

MINING IN NIGERIA AND ENVIRONMENTAL PROTECTION: EXAMINING THE LEGAL AND INSTITUTIONAL FRAMEWORKS

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Abstract

It is no longer news that the economic drive of the present government in Nigeria to increase revenue generation include among other things exploration and mining of solid minerals. Nigeria in her efforts to diversify from being a mono economy majorly dependent on crude oil seeks to develop her vast mineral resources. However, it is not without gain saying that mining and mineral explorations despite its economic benefits, has great potentials for environmental damage if not sustainably managed. The paper seeks to explore the need for the country to explore the resources, the implication for the environment and the imperative for necessary precautions to prevent and minimize adverse environmental impacts within the ambit of the law and established international principles and chart the way forward to aid reduction in pollution. This paper adopted the doctrinal research design. Data was sourced from both primary and secondary sources. Primary sources of data were statutes like Nigeria Minerals Mining Act and the regulations; while secondary sources were garnered from books, journal articles, conference papers, research report, newspapers and Internet. The paper discovered that Nigeria is not bereft of laws to regulate the mining industry, and it is up to date with relevant international best practices. However, the country needs to strengthen the regulatory agencies to ensure compliance going forward.

Keywords: mining, environment, institution, legal, protection

1.0 Introduction

The number of solid minerals found in Nigeria are numerous. The mining industry were humming with activity at the beginning of the 20th century. After the inauguration of the minerals investigation of the Southern and Northern protectorates, organized mining began in Nigeria in 1903. The Royal Niger Company began systematic mining of cassiterite and related minerals, including as tantalite and columbite, at Jos, Plateau State, in 1905. Coal mining began in Enugu in 1906, while iron ore could be extracted in Kogi alongside other deposit-rich regions. Overtime the mining activities slowly gave way to crude oil exploration in the 1970s. However, the mining activities at the time did not leave the environment in its pristine state. Many of the mining areas were severely polluted in all ramification; air, land and water. The communities where resources were explored had various environmental degradation impacts to grapple with long after the facilities were decommissioned or abandoned. In Jos alone about 225 kilometres of land were taken out for tin mining,¹ the land was degraded² and became unfit for agrarian purposes and other natural uses as large expanse of land were utilized for the mining purposes.

The plans of the federal government to explore the country's solid minerals deposits for economic growth is laudable, however, there is a need to equally look into how the development in the sector will be sustainable in order to reduce environmental degradation. In the wake of environmental activism and the need for sustainable development, the pollution witnessed in the Niger delta region from crude oil exploration and refining must not be repeated, as the country moves for diversification. Sustainable

¹ Cooper Natasha, 'Tin Mining on the Jos Plateau' [2012] Open Educational Resources230 <<https://scholarworks.uni.edu/oermaterials/230>>accessed 1March 2024

² C Azgaku and US Osuala, 'The Socio-Economic Effects of Colonial Tin Mining on the Jos Plateau: 1904-1960' [2015] 5(14) DCS < www.iiste.org ISSN 2224-607X> accessed 1 March 2024

development in the mineral mining sector is critical for present and future generations for economic, social, environmental, cultural and political well-being of the country. The paper is divided into seven sections. Section one is the introduction, section two discussed the need for diversification of the Nigerian economy from crude oil, section three highlighted the impacts of mining on the environment. Section four discussed the legal framework for the mining industry, section five discussed the institutional framework while the policies of the IGF as entrenched in policy four on environment was juxtaposed with provisions of the Nigeria Mining Act and Regulations 2011 in section six to determine the level of compliance of the Nigerian laws and regulations with international mining industry standards on sustainable mineral and metal mining for optimum environmental protection. conclusion and recommendations are drawn in section seven.

2.0 Factors Necessitating Nigeria's Diversification from Crude Oil

The searchlight beamed on the mining sector in the last couple of years as one of the avenues for Nigeria's economy diversification and source of alternative revenue. This has become imperative as the call for a de-emphasis of the utilization of fossil fuels in the wake of climate change challenges on the global scene becomes upscale. Nigeria is a crude oil exporting nation, generating the highest amount of revenue for the country. Howbeit, with calls for national commitments to the Paris Agreement to achieve a 1.5°C and target zero emissions according to targets and timetables under the schedules for Nationally Determined Contributions (NDCs). It is high time the country looks inward for cleaner alternatives. One of the channels for economic diversification identified and profiled by the government is the exploration of Nigeria's solid mineral deposits.

