledges all complaints within 48 hours and logs them in a digital registry
- Investigates and responds within 7–15 working days based on severity
- Maintains confidentiality and ensures protection from retaliation
- Provides appeals mechanisms and tracks resolution timelines

Each project site must display GRM procedures visibly in public areas. Contractors must cooperate with investigations and comply with resolutions.

6.8.1 Guidelines for Establishing the GRM

To promote accountability, transparency, and timely resolution of community concerns, KP-MDMCL shall establish a formal Grievance Redress Mechanism (GRM) guided by the following policy framework:

a. Multi-Tier Grievance Redress Structure

The GRM shall operate at three functional levels to ensure timely and context-specific grievance resolution:

Tier	Committee	Composition	Scope
Tier 1	Site-Level GRC	Project E&S Coordinator, Social Mobilizer, Community Representative, Contractor's CSR Focal	Address routine, low-risk grievances at the project level
Tier 2	Regional/District GRC	KP-MDMCL ESMU Representative, Local Govt Official, Civil Society Member, Tribal/Elder Council Nominee	Escalated or unresolved complaints from site level
Tier 3	Corporate GRC	Manager (E&S), Legal Advisor, HR/Compliance Officer, Independent Member	High-impact, sensitive or policy-related grievances

b. Committee Terms of Reference (ToRs)

Each GRC shall be guided by standard ToRs, including:

- Receive, register, and categorize grievances
- Hold review meetings within 7–10 working days of complaint receipt
- Investigate and propose corrective actions
- Ensure timely communication with complainants
- Maintain confidentiality and prevent retaliation
- Track and report grievance resolution metrics

c. GRM Operating Procedures

- **Access:** Multiple submission channels SMS, hotline, email, drop box, in-person
- **Acknowledgment:** Complaint logged and acknowledged within 48 hours
- **Response Time:** Tier 1 (within 7 days), Tier 2 (within 15 days), Tier 3 (within 30 days)
- **Appeals:** Complainant may escalate to higher tier if dissatisfied
- **Documentation:** Digital grievance logbook maintained and audited quarterly
- **Awareness:** GRM info disseminated in local languages at project sites and community spaces

d. Monitoring and Review

The GRM performance will be monitored through:

- Quarterly GRC meetings at each tier
- Inclusion of GRM indicators in the company's E&S performance reports
- Annual audit of grievance handling processes by the higher management

6.9 Special Focus Areas: Gender, Youth, and Indigenous Groups

Sustainable mineral development must go beyond infrastructure and income it must address the structural inequalities that often leave women, youth, indigenous peoples, and minorities marginalized from development benefits. KP-MDMCL recognizes that inclusive development is both a moral obligation and a business advantage as it promotes stable communities, diversified local economies, and stronger partnerships.

a. Gender Inclusion

In many parts of KP, women face cultural, geographic, and economic barriers to participation in the formal economy. To address this, KP-MDMCL shall:

- Prioritize women's participation in CSR consultations and planning sessions
- Allocate dedicated funding for women's livelihood projects (e.g., sewing centres, kitchen gardens, micro-enterprises)
- Ensure that community facilities (e.g., health posts, water tanks, latrines) are gender-sensitive in design and location
- Provide health awareness programs, including reproductive health and maternal care, where, mining affects family life
- Enforce gender non-discrimination clauses in all contracts with service providers and contractors

Each project must report on gender-disaggregated beneficiaries of CSR programs.

b. Youth Empowerment

The majority of the population in KP is under the age of 30. However, rural youth often lack access to marketable skills, information, and startup capital. KP-MDMCL shall:

- Sponsor vocational training for youth in trades aligned with mining and infrastructure (e.g., welding, mechanics, surveying, safety officers, electricians)
- Support youth entrepreneurship through micro-grants, internships, and apprenticeships
- Partner with TVETA institutes, universities, and NGOs to co-fund skills programs
- Prioritize youth employment quotas within KP-MDMCL and contractor hiring practices

c. Indigenous and Minority Groups

In remote mining zones (e.g., Chitral, Kohistan, Kalash valleys), tribal and indigenous communities often have distinct land tenure systems, cultural heritage sites, and spiritual values tied to natural resources. CSR programs must respect and preserve these identities.

KP-MDMCL will:

- Apply the Free, Prior and Informed Consent (FPIC) protocol before initiating any project near indigenous settlements
- Avoid activities that restrict access to traditional lands, forests, or sacred areas
- Support cultural heritage preservation, such as traditional architecture, local festivals, or handicrafts
- Translate all engagement materials into local dialects/languages and involve elders in program design

Each project site must document the presence of vulnerable or indigenous groups and ensure no adverse social impact without mitigation and benefit-sharing.

6.10 Monitoring, Auditing, and Enforcement of CSR Obligations

Ensuring the credibility, consistency, and accountability of CSR requires a robust system of monitoring, performance tracking, and enforcement.

a. Internal Monitoring

KP-MDMCL shall appoint a CSR Monitoring Officer within the Corporate Social and Environmental Unit, who will:

- Collect monthly CSR reports from field teams and contractors
- Conduct regular site visits to verify activities and budget utilization
- Review the CSR Implementation Log, including attendance sheets, receipts, and photographic evidence
- Maintain a CSR Dashboard for Board-level tracking, including geographic coverage, sectoral focus, and gender/youth indicators

b. Third-Party Audits

An independent third-party audit shall be commissioned annually for all large-scale projects. This audit will assess:

- Financial integrity of CSR expenditures
- Quality and sustainability of implemented programs
- Community satisfaction and grievance patterns
- Contractor performance against agreed CSR deliverables
- Recommendations for future planning and risk mitigation

c. Community-Based Monitoring

To ensure bottom-up accountability, KP-MDMCL will support Community Scorecards or Citizen Oversight Committees, who will:

- Rate the quality and usefulness of CSR projects
- Provide real-time feedback and complaints
- Monitor presence and transparency of contractors on-site
- Participate in semi-annual CSR review meetings

The results will be included in the Annual CSR Impact Report submitted to the Board and shared with public stakeholders.

d. Penalties and Enforcement

Failure to meet CSR requirements will result in:

Table 6-1: Violation Levels and Corresponding Disciplinary Actions under CSR Compliance Framework

Level of Violation	Example	Action Taken
Minor	Delayed reporting or minor budget misallocation	Written warning, corrective deadline
Moderate	Poor-quality delivery or non-participation in community meetings	Deduction from monthly invoice (2–5%)
Major	Falsification of records, violation of FPIC, community rejection	Stop-work order, blacklisting, legal action

All contractors must accept this enforcement mechanism via contract clause.

6.11 Alignment with National and International Frameworks

KP-MDMCL CSR policy is informed by and aligned with national regulations, as well as globally recognized sustainability and human rights frameworks, to ensure both legal compliance and international credibility.

a. National Compliance

- **Securities and Exchange Commission of Pakistan (SECP) CSR Guidelines (2013)**:

  KP-MDMCL shall follow SECP's guidance on allocating a minimum CSR budget and public disclosure of CSR initiatives in the company's annual reports[25].

- **Labour Welfare Ordinances and Excise Duties**:

  KP-MDMCL shall ensure that statutory welfare contributions under the Excise Duty on Minerals (Labour Welfare) Act, 1967 are utilized for CSR in collaboration with the Directorate of Labour[26].

