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Environmental and Social Impact Assessment (ESIA) Guidelines for the Mining Sector

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Foreword

The Government of Kenya is committed in ensuring a clean, safe and healthy environment for its citizens. The Constitution of Kenya espouses the tenets, duties and responsibilities of state and non-state actors to safeguard, uphold and protect the environment and its natural resources to realize the growth of the green economy and promote sustainable development.

The Government has reflected its commitment towards achieving sustainable development goals through economic blue prints such as the bottom up economic transformative agenda (BETA) model, Medium Term Plan (MTP) IV of Vision 2030. The Vision identifies oil and other mineral resources as a priority sector under the economic pillar to spur and maintain the Country's economic growth. The sector is projected to contribute 10% to the gross domestic product (GDP).

The development of the Environmental and Social Impact Assessment (ESIA) Guidelines for the Mining Sector in Kenya has been necessitated by the need to integrate environmental, social, planning, safety, health and human rights considerations in mineral development activities. This integration will ensure that mining activities are conducted inclusively, responsibly and sustainably.

This Guideline has been developed to inform regulators, environmental assessment experts, investors, mining communities and other stakeholders on the procedures and processes for undertaking ESIA for the mining projects. Further, the Guidelines provide the required reporting structure of an ESIA report in tandem with the Environmental (Impact Assessment and Audit), Regulations, 2003 to ensure quality output. It is also notable that the Guidelines have emphasized the need for inclusive public consultation and meaningful stakeholder engagement, one of the salient features in ESIA processing and the mining cycle.

It is my aspiration that the stakeholders will utilize this Guideline to enhance environmental sustainability in the mining value chain. It is my desire that the Guideline will serve as a resource material to appraise the general public on environmental and social impact assessment and monitoring requirements and best practices in the mining value chain.

This Guideline may be updated from time to time as the environmental assessment processes and mining sector continue to evolve with increased knowledge, technological advancement and experience of the users.

Emilio Mugo
Chairman
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NEMA Board of Management provided substantive guidance, advice and managerial assistance and support throughout the process.

It is my hope that the Guideline will enhance environmental governance through meaningful stakeholder engagements, community empowerment, gender and human rights considerations and adoption of best practices in the sector.

I urge the policy makers, Ministries, Departments, Counties and Agencies (MDCAs), environmental experts, private sector, Artisanal and Small-Scale Miners (ASMs), academia, Civil Society Organizations (CSOs), communities, and mass media to make good use of this Guideline in ensuring sustainable operations in the mining sector.

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Acronyms

ABS	Access Benefit Sharing
ADR	Alternative Dispute Resolution
AIA	Archeological Impact Assessment
ASM	Artisanal and Small-Scale Mining
CBD	Convention on Biological Diversity
CECs	County Executive Committees
COK	Constitution of Kenya, 2010
COx	Carbon Oxides
CPR	Comprehensive Project Report
CSO	Civil Society Organizations
CCM	Climate Change Mainstreaming
DOM	Directorate of Mines
DoGS	Directorate of Geological Surveys
DoMP&VA	Directorate of Mineral Promotion and Value Addition
EA	Environmental Audit
ELC	Environment and Land Court
EMCA	Environmental Management and Coordination Act, 1999
ERA	Environmental Risk Assessment
ESIA	Environmental and Social Impact Assessment
ESMPs	Environmental and Social Management Plans
GDP	Gross Domestic Product
GHG	Green House Gases
GOK	Government of Kenya
GRM	Grievance Redress Mechanism
HIA	Heritage Impact Assessment
IPs	Interested Persons
LAs	Lead Agencies
MDCA	Ministries, Departments, Counties, Agencies
MOPM	Ministry of Petroleum and Mining
MTP	Medium Term Plan of Vision 2030
NCA	Norwegian Church Aid
NECC	National Environment Complaints Committee
NEMA	National Environment Management Authority
NETFUND	National Environment Trust Fund
NMC	National Mining Corporation

NLC	National Land Commission
NOx	Nitrogen Oxides
PAPs	Project Affected Persons
PM	Particulate Matter
PPEs	Personal Protective Equipment
PSC	Production Sharing Contract
PTC	Project Technical Committee
RAPs	Resettlement Action Plans
RODs	Record of decisions
SESA	Strategic Environmental and Social Assessment
SOx	Sulphur Oxides
SPR	Summary Project Report
VOCs	Volatile Organic Compounds
WRA	Water Resources Authority

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Definition of Terms

"Artisanal mining" means traditional and customary mining operations using traditional or customary ways.

"**Biological Diversity"** means the variability among living organisms from all sources including, terrestrial ecosystems, aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, among species and of ecosystems.

"**Comprehensive Project Report (CPR)"** means a summary statement of the likely environmental effects of a proposed development referred to in section 7 (4) and (5) of the The Environmental (Impact Assessment and Audit) (Amendment) Regulations, 2019.

Control Audit – means a mechanisms of procedure put in place by a proponent or a proprietor in consultation with the Authority to determine compliance with environmental standards.

"**Environmental Audit**" means the systematic, documented, periodic and objective evaluation of how well environmental organization, management and equipment are performing in conserving or preserving the environment.

"**Environmental Impact Assessment"** means a systematic examination conducted to determine whether or not a programme, activity or project will have any adverse impacts on the environment.

"**Environmental Inspector"** means any environmental inspector appointed or designated under section 117 of the Environmental Management and Coordination Act (EMCA), 1999.

"Environmental and Social Impact Assessment (ESIA) Study" means a systematic study conducted to determine whether or not a project will have any adverse impacts on the environment as stipulated in section 58 of EMCA, 1999 and Regulations 11 to 17 of the Environmental (Impact Assessment and Audit) Regulations, 2003.

"Environmental Management" includes the protection, conservation and sustainable use of the various elements or components of the environment.

"**Environmental Monitoring"** means the continuous or periodic determination of actual and potential effects of any activity or phenomenon on the environment whether short-term or long term.

"**Inter-generational Equity"** means that the present generation should ensure that in exercising its rights to beneficial use of the environment the health, diversity and productivity of the environment is maintained or enhanced for the benefit of future generations.

"**Intra-generational Equity"** means that all people within the present generation have the right to benefit equally from the exploitation of the environment, and that they have an equal entitlement to a clean and healthy environment.

"Lead Agency (LA)" means any Government ministry, department, parastatal, state corporation or County Government, in which any law vests functions of control or management or any element of the environment or natural resources.

Local Content – Means the added value brought to the Kenyan economy from the extractive industry through systematic development of National capacity and capabilities and investment in developing and procuring locally available workforce, services and supplies, for the sharing of accruing benefits.

"Polluter-Pays Principle" means that the cost of cleaning up any element of the environment damaged by pollution, compensating victims of pollution, cost of beneficial uses lost as a result of an act of pollution and other costs that are connected with or incidental to the foregoing, is to be paid or borne by the person convicted of pollution under EMCA, 1999 or any other applicable law.

"Public Participation" means any process that directly engages the public in decision making and gives consideration to public input in making that decision.

"Precautionary Principle" is the principle that where there are threats of damage to the environment, whether serious or irreversible, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation.

"Reconnaissance" means the operations and works to carry out the non-intrusive search for mineral resources by geophysical surveys, geo-chemical surveys, photo geological surveys or other remote sensing techniques and surface geology in connection therewith, but excludes drilling and excavations.

"Strategic Environmental and Social Assessment (SESA)" is a range of analytical and participatory approaches that aim to integrate environmental consideration into Policies, Plans, and Programs (PPP) and evaluate the inter-linkages with economic and social considerations.

"Summary Project Report (SPR)" means a summary statement of the likely environmental effects of a proposed development referred to in section 7 (1) (2) and (3) of the Environmental (Impact Assessment and Audit) (Amendment) Regulations, 2019.

Executive Summary

The mining sector in Kenya plays an important role in the economic development of the country. The integration of environmental and social requirements, considerations and international best practices into mining activities ensures an inclusive, responsible and sustainable mining. This Guideline has been developed to enhance environmental and social performance and sustainability in the entire mining value chain. The Guideline is divided into five chapters as outlined.

Chapter I gives a background of the mining sector in Kenya, objective of the Guideline, rational and scope. The chapter also covers the stages covered in the mining cycle as well as linkages between the cycle and environmental assessment tools.

Chapter II provides an overview of policy, legal and institutional frameworks that are relevant to the mining sector.

Chapter III provides the environmental and social assessment procedures, the guiding principles of Environmental and Social Impact Assessment (ESIA), the ESIA review and the decision-making process.

Chapter IV outlines the key components of the ESIA report for the mining sector including the baseline information, analysis of alternatives, public participation, transboundary issues, environmental and social management plans, reporting mechanism among others.

Chapter V details the procedure and process of environmental monitoring and auditing.

CHAPTER 01

Introduction

1.1 Background

Mining has been practiced in Kenya since precolonial period and has over the years grown geographically in scope as well as in scale of operations. Mining sector operations in the country are undertaken by large, small and artisanal miners, but predominantly by ASMs. During the precolonial period until 1999, there was no requirement for ESIA and thus mining was undertaken without good environmental practices. The enactment of the Environmental Management and Coordination Act, (EMCA) 1999 brought to the forefront the requirements of ESIA for proposed projects that have or may have significant impacts on environment and social wellbeing.

Section 58 of EMCA, 1999 requires an ESIA for all project listed in the second schedule of the Act of which mining is one of them. In addition, the Mining Act, 2016 stipulates that a mineral right or other license or permit granted under the Act shall not exempt a person from complying with any law concerning the protection of the environment. Further, section 68 of EMCA, 1999 specifies that the Authority shall be responsible for carrying out Environmental Audit (EA) of all activities that are likely to have significant effect on the environment such as mining activities.

These ESIA Guidelines for the Mining Sector have been developed in compliance to the EMCA, 1999 and the Environmental (Impact Assessment and Audit) Regulations, 2003, which requires that sectoral Environmental Impact Assessment Guidelines shall be developed by the lead agency in consultation with NEMA. The development of this Guideline is not only anchored in the law and informed by the Strategic Environmental and Social Assessment (SESA) for the mining sector which amongst several recommendations proposed the need for ESIA guidelines for the sector.

The ESIA Guidelines have been developed through a consultative process, bringing together lead agencies, County Governments, private sector, international development partners, Artisanal and Small-scale Miners (ASMs), professional associations, academia and other stakeholders. Additionally, this Guideline has been informed by international best practices and lessons from more developed mining operations and jurisdictions.

1.2 Mining Sector in Kenya

In the recent past, Kenya has experienced rising investor interest in the mining sector following discoveries of mineral resources as well as increased global demand for precious metals and minerals. The sector has been identified as a high potential of spurring economic growth and thus a key driver to the achievement of the country's Vision 2030 (GoK, 2015). The mining sector has been growing from 2016 to 2019 however, there was a decline in 2020 by 5.8% associated to the Covid-19 pandemic. In 2020, the contribution of the sector to the economy was Kshs. 22 Billion down from Kshs. 24 Billion in 2019 *(KNBS, 2021).* Despite the diverse and multifaceted nature of the sector, its contribution to the national GDP is 1% and less than 2% of total export revenue *(KNBS, 2021)*.

Kenya has four belts of minerals namely: the gold green stone belt in Western Kenya, which extends to Tanzania; the Mozambique belt passing through central Kenya, the source of Kenya's gemstones; the Rift belt, which has resources including soda ash, and diatomite; and, the Coastal belt, which has titanium among other minerals. However, the Minerals production has largely been limited to a few minerals including: soda ash, diatomite, limestone, titanium and gold.

In Kenya, although large-scale mining companies operate in the country, ASM remains the significant source of employment in the sector. In a study "Economic Contributions of Artisanal and Small-Scale Mining in Kenya: Gold and Gemstones," it was noted that Large-scale mining (LSM) currently employs around 9,000 workers in the country (*Barreto et al, 2018)*. The sector remains largely informal, but produces around 60% of the country's gemstones, most of its gold, quarried stones and other construction materials (*Barreto et al, 2018)*.

Kenya has a Mineral Policy and enacted the Mining Act, 2016 to govern the sector to harness sustainable mining. In addition, EMCA, 1999 and its subsidiary legislations provide for the protection of the environment. Despite the strong policy, legal and institutional frameworks, Kenya's mining sector still faces a myriad of environmental, social, safety, health and human rights concerns. This is especially more evident in the artisanal and small-scale mining operations whose activities adversely impacts on the human health and the environment.