The volatility of crude oil prices at the international oil market have impacts on the dynamics for management of the nation's foreign exchange rate, oil

revenue, real GDP and other macroeconomic stability in the country.³The volatility of the global oil market and the effects on the nation's gross domestic product, the economy and the citizens gave credence to calls for alternative revenue generating sources for the country. Climate change challenges and the global shift from fossil fuels to less polluting alternative energy sources in order to meet requisite commitments under the Paris Agreement 2015 is a major reason for Nigeria to diversify. Transition from fossil fuels is a critical factor to achieving climate goals.⁴ Over dependence on crude oil exports has made Nigeria a dependent mono economy subject to fluctuations on the global market⁵, decline in revenue generation and inability to meet budgetary targets for the country's development. Neglect of the other income generating alternatives which needed to be revitalized in the face of global economic downturn prompted the renewed vigour at solid mineral exploration. With the huge deposits of solid minerals in Nigeria, the country generated a meagre 0.5% revenue from the sector,⁶ making the sector highly uncompetitive. The revitalization of the solid mineral sector will bring about the touted economic turnaround, revenue generation beyond crude oil, infrastructure development, job creation and by implication improved standard of living, transfer of technology and other benefits that are accruable to sustainable development of the potentials in the sector.

³ OG Ige and B Obi, 'Impact of crude Oil Price Volatility on the Nigerian Economy' <<https://journal.binghamuni.edu.ng/pdfs/bjeas/1013.pdf>>accessed 19 March 2024

⁴ Cleo Verkuijl and others, 'Aligning Fossil Fuel Production with the Paris Agreement, Insights for the UNFCCC Talanoa Dialogue,' <https://unfccc.int/sites/default/files/resource/11_12_13_SEI_Talanoa_Fossil_Fuels.pdf> accessed 1 March 2024

⁵ Office of the Secretary to the Federal Government, National Policy on Solid Minerals and Metals, <<https://www.osgf.gov.ng/resources/policies/solid-minerals-and-metals/accessed>> 1 March 2024

⁶MA Olade,'Solid Mineral Mining and Deposit in Nigeria: A Sector in Transitional Change' [2019] 2(1) Achievers Journal of Scientific Research, 1-15

3.0 Impacts of Mining on the Environment

There are different methods for mining which depend on the location and type of resource that is being mined. Because waste debris is dumped, excavations are made, and the natural beauty of the mining site is altered. Regardless of the technique, mining has an impact on the land, water, air, vegetation, and fauna. Globally, there have been significant issues raised by the effects of natural gas extraction on the environment and human health of those who live close to the extraction and mining sites.⁷ Large scale mining is associated with lots of wastes, and if not properly managed portend grievous environmental disaster resulting in loss of productivity.⁸

Mining is a major factor in deforestation. When licenses are granted to explore for minerals, the licensee goes to work by cutting down large tracts of forest land in order to prospect for the mineral, occasioning land use changes which can cause deforestation, erosion, contamination and alteration of soil profile.⁹ It also a major factor in the loss of biodiversity be it terrestrial or aquatic in the area of operation.¹⁰ Air, land and water are severely polluted rendering them unfit for legitimate purposes and exposing communities to diseases and death in extreme cases. The Zamfara and Niger states lead poisoning incidents that claimed the lives of over hundred

⁷UNECA, Mainstreaming Governance of the Extractive Sector in the African Peer Review Mechanism Process, <repository.uneca.org>accessed 24 March 2024

⁸Mining Minerals and Sustainable Development, Breaking New Grounds, 234<<https://www.iied.org/sites/default/files/pdfs/migrate/G00902.pdf> >accessed 30 March 2024

⁹ Majuba Hill, the Impact of Mining on the Environment, 5 <<https://www.majubahillcopper.com/s/The-Impact-of-Mining-on-the-Environment.pdf>> accessed 15 March 2024

¹⁰ Pradeep Mehta, 'The India Mining Sector: Effects on the Environment and FDI Flows' (CCNM Global Forum on International Investment Conference on FDI and the Environment, Lessons to be Learned from the Mining Sector, 7-8 February 2002) <https://www.oecd.org/env/1830307.pdf> accessed 18 April 2024

children is an example of how mining activities can result in fatalities.¹¹ The environment of columbite and tin mines in the plateau still suffers enormous degrading impacts as of today, with devastating consequences on the populace. The environmental hazards from mining are diverse, for example in the Jos, Plateau where tin had been mined some decades ago, are characterized by open cesspits, pools that were not decommissioned thereby creating health and environmental hazards.