- **Pakistan Environmental Protection Act (1997)**:

  All CSR plans linked to EIA mitigation or compensation will be fully integrated into the Environmental Management Plan (EMP) and monitored by the EPA[27].

b. Global Frameworks

Table 6-2: Alignment of CSR Frameworks with International Sustainability & Human Rights Standards

Framework	Relevance
UN Sustainable Development Goals (SDGs)	CSR projects must align with SDG targets such as poverty alleviation (SDG 1), education (SDG 4), clean water (SDG 6), decent work (SDG 8), and reducing inequalities (SDG 10)
IFC Performance Standards[28]	Particularly PS 1 (Assessment and Management of Environmental and Social Risks) and PS 7 (Indigenous Peoples), which are relevant to CSR design, FPIC, and risk mitigation
UN Guiding Principles on Business and Human Rights[29]	Emphasize community rights, grievance mechanisms, and non-discrimination, which must be enforced across all KP-MDMCL operations and partner activities
Global Reporting Initiative (GRI)[30]	KP-MDMCL may choose to report CSR outcomes using GRI standards for transparency and benchmarking

Adopting these frameworks enhances KP-MDMCL reputation among development partners, ESG-focused investors, donors, and civil society.

[25] https://www.secp.gov.pk/document/voluntary-guidelines-for-csr-2013
[26] https://pakistancode.gov.pk/english/UY2FqaJw1-apaUY2Fqa-cJuX-sg-jjjjjjjjjjjj
[27] https://pakistancode.gov.pk/english/UY2FqaJw1-apaUY2Fqa-apqaZQ%3D%3D-sg-jjjjjjjjjjjj
[28] International Finance Corporation (IFC). (2012). *Performance Standards on Environmental and Social Sustainability*, including PS 1 (Environmental and Social Risk Management) and PS 7 (Indigenous Peoples). https://www.ifc.org/wps/wcm/connect/topics_ext_content/ifc_external_corporate_site/sustainability-at-ifc/policies-standards/performance-standards
[29] United Nations. (2011). *Guiding Principles on Business and Human Rights: Implementing the United Nations "Protect, Respect and Remedy" Framework*: https://www.ohchr.org/documents/publications/guidingprinciplesbusinesshr_en.pdf
[30] https://www.globalreporting.org/how-to-use-the-gri-standards/gri-standards-english-language/

7 Community Engagement and Social Safeguards

7.1 KP-MDMCL Community Engagement and Safeguard Guidelines and Code of Practice

The following Community Engagement and Social Safeguard Guidelines and Code of Practice are formally adopted for the Board of Directors of KP-MDMCL and will be enforceable on all staff, contractors, partners, and third parties involved in mineral development under KP-MDMCL mandate.

These guidelines institutionalize a structured, inclusive, and rights-based approach to stakeholder engagement and social risk management. They are aligned with KP-MDMCL CSR principles (Chapter 6), legal obligations under KP and national laws, and global good practices for Free, Prior and Informed Consent (FPIC), human rights due diligence, and inclusive project design.

All projects must adhere to this Code of Practice as a condition of project approval, contractor eligibility, and continued operations.

7.2 Community Engagement Policy

KP-MDMCL Community Engagement Policy is based on the following commitments:

- No project activity shall commence without meaningful, culturally appropriate, and participatory engagement with affected communities.
- All community engagement must be inclusive, with intentional outreach to women, youth, minorities, indigenous groups, and other vulnerable populations.
- Transparency, respect, and accountability shall guide all community-facing activities.
- KP-MDMCL shall maintain ongoing two-way communication and feedback mechanisms for the full life cycle of each project.
- Community engagement performance will be measured and enforced with the same level of rigor as technical, financial, and environmental standards.

Every department, site office, and partner organization must embed community engagement functions into their operations.

7.3 Stakeholder Identification and Mapping

A comprehensive Stakeholder Identification and Mapping exercise must be conducted for every new project and updated annually. The process must:

- Identify all primary, secondary, and indirect stakeholders, including landowners, tenants, labourers, service providers, local businesses, elders, religious leaders, schools, women's groups, and youth networks.
- Analyze stakeholders based on influence, vulnerability, expectations, and level of project impact.
- Apply participatory tools such as social mapping, institutional mapping, seasonal calendars, and power analysis.
- Generate a Stakeholder Engagement Matrix that categorizes groups by engagement strategy (inform, consult, collaborate, empower).

A finalized Stakeholder plan/report must be submitted to KP-MDMCL Social Unit and updated quarterly.

7.4 Information Disclosure and Communication

KP-MDMCL must ensure full disclosure of relevant project information to all affected communities. Disclosure must be:

- In local languages and culturally appropriate formats
- Delivered through accessible channels such as mosque announcements, village notice boards, social media, radio messages, printed flyers, and mobile text alerts
- Scheduled at regular intervals before, during, and after major project milestones

Key information to be disclosed includes:

- Project objectives, timeline, and activities
- Potential social and environmental impacts
- Rights and entitlements of affected communities
- Grievance mechanisms and engagement points of contact

All communication activities must be documented with dates, materials shared, attendance records, and feedback summaries.

7.5 Free, Prior, and Informed Consent (FPIC)

In areas with indigenous peoples, tribal communities, or customary governance structures, KP-MDMCL must follow the FPIC protocol[31] in line with international standards (e.g., IFC Performance Standard 7, UNDRIP):

- Free: Participation is voluntary, with no coercion, intimidation, or incentives
- Prior: Engagement begins well before any project decision or implementation
- Informed: Communities receive full, understandable information in their language
- Consent: Communities have the right to accept, reject, or negotiate terms

FPIC must be documented through signed minutes, photographs, video/audio recordings, and declarations. No activity shall proceed without documented FPIC in high-risk or tribal areas.

7.6 Social Impact Assessment (SIA) and Management

A Social Impact Assessment (SIA) is mandatory for all large-scale or high-risk mining operations. It must be:

- Led by qualified social specialists
- Based on primary data collected through household surveys, FGDs, and participatory tools
- Disaggregated by gender, age, ethnicity, and income group
- Aligned with the EAs and integrated into the project's Environmental and Social Management Plan (ESMP)

[31] Food and Agriculture Organization of the United Nations (FAO). (2016). *Free, Prior and Informed Consent: An Indigenous Peoples' Right and a Good Practice for Local Communities*. https://www.fao.org/documents/card/en/c/8bfc409c-0d0e-4e75-8f9f-3f3b5f7e87d7

The SIA must identify potential impacts on:

- Livelihoods, incomes, and local markets
- Land access, housing, and cultural heritage
- Social cohesion and conflict
- Community health, education, and safety

A Social Management Plan (SMP) must be developed to mitigate risks, enhance benefits, and assign clear responsibilities and budgets.

7.7 Land Acquisition and Involuntary Resettlement

Where land acquisition is unavoidable, KP-MDMCL shall follow the following protocols:

- Prepare a Land Acquisition and Resettlement Plan (LARP) & Resettlement Action Plan (RAP) based on socio-economic census and meaningful consultation
- Comply with Pakistan's Land Acquisition Act 1894, KP Land Rules 2022, and (if applicable) donor standards such as World Bank Environment and Social Standards (ESS) 5 or ADB SPS 2009
- Ensure compensation is not only monetary but includes land-for-land, housing, and access to livelihoods
- Offer relocation assistance, transitional support, and social reintegration programs
- Monitor post-relocation outcomes for at least 24 months

All land acquisition must be preceded by FPIC, especially in tribal, forest, or communal tenure areas.

7.8 Labour and Working Conditions in Communities

KP-MDMCL and its contractors shall ensure that all community members employed in project activities are protected by fair labour practices:

- No employment of children under 18 or any form of forced labour
- Written contracts for all workers, including wage terms and grievance rights
- Equal opportunity hiring regardless of gender, religion, ethnicity, or disability
- Access to personal protective equipment (PPE), sanitation, and safe working environments
- Periodic labour audits and compliance checks on all contractors

Violations shall result in financial penalties and contract enforcement actions.

