



FEDERAL MINISTRY OF ENVIRONMENT

Environment House

Independence Way South, Central Business District, Abuja - FCT.

Tel: 09-2911 337 www.environment.gov.ng, ea-environment.org

ENVIRONMENTAL ASSESSMENT DEPARTMENT

Ref: FMENV/EA/EIA/123:4060/Vol.1/xxx

Date: 6th December 2016

The National Project Coordinator,
Mineral Sector Support for Economic Diversification Project (MinDiver)
No 2, Luanda Crescent off Adetokunbo Ademola Crst.
Wuse 2, Abuja.

**PUBLIC DISCLOSURE ON THE ENVIRONMENTAL AND SOCIAL MANAGEMENT FRAMEWORK
(ESMF) AND RESETTLEMENT POLICY FRAMEWORK (RFP) FOR THE MINERAL SECTOR
SUPPORT FOR ECONOMIC DIVERSIFICATION PROJECT BY THE FEDERAL MINISTRY OF
MINES AND STEEL DEVELOPMENT**

Please refer to your letter dated 6th December 2016 submitting draft ESMP/RFP report of the above project.

2. I am directed to inform you that the Honorable Minister of Environment has approved 21 working days public display review process for the proposed project.

3. The public display exercise is to take place from 8th December 2016- 5th January, 2017. You are please requested to place the enclosed newspaper adverts (full page) on or before 8th December, 2016 in the following newspapers:

- (i) Daily Trust
- (ii) The Sun
- (iii) Leadership

4. You are further requested under this arrangement to place radio announcements at prime time on Radio Nigeria for the first and last five (5) days of the display period. A sample of the radio announcement is herewith attached. In addition, you shall please submit the evidence of newspapers advertisement to the Federal Ministry of Environment, Abuja.

5. Thank you for your co-operation.

Abbas O. Suleiman
for: Honorable Minister



PUBLIC NOTICE

FEDERAL MINISTRY OF ENVIRONMENT

PUBLIC DISCLOSURE ON THE ENVIRONMENTAL AND SOCIAL MANAGEMENT FRAMEWORK (ESMF) AND RESETTLEMENT POLICY FRAMEWORK FOR THE MINERAL SECTOR SUPPORT FOR ECONOMIC DIVERSIFICATION PROJECT BY THE FEDERAL MINISTRY OF MINES AND STEEL DEVELOPMENT

In accordance with the provisions of Environmental Impact Assessment (EIA) Act CAP E12 LFN 2004, which makes it mandatory for proponents of all new major development activities to carry out Environmental Impact Assessment on their proposed projects, the Federal Ministry of Environment hereby announces a twenty-one (21) working day Public Notice for information and comments on the Draft ESMF, and RPF reports submitted by the Mineral Sector Support for Economic Diversification (MinDiver) Project of Federal Ministry of Mines and Steel Development, Abuja.

The Disclosure Centers Are:

- All the 36 States Ministry of Environment in Nigeria
- All the Federal Controller Office, Federal Ministry of Environment
- Federal Ministry of Mines and Steel Development, Abuja
- National Steel Raw Materials Exploration Agency, Kaduna
- Nigeria Institute of Mining and Geosciences, Jos
- Federal Ministry of Environment, Environment House, (Brown Building), Central Business District, Abuja, F.C.T.
- www.ca-environment.org

Project Description:

The Mineral Sector Support for Economic Diversification Project aims at catalyzing the process of economic diversification through the development of the mineral sector. The project is designed to deliver on the following thematic issues:

- Removing the Barriers to Mining Sector Development which will include strengthening governance, environmental and social governance, and the generation of geological knowledge and information infrastructure.
- Catalyzing the Process of Economic Diversification through the Mining Sector by providing Transaction Support to both Government and private sector to move mining investment to contractual close, catalyzing the mineral sector for regional development and accelerating growth in the Artisanal and small scale mining.

Duration of Display:

Date: 8th December 2016- 5th January 2017.

Time: 8:00am – 4:00pm Daily.

ALL COMMENTS RECEIVED SHOULD BE FORWARDED TO THE HONOURABLE MINISTER, FEDERAL MINISTRY OF ENVIRONMENT ON OR BEFORE 5TH JANUARY 2017

SIGNED
PERMANENT SECRETARY
For: Honourable Minister

RADIO ANNOUNCEMENT

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FEDERAL REPUBLIC OF NIGERIA

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MinDiver

MINERAL SECTOR SUPPORT FOR ECONOMIC DIVERSIFICATION (MSSD)
(World Bank Assisted)

Ministry of Solid Minerals Development

2 Luanda Crescent, Off Ademola Adetokunbo Crescent, Wuse II. P.M.B. 117, Garki, Abuja - Nigeria

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ENVIRONMENTAL AND SOCIAL MANAGEMENT FRAMEWORK

FINAL REPORT



ENVIRONMENTAL AND SOCIAL MANAGEMENT FRAMEWORK

**NIGERIA MINERAL SECTOR SUPPORT FOR ECONOMIC
DIVERSIFICATION PROJECT
FEDERAL MINISTRY OF SOLID MINERAL DEVELOPMENT**

FINAL REPORT

DECEMBER 2016

ABBREVIATIONS AND ACRONYMS

ASM	Artisanal and Small Scale Mining
BP	Bank Policy
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
EA	Environmental Assessment
ECOWAS	Economic Community of West African States
EFO	Externally Funded Output
EIA	Environmental Impact Assessment
ESMF	Environmental and Social Management Framework
ESMP	Environmental and Social Management Plan
EPA	Environmental Protection Agency
FEPA	Federal Environmental Protection Agency
FGN	Federal Government of Nigeria
FMinv	Federal Ministry of Environment
FPIC	Free Prior and Informed Consent
GDP	Gross Domestic Product
GoN	Government of Nigeria
IFC	International Financial Corporation
MARPOL	Marine Pollution by Dumping of Waste
MDAs	Ministries Department and Agencies
MECD	Mining Environmental Compliance Department
MinDiver	Mineral Sector Support for Economic Diversification
MIREMCO	Mineral Resources and Environmental Management Committee
MMSD	Ministry of Mines and Steel Development
MSMD	Ministry of Solid Minerals Development
NEITI	Nigeria Extractive Industries Transparency Initiative
NESREA	National Environmental Standards and Regulatory Enforcement Agency
OHS	Occupational Health and Safety
OP	Operational Policy
PCR	Physical Cultural Resources
PDOs	Project Development Objectives
PIU	Project Implementation Unit
RPF	Resettlement Policy Framework
SESA	Strategic Environmental and Social Assessment
SMRP	Sustainable Management of Mineral Resources Project
TBD	To Be Determined
TOR	Terms of Reference
WB	World Bank

CURRENCY AND EQUIVALENTS

Currency Unit	=	Nigerian Naira
1 US\$	=	N305

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EXECUTIVE SUMMARY

ES 1: Background

One of the key priorities of the Nigerian government is to enhance the diversification of the economy to mitigate its over-dependence on the petroleum sector. In this context, agriculture and the mining sector have been identified, by the newly elected government, as potential sources of growth for the future. Nigeria has an important geological potential for a number of minerals that, if adequately assessed, well exploited and managed, could support economic growth through mineral sector development. The government has identified a number of strategic minerals including barite, gold, bitumen, iron ore, lead/zinc, coal and limestone. Mining is widespread across almost all the states of the Federation, including the northern regions of the country where inequality and poverty rates are highest. In the North Eastern region of the country, mining development could be a driving force to bring jobs and revenue sources thus impacting on the economic stabilization of the region.

ES 2: Project Description

The proposed project will be financed through an IDA Credit in the amount of US \$150 million. Based on consultations with government counterpart, this proposed project is designed to deliver both short-term results (1 – 2 years) and longer-term results (4-5 years).

The project consists of three main components, namely:

- Component A: Establishing a Strong Foundation for Mining Sector Development (US \$62 million):
- Component B: Facilitating Downstream Sector Development & Enhancing Competitiveness (US \$76 million):
Sub-Component B2: Catalyzing the mineral sector for regional development (US \$13 mil). The objective of this project activity is to leverage the mining sector to enhance regional development in several strategic resource-rich regions identified as priorities for the government: Northeast, Northwest, and Southwest regions. This involves developing an enhanced regionally-based resource corridor analysis (DSS) to provide detailed analysis on opportunities for value chain and local content development, as well as infrastructure development in those regions. This sub-component will also provide financing for small (minor) infrastructure development projects associated with facilitating mine development, such as building or refurbishing an access road, power interconnect, gas connection, water management system, etc. Any such support will be in accordance with the Project's ESMF/RFP, and will include an ESIA and a site-specific environmental impact assessment (EMSP), where relevant.
- Component C: Project Management and Coordination (US \$9 mil)

ES 3: Rationale and Objective of ESMF

The project will provide financing to small (minor) infrastructural development associated with facilitating mine development such as building or refurbishing access roads, power interconnect, gas connection, water management system, etc. But, the locations of said investments will not be determined before the project be presented for approval by the Bank's Board. Therefore, in accordance with the Bank's policies, this Environmental and Social Management Framework (ESMF), and a Resettlement Policy Framework (RPF) prepared separately in complement, are adopted as safeguards management tools. The project is identified under Safeguards Category B, implying that the potential environmental and social impacts are expected to be minor, and manageable to a reasonable level.

The ESMF ensures that the principles and procedures for the development of in-country capacity and compliance with local regulations are established and it serves as the basis for environmental assessment of all sub-projects to be carried out under the project. Furthermore, the ESMF provides guidance for preparation ofESIAs, ESMPs, and environmental audits. It includes a screening process that is consistent

with both World Bank operational policies and Nigeria Environmental regulations, and a chapter on project processing that describes the responsibilities of stakeholders.

ES 4: Environmental and social stakes/issues in the potential intervention areas

The major environmental and social issues stakeholders are currently facing in the project area of influence include:

- Pollution of surface water from mine wastes in communities;
- Evaporation of mercury into the atmosphere during Gold Artisanal mining;
- Contamination of ground water with cyanide;
- Limited control of mine waste and process water discharge is carried out indiscriminately.
- Women and children involved during mining processing;
- Exposure of the vulnerable including women which exposes them to prostitution among mine workers;
- Social conflicts between new individuals at a mine and among indigenes of a community; and
- Armed banditry and crime.

ES 5: Potential Risks and Negative Environmental and Social Impacts

Implementation of some of the MinDiver sub-project could exert some negative impacts on the social and bio-physical environment within the project area of influence where they are implemented. The potential negative impacts, proposed mitigation measures as well as monitoring measures are included in Environmental and Social Management Plan (ESMP) as a checklist that would serve during the preparation of an ESIA/ESMP (See annex 8). Some of the potential negative impacts are presented in the Table below:

POTENTIAL ADVERSE IMPACTS	
ENVIRONMENTAL IMPACTS	SOCIAL IMPACTS
<ul style="list-style-type: none"> • Deterioration of ambient air quality due to the release of fugitive dusts and gaseous pollutants • Noise & vibration disturbances from operation of machineries and motorized equipment. • Loss of vegetation, Loss of biodiversity and altered ecosystem dynamics/processes. • Soil erosion due to compaction, soil horizon mixing and exposure of soil surfaces to rain and wind during earth moving, excavation & trenching activities. • Soil contamination from accidental leakage/spillage of fuel, oil/lubricants from equipment and vehicles. • Surface water pollution from sediment run-off from excavated areas • Generation of waste including spoils, vegetal and hazardous waste e.g. explosives 	<ul style="list-style-type: none"> • Loss of economic trees including medicinal herbs • Increase demand on existing health and sanitation infrastructure due to influx of temporary workers and camp followers. • Damage to existing underground facilities such as communication and electrical cables, sewage pipes and other service lines • Increased social vices/crimes and dilution of indigenous culture, norms and traditions in nearby communities due to influx of migrant workers and business opportunists e.g. community women being lured into prostitution, youth being introduced into hard drugs etc. • Loss of Cultural/Historical Sites. • Marginalization of women and other vulnerable groups. • Risk of child labour • Risk of communicable diseases such as STDs including HIV/AIDS from influx of temporary construction workers. • Conflicts among Water Users • Shortage of Water for Domestic, Irrigation and Other Uses • Outbreak of Sanitation - related Diseases such as Dysentery, Cholera etc. due to shortage of water downstream • Risks of occupational accidents and injuries to workers.

ES 6: Training and Capacity Strengthening Plan

Based on the public consultation, the capacity assessment of implementing state level MDAs as well as the PIU, were carried out. The effective functioning of the MDAs is compromised by limited technical skills and resource constraints.

For effective implementation of the ESMF, there will be need for technical capacity in the human resource base of implementing institutions as well as logistical facilitation. The identified technical skills and constrained as well as recommended training programmes are discussed in section 7.7 of this ESMF

ES 7: Stakeholder Public Consultation

Since sub-projects have not been identified at this stage the stakeholders consulted comprised of the PIU including the Project Coordinator, Procurement Officer, Representatives of Nigeria Geological Survey Agency (NGSA), Mining Inspectorate (MI), Artisanal and Small Scale Mining (ASM) Department and Mines Environmental Compliance Department (MECD). Other stakeholders include CDAs/CSOs. Details of the consultations are presented in Chapter 1 of this ESMF.

ES 8: Disclosures of Safeguard Instruments

The ESMF has been prepared in consultation with the PIU, relevant state MDAs and CSOs/NGOs. Copies of this ESMF, like other safeguard instruments (such as ESIAs/ESMPs) that would be prepared for MinDiver and its sub-projects will be made available to the public by the PIU.

The PIU will disclose the ESMF as required by the Nigeria EIA public notice and review procedures as well as the World Bank Disclosure Policy at the World Bank Infoshop. Copies of other safeguards instruments (such as ESIAs/ESMPs) should be disclosed in like manner. The Table below outlines documents to be disclosed.

Topic	Documents to be disclosed	Frequency	Media
Public Consultation	Minutes of Formal Public Consultation Meetings	Within two weeks of Meeting	FMEEnv MSMD MinDiver Project Website State Ministries of Environment Project Implementation Unit (PIU) Local government Secretariat
Environment Management	ESMF, Report & Environment and Social Management Plans (ESMPs); Strategic Environmental and Social Assessment (SESA).	Prior to awarding works and to remain on website	FMEEnv MSMD MinDiver Project Website State Ministry of Environment Project Implementation Unit (PIU) Local government Secretariat World Bank Infoshop.

ES 9: Implementing the ESMF – Roles & responsibilities

The environmental safeguards specialist and social safeguard specialist in the PIU will be responsible for the implementation of the ESMF in close collaboration with the Federal and State Ministries of Environment and relevant MDAs.

Subsequently, they shall be required to prepare a quarterly audit on ESMF implementation in addition to the project reports as may be required. In addition, each sub-project requiring an ESMP will also be required to produce an annual audit report for delivery to the PIU.

No	Steps/Activities	Responsible	Collaboration	Service Provider
1.	Identification and/or siting of the sub-project	PIU MinDiver	<ul style="list-style-type: none"> • MMSD • Local authority 	
2.	Screening, categorization and identification of the required instrument	Env. safeguards specialist (ESS) on the PIU	<ul style="list-style-type: none"> • beneficiary; • local authority • Social Safeguards Specialist (SSS) on the PIU 	
3.	Approval of the classification and the selected instrument by the FMEnv	PIU Coordinator	<ul style="list-style-type: none"> • ESS-PIU • SSS-PIU 	<ul style="list-style-type: none"> • FMEnv-EA Department • The World Bank
4.	Preparation of the safeguard document/instrument (ESIA, Env. Audit, simple ESMP, etc.) in accordance with the national legislation/procedure (taking into account the Bank policies requirements)			
	Preparation and approval of the ToRs	ESS-PIU		<ul style="list-style-type: none"> • The World Bank
	Preparation of the report		<ul style="list-style-type: none"> • Procurement specialist (PS-PIU) • SSS-PIU • Local authority 	<ul style="list-style-type: none"> • Consultant
	Report validation and issuance of the permit (when required)		<ul style="list-style-type: none"> • Procurement specialist (PS-PIU) • SSS-PIU • Local authority 	<ul style="list-style-type: none"> • FMEnv-EA Department • The World Bank
	Publication of document		Project Coordinator	<ul style="list-style-type: none"> • Media; • The World Bank
5.	(i) Integrating the construction phase mitigation measures and E&S clauses in the bidding document prior they're advertised; (ii) ensuring that the constructor prepares his ESMP (C-ESMP), gets it approved and integrates the relevant measures in the works breakdown structure (WBS) or execution plan.	Technical staff in charge of the sub-project (TS-PIU)	<ul style="list-style-type: none"> • ESS-PIU • PS-PIU 	<ul style="list-style-type: none"> • Control Firm (Supervisor) FMEnv
6.	Implementation of the other safeguards measures, including environmental monitoring (when relevant) and sensitization activities	ESS-PIU	<ul style="list-style-type: none"> • SSS-PIU • PS-PIU • TS-PIU • Financial Staff (FS-PIU) • Local authority 	<ul style="list-style-type: none"> • Consultant • National specialized laboratories • NGOs
7.	Oversight of safeguards implementation (internal)	SSES	<ul style="list-style-type: none"> • Monitoring and Evaluation specialist (M&E-PIU) • FS-PIU) • Local authority 	<ul style="list-style-type: none"> • Control Firm (Supervisor)
	Reporting on project safeguards performance and disclosure	Coordinator	<ul style="list-style-type: none"> • M&E-PIU • ESS-PIU • SSS-PIU 	
	External oversight of the project safeguards compliance	FMEnv	<ul style="list-style-type: none"> • M&E-PIU • ESS-PIU • SSS-PIU • PS-PIU • Supervisor 	

9.	Building stakeholders capacity in safeguards management	ESS-PIU	<ul style="list-style-type: none"> • SSS-PIU • PS-PIU 	<ul style="list-style-type: none"> • Consultant • Other qualified public institutions
11.	Independent evaluation of safeguards performance (Audit)	ESS-PIU	<ul style="list-style-type: none"> • SSS-PIU • PS-PIU 	<ul style="list-style-type: none"> • Consultant

ES 10: Estimated Budget for Implementing the ESMF

The table below shows an indicative budget breakdown and responsibility of the cost for implementing due diligence in the project. The total cost for implementing the ESMF is estimated at **Two Hundred and Four Thousand, Four Hundred and Sixty Three US Dollars only (\$204,463.00)**.

Item	Responsibility	Cost Breakdown	Cost Estimate in Us Dollars (US\$)
Mitigation	PIU, Contractors		157,500
Management	PIU	5% of Mitigation Cost	7,875
Capacity Building	PIU, Federal and States Ministries of Environment / Relevant MDAs		20,500
Preparation of specific instruments i.e ESIA/ESMP	PIU/Consultant	This estimation includes cost for reconnaissance survey, field studies, public consultations and report preparation etc	TBD
Sub- Total			185,875
Contingency		10% of Sub- Total	18,587.5
Total			204,463.00

A Resettlement Policy Framework (RPF) has also been prepared and adopted to complement this ESMF to comply with our own safeguards framework (national legislations and procedure on environmental and social) and to satisfy the requirements of the applicable World Bank environmental and social safeguards policies.

1.0 INTRODUCTION

1.1 Background

Until recently, Nigeria's economic growth has been relatively stable over the last decade and averaged around 7% a year. As a result of a statistical rebasing of the gross domestic product (GDP) in 2014, Nigeria's GDP was placed close to US\$500 billion, making it the world's 26th largest economy. Since June 2014, the economy has been facing challenges following the precipitous decline in global crude oil prices from record high prices in 2014 as well as a slow global economic recovery. As a result, Nigeria's dependency on the oil sector for fiscal revenues, in spite of non-oil sector growth, has affected the macroeconomic stability of the past years in the short and medium term.

One of the key priorities of the Nigerian government is to enhance the diversification of the economy to mitigate its over-dependence on the petroleum sector. In this context, agriculture and the mining sector have been identified, by the newly elected government, as potential sources of growth for the future. Nigeria has an important geological potential for a number of minerals that, if adequately assessed, well exploited and managed, could support economic growth through mineral sector development. The government has identified a number of strategic minerals including barite, gold, bitumen, iron ore, lead/zinc, coal and limestone. Mining is widespread across almost all the states of the Federation, including the northern regions of the country where inequality and poverty rates are highest. In the North Eastern region of the country, mining development could be a driving force to bring jobs and revenue sources thus impacting on the economic stabilization of the region.

The proposed project will be financed through an IDA Credit in the amount of US \$150 million. Based on consultations with government counterpart, this proposed project is designed to deliver both short-term results (1 – 2 years) and longer-term results (4-5 years).

1.2 Rationale of the Environmental and Social Management Framework (ESMF)

The project is identified under Safeguards Category B, implying that the potential environmental and social impacts are expected to be minor, site-specific and manageable to a reasonable level. Based on the information provided until this stage, the Project triggers three World Bank safeguard policies, namely, Environmental Assessment (OP/BP 4.01), Physical Cultural Resources (OP 4.11), and Involuntary Resettlement (OP 4.12). However, the project will provide financing to small (minor) infrastructural development associated with facilitating mine development such as building or refurbishing access roads, power interconnect, gas connection, water management system, etc. Therefore as a precautionary measure, an Environmental and Social Management Framework (ESMF) is being updated and a Strategic Environmental and Social Assessment (SESA) will be developed during implementation to ensure that any potential adverse social and environmental impacts are mitigated.

The ESMF ensures that the principles and procedures for the development of in-country capacity and compliance with local regulations are established and it serves as the basis for environmental assessment of all sub-projects to be carried out under the project. Furthermore, the ESMF provides guidance for preparation of ESIA's, ESMPs, and environmental audits. It includes a screening process that is consistent with both World Bank operational policies and Nigeria Environmental regulations, and a chapter on project processing that describes the responsibilities of stakeholders. Most of the infrastructural development activities are not expected to result in major losses or acquisition of land or in restrictions to sources of livelihoods. However, given the possibility that some of the project activities may involve land acquisition and involuntary resettlement, an RPF is also being prepared.

1.3 Stakeholder consultations

This step involved intensive stakeholder involvement and participation. The issues discussed with focus groups include:

- Environmental Issues e.g. Land Degradation & Mine Waste; Surface and Ground Water pollution;
- Abandoned mines;
- Health Safety and Environment and;
- Social issues including gender, labour, conflicts etc;

Table 1 below outlines a summary of stakeholder consultation carried out during the field visits.

Table 1(a): Summary of stakeholder consultation

Items	Description
Date of Public consultation	11/10/2016
Name of Stakeholders	MMSD, Mining Inspectorate (MI), MMSD Artisanal and Small Scale Mining (ASM) Department,, Nigeria Geological Survey Agency (NGSA), Project Coordinator, Project Consultant Geologist
Language of communication	English
Introduction	The Project Coordinator gave opening remarks on the overall MinDiver project objective and sub project interventions. The ESMF consultant highlighted the scope of the ESMF and the need of a stakeholder consultation in order to efficiently deliver improved project sustainability.
Issues/Comments of the Stakeholders	<p>The consultant Geologist raised concerns on E & S issues with mining companies. He maintained that a rehabilitation and closure plan be embedded as part of the regulatory requirements. He pointed out that mining companies have to be in compliance with E&S issues and should be guided in understanding these requirements.</p> <p>The representative of the Mining Inspectorate remarked that MECD monitors and ensures that E&S laws by operators are complied with and its statutory to comply with these issues. He further mentioned that the Environmental Protection and Rehabilitation Fund is not operational and hinders the effectiveness of monitoring E&S impacts. He also mentioned that the MI is situated in the 36 states of Nigeria within the MMSD.</p> <p>The ASM representative highlighted on the environmental and social issues that arise from mercury, cyanide and lead in mining. He noted that during Gold mining common environmental and social impacts include pollution of surface water from mine wastes in communities, evaporation of mercury in the air, women and children involved in the mining processing, social conflicts between new individuals at a mine and between indigenes of a community, armed bandits and crime.</p> <p>The MI representative added that during TIN mining in Oyo State, the control of mine waste is limited as well as process water discharge is carried out indiscriminately. He remarked that there is no geotechnical information of open pits nationwide.</p> <p>The representative from the NGSA noted air quality as a major concern and the exposure of the vulnerable including women which exposes them to prostitution among mine workers. He observed that a comprehensive study was carried out on water, soil and rock investigations nationwide.</p> <p>The ASM representative further stated that monitoring apparatus of ground water is essential especially considering the contamination of ground water with cyanide. The NGSA commented on the need for the Hydrogeology research unit of the Agency should lay more emphasis on the need to carry out investigations/monitoring of surface and ground water.</p> <p>The MI iterated that the real issue is to ensure compliance and make sure that mitigation measures in the ESMF are implemented.</p> <p>The Project Consultant Geologist commented on the need to establish baseline data before mines are established. Monitoring after mine establishment can give a false impression of potential impacts. He mentioned that a concern in implementing E&S impacts are the overlap of responsibilities on mitigation and monitoring aspects and lack of understanding on the responsibilities during implementation.</p> <p>The NGSA representative highlighted that some mining companies use cyanide leaching to mine and local miners throw mine waste into streams. He noted that the ESMF should</p>

	highlight the lapses or responsibilities of the responsibilities of each agency/department. He further said the NGSA is responsible for soil, water, air, rock and sediment investigations and the laboratory situated in Kaduna can be improved for analysis. The consultant geologist suggested that data gathered from the NGSA should be captured in the already installed Decision Support System (DSS).
Remarks/Recommendations	The project does not envisage significant negative environmental and social impact There should be a participatory approach involving stakeholders for project sustainability. All stakeholders should have a common understanding about the issues of the environment. the participation of the World Bank will foster due diligence, community inclusion and participation in the entire implementation process

Table 1(b): Summary of stakeholder consultation

Items	Description
Date of Public consultation	12/10/16
Name of Stakeholders	MECD, MMSD
Language of communication	English
Introduction	The MECD Director introduced the ESMF consultant to staff members present. The ESMF consultant highlighted the scope of the ESMF and the need of a stakeholder consultation in order to efficiently deliver improved project sustainability.
Issues/Comments of the Stakeholders	The Director mentioned that the Department of Pollution Control in the Federal Ministry of Environment also looking into impacts on the mining sector on the environment such as the Lead poisoning that occurred in Zamfara in June 2010. He said the MECD has presence in 27 states of Nigeria. Challenges encountering the department include, inadequate manpower, lack of synergy with other departments of the MMSD in monitoring E&S issues etc. The Director and his team listed number activities as well as the environmental and social issues they encounter during their supervision and monitoring missions. These include blasting, quality of air, heavy metals leaching into the soils and watercourse, water usage, dredging (oil spillage from dredger into surface water), During processing, mercury in Gold, Borax. Other environmental impacts identified include: clearing of vegetation for access, siltation of River courses, creating land volume of pits, reclaiming pits. During coal mining; the release of methane gas when not properly trapped, mine fire. Social issues include prostitution, relocation impacts, learning a different trade and livelihood impacts. The Director noted that the Mining Act would be amended next year and a proposed new agency the National Mineral Resources Commission which would include the MI, MCO, MECD etc would be established. He requested that capacity building of MECD staff should be considered including study tours and local training. The MECD team in conclusion, highlighted ongoing projects by the department including the mapping of environmentally sensitive areas (community shrines, traditional artifacts, water bodies etc), Nationwide survey of abandoned mines.
Remarks/Recommendations	The proposed project does not envisage significant negative environmental and social impact. There should be a participatory approach involving stakeholders for project sustainability.