The renewed efforts by the federal government to explore the country's mineral resources for economic development must be commended, howbeit, there is a clarion call to conduct with sustainable plans that will impact minimally on the environment and the populace.

4.0 Legal Framework for Environmental Protection Against Adverse effects of Mining in Nigeria

All actions under a national jurisdiction are governed by national legislation, and searching for minerals is a national obligation. The interest of multinational mining corporations has played a significant role in driving worldwide activity. Domestic legislation has also played a role in local regulation, and non-governmental organizations with a particular interest have been actively enforcing their own standards against perceived deviations from standard operating procedures.¹²

4.1 Constitution Federal Republic of Nigeria (1999 CFRN)

Section 20 of the 1999 CFRN provides that “The State shall protect and improve the environment and safeguard the water, air and land, forest and wild life of Nigeria”. This mandate has been pursued through the different

¹¹N Umar-Tsafe and others, ‘Seizing Opportunities and Addressing Challenges of Precision Medicine’ (ICDDTM 18, Malaysia, 3 Dec - 5 Feb, 2019)

¹² Eric Garner, ‘International Treaties Governing Mineral Exploration’ Environmental and Engineering Geology - Vol. III - <http://www.eolss.net/sample-chapters/c09/E6-65-05-04.pdf> accessed 21 March 2024, pg. 3

laws and regulations that have been enacted to protect the environment and prevent pollution.

4.2 Environmental Impact Assessment (EIA)¹³

The adherence to requirements of the EIA is critical to the commencement of any developmental project or activities that will have significant impact on the environment. It is provided that an EIA must be carried out in order to determine the impact it will have on the environment. Under the mandatory list for which an EIA is required is mining of materials in new areas where the mining lease covers areas in excess of 250 hectares of land, activities involving processing of iron ore, concentrating for aluminum, copper, gold or tantalum.¹⁴

4.3 Nigerian Minerals and Mining Act¹⁵

The main legislation governing Nigeria's management of its solid mineral resources is the Mineral and Mining Act 2007 (MMA). The 1946 Mineral Act was once again superseded by the 1999 Minerals and Mining Act. According to the Act, a person holding a mineral title must exercise his or her right to mine while considering how mining would affect the environment and taking the appropriate precautions to keep the environment clean.¹⁶ Any area where mining activities have been carried out must by order of the Minister be restored as best practicable by the grantee of a mining lease.¹⁷ Licensees of a mining lease have the responsibility to restore exploited mined out areas in accordance with the condition of its grant.¹⁸

¹³ Environmental Impact Assessment Act, Cap E12 LFN 2004

¹⁴ Section 12(11) (a & b) EIA

¹⁵ Nigerian Minerals and Mining Act of 2007 (NMM Act)

¹⁶ NMM Act s 111, deltanalyst.wordpress.com

¹⁷ *ibid* s 114(1) < <https://documents1.worldbank.org/>accessed> 18 April 2024

¹⁸ *ibid* s 115

Every holder of a mineral title has obligations as far as it is reasonably practicable to reduce and manage any adverse environmental impact occasioned by mining activities. Explored areas of land must be rehabilitated to its original state or as prescribed under the laws of granting authorities, legislations and best practices in the industry.¹⁹

Prior to beginning mining operations, any entity awarded an exploration license, small-scale mining lease, mining lease, quarry lease, or water use allow must submit an EIA statement approved by the Federal Ministry of the Environment to the Mines Environmental Compliance Department along with an Environmental Protection and Rehabilitation Program containing any information that may be specified in the environmental regulations issued under this Act.²⁰

In order to ensure uniformity of practice in the industry, to reduce adverse impacts of mining on the environment, the minimum contents of the EPRP provided standards and guidelines for all mining entities for restoration and rejuvenation actions for impacted areas by conducting inspections, audits and a reasonable estimate of the total cost of restoration. This is to make sure that the environment after mining operations can still be reconditioned for optimum aesthetic, economic and social use.²¹

The powers of the Mines Environmental Compliance Department (MECD) under the EPRP are duly exercised in collaboration with the State Mineral Resources and Environmental Management Committee. The MECD in the exercise of its powers may reject or approve or an EPRP submitted by a mineral titleholder. Notification for approval or rejection of EPRP is to be communicated to the applicant within sixty days, failure of which the submission is deemed approved as submitted.²² In a situation where the