1.3 Objective of the Guidelines

The general objective of the ESIA Guideline for the mining sector is to facilitate sustainable mining development and operations in Kenya.

The specific objectives of the Guideline are:

(i) To enhance environmental governance through integration of principles of human rights, rule of law and gender considerations;

(ii) To guide mining development operations; large scale, small scale and artisanal to conform to the existing policy, legislative and institutional framework; and

(iii) To mainstream environmental, socio-cultural and planning safeguards in the mining sector.

(iv) To enhance compliance to environmental and social requirements and considerations among ASMs.

1.4 Rationale

The Kenyan mining sector is undergoing an exponential growth given the existence of the mineral reserves and the enabling policy and legislative frameworks, which allow for artisanal to large scale operations. This growth if not well coordinated and managed may lead to negative impacts to persons and the living environment that negate the expected benefits from the sector.

The Guideline highlights the key considerations that should be taken by actors in the sector to ensure safe, compliant and sustainable mining operations. This Guideline is informed by international best practice and lessons from more developed mining operations and jurisdictions.

1.5 The Scope

This Guideline is applicable to the mining sector in Kenya to inform the environmental and social assessment processes while ensuring inclusive public participation and meaningful stakeholder engagement, integration of gender and human rights considerations, implementation of the Environmental and Social Management Plans, environmental monitoring and auditing. The Guideline also provide applicable linkages between the environmental planning tools and the steps in the mining cycle.

The Guideline shall apply to the MDCAs, environmental experts, private sector, large scale miners, ASMs, academia, CSOs, communities, mass media, in ensuring responsible mining development operations. It is envisaged that the Guideline will contribute to good governance through meaningful stakeholders' engagement, transparency, respect for human rights and best practices in the sector.

1.6 The Mining cycle

The mining cycle refers to the mineral development steps that include; Reconnaissance, prospecting, mining and processing.

1.6.1 Reconnaissance

This is the first step in the establishment of a mineral resource in a given geological area and informs other subsequent mining phases.

The Mineral rights for this phase are:

(i) Reconnaissance license for large scale operations

(ii) Reconnaissance permit for small scale operations

1.6.2 Exploration/prospecting

This is the phase where the prospector identifies rocks for useful minerals and any other clues where the resource maybe hidden. This operation can be carried out offshore and onshore to search for and define the extent of a mineral deposit and to determine its economic value.

The Mineral rights for this phase are:

(i) Prospecting licence is for a large-scale operations
(ii) Prospecting permit is for a small-scale operations
(iii) Retention licence is for large scale operations

1.6.3 Operations

Mining operations involve mine development, drilling, blasting, extraction, milling, crushing, screening, maintenance and repair of mining equipment and decommissioning activities which are geared to facilitate the production of a mineral product.

The Mineral rights for this phase are:

(i) Mining licence is for large-scale operations

(ii) Mining permits for small-scale operations

(iii) Artisanal Mining Permit

(iv) Mineral dealer's (processing) licence – this is a license granted for the purposes of processing a mineral.

1.7 Mineral Resources Development cycle and environmental assessment tools linkages

The Kenyan mining legislative framework provides that an applicant of a mineral right (reconnaissance license & permit, exploration license & permit, retention license, mining license & permit, AM permit) and mineral dealer's (processing) license shall undertake an environmental and social impact assessment and obtain an ESIA license prior to obtaining a mineral right. Figure 1 shows the linkage between the mineral resources development cycle and the applicable environmental assessment tools

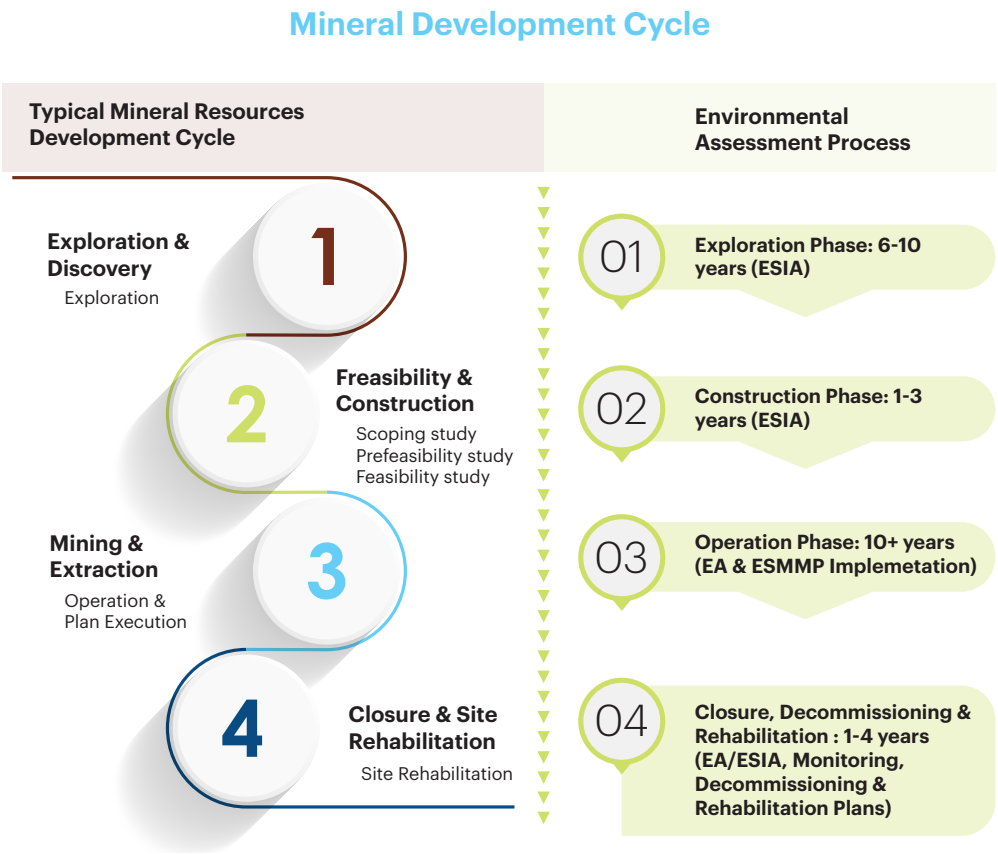


Figure 1: Mineral Development Cycle

1.7.1 General Requirements

There are general requirements as outlined in the Mining Act, 2016 and its subsidiary legislations that are in conformity with environmental assessment tools as summarized below;

(i) Compliance with the terms and conditions of environmental rehabilitation and restoration plan including progressive rehabilitation

(ii) Provision for Environmental protection bond

(iii) Requirements for Environmental Audit

(iv) Promotion of local content

(v) Requirements for decommissioning and rehabilitation plan including progressive rehabilitation

CHAPTER 02.

Policy, Legal and Institutional Frameworks

This chapter presents an overview of Kenya's policy, legal and institutional frameworks for the mining sector. The chapter also provides an overview of the multi-lateral environment agreements (MEAs) relevant to the mining sector and ESIA that Kenya is a party to.

2.1 Overview of Multi-lateral Environment Agreements

2.1.1 Minamata Convention on mercury, 2013

The Minamata Convention on Mercury is a global treaty to protect human health and the environment from the adverse effects of mercury. The Convention advocates for minimization and elimination of mercury use. Improper handling and disposal of mercury contaminates the soil and water posing a major risk to human health.

In reference to the mining sector, the Minamata Convention obligates parties to ban use of mercury in new mines, phase-out of existing ones, put in place control measures on emissions to air and on releases to land and water, and the regulation of its use in gold mining by ASMs. The Convention also addresses interim storage of mercury, its disposal once it becomes waste and rehabilitation of contaminated sites.

2.1.2 United Nations Stockholm Convention on persistent organic pollutants, 2004

The Stockholm Convention provides mechanisms and measures to protect human health and environment from the effects of persistent organic pollutants (POPs) such as mercury. The convention works to promote shared responsibilities in relation to importation of hazardous chemicals, specifically persistent organic pollutants (POPs).

2.1.3 Ramsar Convention on wetlands of international importance, 1975

Unsustainable mining practices such as disposal of mine waste tailings in wetlands degrade such important ecosystems.

The Convention on Wetlands provides the framework for national action and international cooperation for the conservation and wise use of wetlands and their resources. The Convention's three pillars are:

i. Work towards the wise use of all wetlands

ii. Designate suitable wetlands for the list of Wetlands of international importance and ensure their effective management

iii. Cooperate internationally on trans boundary wetlands, shared wetland systems and shared species

2.1.4 Rotterdam Convention on Hazardous Chemicals

The Convention facilitates informed decision-making by Parties with regard to trade in hazardous chemicals. The convention seeks to promote shared responsibility and cooperative efforts among Parties in the international trade of certain hazardous chemicals in order to protect human health and the environment from potential harm. Secondly, the convention seeks to contribute to the environmentally sound use of those hazardous chemicals, by facilitating information exchange about their characteristics, by providing for a national decision-making process on their import and export and by disseminating these decisions to Parties. The Convention creates legally binding obligations for the implementation of the Prior Informed Consent (PIC) procedure. Use of such chemicals such as mercury and cyanide should be done so in line with the provisions of the convention.

2.1.5 The Basel Convention on the Control of Trans boundary Movement of Hazardous Wastes and their Disposal

The overarching objective of the Basel Convention is to protect human health and the environment against the adverse effects of hazardous wastes. The provisions of the Convention center around the following principal aims:

- the reduction of hazardous waste generation and the promotion of environmentally sound management of hazardous wastes;
- the restriction of trans boundary movements of hazardous wastes except where it is perceived to be in accordance with the principles of environmentally sound management; and
- a regulatory system applying to cases where trans boundary movements are permissible.

2.1.6 United National Framework Convention on Climate Change

Mining activities have the potential to alter the global carbon budget. The United Nations Framework Convention on Climate Change aims to combat "dangerous human interference with the climate system", in part by stabilizing greenhouse gas concentrations in the atmosphere.

2.1.7 United Nations Convention on Biological Diversity

The Convention has three main goals: the conservation of biological diversity; sustainable use of its components; and the fair and equitable sharing of benefits arising from genetic resources. Its objective is to develop national strategies for the conservation and sustainable use of biological diversity.

2.2 Constitution of Kenya, 2010

The Constitution of Kenya provides in article 42 for the right to a clean and healthy environment for all. It further espouses the need for the sustainable management and preservation of land and other natural resources as outlined in Articles 60, 62, and 69.

Article 69 (1) specifies the establishment of systems of environmental impact assessment, environmental audits and monitoring, eliminates processes and activities that are likely to endanger the environment, and encourages public participation in the management, protection and conservation of the environment.

2.3 Policy, Legal and Institutional Frameworks Matrix

National Environment Management Authority – to exercise supervision and coordination over all environmental matters in the Country and be the principal government agency to implement environmental policies and standards as per the EMCA, 1999

State Department of Mining – to promote sustainable development of the extractive sector in Kenya as per the Mining Act, 2016.

Directorate of Occupational Safety and Health Services – to ensure that every work place is free from any hazards and complies to laid down standards to ensure safety of employees/workers as per the Occupational Safety and Health Act.

Kenya National Commission on Human Rights – to protect the public against adverse human rights impacts from the mining activities.

Physical Planning Department – to advise national government on physical and land use planning matters and formulating national physical and land use planning, policies, guidelines and standards.

County Government – to provide services to the people who live within their jurisdiction.

Water Resources Authority – to provide information and advice the Cabinet Secretary for formulation of policy on National Water Resource Management, water storage and flood control strategies, Regulate Water use allocation, Collect water permit fees and water use charges.

Kenya Wildlife Services - to conserve and manage wildlife in Kenya, and to enforce related laws and regulations.

Kenya Forest Service – to manage and protect all state forests.