7.9 Community Health and Safety

Each project must undertake a Community Health and Safety Risk Assessment (CHSRA) to address:

- Increased vehicular traffic and road hazards
- Dust, noise, vibrations, and emissions
- Water contamination and vector-borne disease risks
- Security incidents and risks to women and children

Mitigation measures include:

- Installing speed breakers, signage, and fencing
- Coordinating with local health units to monitor disease outbreaks
- Providing first aid, ambulance support, and referral services during project activity
- Including communities in emergency preparedness plans

7.10 Community Feedback and Participation

KP-MDMCL shall institutionalize participation mechanisms across the project life cycle:

- Village Liaison Committees (VLCs) established with balanced representation (including women and youth)
- Community Development Agreements (CDAs) negotiated with local stakeholders for major investments
- Public Hearings and Social Audits held annually with open attendance
- Scorecard Surveys and Perception Assessments to evaluate service quality and responsiveness

Feedback from these processes must be integrated into project planning, design updates, and CSR programs.

7.11 Monitoring, Reporting, and Enforcement

KP-MDMCL will ensure rigorous performance management of community engagement and social safeguard activities:

- Monthly Compliance Reports by site social officers
- Quarterly Independent Audits for high-risk sites
- Annual E&S Performance Report, publicly disclosed
- Contractor Scorecards linked to social indicators (e.g., local hiring, FPIC, GRM responsiveness)

Failure to meet social safeguard standards will result in:

- Withholding of payments
- Contract suspensions or termination
- Blacklisting from future tenders

All projects must maintain a Social Safeguards Compliance Register, updated monthly and reviewed by the Corporate Social and Environmental Unit.

8 Institutional Arrangements, Staffing, and Capacity Building

8.1 KP-MDMCL Institutional Framework for Environmental and Social (E&S) Sustainability

KP-MDMCL committed to embedding environmental and social sustainability as a core operational pillar not a peripheral function. To realize this vision, the company will establish a comprehensive, well-resourced, and professionally managed institutional framework. This structure will ensure that environmental and social (E&S) responsibilities are fully integrated into the planning, design, execution, and closure of every mineral development project undertaken by the company.

8.2 Core Institutional Principles

KP-MDMCL approach to institutionalizing E&S management is rooted in the following principles:

- **Integration:** E&S risk management will not be isolated to a single department. Instead, it will be cross-cutting affecting how operations are planned, financed, procured, constructed, and closed. E&S functions will be embedded in procurement, project management, finance, engineering, and legal units.
- **Accountability:** All departments, site managers, and contractors will be held accountable for their E&S performance. E&S responsibilities will be incorporated into job descriptions, performance evaluations, and procurement contracts.
- **Resourcing:** Adequate staffing and budget will be allocated to E&S units at both the corporate and project levels. Environmental and social risks require proactive management and cannot be addressed without trained personnel and financial investment.
- **Transparency:** E&S systems will include mechanisms for public disclosure, third-party audits, and performance reporting to ensure trust and regulatory compliance.
- **Continuous Improvement:** Through monitoring, feedback, lessons learned, and adaptive management, KP-MDMCL will strive to continuously improve its institutional E&S performance.

8.3 Organizational Structure and E&S Unit

At the heart of KP-MDMCL E&S institutional setup will be a dedicated Environmental and Social Management Unit (ESMU). This unit will operate under the direct supervision of the Chief Executive Officer (CEO) and provide regular reports to the Board of Directors through its Environment & Social (ES) Committee. To support the early-stage implementation of environmental and social safeguards before the full operationalization of the Environmental and Social Management Unit (ESMU), KP-MDMCL will establish an Interim ES Compliance Committee. This committee will act as a temporary governance mechanism to oversee compliance, provide guidance, and coordinate with external stakeholders.

Figure 8-1: Proposed Organizational Structure for Environment & Social Management in KP-MDMCL

Table 8-1: Proposed composition of the committee

Position	Role in Committee
General Manager	Committee Chairperson
Manager (E&S)	Technical Focal Point for E&S
Manager (Legal & Compliance)	Risk and Regulatory Compliance Lead
Manager (Community Liaison/Social)	Stakeholder Engagement Focal
Representative from Finance/Procurement	Budgeting and Compliance Integration
External Advisor (optional)	Subject Expert in E&

Note: *The committee shall include at least one female member to ensure gender inclusion.*

8.3.1 Terms of Reference (ToRs) – Interim E&S Compliance Committee

- Oversee interim implementation of environmental and social safeguards until ESMU is fully functional
- Review and monitor compliance with national and provincial E&S regulations, policies, and donor standards
- Support coordination with relevant departments (e.g., EPA, Forest, Labour, Local Government)
- Supervise early-stage community engagement activities and grievance redress setup
- Review and recommend site-level E&S protocols, checklists, and procedures
- Identify capacity gaps and recommend training or technical support for staff and contractors
- Submit quarterly compliance updates to the CEO and Board E&S Committee
- Recommend adjustments to E&S systems based on early implementation feedback
- Prepare for transition and eventual integration into the formal ESMU once operational

8.3.2 ESMU at Corporate Level

The corporate ESMU will include a multidisciplinary team of specialists with the following roles:

- **Chief Executive Officer:** This senior leadership role will guide E&S strategy, oversee policy implementation, manage the ESMU, and serve as the primary liaison with regulatory agencies and donor institutions.
- **Environmental Manager:** Responsible for overseeing compliance with environmental regulations, leading the environmental permitting process, and ensuring the execution of EIA, EMP, and monitoring plans.
- **Social Manager:** Oversees the implementation of social policies, including stakeholder engagement, land acquisition & resettlement action plans, gender inclusion strategies, and labour rights monitoring.
- **HSE Manager:** Leads the development and implementation of Health, Safety, and Environmental (HSE) systems across the company's operations.

8.3.3 Project-Level E&S Staffing

Each project site will maintain a dedicated Environmental and Social (E&S) team to oversee compliance with environmental safeguards, health and safety standards, and community engagement. The staffing structure will be based on project size and risk, ensuring coverage of key areas such as environmental monitoring, occupational safety, consultation, and grievance handling. These roles will report directly to the company's Environmental and Social Management Unit (ESMU) to maintain independence and alignment with corporate policies. Staffing must be adequately resourced and flexible enough to scale based on project needs.

8.4 Roles and Responsibilities

To ensure institutional clarity, the following table outlines the key roles and E&S responsibilities across KP-MDMCL:

Table 8-2: Institutional Roles and Responsibilities for Environmental and Social Governance at KP-MDMCL

Entity	Responsibilities
Board E&S Committee	Provide strategic oversight of E&S performance, review policies, approve budgets, and commission third-party audits.
Chief Executive Officer (CEO)	Champion E&S integration, ensure cross-departmental coordination, and enforce compliance across the organization.
Manager, E&S	Lead ESMU, supervise E&S programs and reporting, advise management, and represent KP-MDMCL in regulatory discussions.
Operations and Engineering Teams	Integrate E&S requirements in project planning, design, and execution. Ensure alignment with permits, EMPs, and SMPs.
Procurement Unit	Include E&S clauses in tender documents, evaluate bidder capacity for compliance, and enforce penalties for violations.
Contractors and Consultants	Comply with all KP-MDMCL E&S policies, provide site-level plans, submit monthly reports, and facilitate audits.
Community Liaison Officers	Maintain regular contact with affected stakeholders, support grievance resolution, and track feedback.

8.5 Policies, Standards, and Internal Systems

KP-MDMCL will institutionalize E&S performance through a suite of internally approved policy documents and operational standards. These will include:

- **Environmental Policy and Code of Conduct:** Sets the company's environmental vision, guiding principles, and expectations for staff and contractors.
- **Social Safeguards Policy:** Outlines minimum standards for land acquisition, resettlement, labour rights, indigenous peoples, and gender inclusion.
- **HSE Guidelines and Contractor Compliance Manual:** Defines site safety protocols, emergency response measures, and compliance expectations for third parties.
- **CSR and Community Investment Framework:** Establishes budgeting, design, and implementation procedures for local development initiatives.
- **Grievance Redress Manual:** Provides operational procedures for the registration, escalation, resolution, and documentation of grievances.
- **Project Screening and EIA/IEE SOPs:** Ensure early identification of risks, classification of projects, and standard approaches to environmental review.