¹⁹ibid s 118(a &b)

²⁰Ibid s 119 (a-d)

²¹ S 120(1) (a-f) NMMA

²² S 120(4)

EPRP is rejected, the mineral title holder is to submit another EPRP.²³ Where an EPRP application is rejected more than once, the applicant have the right to resort to arbitration.²⁴ From the foregoing, it is expedient that the provision of the law should be technically looked into; to reduce the financial burden of having to continue to produce EPRP until accepted or submit to arbitration. It is advisable that the Mines environmental compliance department make guidelines to follow for the requirement of EPRP, because in the course of going back and forth for approval, the Holder, out of desperation may want to cut costs, thereby creating room for corrupt practices that will eventually jeopardise the whole process. Holders of mineral titles have financial obligations to deposit their allocated amounts to the Environmental Protection and Rehabilitation Fund (EPRF) no later than a year from approval.

In furtherance of environmental protection, water courses are to be protected from pollution in the process of mining or exploration for minerals in the area within the Mining Lease or beyond that area.²⁵ Waters fouled during mining operations must be purified and duty is laid on the mining entities to ensure that waste waters do not contain harmful substances in quantities enough to adversely impact the environment.²⁶ Where there is pollution of river banks or alteration of quality of water due to mining activities, the onus lies on the operating entity to clean up and restore a river bank to its safe state.²⁷ Where water courses or land is polluted by mining operations, the holders are obliged to compensate the owners or occupiers as necessary.²⁸

4.4 National Minerals and Metals Policy 2008

²³ S 120(5a)

²⁴ S 120(5b)

²⁵ S 123NMMA

²⁶ S124 (a-c) NMMA

²⁷ S 128

²⁸ NMMA 125 (a &b)

The Ministry of Mines and Steel Development engendered the National policy on minerals and metals. It is pivotal to the development and take off of the Nigerian Minerals and Mining Act 2007 and an update of the Seven Year Strategic plan for Solid Minerals Development in Nigeria (2002 – 2009) ²⁹

4.5 Nigeria Minerals and Mining Regulations 2011

This document provides a good interpretation of the Mining Act of 2007, and guidelines for operations in the solid mineral sector, and will be considered in conjunction with the provisions of the codes of practice for the mining sector as enshrined in the Intergovernmental Forum on Mining, Minerals, Metals and Sustainable Development.

5.0 Institutions charged with oversight functions for environmental protection in the Mining Sector

5.1 Ministry of Mines and Steel Development

The main federal institution in charge of mining operations in Nigeria is the Ministry of Mines and Steel development. The Mines environmental compliance unit is critical for environmental best practices in the mining sector. The establishment of environmental procedures and requirements applicable to mining operations, the review of all plans, studies and reports required to be prepared by holders of mineral title and the monitoring and enforcement of compliance with all environmental requirements and obligations³⁰

5.2 Mining Cadastre Office

The Act created the Mining Cadastre Office. It is saddled with the responsibility of the administration of Mineral titles and the maintenance

²⁹Geus (n1)

³⁰Ministry of Mines and Steel Development, Roadmap for the Growth and Development of the Nigerian Mining Industry: Road to Shared Mining Prosperity, 2016

of the cadastral registers.³¹ The functions of the Cadastre office include vetting applications for and issuance of mineral titles and permits. It also has powers to suspend mineral titles and revoke such titles can also be revoked on the written approval of the minister. However, where there are competing applications for mineral titles to a specific area, the first in time takes priority.

5.3 Mines Inspectorate

The mines inspectorate is charged with environmental management in the mining sector to oversee and ensure compliance of all reconnaissance, exploration and mining operations with all mine health and safety regulations prescribed under the Act³²

5.4 Mines Environmental Compliance Department (MECD)

The MECD is saddled with the responsibilities to review all plans, studies and reports required to be prepared by holders of mineral title with regards to their environmental responsibilities under the Act. It is also required to implement and monitor compliance of operating entities to environmental requirements under the Act and subsidiary legislations in observance of social and environmental issues involved in mining operations, mine decommission and land restoration.³³

5.5 State Mineral Resources and Environmental Management Committee (SMREMC)

Lands allocated for mining purposes are located in different states of the Federation and the SMREMC was established as an advisory body to facilitate discussion with the Minister on matters of land pollution and environmental degradation in resource exploration affected areas. The Committee also advise the departments established in accordance with the provisions of this Act for the supervision of mineral exploitation and the