Table 1: Policy, Legal and Institutional Frameworks

No.	Policy and Legal Frameworks		Key Applicable Provisions	Regulations	Institutions
1.	**Policy**	National Environment Policy, sessional paper no 10 of 2013	Chapter 4 which also covers minerals in Kenya which encourages sustainable mining		Ministry of Environment and Forestry, NEMA,
		Mining and Minerals Policy, sessional paper no 7 of 2016	Mining Act 2016 and the Mining Regulations		DoM, DoGS, DoMP&VA, NMC
		National Water Policy sessional paper no. 1 of 2021			
		National Land Policy sessional paper no. 3 of 2009			
		National Land Use Policy sessional paper no.1 of 2017			
		National Occupational Safety and Health Policy 2012			
2.	**Laws**	EMCA, 1999	Section 3, 9, 24, 28, 29, 31, 57A, 58, 68, 108, 117, 125,	Environmental (Impact Assessment and Audit) Regulations, 2003 Environmental Management and Coordination (Waste Management) Regulations, 2006 Environmental Management and Coordination (Noise & Excessive Vibrations) Regulations, 2009 Environmental Management and Coordination (Water Quality) Regulations, 2006 Environmental Management and Coordination (Air Quality) Regulations, 2014 Environmental Management and Coordination (Conservation of Biological Diversity and resources, access to genetic resources and benefit sharing) resources, 2006	NEMA, NET, NECC, NETFUND, CEC

No.	Policy and Legal Frameworks	Key Applicable Provisions	Regulations	Institutions
	Mining Act 2016	The entire Act is applicable	Mining (Work Programmes and Exploration Reports) Guideline, 2017 Mining (Licence and Permit) Regulations, 2017. Mining (Dealings in Minerals) Regulations, 2017. Mining (Community Development Agreement) Regulations, 2017. Mining (Strategic Minerals) Regulations, 2017. Mining (Mine Support Services) Regulations, 2017. Mining (Award of Mineral Rights by Tender) Regulations, 2017.	Ministry of Petroleum & Mining, National Mining Corporation, Minerals and Metals Commodity exchange
	OSHA 2007	Section 9, 11, 14, 16, 21 44, 49, 50, 52, 64, 101	Eyes protection rules L.N 44/1978 Building operations and works of engineering construction rules L.N 40/1984 Electric power special rules L.N 340/1979 First aid rules- L.N 160/1979. Health and safety committee rules-L.N 31/2004 Medical examination Rules L.N 24/2005 Noise prevention and control Rules L.N 25/2005 Fire Risk Reduction Rules L.N. 59/2007 Hazardous Substances Rules L.N. 60/2007	Directorate of Occupational Safety and Health Services
	Explosives Act, Cap 115	Section 18, 20, 21, 24, 28	Explosives (Blasting and explosives) rules	Ministry of Petroleum and Mining, Director of Mines
	Work Injury Benefits Act, 2007	Section 7, 10, 21, 45,		DOSHS
	Employment Act, 2007	Section 4, 6, 17, 26, 27, 29, 30, 31, 32, 33, 34, 35	Employment general rules of 2014	Ministry of Labour, Employment and Labour relations Court
	Land Act, 2012	Section 11, 19,		NLC
	Environment and Land Court Act, No. 19 of 2011	Section 4, 13, 14, 16		ELC

No.	Policy and Legal Frameworks	Key Applicable Provisions	Regulations	Institutions
	Community Land Act	Section 5, 6, 8, 27, 34, 35, 36	Community land Regulations, 2017	Ministry of Lands, NLC, County Government, ELC
	Water Act, 2016	Section 22, 23, 36	Water Resources Management Rules, 2007	WRA, Water Appeals Tribunal, ELC, Basin Water Resources Committee, Water Resource Users Associations,
	Physical and Land Use Planning Act No. 3 of 2019	Section 14, 18	Physical and Land Use Planning (Development permission and control) (general) Regulations 2021	County physical and land use planning consultative forum
	Forest Conservation & Management Act, 2016	Section 8, 20, 21, 30	Forest (Participation in Sustainable Forest Management) Rules, 2009	KFS, County governments
	Wildlife Conservation and Management Act, 2013	Section 26, 45, 46,47	Wildlife Conservation and Management (Protection of Endangered and threatened ecosystems, habitat and species) Regulations, 2017	KWS
			Wildlife Conservation and Management (Joint Management of Protected Water Towers) Regulations, 2017	
	National Land Commission Act, 2012	Section 5, 6	National Land Commission (Review of Grants and Dispositions of Public Land) Regulations, 2017	NLC
	County Government Act, 2012	Section 102, 103, 104, 105, 109, 110		County Government
	Public Health Act	Section 21, 22, 38, 115		Ministry of Health (MoH)
	Kenya National Commission on Human Rights Act, 2011	Section 8, 28, 29, 33		KNHCR
	Climate Change Act, 2016	Section 23		ELC

CHAPTER 03

Environmental and Social Assessment Procedure

The ESIA process presents decision-makers with the information necessary to determine whether or not a project should be implemented.

Figure 2 outlines the applicable environmental and social assessment tools from the strategic to operational level of decision making.

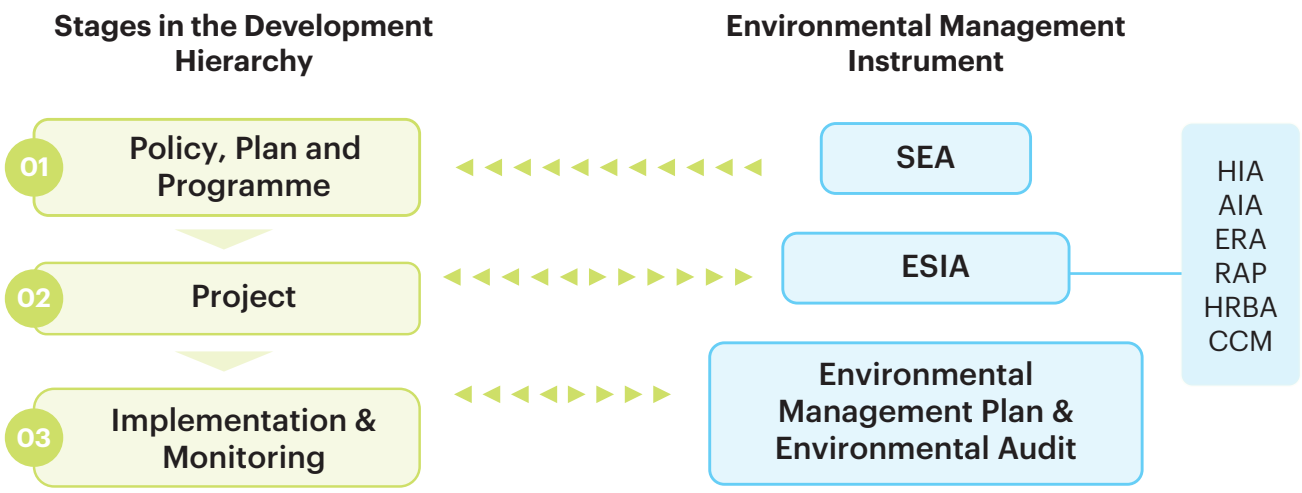


Figure 2: Development hierarchy instrument and the development tool

Table 2: Summary of the ESIA process in Kenya

Project Risk Categorization (L.N No. 31 of 2019)	Applicable Environmental Assessment tool	Processing requirements	Processing timelines	Record of decisions
Low Risk	Summary Project Report (SPR)	• Public consultation (interviews) • Site verification if required	Five (5) days	• Approval or upgrading to a CPR • Appeal to NET within sixty (60) days if aggrieved by the decision of the Authority
Medium Risk (ASM)	SPR or Comprehensive Project Report (CPR)	• Public consultation (interviews) • Site verification	Five (5) days for SPR and Thirty (30) days for CPR	• Approval or upgrading to a CPR **If CPR, EIA license or Rejection • Appeal to NET within sixty (60) days if aggrieved by the decision of the Authority

Project Risk Categorization (L.N No. 31 of 2019)	Applicable Environmental Assessment tool	Processing requirements	Processing timelines	Record of decisions
High Risk (Large-scale Mining)	ESIA	• Scoping and development of TORs for consideration by the Authority • At least two public meeting with the PAPs organized by the proponent and the expert • Public disclosure in the print media, electronic and gazette Notice • TAC (will comprise of independent multi-disciplinary specialists and may, with the approval of the Director General, co-opt any persons it deems necessary for its proper functioning) if applicable • Public Hearing if applicable • Site verification	Within Sixty (60) days	• EIA license or a rejection • Appeal to NET within sixty (60) days if aggrieved by the decision of the Authority

3.1 Guiding Principles of ESIA

The ESIA guiding principles are;

i) Environmental concerns must be accounted for in all development activities

ii) Inclusive Public participation in the development of projects

iii) Recognition of the social, cultural and human rights-based principles traditionally used in the management of the environment and natural resources

iv) International cooperation (trans-boundary issues) in the wise use and management of shared resources

v) Intra-generational and inter-generational equity

vi) Polluter-pays principle

vii) The precautionary principle

viii) Integration of Climate change risk and vulnerability assessment and mainstreaming

3.2 ESIA Screening

This refers to the process of identification of current and potential impacts to be studied. It is the first stage of the environmental assessment process and is used to determine which projects need to be subjected to ESIA as well as the level of environmental examination that is required.

Screening is done by the project proponent in consultation with the environmental expert *(refer to **annex 1** on ESIA screening criteria).*

The amended 2nd schedule of EMCA, 1999 vide Legal Notice 31 of 2019 categorizes projects into three (3) broad categories namely; low risk, medium risk and high risk with the corresponding applicable environmental and social impact assessment tool.

Legal Notice no. 31 of 2019 categorizes ASMs as medium risk projects and large-scale mining projects as high risk

3.3 ESIA Scoping

This is the process of determining the spatial and temporal boundaries and key issues to be addressed in an impact assessment.

Scoping is done by a licensed EIA/EA expert appointed by the project proponent.

A scoping report shall take into consideration the environmental, social, cultural and economic aspects of the proposed project and shall:

i) Describe the proposed project and its objectives;

ii) Provide a brief description of the environmental characteristics of the project area;

iii) Identify the range of issues to be addressed in the ESIA study and the issues raised by the stakeholders;

iv) Provide a brief of the relevant policy, legislative and regulatory framework;

v) Determine the relevance of integration of climate change vulnerability assessment, adaptation and mitigation actions;

vi) Identify anticipated significant impacts and issues that would need detailed study and reasons thereof;

vii) Identify study issues that are not significant or very well understood and justifications thereof;

viii) Describe the scope of the ESIA study in terms of geographical extent;

ix) Outline how the ESIA study will be conducted, the disciplines and expertise to be involved together with the evidence of qualifications, and the implementation schedule of the study;

x) Provide the profile and evidence of experience in similar assignments for the lead expert or the firm of experts;

xi) Provide a strategic communication plan with a methodology to ensure inclusive participation; during the ESIA study;

xii) Determine the requirements for the collection of baseline and other relevant information; and

xiii) Provide the Terms of Reference for the ESIA and submit the same to the Authority for approval

3.4 Submission of the ESIA Report

The proponent shall submit the CPR or ESIA report to the Authority for review as guided by;

(i) Regulation 7 (4) of the Environmental (Impact Assessment and Audit) (Amendment) Regulations, 2019 for CPR (medium risk)

(ii) Regulation 18 of the Environmental (Impact Assessment and Audit) Regulations, 2003 for Study report (high risk)

3.5 Review and Decision-Making

The Authority shall undertake review of the submitted report and shall take into account the following to inform its Record of decisions:

i) Emphasis on the environmental, economic, social and cultural impacts of the project and adequacy of the prescribed mitigation measures;

ii) the comments submitted by County Governments, CECs, lead agencies, indigenous communities, the public, and other interested stakeholders;

iii) recommendations of a Technical Advisory Committee, where applicable;

iv) the report of a presiding official compiled after a public hearing where applicable;

v) precautionary principle;

vi) conformity to existing policy and planning framework;

vii) risk assessment and management; and

viii) Other factors which the Authority may consider relevant in the implementation of the project.

The Authority shall give its RoDs on application within thirty (30) days for a CPR *(refer to **annex 2** on the content of CPR*) and sixty days (60) for a study report.

The objectives of the RoDs are;

(i) To communicate formally in writing that a development may or may not proceed

(ii) To set out the reasons for the decision in writing.

(iii) To set out the terms and conditions under which the development is authorized.

In processing RoDs, the Authority applies several decision making principles (refer to **annex 3**).

The decision can either be approval or rejection. If approval is granted, licensing conditions are processed to guide the proponent during the entire project life cycle. Once a decision is made and reasons given, any aggrieved party can appeal the decision of the Authority at the National Environment Tribunal (NET).

3.6 ESIA cluster application

The ESIA cluster application can be applied by the Authority to process the ESIAs submitted by the ASM in designated mining zones. This ensures that the ASM comply with environmental requirements while undertaking their mining operations. It also lowers the cost of compliance per individual since one application will cater for the whole group of miners within a locality. The ESIA cluster application for ASMs will be processed as a comprehensive project report.