Table 1(c): Summary of stakeholder consultation

Items	Description
Date of Public consultation	24/10/16
Name of Stakeholders (Civil Society Organizations)	(i) Global Rights (ii) Connected Development(CODE)
Language of communication	English
Introduction	The Project Consultant, John Eyre, gave opening remarks on the overall MinDiver project objective and sub project interventions. The ESMF consultant highlighted the scope of the ESMF and the need of a stakeholder consultation in order to efficiently deliver improved project sustainability.
Issues/Comments of the Stakeholders -- Global Rights	The development of the physical infrastructure is commendable considering the game changing outlook to develop the mining sector. However maintained that the economic corridors such as the development of railways etc should be commercial. The Country

	<p>Director also remarked that issues related to the mining sector include forced evacuation of communities, conflicts etc. She specifically noted on Free Prior and Informed Consent (FPIC) to be able to ensure that there is a transparent EA and affected communities have easy access to information in a language they can understand. She remarked that the proposed projects will enhance development in affected communities and help to develop other sectors of the economy. However, she strongly advocated for participatory governance through which the affected communities, CSOs and other stakeholders can dialogue with Government on these issues.</p>
Issues/Comments of the Stakeholders -- Connected Development (CODE)	<p>The Chief Executive gave an overview of the focus of the organization highlighting their roles in empowering marginalized communities with timely information in areas of health, education and environment. He commented on the Zamfara and Niger States Lead poisoning incidences and hinged it on illegal mining practices. However, the organization launched an advocacy for environmental cleanup and safer mining practices. One of their campaigns tagged 'Follow the money' has been very successful in ensuring government allocations meant to address environmental remediation, health care treatment, safe mining practices are judiciously used for the benefit of affected communities.</p> <p>He noted that the organizations key interest is timely data and open governance. He raised concerns on the MMSD focus on the procurement of machinery rather than on a robust process and the people. Other concerns discussed include: the quality of Environmental Assessments from the MECD, distrust/gaps from Federal, State and Local levels of Government. It was opined the MMSD should have a framework to accommodate and regulate the ASM, junior mining companies and the top mining companies.</p>
Remarks/Recommendations	<p>The proposed project does not envisage significant negative environmental and social impact. A participatory approach involving stakeholders for project sustainability is key.</p>

2.0 POLICY, LEGAL AND REGULATORY FRAMEWORK

2.1 Introduction

This chapter presents an overview of applicable state, federal and international policies and regulations that guides the implementation of the ESMF in addition to an assessment of the institutional framework for the implementation of the sub-projects.

2.2 National Policies

Nigeria National Policy on environment is a broad course of action that the Government of Nigeria adopts so that it meets its objectives.

2.2.1 National Policy on the Environment (1988)

The National Policy on the Environment aims to achieve sustainable development in Nigeria, and in particular to:

- secure a quality of environment adequate for good health and well being;
- conserve and use the environment and natural resources for the benefit of present and future generations;
- restore, maintain and enhance the ecosystems and ecological processes essential for the functioning of the biosphere to preserve biological diversity and the principle of optimum sustainable yield in the use of living natural resources and ecosystems;
- raise public awareness and promote understanding of the essential linkages between the environment, resources and development, and encourage individuals and communities participation in environmental improvement efforts; and
- co-operate with other countries, international organizations and agencies to achieve optimal use of trans-boundary natural resources and effective prevention or abatement of trans-boundary environmental degradation.

2.3 Regulatory Framework

The regulatory framework is a system of regulations and the means used to enforce them. They are established by the Government of Nigeria to regulate environmental specific activities and are recognized by the law. The following gives an overview of the existing Federal legislations.

2.3.1 Federal Legislation

2.3.1.1 Nigerian Mining Legislation

The Nigerian mining legislation and most of the supportive technical guidelines are well developed and at the state of the art. The core of the mining legislation may be divided into 2 parts:

- The part pertaining to the MMSD, such as the Mining Act (2007) and the Mining Regulations (2011); and
- The supportive ancillary part, issued by other Ministries (essentially the Federal Ministry of Environment and NESREA), such as technical national guidelines.

An example of the latter, the “National guidelines for Environmental Impact assessment, sectoral guidelines: mining” is a relevant document, to be read in conjunction with the Environmental Impact Assessment decree (Act 86, 1992).

The Mining Act is the principal legislation that regulates the Nigerian mining sector. The Act vests the control, regulation and ownership of all mineral resources in the Federal Republic of Nigeria .

The provisions of the National Minerals and Metals Policy and the Minerals and Mining Regulations also regulate the sector.

The administration of the mining industry is vested in the Ministry of Mines and Steel Development (MMSD), operating through the following four departments: a) Mines Inspectorate Department, b) Mines Environment and Compliance, c) Mining Cadastre Office, d) Artisanal and small-scale Mining Department

2.3.1.2 ASM Regulatory Framework

ASM regulatory framework is well defined and integrated in the Nigerian mining legislation (MMSD, 2011). It takes consideration of the limited technical possibilities and financial difficulties faced by ASM operators. The legal procedure to be followed by ASM miners is relatively simple and accessible. However, from environmental point of view, only the “water use permit” is required, as any other environmental precaution or permit is not specifically enforced. The Mining Act (Regulation 108, 6, c) specifically requires the following: Surface and Groundwater control; Mine Restoration, reclamation and rehabilitation plan; Mine health and safety scheme; Mine tailings and waste disposal plan, Mine closure plan.

From environmental point of view, the statutory requirement to be satisfied before the commencement of development works requires:

- Submission and approval for water use permit;
- Submission and approval of EIA studies and mitigation plans to MECD; where the mitigation plans should explain how the area will be reclaimed and wastes treated;
- Submission and approval of Community Development Agreement to MECD;
- Submission and approval of EIAS to MoE and to MECD

2.3.1.3 Federal Environmental Protection Agency Decree No 58 (1988)

The Federal Environmental Protection Agency (FEPA) was established by Decree No. 58 of 1988 and charged with the responsibility for environmental protection. Following the upgrading of the agency to a Federal Ministry of Environment (FMEnv) in January 2007, the Ministry was mandated to coordinate environmental protection and natural resources conservation for sustainable development.

The FMEnv has developed statutory documents to aid in the monitoring, control and abatement of industrial waste. These guidelines stipulate standards for industrial effluent, gaseous emissions and hazardous wastes.

2.3.1.4 National Environmental Standards and Regulations Enforcement Agency (Establishment) Act, 2007

This Act established NESREA and charged it with the responsibility of protecting and developing the environment in Nigeria, as well as enforcing all environmental laws, regulations, standards, policies, guidelines and conventions on the environment to which Nigeria is a signatory.

Some functions of the Agency, amongst others include to:

- enforce compliance with laws, guidelines, policies and standards on environmental matters;
- coordinate and liaise with, stakeholders, within and outside Nigeria on matters of environmental standards, regulations and enforcement;
- enforce compliance with the provisions of international agreements, protocols, conventions and treaties on the environment including climate change, biodiversity conservation, desertification, forestry, oil and gas, chemicals, hazardous wastes, ozone depletion, marine and wild life, pollution, sanitation and such other environmental agreements as may from time to time come into force;
- enforce compliance with policies, standards, , legislation and guidelines on water quality, Environmental Health and Sanitation, including pollution abatement;
- enforce compliance with guidelines, and legislation on sustainable management of the ecosystem, biodiversity conservation and the development of Nigeria's natural resources;
- enforce compliance with any legislation on sound chemical management, safe use of pesticides and disposal of spent packages thereof;
- enforce compliance with regulations on the importation, exportation, production, distribution, storage, sale, use, handling and disposal of hazardous chemicals and waste, other than in the oil and gas sector;
- enforce through compliance monitoring, the environmental regulations and standards on noise, air, land, seas, oceans and other water bodies other than in the oil and gas sector;
- ensure that environmental projects funded by donor organizations and external support agencies adhere to regulations in environmental safety and protection;
- enforce environmental control measures through registration, licensing and permitting Systems other than in the oil and gas sector;
- conduct environmental audit and establish data bank on regulatory and enforcement mechanisms of environmental standards other than in the oil and gas sector;
- create public awareness and provide environmental education on sustainable environmental management, promote private sector compliance with environmental regulations other than in the oil and gas sector and publish general scientific or other data resulting from the performance of its functions; and
- carry out such activities as are necessary or expedient for the performance of its functions.

The Agency has powers to:

- prohibit processes and use of equipment or technology that undermine environmental quality;
- conduct field follow-up of compliance with set standards and take procedures prescribed by law against any violator;
- subject to the provision of the Constitution of the Federal Republic of Nigeria, 1999, and in collaboration with relevant judicial authorities establish mobile courts to expeditiously dispense cases of violation of environmental regulation;

2.3.1.5 National Environmental (Sanitation and Wastes Control) Regulations, S. I. No. 28 of 2009

The purpose of this Regulation is to provide the legal framework for the adoption of sustainable and environment friendly practices in environmental sanitation and waste management to minimize pollution.

2.3.1.6 National Environmental (Mining and Processing of Coal, Ores and Industrial Minerals) Regulations, S. I. No. 31 of 2009

This Regulation seeks to minimize pollution from mining and processing of coal, ores and industrial minerals and encourage the application of up-to-date efficient cleaner production technologies.

2.3.1.7 National Environmental (Mining and Processing of Coal, Ores and Industrial Minerals) Regulations, S. I. No. 31 of 2009

This Regulation seeks to minimize pollution from mining and processing of coal, ores and industrial minerals and encourage the application of up-to-date efficient cleaner production technologies.

2.3.1.8 National Environmental (Soil Erosion and Flood Control) Regulations, S. I. No. 12 of 2011

The overall objective of this Regulation is to regulate all earth-disturbing activities, practices or developments for non-agricultural, commercial, industrial and residential purposes.

2.3.1.9 National Environmental (Base Metals, Iron and Steel Manufacturing/Recycling Industries) Regulations, S. I. No.14 of 2011

The principal thrust of this Regulation is to control all operations and ancillary activities of this sector in order to safeguard the Nigerian Environment from their negative impact.

2.3.1.10 National Environmental (Non-Metallic Minerals Manufacturing Industries Sector) Regulations, S. I. No. 21 of 2011

This Regulation provides the regulatory framework for the control of all activities of this sector in order to protect the Nigerian environment from their negative impact.

2.3.1.11 National Environmental (Surface and Groundwater Quality Control) Regulations, S. I. No. 22 of 2011

The purpose of this Regulation is to restore, enhance and preserve the physical, chemical and biological integrity of the nation's surface waters, and to maintain existing water uses.

Table 2 summarizes the existing national legal instruments applicable to environmental protection.

Table 2: Existing National Environmental Protection Regulations

S/N	Regulations	Year	Provisions
1	National Environmental Protection (Effluent Limitation) Regulations	1991	The regulation makes it mandatory for industrial facilities to install anti-pollution equipment, makes provision for effluent treatment and prescribes a maximum limit of effluent parameters allowed.
2	National Environmental Protection (Pollution and Abatement in Industries in Facilities Producing Waste) Regulations	1991	Imposes restrictions on the release of toxic substances and stipulates requirements for monitoring of pollution. It also makes it mandatory for existing industries and facilities to conduct periodic environmental audits.
3	National Environmental Protection (Management of Solid and Hazardous Wastes) Regulations.	1991	Regulates the collections, treatment and disposal of solid and hazardous wastes from municipal and industrial sources.
4	Harmful Wastes (Special Criminal Provisions etc) Decree No. 42	1988	Provides the legal framework for the effective control of the disposal of toxic and hazardous waste into any environment within the confines of Nigeria
5	Environmental Impact Assessment Act (Decree No. 86).	1992	The decree makes it mandatory for an EIA to be carried out prior to any industrial project development
6	National Guideline and Standard for Environmental Pollution Control	1991	The regulations provide guidelines for management of pollution control measures.
7	Workmen Compensation Act	1987	Occupational health and safety
8	Urban and Regional Planning Decree No 88	1992	Planned development of urban areas (to include and manage waste sites)
9	Environmental Sanitation edicts, laws and enforcement agencies		General environmental health and sanitation. Enforcing necessary laws
10	State waste management laws		Ensure proper disposal and clearing of wastes

11	Public Health Law		Covering public health matters
12	National Guidelines on Environmental Management Systems (EMS)	1999	Recognizes the value of EMS to EIA and sets out objectives and guideline on general scope and content of an EMS
13	National Policy on the Environment	1989	The policy identifies key sectors requiring integration of environmental concerns and sustainability with development and presents their specific guidelines
14	National Guidelines and Standards for Water Quality	1999	It deals with the quality of water to be discharged into the environment, sets standards and discharge measures for for a wide range of parameters in water discharged from various industries. It also sets out the minimum/maximum limits for parameters in drinking water
15.	National Air Quality Standard Decree No. 59	1991	The World Health Organization (WHO) air quality standards were adopted by the then Federal Ministry of Environment (FMEnv) in 1991 as the national standards. These standards define the levels of air pollutants that should not be exceeded in order to protect public health.
16.	National Environmental Standards and Regulations Enforcement Agency (NESREA Act)	2007	Established to ensure compliance with environmental standards, guidelines and regulations.
17.	National Policy on Flood and Erosion Control (FMEnv)	2006	This policy addresses the need to combat erosion in the country utilizing the procedures outlined in the National Action Plan for Flood and Erosion Control and Technical Guidelines, developed by the WIC Environmental Committee which was set up to plan an operational platform for these issues
18.	National Oil Spill Detection and Response Agency (NOSDRA Act)	2005	This statutory regulation makes adequate regulations on waste emanating from oil production and exploration and its potential consequences to the environment.

Table 3 below presents a list of proposed National legislations.

Table 3: List of proposed environmental national legislation

s/n	Regulation	Year
1	Waste Prevention and Recycling Bill	1999
2	Response, Compensation and Liability For Environmental Damage Bill	1999
3	Waste Prevention and Recycling Bill	2000
4	Federal Environmental Protection Agency (Amendment) Bill	2001
5	Pollution Abatement and Waste Generation Facilities (control) Bill	2001
6	Federal Environmental Protection Agency Bill	2003
7	Industrial Wastewater Pollution and Control Bill	2003
8	Environmental Managers Registration Council of Nigeria Bill	2003
9	Amendment of EIA Decree No. 86 of 1992 Bill	2005

2.4 Other Acts and Legislations

Other formal written enactment produced by a legislature or by a legislative process important in the project includes:

2.4.1 Environmental Protection and Rehabilitation Program

The Environmental Protection and Rehabilitation Program required under the provisions of this Act shall- Provide for specific rehabilitation and reclamation actions, inspections, annual reports;

- A reasonable estimate of the total cost of rehabilitation;
- Cost estimates for each specific rehabilitation and reclamation action; and
- A timetable for the orderly and efficient rehabilitation and reclamation of the Mineral title area to a safe and environmentally sound condition suitable for future economic development or

recreational use

2.4.2 MMSD Environmental Compliance Department

The Mines Environmental Compliance Department shall exercise all its powers in respect of Environmental Protection and Rehabilitation Programs provided for in section 119 in consultation with the State Mineral Resources and Environmental Management Committee (MIREMCO) established pursuant to Section 19 of this Act.

The Mines Environmental Compliance Department may approve or reject an Environmental Protection and Rehabilitation Program submitted by a Mineral title Holder and shall notify the Holder of the Mineral title of its decision thereon within sixty days of the submission of the Environmental Protection and Rehabilitation Programme.

If the Mines Environmental Compliance Department does not notify the Holder of a Mineral title within the period specified under subsection (3) of this section, the Environmental Protection and Rehabilitation Program shall be deemed to have been approved as submitted.

In the case of a rejection of the Environmental Protection and Rehabilitation Program by the Mines Environmental Compliance Department, the Mineral title Holder may

- submit such other number of Environmental Protection and Rehabilitation Programs as may be necessary in order to obtain the approval of the Mines Environmental Compliance Department; or
- If its application is rejected twice, the Holder may submit the matter to arbitration within thirty days of notification of the decision under subsection (3) of this section.

In the case of its approval, the Mines Environmental Compliance Department shall ensure the implementation of the Environmental Protection and Rehabilitation Program.

2.4.3 Environmental Impact Assessment Sectoral Guidelines – Mining of Solid Minerals, Beneficiation and Metallurgical Processes¹⁹⁹⁵

Formulated under the Environmental Impact Assessment Decree, these Guidelines are designed specifically for the mining industry, to assist the proponent in conforming with the requirements of the Decree. They are designed to ensure best practice environmental management and provide an overview of the key environmental, socio-economic and cultural issues, both direct and indirect, and potential significant environmental impacts that should be addressed in the EIA.

2.4.4 Land Use Act (1978)

This act provides a legal basis for land acquisition in Nigeria. The major provisions include:

- Section 1: all land comprised in the territory of each state in the Federation is vested in the Governor of the state and such land shall be held in trust and administered for the use and common benefit of all.
- Section 2 (a): all land in urban areas shall be under the control and management of the Governor of each State; and
- Section 2 (b): all other land shall be under the control and management of the local government within the area of jurisdiction in which the land is situated.

State governments have the right to grant statutory rights of occupancy to any person for any purpose; and the Local Government has the right to grant customary rights of occupancy to any person or organization for agricultural, residential and other purposes. Further details on the Land Use Act (1978) will be discussed in the updated RPF.

2.5 Assessment of the Policy and Regulatory Framework

The existing legal framework for environmental assessment in Nigeria is considered adequate. Detailed laws, regulations and guidelines have been developed and serve as the framework for environmental protection. The implementation has been poor due to poor enforcement.

2.5.1 Environmental Impact Assessment (EIA) Act

The Environmental Impact Assessment (EIA) Act does not encourage the participation of people whose lives are likely to be affected by a project; rather, it encourages the collection and documentation of technical information which is confusing to most people.

2.5.2. Federal Environmental Protection Agency (FEPA) Sectoral Guideline

FEPA's Guideline covering infrastructural projects deals with both the procedural and technical aspects of EIA for construction projects. The guideline stresses the need to carry out an EIA at the earliest stage possible. Infrastructure Project EIAs have been conducted in rather loose form, and often taken as a supplementary requirement to overall economic and engineering issues.

2.5.3 National Policy on Environment

The policy and its institutional arrangements have not yielded the desired results. This is principally due to weak enforcement; inadequate manpower in the area of integrated environment management; insufficient political will; inadequate and mismanaged funding; low degree of public awareness of environmental issues; and a top-down approach to the planning and implementation of environmental programme.

2.6 International Environmental Agreements

Nigeria is also a signatory to the following relevant international conventions:

- Basel Convention on the control of hazardous wastes and their disposal;
- Bonn Convention on conservation of Migratory Species;
- Stockholm Convention on Persistent Organic Pollutants;
- The African Convention on the Conservation of Nature and Natural Resources, The African Convention, 1968;
- The Convention Concerning the Protection of the World Cultural and Natural Heritage, The World Heritage Convention, 1972;
- The Convention on International Trade in Endangered Species of Wild Fauna and Flora, CITES, 1973;
- The Framework Convention on Climate Change, Kyoto Protocol, 1995;
- The Convention on Biological Diversity, 1992; and
- The Convention on the Prevention of Marine Pollution by Dumping of Waste, MARPOL, 1972;

In addition, Nigeria also has obligations to protect the environment through various commitments to the African Union (AU), the Economic Community of West African States (ECOWAS) and the Commonwealth. It is also committed through relations with the European Community under the Lome IV Convention.

2.6.1 Other International Conventions and Guidelines for the mining sector

2.6.1.1 Fundamental Principles for the mining sector, Berlin Guidelines, UN, 2002

The milestone guideline for environmental policy addressing the mining industry is the revised Berlin Guidelines (UN, 2002), which sets important recommendations for the Governments to be followed for assuring sustainable mining.

Governments, mining companies and mineral industries should as a minimum:

- Recognize environmental management as high priority, notably during the licensing process and through the development and implementation of environmental management systems. These should include early and comprehensive environmental impact assessments, pollution control and other preventive and mitigative measures (among other measures and procedures);
- Recognize the importance of socio-economic impact assessments and social planning in mining operations from the earliest stages of project development;
- Ensure participation of and dialogue with the affected community and other directly interested parties on the environmental and social aspects of all phases of mining activities;
- Encourage long term mining investment by having clear environmental standards with stable and predictable environmental criteria and procedures.

2.7 Institutional Framework

2.7.1 Federal Ministry of Environment (FMEnv)

The FMEnv in accordance with its mandatory functions will ensure that the project implementation conforms to the Environmental Impact Assessment Act 1992.

FMEnv has responsibility to administrate and enforce environmental laws in Nigeria. The specific responsibilities of the ministry include:

- Monitoring and enforcing environmental protection measures;
- Enforcing international laws, conventions, protocols and treaties on the environment
- Prescribing standards for and making regulations on air quality, water quality, pollution and effluent limitations, atmosphere and ozone protection, control of toxic and hazardous substances; and
- Promoting cooperation with similar bodies in other countries and international agencies connected with environmental protection.

2.8 World Bank Safeguard Policies triggering safeguard management

The World Bank has 10 + 2 Safeguard Policies to reduce or eliminate the negative environmental and social impacts of potential projects, and improve decision making. Details of the safeguard policies can be seen in Annex 2.

The safeguard policies triggering safeguard management include:

▪ *OP/BP 4.01: Environmental Assessment*

The project will provide financing to small (minor) infrastructural development associated with facilitating mine development such as building or refurbishing access roads, power interconnect, gas connection, water management system, etc. But, the locations of said investments will not be determined before the project be presented for approval by the Bank's Board. The exact locations and impacts of the infrastructural development activities have not been identified; thus, an ESMF is being prepared with potential mitigation measures to address minor impacts, and includes an indicative budget for such mitigation activities

The project is identified under Safeguards Category B, implying that the potential environmental and social impacts are expected to be minor, site-specific and manageable to a reasonable level

▪ *OP/BP 4.12: Involuntary Resettlement*

Most of the infrastructural development activities are not expected to result in major losses or acquisition of land or in restrictions to sources of livelihoods. A Resettlement Policy Framework (RPF) prepared separately in complement, are adopted as safeguards management tools.

▪ *OP 4.11: Physical Cultural Resources*

Activities in Sub components B2 may include civil works that could expose chance finds. These chance find sites may include sacred shrines, burial sites etc. The environmental and Social Screening Checklist annexed to the ESMF will address the Physical Cultural Resource (PCR), and the ESMF includes provisions for addressing such cultural heritage chance finds. To mitigate this risk, specific procedures (such as chance find procedures) will be included in the sub-project ESIAs/ESMPs as required.

Figure 1 below illustrates the safeguard operational policies. Table 4 presents a summary of safeguard policies triggered and reasons.

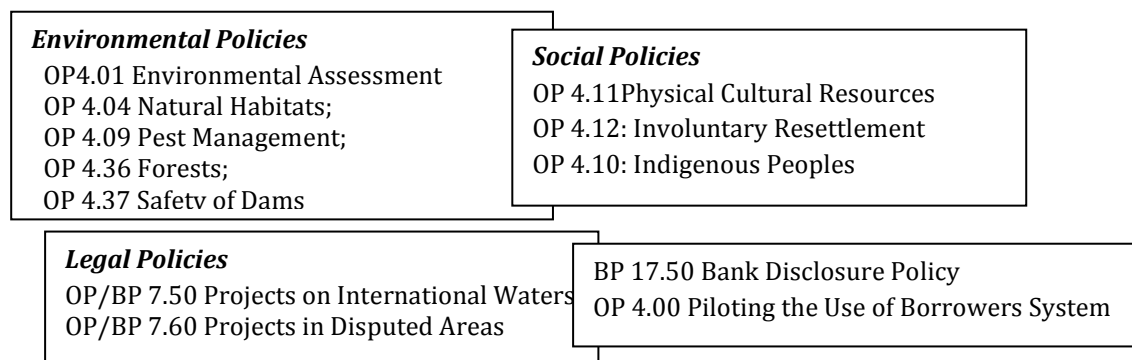


Figure 1: Illustration of the Safeguards Policies

2.8.1 Safeguard Mechanisms

It is anticipated that some of the institutions that will be receiving grants under this project will be from the private sector and thus some of the activities will be done with private sector actors. In these circumstances the World Bank Group performance standards, specifically the IFC Performance Standards applicable to the private sector will be used instead of the policy safeguards if they are triggered (See Annex 3 for the IFC Performance Standards that may be triggered by the sub-projects).

In summary, the adverse social impact of this project is anticipated to be minimal and the triggering of the main social safeguard or performance standard, except for the environmental and social assessment (OP 4.01), seems unlikely. The sub-project activities in components 2 (sub component B2) will involve the potential infrastructural development activities include building or refurbishing access roads, power interconnect, gas connection, water management system, etc.

General Social Issues: The key social issues for this project are social accountability and citizen engagement and gender mainstreaming and analysis. The Grievance Redress Mechanism, will be one of the key tools and mechanisms to ensure accountability and social inclusion. The GRM should be used in conjunction with a detailed stakeholder engagement plan and if the performance standards are triggered this would require a Public Consultation and Disclosure Plan (PCDP), which has more extensive requirements, connect, gas connection, water management system, etc.

Cumulative and Induced Impacts: No long term or cumulative adverse impacts is anticipated. However, the combination of multiple impacts from existing projects, the proposed project, and/or anticipated future projects may result in significant adverse and/or beneficial impacts that would not be expected in case of a standalone project. The ESMF would assess relevant existing environmental and social conditions in Nigeria. In addition, the proposed Strategic Environmental and Social Assessment (SESA) for the project would give priority to assessing cumulative impacts stemming from the proposed project activities.

Screening Process: A review process will be put in place to ensure screening of all potential civil work activities for environmental and social impacts prior to approval by the PIU. The screening can be carried out by a designated officer of the PIU (Environmental Specialist and Social Specialist) or the relevant MDA (Ministry of Solid Mineral Development) in accordance with the laid down procedure. This will include an environmental and social screening sheet showing the estimated impact category of each sub-project destined for rehabilitation and/or refurbishment. The screening process will involve an assessment of the project to determine: (a) the appropriate project categorization for the EA; (b) applicable World Bank environmental and social safeguards; (c) potential for environmental and social impacts and (d) cultural or other sensitivities. In addition, each project will be screened to identify relevant stakeholders and, the nature and extent of engagement for each stakeholder category.

Environmental and Social Impact Assessments (ESIAs): The project and all infrastructural activities will include the preparation of ESIAs including ESMPs which is the core part/result of any ESIA (full, partial, etc.) to address achieve environmental, social health and safety regulatory compliance objectives, institutional responsibilities (e.g., World Bank), and other related commitments. An ESMP is an important element of the overall environmental and social sustainability strategy of the mining sector in order to ensure environmental, health and social performance.

Other Safeguard Policies (if applicable)

Legacy Issues: Finally, though not a safeguard policy, the activities in component 2 may have legacy issues. These could include a situation where the World Bank is asked to participate in a relatively small or narrowly defined component of a much larger or broader project whose design has been completed and construction has progressed significantly or is near completion, with the exception of the component for which World Bank participation has been requested. The component for which World Bank support is solicited could be an associated facility in some cases. A rapid assessment would be prepared to assess the existing safeguards documents and/or implementation measures, taking into account Bank safeguard requirements. Appropriate follow-up terms of safeguards due diligence, including updating or preparing new safeguards instruments, would be undertaken once the rapid assessment is completed.