³¹ NMM Act 2007 s 5

³²Ibid, s 17

³³Ibid, s 18 (a-d)

implementation of social and environmental protection measures. Local Government Areas and communities also benefit from the Committee's advise on the actualisation of the social and environmental programmes for sustainable exploration of mineral resources in their areas.³⁴

5.6 Federal Ministry of Environment (FMoE)

The FMoE is the frontal ministry in charge of protection and management of the Nigerian environment. It has the mandate to review the EIA, assess the quality of the country's soil and water resources and natural resource management. It also superintends matters on forestry, rangeland management, drought and desertification control, erosion and flood control and coastal zone management. FMoE also formulates policies and guidelines as relates to the environment through information gathering for coordination and monitoring.³⁵

The EIA remains the topmost tool for efficient administering the environment in Nigeria. It adopts the principles of precaution and prevention to preserve the environment, this is achieved by subjecting all development activities to EIA. The implementation of the EIA is carried out by the FMoE requires all projects with substantial environmental effects to go through mandatory EIA from initialisation to the conclusion of the project to address associated environmental challenges.³⁶

5.7 National Environment Standards Regulation and Establishment Agency³⁷

NESREA is the agency in charge of environmental protection and sustainable development in Nigeria. The functions include protecting the

³⁴S.19(c, e & f), www.ijramr.com

³⁵ GEUS, supra (n1), <https://documents.worldbank.org/en/publication/documents-reports/accessed1> May 2024

³⁶ *ibid*

³⁷National Environment Standards Regulation and Establishment Agency, Cap N27, LFN 2007

nation's air and atmospheric resources, setting specifications and standards to protect and enhance the quality of Nigeria's air resources by controlling pollution emanating from energy sources and industries. It is the Agency's responsibility to set standards for new mobile and stationary sources, if it is envisaged that the activities will negatively impact public health.³⁸

The Agency is the regulates discharge of effluents and emission control. It is empowered by law to determine the permissible limits for effluents to be discharged from new point sources, a review of old sources, and also prescribe the standards for applicable equipment and best management practices.³⁹ The Act prohibits the discharge of harmful substances into the environmental media of Nigeria or at the adjoining shorelines, the only exception is in circumstance where a permit has been granted under the law where such discharge is permitted or authorized under any law in force in Nigeria.⁴⁰ As the mining industry is receiving the push to boost exploration, NESREA has been able to put up guidelines that will aid sustainable processes in the mining industry, several regulations that are industry specific have been set up, however, enforcement and monitoring compliance is critical to achieving the aims and objectives of the laws and regulations.

6.0 International Approach to Environmental Management in Mineral and Metal Mining Activities

There is no definite treaty or agreement on mining, but several conventions, agreements, declarations, industry codes and standards are resources from which domestic laws are garnered to protect the environment and resources against the adverse impacts of minerals and metal mining activities.

The Convention on Biological Diversity (CBD) place obligation on member states to the CBD of which Nigeria is a party are to ensure that

³⁸NESREA Act 2007, s 20

³⁹Ibid, s 24

⁴⁰Ibid, s 27

entities initializing projects that will have significant effects on the biological diversity of project areas conduct EIA to mitigate identified adverse impacts and encourage participation of stakeholders.⁴¹ Due to the high environmental impacts associated with mineral mining, countries are to conduct environmental audits to mitigate the adverse impacts of their policies on biological diversity.⁴²

At the 2002 World Summit on Sustainable Development, held in Johannesburg, mining-interested nations came to an agreement to highlight the importance of the mining industry as a major player in global economic development. This served as the impetus for the Johannesburg Plan of Implementation's draft paragraph 46.⁴³ The Johannesburg Plan of Implementation was the catalyst for the establishment of the Intergovernmental Forum on Mining, Minerals, Metals and Sustainable Development. Enhancing the contribution of minerals and metals mining to sustainable development includes actions at all levels to: ramp up support efforts to address the environmental, economic, health and social impacts of mining operations and provide technical support to developing countries, while also aligning stakeholders to participate in ensuring sustainable mining in their communities.⁴⁴

The Mining Policy Framework is evidence of the IGF members' dedication to ensuring that mining operations within their borders adhere to global best practices for environmental, social, and economic governance and foster the creation and fair sharing of benefits in a way that will support sustainable development. Nigeria is one of these members.⁴⁵ The Mining