Each of these policies will be part of employee onboarding and will be annexed to every project contract. Failure to adhere will trigger internal corrective action or contractual sanctions.

8.6 Contractor Management and Institutional Enforcement

KP-MDMCL will enforce its E&S management guidelines across all tiers of contractors, vendors, and third-party service providers. Contractor management is essential to ensure that E&S risks are controlled throughout the project lifecycle, especially in outsourced operations such as drilling, construction, blasting, waste management, and transport.

Key enforcement mechanisms will include:

- **Mandatory Contractual Clauses:** All contracts will include binding clauses related to HSE compliance, waste handling, community engagement, labour rights, and grievance redress. Breach of any clause will result in contractual penalties, including payment holdbacks and termination.
- **Dedicated E&S Personnel:** Contractors must appoint site-level HSE officers and social liaison personnel. These appointments must be approved by KP-MDMCL ESMU.
- **Compliance Monitoring:** Contractors are required to submit monthly E&S compliance reports, undergo site audits, and allow unannounced inspections by KP-MDMCL or third-party monitors.
- **Penalty and Blacklisting System:** A documented system will be maintained to record violations, issue warning letters, and apply penalties. Repeat violators will be blacklisted from future tenders.

8.7 Capacity Building and Technical Training

E&S performance cannot be sustained without continuous skill development and institutional learning. KP-MDMCL will implement a multi-level capacity building strategy that targets corporate staff, field personnel, contractors, and community partners.

Capacity building mechanisms will include:

- **Annual Training Plan:** Each year, the ESMU will prepare a training calendar covering core topics such as ESMP, GRM, HSE, environmental monitoring, stakeholder engagement, gender-sensitive programming, biodiversity protection, climate risk screening, and emergency response.
- **Induction Programs:** All new hires and contractors will undergo mandatory induction training on KP-MDMCL environmental and social policies, Code of Conduct, SOPs, and reporting procedures.
- **Refresher Courses:** Ongoing learning opportunities will be provided through quarterly workshops, safety drills, scenario-based exercises, and e-learning modules.
- **Third-Party Training Providers:** KP-MDMCL will partner with universities, NGOs, and certified firms to deliver specialized training on ISO standards (ISO 14001, 45001), IFC Performance Standards, GRI reporting, and mine site rehabilitation.
- **Certification and Recognition:** Staff and contractors completing key modules will receive certificates. Outstanding E&S performers will be recognized in annual awards.

8.8 Budgeting and Resource Allocation

Environmental and social functions must be adequately resourced. KP-MDMCL will ensure that:

- Each project allocates a minimum of 5% of total operating expenditure to E&S planning, implementation, monitoring, and stakeholder engagement.
- Corporate ESMU has an annual budget line for staff salaries, training, monitoring equipment, third-party audits, grievance redress, and community programs.
- Emergency reserves are maintained for urgent HSE issues such as chemical spills, community unrest, or landslides.

E&S budget utilization will be reviewed quarterly by the E&S Committee and adjusted based on audit findings and risk analysis.

8.9 Monitoring, Learning, and Institutional Evolution

KP-MDMCL will establish a performance-based monitoring framework to ensure that institutional goals translate into field-level impact. The system will include:

- **Key Performance Indicators (KPIs):** Defined for each role and department (e.g., % of projects with EA approval, GRM resolution time, community training coverage).
- **Monthly Dashboards:** Prepared by the Monitoring and Reporting Officer and circulated to all project leads.
- **Internal Reviews:** Biannual self-assessments by ESMU to evaluate strengths, weaknesses, and corrective measures.
- **Third-Party Audits:** Annual reviews by external evaluators if needed, to assess compliance, stakeholder satisfaction, and areas for improvement.
- **Knowledge Management:** Lessons learned from audits, evaluations, and complaints will be documented in an internal knowledge platform to inform future policy updates.

8.10 Alignment with National and International Best Practices

KP-MDMCL institutional framework will adhere to the highest standards by aligning with:

- **National Laws and Policies:** Including the KP Environmental Protection Act 2014, Mine Safety Act 2019, Labour Welfare Ordinance, and KP Mineral Sector Governance Act.
- **Donor and Development Partner Frameworks:** Including World Bank's Environmental and Social Framework (ESF), ADB Safeguard Policy Statement (SPS), and UNDP's Human Rights Due Diligence Standards.
- **Industry Best Practices:** Such as the International Council on Mining and Metals (ICMM) Principles, Equator Principles[32], and ISO Standards (14001 for Environment, 45001 for Occupational Health and Safety).

This alignment will ensure KP-MDMCL meets not only domestic regulatory requirements but also expectations of international investors, donors, and watchdogs[33].

[32] The Equator Principles (EPs) are a risk management framework adopted by financial institutions to assess and manage environmental and social risks in projects, particularly those related to project finance, project-related corporate loans, and bridge loans. They aim to ensure that these projects are developed in a socially and environmentally responsible manner. The EPs are based on the International Finance Corporation's (IFC) Performance Standards

[33] Monitor, Investigate & Report the activity to ensure accountability and transparency.

9 Environmental and Social Monitoring, Reporting, & Compliance Systems

9.1 Introduction

Environmental and Social (E&S) monitoring, reporting, and compliance form the backbone of KP-MDMCL commitment to responsible mineral development. These systems ensure that the policies, Environmental and Social Management Plans (ESMPs), and safeguard measures are effectively implemented, tracked, and refined based on real-time field conditions and stakeholder feedback. A robust monitoring framework not only assures legal compliance but also reinforces accountability, transparency, and continuous improvement across all levels of the company's operations.

KP-MDMCL monitoring system is designed to proactively identify risks, enforce compliance, and ensure that E&S performance standards are met or exceeded. This chapter outlines a structured and enforceable institutional approach that integrates internal processes, contractor accountability, independent audits, community verification, and digital systems into a cohesive E&S monitoring architecture.

9.2 Institutional Objectives of the Monitoring and Compliance Framework

KP-MDMCL Environmental and Social Monitoring and Compliance Framework aims to:

- Institutionalize a consistent, multi-tiered monitoring process throughout the project lifecycle.
- Provide timely identification of environmental and social risks to ensure rapid mitigation.
- Verify compliance with the KP Environmental Protection Act 2014, NEQS, Mine Safety Act, relevant international guidelines, and internal policies.
- Enable real-time, evidence-based decision-making at both the project and corporate levels.
- Document performance against E&S Key Performance Indicators (KPIs) and align with sustainability targets.
- Foster transparency through regular public disclosure of verified data and audit results.

All project staff, contractors, and third-party service providers are bound by this framework under KP-MDMCL operational guidelines and contractual terms.

9.3 Structural Design of the Monitoring System

KP-MDMCL will operationalize a three-tiered E&S monitoring structure, ensuring integration across all stakeholders:

9.3.1 Tier I – Internal Monitoring:

Performed by KP-MDMCL Environmental and Social Management Unit (ESMU) and project-level E&S teams. Activities include routine site inspections, use of standardized digital checklists, and submission of weekly and monthly compliance reports. Field staff are responsible for initial detection, logging, and preliminary response to non-conformances.

9.3.2 Tier II – Independent Third-Party Audits:

External experts shall be engaged annually (or bi-annually for high-risk projects), when needed to conduct environmental audits, social assessments, and performance verification. These audits offer an impartial perspective on the efficacy of internal systems and contractor compliance.

9.3.3 Tier III – Community-Based Feedback Mechanisms:

Recognizing the inherent difficulties in technical monitoring by communities, KP-MDMCL will adopt simplified participatory tools such as community scorecards, focus group feedback, and grievance redress reviews. These will be designed to ensure that local concerns are acknowledged and integrated, without placing unrealistic expectations on community members for technical compliance monitoring.