CHAPTER 04

Key Components of ESIA Report For The Mining Sector

ESIAs are usually detailed studies for high risk projects such as large scale mining projects and should provide not only scientific but also comprehensive technical information for informed decision making. The components of an ESIA report are annexed to this Guideline *(refer to **annex 4**)*.

4.1 Description of the Proposed Project

The proponent should clearly describe the kind and form of mining activities they intend to establish.

The description should include but not limited to the following:

(i) Summary of the proposed project;

(ii) Objectives of the project;

(iii) Project proponent;

(iv) Scale and types of mining activities proposed;

(v) A description of the stages of mining;

(vi) On-site and off-site activities proposed such as. tailings storage facilities (TSF), management of overburden;

(vii) The need for a geotechnical surveys - The design of the TSF should be undertaken after geotechnical surveys. An appropriately designed TSF should reduce the environmental risks by optimizing the following parameters: immobilization of the deposited tailings; reduction of the capillary action; control of infiltration; runoff reduction; management of surface water; and soil erosion;

(viii) Identity any special features of the surrounding environment and biodiversity;

(ix) Nature and extent of human-resource requirements and plans; and

(x) Other developments in the project area

4.2 Location of the project

The site-specific nature of the ESIA demands that the proponent provides a detailed description of where the mining activities will be located. The location of the project should include but not limited to:

(i) project location, ward, Sub-County, County, land registration number;

(ii) status/ownership of land – private, government, leased (attach relevant documents);

(iii) infrastructure in place such as health facilities, water, roads, communication among others;

(iv) accessibility to project site – distances from major roads, airstrips among others;

(v) security measures to be put in place such as distance from the nearest police station/police post;

(vi) proximity of the site to human settlements, industries and communities; and

(vii) Ecological aspects of the site and its surroundings, including indication of any protected areas or sensitive ecological habitats.

4.3 Baseline Information

Baseline information establishes the identity of a project, identifies the project affected persons, the current status of the environment and natural resources thereby providing a basis for impact prediction. The baseline studies should inform the subsequent studies that should be undertaken during the monitoring and auditing of the ESMP and decommissioning and rehabilitation of the mining site.

4.3.1 Biological diversity/Biodiversity assessments

Assessing the status and trends of biodiversity is essential in the Mining sector. Biodiversity embraces all living organisms and their genetic diversity, a vast and complex array of ecosystems and habitats, as well as the processes that underpin and result from diversity, such as photosynthesis, nutrient cycling or pollination. Different species (plant, animal, fungal and microbial) interact with each other in a variety of ecological processes to form ecosystems. These processes are in turn the result of the interactions between species and with their physical and chemical environment.

The Biodiversity Assessments undertaken as part of ESIAs for the Mining sector should lead to the development of Biodiversity Action Plans (BAPs) for monitoring. The plans should cover the following key parameters:

(i) Flora

An inventory of plant species should include information about: composition, density, distribution, status, vegetative cover, and dominant, protected, foreign, threatened, and vulnerable species, as well as noticeable effects/ impacts of human presence in the ecosystem.

(ii) Fauna

Inventories of fauna species should include: diversity, distribution, and density, including information about the presence of endemic, protected, threatened, and endangered species. The ESIA should discuss biomes, indicator species, and relevant interrelations between communities of species. Depending on the project, other relevant baseline information about migration routes, breeding grounds, nesting sites, wildlife corridors, and uniqueness of fauna habitat should be discussed.

(iii) Aquatic Fresh/Marine Environment

Aquatic environments include not only fish and amphibians, but also aquatic plants, and invertebrates (snails, bivalves, crustaceans, insects, worms). Information on aquatic species should include details on the abundance and distribution of endemic, protected, and endangered species; detailed data on the abundance and distribution of fisheries of commercial importance or relied on for sustenance; and impact on migratory aquatic species (such as fish) and breeding grounds.

(iv) Critical habitats/Fragile ecosystems

Critical habitats include wetlands, swamps and forests among others. Certain natural habitats are especially important for ecological functioning or species diversity in an ecosystem. Unusual climate or edaphic (soil based) conditions may create local biodiversity hot-spots or disproportionately support ecological processes such as hydrologic patterns, nutrient cycling, and structural complexity. For these reasons, preservation of specific habitats (usually the remaining natural areas within the landscape) should be a priority. In general, these are the remaining natural areas, especially those that integrate the flows of water, nutrients, energy, and biota through the watershed or region. This concept is analogous to that of 'keystone species' that are essential for a community structure. Forests, range lands, and aquatic ecosystems all have unique or critical habitats that support the provision of ecosystem services within the landscape.

4.3.2 Air Quality

This is a discussion of air quality management issues relating to mining, mainly centered on particulate matter (PM) impacts. These include dust deposition, and health impacts associated with PM_{10} and $PM_{2.5}$ and the mineralogy and chemical composition of the particles. Generally, dust deposition is the focus of mine air quality management.

Impacts are observed during each stage of the mine cycle, but the mining operations like drilling, blasting, hauling, collection, and transportation are the major sources of airborne emissions and pollution. During mining cycle, the ore extraction, generation of solid waste and ore refining and processing, create air pollution which have cumulative environmental and health impacts.

The major parameters of air pollution in mining operations are:

(i) **Particulate matter:** This is a major pollutant in and around opencast mine areas, which is mostly dispersed by the wind during excavations, blasting, material transport, and also from tailings, waste dumps, and haul roads.

(ii) **Gas emissions:** These are mostly generated during the combustion of fuels, explosions and mineral processing and may include NO_x, SO_x, CO_x, VOCs among others.

The major sources of air pollution in mining operations are:

(i) Mobile sources:

Mobile sources of air pollutants include heavy vehicles used in excavation operations, cars that transport personnel at the mining site, and trucks that transport mining materials. The level of polluting emissions from these sources depends on the fuel and conditions of the equipment. Even though individual emissions can be relatively small, collectively these emissions can be of real concern. In addition, mobile sources are a major source of particulate matter, carbon monoxide, and volatile organic compounds that contribute significantly to the formation of ground-level ozone.

(ii) Stationary sources

The main gaseous emissions are from combustion of fuels in power generation installations, and drying, roasting, and smelting operations. Many producers of precious metals smelt metal on-site, prior to shipping to off-site refineries. Typically, gold and silver is produced in melting/fluxing furnaces that may produce elevated levels of airborne mercury, arsenic, sulfur dioxide, and other metals.

(iii) Fugitive emissions

Common sources of fugitive emissions include: storage and handling of materials; mine processing; fugitive dust, blasting, construction activitie

4.3.2.1 Air Quality Considerations in ESIAs for Mining Activities

A systematic risk-based air quality management planning is proposed as part of an ESIA to ensure that:

(i) air quality management is properly integrated into the mining operation,

(ii) is compatible with community expectations

(iii) is compatible with the regulatory expectations,

(iv) Incorporates future mine development changes, and

(v) Is continuously reassessed and improved to ensure air quality is optimally managed throughout the mine life-cycle.

Air quality conditions in a project area are critical to evaluating the potential distribution of air pollutants and their effects in the area of influence.

Baseline air quality information should be considered in relation to meteorological conditions, wind patterns, geological formations, and anything else that might influence the distribution of air pollutants.

Baseline air quality data in an ESIA should:

(i) Identify air basin

(ii) Describe local climate and topography

(iii) Identify national and local air quality standards

(iv) Describe historical air quality trends

(v) Describe air quality of the proposed mining area and/or air basin

(vi) Identify sensitive receptors

(vii) Describe the exact location of air monitoring and/or sampling stations

Baseline air quality analysis should include measurements of these common parameters:

(i) Particulate matter (PM_{10} and $PM_{2.5}$)

(ii) Carbon monoxide (CO)

(iii) Nitrogen oxides (NOx)

(iv) Lead (Pb), cadmium (Cd), arsenic (As), mercury (Hg)

(v) Total Suspended Solids (TSS)

(vi) Sulfur dioxide (SO2)

Baseline air quality information should be supported by methodological and analytical data.

The ESIA must include a clear description of the air sampling methods, and number and exact location of sampling points. These should be representative of the project's area of influence. This information can be included in tables and figures and the laboratory reports are included as annexes. Results of air quality data must be compared to existing air quality regulations or International Standards and Guidelines.

4.3.3 Water Quality and Quantity

The most critical impact of mining in most of the cases is on water quality and quantity. The environmental impacts of tailings and acid mine drainage are the serious issues of concern.

Acid mine drainage is one of the most prevalent factors and serious threats that affects the water through dissolved metals and contaminant leaching. Nevertheless, in other cases, leaching of toxic constituents, such as arsenic, selenium, and heavy metals, can also occur. Heap leaching and blasting operations also lead to elevated levels of cyanide and nitrogen compounds (ammonia, nitrate, and nitrite) in water resources.

In general, the impacts of contaminated water are divided into following categories:

(i) Chemical: The impacts are due to altered pH resulting into increased acidity or alkalinity; increased dissolved metals and the presence of synthetic compounds.

(ii) Physical: Physical impacts include the increased concentration of suspended solids causing turbidity, and adsorption of metal compounds onto sediments and soils.

(iii) Biological: This impact is seen in the form of species migration and death and also acute chronic toxicity. Biological impacts also affect ecosystem health such as disturbed soil, vegetation and fauna, contaminated and polluted water, contaminated and polluted air.

(iv) Ecological: Ecological impacts include habitat alteration, bio-accumulation of metals in food chain, species extinction and reduced primary productivity.

4.3.3.1 Air Quality Considerations in ESIAs for Mining Activities

The ESIA should detail the following:

(i) Characterizing existing surface water quality provides detailed information on the location, distribution, quantity, and quality of all water resources that could be affected by a project and its alternatives;

(ii) The data and analysis should have a reasonable level of detail, to help understand the conditions of the environmentally significant geographic areas such as wetland areas, flood zones, minimum flow rates, speed and direction among others;

(iii) Baseline studies about water quality and quantity should consider the local and regional uses of water (domestic, industrial, urban, agricultural, recreational among others);

(iv) Assess water quality as part of the ecosystem (in relation to the life of plant and animal communities);

(v) Water quality studies should be compared to existing water quality regulations, standards and International Standards and Guidelines for each water use; and

(vi) Quantity must reflect several aspects such as watershed distribution, hydrological processes, and the availability for different water uses at local and regional levels.

An ESIA must include a clear description of water sampling methods, and the number and exact location of sampling points. These should be representative of the area of influence of a project and of all the surface water resources that would be affected by a project. Also, water quality data should include the results of laboratory analysis. Frequently, this information in an ESIA is presented in tables and figures and the laboratory reports are included as annexes. Surface water quality data must be compared to existing water quality standards, according to the uses categorized in national laws or international Guidelines.

Water quantity may be impaired depending on the scale of operations and water reserve available. Uses of water in mining operations include mainly mineral processing, transportation of slurry, dust suppression and general uses within the mining sites. Huge consumption of water by the operations may result in conflicts due to competing interests.

4.3.4 Soil Quality

The mining operations cause serious impacts on soil fertility by removing the topsoil and soil contamination. Erosion of exposed soils, extracted mineral ores, tailings, and fine material in waste rock piles can result in substantial sediment loading to surface waters and change in drainage pattern. Spills and leaks of hazardous materials such as petroleum products, mercury, cyanide and the deposition of contaminated windblown dust and water runoff and leaching can lead to soil contamination.

4.3.4.1 Soil Quality Considerations in ESIAs for Mining Activities

Soil baseline studies should be based on three major sources of information: desk study, fieldwork, and laboratory analysis.

Baseline studies should include:-

(i) soil survey maps,

(ii) tables documenting the levels of chemical components,

(iii) methods of analysis,

(iv) literature review,

(v) soil sampling, and;

(vi) results of laboratory analysis.

Maps should be accompanied by explanatory information, with information on local geology, vegetation, and land use. Soil sampling information should comprise a reasonable number of sampling points representative of the mining concession area.

Samples must include each horizon encountered in soil profiles. The layout and number of samples required can vary, but the number of samples should be representative of the project area.

Soil chemistry is important in mining projects because problems with naturally occurring toxic elements are a real possibility.

Baseline soil quality analysis should include measurements of these common parameters:

(i) pH

(ii) Cation exchange capacity (the total number of cations absorbed on soil colloids gives some indication of potential fertility)

(iii) Soil nutrient status: potassium, calcium, magnesium, nitrogen, and phosphorus

(iv) Heavy metals: lead, copper, zinc, cadmium, mercury, and chromium

(v) soil strength (resistance to crushing),

(vi) Some measure of water content, organic content, soil texture, particle size, and bulk density should also be included.