2.8.2 WBG Environmental, Health and Safety Guidelines (EHS) for Mining

The WBG EHS guideline (IFC, 2007) sets an important reference and guidance for the standard mining industry. The EHS is organized into 2 main sections: industry specific impacts and management; and performance indicators and monitoring. The first section is importantly divided into 4 main areas:

- Environmental (e.g. water, leaching, wastes, etc.)
- Occupational health and safety (e.g.: hazardous substances, explosives, etc.);
- Community health and safety; and
- Mine closure and post closure

Table 4: Summary of safeguards policies triggered

Operational Policy	Yes	Reasons	No
Environmental Assessment(OP.4.01);	X	This proposed project is primarily technical assistance project and as such physical impacts of the project such as land acquisition or air pollution are not anticipated or currently known. At this stage the team does not anticipate that physical works will be directly funded by the IDA credit, however transactions advisory services on mineral developments will be supported through the project. A Strategic Environmental and Social Assessment (SESA) will be developed during implementation to ensure that any potential adverse social and environmental impacts are mitigated in accordance with World Bank policies	
Natural Habitat (OP/BP 4.04)		The proposed project does not trigger this policy as this is primarily a Technical Assistance project and specific information on location of potential transaction support are not yet known. The SESA will evaluate the laws and policies related to Natural Habitat protection and mining, and provide recommendations for risk mitigation.	X
Forests (OP 4.36)		The proposed project does not trigger this policy as this is primarily a Technical Assistance project and specific information on location of potential transaction support are not yet known. The SESA will evaluate the legal framework and policies related to the forest protection and mining, and provide recommendations for risk mitigation..	X
Pest Management OP 4.09		This Policy is not triggered	X
Physical Cultural Resources (OP 4.11)	X	Activities in Sub components B2 may include civil works that could expose chance finds. These chance find sites may include sacred shrines and burial sites. The environmental and Social Screening Checklist and the Generic Environmental and Social Mitigation Measures Checklist that are annexed to the ESMF will address the Physical Cultural Resource (PCR), and the ESMF includes provisions for addressing such cultural heritage chance finds. To mitigate this risk, specific procedures (such as chance find procedures) will be included in the sub-project ESIA/ESMPs as required.	
Indigenous Peoples (OP 4.10)		This Policy is not triggered	X
Involuntary Resettlement (OP/BP 4.12)	X	Most of the infrastructural development activities are not expected to result in major losses or acquisition of land or in restrictions to sources of livelihoods. However, a RPF was prepared under the SMMRP and will be updated under this project.	
Safety of Dams (OP/BP 4.37)		This Policy is not triggered.	X
Projects on International Waters (OP/BP 7.50)		This Policy is not triggered.	X
Projects in Disputed Areas (OP/BP 7.60)		This Policy is not triggered.	X
Disclosure Policy (OP/BP 17.50)	X	All projects must disclose key information in country and through the Bank's Infoshop	

2.9 Nigeria EIA Guidelines and World Bank EA Guidelines

The Environmental Impact Assessment Act No. 86 of 1992 requires that development projects be screened for their potential environmental and social impact. Based on the screening, a full, partial, or no

EIA may be required. Guidelines issued in 1995 direct the screening process. According to these guidelines the Nigeria EIA Categories include: See Table 5 below.

Table 5: Nigeria EIA Guidelines and World Bank EA Guidelines

EIA Stages	World Bank EA Guidelines	Nigeria EIA Guidelines
Screening/Categorization	Category A,B,C, FI	Category 1,2,3
Scoping (ToR)	Required	Required
Environmental and Social Baseline Studies	Required	Required
Assessment of Project Alternatives	Required with project justification	Required
Description of Impact Assessment and Mitigation measures	Required	Required
Public Consultation	Required	Required
Monitoring	Required	Required
Disclosure	Makes report available in info shop	Disclose draft final reports in-country

This World Bank categorization (A, B, & C) corresponds in principle with the Nigeria EIA requirements of Category (I, II and III), which in actual practice is done with regard to the level of impacts associated with a given project. However, in the event of divergence between the World Bank safeguard policies and the Nigeria EA laws, the World Bank Safeguards policies takes precedence over Nigeria EA laws, guidelines and standards.

2.10 Adequacy of Legal Instruments for Environmental & Social Issues

Generally with regard to environmental and social management issues, legislation is in a continuing process of development in Nigeria. Amongst the existing pieces of legislations highlighted above, there are a number of state, national and international environmental guidelines applicable to the sub-projects under the proposed MinDiver.

The Federal and State Ministries of Environment in Nigeria are conversant with the Environmental Assessment (EA) legislation, procedures and framework applicable based on the Federal EIA Act 86 of 1992. The main challenge would be enforcement of these legislation/guidelines.

Thus as part of this ESMF, in order to support the due diligence process, to avoid causing harm and to ensure consistent treatment of environmental and social issues across the sub-project intervention areas, institutional capacity strengthening and funding have been recommended.

3.0 PROJECT DESCRIPTION

3.1 Description

The proposed project will be financed through a World Bank International Development Association (IDA) Credit in the amount of US \$150 million. Based on consultations with government counterpart, this proposed project is designed to deliver both short-term results (1 – 2 years) and longer-term results (4-5 years). Targeted activities expected to produce ‘quick win’ results which will be implemented earlier on in project implementations include the following: (1) Undertaking a demand/gap analysis of industrial minerals required by the local industries to explore some import substitution potentials as well as facilitate the flow of mineral transactions. (2) Facilitating access to finance, technology and equipment, knowledge, and markets as well as provision of mineral extension services; (3) Supporting the mining and processing of the minerals and dimension-stones to meet the required specifications of the local industries in accordance with best practices; and 4) Developing measures for formalizing, regulating and inventorying artisanal and small-scale mining (ASM).

3.2 Project Objectives

The proposed project seeks to support the Government of Nigeria to enhance the mining sector’s contribution to the economy through improved governance, downstream linkages and increased competitiveness. The proposed credit amount for the project is US\$150 million.

3.3 Components of the Nigeria Mineral Sector Support for Economic Diversification Project (MINDIVER)

The project consists of three main components, namely (refer to Project Appraisal Document for detailed description):

- Component A:** Establishing a Strong Foundation for Mining Sector Development (US \$62 million);
- Component B:** Facilitating Downstream Sector Development & Enhancing Competitiveness (US \$76 million); and
- Component C:** Project Management and Coordination (US \$9 mil)

3.3.1 Project Component triggering safeguards management

Sub-Component B2: Catalyzing the mineral sector for regional development (US \$13 mil). The objective of this project activity is to leverage the mining sector to enhance regional development in several strategic resource-rich regions identified as priorities for the government: Northeast, Northwest, and Southwest regions. This involves developing an enhanced regionally-based resource corridor analysis (DSS) to provide detailed analysis on opportunities for value chain and local content development, as well as infrastructure development in those regions. This sub-component will also provide financing for small (minor) infrastructure development projects associated with facilitating mine development, such as building or refurbishing an access road, power interconnect, gas connection, water management system, etc. Any such support will be in accordance with the Project’s ESMF/RFP, and will include an ESIA and a site-specific environmental impact assessment (EIA), where relevant.

4.0 DESCRIPTION OF BASELINE ENVIRONMENT IN NIGERIA

4.1 Location

The Federal Republic of Nigeria commonly referred to as Nigeria, is a federal constitutional republic in West Africa, bordering Benin in the west, Chad and Cameroon in the east, and Niger in the north. Its coast in the south lies on the Gulf of Guinea in the Atlantic Ocean. It comprises 36 states and the Federal Capital Territory, where the capital, Abuja is located.

It has a total area of 923,768 km² (356,669 sq mi),[96] making it the world's 32nd-largest country (after Tanzania). It shares a 4,047-kilometre (2,515 mi) border with Benin (773 km), Niger (1497 km), Chad (87 km), Cameroon (1690 km), and has a coastline of at least 853 km. Nigeria lies between latitudes 4° and 14°N, and longitudes 2° and 15°E.

4.2 The mining industry in Nigeria

Nigeria is the largest economy in Africa and is a country endowed with mineral resources, as respectively indicated in figure 2 below.

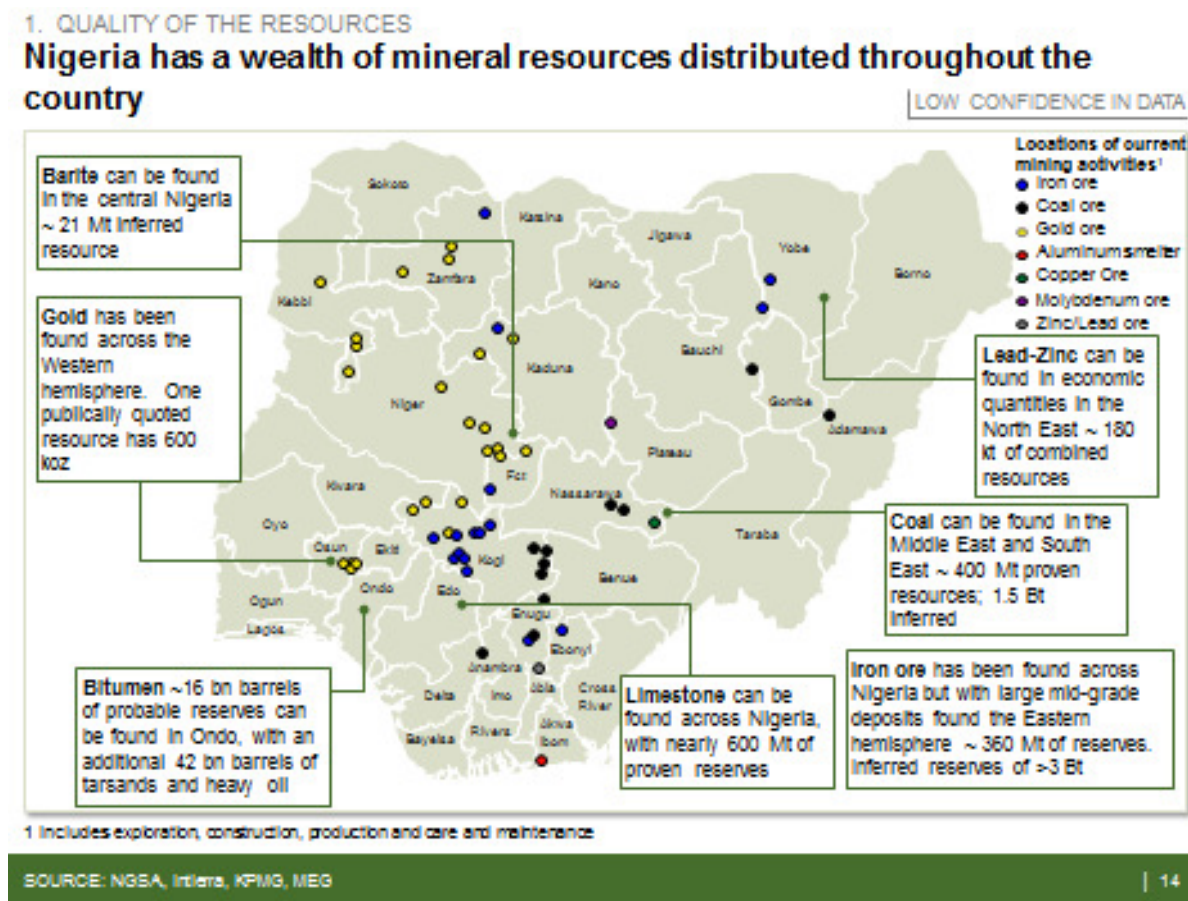


Figure 2: Wealth of Mineral resources in Nigeria (Mckinsey, 2013). The seven strategic minerals identified for the sustainable development of the mineral sector in Nigeria.

Nigeria's economy has been transformed since the '50 from a diversified base to a mono-cultural economy based on the oil-gas industry, after abandoning most of the solid mineral extraction (essentially tin and

coal) in the '60. The oil boom relegated the solid mineral sector to the fringe of the economy, and largely outside the control and effective regulation of the State.

The contribution of the solid minerals sector to the national economy has not been commensurate with the minerals base and potential of the country.

The renewed interest in the solid mineral sector is part of the economic diversification strategy of the country, and the first tangible effect was the restructuring of the Administration and a process of reform of the mining sector, which resulted in the Nigerian Minerals and Mining Act (2007) and the Nigerian Minerals and Mining Regulations (2011).

The mineral sector in Nigeria is currently dominated by artisanal and small-scale mining operators. They are mainly informal, working with rudimentary methods and limited technical training (for additional information on artisanal small-scale mining kindly refer to the publication: Borla, 1996). It is only with quarrying that large-scale operations exist with the construction companies and cement manufacturers.

4.2.1 Structure of Mining Sector/Geology

Nigeria's mining sector is defined by a diversity of mineral resources, classified into five broad groups

- Industrial minerals (e.g. barite, kaolin, gypsum, feldspar, limestone)
- Energy minerals (e.g. coal, bitumen, lignite, uranium)
- Metallic ore minerals (e.g., gold, cassiterite, columbite, iron ore, lead-zinc, copper, and rare earth elements)
- Construction material/dimension stones (e.g., granite, migmatite gneiss, gravel, laterite, sand)
- Precious stones (e.g. sapphire, tourmaline, emerald, topaz, amethyst, garnet, etc.¹)

4.3 Physical Setting

4.3.1 Nigeria's Mineral Endowment

The most known economic mineral deposits in Nigeria are best grouped in accordance with the three broad geological provinces and age groups (Figure 1). These are:

- Pan-African basement rocks.
- Mesozoic Younger Granites.
- Cretaceous-Tertiary sedimentary basins

¹ The mineral lists are only indicative – they are not exhaustive

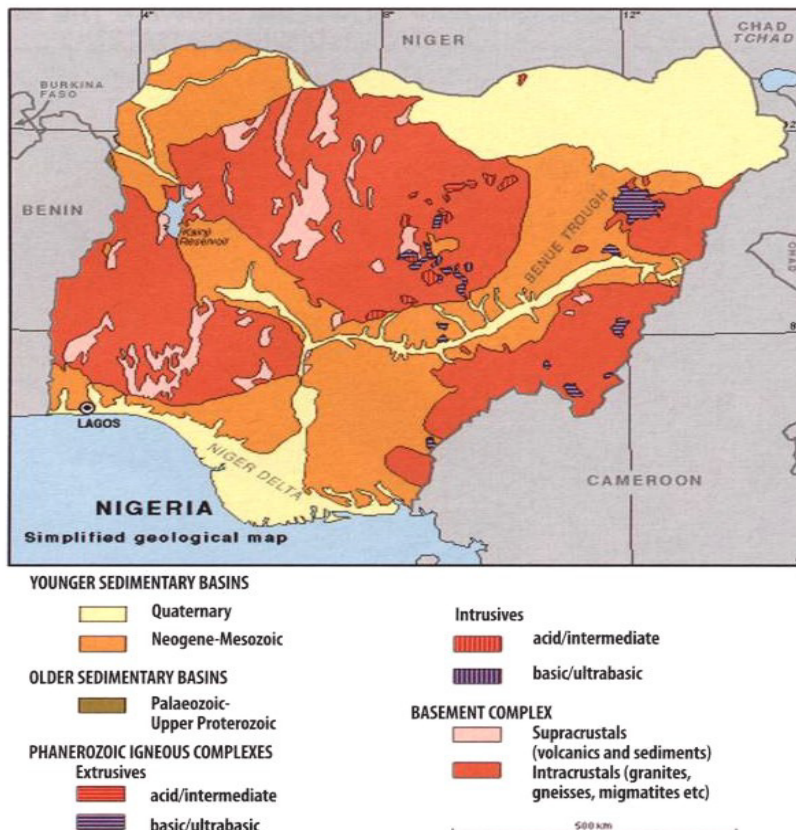


Figure 3: Geologic Map of Nigeria

Each of these is discussed in detail below:

1. Resource Potential of the Nigerian Pan-African basement

- **Gold:** Associated with the schist belts of western Nigeria, mostly in the northwest. There has been widespread small-scale mining targeting rich veins and associated eluvial and alluvial deposits.
- **Tin-Tantalum-Niobium:** A broad belt of tin-tantalum-niobium bearing pegmatites extends north-eastwards for about 400 km from near Ile-Ife (Osun State) to the Wamba-Jema'a areas (Nasarawa and Kaduna States) just southwest of the Jos Plateau. In addition to the main economic minerals cassiterite, columbite and tantalite, there are a host of accessory minerals including scheelite, wolframite, beryl, apatite, monazite, micas (muscovite and lepidolite) and tourmalines.
- **Iron Ore:** There are widespread occurrences of iron formations (BIF) in the schist belts, but they are much smaller and leaner than the itabirites of the Archaean terranes, with grades seldom exceeding 40% Fe. However, there are purer iron ores interbedded among basement gneisses in the Okene-Lokoja area (Kogi State). These are probably older metasedimentary or magmatic relics and could be as old as the Archaean and perhaps can be correlated with the iron ores in Liberia and Guinea. About 200 million tonnes of 30-50% Fe have been proved so far to provide the main raw material feed for the Ajaokuta and Aladja steel plants.
- **Chromite and Nickel:** Small chromite deposits are known to be present in some ultramafic (serpentinite) masses associated fault structures in the schist belts, especially in the northwest. Such bodies are also found to have economic quantities of Nickel, Talc, Asbestos and Magnesite.

- Uranium: A possibility of vein-type uranium mineralisation in the basement granites of the northeast has stimulated exploration in the past, mostly driven by the success in northern Cameroon east of the Mambila plateau.
- Industrial Minerals: In addition to Talc, Asbestos and Magnesite, other industrial minerals such as Kyanite and Sillimanite, known in some schist belt locations are found in the Pan-African basement in Nigeria. Additionally, Feldspar and Kaolin are found in granitic rocks. Marble: Major industrial mineral known in a number of locations in the basement, especially in central Nigeria (Kogi-Kwara States and FCT). A large deposit near Lokoja (Obajana) is now host to one of the largest cement plants in Africa.

2. Resources Potential of the Sedimentary Basins

- The Cretaceous-Tertiary basins of West Africa are of great economic importance to the countries in which they occur. Virtually all of West Africa's energy resources are present in these basins.
- Oil and Gas are of greatest importance and are dominated by the enormous reserves of the Niger Delta Basin, other coastal basins and also in the interior basins. There are similarly enormous reserves of Coal in Nigeria, while Uranium deposits discovered in the Republic of Niger are some of the world's largest.
- Tar Sands/Bitumen: The existence of huge deposits of tar sands in Nigeria is composed of sand, heavy oil (bitumen), mineral-rich clay and water in varying proportions. This heavy oil in tar-sand is commonly referred to as bitumen. It is a viscous and complex mixture of hydrocarbons and other heterocyclic substances. Extensive seepages of bituminous sand are known to occur along an East-West belt stretching over an area of about 120 km x 6 km across Lagos, Ogun, Ondo and Edo States in southwestern Nigeria). Many attempts have been made, mostly by the Nigerian government, to explore the commercial viability of the resource and reported resources equivalent up to 13 billion barrels of oil.
- Coal: Major occurrences of coal are known from the Lower Benue Trough where several seams occur among the Lower Coal Measure. The exploitable parts of the coalfield are on the gently west-dipping eastern limb of the broad synclinal structure (the Anambra Basin) of the Lower Benue Trough. Coal is best developed around Enugu with seams 1-2 m thick and more than 300 million tonnes of estimated resources. The coal is sub-bituminous with average calorific value around 10,000 Kcal/kg. There are other coalfields in the Middle and Upper Benue Trough, with some relatively thicker seams and shallower coal seams being developed in recent times. Deposits of Lignite occur in the Tertiary sediments of the Niger Delta Basin, notably in the Ogwashi-Asaba Formation, where seams up to 6 m thick are reported with total resources estimated to be some 60 million tonnes. Lignite is also known to be found in the Sokoto and Chad Basins.
- Metallic minerals: Lodes and veins containing economic quantities of Lead and Zinc (galena and sphalerite) with small amount of Copper (chalcopyrite) have long been known in many locations in the Benue Trough, from Abakaliki area (Ebonyi State) to the Gombe area (Gombe State). This region has been the attraction of some exploration and mining activities in recent times. Iron Ore in form of plateau-forming oolitic and pisolitic ironstones of the Cretaceous sequence of the Niger (Bida) Basin have long been recognised as potentially huge iron ore resources with grades up to 60% Fe. They, however, remain unattractive due to the relatively high phosphorous (2% P₂O₅) and sulphur (1%) as impurities, even though the quantities are large, perhaps as much as 2 billion tonnes.

- Industrial minerals: Limestone, suitable for cement manufacturing occurs in a number of places in the sedimentary basins of Nigeria, and cement industries have been established near several of its reserves. An additional resource in some of the associated shales is Gypsum, which is also used in the manufacture of cement and occurs in exploitable quantities in a number of locations. Baryte and Fluorite are commonly associated with the lead-zinc veins and occur in exploitable quantities in a number of locations. Phosphate, Kaolin and other Clays (including refractory Fireclay) and Diatomite have been reported, explored and even exploited in a number of localities within the sedimentary basins.

3. Resource Potential of the Nigerian Mesozoic Younger Granites

- The Younger Granites of Nigeria are famous for their Tin (cassiterite) and Niobium (columbite and pyrochlore) mineralisation. The Uranium content of the Pyrochlore is believed to probably be the primary source for the sedimentary uranium deposits in Niger Republic. This scenario presents an exploration challenge for sedimentary uranium deposits in the closely associated sedimentary basins in Nigeria.
- Other economic minerals associated with the Younger Granites are Lead (galena), Zinc (sphalerite), Wolframite, Topaz, Molybdenite, Scheelite, Zircon, Monazite, Thorite, Cryolite and gem quality Beryl.

4.3.2 Soils

The agricultural economy of Nigeria is based upon access to good quality soils for the cultivation of crops. Within tropical and savanna regions this has necessitated removal of the natural vegetation exposing the soil cover to erosion especially during heavy tropical rainstorms. The resultant erosion of soils by runoff and incision of deep gullies are major causes of concern. Effects have been noted in Jos where removal of the natural vegetation cover has resulted in incision of extensive gully systems. Mine site remediation in Jos includes the backfilling of gullies with rolled and compacted laterite covered by black soil. Where incisions in deep gullies are stabilised using wire cage gabions packed with blocks of laterite.

The nature and distribution of soils is important to small-scale mining for the following reasons:

- Forest cover clearance at a mine site and the surrounding area exposes soil layers to greater risk of erosion especially fragile deeply weathered tropical soils that can be rapidly eroded during tropical high intensity rain storms. Rapid runoff results in rapid land surface erosion through removal of surface layers and intense stream gullying with siltation of downstream river channels.
- Awareness is needed of cropping patterns undertaken at the proposed mine site before operations start. At the cessation of mining attempts should be made to return the site to such a state that former agricultural activities could be resumed. This may require the removal of topsoil to a safe storage area from where it can be returned to its original position and conditions.
- The manual mining of near surface deposits is often dependent upon the depth and patterns of rock weathering. In areas of shallow weathering patterns explosives may be needed to mine competent rock layers.
- Near surface zones of water flow often occurs within lateritic soils especially during the wet season. Such occurrences will impact upon seasonal working patterns in shallow pits that may be prone to flood during the wet season. These patterns of surface flow may be important factors in provision of domestic water supply via shallow wells to the local community. The excavation of pits draining shallow weathered zones will cause reduction in community water supply so that alternative sources of water may have to be found.

- Leachates from mine workings, spoil heaps and mineral-processing plants may seep into local soils resulting in changes to soil chemistry which could be toxic to plant life and local communities who consume crops produced on affected lands.

4.3.3 Climate

Weather patterns are influenced by two wind systems, the south-westerly that brings rain and the north-westerly from the Sahara Desert that brings the dry and dusty harmattan wind. The seasonal movement of the Intra Tropical Convergence Zone controls weather patterns on a regional scale. Annual distributions of wet and dry seasons, the impact of climate change and the resultant impact of desertification on a regional scale in Nigeria are aspects to be studied as they impact upon all sections of the national economy.

Nigeria has four main climatic zones:

- The Equatorial Climate which extends from the coast to about 150km inland. Rainfall is between 1500 and 3000mm per annum, with an average temperature range of 17–24°C and relative humidity ranges between 60–90%. It has two seasons, the wet season March to October, and dry season November to March.
- Tropical Hinterland, about 150–240km northwards from the coast, with 1000 to 1500mm rainfall, temperature range of 21–25°C and relative humidity range of 50–80%. It has a longer dry season, of 4–5 months, compared with the equatorial zone which lasts from October to April.
- Tropical Continental which falls into the Sudano-Sahelian vegetation zone with rainfall of 250–1000mm, temperature of 25–30°C (with lower night temperatures especially during the harmattan) and low relative humidity of 20–40%. The characteristic dry hot harmattan wind can last from October to May.
- Montane or Plateau type climate is limited to the highland areas, with a high annual rainfall of 1400–4000mm, relatively low temperatures of 5–20°C and high humidity of 30–90%.

An understanding of weather patterns is important to mining for the following reasons:

- From observations made it is apparent that small scale mining and quarrying activities are essentially dry season activities. During the wet season workings flood becoming inaccessible without dewatering using pumps
- During the wet season the rural population is primarily engaged upon the tilling of lands and planting of crops, taking advantage of the rains.
- Knowledge of storm intensity and duration patterns are necessary to understand the erosivity of rainfall on soils. This is especially important in areas where the natural vegetation has been removed as a precursor to mining operations, or remedial action has to be undertaken to return the land to its former state after mining has ceased. If there has been insufficient compaction of replacement material and/or the vegetation cover has not been replaced then excessive rainfall runoff results in excessive land surface erosion commonly resulting in the formation of deep gully systems. This is noted in parts of the Jos Plateau and in south eastern Nigeria.
- Knowledge of evaporation rates is needed to estimate the rate of natural removal of water from open pits during the dry season.
- Wind direction and strength may impact upon dust production at open cast and treatment sites
- The likelihood of some dry season rainfall necessitating dewatering of workings adding to operating costs is a risk to be included in mine operation planning.
- Rainfall/runoff characteristics will impact upon the generation of leachates from mine workings and waste disposal dumps. Retaining walls may have to be constructed to minimise flow of polluted discharges to local streams.

4.3.4 Hydrology and Inland water resources

The hydrology of Nigeria is dominated by two great river systems, the Niger-Benue and the Chad systems. With the exception of a few rivers that empty directly into the Atlantic Ocean (Cross River, Ogun, Oshun, Imo, Qua Iboe and a few others), all other flowing waters ultimately find their way into the Chad Basin or down the lower Niger to the sea. The approximate extent of the major inland water systems is given in Tables 1 and 2. The major rivers, estimated at about 10,812,400 hectares, make up about 11.5% of the total surface area of Nigeria which is estimated to be approximately 94,185,000 hectares. Thirteen lakes and reservoirs with a surface area of between 4000 ha and 550,000 ha have a total surface area of 853,600 ha and represent about one percent of the total area of Nigeria. The table 6 below shows the major Rivers, lakes and reservoirs in Nigeria.