This multi-tier approach ensures objectivity, accountability, and responsiveness to ground realities.

9.4 Monitoring Themes and Indicator Categories

KP-MDMCL monitoring indicators will be organized across five priority domains:

a. **Environmental Compliance:** Dust levels, wastewater discharge, noise emissions, waste disposal practices, air quality, biodiversity impacts, and compliance with environmental permits.
b. **Social Performance:** Local hiring and labour inclusion rates, gender-disaggregated participation, grievance resolution metrics, quality of stakeholder engagement, and fulfillment of community investment targets.
c. **Occupational Health and Safety (OHS):** Injury and accident rates, use of personal protective equipment (PPE), emergency preparedness, fire safety compliance, and safety drills.
d. **Community Health and Safety:** Road traffic safety, sanitation conditions at labour camps, disease risk management (e.g., vector-borne illnesses), and access to health services.
e. **Grievance Redress Monitoring:** Timeliness of complaint resolution, user satisfaction with redress outcomes, number of unresolved grievances, and grievance trends by issue type.

Indicators will be defined during project planning, embedded in EIA/SIA documents, and reviewed quarterly. Data will be disaggregated by gender, age, ethnicity, and vulnerability status.

9.5 Documentation, Reporting Protocols, and Templates

To streamline reporting, KP-MDMCL will establish standardized templates and digital workflows across all tiers:

- **Daily Field Checklists** will be completed by site inspectors using mobile applications/checklist, including environmental, HSE, and social safeguard fields.
- **Weekly Site Reports** will be compiled by the site E&S coordinator and verified by the relevant department head.
- **Monthly Compliance Reports** will be submitted by contractors, detailing performance metrics, issues faced, and incident logs.
- **Quarterly Corporate E&S Performance Reports** will be produced by ESMU and submitted to the Board/Committee.
- **Annual Sustainability Reports** will be disclosed validated KPIs, audit findings, and case studies for external stakeholders.

All templates will be digitized through KP-MDMCL Environmental and Social Monitoring Information System (ES-MIS). Training sessions will be provided regularly to ensure consistency and accuracy in reporting.

9.6 Data Validation and Quality Assurance

To maintain credibility and reliability, a formal Data Quality Assurance Protocol (DQAP)[34] based on ISO principles will be implemented. Key elements include:

- Mandatory geo-tagged photographs and timestamps for every field report submission.
- Spot-check verification of 10% of reports by supervisors or ESMU quality control staff.
- Cross-checking of contractor reports against internal monitoring records and third-party data.
- Digital audit trails within ES-MIS to track report origin, revision history, and approval signatures.

Discrepancies or manipulated data shall be flagged, investigated, and escalated to the GM E&S. Proven data falsification by contractors will result in financial penalties and/or contract termination.

[34] International Organization for Standardization. (2005). *ISO 9001:2005 – Quality Management Systems – Requirements*: ISO Catalogue.

9.7 Corrective and Preventive Action (CAPA) Framework

Upon detection of non-compliance, an immediate Corrective and Preventive Action (CAPA) protocol will be activated.

Step 1 – Root Cause Analysis: Within 5 working days, the Site E&S Coordinator must identify the underlying cause of the issue using root cause tools.
Step 2 – Action Planning: A Corrective Action Plan (CAP) must be developed, detailing actions to resolve and prevent recurrence, assigned responsibilities, estimated costs, and implementation deadlines.
Step 3 – Review and Approval: The CAP must be reviewed and approved by the corporate ESMU, and logged in the project's Compliance Register.
Step 4 – Monitoring and Closure: CAP implementation will be tracked weekly. Closure will only occur after independent verification that the original risk has been mitigated.
Repeated or critical violations may trigger suspension of works, stop-work orders, or blacklisting of the contractor.

9.8 Public Disclosure and Stakeholder Transparency

KP-MDMCL will commit to disclosing E&S performance to affected communities, government bodies, and the general public. At a minimum, the following will be disclosed:

- Project-specific EIA and SIA summaries
- Annual Sustainability Reports (English, Urdu, and local languages)
- Summary tables of grievance cases and resolutions
- Major incidents and CAPA progress reports

Disclosure will be conducted via the company website, local noticeboards, printed handouts, community FM broadcasts, and public meetings. Feedback from stakeholders will be collected and used to refine monitoring strategies.

9.9 Legal Compliance and Institutional Enforcement

KP-MDMCL monitoring systems are designed to ensure adherence to all applicable regulations, including:

- KP Environmental Protection Act 2014 and NEQS
- Mine Safety Act 2019 and KP Labour Welfare Ordinances
- The Khyber Pakhtunkhwa Environmental Assessment Rules, 2021
- Hazardous Waste Rules, and Occupational Health Standards

Violations of statutory obligations will be reported to provincial and national regulators. Internally, breaches will be documented in the Legal Compliance Register, and contractors may face:

- Written warnings and CAPA obligations
- Penalties up to 10% of monthly invoice
- Suspension or termination of contract for repeated offenses

9.10 Institutional Learning and Continuous Improvement

KP-MDMCL recognizes that monitoring is not just a compliance tool, but a foundation for learning and innovation. Each year, the ESMU will organize an E&S Performance Review Workshop involving project teams, contractors, community representatives, and external experts.

Outcomes of this workshop will include:

- Updates to monitoring tools and indicator definitions
- Lessons learned briefs shared internally and externally
- Recommendations for system upgrades and resource allocation
- Identification of training needs and technical support priorities

10 Emergency Preparedness, Risk Reduction, and Crisis Response Systems

10.1 Introduction

In the mineral sector, emergencies such as landslides, explosions, chemical spills, seismic events, and community unrest can cause serious threats to human life, environmental integrity, and corporate reputation. Therefore, KP-MDMCL consider Emergency Preparedness and Response (EPR) not only a compliance requirement but a core operational priority.

10.2 Objectives of Emergency Preparedness and Response

KP-MDMCL Emergency Preparedness and Response Framework aims to:

- Anticipate and reduce the likelihood of foreseeable emergencies through early risk identification and mitigation
- Build response capacities at both site and institutional levels to manage emergencies effectively
- Protect the lives of workers, communities, and on-site personnel through rapid and coordinated actions
- Minimize operational downtime and business disruption
- Comply with national regulations and international safety standards

EPR protocols will be embedded into the design, construction, operational, and closure phases of all mining projects.

10.3 Institutional Responsibilities and Coordination

KP-MDMCL will be designate clear lines of authority and cross-departmental coordination for emergency planning and response:

- **Board E&S Committee:** Oversees strategic emergency preparedness planning and reviews major incident reports.
- **CEO and Executive Management:** Approve emergency resource allocations and lead crisis communication with authorities and the public.
- **Manager HSE:** Serves as Chief Emergency Coordinator for all KP-MDMCL operations.
- **Site HSE Officer:** Leads on-site implementation of drills, alerts, evacuations, and emergency equipment checks.
- **Contractor Safety Teams:** Maintain dedicated safety personnel and emergency supplies per contract.
- **Local Authorities and Rescue Services:** Coordinate joint response protocols through signed MoUs with police, rescue 1122, and health departments.

Emergency Response Teams (ERTs) must be formed at all sites and trained in standard operating procedures (SOPs).

10.4 Emergency Risk Assessment and Scenario Planning

Each project must conduct a comprehensive Emergency Risk Assessment (ERA) during the planning phase, covering:

- Geohazards (e.g., landslides, flooding, earthquakes)
- Chemical and fire hazards (e.g., explosives, fuel storage, waste chemicals)
- Occupational incidents (e.g., fall from height, confined space accidents)
- Social and security risks (e.g., protests, sabotage, theft, tribal conflict)

All identified risks will be mapped using GIS, scored by probability and severity, and addressed through engineering, administrative, and procedural controls. A Site-Specific Emergency Preparedness Plan (SSEPP) must be developed for each risk cluster.