4.3.5 Sampling and analytical protocols

Sampling and chain of custody of samples should be done in accordance with ISO 17025:2017 protocols. The integrity of the samples collected should be maintained by ensuring that there is a clear Record of chain of custody. Sample analysis should be conducted by a NEMA designated laboratory with Good Laboratory Practice (GLP) as per the relevant analytical methods. The certificate of analysis issued by the designated laboratory should be as per EMCA, 1999 section 120 with interpretation of the results.

4.3.6 Incidental releases of mercury and cyanide

Mercury is used by the ASMs to recover minute pieces of gold that is mixed in soil and sediments. Mercury and gold settle and combine to form an amalgam. Gold is then extracted by vaporizing the mercury. Notably, the miners undertake this process without appropriate Personal Protective Equipment (PPEs) High exposure to mercury leads to health risks such as damage to the nervous, digestive and immune systems.

Cyanide is used in gold mining despite its toxicity. Cyanide is commonly used to leach the gold from the ore, it dissolves the gold from the ore into the solution as it trickles through the heap. The pad collects the now metal impregnated solution which is stripped of gold and resprayed on the heap until the ore is depleted. Cyanide spills can have devastating effects on rivers sometimes killing everything miles downstream. Cyanide is cheap, effective and biodegradable despite its high toxicity and if not well managed has severe harm to organisms.

The ESIA must include;

(i) An analysis of alternatives in terms of technology and leaching chemicals

(ii) Appropriate safe use protocols as guided by the Material Safety Data Sheet (MSDS)

(iii) An effective training on handling, transportation, storage and disposal of leaching chemicals

(iv) An effective monitoring programme as part of the ESMP

4.3.7 Noise and Vibrations

Noise pollution associated with mining may include noise from vehicle engines, loading and unloading of rock into steel dumpers, chutes, power generation, cumulative impacts of shoveling, ripping, drilling, blasting, transport, crushing, grinding, and stock-piling among other sources. Vibrations are associated with many types of equipment used in mining operations, but blasting is considered the major source. Vibration affects the stability of infrastructures, buildings, and homes of people living near mining operations.

Data on noise and vibrations must be compared to existing noise and excessive vibrations regulations or International Standards and Guidelines. An effective monitoring programme for noise and vibrations should be discussed in the ESMP

4.3.8 Waste Management

Waste from extractive operations (i.e. waste from extraction and processing of mineral resources) once generated requires management in an environmentally sound manner to reduce the risk of pollution on the environment.

Mine wastes involves products that must be removed to gain access to the mineral resource, such as topsoil, overburden and waste rock, as well as tailings remaining after minerals have been largely extracted from the ore.

Some of these wastes are inert and hence not likely to represent a significant pollutant threat to the environment save for smothering of river beds and possible collapse if stored in large quantities. However, other fractions, may contain large quantities of dangerous substances, such as heavy metals such as mercury through the extraction and subsequent mineral processing, metals and metal compounds tend to become chemically more available, which can result in the generation of acid or alkaline drainage.

Moreover, the management of tailings is an intrinsically risky activity, often involving residual processing chemicals and elevated levels of metals. In many cases tailings are stored on heaps or in large ponds, where they are retained by means of dams. The collapse of dams or heaps may have serious impacts on environment and human health and safety. Other likely significant impacts relate to the physical footprints of waste disposal facilities and resulting loss of land productivity, effects on ecosystems, dust and erosion.

These impacts can have lasting environmental and socio-economic consequences and can be extremely difficult and costly to address through remedial measures. Wastes from the extractive industries have therefore to be properly managed in order to ensure in particular the long-term stability of disposal facilities and to prevent or minimize any water and soil pollution arising from

acid or alkaline drainage and leaching of heavy metals.

The ESIA must include;

(i) Compliance to the proposed waste management practices to the existing waste management regulations or International Standards and Guidelines

(ii) An analysis of alternatives in terms of best available technology (BATs) and/or best environmental technologies (BETs)

(iii) An effective training on handling, transportation, storage and disposal of various waste streams

(iv) An effective monitoring programme as part of the ESMP

4.3.9 Integrate climate change vulnerability and risk assessment

Large-scale mining projects have the potential to alter the global carbon budget in at least the following ways:

(i) Lost CO_2 uptake by forests and vegetation that is cleared in order for mining to begin;

(ii) CO_2 emitted by machines consuming fossil fuels that are involved in extracting and transporting ore (such as., diesel-powered heavy vehicles); and

(iii) CO_2 emitted by the processing of ore into metal (such as., by pyro-metallurgical versus hydro-metallurgical techniques).

The impacts analysis section of the ESIA should include quantitative estimates of each of the above three ways a mining project could potentially affect the global carbon budget. Quantitative estimates of the second two components should be relatively simple projections, based on expected rates of fossil fuel consumption.

A quantitative estimate of the first component will require a more complicated, site-specific analysis of the CO_2 uptake rates by local forests that will be impacted by the proposed mining project. This analysis is essential because for many proposed mining projects in tropical areas, lost CO_2 uptake by forests and vegetation would be the largest factor determining the project's potential impact on global climate.

4.4 Analysis of alternatives

This is a review of all available alternative actions related to a given project such as alternative sites, materials, alternative techniques/technology, routing, alternative projects and no-action alternative. The purpose of considering alternatives is to adopt those that minimize damage to the environment and harm to human health or which allow the use of mitigation measures to protect the environment and human health. The identification of alternatives must be genuine, feasible, well documented and carried out before a choice is made. The choice of suitable and optimal alternative should be informed by environmental benefits, socio-cultural acceptability and economic viability.

4.5 Public Participation

Participation is very important in undertaking of ESIA and should be undertaken all through the life of a project from design to decommissioning phases. Public participation involves seeking public comments on the project, especially from those persons affected by the project. Views may be sought through interviews with various stakeholders and interested parties or by publicizing the project, its benefits and impacts. Identification of various stakeholders involved in or potentially affected by the proposed project should thus be undertaken from the very beginning and should include those from governmental, non-governmental, private sectors (particularly those from the mining sector), and indigenous and local communities.

Generally, public participation enhances sourcing of information, its analysis and appropriate interpretation. It also improves public perception of the project, its environmental, social, cultural and economic implications, and the project options and proposed impacts mitigating measures. Public involvement may be extended beyond the affected community in the project area, to involve any member of the public that may be knowledgeable on the impacts of the project or may be better informed on environmental trends of the project area. This may require consultations with experts and interested parties.

The following are good practices to ensure inclusive public participation and meaningful stakeholder engagement: -

(i) Getting written comments and submissions from the relevant lead agencies;

(ii) Developing a public participation framework as early as possible;

(iii) Undertake Stakeholders mapping;

(iv) Identifying appropriate techniques of public participation/communication and disseminating information in a way that is easily understandable;

(v) Holding public consultation events at venues and times that allow for maximum attendance and free exchange of information;

(vi) Allowing stakeholders enough time to assimilate information, consider their implication and present their views, and

(vii) Ensuring that responses and feedback are given on any issues and concerns about the project raised during consultation.

4.6 Socio-cultural and Economic Impacts of the Project

The quality of life and uplifting of the human living standard is at the center of all development activities. Indeed, it is commonly recognized that sustainable mining is more than just environmental conservation of a natural area, but that is must also address the satisfaction and the quality of life for host communities. As such, all development activities impact on the socio-economic and cultural environment of humans and are thus also considered while undertaking an ESIA as shown in table 3 below.

Table 3: Socio-cultural and economic impact matrix

Type of Socio-cultural and economic Impact	Effect	Mitigation
Income	(+)	
Employment	(+)	
Livelihood	(+) or (-)	
Poverty	(+) or (-)	
Training & skills development	(+)	
Education & literacy	(+) or (-)	
Community access to services	(+) or (-)	
Water (scarcity and quality)	(-)	
Land impacts	(-)	
Assets impacts	(-)	
Diseases (Covid -19, HIV/AIDS/STDs)	(-)	
Security	(-)	
Violence, drug trade and money laundering	(-)	
Gender and the youth	(+) or (-)	
Cultural erosion	(-)	
Social transformation	(-)	
Child labour	(-)	
Migration	(+) or (-)	
Impacts on host community	(-)	
Impacts on agriculture	(-)	

4.7 Impact Prediction and Evaluation

This addresses the prediction of the magnitude and significance of the environmental impact. Whenever possible or feasible to determine the magnitude and significance of impacts, it is generally agreed that the quantitative change due to the impact be compared. Details of impacts at each phase of the mining operations should be discussed. This should include impacts of mine exploration, construction, operations and closure.

(i) Main Impacts of Exploration on the natural environment include the following but not limited to:

- Temporary disturbance of species at local level
- Temporary local loss of habitat
- Road collisions
- Dust smothering of vegetation
- Poaching and firewood collection by workers
- Introduction of alien species
- Sediment runoff
- Opening up remote areas which could result in impacts on the natural environment.

(ii) Main Impacts of Construction on the natural environment include the following but not limited to:

- Temporary and permanent loss of habitat
- Road collisions with animals, birds
- Dust smothering of vegetation along access roads
- Sedimentation of streams, rivers and wetlands
- Poaching and firewood collection by workforce and itinerant job seekers
- Habitat fragmentation and loss of ecological corridors
- Local loss of species
- Introduction of alien species e.g. through seeds on vehicles and equipment
- Providing access to remote areas and indirectly putting pressure on ecological goods and services
- Loss of access to ecological goods and services by local communities with resultant impacts on livelihoods
- Indirect impacts on the natural environment due to resettlement of local communities to other areas

(iii) Main Impacts of Mine Operations on the natural environment include the following but not limited to:

- Direct loss of habitat
- Direct loss of species in the area
- Road collisions with birds and animals
- Direct and indirect loss of habitat through water pollution, dust smothering, acid rain, air pollution, reduction in river flows, soil contamination
- Impact on vegetation due to lowering of water table resulting from groundwater abstraction
- Effects of greenhouse gases on climate change and subsequent effects on the natural environment
- Habitat fragmentation
- Interruption and/or loss of migration corridors and disturbance of source-sink relationships
- Indirect impact on food web functioning through bioaccumulation of metals, loss of diversity, lower species resilience
- Alien species invasion (plants, pests, vermin, water weeds)

(iv) Main Impacts of Mine Closure on the natural environment include the following but not limited to:

- Re-colonisation of disturbed areas by fauna and flora
- Creation of new/different habitats
- Potential for invasive species
- Physical traps for wildlife e.g. open pits

4.8 Impacts Mitigation

These are measures that will eliminate or reduce the intensity or compensate for the losses or potential adverse environmental impacts.

Mitigation measures proposed should also be evaluated for their effectiveness. Mitigation measures may include:

(i) Abandoning or modifying a project proposal

(ii) Substitution of techniques using Best Available Technology

(iii) Correct impact by repairing,

(iv) Compensate for the impact by replacing or providing substitute resources such as reforestation when forests are destroyed, rehabilitating or restoring existing environment.

(v) Allocation of adequate resources (human and financial) to ensure effective mitigation

(vi) Offset - Offset is a consideration that balances or diminishes the negative effect of an action. Offset replaces or provides 'like for like or better' substitutes for residual negative impacts on the environment e.g. mining activities in environmentally sensitive areas should be the last consideration and can only be allowed if there is formal commitment to managing substitute areas of comparable or greater value for conservation.

4.9 Trans-boundary issues

Trans-boundary considerations apply when project activities in one country have significant impact on the environment of another country. When a proposed project may lead to impacts across jurisdictional boundaries, the country of origin and the project developer should ensure that the affected country and its citizens within the area of likely impact are given the opportunity to participate in the environmental impact assessment. The country of origin should thus provide information on the assessment at an early stage in the assessment process, when a decision to apply an ESIA is made or when the scope of the assessment is determined.

Key considerations include:

(i) Notification procedures should be taken into consideration as guided by trans-boundary ESIA guidelines and/or agreements on shared resources and trans-boundary impacts such as Nile Basin Initiative, Trans-boundary ESIA Guidelines for shared ecosystems in East Africa, Western Indian Ocean Region Land Based Activities (WIO-LaB) among others;

(ii) Undertaking appropriate and effective measures to prevent, reduce and control significant adverse trans-boundary environmental impact from proposed activities.

(iii) Ensuring that affected parties are notified of a proposed activity that is likely to cause a significant adverse trans-boundary impact.