Table 6: Description of major Rivers, lakes and reservoirs in Nigeria

s/n	Major Rivers	Approximate surface area (ha)
1	Anambra River	1,401,000
2	Benue River	129,000
3	Cross River	3,900,000
4	Imo River	910,000
5	Kwa Iboe River	500,200
6	Niger River (less Kainji and Jebba lakes)	169,800
7	Ogun River	2,237,000
8	Oshun River	1,565,400
	Sub Total	10,812,400
	Major Lakes and Reservoirs	
1	Lake Chad (natural)	550,000
2	Kainji Lake (man-made)	127,000
3	Jebba Lake (man-made)	35,000
4	Shiroro Lake (man-made)	31,200
5	Goronyo Lake (man-made)	20,000
6	Tiga Lake (man-made)	17,800
7	Chalawa Gorge (man-made)	10,100
8	Dadin Kowa (man-made)	29,000
9	Kiri (man-made)	11,500
10	Bakolori (man-made)	8,000
11	Lower Anambra (man-made)	5,000
12	Zobe (man-made)	5,000
13	Oyan (man-made)	4,000
	Sub-Total	853,600
	Total	11,666,000

Source: Ita and Sado et. al. 1985

4.3.5 Existing Environmental Issues and Challenges

Mining is normally destructive of the environment, and in Nigeria the mining sector is largely dominated by ASM activities- as there are a very few medium –large scale mining operations – with a prevalence of informal and illegal activities.

A detailed description would be redundant but may be characterised as abandoned pits, shallow ponds, and poisonous wastes with severe health implications. Another important environmental challenge is at the ore processing as the ore dressing cycle is an equally polluting activity, often neglected.

Artisanal and illegal mining of solid minerals pervade the entire country leaving behind their effects on the environment. Most of these artisanal and illegal miners (men, women and children) are rural and poor and usually work without legal mining title. Their activities include mining of gem stones like tourmaline,

beryl, amethyst, aquamarine and garnet and precious minerals like diamond and gold. It also includes mining of other minerals like columbite, tantalite and cassiterite. Mining of river sands, digging of burrow pits, removal of top soil, sand and laterite for building purposes are also carried out.

Other activities include removal of vegetation and cleaning of dams to produce dam sands. These arrays of activities lead to uncoordinated and unregulated mining which usually result in haphazard extraction of the minerals and eventual destruction of the environment. Evidences of such destruction are observed in the form of soil erosion, change in topography and water pollution and dumps of overburden material. See annex 7 for typical environmental issues.

4.4 Description of social conditions

4.4.1 Demography

Nigeria was estimated at 182.2 million people in 2015, according to the latest census figures. Nigeria population is equivalent to 2.48% of the total world population. The population density in Nigeria is 205 per km² (532 people per mi²).

4.4.2 Mining sector and the economy

Nigeria's mining sector is diverse in mineral resources, including high-value commodities (i.e. gold), bulk commodities (i.e. iron ore and tin) as well as gemstones and dimension stones. Despite the country resource potential and its past experience as a significant player in solid minerals development (about 4-5% in the 1960s-70s), today the sector has one of the lowest outputs in the Nigerian economy. The mining sector's contributions to GDP has steadily declined from 5.6% in 1980 to around 0.33% of GDP by 2015, which is significantly lower than other mineral rich countries in the region. Exploration expenditure in Nigeria from 2011-14 has been estimated in US \$ 88 million, including fees and royalties. Activities in the solid minerals sector can be grouped according to their contribution to the GDP, for instance in, Ghana 6.16%, Mali 8%, Guinea 20%, Niger 3%, Senegal 20%, and Mauritania 24%. In 2015, Nigeria gained about 0.02% of its export earnings from solid minerals, compared to more than 20 percent in Namibia, Botswana and Zambia, and more than 50 percent of export earnings were generated in the Democratic of Congo. The sector faces several challenges with geosciences, Industry participants, Stakeholders, Institutions, Governance and other enablers of the sector.

The mining sector in Nigeria today is dominated primarily by domestic small scale companies and artisanal miners. Nigeria currently does not have any active operations by major international mining companies, due in part to the lack of sufficient geo-data. There have been a few intermediate to junior mining companies (from Australia, UK, China, Ukraine, and India) actively engaged in the sector, focused primarily on the exploration and exploitation of gold, iron ore, lead-zinc, and coal. There are a large number of small domestic mining companies (around 633 as of December 2015), primarily involved in quarry operations for construction stones and limestone. Over 90 percent of the revenue accrued to the government from royalties in the mining sector come from quarrying operations. Most of the quarrying supplies the local construction industry, and in more recent years, local cement manufacturing

4.4.3 ASM social conditions

ASM has a tremendous social impact both on the workers and on those communities and villages close to the sites. ASM is mostly a seasonal activity to temporarily replace rural activities. ASM whole cycle activity encompasses men, women and also children from the digging to the mineral processing and transportation. Surrounding villages are normally affected and characterized by poor hygiene conditions, health hazards, sexually transmitted diseases, prostitution and alcohol abuses.

ASM social conditions in Nigeria are characterized by the following:

- Communities may be identified by the people belonging to the same ethnic group;
- Conflict, induced by the presence of workers and migrants from different ethnic groups;
- Seasonality of the activity, as farming is still the primary livelihood for most miners;
- Women in mining, as a large percentage force of ASM operators, and mostly dedicated to the ore processing (crushing, etc);
- Sexual gender based violence in several forms, such as intimidation or humiliation, sexual threats, discrimination or exploitation;
- Child labour; Children are the most vulnerable group;
- Poor Health and Safety standards;
- Alcoholism and drug abuses; and
- HIV/AIDS and other sexually transmitted diseases in ASM communities

5.0 POTENTIAL ENVIRONMENTAL AND SOCIAL IMPACTS

The potential adverse environmental and social impacts of the proposed intervention will be largely localized in spatial extent, short in duration and can be manageable through the implementation of appropriate mitigation measures. For example, deterioration of air quality due to release of fugitive dust and gaseous emission from operating vehicles and equipment during site clearing may occur during site clearing activities. These activities are envisaged to be localized to the project site and occur for a short period of time. In addition, gaseous emissions are anticipated to be generated in small concentrations and dispersed rapidly. Dust suppression methods, such as the use of water, will also be employed to minimize the amount of effect on the local surroundings. The potential environmental and social risks and impacts include:

5.5.1 Environmental Impacts

- Deterioration of ambient air quality due to the release of fugitive dusts and gaseous pollutants;
- Noise & vibration disturbances from operation of machineries and motorized equipment;
- Loss of vegetation, Loss of biodiversity and altered ecosystem dynamics/processes;
- Soil erosion due to compaction, soil horizon mixing and exposure of soil surfaces to rain and wind during earth moving, excavation & trenching activities;
- Soil contamination from accidental leakage/spillage of fuel, oil/lubricants from equipment and vehicles;
- Surface water pollution from sediment run-off from excavated areas; and
- Generation of waste including spoils, vegetal and hazardous waste e.g. explosives

5.5.2 Social Impacts

- Loss of economic trees including medicinal herbs;
- Increase demand on existing health and sanitation infrastructure due to influx of temporary workers and camp followers;
- Damage to existing underground facilities such as communication and electrical cables, sewage pipes and other service lines;
- Increased social vices/crimes and dilution of indigenous culture, norms and traditions in nearby communities due to influx of migrant workers and business opportunists e.g. community women being lured into prostitution, youth being introduced into hard drugs etc;
- Loss of Cultural/Historical Sites;
- Marginalization of women and other vulnerable groups;
- Risk of child labour;
- Risk of communicable diseases such as STDs including HIV/AIDS from influx of temporary construction workers;
- Conflicts among Water Users;
- Shortage of Water for Domestic, Irrigation and Other Uses;
- Outbreak of Sanitation - related Diseases such as Dysentery, Cholera etc. due to shortage of water downstream; and
- Risks of occupational accidents and injuries to workers.

6.0 STAKEHOLDER CONSULTATION

6.1 Process of Stakeholder Consultation

Stakeholder consultation for the MinDiver project entails the process of informing stakeholders on the need to carry out potential various MinDiver sub-projects in (a) their environment, (b) the scope and the (c) need for the community to own and safeguard the project as beneficiaries and stakeholders.

Stakeholder/ public consultation would be an on-going activity taking place throughout the entire project process. Public participation and consultation would take place through meetings, radio programs, requests for written proposals/comments, , structured questionnaire administration, explanations of project to the locals, making public documents available at the state and local levels.

In addition, in-depth interviews and focus group discussions shall also be utilized. Through this process, concerns and issues raised were addressed while views and inputs as regards the potential environmental and social impacts of the project and proposed mitigation/enhancement measures were obtained.

At the local level, suitable locations will include the residents at sub-project areas. These measures would take into account the low literacy levels prevalent in these rural communities by allowing enough time for responses and feedback. Annex 11 describes the steps of public consultation in the MinDiver project cycle.

6.2 Stakeholder Focused Group Discussion and Interpretation

Since sub-project host communities have not been identified at this stage. Consequently, stakeholders consulted at this ESMF stage comprised of the Project Coordinator, PIU, Project Consultant Geologist, Representatives of Nigeria Geological Survey Agency (NGSA), Mining Inspectorate (MI), MSMD Artisanal and Small Scale Mining (ASM) Department and Mines Environmental Compliance Department (MECD). Other stakeholders consulted were CSOs including Global Rights; Advocates for Sustainable Justice and Connect Development (CODE). Attendance at the stakeholder consultation is attached as Annex 13.

Summary of consultations is presented in Table 1(a, b & c) in Section 1.7.5 of this ESMF.

6.3 Consultations in the study area

Further consultations will be required to other key stakeholders including (MDAs), Community Based Organizations (CBOs), Non-Governmental Organizations (NGOs), Representatives/Leadership in host communities, and Heads of community households. This will be achievable once host communities have been identified.

7.0 FRAMEWORK ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN (ESMP-F)

This chapter contains a summary of the screening procedure, capacity building activities and ESMP-F implementation budget.

7.1 Screening Process

A review process will be put in place to ensure screening of all potential civil work activities for environmental and social impacts prior to approval by the PIU. The screening can be carried out by a designated officer of the PIU (Environmental and Social Officers) or the relevant MDA (Ministry of Solid Mineral Development) in accordance with the laid down procedure. This will include an environmental screening sheet showing the estimated impact category of each sub-project destined for rehabilitation and/or refurbishment. The screening process will involve an assessment of the project to determine:

- the appropriate project categorization for the EA;
- applicable World Bank environmental and social safeguards;
- potential for environmental and social impacts and
- cultural or other sensitivities.

In addition, each project will be screened to identify relevant stakeholders and, the nature and extent of engagement for each stakeholder category. Figure 4 below describes a typical environmental and social screening procedure.

7.2 Environmental and Social Screening Criteria

The screening exercise will be carried out prior to initiation of the project preparation activities. The screening exercise will be used as a tool to identify the severity of environmental and social impacts and integrate relevant mitigation measures into the project preparation accordingly.

The screening also shall provide information on the following:

- Categories of sub-projects and inclusion in the project; and
- Categories of sub-projects to be excluded in sensitive areas through exclusion criteria.

The categorization is done through the use of an Environmental and Social Screening Checklist (ESSC) of the proposed sub-projects to determine if they fall under any EA Category A, B or C. The FMEnv Screening process flowchart is presented in Annex 4 while screening report and checklist are attached as Annex 5.

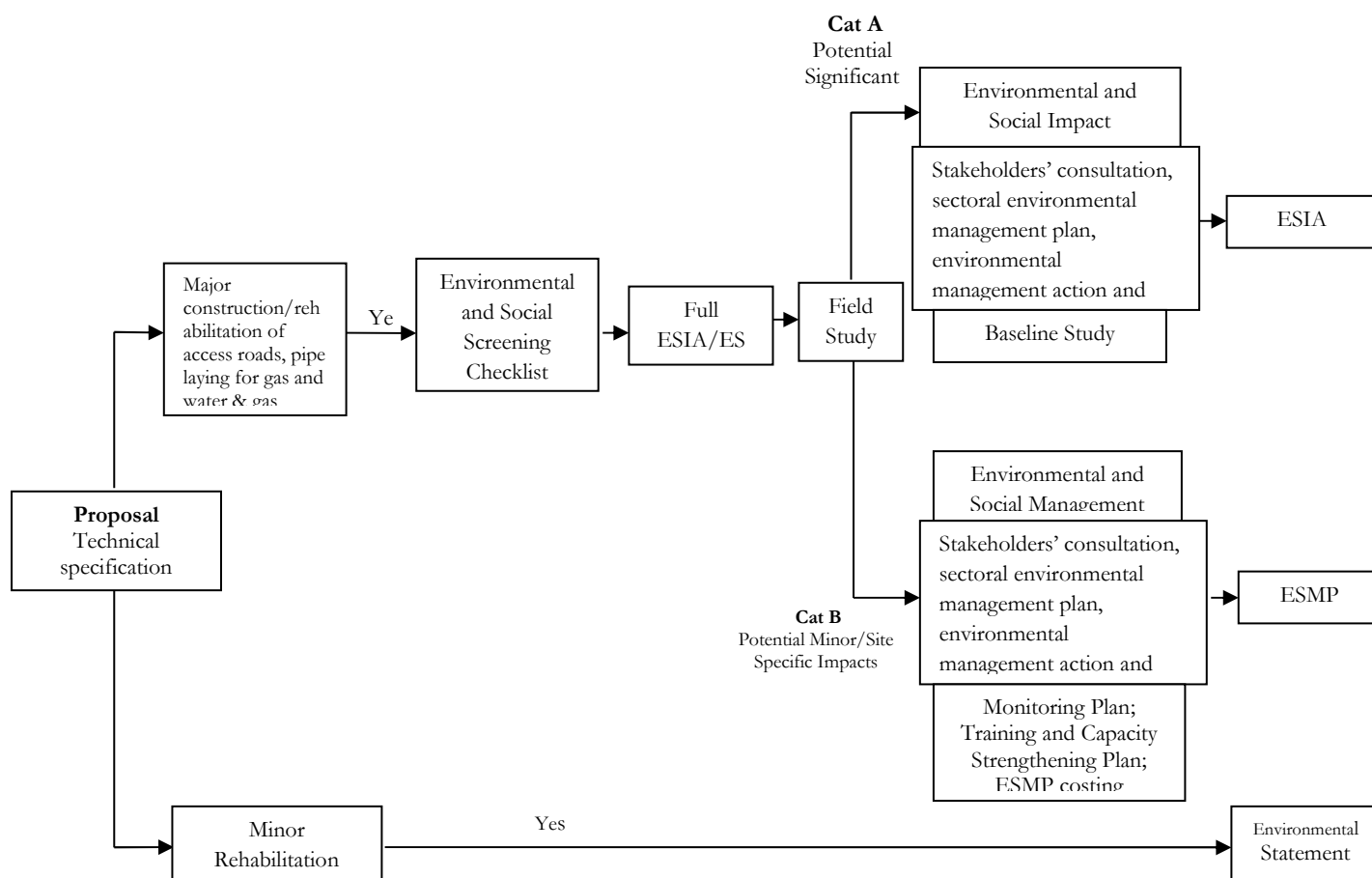


Figure 4: Typical Environmental Screening Procedure

7.3 Implementation of Sub-projects

Implementation of sub-projects such as building or refurbishing access roads, power interconnect, gas connection, water management system, etc. will expand access to Nigerian mineral deposit including barite, gold, iron ore, lead/zinc and limestone which can be exploited as a source of revenue for government, raw materials for industries and employment opportunity for the populace. This will reposition mining as a driving force to bring jobs and generate revenue to promote economic stabilization.

In addition, the sub-project will encourage best practice in mining thus reducing some of the conventional environmental degradation closely associated with mining in this part of the world. The investment under the MSSD is what Nigeria needs at this point to expand her infrastructure especially in the Mining sector to support sustainable economic development. Implementation of the sub-project will ensure the available investment is utilized to achieve the intended objectives.

From the above, implementation of the sub-project alternative is a better option than the “No-Action” option.

7.4 Impact analysis and prediction

Predicting the magnitude of a development likely impacts and evaluating their significance is core of environmental and social assessment process. Prediction should be based on the available environmental and social baseline of the project area. Such predictions are described in quantitative or qualitative terms See Table 7 below.

Table 7: Considerations in impact prediction

Consideration	Summary
Magnitude of Impact:	This is defined by the severity of each potential impact and indicates whether the impact is irreversible or, reversible and estimated potential rate of recovery. The magnitude of an impact cannot be considered high if a major negative impact can be mitigated.
Extent of Impact:	The spatial extent or the zone of influence of the impact should always be determined. An impact can be site-specific or limited to the project area; a locally occurring impact within the locality of the proposed project; a regional impact that may extend beyond the local area and a national impact affecting resources on a national scale and sometimes trans-boundary impacts, which might be international.
Duration of Impact	Environmental impacts have a temporal dimension and needs to be considered in an ESIA. Impacts arising at different phases of the project cycle may need to be considered. An impact that generally lasts for only three to nine years after project completion may be classified as short-term. An impact, which continues for 10 to 20 years, may be defined as medium-term, and impacts that last beyond 20 years are considered as long-term.
Significance of the Impact:	This refers to the value or amount of the impact. Once an impact has been predicted, its significance must be evaluated using an appropriate choice of criteria. The most important forms of criterion are: <ul style="list-style-type: none"> • Specific legal requirements e.g. state, national laws, standards, international agreements and conventions, relevant policies etc. • Public views and complaints • Threat to sensitive ecosystems and resources e.g. can lead to extinction of species and depletion of resources, which can result, into conflicts. • Geographical extent of the impact e.g. has trans- boundary implications. • Cost of mitigation • Duration (time period over which they will occur) • Likelihood or probability of occurrence (very likely, unlikely, etc.) • Reversibility of impact (natural recovery or aided by human intervention) • Number (and characteristics) of people likely to be affected and their locations • Cumulative impacts e.g. adding more impacts to existing ones. • Uncertainty in prediction due to lack of accurate data or complex systems. Precautionary principle is advocated in this scenario.

7.5 Types of impacts considered under the MinDiver

Identified impacts that are likely to be associated with the MinDiver project have been classified to occur in 4 phases making up the project life cycle.

The phases include:

- Pre-construction;
- Construction;
- Operational and Maintenance; and
- Decommissioning

While the project is designed to have positive socioeconomic impacts on the host communities and Nigeria at large in terms of employment opportunities and improved standards of living, there are also potential negative environmental and social impacts. The environmental and social impact associated with proposed sub-project activities are expected to be moderate and manageable as compared to the impacts of actual mineral exploitation and mining process. See Annex 7 for typical environmental and social issues in the mining sector.

Specific environmental and social impacts and measures will only been known after the subproject locations are identified, and the specific ESIA/ESMPs prepared. Annex 8 serves as a check list that would serve during specific ESIA preparation, if national procedures and guidelines on ESMP are not clear enough or do not exist.

7.6 Environmental and Social Management Organization

The successful implementation of the project as well as the environmental and social management programs will depend on the commitment and capacity of the PIU and other third parties (institutions) to implement the program effectively. Thus, the roles and responsibilities of persons and institutions that will be involved in the implementation, monitoring and review of the ESMP as well as training and capacity strengthening programmes are discussed in this section.

7.6.1 Environmental and Social Management Organization

The roles and responsibilities of the key stakeholders involved in the development, implementation and review of the ESMP are described below:

7.6.1.1 The Ministry of Solid Minerals Development (MSMD)

The Ministry is charged with the mandate of ensuring a rapid and beneficial development of the Country's Solid Minerals resources by unlocking the economic potentials of the Solid Minerals sub-sector. In carrying out the above mandate, the Ministry is charged with the following responsibilities:

- Formulating policy including strong regulations and globally comparable legal and fiscal framework whilst also ensuring enforcement and compliance.
- Providing Information and knowledge especially reliable geological and geophysical data to enhance investment in the sector
- Regulating operations in the Solid Minerals sector
- Generating appropriate revenue for the government, etc.

7.6.1.2 Mining Environment Compliance Department (MECD), MMSD

The Department of Environment Compliance in MSMD is responsible for the enforcement of compliance with all National Mining Laws and Regulations, including the EIA Law, Pollution Control, Safety Code and Accident Prevention Regulations. The Department also ensures the adoption of environmentally sound technologies and practices in all phases of mining activities and encourages public participation through dialogue with affected communities and other interested parties on the environmental aspects of different phases of mining activities.

Specifically for the proposed sub-project, the Department has the mandate to:

- Provide advice on environmental assessment procedures including impact prediction, mitigation measures including evaluation of social impacts and enforcement of mitigation measures;
- Provide Screening and scoping advice to the World Bank and the Ministry of Environment;
- Monitor and enforce compliance with all environmental and social requirements and obligations including those in the ESMP;
- Review of ESIA Reports;
- Make recommendations regarding environmental and social issues of the projects to the Minister;
- Liaise with relevant agencies of government e.g. FMEnv with respect to the social and environmental issues involved in the implementation of the sub-projects.

7.6.1.3 Artisanal and Small-Scale Mining (ASM) Department, MMSD

Broadly, the functions of the ASM Department involve the implementation of the provisions of the Minerals and Mining Act and the formulation, recommendation and implementation of government

programs and policies for the support and promotion of ASM. However, in specific terms, the functions include;

- Organizing, supporting and assisting small-scale mining operations;
- Provision of extension services to mining cooperatives on exploration, exploitation, mineral processing, entrepreneurial training, environmental management, health & safety issues etc;
- Improving the physical and sustainable livelihood in ASM communities;
- Facilitating healthy relationship between ASM miners and community on one hand, and with large scale mining companies where applicable;
- Registration and administration of mining cooperatives and mineral buying centre;
- Preparing and rendering records, reports and returns on ASM as required by the Minister or as prescribed by the mining regulations.

7.6.1.4 Federal Ministry of Environment (FMEnv)

The FMEnv has the mandate to co-ordinate environmental protection and natural resources conservation for sustainable development and specifically to Secure a quality of environment adequate for good health and well-being; Promote the sustainable use of natural resources; Restore and maintain the ecosystem and ecological processes and preserve biodiversity; Raise public awareness and promote understanding of linkages of environment; and Co-operate with government bodies and other countries and international organizations on environmental matters.

Specifically for the implementation of these sub-projects, Federal Ministry of Environment shall play the role of lead environmental regulator, overseeing compliance requirements, granting consent and also monitoring or providing supervisory oversight for the MinDiver projects. It also shall receive comments from stakeholders, public hearing of project proposals, and convening technical decision-making panel as well as provide approval and needed clearance for EA/ESMP or other environmental clearance that may be required.

7.6.1.5 State Ministries of Environment

The State Ministries of Environment shall be involved in provision of advice on screening, scoping, review of draft RAP/EA report (in liaison with Federal Ministry of Environment), receiving comments from stakeholders, public hearing of the project proposals, and convening a technical decision-making panel, Monitoring and evaluation process and criteria. The Ministries of Water resources at State level shall be carried along to provide necessary advice on the sub-projects involving water resources.

Other State Government MDAs, including Ministries of Lands, Women Affairs, Community Development, Social Welfare and Poverty Alleviation may be required depending on the State laws.

7.6.1.6 Project Implementation Unit (PIU)

The PIU, as the implementing authority, has the mandate to:

- Ensure that the PDOs of the project are fully achieved in a timely manner;
- Co-ordinate programmes and actions related to the project;
- Ensure the smooth and efficient implementation of the project's various technical programmes;
- Cooperate through a Steering Committee that provides guidance to the technical aspects of all project activities;
- Maintain and manage all funds effectively and efficiently for the sub-projects;
- Plan, coordinate, manage and develop projects to ensure success;
- Recommend on policy issues to the Minister of MSMD including mechanisms for implementation;
- Prepare plans for the management and development of MinDiver project;

- Monitor the project work to ensure that the activities are carried out in a satisfactory manner;
- Organize the necessary orientation and training for the departmental officials so that they can carry out consultations with local governments, support local governments in carrying out the recommendations in the ESMF;; and
- Ensure that progress reports are submitted to the World Bank regularly.

7.6.1.7 Environmental and Social Safeguards Unit

The environmental safeguard specialist and social safeguard specialist attached to the PIU shall be responsible for the implementation of the ESMF as well as the Resettlement Policy Framework (RPF) which is a stand-alone document has also been prepared to address possible involuntary physical and economic displacements by the project. For adverse impacts that are not considered minor, the preparation of a Resettlement Action Plan (RAP) is required for each site. World Bank OP 4.12 article 25 sets the requirements of the RAP.

To ensure sustainability in all the MinDiver sub-project activities, a safeguards unit which comprises an environmental safeguard specialist and social safeguard specialist shall be formed. The safeguards specialists shall report directly to the PC.

The paramount objective of the environmental/social safeguards officers is to ensure the effective consideration and management of environmental and social concerns in all aspects of MinDiver, from the design, planning, implementation, monitoring and evaluation of initiatives. Thus, a key function of the environmental specialist and social specialist is to engender a broad consensus, through participatory methods and extensive dialogue on the potential environmental and social concerns from project civil works as incorporated into the World Bank's environmental and social safeguards policies triggered OP. 4.01, 4.11, 4.12 and 17.50 (See Table 4 in Chapter 2) and environmental compliance with the EA.

The roles and responsibilities of the environmental and social safeguards officers to anchor environmental and social issues distinctively are described below.

7.6.1.8 Roles & Responsibilities of Environmental and Social Safeguards Unit

- Process all subjected subproject through the screening procedure to identify/propose category and specific instrument to prepare;
- Approval of the classification and the selected instrument by the Public ESIA Agency;
- Preparation of the safeguard document/instrument (ESIA, Env. Audit, simple ESMP, etc.) in accordance with the national legislation/procedure (taking into account the Bank policies requirements);
- Preparation and approval of the ToRs and preparation of the report
- Report validation and issuance of the permit (when required);
- (i) Integrating the construction phase mitigation measures and E&S clauses in the bidding document prior they're advertised; (ii) ensuring that the contractor prepares his ESMP (C-ESMP), gets it approved and integrates the relevant measures in the works breakdown structure (WBS) or execution plan;
- Implementation of the other safeguards measures, including environmental monitoring (when relevant) and sensitization activities;
- Reporting on project safeguards performance and disclosure;
- External oversight of the project safeguards compliance;
- Building stakeholders capacity in safeguards management;
- Prepare Independent evaluation of safeguards performance (Audit)

7.6.1.9 Local Governments

The LG governs the affairs in the various communities. It is expected that it serves as an inter-phase between the community members who are leaving in the project areas. The LGs can assist in the implementation of the proper community mechanism. Their staff can work together with the other relevant MDAs and CBOs.

The host Local Government Councils has to be fully briefed and enlightened in the process and steps to be taken in the ESMF/ ESMP and the overall project execution. The councils should in turn engage and be encouraged to carry out a comprehensive and practical awareness campaign for the proposed sub-project(s), amongst the various relevant grass roots interest groups.

7.6.1.10 Community Based Organizations / Community Development Associations (CBOs/CDAs)

The primary aim of the CBOs/CDAs is to sensitize community members for community actions with minimal support from Government. Some of their functions include:

- Mobilizing urban communities with a view to providing basic amenities;
- Sensitize community members for community actions; and
- Responsible for everyone in a community which include women groups, vulnerable groups and the youth.