10.5 Emergency Response Plan (ERP) Components

Each project site must maintain a documented and approved Emergency Response Plan (ERP) containing the following:

- **Emergency Contact Directory:** Internal teams, hospitals, fire services, local government, EPA, and Mines Department
- **Emergency Resource Inventory:** Fire extinguishers, PPE stockpiles, spill kits, evacuation maps, sirens, medical kits
- **Evacuation Protocols:** Step-by-step guides for mass evacuation, designated assembly points, and transport coordination
- **Medical Response and Triage:** First aid stations, trained responders, and linkage with ambulances and referral hospitals
- **Emergency Roles and Responsibilities:** Clear duties for all site personnel and contractors during crisis events
- **Communication and Media Protocol:** Internal briefings, press statements, and community information channels

All ERPs must be reviewed every six months and updated based on incident reports and simulation outcomes.

10.6 Capacity Building and Drills

To operationalize preparedness, KP-MDMCL will implement:

- **Induction Trainings:** Mandatory orientation on ERP protocols for all new staff and contractors
- **Simulation Drills:** Site-wide mock drills conducted quarterly, including fire evacuation, spill response, and rescue operations
- **Specialized Training:** High-risk personnel will be trained in confined space entry, first aid, hazardous material handling, and firefighting
- **Joint Exercises:** Periodic coordination drills with local rescue services and police

Training records and drill performance will be audited by KP-MDMCL HSE Systems Manager.

10.7 Incident Reporting and Root Cause Analysis

Every emergency incident, near miss, or hazard observation must be reported within 24 hours using a standardized Incident Report Form. This will include:

- Nature and time of incident
- Persons and equipment affected
- Initial response taken
- Environmental or social consequences
- Witness statements and photographic evidence

The SERO will lead a Root Cause Analysis within 7 days of a reportable incident. Findings will inform corrective actions, ERP updates, and lessons learned communication.

10.8 Emergency Communication and Community Alert Systems

Each project must maintain accessible and functional communication systems during emergencies:

- On-site sirens, flashing alarms, and mobile alert systems
- Community alert networks using mosque announcements, local FM radio, and SMS
- Dedicated 24/7 emergency hotline for internal and public use

Emergency signage in local languages must be posted throughout the project footprint, including assembly points, medical aid stations, and chemical storage areas.

10.9 Regulatory Compliance and Standards Alignment

KP-MDMCL EPR protocols will comply with:

- KP Mines Safety Act and Rules
- KP Environmental Protection Act 2014
- Pakistan Fire Safety Codes
- IFC Performance Standard 4 (Community Health, Safety, and Security)
- ISO 45001 Occupational Health and Safety Management System
- UNDRR guidelines[35] on disaster risk reduction in extractives

Contractors and joint venture partners must demonstrate alignment with these standards during bid evaluation and performance monitoring.

[35] United Nations Office for Disaster Risk Reduction (UNDRR). (2019). *Words into Action: Local Disaster Risk Reduction and Resilience Strategies*. https://www.undrr.org/annual-report/2024

Institutional Learning and Emergency System Review

KP-MDMCL will conduct an annual Emergency Preparedness Review (EPR) across all sites to assess:

- Incident trends and root causes
- Drill effectiveness and staff knowledge
- Inventory of response equipment
- Community awareness and satisfaction

A consolidated “Emergency Readiness Status Report” will be submitted to the E&S Board Committee and shared with provincial emergency agencies.

This process will ensure KP-MDMCL evolves from reactive to anticipatory crisis management.

11 Gender Equality, Diversity & Social Inclusion in Mineral Development

11.1 Introduction

Gender equality, social inclusion, and respect for cultural diversity are not only human rights principles they are also strategic enablers of sustainable and equitable mineral development. KP-MDMCL is committed to ensuring that women, persons with disabilities, ethnic minorities, indigenous communities, and marginalized groups are actively included in all aspects of its operations.

KP-MDMCL also affirms its commitment to gender parity in line with the "Path to Gender Parity 2025" strategy released by the Chief Minister's Secretariat. This section outlines actionable steps and institutional mechanisms to embed gender equality across all stages of mineral development, from policy to project delivery.

11.2 Policy Commitments and Guiding Principles

KP-MDMCL will uphold the following principles across its programs and partnerships:

- **Non-discrimination:** No person shall be denied access to employment, participation, or benefits on the basis of gender, caste, religion, disability, ethnicity, or socioeconomic status.
- **Equal Opportunity:** Recruitment, training, and promotion practices shall prioritize merit, inclusive outreach, and diversity targets.
- **Empowerment of Women and Vulnerable Groups:** Deliberate efforts shall be made to enhance the voice, agency, and livelihood opportunities of underrepresented groups.
- **Do No Harm:** All projects must proactively avoid exacerbating gender-based violence (GBV), discrimination, or cultural marginalization.

These principles shall be formalized in KP-MDMCL corporate Gender and Inclusion Policy.

11.3 Key Principles and Alignment

KP-MDMCL will adhere to the following principles guided by the provincial mandate:

- **Mandatory Gender Mainstreaming**: All policies, plans, and projects must integrate gender analysis, in accordance with Section 3 of the Gender Parity Framework.
- **Zero Discrimination Policy**: Institutional mechanisms will ensure equitable access to opportunities for men and women, with a strong focus on inclusion in leadership and technical roles.
- **Representation Quotas**: At least 20% women representation is mandated in all recruitment and committee formations, including those related to community consultation, grievance redress, and CSR planning.
- **Gender Responsive Budgeting**: Every project budget will allocate specific funds for women's development, participation, and protection measures as per Section 5.2 of the provincial strategy.
- **Workplace Safety and Dignity**: KP-MDMCL will enforce safe and respectful work environments, with anti-harassment policies and grievance channels aligned with the KP Harassment Act and Gender Parity Action Plan.

11.4 Institutional Arrangements for Gender and Inclusion

A Gender Specialist will be appointed within the ESMU to:

- Lead the development of gender action plans and inclusion strategies
- Review EA/SIA reports for gender and vulnerability assessments
- Support project teams in meeting inclusion-related KPIs
- Liaise with local NGOs, women's organizations, and minority councils

At the project level, contractors will be required to nominate Inclusion Officers responsible for implementing site-specific measures, such as inclusive hiring, safe workplaces, and separate sanitation facilities.

11.5 Gender-Inclusive Employment and Safe Workplaces

KP-MDMCL will enforce a Gender-Inclusive Employment Protocol to:

- Set gender targets in project hiring, especially in community liaison, data collection, logistics, and CSR roles
- Ensure equal pay for equal work across all positions
- Establish gender-sensitive grievance channels for workplace harassment and discrimination
- Provide separate and secure facilities for women (toilets, changing areas, rest zones)
- Offer transportation support for women workers where feasible

All contractors will be audited for compliance with these standards and penalized for violations.

11.6 Gender and Social Inclusion in Community Engagement

KP-MDMCL will ensure inclusive participation in consultations, grievance redress, and community decision-making:

- **Separate Consultations:** Women, minorities, and marginalized groups shall be engaged through targeted sessions, led by trained female facilitators where appropriate.
- **Disaggregated Stakeholder Mapping:** Community engagement plans must identify female-headed households, religious minorities, persons with disabilities, and indigenous populations.
- **Gender-Responsive Communication:** Information must be provided in local languages and formats accessible to low-literacy participants (e.g., oral, pictorial, audio).
- **Inclusive Grievance Mechanisms:** Alternative entry points (e.g., women's centers, village elders, health staff) shall be recognized for registering sensitive complaints.