⁴¹CBD 1992, Article 14(1)(a)

⁴²Ibid, Article 14(1)(b)

⁴³Intergovernmental Forum on Mining, Minerals, Metals and Sustainable Development <https://www.iisd.org/system/files/2023-12/igf-mining-policy-framework-en.pdf> accessed 26 March 2024

⁴⁴Paragraph 46, Johannesburg Plan of Implementation, 2002

⁴⁵ www.igf.org accessed 26 March 2024

policy framework is divided into different sections addressing diverse aspects of mining operations. However, the scope of this paper is legal protection of the environment in mining operations. Therefore, the policies of the IGF as entrenched in policy four on environment, which made provisions for the environmental media, ecosystem and its diversity, waste and disaster management, decommissioning and ancillary matters in mining operations are juxtaposed with provisions of the Nigeria Mining Act 2007 and 2011 Regulations to determine the level of compliance of the Nigerian laws with international mining industry standards on sustainable mineral and metal mining.

The IGF advocates policies, standards, enforcement and compliance mechanisms critical for management of air and noise pollution, water, waste, biodiversity, mine closure for effective management and protection of the environment and ecosystem services.⁴⁶ It sets standards for entities to adopt to control and reduce greenhouse gas emissions and to meet up nationally determined contributions commitments to international climate change goals.⁴⁷

Some mechanisms advanced by the IGF for monitoring emissions include regular inspections, reporting, analysis and auditing and standard enforcement with adequate penalties for strict adherence with laws and regulations.⁴⁸ The Nigerian Mineral Mining Regulations 2011 domesticated these provisions in regulations 170 on pollution prevention and 221 on atmospheric pollution control. Mining entities are to adopt water management standards for the use of surface and ground water to reduce injurious contamination, and implement planning at the watershed level,

⁴⁶IISD, <<https://www.iisd.org/system/files/2023-12/igf-mining-policy-framework-en.pdf>> accessed 26 march 2024

⁴⁷IISD, IGF, 4.1.1

⁴⁸Ibid 4.1.4

considering the protection of water sources for potential users and integrating the risks posed by climate change.⁴⁹

Under the IGF mining entities are required to take into cognizance the environmental programs needed to reduce impacts on surface and underground water and minimize pollution to maintain water quality and quantity in the mining areas including potential trans-boundary impacts. They are to treat mine effluent before discharge into the environment to mitigate adverse environmental consequences and protect groundwater from water-leaching or percolating waste dumps, tailings storage areas, and leach pads have been domesticated as Regulation 220 on control of water and tailing disposal.⁵⁰ They are also to establish robust mechanism for monitoring water quality and quantity, that include regular inspections and analysis of reports; enforce standards with appropriate sanctions to ensure compliance with laws and regulation. This requirement has been domesticated in Regulation 209 on air and water quality monitoring.⁵¹

The mining entities are mandated to deploy the prevention and precautionary principles with regard to environmentally sensitive ecosystems and places designated as world heritage sites by identification and management of risks that have adverse effects on biodiversity throughout the lifespan of mining activities. It is also critical to avoid interference with areas designated as World Heritage Sites and exercise due regard for legally protected areas. Mining entities are duty bound while administering their environmental plan to monitor and report risks to biodiversity as part of their environmental and social impact assessment responsibilities.⁵²

⁴⁹ Ibid, 4.2.1 -4.2.2

⁵⁰ Ibid, 4.2.3

⁵¹ Ibid, 4.2.4

⁵² IISD, 4.3.2

Also, countries are enjoined to establish comprehensive biodiversity management mechanisms for monitoring, through regular inspections and analysis of reports; enforcing standards with appropriate sanctions to ensure compliance with laws and regulation. Section 167- 169 of the Nigeria Mineral and Mining Regulation of 2011 domesticated the policies on biodiversity: protection of flora, fauna and endangered species, national parks, world heritage sites and sanctuaries. Policy 4.4.3 established an integrated waste management mechanism for monitoring by conducting regular inspections and analysis of reports submitted by mining entities; enforce standards with appropriate sanctions to ensure compliance with laws and regulations. Regulations 170-173 and 199 made provisions for mine waste management.