7.6.1.11 Consultants, Contractors and Site Engineers

The consultants and contractors will work with the PIU and other stakeholders in prompt and effective projects delivery.

The safeguards responsibilities for proposed sub-projects are summarized in Table 8 below.

Table 8: Institutional arrangements for safeguards management - MinDiver sub-projects

S/N	Category	Roles
I	Safeguards Unit-PIU	<u>Environmental Safeguards</u> Liaise closely with the World Bank, MSMD, FMEnv and relevant State MDAs in preparing a coordinated response on the environmental and social aspects of project development respectively; Collate baseline data on relevant environmental characteristics of the selected project sites; Analyse potential community/individual sub-projects and their environmental impacts; Ensure that project activities that are implemented will in accordance to best practices and guidelines set out in the ESMF and site specific ESIAs/ESMPs; Identify and liaise with all stakeholders involved in environment related issues in the project; and Be responsible for the overall monitoring of mitigation measures and the impacts of the project during implementation. Safeguards due diligence
		<u>Social Safeguards</u> Develop , coordinate and ensures the implementation of the RAPs; Identify and liaise with all stakeholders involved in social related issues in the project; Conduct impact evaluation and beneficiaries assessment; and Establish partnerships and liaise with organisations, Community Based Organizations (CBOs) and Civil Society Organizations (CSOs). Safeguards due diligence

II	Federal Government MDAs (Federal Ministry of Environment and her agencies such as NESREA)	Provision of advice on screening, scoping, review of draft final ESIA/ESMP report (in liaison with State Ministries of Environment), receiving comments from stakeholders, public hearing of the project proposals, and convening a technical decision-making panel, Project categorization for EA, Applicable standards, Environmental and social liability investigations, Monitoring and evaluation process and criteria.
III	MECD, MMSD	Provision of advice and guidance on environmental assessment procedures including impact prediction, mitigation measures including evaluation of social impacts and enforcement of mitigation measures; Provision of screening and scoping advice to the World Bank and the Ministry of Environment; Monitoring and enforcement of compliance with all environmental and social requirements and obligations including those in the ESMP; Providing recommendations regarding environmental and social issues of the sub-projects to the Minister, and Liaising with relevant agencies of government e.g. FMEnv with respect to the social and environmental issues involved in the implementation of the sub-projects. Also reviewing of this ESMF and other safeguard instruments e.g. ESMP
IV	State Government MDAs (State Ministry of Environment)	Lead role -provision of advice on screening, scoping, review of draft final ESIA/ ESMP report receiving comments from stakeholders, public hearing of the project proposals, and convening a technical decision-making panel, monitoring and evaluation process and criteria; This ESMF will be reviewed and disclosed by host State Ministries of Environment.
V	Other State MDAs	The MDAs apply when relevant areas or resources under their jurisdiction are likely to be affected by or implicated sub-projects. They participate in the EA processes and in project decision-making that helps prevent or minimize impacts and to mitigate them. These institutions may also be required, issue a consent or approval for an aspect of a project; allow an area to be included in a project; or allow impact to a certain extent or impose restrictions or conditions, monitoring responsibility or supervisory oversight.
VI	World Bank	Overall supervision and provision of technical support and guidance. Recommend additional measures for strengthening the management framework and implementation performance; Supervising the application and recommendations of sub- project ESIAs /ESMPs.
VII	Local Government	Liaising with the PIU. Engage and encourage carrying out comprehensive and practical awareness campaign for the proposed sub-projects, amongst the various relevant grass roots interest groups.
VIII	CDA (Community Development Organisations)	Ensure community participation by mobilizing, sensitizing community members on environmental and social awareness;
IX	Consultants, Contractors, and Site Engineers	Will work with the PIU and other stakeholders. They are to ensure effective project delivery in a timely, safe and environmentally sound manner.
X	NGOs/CSOs	Assisting to ensure effective response actions and providing wide support as third party monitoring of the application of the EA instruments – ESIAs/ ESMPs as well as management planning, institutional/governance issues and other livelihood related matter and awareness campaigns
XI	The General Public	Assist to ensure effective dissemination, ensuring safe use of volunteers and identifying where the volunteers can best render services effectively.

7.7 Training and Capacity Strengthening Plan

Based on the public consultation, the capacity assessment of implementing state level MDAs as well as the PIU, were carried out. The effective functioning of the MDAs is compromised by limited technical skills and resource constraints. Thus, institutional barriers include:

- Limited knowledge on ESMF implementation as well as project specific ESIAs and ESMPs especially during construction of sub-projects;
- Participatory governance and stakeholders engagement;
- Limited knowledge on Strategic Environmental and Social Assessment;

For effective implementation of the ESMF, there will be need for technical capacity in the human resource base of implementing institutions as well as logistical facilitation. Implementers need to identify and understand the environmental and social issues.

Specific areas for effective training and institutional capacity needs are given in Tables 9- 11 below.

Table 9: Training programs (Environmental and Social Accountability)

Programme/Description	Participants	Form of Training	Duration	When	Training to be conducted by who	Training Organizing Agency	Training Costs USD
WB Safeguards Awareness Training of Environmental Safeguards Policies triggered	PIU, Federal and State Ministries of Environment, MMSD and other project affiliated MDAs in host States.	Workshop	½ Working day	During project preparatory stage	World Bank	World Bank	1,500
World Bank Social Accountability System	PIU, Ministries of Environment, MMSD Women Affairs, Community Development, Social Welfare and Poverty reduction & other Project affiliated MDAs	Workshop	½ Working day	During project preparatory stage	World Bank	World Bank	1,500
Nigerian Environmental Guidelines Introduction to Environment Basic Concept of Environment Environmental Regulations and Statutory requirements as per Government.	PIU, Federal and State Ministries of Environment, MMSD and other project affiliated MDAs in host States.	Workshop	½ Working day	During project preparatory stage	Relevant Consultant	PIU	1,500
Environmental Considerations in sub-project activities: Environmental components affected during construction and operation stages; Environmental management and Best practice; Stakeholder participation Project Screening and Scoping Physical Cultural Resources	PIU, Federal and State Ministries of Environment, MMSD and other project affiliated MDAs in host States.	Workshop	1 Working day	During project preparatory stage	Relevant Consultant	PIU	2,000
Review of EIA and its integration into designs EIA methodology; Environmental provisions Implementation arrangements Preparation of ESIA, EA and ESMP Term of Reference/Implementation Environmental & Social Audits Preparation and administration of questionnaires and stakeholders consultation/FGD	PIU	Lecture and Field visit/ Training of Trainers	1 Working day	During project preparatory stage	Relevant Consultant	PIU	2,000
Project Management (scope, implementation, time, budget, costs, resource, quality,	PIU, MMSD, Federal and State Ministries of Environment and	Training of Trainers	1 Working day	During project preparatory stage	Project Management Consultant	PIU	2,000

procurement, monitoring and evaluation) Logistic and planning	other project affiliated MDAs in host States.			ry stage			
Strategic Environmental and Social Assessment (SESA)	PIU, MMSD, Federal and State Ministries of Environment and other project affiliated MDAs in host States.	Training of Trainers	1 Working day	During project preparatory stage	Relevant Consultant	PIU	2,000
Total							12,500

Table 10: Training program (Health Impact Assessment) - HIA

Programme/Description	Participants	Form of Training	When	Training to be conducted by who	Training Conducting Agency	Training Costs USD
Overview of HIA Screening—How to Decide Whether to Conduct an HIA Environmental Health Areas Scoping—How Comprehensive Should the HIA Be Baseline Data—What, When, and How Much? Risk Assessment—Assessing and Ranking Impacts Health Action Plan Monitoring and Verification Resourcing	PIU, MMSD, Federal and State Ministries of Environment and other project affiliated MDAs in host States.	Training of Trainers	During project preparatory stage	Relevant Consultant	PIU, MMSD, Federal Ministry of Health	4,000

Table 11: Training Programs [Occupational Health and Safety Management Plan (OHSMP)]

Programme/Description	Participants	Form of Training	When	Training to be conducted by who	Training Conducting Agency	Training Costs USD
Occupational Health and Safety(OHS) Leadership Management Safety performance assessment Hazard Analysis and Control Hazard Communication Program Effective Accident Investigation Conducting Health and Safety Audits Job Hazard Analysis Occupational Health Risk Assessment Work Stress Risk Assessment Electrical safety Fire Safety Fall protection Plan Fleet Safety Management	PIU, MMSD ,Ministry of Environment and Habitat, project affiliated MDAs Contractors, Project affected Community representatives	Training of Trainers	During project initiation stage (Before commencement of civil works)	Relevant Consultant	PIU, MMSD, Federal Ministry of Environment	4,000

7.8 Chance Find Procedures

Activities in Sub components B2 may include civil works that could expose chance finds. These chance find sites may include sacred shrines and burial sites. The environmental and Social Screening Checklist will address the impacts to Physical Cultural Resources (PCR)—Refer to Annex 9 for the procedures for the protection of PCRs. The ESMF includes provisions for addressing such cultural heritage chance finds. To mitigate this risk, specific procedures (such as chance find procedures) will be included in the sub-project ESIA/ESMPs as required.

In the event of chance finds of items of cultural significance, all forms of excavation in and around the site will be stopped. Subsequently, experienced archaeologists and anthropologist would be recruited to carry out an investigation and proposed plans for the preservation of such cultural artefacts.

During the project site induction meeting, all contractors will be made aware of the presence of an on-site archaeologist who will monitor earthmoving and excavation activities.

The following procedure is to be executed in the event that archaeological material is discovered. Annex 8 describes the procedure in detail:

- All construction activity in the vicinity of the find/feature/site will cease immediately;
- Delineate the discovered find/ feature/ site will be delineated;
- Record the find location, and all remains are to be left in place;
- Secure the area to prevent any damage or loss of removable objects;
- The on-site archaeologist will assess, record and photograph the find/feature/ site;
- The on-site archaeologist will undertake the inspection process in accordance with all project health and safety protocols under direction of the Health and Safety Officer; and
- In consultation with the statutory authorities the on-site and Project Archaeologist will determine the appropriate course of action to take.

7.9 Roles and responsibilities for the implementation of the ESMP-F

The environmental safeguards specialist and social safeguard specialist in the PIU will be responsible for the implementation of the ESMP-F in close collaboration with the Federal and State Ministries of Environment and relevant MDAs.

Subsequently, they shall be required to prepare a quarterly audit on ESMP-F implementation in addition to the project reports as may be required. In addition, each sub-project requiring an ESMP will also be required to produce an annual audit report for delivery to the PIU. See table 12 below

Table 12: Roles and responsibilities for the implementation of the ESMP-F

No	Steps/Activities	Responsible	Collaboration	Service Provider
1.	Identification and/or siting of the sub-project	PIU MinDiver	<ul style="list-style-type: none"> • MMSD • Local authority 	
2.	Screening, categorization and identification of the required instrument	Env. safeguards specialist (ESS) on the PIU	<ul style="list-style-type: none"> • beneficiary; • local authority • Social Safeguards Specialist (SSS) on the PIU 	
3.	Approval of the classification and the selected instrument by the FMEnv	PIU Coordinator	<ul style="list-style-type: none"> • ESS-PIU • SSS-PIU 	<ul style="list-style-type: none"> • FMEnv-EA Department • The World Bank
4.	Preparation of the safeguard document/instrument (ESIA, Env. Audit, simple ESMP, etc.) in accordance with the national legislation/procedure (taking into account the Bank policies requirements)			
	Preparation and approval of the ToRs	ESS-PIU		<ul style="list-style-type: none"> • The World Bank
	Preparation of the report		<ul style="list-style-type: none"> • Procurement specialist (PS-PIU) • SSS-PIU • Local authority 	<ul style="list-style-type: none"> • Consultant
	Report validation and issuance of the permit (when required)		<ul style="list-style-type: none"> • Procurement specialist (PS-PIU) • SSS-PIU • Local authority 	<ul style="list-style-type: none"> • FMEnv-EA Department • The World Bank

	Publication of document		Project Coordinator	<ul style="list-style-type: none"> Media; The World Bank
5.	(i) Integrating the construction phase mitigation measures and E&S clauses in the bidding document prior they're advertised; (ii) ensuring that the constructor prepares his ESMP (C-ESMP), gets it approved and integrates the relevant measures in the works breakdown structure (WBS) or execution plan.	Technical staff in charge of the sub-project (TS-PIU)	<ul style="list-style-type: none"> ESS-PIU PS-PIU 	<ul style="list-style-type: none"> Control Firm (Supervisor) FME nv
6.	Implementation of the other safeguards measures, including environmental monitoring (when relevant) and sensitization activities	ESS-PIU	<ul style="list-style-type: none"> SSS-PIU PS-PIU TS-PIU Financial Staff (FS-PIU) Local authority 	<ul style="list-style-type: none"> Consultant specialized laboratories NGOs
7.	Oversight of safeguards implementation (internal)	SSES	<ul style="list-style-type: none"> Monitoring and Evaluation specialist (M&E-PIU) FS-PIU) Local authority 	Control Firm (Supervisor)
	Reporting on project safeguards performance and disclosure	Coordinator	<ul style="list-style-type: none"> M&E-PIU ESS-PIU SSS-PIU 	
	External oversight of the project safeguards compliance	FME nv	<ul style="list-style-type: none"> M&E-PIU ESS-PIU SSS-PIU PS-PIU Supervisor 	
9.	Building stakeholders capacity in safeguards management	ESS-PIU	<ul style="list-style-type: none"> SSS-PIU PS-PIU 	<ul style="list-style-type: none"> Consultant Other qualified public institutions
11.	Independent evaluation of safeguards performance (Audit)	ESS-PIU	<ul style="list-style-type: none"> SSS-PIU PS-PIU 	Consultant

7.10 ESMF Implementation and Management

7.10.1 Introduction

The implementation of the ESMF depends on the commitment of the PIU, MMSD, relevant MDAs, and the capacity to apply or use the framework effectively, and the appropriate and functional institutional arrangements, among others. This section addresses the key ESMF areas relevant to its successful implementation:

- Implementing the ESMF;
- Institutional arrangements;
- Capacity building (See sub-section 7.7);
- Monitoring and Evaluation;
- Indicative cost of implementing the ESMF
- Disclosure of safeguard instruments.

7.10.2 Implementing the ESMF

The environmental safeguards specialist and social safeguard specialist attached to the PIU will be responsible for the implementation of the ESMF in close collaboration with identifies and assesses the potential environmental and social concerns and implications that may arise with the implementation of a project, in order to influence the design and other engineering feasibility options and decisions, for informed and sustainable project development. Key stages of the EISAs/ESMPs include proposal screening, Scoping, ESMP and mitigation measures, while the pre-project/planning process involves project concept, identification, design and appraisal (See Annex 5 and 6).

7.10.3 Institutional Arrangements

The MinDiver will be implemented by the PIU and monitored by the Inter-Ministerial Steering Committee (IMSC) made up of relevant stakeholders from relevant institutions with the PIU managing every day affairs of the entire project. The PIU has the responsibility to:

- Co-ordinate the MinDiver programs and actions;
- Plan, coordinate, manage and develop the various sub-project activities;
- Prepare plans for MinDiver management and development.

The PIU will liaise with the MSMD various levels of the state Government and other identified stakeholders, including relevant Federal MDAs, State MDAs, LGAs, NGOs/CSOs, CBOs, CDAs, etc. The roles and responsibilities of these levels of institutions have already been defined in Chapter 6 of this ESMF. The institutional arrangement is depicted in Figure 5.

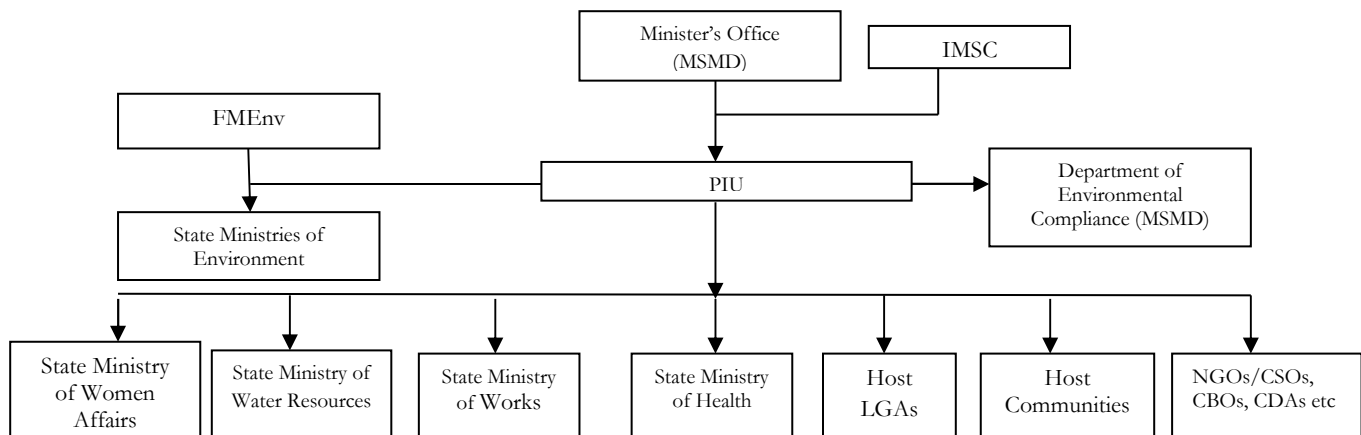


Figure 5: ESMF Implementation Arrangement

7.10.4 Monitoring of ESMF Implementation

The environmental specialist and social development specialist will be primarily responsible for monitoring the requirements of the ESMF. Subsequently, they shall be required to prepare a quarterly audit on ESMF implementation in addition to the project reports as may be required. In addition, each sub-project requiring an ESIA /ESMP study will also be required to produce an annual audit report for delivery to the PIU.

External and independent monitoring will be carried out by the Federal and State Ministries of Environment, MSMD as well as other relevant MDAs. This framework is suggesting the independent monitoring organizations be structured into the whole M&E component of the project. This would take the form of giving these agencies the mandate to carry out independent monitoring of the implementation of the ESMF at periodic intervals of quarterly or half yearly (as circumstances dictate) during the project life.

Their report would then be sent to the PIU and the FMEnv and thus will become part of the official documents of the project.

7.10.5 Evaluation of Results

The evaluation of results of the environmental and social mitigation can be carried out by comparing baseline data collected in the planning phase with targets and post project situations.

7.11 Estimated Budget for Implementing the ESMF

To implement the environmental and social management measures as part of the ESMF, necessary budgetary provisions have been made for the individual sub-projects. It is important to identify financial resource requirements even if indicative. This ensures upfront appreciation of the financial requirements and allows early planning and budgeting accordingly.

Tentative budget for each of the project includes the environmental management costs other than the good engineering practices and cost of environmental monitoring. All administrative costs for implementing the ESMF shall be budgeted for as part of the PIU's costing.

Table 13 below shows an indicative budget breakdown and responsibility of the cost for implementing due diligence in the project. The total cost for implementing the ESMF is estimated at **Two Hundred and Four Thousand, Four Hundred and Sixty Three US Dollars only (\$204,463.00)**.

Table 13: Summary of indicative budget breakdown and responsibility of the cost for implementing the ESMF instruments

Item	Responsibility	Cost Breakdown	Cost Estimate in Us Dollars (US\$)
Mitigation	PIU, Contractors		157,500
Management	PIU	5% of Mitigation Cost	7,875
Capacity Building	PIU, Federal and States Ministries of Environment / Relevant MDAs		20,500
Preparation of specific instruments i.e ESIA/ESMP	PIU/Consultant	This estimation includes cost for reconnaissance survey, field studies, public consultations and report preparation etc	TBD
Sub- Total			185,875
Contingency		10% of Sub- Total	18,587.5
Total			204,463.00

8.0 Disclosures of safeguard instruments

The ESMF has been prepared in consultation with the PIU, relevant state MDAs, and CBOs/CSOs. Copies of this ESMF, like other safeguard instruments (such as ESIA/ESMPs) that would be prepared for MinDiver and its sub-projects will be made available to the public by the PIU.

The PIU will disclose the ESMF as required by the Nigeria EIA public notice and review procedures as well as the World Bank Disclosure Policy at the World Bank Infoshop. Copies of other safeguards instruments (such as ESIA/ESMPs) should be disclosed in like manner. Table 14 below outlines documents to be disclosed.

Table14: Typical documents to be disclosed

Topic	Documents to be disclosed	Frequency	Media
Public Consultation	Minutes of Formal Public Consultation Meetings	Within two weeks of Meeting	FMEnv MSMD MinDiver Project Website State Ministries of Environment Project Implementation Unit (PIU) Local government Secretariat
Environment Management	ESMF, Report & Environment and Social Management Plans (ESMPs);	Prior to awarding works and to remain on website	FMEnv MSMD MinDiver Project Website State Ministry of Environment Project Implementation Unit (PIU) Local government Secretariat World Bank Infoshop.

Annex 1: Terms of Reference

CONSULTANCY SERVICES FOR THE PREPARATION OF AN ENVIRONMENTAL AND SOCIAL MANAGEMENT FRAMEWORK (ESMF)

Background

The proposed project will be financed through an IDA Credit and is designed to deliver both short-term results (1 – 2 years) and longer-term results (4-5 years). Targeted activities expected to produce ‘quick win’ results which will be implemented earlier on in project implementations include the following: (1) Undertaking a demand/gap analysis of industrial minerals required by the local industries to explore some import substitution potentials as well as facilitate the flow of mineral transactions. (2) Facilitating access to finance, technology and equipment, knowledge, and markets as well as provision of mineral extension services; (3) Supporting the mining and processing of the minerals and dimension-stones to meet the required specifications of the local industries in accordance with best practices; and 4) Developing measures for formalizing, regulating and inventorying artisanal and small-scale mining (ASM).

Project Development Objective

The proposed project seeks to support the Government of Nigeria to enhance the mining sector’s contribution to the economy through improved governance, downstream linkages and increased competitiveness. The proposed credit amount for the project is US\$150 million.

Project Components

Component-A: Removing the Barriers to Mining Sector Development

1. **A1. Strengthening mining governance, transparency, accountability, and administration.** Building on the reforms supported by the SMMRP and the EFO, as well as the findings and recommendations of the NEITI mining audit reports, this component will support a second generation of governance reforms. The following activities are envisioned (a) *Updating the Policy, Legal, and Regulatory Framework to align* with international standards and promote investment, (b) *Improve Organizational Efficiency* including the development of an integrated “data repository management system” for improved inter-ministerial coordination, land-related multi-sector planning and operational efficiencies, (c) *administrative capacity building* to the Ministry of Solid Minerals Development and over relevant government agencies, (d) *strengthen revenue assessment and collection* including support of implementation of NEITI, (e) *mineral revenue management* in collaboration with the WB Governance Global Practice (GP), Macroeconomics & Fiscal Management GP and the IMF, (f) *Building independent oversight capacity* with parliamentarians, civil society groups and communities to ensure transparency and accountability.
2. **A2. Strengthening Geological Knowledge and Information Infrastructure.** Identification of prospective areas to facilitate bidding rounds to attract investors. This component will support the collection of new geodata and the digital capture of existing historical geodata for the development of a modern computerized geo-database in order to facilitate mineral asset transactions and attract exploration interest that is necessary to sustain discovery of new deposits and sector growth. To achieve this three activities are envisioned: 1) Geo-data collection (detailed geophysics & geochemistry), interpretation/ analysis and mapping, 2) Prospectively Analysis to identify potential targets and assigning exploration success probabilities based on ore deposit models, 3) Support mineral asset transaction and valuation processes of selected mineral/ mining targets & packaging for bidding rounds. In addition to information infrastructures other mining-related facilities will be upgraded such as mineral and geochemical laboratories.
3. **A3. Skills Building and Education Support for Mining Sector Development.** To address skills gaps and in follow-up to activities implemented under SMMRP, this sub-component support the education of the next generation of sector specialists. The project will work in close collaboration

with a local university or other educational institution, such as the Nigerian Institute of Mining and Geosciences, focusing on building technical capacity within Nigeria.

4. **A4. Environmental and Social Performance.** This will include (a) an assessment of social and health related impacts and associated regulatory reforms; (b) the establishment of an Environmental Information System (EIS); (c) capacity building within government to assess environmental information, regulate and monitor the environmental and health impacts associated with the mining sector, including ASM and medical geology; (d) a conflict-assessment to identify potential risks and mitigation measures focused on key areas of the North which will feed into the EIS allowing for continuous monitoring; and (c) implementation of gender equality programs and projects in the mining sector.

Component –B: Catalyzing the Process of Economic Diversification through the Mining Sector

5. **B1. Developing measures for formalizing, regulating and inventorying artisanal and small-scale mining (ASM).** The objective is to enhance their economic opportunities, reduce smuggling practices, supporting gender inclusiveness, and bringing incentives towards its inclusion within the “real economy” thus reducing revenue collection misalignments and non-transparent practices in line with poverty alleviation and job creation objectives.
6. **B2. Catalyzing the mineral sector for regional development.** The aim of this component is to leverage the mining sector to enhance regional development in several strategic resource-rich regions identified as priorities for the government: Northeast, Northwest, and Southwest regions. Other activities under this component could include the development of an enhanced regionally-based resource corridor analysis (DSS) and local content analysis and development, and a small grants program in those regions.
7. **B3. Implementing steps to enhance value-addition.** Activities under this component will include technical support to increase downstream processing of mineral products. As part of this work, attention will be given to (a) formulation of effective policy measures, (b) accreditation and certification of laboratories, (c) research & development (R&D) processes for new technologies, targeting backward integration, (d) specialized training, and (e) analysis of economic drivers linking supply of industrial minerals with demand for construction materials.
8. **B4. Addressing access to finance and mineral sector investment climate constraints.** In collaboration with the Trade & Competitive Industries GP, this sub-component includes developing and implementing reforms to address access to finance and investment policy constraints in order to encourage greater competitiveness in the global mineral market. Specifically, the activities will include: Assessing investment entry constraints, investment entry reforms, improving and facilitating access to the domestic as well as regional markets, develop more efficient investment incentives.
9. **B5. Transaction Support, Identifying and Advancing “Proof of Concept” Investments.** Activities under this component will include: (a) analytical work identify several “proof of concept” investments to bring forward mineral assets within the mining cycle (i.e. strategic concessions, mines or infrastructure), and (b) transaction support to the government to move investment to contractual close as part of an increased knowledge of its resources and economic potentialities. Collaboration with IFC in the domain of transactions & asset evaluation will be envisaged from an earlier stage.

Component - C. Project Management.

10. Support the GoN in managing and coordinating the Project and building its procurement, financial management, safeguards management, monitoring and evaluation capacity through the provision of technical advisory services, training, acquisition of goods, and operating costs. An external support action to enhance and professionalized project management (certifications PMP, project server etc...) is envisaged besides the traditional project administration and coordination roles.

Rationale.