(iv) Public participation and stakeholder engagement should be made available to the public in the areas of likely impact on both sides of the border. The public of the affected country and of the origin of impact should receive the same information, and be given the same opportunity to participate in the assessment and comment on the results.

Inclusion of trans-boundary issues may be relevant on a case to case basis depending on a project site and impacts therein.

4.10 Equitable sharing

This is a concept that ensures that the benefits arising from the utilization of biodiversity and natural resources are shared in a fair and justifiable way along the value chain. The Benefit Sharing Arrangements (ABS) and the Community Development Agreement (CDA) with the local communities to be considerate of the efforts put in as far as conservation of the resource is concerned. The fair access and benefit from natural resources should factor in intra and inter-generational equity & the upstream and downstream communities.

4.11 Environmental and Social Management Plan (ESMP)

The Management Plan is one of the most critical outputs of an ESIA. It details actions to be taken to minimize the adversity of impacts throughout the project cycles. It goes further to assign responsibilities and commitments proposed, time schedules and costs for the mitigation. The proposed ESMP should be in line with the general management plans as guided by the mining and environmental laws.

4.11.1 General

i) Relevant environmental policy of the proponent and contractor

ii) Specification of roles and responsibilities

iii) Reporting structure (organogram) and frequency

A statement as to whether the ESMP forms part of a larger management system, e.g. ISO 14001

4.11.2 Layout

For each impact identified in the impact assessment report, the ESMP must provide the following:

i) A management objective;

ii) The management action to achieve the objective;

iii) The target, standard, guideline to be achieved;

iv) The person responsible for carrying out the action;

v) The frequency of the action (if repeated) or the date for completion of the action; and

vi) The budget required for carrying out the action.

Within each major project phase (Construction, Commissioning, Operations, Decommissioning and Closure), the ESMP actions should be grouped by administrative area e.g. workshops, TSF, camp, mining site among others so that the person responsible for that area knows exactly what must be done with regards to environmental management and can be held directly responsible for any non-compliance.

4.11.3 Monitoring Programme

For each element to be monitored e.g. water quality, the ESMP should specify:

(i). What has to be monitored e.g. pH, SO_x, NO_x and suspended solids

(ii). Where the monitoring stations should be e.g. provide map and precise coordinates of all sampling points

(iii). Who is responsible for monitoring e.g. Environmental Control Officer or external consultancy

(iv). Monitoring frequency e.g. monthly

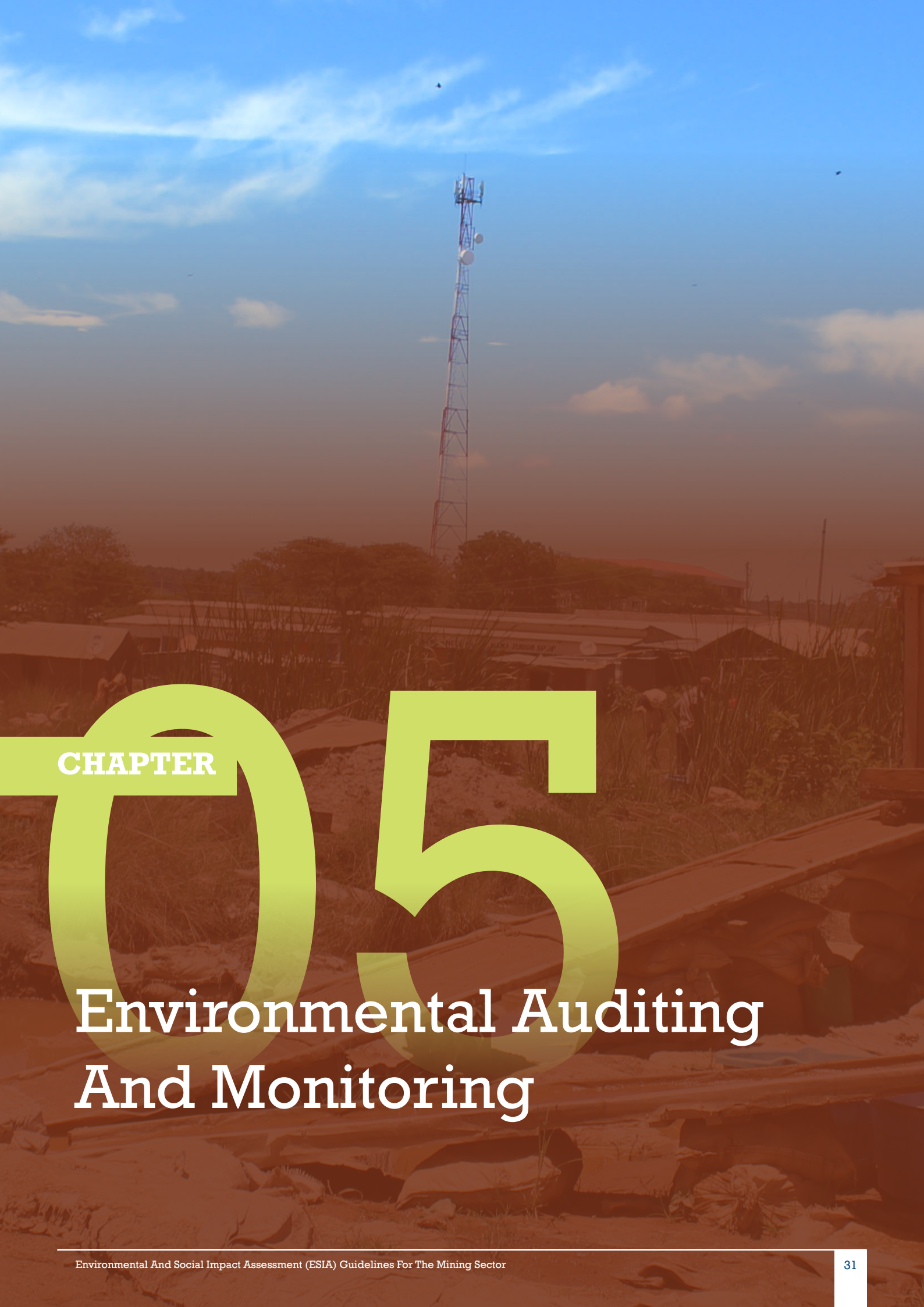
(v). Where applicable the need for transboundary monitoring should be undertaken.

The ESMP should provide monitoring/sampling protocols, chains of custody and the accredited laboratories that will be used for specific analyses.

The ESMP should include an outline of the monitoring report formats to be used.

4.12 Reporting

An ESIA report is written according to the requirements of the EIA/EA Regulations, 2003 and prepared in accordance with the outline provided for in ***Annex 2*** for medium risk projects ***and 4*** for high risk projects of this Guideline. An ESIA report is then submitted to the NEMA for review with the involvement of relevant lead agencies.



CHAPTER 05

Environmental Auditing And Monitoring

5.1 Environmental Auditing

Environmental auditing enables the assessment of performance and compliance of mining operations to the relevant laws, regulatory framework and applicable standards to the ESMP.

The key elements to be considered during environmental auditing of a mine field and associated facilities include;

(i) Description of the project and its objectives;

(ii) audit objectives, scope and criteria;

(iii) outline and analyze all relevant laws and regulatory frameworks and applicable international standards;

(iv) assessment of the level of compliance by the proponent with the conditions of the Environmental and Social Management and Monitoring Plan and of all relevant national and international laws and standards on matters of environment;

(v) evaluation of the awareness, knowledge, and responsibility of personnel's on requirements of relevant legislation;

(vi) examination of existing project documentation related to all infrastructural facilities and designs for their effectiveness in mitigating anticipated adverse environmental impacts;

(vii) integration of climate change vulnerability assessment, adaptation and mitigation actions;

(viii) examination of monitoring programs, parameters, standards and procedures in place for control and corrective actions in case of emergencies;

(ix) examination of records of incidents and accidents and the likelihood of future occurrence of the incidents and accidents;

(x) inspection of all mine fields, buildings, equipment, premises and yards in which manufacturing, testing and transportation takes place within and without the project area, as well as areas where goods are stored and disposed of and give a record of all significant environmental risks associated with such activities;

(xi) assessment of views on environmental, social, safety and health issues from the project employees, the locals and other potentially affected communities including youth, persons with disability and other vulnerable groups and;

(xii) examination of the records of safety and health and environmental concerns of past and ongoing activities.

5.2 Environmental Audit Report

There are two types of Environmental Audit namely Self-Audit and Control Audit. Self-Audit shall be undertaken by the operating mining facilities while a control audit is undertaken by the Authority.

5.2.1 Self Environmental Audit Report:

The operator shall undertake an environmental audit report as follows:-

(i) for facilities or entities listed in number 1 of the Second Schedule to the Act, being low risk projects every three (3) years;

(ii) for facilities or entities listed in number 2 of the Second Schedule to the Act, being medium risk *(artisanal and small scale mining)* projects every two (2) years;

(iii) for facilities or entities listed as high risk *(large scale mining)* projects under the Second Schedule to the Act every twelve (12) months;

provided that an audit maybe required sooner if the life of the facilities or entities is shorter than the period prescribed and the Authority retains the right to require an audit for such facilities or entities to be undertaken before the expiry of the stipulated period above on giving at least fourteen (14) days' notice to the operator.

Environmental Audit report compiled shall contain the following but not limited to;

a) a description of the type of activity being audited;

b) a non-technical summary outlining the key findings, conclusions and recommendations of the auditor;

c) an indication of the inputs used, final products, by-products, and waste generated by the project;

d) a description of the different technical activities, processes and operations of the project;

e) a description of the national and county environmental legislative and regulatory frameworks on the environment and socio-economic matters;

f) a description of the potentially affected environment including public and occupational safety and health, the biophysical and socio-economic matters;

g) integration of climate change vulnerability assessment, adaptation and mitigation actions

and where applicable indicate level of compliance with National Climate Change obligations;

h) a prioritization of all past and on-going impacts of the project;

i) an assessment on the efficacy and adequacy of the ESMP of the project to ensure implementation is of acceptable environmental standards;

j) Audit Action Plan detailing recommendations for corrective activities, their cost, timetable and mechanism for implementation;

k) an assessment of views on environmental, social, safety and health issues from the project Employees, the local and other potentially affected communities; and

l) Attach proof of compliance with applicable laws, Regulations and standards.

See table 5 below for the environmental audit checklist.

On completion of Environmental Audit report, the proponent shall submit 5 printed copies (or as the Authority may prescribe from time to time) and an electronic copy to the Authority for further processing.

The Authority shall review the report and where necessary undertake site verification to confirm the compliance status of the facility and may then issue a compliance letter or an improvement order/notice.

5.2.2 Control Environmental Audit:

Control environmental audit shall be carried out by the Authority whenever the Authority deems it necessary to check compliance with the environmental parameters and standards established for the facilities or entities in the Environmental Management Plan.

A member of the public may also petition the Authority to cause an audit to be carried out by the Authority on any mining operation.