All community scorecards and perception surveys shall be disaggregated by gender and minority status.

11.7 Gender-Based Violence (GBV) and Harassment Prevention

All project activities will include measures to prevent and respond to GBV, harassment, and exploitation:

- **Code of Conduct:** All employees and contractors must sign and adhere to a zero-tolerance Code of Conduct on GBV and harassment.
- **Training and Awareness:** Periodic workshops on respectful conduct, consent, and cultural sensitivity shall be held for all site staff.
- **Confidential Reporting Channels:** Safe and confidential systems will be established to report abuse, linked to trained Gender Focal Persons and local service providers.
- **Support Services:** Survivors will be referred to health, psychosocial, and legal support services in collaboration with NGOs and health departments.

Any proven GBV incident will trigger disciplinary measures, including termination of employment and legal action.

11.8 Inclusive Benefits and CSR Programming

KP-MDMCL will mainstream gender and inclusion into its Corporate Social Responsibility (CSR) Framework by:

- Designing community programs that specifically target women and vulnerable groups (e.g., maternal health, women-led enterprises, disability access)
- Allocating minimum percentages of CSR budgets to inclusive initiatives
- Monitoring participation of underrepresented groups in vocational training, livelihood restoration, and education support
- Ensuring inclusive access to CSR infrastructure (e.g., ramps, lighting, female sanitation blocks)

All CSR proposals must include a gender and inclusion checklist approved by the ESMU.

11.9 Monitoring, Evaluation, and Reporting

KP-MDMCL will track and report gender and inclusion performance through:

- Inclusion of sex-disaggregated data in all E&S monitoring tools
- Quarterly gender and inclusion compliance reports from contractors
- Annual gender audits and community feedback surveys
- Independent evaluations of gender equity and social inclusion outcomes

Findings will inform policy updates, resource allocations, and corrective action plans.

11.10 Alignment with National and International Frameworks

KP-MDMCL approach is aligned with:

- Pakistan's National Gender Policy Framework[36]
- Protection Against Harassment of Women at the Workplace Act[37]
- UN Women's Principles for Gender-Responsive Mining[38]
- IFC Performance Standards 1, 4, and 7[39]
- World Bank Gender Strategy and ESS 1, 4, 5, and 7[40]
- UN Declaration on the Rights of Indigenous Peoples (UNDRIP)[41]

KP-MDMCL will continue to collaborate with gender experts, advocacy groups, and government agencies to build a culture of equity and empowerment.

[36] https://pc.gov.pk/uploads/report/NGPF.pdf
[37] https://qau.edu.pk/pdfs/ha.pdf
[38] https://unmas.org/sites/default/files/documents/mine_action_gender_guidelines_web.pdf
[39] https://www.ifc.org/content/dam/ifc/doc/mgrt/ifc-performance-standards.pdf
[40] https://projects.worldbank.org/en/projects-operations/environmental-and-social-framework/brief/environmental-and-social-standards
[41] https://www.un.org/development/desa/indigenouspeoples/wp-content/uploads/sites/19/2018/11/UNDRIP_E_web.pdf

12 Climate Change Mitigation, Adaptation & Resilience in the Mining Sector

12.1 Introduction

Climate change has emerged as a critical environmental and operational risk to the mining sector in Khyber Pakhtunkhwa. The province is particularly vulnerable to climate-induced hazards such as glacial lake outburst floods (GLOFs), erratic rainfall, landslides, rising temperatures, and prolonged droughts. These threats pose significant risks to the continuity, safety, and environmental integrity of mineral operations managed by KP-MDMCL.

At the same time, mining operations can contribute to global warming through energy-intensive processes, deforestation, and GHG emissions. In response, KP-MDMCL will be implement a mandatory, company-wide Climate Change Mitigation, Adaptation, and Resilience Framework. The framework applies not only to KP-MDMCL but also to all contractors, vendors, and project partners. Compliance will be contractually enforced.

12.2 Institutional Climate Commitments

KP-MDMCL shall ensure that all departments, subsidiaries, and third-party contractors operate under the following institutional climate principles:

- **Mitigation:** Reduce the carbon footprint of mining through operational efficiency, clean energy, and controlled land use.
- **Adaptation:** Engineer resilience into mining infrastructure, emergency systems, and workforce safety.
- **Nature-Based Solutions:** Restore forests, protect watersheds, and rehabilitate land to enhance ecosystem resilience.
- **Compliance and Enforcement:** All climate obligations shall be embedded in contract clauses, KPIs, and audit systems.

12.3 Mandatory Climate Risk Screening and EAs

KP-MDMCL requires Climate Risk Screening (CRS) as a prerequisite for project approval. Contractors and consultants must submit a CRS report as part of the EAs package.

Key screening requirements:

- Use of downscaled IPCC models[42] to assess temperature and precipitation changes under RCP 4.5 and 8.5
- GIS-based overlay of GLOF zones, flood plains, landslide-prone slopes, and seismic corridors
- Site-specific water stress index to evaluate intersectoral competition
- Infrastructure fragility scoring using hazard-exposure matrices

Failure to conduct or incorporate climate screening into project design will result in permit suspension or project rejection.

[42] Haylock, M. R., et al. (2020). *Downscaled climate projections for regional vulnerability assessments: RCP 4.5 and RCP 8.5 scenarios*. In *Intergovernmental Panel on Climate Change (IPCC) Sixth Assessment Report, Working Group II*.

12.4 Climate Change Mitigation Requirements

KP-MDMCL mandates the following mitigation actions:

12.4.1 Energy Transition and Efficiency (Contractor-Bound):

- All processing facilities must achieve at least 15% improvement in energy efficiency over baseline designs
- Contractors must install VFDs and ISO 50001[43] certified energy management systems

12.4.2 Renewable Energy Use (Mandatory):

- Minimum 30% of operational energy (non-process) must be sourced from solar, micro-hydro, or hybrid systems
- Diesel generators may only be used as backup, not primary sources

12.4.3 Emissions Monitoring:

- Contractors must report Scope 1 and 2 emissions[44] quarterly using ISO 14064[45] or IPCC Tier 2[46] methodology
- Emission intensity thresholds (e.g., kg CO_2-eq per ton of ore) will be contractually enforced

12.4.4 Green Transport Obligations:

- Haulage contractors must shift 50% of material by shared or fuel-efficient vehicles
- Vehicle emissions must comply with NEQS/WHO or equivalent standards

12.4.5 Waste and Land Use Controls:

- Tailings management must include methane recovery options
- Tree-felling must be minimized; a 1:10 tree replanting ratio is mandatory

[43] ISO 50001 is an internationally recognized standard that provides a framework for organizations to establish, implement, maintain, and improve their energy management systems (EnMS).
[44] https://www.cic.com.vn/scope-12-and-3-greenhouse-gas-emissions-according-to-ghg-protocol-and-iso-14064-ne253.html
[45] ISO 14064 is an internationally recognized standard for quantifying, monitoring, reporting, and verifying greenhouse gas (GHG) emissions.
[46] IPCC. (2006). *2006 IPCC Guidelines for National Greenhouse Gas Inventories, Volume 1: General Guidance and Reporting*. Intergovernmental Panel on Climate Change. https://www.ipcc-nggip.iges.or.jp/public/2006gl

12.5 Adaptation Engineering and Resilience Standards

All project designs must incorporate climate-resilient features, including:

12.5.1 Infrastructure Standards:

- Roads and bridges must be designed to withstand 1-in-100-year flood events
- Slope stabilization using soil nailing, retaining walls, and geogrid systems in landslide-prone zones
- Elevated storage platforms for fuels and chemicals in floodplains

12.5.2 Water Security Planning:

- Rainwater harvesting must supply at least 20% of non-potable water use
- Greywater recycling is mandatory for dust control and vehicle washing

12.5.3 Early Warning Systems:

- Weather stations, flood sensors, and satellite-linked alert systems must be installed and tested
- Alerts must be linked to emergency sirens, SMS, and community radio

12.5.4 Labour Protection Measures:

- All sites must follow WB/IFC heat stress protocols, including shaded rest shelters, hydration stations, and work hour adjustments

12.6 Ecosystem-Based Adaptation (Nature-Based Solutions)

KP-MDMCL shall require:

- Restoration of at least 80% of vegetation cover in disturbed areas using native drought-tolerant species
- Buffer zones of 50 meters around rivers and wetlands
- Use of vegetative swales and biofilters to treat stormwater runoff
- Wildlife corridors in high-biodiversity areas based on ecological connectivity assessments

All NbS plans must include a monitoring and survival rate verification system approved by the Environmental Field Officer.