11. This project is a technical assistance project and as such physical impacts of the project such as land acquisition or air pollution are not anticipated or known. Furthermore, any potential physical works will not be directly funded by the IDA credit which will provide transactional support. However, a Strategic Environmental and Social Assessment (SESA) will be developed during implementation to ensure that any potential adverse social and environmental impacts are mitigated in accordance with World Bank policies.
12. For the above reasons, the Government of Nigeria and the World Bank both require careful investigation of the potential impacts of an investment project *before* it is begun and the adoption of mitigating measures to reduce or eliminate adverse impacts. The proposed project is classified under the Nigerian Environmental Act as “Category 2,” or, under the World Bank’s Operational Policy on Environmental Assessment (OP/BP4.01), as “Category B.” This means that it must be subjected to an environmental assessment, because the proposed project triggers OP 4.01 – Environmental Assessment of the World Bank Safeguard Policies. It is therefore appropriate to conduct an Environmental and Social Management Framework (ESMF) in order to analyze the environmental and social impacts likely to be caused by the proposed projects.
13. The ESMF will provide an environmental and social screening process that will enable the identification, assessment and mitigation of potential environmental and social impacts including monitoring indicators of the proposed investments. The framework will also guide the preparation of Environmental and Social Management Plan (ESMP) and Environmental Impact Assessment Study (ESIA) if necessary.

Objective of the assignment

14. The overall objective is to prepare an Environmental and Social Management Framework (ESMF) for the Nigeria Mineral Sector Support for Economic Diversification Project. It is important to emphasize that the goal of the Environmental and Social Management Framework is not simply to compile and repackage data. Rather the goal is to collect and analyse data relevant to the issue of environmental and social impacts.

Scope of Work for Environmental and Social Management Framework (ESMF):

15. The ESMF should provide the project
 - i. Review of the SESA, ESIA and RPF for the first mining sector project – Sustainable Management of Mineral resources Project (SMMRP) with a view to include background information about the mining sector as well as the Environmental Study Report and Gender Mainstreaming Implementation in the Nigeria Mining Industry prepared through the Externally Funded Output (EFO) on the Technical assistance project for mining sector development in Nigeria
 - ii. Review of relevant MMSD documents such as the ASM Handbook for Nigeria, Guidelines for the development of Community development agreement, Nigerian Mineral and Mining Act, National minerals and metals policy, Nigerian Mineral and Mining Regulations etc.
 - iii. Update of the regulations and guidelines which govern the conduct of the framework in line with the Government of Nigeria’s environmental policies in the extractive sectors (FMEnv & NESREA) and specifically the MMSD’s Environmental Compliance Department (MECD) policies, guidelines and regulations government the environmental issues in the mining sector. Where gaps exist between these policies, make recommendations to bridge the gaps in the context of the proposed project.

- iv. Summary of consultation meetings with relevant stakeholders and ensure that the ESMF is cleared by the Federal Ministry of Environment EA department and the World Bank prior to public disclosure in country and at the World Bank info shop.
- v. Description of proposed project activities and Analysis of Alternatives
- vi. Assessment of potential environmental and social impacts of the different project components and recommend appropriate mitigation measures
- vii. Developed proposed Environmental and Social Management Plan for the project (understanding that site specific activities may require site specific plans).
- viii. Recommendation of feasible and cost-effective measures to prevent or reduce significant environmental and social impacts to acceptable levels; estimate the impacts and costs of those measures. Institutional responsibility for mitigation and monitoring should be clearly specified and articulated.
- ix. Assessment of the current institutional ability and needs for the MMSD and recommendations of actions to strengthen the MMSD and FMEnv to implement the recommendations of the ESMF and make appropriate capacity strengthening recommendations.

Duration of the Assignment

16. The Consultancy assignment for the preparation of the ESMF shall be for 15 days within which the Consultant shall accomplish all the tasks including submission of the updated final ESMF.

Client Input

17. The PIU will provide the necessary documents including the prepared ESMF, but the consultant is responsible for the analysis and interpretation of the documents. The PIU will also provide the appropriate liaison and will organise the stakeholders meeting and provide relevant information necessary for the updating process.

Reporting

18. The Consultant should report directly to the Project Coordinator and work closely with the MMSD.
19. The following reports shall be submitted through PIU for the review and approval of the FMEnv and the World Bank at the time and in a manner stipulated below:
- Updated Draft report in four (4) hard copies and one (1) electronic copy (CD) within **7 days** from commencement date. The MMSD allows for 2 days to review the draft and compile the comments;
 - Updated Draft Final report in four (4) hard copies and one (1) electronic copy (CD) within **10 days** from commencement date. The MMSD allows for 1 day to review the draft final and compile the comments;
 - Final report in four (4) hard copies and one (1) electronic copy (CD) with comments incorporated within **15 days** from commencement date.

Qualifications/Expertise Required

20. The project requires the services of an experienced Environmental Specialist. He/she must to have a master's Degree in Natural Sciences, Environmental Management or a related field with at least 5 years post qualification experiences in the field of Environmental and Social Safeguards policies related to mining and infrastructure sectors. He/she must possess a specialized knowledge and expertise built preferably in World Bank Funded Projects or International Development Partners. Excellent familiarity with the World Bank /Nigerian Government Safeguards policies and the Bank's Disclosure Policy will be an added advantage.

Annex 2: Summary of World Bank Environmental and Social Safeguard Policies.

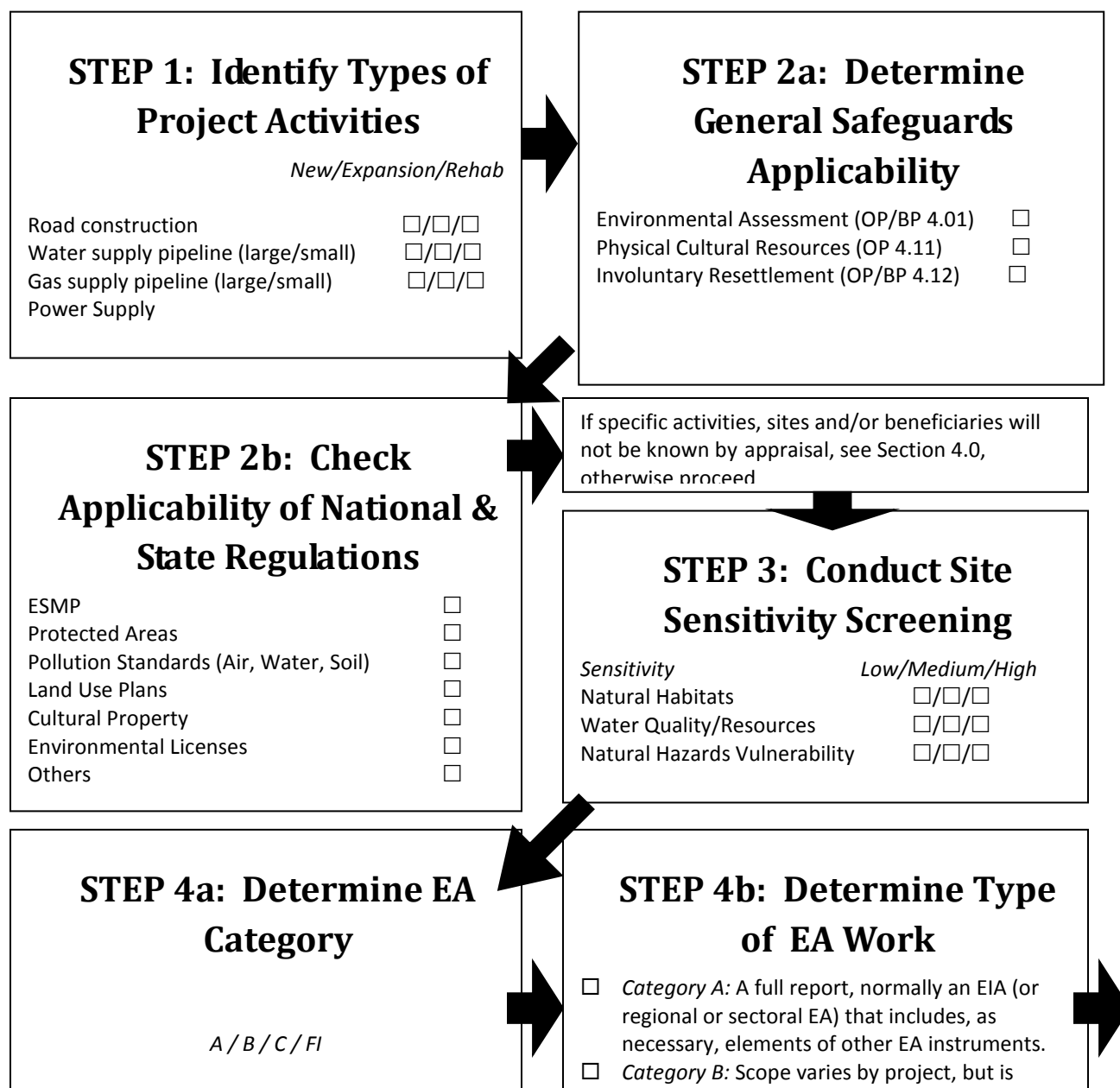
- **Environmental Assessment (OP 4.01).** Outlines Bank policy and procedure for the environmental assessment of Bank lending operations. The Bank undertakes environmental screening of each proposed project to determine the appropriate extent and type of EA process. This environmental process will apply to all sub-projects to be funded by MinDiver.
- **Natural Habitats (OP 4.04).** The conservation of natural habitats, like other measures that protect and enhance the environment, is essential for long-term sustainable development. The Bank does not support projects involving the significant conversion of natural habitats unless there are no feasible alternatives for the project and its siting, and comprehensive analysis demonstrates that overall benefits from the project substantially outweigh the environmental costs. If the environmental assessment indicates that a project would significantly convert or degrade natural habitats, the project includes mitigation measures acceptable to the Bank. Such mitigation measures include, as appropriate, minimizing habitat loss (e.g. strategic habitat retention and post-development restoration) and establishing and maintaining an ecologically similar protected area. The Bank accepts other forms of mitigation measures only when they are technically justified. Should the sub-project-specific ESMPs indicate that natural habitats might be affected negatively by the proposed sub-project activities with suitable mitigation measures, such sub-projects will not be funded under the MinDiver.
- **Pest Management (OP 4.09).** The policy supports safe, effective, and environmentally sound pest management. It promotes the use of biological and environmental control methods. An assessment is made of the capacity of the country's regulatory framework and institutions to promote and support safe, effective, and environmentally sound pest management. This policy does not apply to the MinDiver..
- **Involuntary Resettlement (OP 4.12).** This policy covers direct economic and social impacts that both result from Bank-assisted investment projects, and are caused by (a) the involuntary taking of land resulting in (i) relocation or loss of shelter; (ii) loss of assets or access to assets, or (iii) loss of income sources or means of livelihood, whether or not the affected persons must move to another location; or (b) the involuntary restriction of access to legally designated parks and protected areas resulting in negative impacts on the livelihoods of the displaced persons. This policy does apply to the MinDiver. sub-projects.
- **Indigenous Peoples (OP 4.10).** This directive provides guidance to ensure that indigenous peoples benefit from development projects, and to avoid or mitigate negative effects of Bank-financed development projects on indigenous peoples. Measures to address issues pertaining to indigenous peoples must be based on the informed participation of the indigenous people themselves. Sub-projects that would have negative impacts on indigenous people will not be funded under MinDiver..
- **Forests (OP 4.36).** This policy applies to the following types of Bank-financed investment projects: (a) projects that have or may have impacts on the health and quality of forests; (b) projects that affect the rights and welfare of people and their level of dependence upon or interaction with forests; and (c) projects that aim to bring about changes in the management, protection, or utilization of natural forests or plantations, whether they are publicly, privately, or communally owned. The Bank does not finance projects that, in its opinion, would involve significant conversion or degradation of critical forest areas or related critical habitats. If a project involves the significant conversion or degradation of natural forests or related natural habitats that the Bank determines are not critical, and the Bank determines that there are no feasible alternatives to the project and its siting, and comprehensive analysis demonstrates that overall benefits from the project substantially outweigh the environmental costs, the Bank may finance the project provided that it incorporates appropriate mitigation measures. Sub-projects that are likely to have negative impacts on forests will not be funded under MinDiver..

- **Physical Cultural Resources (OP 4.11).** The term “cultural property” includes sites having archaeological (prehistoric), paleontological, historical, religious, and unique natural values. The Bank’s general policy regarding cultural property is to assist in their preservation, and to seek to avoid their elimination. Specifically, the Bank (i) normally declines to finance projects that will significantly damage non-replicable cultural property, and will assist only those projects that are sited or designed so as to prevent such damage; and (ii) will assist in the protection and enhancement of cultural properties encountered in Bank-financed projects, rather than leaving that protection to chance. The management of cultural property of a country is the responsibility of the government. The government’s attention should be drawn specifically to what is known about the cultural property aspects of the proposed project site and appropriate agencies, NGOs, or university departments should be consulted; if there are any questions concerning cultural property in the area, a brief reconnaissance survey should be undertaken in the field by a specialist. The MinDiver. will fund sub-projects that will have negative impacts on cultural property.
- **Safety of Dams (OP 4.37).** For the life of any dam, the owner is responsible for ensuring that appropriate measures are taken and sufficient resources provided for the safety to the dam, irrespective of its funding sources or construction status. The Bank distinguishes between small and large dams. Small dams are normally less than 15 m in height; this category includes, for example, farm ponds, local silt retention dams, and low embankment tanks. For small dams, generic dam safety measures designed by qualified engineers are usually adequate. This policy does apply to MinDiver. since the policy is triggered under the project.
- **Projects on International Waterways (OP 7.50).** The Bank recognizes that the cooperation and good will of riparians is essential for the efficient utilization and protection of international waterways and attaches great importance to riparian’s making appropriate agreements or arrangement for the entire waterway or any part thereof. Projects that trigger this policy include hydroelectric, irrigation, flood control, navigation, drainage, water and sewerage, industrial, and similar projects that involve the use or potential pollution of international waterways. This policy will not apply to MinDiver.
- **Disputed Areas (OP/BP/GP 7.60).** Project in disputed areas may occur the Bank and its member countries as well as between the borrower and one or more neighboring countries. Any dispute over an area in which a proposed project is located requires formal procedures at the earliest possible stage. The Bank attempts to acquire assurance that it may proceed with a project in a disputed area if the governments concerned agree that, pending the settlement of the dispute, the project proposed can go forward without prejudice to the claims of the country having a dispute. This policy is not triggered by sub-projects activities therefore will not be funded by the MinDiver.

Annex 3: Summary of IFC Performance Standards Triggered by sub-Projects

Performance Standard	Summary of Requirement
Performance Standard (PS) 1: <i>Assessment and Management of Environmental and Social Risks and Impacts</i>	The PS 1 underscores the importance of managing environmental and social performance throughout the life of a project. The Standard applies to projects with environmental and/or social risks and/or impacts. The objective of the Standard include to identify and evaluate environmental and social risks and impacts of the project and to adopt a mitigation hierarchy to anticipate and avoid, minimize, and where residual impacts remain, compensate/offset risks and impacts to workers, affected communities and the environment,
Performance Standard (PS) 2: Labor and Working Conditions	The PS 2 recognizes that the pursuit of economic growth through employment creation and income generation should be accompanied by protection of the fundamental rights of workers. The Standard recognizes the workforce as a valuable asset and recommends a sound worker-management relationship as a key ingredient in the sustainability of a company. The Standard requires the proponent <ul style="list-style-type: none"> - to promote fair treatment, nondiscrimination, equal opportunity of workers, and promote compliance with national employment and labor laws; - to promote safe and healthy working conditions to protect and promote health of workers; and - to avoid the use of forced labor
Performance Standard (PS) 3: Resource Efficiency and Pollution Prevention	The Standard recommends that proponents should undertake their developments and economic activities in a manner that will enhance human health and protect the environment by avoiding or minimizing pollution to air, water, and land, and to also ensure sustainable consumption of finite resources and reduce project-related GHG emissions
Performance Standard (PS) 4: Community Health, Safety and Security	The PS 4 recognizes that project activities, equipment, and infrastructure can increase community exposure to risks and impacts. The Standard therefore emphasizes the proponent's responsibility to avoid or minimize the risks and impacts to community health, safety, and security that may arise from project related-activities, with particular attention to vulnerable groups.
Performance Standard (PS) 5: Land Acquisition and Involuntary Resettlement	The Standard emphasizes the avoidance of involuntary displacement by exploring alternative project designs and when avoidance is not possible, to minimize. The Standard further recommends the total avoidance of forced eviction and improvement, or restoration of livelihoods and living conditions of displaced persons.
Performance Standard (PS) 6: Biodiversity Conservation and Sustainable Management of Living Natural Resources	The PS 6 recognizes that protecting and conserving biodiversity, maintaining ecosystem services, and sustainably managing living natural resources are fundamental to sustainable development. The Standard requires project proponents to sustainably manage and mitigate impacts on biodiversity and ecosystem services throughout the project's lifecycle.

Annex 4: Screening Process Flow Checklist



STEP 5a: Determine Content of ESMP

- ☐ Describe the proposed project
- ☐ Describe the environmental characteristics of the project's area of influence
- ☐ Describe legislative/regulatory considerations
- ☐ Examine potential environmental impacts
- ☐ Compare impacts with those of feasible alternatives
- ☐ Develop an Environmental Management Plan
- ☐ Assess institutional capacity and identify needs
- ☐ Develop a monitoring plan
- ☐ If necessary, prepare dam safety assessment and plans for additional dam safety measures
- ☐ If necessary, develop a Pest Management Plan
- ☐ If necessary, include natural habitat mitigation measures acceptable to the Bank
- ☐ Comply with consultation requirements
- ☐ Other

STEP 5b: Separate Safeguards Work Required

- ☐ Environmental and Social Management Plan
- ☐ Environmental and Social Management Framework

STEP 5c: Disclosure Requirements

Category	Documents	InfoShop	In-country
A	Draft ESMP Report		<input type="checkbox"/>
	Final stand-alone, separate-cover EA (and English language summary to the Board)	<input type="checkbox"/>	
B	Draft ESMP Report		<input type="checkbox"/>
	Final stand-alone, separate-cover ESMP report	<input type="checkbox"/>	
All	Project Information Document (PID)	<input type="checkbox"/>	
	ISDS-CS	<input type="checkbox"/>	
	ISDS-PAD	<input type="checkbox"/>	
	Indigenous Peoples instrument (i.e., IPDP or IPDF)	<input type="checkbox"/>	<input type="checkbox"/>
	Resettlement instrument (i.e., RAP or RPF)	<input type="checkbox"/>	<input type="checkbox"/>
	Other free-standing safeguards instruments	<input type="checkbox"/>	<input type="checkbox"/>

STEP 6: Plan Project Supervision

- ☐ Identify project aspects requiring supervision
- ☐ Develop supervision plan, including procedures for divesting supervision to a third-party, if necessary
- ☐ Ensure bidding documents and contracts specify environmental rules for contractors, noncompliance penalties, and supervision arrangements

Annex 5: Screening Report for Standard Format and Screening Checklist

1. GENERAL DESCRIPTION
 - 1.1. Overview of State /Local Governments
 - 1.2. List of relevant existing MDAs
2. PROJECT-SPECIFIC SCREENING:
 - 2.1. Existing alignment
 - 2.2. Proposed Works
 - 2.3. Estimated Cost
 - 2.4. Summary of Environment and Social Issues
 - 2.4.1.Land Resources
 - 2.4.2.Hydrology and Water Resources
 - 2.4.3.Air and Noise
 - 2.4.4.Biological Resources
 - 2.4.5.Socio-Economic and Cultural
 - 2.4.5.1. Population
 - 2.4.5.2. Employment and Other Benefits
 - 2.4.5.3. Other site-specific issues
 - 2.5. Environment Screening Category
 - 2.6. Applicable Safeguard Policies
3. STATE/LOCAL GOVERNMENT ESMP ACTION PLAN
4. ATTACHMENTS
 - 4.1. Construction Maps/ Drawings
 - 4.2. Photos
 - 4.3. Location and Administrative Maps
- 4.4 Environment and Social Checklist

Annex 6: Draft ESMP Terms of Reference

Introduction and context

This part will be completed in time and will include necessary information related to the context and methodology to carry out the study.

Objectives of study

This section will indicate (i) the objectives and the project activities; (ii) the activities that may cause environmental and social negative impacts and needing adequate mitigation measures.

Tasks

The consultant should realize the following:

- 1 Assess the potential environmental and social impacts related to project activities and recommend adequate mitigation measures, including costs estimation..
- 2 Review institutional assessment and framework for environmental management.
- 3 Identify responsibilities and actors for the implementation of proposed mitigation measures
- 4 Assess the capacity available to implement the proposed mitigation measures, and suggest recommendation in terms of training and capacity building, and estimate their costs.
- 5 Develop a Environmental and Social Management Plan (ESMP) for the project. The ESMP should underline (i) the potential environmental and social impacts resulting from project activities (ii) the proposed mitigation measures; (iii) the institutional responsibilities for implementation; (iv) the monitoring indicators; (v) the institutional responsibilities for monitoring and implementation of mitigation measures; (vi) the costs of activities; and (vii) the calendar of implementation.
- 6 Public consultations. The ESMP results and the proposed mitigation measures will be discussed with relevant stakeholders, NGOs, local administration and other organizations mainly involved by the project activities. Recommendations from this public consultation will be include in the final ESMP report.

Plan of the ESMP report

- 1 Cover page
- 2 Table of contents
- 3 List of acronyms
- 4 Executive summary
- 5 Introduction
- 6 Description of sub-project sites
- 7 Description of environmental and social impacts and mitigation measures for project activities
- 8 Institutional Assessment and framework for Environmental Management.
- 9 Environmental and Social Management Plan (ESMP) for the project
 - o including the proposed mitigation measures;
 - o Institutional Responsibilities for Implementation;
 - o Monitoring indicators;
 - o Institutional responsibilities for monitoring and implementation of mitigation;
 - o Summarized table for ESMP including costs
 - o ESMP Training requirements
- 10 Public Consultation
- 11 Conclusion and Recommendations
- 12 Annexes: List of persons / institutions meet

Duration of study

The duration of study will be determined according to the type of activity

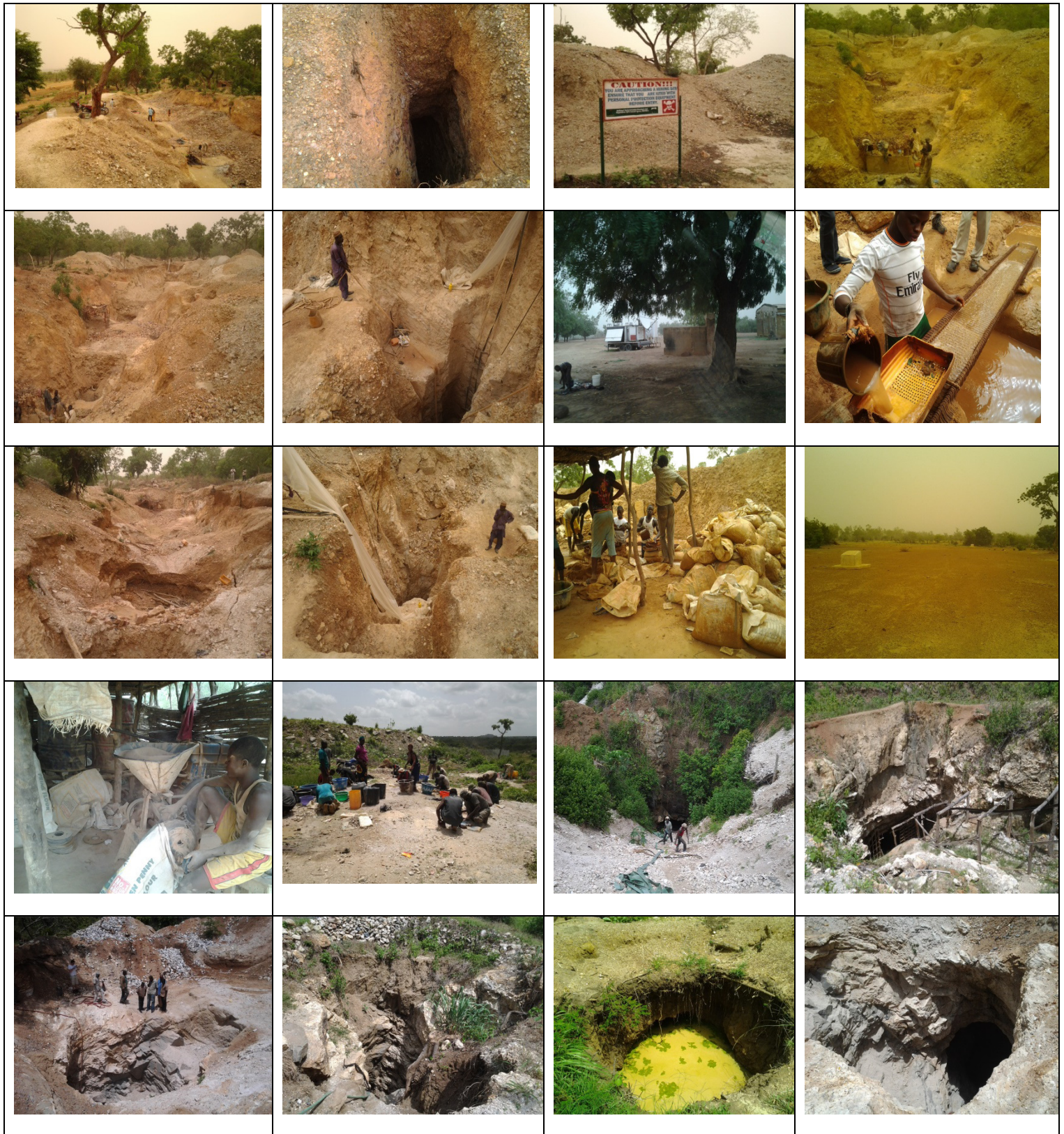
Production of final report

The consultant will produce the final report one (1) week after receiving comments from the World Bank, Federal Ministry of Environment (Pollution Control Unit) and the PIU. The report will include all the comments from all.

Supervision of study

The consultancy will be supervised by the Environmental and Social Development Specialist at the PIU.