Reference to be made to the EIA/EA Regulations, 2003

Table 4: Environmental Audit Checklist

Environmental Parameters			
Parameters	**Regulatory Requirements**	**Facility Performance**	**Compliance Status**
Air emissions	Environmental Management and Coordination (Air Quality) Regulations, 2014		
Liquid/Hazardous wastes and effluents	Environmental Management and Coordination (Water Quality) Regulations, 2006		
Waste disposal (onsite & offsite)	Environmental Management and Coordination (Waste Management) Regulations, 2006, ESIA licensing conditions		
Oil/chemicals spill prevention	Environmental Management and Coordination (Waste Management) Regulations, 2006, ESMP, ESIA licensing conditions		
Biodiversity conservation	Environmental Management and Coordination (Conservation of Biological Diversity and Resources, Access to genetic resources and Benefit Sharing) Regulations, 2006, ESIA licensing conditions; ESMP		
Climate change inventory (GHG emissions inventory)	Climate Change Act, 2016, ESIA licensing conditions		
Contingency plan oil spills,	ESIA licensing conditions, ESMP		
Land/soil quality	ESIA licensing conditions, ESMP		
Incident response	ESMP, ESIA licensing conditions, Incident Management Strategy		
Mine closure plan	ESIA licensing conditions, ESMP		
Other parameters	EMCA, 1999, Environmental Management and Coordination (Controlled Substances) Regulations, 2007		

Occupational Health & Safety Parameters			
Parameters	**Regulatory Requirements**	**Facility Performance**	**Compliance Status**
Accidental reporting, investigations and risk assessment	OSHA Section 6(4) & Section 21		
Permit to work and special working procedures	OSHA Section 96		
Fire safety policy	Fire Risk Reduction Rules LN 59		
Job safety analysis	OSHA, 2007		
House keeping	Fire Risk Reduction Rules		
Emergency response	OSHA, 2007		
Regulatory compliance			
Naturally Occurring Radioactive Materials	The Nuclear Regulatory Act, 2019		
Employee exposure to air contaminants	Hazardous Substance Rules LN 60		
Exposure to physical agents such as. noise	Noise Prevention and Control Rules LN 25		
Measurement of employee exposure	OSHA, 2007. Medical Examination Rules		
Ventilation and engineering controls	Hazardous Control Rules LN 60		
Personal protective equipment	OSHA, 2007 - Section101		
Information and training on health hazards	Health and Safety Committee Rules LN 31		
medical surveillance programme	Medical Examination Rules LN 24		
Hearing conservation	Medical Examination Rules LN 24 Noise Prevention and control rules LN 25		
First aid	First Aid Rules LN 160		
Regular requirements	OSHA, 2007. Safety and Health Audits – COP, Fire Audits etc.		
Social Parameters			
Parameters	**Regulatory Requirements**	**Facility Performance**	**Compliance Status**
Grievance Redress Mechanism	ESIA Licensing conditions		
Stakeholder (PAPs, IPs, PWDs, gender considerations, vulnerable groups and Employees) involvement	ESMP, ESIA Licensing conditions, Environmental (Impact Assessment and Audit), Regulations, 2003		

Benefit sharing agreement	ESMP, Production Sharing Contract (PSC), Environmental Management and Coordination (Conservation of Biological Diversity and Resources, Access to genetic resources and Benefit Sharing) Regulations, 2006		
Capacity building programs	ESMP, PSC		
Approaches to addressing uncertainties	ESMP and PSC		
Integration of local content	ESMP and PSC		
Transparency (such as Extractive Industry Transparencies Initiatives) and management of Confidential Business Information (CBI)	ESMP,PSC and Environmental (Impact Assessment and Audit), Regulations, 2003		
Corporate Social Responsibility projects	PSC		
Social impact monitoring plan	ESMP, OSHA, 2007 and ESIA licensing conditions		

5.3 Environmental Monitoring

It is important to understand the mining method employed in order to understand the impacts associated with the method. The methods include but not limited to open cast, open pit and underground mining. The environmental monitoring shall be based on the parameters and monitorable indicators as defined in the ESMP and as may be prescribed by the Authority.

See table 5 below for environmental monitoring checklist

Table 5: Environmental Monitoring Checklist

Stages in the Mining Cycle	Activity Checklist	Impacts	Performance and Measurable Indicators
Reconnaissance	• Digital area maps and coordinates • Commitment to local content requirements • For airborne reconnaissance, there are transfer camps, temporary installations/installed installations • Financial strength of the proponent • Resume of project manager and key staff including environmental experts • Legally registered name, address and office of the company • Compliance history of the company • Statement of experience in relevant past works • Reconnaissance programme	• Public anxiety and dissatisfaction • Minimal disturbance to vegetation	• Records of public complaints and dissatisfaction recorded and addressed • Grievance Redress Mechanism (GRM) in place
Prospecting/ Exploration	• Survey and mapping • Establish cut lines • Trenching, pitting, drilling and bulk sample collection • Trial mining • Pilot plant construction and operation • Exploration camp • Servicing vehicles and equipment (fuel and lubricant management) • Waste disposal	• Biodiversity loss at local level • Local loss of habitat • Road collisions • Dust pollution • Poaching • Deforestation • Introduction of alien species • Sediment runoff • Opening up remote areas which could result in impacts on the natural environment • Soil and ground water contamination	• No. of features impacted upon • Signs of animal activity within the project area • Waste management strategy in place • Waste overburden • Management of waste tailings • Records on waste categorization and waste quantities • Records on timely vehicle and equipment service

Stages in the Mining Cycle	Activity Checklist	Impacts	Performance and Measurable Indicators
Planning and Design	• Environmental Surveys • Biodiversity assessments • Socio-cultural • Land availability • Air quality assessment • Water quality and quantity assessment • Noise and vibrations assessment • Resettlement Plans • Geological samples and data from the mine • Production capacity of each stage of the process • Available equipment, machinery and manpower • Sales demand and commodity prices • Production cost assumptions • Health and safety of workers • Develop Local content	• Minimal disturbance to vegetation • Public anxiety, expectations and unrests	• Records of public complaints and unrests recorded and addressed • GRM in place

Stages in the Mining Cycle	Activity Checklist	Impacts	Performance and Measurable Indicators
Mine development	• Vegetation clearance • Topsoil stripping • Overburden removal and blasting • Creation of access roads and tracks • Securing the site • Contractor's camp, yard and workshops • Waste dump establishment and waste disposal • Bulk earthworks • Building and plant construction • Installation of temporary and permanent services (water, sewage, power, telecoms, among others) • Laying of pipes and conveyors • Storm water drainage and effluent management • Labour force • Construction traffic • Employment creation for locals • Water quality and quantity	• Loss of habitat • Road collisions with animals, birds • Dust pollution • Fugitive emissions • Sedimentation of streams, rivers and wetlands • Poaching • Deforestation • Habitat fragmentation and loss of ecological corridors • Local loss of species • Introduction of alien species such as. through seeds on vehicles and equipment • Providing access to remote areas and indirectly putting pressure on ecological goods and services • Loss of access to ecological goods and services by local communities with resultant impacts on livelihoods. • Interference with land topography • Pressure on resources • Indirect impacts on the natural environment due to resettlement of local communities to other areas • Public anxiety, expectations and unrests	• No. of features impacted upon • Signs of animal activity within the project area • Waste management strategy in place • Waste overburden • Management of waste tailings • Records on waste categorization and waste quantities • Recorded conflicts due pressure on resources • Records on timely vehicle and equipment service • Integration of local content • Production Sharing Contract • Agreement between the investor and landowners/ community • Records on birth registration • Records on morbidity related exposure to mine operations • Water quality and quantity • Air quality • Soil quality • Records of public complaints and unrests recorded and addressed • GRM in place

Stages in the Mining Cycle	Activity Checklist	Impacts	Performance and Measurable Indicators
Operation	• Drilling and blasting • Waste rock dumps • Ore conveyance (road, conveyor, cable way) • Processing plant • Smelter or refinery • Heap leach, bioreactors • Acid plant • Tailings and/or slimes disposal • Slag and/or process waste dumps • Water abstraction and use • Effluent disposal • Hazardous materials storage and disposal • Industrial waste disposal • Traffic Workshops, offices, accommodation among others • Employment creation for locals • Local content	• Direct loss of habitat • Direct loss of species in the area • Road collisions with birds and animals • Direct and indirect loss of habitat through water pollution, dust pollution, acid rain, air pollution, reduction in river flows, soil contamination • Impact on vegetation due to lowering of water table resulting from groundwater abstraction • Effects of greenhouse gases (GHGs) and subsequent effects on the natural environment • Habitat fragmentation • Interruption and/ or loss of migration corridors and disturbance of source-sink relationships • Pressure on resources • Indirect impact on food web functioning through bioaccumulation of metals, loss of diversity, lower species resilience • Alien species invasion (plants, pests, vermin, water weeds) • Socio-cultural erosion • Disruption of family bonds	• No. of features impacted upon • Signs of animal activity within the project area • Waste management strategy in place • Waste overburden • Management of waste tailings • Records on waste categorization and waste quantities • Recorded conflicts due pressure on resources • Records on timely vehicle and equipment service • Integration of local content • Integration of environmental and social considerations in the Production Sharing Contract (PSC) • Agreement between the investor and landowners/ community • Records on birth registration • Records on morbidity related exposure to Mine operations • Water quality and quantity • Air quality • Soil quality • Records of public complaints and unrests recorded and addressed • • GRM in place

Stages in the Mining Cycle	Activity Checklist	Impacts	Performance and Measurable Indicators
Decommissioning, Mine Closure and After use	• Presence of open pit • Treatments of heaps • Removal of all structures and waste • Water pollution control measures • Tailings Storage Facility •	• Re-colonisation of disturbed areas by fauna and flora • Creation of new/ different habitats • Potential for invasive species • Physical traps for wildlife and humans such as. open pits, shafts, trenches • Ground and surface water pollution	• Emergence of new vegetation cover on back filled pits • Categories and quantities of wastes recovered • Water quality and quantity • Soil quality

5.4 Community Based Environmental Monitoring

This is a good practice that enhances meaningful inclusion of the project affected persons in decision making and assessment of the utilization of the natural resources within their locality. It promotes project acceptability and ownership during the operational phase of the project and guarantees the miner the social license to operate. It also enhances efficiency in addressing any emerging issues as well collaboration and coordination with the relevant regulatory agencies.

CBEM also gives communities control of their resources while ensuring compliance with regulatory requirements. It should be inculcated by the miners and the mining groups to enhance self-regulation and hence the balance between livelihood requirements and environmental conservation.

Annexes

Annex 1 ESIA Screening Criteria

	Environmental and Social Impacts	Yes	No
1	Are there environmentally sensitive areas (forests, rivers or wetlands among others.) or threatened species that could be adversely affected by the project?		
2	Does the project area (or components of the project) occur within or adjacent to any protected areas designated by government (national park, Conservancies, national reserve, world heritage site, among others.)?		
3	If the project is outside of, but close to, any protected area, is it likely to adversely affect the ecology within the protected areas (such as. interference with the migration routes of mammals or birds?		
4	Will the project reduce peoples' access (due to roads, location among others.) to the pasture, water, public services or other resources that they depend on?		
5	Might the project alter any historical, archeological or cultural heritage site or require excavation near such a site?		
6	Will the project require large volumes of construction materials (such as. gravel, stones, water, timber, firewood?		
7	Might the project lead to soil degradation, soil salinity or erosion in the area?		
9	Will the project create solid or liquid waste or gaseous emissions that could adversely affect local soils, vegetation, rivers, streams, ground water or air?		
10	Might river or stream ecology be adversely affected due to the installation of structures such as weirs and by-passes for micro-hydro projects?		
11	Will the project have adverse impacts on natural habitats that will not have acceptable mitigation measures?		
12	Will the project have human health and safety risks, during all the phases of the project		
13	Will the project lead to displacement of people or of livestock?		
14	Might the project lead to migration into the area and outside?		
15	Is it possible to achieve the objectives above in a different way, with fewer environmental and social impacts?		

Annex 2 Content of a Comprehensive Project Report

The project report constitute the following:

a) the nature of the project;

b) the location of the project including, proof of land ownership where applicable, the Global Positioning System (GPS) coordinates and the physical area that may be affected by the project's activities;

c) the activities that shall be undertaken during the project construction, operation and decommissioning phases;

d) a description of the International, national and county environmental legislative and regulatory frameworks on the environment and socio-economic matters;

e) the preliminary design of the project;

f) the materials to be used, products and by-products, including waste to be generated by the project and the methods of their disposal;

g) the potential environmental impacts of the project and the mitigation measures to be taken during and after implementation of the project;

h) analysis of alternatives including project site, design, technologies and processes and reasons for preferring the proposed site, design, technologies and processes;

i) an action plan for the prevention and management of possible accidents during the project cycle;

j) a plan to ensure the health and safety of the workers and neighboring communities;

k) the economic and socio-cultural impacts to the local community and the nation in general;

l) a plan to ensure the relocation or resettlement of persons affected by the project;

m) a strategic communication plan to ensure inclusive participation during the study and provide a summary of issues discussed at the public participation forum;

n) an environmental management plan;

o) integration of climate change vulnerability assessment, relevant adaptation and mitigation actions;

p) the project cost ; and

q) any other information the Authority may require.