Operating entities are required to make adequate provisions for adoption and implementation of regional and national emergency preparedness and response programs prior to starting their operations. They are to conduct drills to monitor the effectiveness and responsiveness of the emergency preparedness and response programs in cooperation with communities and all levels of government.⁵³This requirement is provided for in Regulation 228 on emergency preparedness.

States are to adopt legal and regulatory frameworks for mine closure has been domesticated in Regulation 225 and ensure maintenance of institutional capacity to ensure compliance and enforcements.⁵⁴ This is an aspect the country has not been able to measure up on, and will require building capacity in all departments connected with the mining industry.

Enact regulations on the types of financial assurance that are appropriate for mine closure, including their specific details and conditions. This requirement has been taken care of in Regulation 121 (2) & (3) Minerals

⁵³ IISD IGF,4.5.2

⁵⁴ *ibid*, 5.2.1

Mining Act. The Minister shall appoint a reputable institution customarily engaged in business as trustees or fund managers to administer the EPRF.⁵⁵ The IGF obligation on entities provided for situation where an entity is not able to fulfill its closure obligations, provide government the right to gain immediate and unencumbered access to the full amount of the financial assurance to cover the costs of all outstanding work programs.⁵⁶ Regulation 184 established the fund that is used in the rehabilitation of closed or abandoned mines as the case may be.

The code requires that an inventory of orphaned and abandoned mines be taken to identify potential hazards and impacts as well as opportunities and values.⁵⁷ It also made provision to undertake a risk assessment for abandoned mines and risks to people, the environment, and property and to engage and involve communities in the identification and assessment of abandoned mines. To develop remediation plans for abandoned mines that are consistent with risks and with regulations for mine closure, and that consider the redevelopment of abandoned mines or the preservation of values beneficial to people, wildlife, climate resilience, and the environment⁵⁸

7.0 Conclusion and Recommendations

Conclusively, mining and pollution of the environment are inseparable; however, mining can be achieved with minimal negative impacts, if corporations adopt best practices and government conduct regulatory affairs with diligence and transparency. The creation of different departments to oversee environmental compliance, uphold standards to reduce pollution and make mining entities accountable is commendable; if the enforcement agents dutifully perform their oversight functions. The Act made provision for several layers of environmental protection from the

⁵⁵ibid, 5.2.2

⁵⁶ibid, 5.2.3.(c)

⁵⁷ ibid, 5.3.1

⁵⁸ 5.3.3-5.3.5 IGF

federal to state, local government, communities, civil organisations and the mining organisations to ensure sustainable mining by engaging the multi-stakeholder approach and principle of public participation and protection of indigenous rights.

Nigeria is not bereft of laws to regulate the mining industry, it is duly up to date with relevant international best practices as examined in the paper, however, enforcement is a key challenge and incapacity on the part of the personnel must be addressed to achieve a sustainable experience in the Nigeria mining industry going forward.

It is however recommended that the:

The Mines Inspectorate must be better funded to boost training and enhance capacity of the personnel in the conduct of their tasks of inspecting and ensuring compliance with environment and safety measures.

The country should seek means through which entities that comply with codes, standards, laws and regulations are duly recognised, and awarded for best practices, while the non-compliant entities are stringently penalised to act as deterrence to others.

The global minerals and mining governing bodies should sanction countries that reduce standards of environmental compliance, like wise organisations found wanting contrary to international standards should equally be penalized. Such penalty could be suspension of mine lease for a period of time until remedies are carried out.

Effective agency coordination is critical; given that mining projects require different processes and procedures that involves multiple agencies, attainment of goals and objectives will be achieved through synergy.

Therefore, there must be no vacuum in legislation and ensure stakeholders wide consultation when there is a need to change laws and policies.⁵⁹

Transparency and accountability are critical to the overall success of any environmental management plan. Where enforcement agents are corruptible, the environment and the people will suffer. The sacred cow syndrome in Nigeria should be discouraged, and if necessary be criminalized.

Proper remuneration is advocated for officers to reduce the allure of bribes and other corruptive tendencies in carrying out their function, and sanctions should be meted to officers that are found wanting in a proper court of law. In the implementation of the EIA requirement for public hearing; the author opine that in order for the Free prior informed consent principle to be fully carried out, the hearing should be in the locality of the proposed mining activity and conducted in the native language of the area to be so impacted or provide an interpreter at such hearing sessions. This will enhance full participation especially where the locals are majorly not lettered.

⁵⁹ UN.ECA, Mainstreaming Governance of the Extractive Sector in the African Peer Review Mechanism Process, 116