Annex 7: Typical Environmental and Social Impacts in the Mining Sector (Zamfara and Oyo States)



Annex 8: Environmental and Social Management Plan (ESMP) Framework

	Potential Impacts	Mitigation Measures	Responsibility For Mitigation	Cost of Mitigation (USD)	Parameters to be Measured	Method of Measurement	Sampling Location	Responsibility for Monitoring	Cost of Monitoring (USD)
A	PRE-CONSTRUCTION PHASE								
	SITE CLEARING AND MOBILIZATION								
	ENVIRONMENTAL IMPACTS								
1	Deterioration of ambient air quality due to the release of fugitive dusts and gaseous pollutants	<ul style="list-style-type: none">• Use water suppression for control of loose soil materials on unpaved surfaces.• Cover trucks for transporting loose materials that may generate dust.• Ensure emissions from vehicles comply with specified national standards.• Train drivers/ workers on proper operation of vehicles and equipment to include fuel efficiency and anti-idling techniques.	Contractor	1,500	Gaseous pollutants such as SO2, NO2, CO2, CO, VOCs, H2S, TSP etc Vehicular emission	In-situ Air Quality Measurement Visual observation	Project site and along transport corridor	Environmental specialist FMEnv/SME MECD	-
2	Noise & vibration disturbances from operation of machineries and motorized equipment.	<ul style="list-style-type: none">• Restrict all haulage and noise generating activities to working hours during the day.• Avoid unnecessary idling of internal combustion engines.• Install suitable mufflers on engine exhausts & compressor.• Ensure maintenance of equipment according to manufacturer’s specifications.• Ensure vehicle travelling in the project area are operated in accordance with speed limits to reduce noise levels.• Develop a mechanism to record and respond to noise complaints.• Provide & enforce the usage of hearing protection devices (ear plugs/muffs).	Contractor	1,500	No of Complaints from affected communities Working hours Vehicle / equipment maintenance records Usage of ear plugs/ muffs	In-Situ Measurement of noise level	Project site and nearby communities	Environmental specialist FMEnv/SME MECD	-
3	Loss of vegetation	<ul style="list-style-type: none">• Restrict removal of vegetation and trees to clearly defined project boundaries.• To the extent possible schedule vegetation clearing to occur in phases so that the entire project area is not cleared at once.• Protect all vegetation not required to be removed against damage;• Undertake quick re vegetation of exposed soils with indigenous plant species after construction works• Retain native root structure to facilitate recovery of vegetation cover, retain soil stability and minimize erosion	Contractor	1,000	Clearly defined boundaries of protected areas	Visual observation; and	Project areas	Environmental specialist	-
4	Loss of economic trees including medicinal herbs				Evidence of revegetation	Biodiversity survey		FMEnv/SME	
5	Loss of biodiversity and Altered Ecosystem Dynamics/Processes.							MECD	
6	Predisposition to soil erosion due to removal of vegetal cover								
IMPACT ON COMMUNITY HEALTH & SAFETY									
7	Security challenges due	<ul style="list-style-type: none">• Deploy direct or contracted workers to	PIU	5,000	No of	Records	Project sites &	Social	-

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	Potential Impacts	Mitigation Measures	Responsibility For Mitigation	Cost of Mitigation (USD)	Parameters to be Measured	Method of Measurement	Sampling Location	Responsibility for Monitoring	Cost of Monitoring (USD)
	to storage of materials and equipment on rural sites	provide security to safeguard personnel and assets on site <ul style="list-style-type: none"> • Employ the principles of proportionality, good international practice and applicable law in relation to hiring, rules of conduct, training, equipping, and monitoring of security workers. • The use of force shall not be sanctioned except when used for preventive and defensive purposes in proportion to the nature and extent of the threat • Provide a grievance mechanism for Affected Communities to express concerns about the security arrangements and acts of security personnel • Investigate all allegations of unlawful or abusive acts of security personnel, take action to prevent recurrence, and report unlawful and abusive acts to public authorities. • Provide structural elements such as fencing to deter criminals • Assist and collaborate with the Affected Communities, LGA and other relevant parties, in their preparations to respond effectively to emergency situations <ul style="list-style-type: none"> • Disclose on-site security arrangements to the public especially members of nearby communities. 	Contractor		community personnel Report on theft	Interview	Host communities	Development Specialist LGA	
8	Traffic Congestion & increased risk of RTA and Injuries (Traffic Safety).	<ul style="list-style-type: none"> • Develop and implement a Traffic Management Plan (TMP) and safe traffic control measures shall include: <ul style="list-style-type: none"> - Establishment and enforcement of speed limits; - Employment of appropriate road safety signage and on-site trained flag-men with high-visibility vests to direct traffic and warn of dangerous conditions; and - Reduction of movement at peak hours. • Ensure regular maintenance of vehicles and use of manufacturer approved parts to minimize potentially serious accidents. • Engage drivers with appropriate class of driving license and at least three years of driving experience. • Train drivers on defensive driving techniques, haulage safety and pedestrian 	Contractor	5,000	<ul style="list-style-type: none"> • Vehicles maintenance records. • Drivers' license. • TMP submitted. • Records of Drivers' Training Speed control 	Visual observation Interview Time and Volume traffic measurement method	Along access roads	Social Development Specialist FRSC LGA	-
9	Risk of injuries to pedestrians and motorcyclists from collision with moving heavy duty vehicles (Pedestrian Safety).								

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	Potential Impacts	Mitigation Measures	Responsibility For Mitigation	Cost of Mitigation (USD)	Parameters to be Measured	Method of Measurement	Sampling Location	Responsibility for Monitoring	Cost of Monitoring (USD)
		safety. • Ensure coordination with emergency agencies to ensure that appropriate first aid is provided in the event of accidents. • Where possible, use locally sourced materials to minimize transport distances.							
B	CONSTRUCTION PHASE								
	Excavation, trenching (including rock blasting) and pipe laying for gas and water supply and road construction								
ENVIRONMENTAL IMPACTS									
1	Deterioration of ambient air quality due to the release of fugitive dusts and gaseous pollutants	• As in A1 above • Ensure the use of minimum amount of explosives required to prevent excessive incomplete reactions which can result in the release of toxic fumes to the atmosphere • Use of proper blast design and blasting shelter to prevent flyrocks	Contractor	1,500	Gaseous pollutants such as SO ₂ , NO ₂ , CO ₂ , CO, VOCs, H ₂ S, TSP etc Vehicular emission	In-situ Air Quality Measurement Visual observation	Project site and along transport corridor	Environmental specialist FMEEnv/SME MECD	-
2	Noise & vibration disturbances from operation of machineries and motorized equipment.	• As in A2 above	Contractor	1,500	No of Complaints from affected communities Working hours Vehicle / equipment maintenance records Usage of ear plugs/ muffs	In-Situ Measurement of noise level	Project site and nearby communities	Environmental specialist FMEEnv/SME MECD	-
3	Soil erosion due to compaction, soil horizon mixing and exposure of soil surfaces to rain and wind during earth moving, excavation & trenching activities.	• Begin and complete as much work as possible during the dry season or Schedule ground-disturbing activities to avoid heavy rainfall and high wind periods to the extent that is practical. • Implement soil conservation measures such as stockpiling topsoil or gravel for the remediation of disturbed areas.	Contractor	3,500	Evidence of erosion and erosion control devises	Visual observation	Project site	Environmental specialist FMEEnv/SME MECD	-
4	Surface water pollution from sediment run-off from excavated areas	• Install sediment retention basins, silt fences or other similar devices at strategic locations to prevent run-offs of sediment/silt to surface water • Also see A3-6 above	Contractor		Surface water quality	In-situ/ Laboratory measurement	Downstream rivers/streams		-
5	Soil contamination from accidental leakage/spillage of fuel, oil/lubricants from equipment and vehicles.	• Ensure that refueling, maintenance as well as storage of diesel and oil conform to best practices to ensure there are no spillages or leakages. Specifically; - Fuel storage tanks shall be leak-proof and checked daily. The tanks shall be installed in	Contractor	3,000	Soil quality parameters (especially hydrocarbon contaminants)	In situ/ Laboratory analysis Visual observation	Project site	Environmental specialist FMEEnv/SME MECD	-

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	Potential Impacts	Mitigation Measures	Responsibility For Mitigation	Cost of Mitigation (USD)	Parameters to be Measured	Method of Measurement	Sampling Location	Responsibility for Monitoring	Cost of Monitoring (USD)
		<ul style="list-style-type: none"> a bunded area and shall be replaced in cases of leakage; - Procedures for storage, handling of hazardous wastes and raw materials (e.g. chemicals, fuels) - Workers shall be trained on the correct transfer and handling of fuels and oil. • Ensure all vehicles are in proper working condition to ensure there is no potential for leaks of motor oil, hydraulic fluid and other hazardous materials. 			<ul style="list-style-type: none"> Compliance with fuel storage procedures Evidence of leakages 				
6	Generation of waste including spoils, vegetal and hazardous waste e.g. explosives	<ul style="list-style-type: none"> • Develop and Implement a site-specific Waste Management Plan (WMP) to prevent unregulated dumping of waste. • Ensure that hazardous wastes are stored in properly labelled closed containers placed away from direct sunlight, wind and rain. • Provide secondary containment with 110% of storage containers for hazardous waste. • Ensure usage of government approved waste vendor. • Ensure spoils are stacked at a designated area and reused for backfilling trenches 	Contractor	2,500	<ul style="list-style-type: none"> WMP and compliance with requirements Waste vendor licence and waste documentations 	Visual observation	Project site	<ul style="list-style-type: none"> Environmental specialist FMEnv/SME MECD 	-
IMPACT ON COMMUNITY INFRASTRUCTURE									
7	Increase demand on existing health and sanitation infrastructure due to influx of temporary workers and camp followers.	<ul style="list-style-type: none"> • Develop a grievance mechanism to effectively handle concerns, complaints and grievances of Affected Communities. • Develop ongoing consultation and engagement plan with Affected Communities throughout project life cycle. • Promote access to community services by supporting infrastructural development in affected communities. • Provide basic health and sanitation infrastructure for workers on project site to avoid dependency on community infrastructure. 	Contractor	25,000	<ul style="list-style-type: none"> Availability of health and sanitation amenities on workers camp Awareness of grievance procedures in affected communities 	<ul style="list-style-type: none"> Visual observation Interview FGDs IDIs 	Workers camp	<ul style="list-style-type: none"> Social Development Specialist FMEnv/SME Host LGA 	-
8	Damage to existing roads at crossings	<ul style="list-style-type: none"> • Adopt appropriate engineering technology to minimize damage to existing roads. • Repair damaged roads immediately after construction. • Develop a grievance mechanism to effectively handle concerns, complaints and grievances of Affected Communities. 	Contractor	45,000	<ul style="list-style-type: none"> Compliance with mitigation measures 	Visual observation	Road crossings	<ul style="list-style-type: none"> Environmental Specialist FMEnv/SME Host LGA 	-
9	Damage to existing underground facilities such as communication and electrical cables,	<ul style="list-style-type: none"> • Use utility survey map to identify existing underground facilities along the corridor before excavation works to prevent damages and disruption of services 	Contractor	1,000	<ul style="list-style-type: none"> Complaints to Utility Service Providers 	<ul style="list-style-type: none"> Complaints Register Visual Observation 	Host communities	Host LGA	-

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	Potential Impacts	Mitigation Measures	Responsibility For Mitigation	Cost of Mitigation (USD)	Parameters to be Measured	Method of Measurement	Sampling Location	Responsibility for Monitoring	Cost of Monitoring (USD)
	sewage pipes and other service lines								
	IMPACT ON COMMUNITY CULTURE AND SECURITY								
10	Increased social vices/crimes and dilution of indigenous culture, norms and traditions in nearby communities due to influx of migrant workers and business opportunists e.g. community women being lured into prostitution, youth being introduced into hard drugs etc.	<ul style="list-style-type: none"> Develop an induction program including a code of conduct for all workers to address: <ul style="list-style-type: none"> Respect for local residents; No hunting or unauthorized taking of products or livestock; Zero tolerance of illegal activities such as prostitution, illegal sale or purchase alcohol, purchase or consumption of drugs, illegal gambling or fighting; Disciplinary measures for infringement of the code of conduct and/or company rules. Improve awareness of and sensitivity of workers to local cultures, traditions and lifestyles. Develop and implement a grievance procedure and raise awareness of grievance procedures amongst affected communities. 	Contractor	10,000	<ul style="list-style-type: none"> Developed induction program. No of workers trained. Level of awareness of workers to local cultures and traditions. 	Interview	Host communities	Social Development Specialist FMEnv/SME Host LGA	-
11	Loss of Cultural/Historical Sites.	<ul style="list-style-type: none"> Consult relevant MDAs and host communities to identify all sites of cultural significance. Priority should be given to avoidance of all sites of cultural significance. Seek permission to relocate community cultural properties prior to construction. Compensate affected persons and communities for loss of any cultural and historical sites In the event of chance finds of items of cultural significance, stop all forms of excavation in and around the site and subsequently consult archaeologists and anthropologist. 	Contractor	12,000	Evidence of consultations with relevant MDAs and host communities No of affected cultural sites	Visual observation Interviews	Project sites	Social Development Specialist Host LGA	-
12	Conflict resulting from community perception of projects	<ul style="list-style-type: none"> Ensure participatory governance involving continuous dialogue with affected communities, CSOs, NGOs and other critical stakeholders. Ensure meetings are conducted in local languages. Ensure affected communities are assisted and have a voice in the appropriation of mitigation measures. Improve awareness of and sensitivity of workers to local cultures, traditions and lifestyles. 	PIU	3,000	Evidence of consultations, Minute of meetings, Agenda etc.	Visual observation Interviews	Affected communities	Social Development Specialist Host LGA	-

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	Potential Impacts	Mitigation Measures	Responsibility For Mitigation	Cost of Mitigation (USD)	Parameters to be Measured	Method of Measurement	Sampling Location	Responsibility for Monitoring	Cost of Monitoring (USD)
		<ul style="list-style-type: none">Encourage multi-stakeholders collaboration in project management.Ensure employment of local labour during project implementation and operation.							
	IMPACT ON VULNERABLE PEOPLE								
12	Abuse of vulnerable people	<ul style="list-style-type: none">Promote the fair treatment, non-discrimination, and equal opportunity of workers.Protect workers, including vulnerable categories of workers such as women and migrant workers.Promote safe, healthy working conditions & the health of workers.Provide a grievance mechanism for workers to freely raise workplace concerns.Prohibit employment of minors.Avoid the use of forced labour.Initiate training and skills development programs prior to the commencement of construction to ensure members of local workforce are up-skilled and can be employed on the project.Ensure construction jobs are targeted to the local people.	Contractor	8,000	No of locals employed	Interviews	Project sites	Social Development Specialist	-
13	Marginalization of women and other minority groups				No of women and other vulnerable groups in employment			Host LGA Ministry of Labour	
14	Risk of child labour				No of under-age workers			Ministry of Women Affairs	
	IMPACT ON COMMUNITY / WORKERS HEALTH AND SAFETY								
15	Risk of communicable diseases such as STDs including HIV/AIDS from influx of temporary construction workers.	<ul style="list-style-type: none">Institution of HIV prevention program to include peer education, condom distribution & Voluntary Counseling and Testing (VCT).Undertaking health awareness and education initiatives on STIs amongst workers and in affected communities.		15,000	Level of Awareness and Education No of new STI cases	Records Interview	Host communities	Environmental Specialist FMEnv/SME Host LGAs	-
16	Risks of occupational accidents and injuries to workers.	<ul style="list-style-type: none">Implement project specific Occupational Health and Safety Plan (OHSP) (OHS Plan is attached as Annex 11)Prohibit drug and alcohol use by workers while on the job.Provide adequate first aiders at site.Provide and enforce usage of appropriate PPERestrict unauthorized access to all areas high risk activitiesEstablish “No Approach” zones around rock blasting areas.Use proper signage (In English and local languages) and engineering barriers (e.g. fencing) to prevent access by unauthorized individuals.	Contractor	5,000	- OHS Plan developed - Compliance with OHS Plan. - No of workers trained No of accidents & injuries	Visual observation Interview. HSE Records	Project site	Environmental Specialist FMEnv/SME Federal Ministry of Health SMH	-
	Power Interconnect activities								

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	Potential Impacts	Mitigation Measures	Responsibility For Mitigation	Cost of Mitigation (USD)	Parameters to be Measured	Method of Measurement	Sampling Location	Responsibility for Monitoring	Cost of Monitoring (USD)
	IMPACT ON COMMUNITY / WORKERS HEALTH AND SAFETY								
17	Risks of fall from working at height and other related occupational accidents and injuries to workers.	<ul style="list-style-type: none"> Implement OHS Plan to include: <ul style="list-style-type: none"> Training of workers on proper use of scaffolds and ladders. Usage of fall prevention and protection devices, including safety belt, full body harnesses, shock absorbing lanyards or self-retracting inertia and other fall arrest devices attached to fixed anchor point or horizontal life-lines to protect workers. Provision of rescue and/or recovery plans, and equipment to respond to workers after an arrested fall. 	Contractor	5,000	<ul style="list-style-type: none"> No of workers trained Availability of fall prevention and protection devices 	Visual observation Interview	Point of connections and along transmission corridor	Power Distribution Companies (Discos) Social Development Specialist Federal Ministry of Labour MECD	-
17	Risk of electrocution to workers and community members	<ul style="list-style-type: none"> Implement Lock-Out / Tag-Out (LOTO) system during any electrical work. Create awareness of safety measures for workers to observe when working in areas of high tension potential. Restrict untrained/unauthorized workers from all areas of high tension potential to prevent electrocution. Establish "No Approach" zones around or under high voltage power lines. Mark all energized electrical devices and lines with warning signs. 	Contractor	2,500	Compliance with mitigation measures Visible warning signs and site restrictions	Visual observation 	Point of connections and along transmission corridor	Power Distribution Companies (Discos) Social Development Specialist Federal Ministry of Labour MECD	-
	OPERATION PHASE								
	Water transfer, electricity transfer, gas transfer and operation of access roads								
1	Loss of Fish and Aquatic Fauna	<ul style="list-style-type: none"> Use nets, barriers or screens to prevent fish from passing into water transfer pipes. Ensure occasional physical removal of vegetation, floating aquatic weeds, macrophyte and algae from the river 	PIU	--	Evidence of barriers in water intakes Fish diversity and population in the River	Biodiversity assessment of river	River source for water transfer	Environmental Specialist	
2	Surface Water Sedimentation	<ul style="list-style-type: none"> Prepare and implement Emergency Preparedness and Response Plan to respond to incident of pipe burst Ensure periodic inspections of the pipeline especially during operation; Shut down operation promptly if in case of suspected pipe damage of burst; Ensure installation of air valves with pipeline to allow for release of pressure during water transfer to prevent pipe burst; 	PIU	--	<ul style="list-style-type: none"> Prepared emergency response plan Air Valve Chambers Level of awareness Maintenance records 	Visual observation Interview	Along the pipeline route	Environmental Specialist MSMD	-
3	Water Quality Deterioration								
4	Flooding due to accidental pipe burst								

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	Potential Impacts	Mitigation Measures	Responsibility For Mitigation	Cost of Mitigation (USD)	Parameters to be Measured	Method of Measurement	Sampling Location	Responsibility for Monitoring	Cost of Monitoring (USD)
5	Injuries and loss of lives due to flooding and fire resulting from accidental burst of water and gas pipelines respectively	<ul style="list-style-type: none"> Sensitise the public and provide them with emergency numbers to call in case of pipeline damage or burst; Ensure periodic inspection and maintenance of the pipeline; Ensure prompt replacement of damaged pipes and accessories before water transfer; Ensure adequate remediation of surface water, gully erosion in case of pipe burst; 							
6	Conflicts among Water Users	<ul style="list-style-type: none"> Develop and implement water management plan with full participation of all water users. Encourage multi-stakeholder collaboration in water management Carry all stakeholders along especially during the dry season when water volume is low and priorities are essential Set up a farmers/water user association to ensure coordination and cooperation between them Ensure accurate forecast of climatic variables and advice water users accordingly. 	PIU	--	<ul style="list-style-type: none"> Developed Water Management Plan Minute of Meeting/ Attendance Records of water discharges 	Visual observation	Host communities	Environmental Specialist	-
7	Shortage of Water for Domestic, Irrigation and Other Uses					Interview		Social Development Specialist MSMD LGA	
8	Outbreak of Sanitation - related Diseases such as Dysentery, Cholera etc. due to shortage of water downstream	<ul style="list-style-type: none"> Provide additional safe and potable sources of water. Develop and implement water management plan with full participation of all water users. 	PIU	--	<ul style="list-style-type: none"> No of new portable water sources such as boreholes 	Visual observation Interview	Host communities	Social Development Specialist MSMD LGA Ministry of Health	-
12	Traffic congestion and increased risk of RTA and Injuries on access roads.	<ul style="list-style-type: none"> Employ appropriate road safety signage especially including those that warn drivers of hazards and speed limits. Install speed breakers/ bumps in appropriate locations e.g. near schools, markets etc. Install pedestrians priority crossings (Zebra crossings). 	PIU	--	Signages Speed control measures	Visual observation	Along access roads	FRSC	-
13	Risk of injuries to pedestrians and motorcyclists from collision with vehicles (Pedestrian Safety).								
14	Risk of electrocution to community members and trespassers from direct and indirect contact with power lines especially from falling power lines.	<ul style="list-style-type: none"> Implement Lock-Out / Tag-Out (LOTO) system during any electrical works. Create awareness of safety measures for workers to observe when working in areas of high tension potential. Restrict untrained/unauthorized workers 	PIU		Compliance with mitigation measures Visible warning signs and site restrictions	Visual observation	Point of connections and along transmission corridor	Power Distribution Companies (Discos) Social Development Specialist	-

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	Potential Impacts	Mitigation Measures	Responsibility For Mitigation	Cost of Mitigation (USD)	Parameters to be Measured	Method of Measurement	Sampling Location	Responsibility for Monitoring	Cost of Monitoring (USD)
15	Risk of electrocution to workers from exposure to live power lines during maintenance	from all areas of high tension potential to prevent electrocution. <ul style="list-style-type: none"> • Establish “No Approach” zones around or under high voltage power lines. • Mark all energized electrical devices and lines with warning signs in English and local languages. 						LGAs	
	TOTAL COST			157,500					-

Annex 9: Protection of Physical Cultural Resources

1. Cultural property include monuments, structures, works of art, or sites of significance points of view, and are defined as sites and structures having archaeological, historical, architectural, or religious significance, and natural sites with cultural values. This includes cemeteries, graveyards and graves.

2. The initial phase of the proposed emergency reconstruction operations pose limited risks of damaging cultural property since projects will largely consist of small investments in community infrastructure, reconstruction of existing structures, and minor public works. Nevertheless, the following procedures for identification, protection from theft, and treatment of discovered artifacts should be followed and included in standard bidding documents.

Chance Find Procedures

3. Chance find procedures will be used as follows:

(a) Stop the construction activities in the area of the chance find;

(b) Delineate the discovered site or area;

(c) Secure the site to prevent any damage or loss of removable objects. In cases of removable antiquities or sensitive remains, a night guard shall be present until the responsible local authorities and the Ministry in charge of Department of Archaeology and Museums take over;

(d) Notify the supervisory Engineer who in turn will notify the responsible local authorities and the Ministry of Culture immediately (within 24 hours or less);

(e) Responsible local authorities and the Ministry in charge of Department of Archaeology and Museums would be in charge of protecting and preserving the site before deciding on subsequent appropriate procedures. This would require a preliminary evaluation of the findings to be performed by the archeologists of the Department of Archaeology and Museums (within 72 hours). The significance and importance of the findings should be assessed according to the various criteria relevant to cultural heritage; those include the aesthetic, historic, scientific or research, social and economic values;

(f) Decisions on how to handle the finding shall be taken by the responsible authorities and the Ministry in charge of Department of Archaeology and Museums. This could include changes in the layout (such as when finding an irremovable remain of cultural or archeological importance) conservation, preservation, restoration and salvage;

(g) Implementation for the authority decision concerning the management of the finding shall be communicated in writing by the Ministry in charge of Department of Archaeology and Museums; and

(h) Construction work could resume only after permission is given from the responsible local authorities and the Ministry in charge of Department of Archaeology and Museums concerning safeguard of the heritage

4. These procedures must be referred to as standard provisions in construction contracts, when applicable, and as proposed in Annex 11. During project supervision, the Site Engineer shall monitor the above regulations relating to the treatment of any chance find encountered are observed.

1. Relevant findings will be recorded in World Bank Project Supervision Reports (PSRs), and Implementation Completion Reports (ICRs) will assess the overall effectiveness of the project's cultural property mitigation, management, and activities, as appropriate.

The table below describes a summary action plan for PCRs.

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S/N	Impact	Mitigation measures	Monitoring Action & Frequency	Area	Responsible Body
1.0	Construction phase				
1.1	Management Design	<ul style="list-style-type: none"> - Inventory of PCR known to be within the project corridor and area of influence. - Inventory of PCR known close to way leave corridor as to be at risk of damage or disturbance - Re-route access roads, Transmission line, water and gas supply corridors to avoid areas of cultural significance. - If rerouting is not possible, consultation should be held with local communities and other key stakeholders to discuss other options e.g. relocation, compensation e.t.c. 	<p>Monitored during design stage</p> <p>Be done daily during construction</p>	Access roads, Transmission line, water and gas supply – corridors including area of influence	<ul style="list-style-type: none"> • PIU • Contractors • Consultant (archaeologist) • Ministry of Information and National Orientation • Ministry of Lands • Local Government Authorities. • Community Leaders.
1.2	Impact on existing graves, grave yards and sacred places	<ul style="list-style-type: none"> - Inventory of exact location of all graves, grave yards, sacred trees and areas of spiritual significance to local communities. - Re-route access roads, Transmission line, water and gas supply corridors to avoid areas of cultural significance. - If rerouting is not possible, consultation should be held with local communities and other key stakeholders to discuss other options e.g. relocation, compensation e.t.c. 	<p>Monitored during design stage</p> <p>Be done daily during construction</p>	Access roads, Transmission line, water and gas supply – corridors including area of influence	<ul style="list-style-type: none"> • PIU • Contractors • Consultant (archaeologist) • Ministry of Information and National Orientation • Ministry of Lands • Local Government Authorities. • Community Leaders.
1.3	Impacts for the chance finds uncovered during construction	<ul style="list-style-type: none"> - Plant operator to immediately stop working and inform the site engineer/ site archaeologist who will consult with statutory authorities and advise whether the work should continue or not depending on the evaluation. - (take note: no work shall be continued on the specific area until permission is given from the authorities 	Be done daily during construction	Access roads, Transmission line, water and gas supply – corridors including area of influence	<ul style="list-style-type: none"> • PIU • Contractors • Consultant (archaeologist) • Ministry of Information and National Orientation • Ministry of Lands • Local Government Authorities. • Community Leaders.
1.4	Impacts for the known finds	<ul style="list-style-type: none"> - Spotting Physical Cultural Resources in the area. - Systematic survey shall be conducted in areas with high concentration of PCR through systematic walking over transects using three meters interval from one individual to another in parallel transects. - Unsystematic survey shall be conducted in areas with an overgrowth of vegetation and rough terrain. - Evaluation, treatment and Documentation of PCR 	Be done before and during the implementation of the project	Access roads, Transmission line, water and gas supply – corridors including area of influence	<ul style="list-style-type: none"> • PIU • Contractors • Consultant (archaeologist) • Ministry of Lands • Local Government Authorities. • Community Leaders.
1.5	Impacts on existing graves and relocated grave yards.	<ul style="list-style-type: none"> - If rerouting is not possible, consultation should be held with local communities and other key stakeholders to discuss other options e.g. relocation, compensation e.t.c. - Carry out consultative meetings with the affected people, families and religious institutions and local authorities on modalities of grave relocation and taking into consideration laws on cultural preferences and wishes of families. - Request Ministry of Land for consent to relocate the graves. - Local Authorities have responsibilities of relocating graves after getting consent from Ministry of lands. 	Be done before the implementation of the project	Access roads, Transmission line, water and gas supply – corridors including area of influence	<ul style="list-style-type: none"> • PIU • Contractors • Consultant (archaeologist) • Ministry of Lands • Local Government Authorities. • Community Leaders.
1.6	Instructions for project staff & contractors regarding PCR	Include Impact on Physical Cultural Resources in trainings to be conducted for non archaeologist staff involved in the project	Before the commencement of the construction	To be decided	<ul style="list-style-type: none"> • PIU • Contractors • Consultant (archaeologist)
1.7	Conservation of Known and Chance findings	Follow all procedures for preservation and protection of sites and articles of paleontological, archaeological, and historical PCR as specified by the relevant national museum. For local PCR, adhere strictly to local dictates and procedures.	During and after the construction	National Museums and on site	<ul style="list-style-type: none"> • PIU • Contractors • Consultant (archaeologist) • National Museum • Ministry of information • Local Govt. Authorities • Local Communities.