Annex 3 ESIA Decision Making Principles

There are ten principles that guide the review of the environmental assessment reports to inform on the appropriate record of decision. The principles are:

a) Ecosystem-based approach

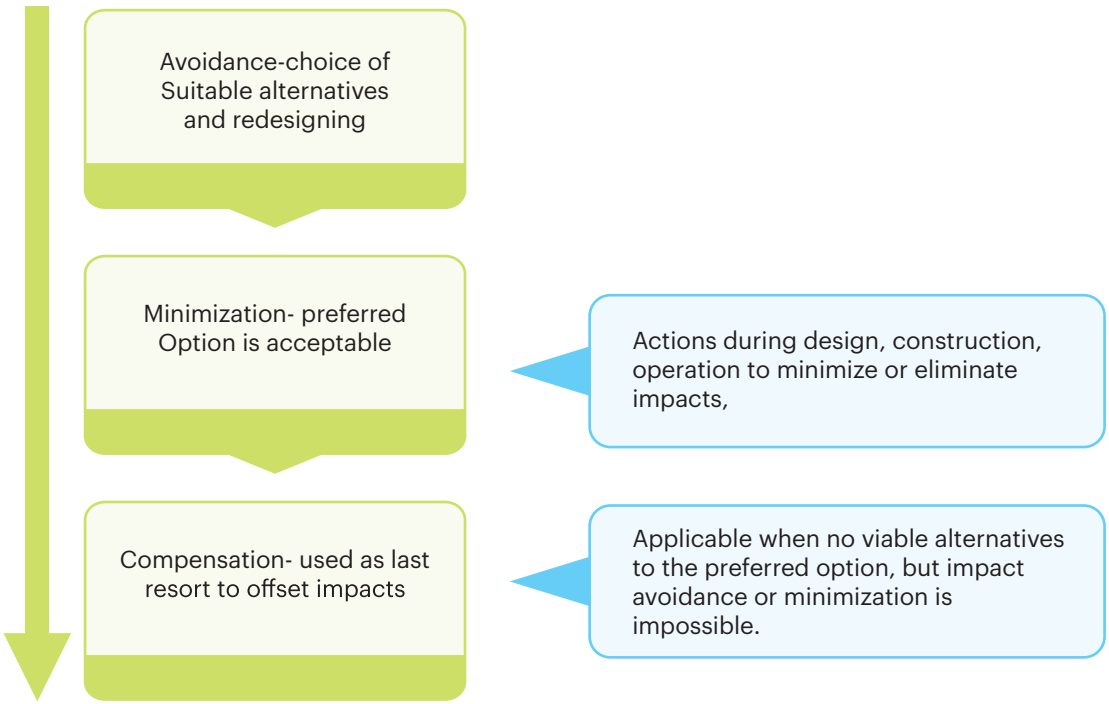
It recognizes that people and biodiversity are part of the broader ecosystems on which they depend, and that they should be assessed in an integrated way. Conservation of ecosystem structure and functioning, to maintain ecosystem services, should be a priority target. The ecosystem management should be set for the long term. It is paramount to establish an appropriate balance between conservation and exploitation. Application of offsets and opportunity cost as we protect environmentally sensitive areas.

b) Alternatives

Evaluation of alternatives is an essential part of impact assessment and decision making. Site, Technology, Design, Material, Routing alternatives among others. Consider also the cost-benefit analysis. Thorough consideration of alternatives result in achievement of stakeholders buy-in and an optimum proposal emerges. Sound decision making identify and select alternatives that offer the greatest overall benefits and avoid undesirable impacts for the society.

c) Mitigation Hierarchy

This principle is summarized by the figure below



d) Precautionary principle

It is based on the premise that if you are not sure what is going to happen as a result of doing something, and the effects could be severe and irreversible, and could compromise our future, we should avoid taking risks. The combination of uncertainty and the risk of irreversible effects or loss of irreplaceable resources presents a challenge to decision makers.

e) Equitable sharing

(i) Intra and Inter-Generational Equity

(ii) Upstream and downstream communities

(iii) Rich and poor

(iv) Avoiding Trans-boundary impacts on shared resources

(v) Benefit sharing Arrangements (ABS) with the local community-fair access and benefit from natural resources

(vi) Resettlement Action Plan (RAP)-Resettlement, Compensation and Restoration of Livelihoods

f) Risk Assessment and Management

Risk is the probability of harm (health effect) or the likelihood of a significant impact. Risk assessment describes the process of evaluating alternative regulatory actions and selecting among them-policy action. It is carried out by Regulatory agencies under various legislative mandates.

Risk assessment is therefore an agency decision-making process that entails consideration of health, environmental, social estimation, economic estimation, policy judgment (political), engineering information and Risk-Benefit control. It requires the use of value judgment on issues such as acceptability of risk and the reasonableness of the cost of control

g) Compatibility/conformity with existing planning framework

It employs ecosystem based General Management Plan (GMP) as a practical management tool to guide project level ESIA (such as. Amboseli National Park Management Plan). The zoning plan/Guidelines is the legal regulation of the use of land. The zoning plan therefore serves as a comprehensive guide for urban and regional development and is adopted and rendered effective as a legal ordinance. Further the zoning plan is vital in informing/guiding ESIA specific projects.

h) Meaningful and inclusive public participation and stakeholder engagement

The Environmental Management and Coordination Act, 1999 recognizes the need of not only public participation but also institutional recognition in the ESIA process. Therefore it is prudent that decision making must take into account the stakeholders needs and views. Adequate stakeholder consultation will improve decisions since there is access to a broader range of perspectives and opinions on the proposed project thereby, promoting social acceptance of the project by the public.

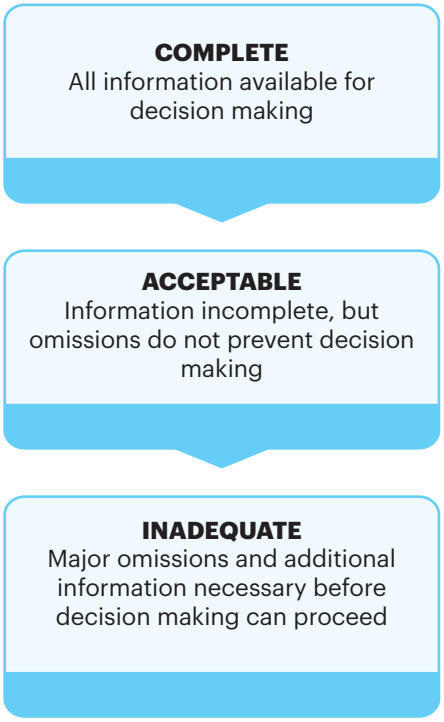
i) Adherence to "three-simultaneity concept"

Environmental Protection (EP) facilities must be designed, constructed and employed simultaneously with the proposed project.

Environmental Protection includes the following: solid waste management plan, wastewater management plan, Emergency Response Plan, Emergency Response fixture, traffic management plan, installation of water and energy saving fixtures, Site rehabilitation plan and Cleaner Production approaches among others.

j) Adequacy of the ESMP and ESIA report

ESIA Report Grading-Complete (C) Acceptable (A) Inadequate (I) Rule



Annex 4 Content of Integrated EIA Study Report:-

The proponent shall submit an integrated ESIA Study report which includes but not limited to the following;

a) A non-technical summary outlining the key findings, conclusions and recommendations of the study and shall be signed by the proponent and environmental impact assessment experts involved in its preparation.

b) the nature of the project;

c) methodology of undertaking the study including implementation of stakeholder engagement plan;

d) the proposed location of the project including, proof of land ownership where applicable and the Global Positioning System (GPS) coordinates;

e) a description of the International, national and county environmental legislative and regulatory frameworks on the environment and socio-economic matters;

f) baseline information including environmental and socio-economic and any other relevant information related to the project;

g) the objectives of the project;

h) the technology, procedures and processes to be used in the implementation of the project;

i) the materials to be used in the construction and implementation of the project;

j) the products, by-products and waste generated by the project;

k) a description of the environment likely to be affected by the project;

l) a summary of issues discussed at the public participation forum with supporting documents annexed;

m) the environmental impacts analysis of the project including direct, indirect, cumulative, irreversible, short-term and long-term impacts anticipated, social analysis, economic analysis and cultural analysis;

n) integration of climate change vulnerability assessment, adaptation and mitigation actions;

o) analysis of alternatives including project site, design, technologies and processes and reasons for preferring the proposed site, design, technologies and processes;

p) an environmental management plan proposing the measures for eliminating, minimizing or mitigating adverse impacts on the environment; including the cost, time frame and responsibility to implement the measures;

q) provision of an action plan for the prevention of foreseeable accidents, occupational diseases and management of hazardous activities in the course of carrying out activities of the project;

r) the measures to prevent health hazards and to ensure safety in the working environment for the employees and for the management of emergencies related to the project;

s) an identification of knowledge gaps and uncertainties which were encountered in undertaking the Integrated Environmental Impact Assessment study;

t) an indication of whether the project is likely to affect the environment in any other country, the available alternatives and mitigation measures; and

u) such other matters as the Authority may require.

References

National Environment Policy, sessional paper no 10 of 2013

Mining and Minerals Policy, sessional paper no 7 of 2016

Environmental Management Coordination Act, 1999

Mining Act, 2016

Occupational Safety and Health Act, 2007

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Work Injury Benefits Act, 2007

Employment Act, 2007

Land Act, 2012

Environment and Land Court Act, No. 19 of 2011

Community Land Act, 2016

Water Act, 2016

Physical and Land Use Planning Act No. 3 of 2019

Forest Conservation & Management Act, 2016

Wildlife Conservation and Management Act, 2013

National Land Commission Act, 2012

County Government Act, 2012

Public Health Act, Cap 242

Kenya National Commission on Human Rights Act, 2011

Climate Change Act, 2016

Environmental (Impact Assessment and Audit) Regulations, 2003

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Environmental Management and Coordination (Noise & Excessive Vibrations) Regulations, 2009

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Environmental Management and Coordination (Air Quality) Regulations, 2014

Environmental Management and Coordination (Conservation of Biological Diversity and resources, access to genetic resources and benefit sharing) resources, 2006

Mining (Work Programmes and Exploration Reports) Guideline, 2017

Mining (Licence and Permit) Regulations, 2017.

Mining (Dealings in Minerals) Regulations, 2017.

Mining (Community Development Agreement) Regulations, 2017.

Mining (Strategic Minerals) Regulations, 2017.

Mining (Mine Support Services) Regulations, 2017.

Mining (Award of Mineral Rights by Tender) Regulations, 2017.

Community land Regulations, 2017

Physical and Land Use Planning (Development permission and control) (general) Regulations, 2021

Wildlife Conservation and Management (Protection of Endangered and threatened ecosystems, habitat and species) Regulations, 2017

Wildlife Conservation and Management (Joint Management of Protected Water Towers) Regulations, 2017

National Land Commission (Review of Grants and Dispositions of Public Land) Regulations, 2017

Frequently Asked Questions During The Stakeholder Consultations

1. What is ESIA?

It is a systematic examination conducted to determine whether or not a project will have any adverse impacts on the environment and social aspects.

2. Why should I do an ESIA?

To assess and predict potential adverse environmental and social impacts and to develop and implement suitable mitigation measures thereby enhancing the quality of the environment and human well-being.

3. Who does an ESIA?

The project proponent through a registered and licensed Environmental Impact Assessment Expert

4. How does one become a registered Environmental Impact Assessment Expert?

For one to be considered for registration as an EIA expert, one needs to have at least a bachelor's degree in environmental studies or a related field. Those with degrees in related fields will be required to further undertake an EIA course from a NEMA accredited institution. With these requirements one can apply to NEMA to be considered for registration as an environmental expert.

5. Must an ASM do an ESIA?

Yes, projects that may have significant impacts to the environment are required to undertake an ESIA including mining projects by ASMs in line with the Environmental Management and Coordination Act (EMCA), 1999.

6. Can miners do one ESIA in a designated mining zone?

Yes, The ESIA class application can be applied by the Authority to process the ESIAs submitted by formalized ASM groups in designated mining zones.

7. What is linkage between the mining cycle and the applicable environment assessment tool

The mining development cycle comprises of exploration & discovery, feasibility & construction, Mining extraction and closure & site rehabilitation. Each of the steps is subjected to the ESIA process for the large scale mining. The ASMs undertake a comprehensive project ESIA process for the mining activities.

8. How much is the ESIA fees charged?

The ESIA processing and monitoring fees is charged at a rate of 0.1% of the project cost with a minimum of Kshs. 10,000 and a maximum of Kshs. 5,000,000.

9. Who pays for the ESIA fees?

The ESIA processing and monitoring fee is paid for by the project proponent in this case the miner/applicant.

10. Is there a classification for ESIAs?

The ESIAs are classified through the risk based criteria namely low, medium and high risks as indicated in legal notice no. 31 and 32 of 2019.

11. What is the definition of Artisanal Mining?

"Artisanal mining" is defined by the Mining Act. 2016 as traditional and customary mining operations using traditional or customary ways and means.

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