12.7 Climate Action Monitoring, Verification, and Enforcement

KP-MDMCL will use its Climate Action Monitoring System to track:

- Contractor compliance with GHG targets
- Timely implementation of adaptation infrastructure
- Renewable energy installation and performance
- Resilience KPIs (e.g., downtime avoided during extreme weather)

Non-compliance will lead to:

- Withholding of monthly payments
- Issuance of non-compliance notices
- Final disqualification from future projects

All data must be geo-tagged and verified by the Monitoring and Reporting Officer within ESMU.

12.8 Capacity Building and Strategic Partnerships

- All contractors must nominate a Climate Focal Person trained by KP-MDMCL
- Annual climate competency audits will be conducted
- KP-MDMCL will partner with the KP-EPA, universities, and climate finance providers to co-develop training and pilot initiatives

12.9 Legal Alignment and Policy Enforcement

This framework aligns with:

- Pakistan Climate Change Act 2017
- KP Climate Change Policy and Action Plan 2022
- IFC Performance Standards
- ISO 14064, 50001
- ICMM Climate and Energy Position Statement

KP-MDMCL will integrate these requirements into all tender documents, contracts, and legal agreements. All contractors, vendors, and JV partners are bound by law and policy to comply.

13 Closure Planning, Site Rehabilitation, and Post-Mining Transition

13.1 Introduction

Closure planning and post-mining rehabilitation are critical stages of the mineral development lifecycle. These processes not only determine the long-term environmental legacy of mining activities but also influence community well-being, land reusability, and regulatory compliance.

For KP-MDMCL, closure is not viewed as the end of operations but as the transition into a new phase of land and community stewardship. Effective closure planning requires early integration into project design, sufficient financial provisioning, transparent community engagement, and enforcement of ecological and safety obligations.

13.2 Closure Planning Objectives

The key objectives of KP-MDMCL closure planning framework are:

- To prevent long-term environmental degradation after mining operations cease
- To restore disturbed ecosystems to a safe, stable, and productive condition
- To ensure socioeconomic stability for workers and local communities
- To transfer land to post-mining use that aligns with local development goals
- To fulfill regulatory, financial, and social obligations under national laws and company commitments

Closure planning is a legal, technical, and ethical obligation and will be enforced across all KP-MDMCL-owned and managed mineral sites.

13.3 Institutional Roles and Responsibilities

Closure planning and rehabilitation will be governed through a defined institutional structure, ensuring transparency and enforceability.

- **Board E&S Committee:** Approves closure strategies, oversees budget allocation, and ensures closure aligns with long-term ES targets.
- **CEO and Executive Management:** Endorse closure plans, authorize funds, and coordinate with government agencies.
- **Manager E&S:** Leads the Closure Task Force, ensures policy alignment, and coordinates with environmental and social teams.
- **Field Officers (E&S):** Responsible for preparation, execution, and monitoring of closure activities at the site level.
- **Project Teams and Contractors:** Implement closure works as per approved plans; ensure removal of infrastructure, recontouring, revegetation, and handover documentation.
- **Community Liaison Officers:** Facilitate engagement with local communities on closure impacts, land use preferences, and livelihood transitions.

Contractual obligations for closure will be embedded in all mining agreements.

13.4 Stages of Closure Planning

Closure planning will be conducted in a phased and iterative manner, integrated with all project phases:

a. **Conceptual Closure Plan:** Prepared during the feasibility stage and submitted with the EIA. It defines the closure vision, landform design principles, and preliminary cost estimates.

b. **Detailed Closure Plan:** Developed during operations (before 50% project completion). It includes detailed maps, schedules, revegetation strategies, stakeholder agreements, and financial provisioning mechanisms.

c. **Final Closure Plan:** Prepared one year before planned cessation. This is the legally binding document for executing closure works, securing No Objection Certificates (NOCs), and handing over assets.

Each plan must be approved by the EPA, Mines Department, and KP-MDMCL Board.

13.5 Environmental Rehabilitation Requirements

The following actions must be undertaken to ensure environmental integrity post-closure:

- **Landform Reshaping and Contouring:** Stabilize disturbed areas, fill voids, and reshape slopes to natural contours.
- **Soil Replacement and Stabilization:** Replace topsoil, apply erosion control techniques, and prevent runoff.
- **Revegetation and Biodiversity Recovery:** Use native plant species, replicate pre-mining vegetation types, and promote natural regeneration.
- **Water Quality Protection:** Seal boreholes, decontaminate water storage, and monitor surface/groundwater against NEQS.
- **Hazardous Waste Removal:** Clear tailings, spills, fuel residues, and explosives in compliance with Hazardous Waste Rules.
- **Mine Openings and Infrastructure:** Secure shafts and adits, remove machinery, demolish structures, and restore roads.

All rehabilitation must be completed within 6–12 months of closure, subject to third-party verification.

13.6 Social Transition and Community Exit Strategy

Closure impacts on workers, service providers, and host communities must be managed sensitively and inclusively. KP-MDMCL will implement a Social Transition Framework that includes:

- **Livelihood Restoration Programs:** Offer skill retraining, micro-financing, and enterprise support for displaced workers and vendors.
- **Community Infrastructure Handover:** Ensure continuity of clinics, schools, water systems built during operations.
- **Stakeholder Consultation:** Conduct dialogue on post-mining land use (e.g., agriculture, tourism, grazing) with local governments and landowners.
- **Closure Disclosure Events:** Publicly announce the closure plan, timelines, and support services available to communities.
- **Cultural Heritage Safeguards:** Protect archaeological and spiritual sites, if any, before demobilization.

All social interventions must be monitored for two years post-closure.

13.7 Monitoring, Evaluation, and Post-Closure Audits

Closure effectiveness will be verified through:

- **Post-Closure Environmental Monitoring:** Conducted quarterly for at least two years to assess erosion, vegetation cover, and water quality.
- **Third-Party Closure Audits:** Conducted within six months of site demobilization to certify compliance.
- **Community Feedback Surveys:** Conducted to evaluate satisfaction with social support and land reuse outcomes.
- **Monitoring Database:** All closure indicators will be stored in the ES-MIS and submitted to regulators.

Final site handover will not be accepted unless all closure criteria are met and verified.

13.8 Legal and Policy Alignment

This closure framework is aligned with:

- KP Environmental Protection Act 2014
- Mine Safety Act and KP Mines Rules
- Pakistan's EIA Regulations and Hazardous Waste Rules
- ICMM Mine Closure Good Practice Guide
- Voluntary Principles on Security and Human Rights

KP-MDMCL will collaborate with regulators to update closure policies and build a provincial knowledge base on mines rehabilitation.

13.9 Institutional Learning and Legacy Management

Closure offers a unique opportunity to consolidate lessons and improve future projects. KP-MDMCL will:

- Publish a “Mine Closure Report” for each completed project
- Organize inter-agency debriefings with Mines, EPA, Labour, and District Administration
- Archive geospatial and compliance records for future land use planning

A Closure Knowledge Repository will be maintained as part of the ES-MIS.

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