Annex 10: Construction Contracts Environmental Management Conditions

General

1. In addition to these general conditions, the Contractor shall comply with any specific Environmental and Social Management Plan (ESMP) or Environmental and Social Management Plan (ESMP) for the works he is responsible for. The Contractor shall inform himself about such an ESMP, and prepare his work strategy and plan to fully take into account relevant provisions of that ESMP. If the Contractor fails to implement the approved ESMP after written instruction by the Project Engineer (PE) to fulfill his obligation within the requested time, the Owner reserves the right to arrange through the SE for execution of the missing action by a third party on account of the Contractor.
2. Notwithstanding the Contractor's obligation under the above clause, the Contractor shall implement all measures necessary to avoid undesirable negative environmental and social impacts wherever possible, restore work sites to acceptable standards, and abide by any environmental performance requirements specified in an ESMP. In general these measures shall include but not be limited to:
 - (a) Minimize the effect of dust on the surrounding environment resulting from earth mixing sites, asphalt mixing sites, dispersing coal ashes, vibrating equipment, temporary access roads, etc. to ensure safety, health and the protection of workers and communities living in the vicinity of dust producing activities.
 - (b) Ensure that noise levels emanating from machinery, vehicles and noisy construction activities (e.g. excavation, blasting) are kept at a minimum for the safety, health and protection of workers within the vicinity of high noise levels and nearby communities.
 - (c) Ensure that existing water flow regimes in rivers, streams and other natural or irrigation channels is maintained and/or re-established where they are disrupted due to works being carried out.
 - (d) Prevent bitumen, oils, lubricants and waste water used or produced during the execution of works from entering into rivers, streams, irrigation channels and other natural water bodies/reservoirs, and also ensure that stagnant water in uncovered borrow pits is treated in the best way to avoid creating possible breeding grounds for mosquitoes.
 - (e) Prevent and minimize the impacts of quarrying, earth borrowing, piling and building of temporary construction camps and access roads on the biophysical environment including protected areas and arable lands; local communities and their settlements. In as much as possible restore/rehabilitate all sites to acceptable standards.
 - (f) Upon discovery of ancient heritage, relics or anything that might or believed to be of archeological or historical importance during the execution of works, immediately report such findings to the SE so that the appropriate authorities may be expeditiously contacted for fulfillment of the measures aimed at protecting such historical or archaeological resources.
 - (g) Discourage construction workers from engaging in the exploitation of natural resources such as hunting, fishing, and collection of forest products or any other activity that might have a negative impact on the social and economic welfare of the local communities.
 - (h) Implement soil erosion control measures in order to avoid surface run off and prevents siltation, etc.
 - (i) Ensure that garbage, sanitation and drinking water facilities are provided in construction workers camps.
 - (j) Ensure that, in as much as possible, local materials are used to avoid importation of foreign material and long distance transportation.
 - (k) Ensure public safety, and meet traffic safety requirements for the operation of work to avoid accidents.
3. The Contractor shall indicate the period within which he/she shall maintain status on site after completion of civil works to ensure that significant negative impacts arising from such works have been appropriately addressed.
4. The Contractor shall adhere to the proposed activity implementation schedule and the monitoring plan / strategy to ensure effective feedback of monitoring information to project management so that

impact management can be implemented properly, and if necessary, adapt to changing and unforeseen conditions.

5. Besides the regular inspection of the sites by the Supervising Engineer for adherence to the contract conditions and specifications, the Owner may appoint an Inspector to oversee the compliance with these environmental conditions and any proposed mitigation measures. State environmental authorities which include the environmental specialist in the PIU may carry out similar inspection duties. In all cases, as directed by the SE, the Contractor shall comply with directives from such inspectors to implement measures required to ensure the adequacy rehabilitation measures carried out on the bio-physical environment and compensation for socio-economic disruption resulting from implementation of any works.

Worksite/Campsite Waste Management

6. All vessels (drums, containers, bags, etc.) containing oil/fuel/surfacing materials and other hazardous chemicals shall be banded in order to contain spillage. All waste containers, litter and any other waste generated during the construction shall be collected and disposed off at designated disposal sites in line with applicable government waste management regulations.
7. All drainage and effluent from storage areas, workshops and camp sites shall be captured and treated before being discharged into the drainage system in line with applicable government water pollution control regulations.
8. Used oil from maintenance shall be collected and disposed off appropriately at designated sites or be re-used or sold for re-use locally.
9. Entry of runoff to the site shall be restricted by constructing diversion channels or holding structures such as banks, drains, dams, etc. to reduce the potential of soil erosion and water pollution.
10. Construction waste shall not be left in stockpiles along the road, but removed and reused or disposed of on a daily basis.
11. If disposal sites for clean spoil are necessary, they shall be located in areas, approved by the SE, of low land use value and where they will not result in material being easily washed into drainage channels. Whenever possible, spoil materials should be placed in low-lying areas and should be compacted and planted with species indigenous to the locality.

Material Excavation and Deposit

12. The Contractor shall obtain appropriate licenses/permits from relevant authorities to operate quarries or borrow areas.
13. The location of quarries and borrow areas shall be subject to approval by relevant local and national authorities, including traditional authorities if the land on which the quarry or borrow areas fall in traditional land.
14. New extraction sites:
 - a) Shall not be located in the vicinity of settlement areas, cultural sites, wetlands or any other valued ecosystem component, or on high or steep ground or in areas of high scenic value, and shall not be located less than 1km from such areas.
 - b) Shall not be located adjacent to stream channels wherever possible to avoid siltation of river channels. Where they are located near water sources, borrow pits and perimeter drains shall surround quarry sites.
 - c) Shall not be located in archaeological areas. Excavations in the vicinity of such areas shall proceed with great care and shall be done in the presence of government authorities having a mandate for their protection.
 - d) Shall not be located in forest reserves. However, where there are no other alternatives, permission shall be obtained from the appropriate authorities and an environmental impact study shall be conducted.
 - e) Shall be easily rehabilitated. Areas with minimal vegetation cover such as flat and bare ground, or areas covered with grass only or covered with shrubs less than 1.5m in height, are preferred.

- f) Shall have clearly demarcated and marked boundaries to minimize vegetation clearing.
- 15. Vegetation clearing shall be restricted to the area required for safe operation of construction work. Vegetation clearing shall not be done more than two months in advance of operations.
- 16. Stockpile areas shall be located in areas where trees can act as buffers to prevent dust pollution. Perimeter drains shall be built around stockpile areas. Sediment and other pollutant traps shall be located at drainage exits from workings.
- 17. The Contractor shall deposit any excess material in accordance with the principles of these general conditions, and any applicable ESMP, in areas approved by local authorities and/or the SE.
- 18. Areas for depositing hazardous materials such as contaminated liquid and solid materials shall be approved by the environmental specialist and solid waste specialist of the PIU and appropriate local and/or national authorities before the commencement of work. Use of existing, approved sites shall be preferred over the establishment of new sites.

Rehabilitation and Soil Erosion Prevention

- 19. To the extent practicable, the Contractor shall rehabilitate the site progressively so that the rate of rehabilitation is similar to the rate of construction.
- 20. Always remove and retain topsoil for subsequent rehabilitation. Soils shall not be stripped when they are wet as this can lead to soil compaction and loss of structure.
- 21. Topsoil shall not be stored in large heaps. Low mounds of no more than 1 to 2m high are recommended.
- 22. Revegetate stockpiles to protect the soil from erosion, discourage weeds and maintain an active population of beneficial soil microbes.
- 23. Locate stockpiles where they will not be disturbed by future construction activities.
- 24. To the extent practicable, reinstate natural drainage patterns where they have been altered or impaired.
- 25. Remove toxic materials and dispose of them in designated sites. Backfill excavated areas with soils or overburden that is free of foreign material that could pollute groundwater and soil.
- 26. Identify potentially toxic overburden and screen with suitable material to prevent mobilization of toxins.
- 27. Ensure reshaped land is formed so as to be inherently stable, adequately drained and suitable for the desired long-term land use, and allow natural regeneration of vegetation.
- 28. Minimize the long-term visual impact by creating landforms that are compatible with the adjacent landscape.
- 29. Minimize erosion by wind and water both during and after the process of reinstatement.
- 30. Compacted surfaces shall be deep ripped to relieve compaction unless subsurface conditions dictate otherwise.
- 31. Revegetate with plant species that will control erosion, provide vegetative diversity and, through succession, contribute to a resilient ecosystem. The choice of plant species for rehabilitation shall be done in consultation with local research institutions, forest department and the local people.

Water Resources Management

- 32. The Contractor shall at all costs avoid conflicting with water demands of local communities.
- 33. Abstraction of both surface and underground water shall only be done with the consultation of the local community and after obtaining a permit from the relevant Water Authority.
- 34. Abstraction of water from wetlands shall be avoided. Where necessary, authority has to be obtained from relevant authorities.
- 35. Temporary damming of streams and rivers shall be done in such a way avoids disrupting water supplies to communities down stream, and maintains the ecological balance of the river system.
- 36. No construction water containing spoils or site effluent, especially cement and oil, shall be allowed to flow into natural water drainage courses.
- 37. Wash water from washing out of equipment shall not be discharged into water courses or road drains.
- 38. Site spoils and temporary stockpiles shall be located away from the drainage system, and surface run off shall be directed away from stockpiles to prevent erosion.

Traffic Management

39. Location of access roads/detours shall be done in consultation with the local community especially in important or sensitive environments. Access roads shall not traverse wetland areas.
40. Upon the completion of civil works, all access roads shall be ripped and rehabilitated.
41. Access roads shall be sprinkled with water at least five times a day in settled areas, and three times in unsettled areas, to suppress dust emissions.

Blasting

42. Blasting activities shall not take place less than 2km from settlement areas, cultural sites, or wetlands without the permission of the SE.
43. Blasting activities shall be done during working hours, and local communities shall be consulted on the proposed blasting times.
44. Noise levels reaching the communities from blasting activities shall not exceed 90 decibels.

Disposal of Unusable Elements

45. Unusable materials and construction elements such as electro-mechanical equipment, pipes, accessories and demolished structures will be disposed of in a manner approved by the SE. The Contractor has to agree with the SE which elements are to be surrendered to the Client's premises, which will be recycled or reused, and which will be disposed of at approved landfill sites.
46. As far as possible, abandoned pipelines shall remain in place. Where for any reason no alternative alignment for the new pipeline is possible, the old pipes shall be safely removed and stored at a safe place to be agreed upon with the SE and the local authorities concerned.
47. AC-pipes as well as broken parts thereof have to be treated as hazardous material and disposed of as specified above.
48. Unsuitable and demolished elements shall be dismantled to a size fitting on ordinary trucks for transport.

Health and Safety

49. In advance of the construction work, the Contractor shall mount an awareness and hygiene campaign. Workers and local residents shall be sensitized on health risks particularly of AIDS.
50. Adequate road signs to warn pedestrians and motorists of construction activities, diversions, etc. shall be provided at appropriate points
51. Construction vehicles shall not exceed maximum speed limit of 40km per hour.

Repair of Private Property

52. Should the Contractor, deliberately or accidentally, damage private property, he shall repair the property to the owner's satisfaction and at his own cost. For each repair, the Contractor shall obtain from the owner a certificate that the damage has been made good satisfactorily in order to indemnify the Client from subsequent claims.
53. In cases where compensation for inconveniences, damage of crops etc. are claimed by the owner, the Client has to be informed by the Contractor through the SE. This compensation is in general settled under the responsibility of the Client before signing the Contract. In unforeseeable cases, the respective administrative entities of the Client will take care of compensation

Contractor's Health, Safety and Environment Management Plan (HSE-MP)

54. Within 6 weeks of signing the Contract, the Contractor shall prepare an EHS-MP to ensure the adequate management of the health, safety, environmental and social aspects of the works, including implementation of the requirements of these general conditions and any specific requirements of an EMP for the works. The Contractor's EHS-MP will serve two main purposes:
 - For the Contractor, for internal purposes, to ensure that all measures are in place for adequate HSE management, and as an operational manual for his staff.
 - For the Client, supported where necessary by a SE, to ensure that the Contractor is fully prepared for the adequate management of the HSE aspects of the project, and as a basis for monitoring of the Contractor's HSE performance.

55. The Contractor's EHS-MP shall provide at least:

- a description of procedures and methods for complying with these general environmental management conditions, and any specific conditions specified in an ESMP;
- a description of specific mitigation measures that will be implemented in order to minimize negative impacts;
- a description of all planned monitoring activities (e.g. sediment discharges from borrow areas) and the reporting thereof; and
- the internal organizational, management and reporting mechanisms put in place for such.

56. The Contractor's EHS-MP will be reviewed and approved by the Client before start of the works. This review should demonstrate if the Contractor's EHS-MP covers all of the identified impacts, and has defined appropriate measures to counteract any potential impacts.

HSE Reporting

57. The Contractor shall prepare bi-weekly progress reports to the SE on compliance with these general conditions, the project ESMP if any, and his own EHS-MP. An example format for a Contractor HSE report is given below. It is expected that the Contractor's reports will include information on:

- HSE management actions/measures taken, including approvals sought from local or national authorities;
- Problems encountered in relation to HSE aspects (incidents, including delays, cost consequences, etc. as a result thereof);
- Lack of compliance with contract requirements on the part of the Contractor;
- Changes of assumptions, conditions, measures, designs and actual works in relation to HSE aspects; and
- Observations, concerns raised and/or decisions taken with regard to HSE management during site meetings.

58. It is advisable that reporting of significant HSE incidents be done "as soon as practicable". Such incident reporting shall therefore be done individually. Also, it is advisable that the Contractor keeps his own records on health, safety and welfare of persons, and damage to property. It is advisable to include such records, as well as copies of incident reports, as appendices to the bi-weekly reports. Example formats for an incident notification and detailed report are given below. Details of HSE performance will be reported to the Client through the SE's reports to the Client.

Training of Contractor's Personnel

59. The Contractor shall provide sufficient training to his own personnel to ensure that they are all aware of the relevant aspects of these general conditions, any project ESMP, and his own EHS-MP, and are able to fulfill their expected roles and functions. Specific training should be provided to those employees that have particular responsibilities associated with the implementation of the EHS-MP. General topics should be:

- HSE in general (working procedures);
- emergency procedures; and
- social and cultural aspects (awareness raising on social issues).

Cost of Compliance

60. It is expected that compliance with these conditions is already part of standard good workmanship and state of the art as generally required under this Contract. The item "Compliance with Environmental Management Conditions" in the Bill of Quantities covers these costs. No other payments will be made to the Contractor for compliance with any request to avoid and/or mitigate an avoidable HSE impact.

Annex 11: Sample HSE Plan

1.0 INTRODUCTION

Every project poses its HSE risks. This plan was necessitated to meet up with OHS standards and to achieve the objectives set for the proposed project. The project team shall undertake to ensure high performance standards and conformity with contract requirements by managing the works in a systematic and thorough manner.

2.0 PROJECT DESCRIPTION

The project entails the construction/rehabilitation of roads, construction of water supply, gas supply and electricity supply infrastructure.

2.1 Purpose

The purpose of this document is to describe the Project Occupational Health and Safety (OHS) plan for the proposed bridge reconstruction and the specific management controls, risk control systems and workplace precautions required to ensure compliance with Occupational Health and Safety Laws and Standards.

2.2 HSE Objectives

The Objectives for this plan are to:

- Adopt a positive Health & Safety Culture.
- Adopt the principles of prevention to avoid risk.
- Complete the project without incident (Zero fatalities, Zero Lost Time Injury (LTI) or occupational illness).

2.3 Scope of Work

The Project Occupational Health and Safety (OHS) plan covers the scope of works defined in the contract. This includes Preconstruction, Construction, Operation & Maintenance and Decommissioning phases.

2.4 Policy Statement

In addition to the existing HSE policy, other policies shall be developed which includes:

- Substance Abuse Policy – Prohibiting the consumption or possession of narcotics, drugs, alcohol and other banned substances
- Emergency Response Policy – Stating commitment to ensure adequate resources and arrangement are in place in the case an emergency.
- Community Affairs Policy – Stating commitment to foster healthy relationships with communities through observance of the highest standard of conduct.
- Road Safety Policy–Stating commitment to complying with Road Traffic regulations and continuously improving its road safety performance by implementing a Road Safety Management Plan (RSMP)

3.0 KEY RESPONSIBILITIES

Involvement of all in implementing, maintaining and continually improving OHS processes is the key to successful completion and achievement of quality objectives set by the management. All project personnel shall therefore be required to be familiar with the content of this OHS plan and shall participate in implementing, maintaining and improving the management system.

It is the responsibility of the project manager and all key personnel to ensure that the requirements for quality are fulfilled for works under their responsibility.

All new staff and staff who are given new responsibilities are to be inducted into the requirements set out in this plan in general and into their function and responsibilities in particular.

3.1 Project Manager Responsibilities

- Set good example in HSE issues.
- Ensure the availability of resources essential to establish, implement, maintain and improve the OHS Management System.
- Define, document and communicate roles, allocate responsibilities and accountabilities, delegating authorities, to facilitate effective OHS management.
- Ensure that all of the activities undertaken in the Project conform to Nigerian legislation, client requirements or international standards when applicable.

- Review objectives achievements throughout the year.

3.2 Project Supervisors Responsibilities

- Enforcing all phases of the established HSE plan.
- Set good example in HSE issues.
- Preparing Job Hazard Analysis when required.
- Ensuring the safety of all workers associated with the site.
- Conducting HSE inspections.
- Ensuring workers are competent for their allocated tasks.
- Attending and participating in HSE meetings.
- Participating in accident investigations.

3.3 HSE Manager/Supervisor Responsibilities

- Prepare relevant OHS documentation and procedures.
- Monitor the efficient implementation of OHS requirements.
- Participate and organize the OHS risk assessments.
- Advise management of compliance and of conditions requiring attention.
- Conduct regular HSE inspections.
- Make thorough analysis of statistical data and inspections; delineates problem areas; and makes recommendation for solutions.
- Take part in the review of all OHS incidents and assist in investigating incident.
- Monitor the efficient implementation of the Project's OHS requirements.
- Organize the Project's OHS risk assessment exercises.
- Check on the use of all types of personal protective equipment specifies the use of appropriate PPE for the various work activities. Evaluates their effectiveness and suggests improvements where indicated.

3.4 HSE Advisor Responsibilities

- Check on the use of all types of personal protective equipment specifies the use of appropriate PPE for the various work activities. Evaluates their effectiveness and suggests improvements.
- Conduct independent inspections to observe conformance with established OHS Plan and determines the effectiveness of individual elements of the plan (pre-task briefing, weekly toolbox talk, etc)
- Establish contact with Subcontractors with the objective of maintaining good relations and coordination of accident prevention activities and compliance with the established OHS plan.
- Correct unsafe acts and unsafe conditions.
- Deliver HSE induction/orientation course to all employees, including subcontractors.
- Deliver HSE awareness course and toolbox talk.
- Advise employees on OHS matters.

3.5 All employees Responsibilities

- Take all reasonable and practical steps to care for their own health and safety and avoid affecting the health and safety of co-workers and the general public.
- Follow all instructions and use the equipment properly
- Not interfere with any safety arrangements.
- Report any circumstances which may not comply with the project's OHS management system.

4.0 Competency

All personnel required to operate or work with any equipment or machine must be competent, be tested for each equipment that he/she shall be operating. All personnel who as part of their profession require licensing or certification must obtain the necessary certification before he/she shall be allowed to work on the site.

5.0 Fitness

All personnel working on site shall be required to be certified medically fit to do so by an approved medical facility or Medical Doctor (pre-employment medical examination)

6.0 HSE Training

6.1 Induction/Orientation

Every new or rehired employee and Subcontractors employees must undergo mandatory OHS orientation / induction. The purpose of the Induction is to educate workers and make them aware of the major potential hazards he or she shall come into contact with while working on the site; also, it is one more opportunity to stress the importance of HSE being the first priority in the operations.

The content of the HSE orientation / induction shall cover the following subjects:

- Site safety rules.
- Personnel protective equipment requirements (PPE).
- Environmental sensitivity and protection.
- Preparation and planning of the job (Daily Pre-task talk).
- Emergency plan and muster points.

6.2 Project Specific HSE Training

In addition to the HSE orientation /induction, there shall be specific site HSE trainings which shall cover the following topics:

- Manual handling.
- Electrical Safety
- Emergency Prevention, Preparedness and Response
- Work at height training
- First Aid training (for site First Aiders)
- Lifting and Rigging
- Safe Driving techniques (for drivers)

7.0 Hazard identification & HSE risk assessment

7.1 Project HSE Risk Assessment

The project HSE risk assessment shall be developed and recorded. The Project's HSE risk assessment shall be conducted by a team consisting of HSE Manager/ Supervisor and technical managers/supervisors. It must be approved by the Project manager.

7.2 Fire Risk Assessment

A fire risk assessment shall be developed and recorded. A fire safety plan shall be in place in the site.

7.3 Job Hazard Analysis

Job hazard analysis is required when the hazards and risks associated with a specific task is to be identified so as to implement control measures. The HSE department together with the technical managers/supervisors shall develop a job hazard analysis when applicable.

8.0 EMERGENCY PREPAREDNESS AND RESPONSE

Emergency procedures and evacuation plan shall be developed by the HSE Department and displayed on the notice board. These procedures shall be communicated to all staff. Also each section/department shall have at least a trained first aider at all times.

9.0 HSE IMPLEMENTATION AND PERFORMANCE MONITORING

9.1 HSE Meetings

HSE management meetings shall be held once a month. The meeting is to help identify safety problems, develop solutions, review incident reports, provide training and evaluate the effectiveness of our safety program. Some of the meetings shall be:

- Project/Site Management HSE Meeting for management and supervision (Monthly).
- Tool box talk meetings for all workforce (Weekly).
- Pre-task briefing for all workforces (Daily).
- Special situation meeting (As required).

9.2 HSE Reporting

All incidents and illnesses must be reported to site supervisor after which investigation shall commence and recorded so that appropriate corrective actions shall be implemented to prevent any re-occurrence and report findings shall be forwarded to management for review. Reporting requirements shall include

notification of incident, investigation report, and monthly report. Notification of Incident form shall be developed which shall be filled and submitted to HSE department for investigation.

9.3 HSE Inspection and Audits

For continual improvement of HSE management system, HSE inspection and audit shall be conducted. An inspection checklist shall be developed. This is to ensure that the HSE management system is being adhered to. The inspection shall be conducted by the HSE department together with site management.

9.4 Corrective and Preventive Actions and Non Conformities

During the course of inspections, concerns raised shall be addressed and closed out. It is expected that in a period of two weeks, a close out inspection shall take place to verify that the corrective actions have been closed.

10.0 Project HSE Rules

The project HSE rules shall be developed and supervision shall develop specific rules and procedures when necessary.

The following site rules shall be implemented at all times. The Site Manager shall draw these rules to the attention of their own workmen or staff. All sub-contractors must ensure that these rules are drawn to the attention of their workmen and staff.

The Principal Contractor may implement additional site rules during the contract programme. Any such additional rules shall be notified to all personnel engaged on the project prior to their implementation. The HSE rules shall include but not limited to:

1. Personal Protective Equipment must be worn at all times.
2. All instructions issued by the Site Manager regarding the storage, handling or cleaning of materials, plant and equipment must be followed.
3. All vehicles must be parked in the designated areas.
4. Any workman suffering from a medical condition that might affect his work and/or that could require specific Medical treatment must inform the supervisor before commencing work.
5. All site tools shall either be battery operated or 110 volts.
6. No one shall be permitted on site if it is believed that they are under the influence of alcohol or drugs.
7. Vehicles must not reverse without a banksman in attendance.
8. All visitors to site must undergo a site-specific induction and operative Identity badges must be worn at all times.
9. All excavations must be secured.
10. Smoking and eating shall only be permitted in the designated area. This area shall be identified during induction.
11. No hot works operations are permitted without a hot work permit in place.
12. There shall be no radios or other music playing devices on site.
13. Good housekeeping practices to be adopted.
14. Compliance with all Ethical Power Permit to Work systems
15. The site keyed access procedure must be strictly adhered to.
16. All Contractors must comply with Site Health & Safety Guidelines / Site Safety Method Statement
17. No untrained worker shall be permitted to operate heavy machineries.

11.0 SAFE WORK PRACTICES

Implementing safe work practices is one of the keys to achieving our HSE objectives and some of these safe work practices include:

11.1 Personal Protective Equipment (PPE)

The basic PPE required for the project shall be Safety Glasses, Safety Boots, Hand Gloves, Hard Hat and Coverall. Any other PPE shall be used as applicable. Management is responsible for the provision of PPE and usage shall be enforced at all time.

PPE shall be provided in circumstances where exposure to hazards cannot be avoided by other means or to supplement existing control measures identified by a risk assessment. An assessment shall be made to ensure that the PPE is suitable for purpose and is appropriate to the risk involved.

Information, instruction & training shall be given to all employees on safe use, maintenance and storage of PPE.

Employees shall, in accordance with instructions given, make full use of all PPE provided and maintain it in a serviceable condition and report its loss or defect immediately to the maintenance department where it shall be replaced.

PPE shall be replaced when it is no longer serviceable and returned on a new for old basis. Employees shall sign to state that they have received PPE when issued.

12.0 WELFARE FACILITIES

The provision of welfare facilities on the site shall be communicated to all operatives at site induction.

A cleaning regime shall be implemented and maintained for the duration of the construction phase to ensure the site welfare facilities remain in a clean and tidy condition.

If mains drinking water becomes unavailable during the construction phase bottled water shall be brought to site for all operatives for the necessary period.

13.0 SIGNAGE

Adequate provision for warning and directional signs shall be made.

14.0 PROJECT HSE PROCEDURES

OHS procedures shall be developed. Project activities shall generally be controlled in accordance with OHS Procedures. These procedures shall include:

- Lifting and Rigging Procedure
- HSE Reporting Procedure
- Working at Height Procedure.
- Emergency Procedure.

Annex 12: Public Participation in Project Cycle

Project Cycle	ESIA Component	Public Participation Activity
Pre-Feasibility	Environmental and Social Screening	Identifies public groups and begins initial contact with groups.
	Initial Environmental Examination (IEE)	Continue consultations – public provides input to IEE report.
	Scoping	Identifies major issues for Scoping and TOR using public input and makes plan for public involvement.
Feasibility	Environmental and Social Impact Assessment (ESIA)	The public reviews and comments on draft ESIA study report. The public provides input to design and survey.
Detailed Survey and Design	Integration of Environmental Mitigation Measures	Detailed design made available to the public.
Construction and Operation	Environmental and Social Monitoring	The public provides input to post-evaluation of impacts and mitigation measures.

Annex 13: List of Stakeholders and Persons Consulted

ATTENDANCE SHEET

STAKEHOLDER CONSULTATION

Date:

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6	Salim A. Salim	MMSD	Director (MEC) Dept.	08127209097	salimack@phor.com
7	Dr (Mrs) Okoro I.C.I	MMSD	AD (EIA)	08037238232	iviviaci@yahoo.com
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ATTENDANCE SHEET

STAKEHOLDER CONSULTATION

Date:

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