

Government Policy and Administrative Framework for Environmental Protection as a result of Mining Activities Caused by Pollution in Kogi State.

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Abstract

Mining activities involve large land use and is accompanied by the vast impact on the environment such as deforestation, erosion, soil profile alteration, sewage, increase in noise level dust pollution and a general impact on the physical, socio-cultural life of communities where these activities are carried out. Current national environmental policies are based on the need to take an integrated approach to environmental management and the need to work towards the goal of sustainable development of great importance to the proposed research is the need to identify policies, legislations and regulations which will need compliance for protection of the environment from pollution resulting from the various artisanal as well as large scale mining activities in respect to the area and region of the proposed study. Because the area and region of the proposed study are within an area of significant importance in terms of its ecological and biological importance and proposed planning regime, it is also of importance that mining activities strike a balance between development and environmental protection. The research work access the implantation of the hazard management plan of companies within Kogi State as well as the implementation of corporate social responsibility of the company and came out with the conclusion that CSR does not equate the number of resources taken out of the state as the most community in Kogi State still in poverty and non-access to basic amenities and quality education and the monitoring team of the government are doing enough to enforce implementation state policy on Hazard management plan

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I. Introduction

They are a general saying that behind every success they are always a challenge if not well managed, Mining activities has proved to be a major source of concern to the physical, socio-cultural environment surrounding Kogi State, which is abundantly blessed with various rocks and minerals (Akubo and Omejeh, 2019). With its vast mineral potential, the state stands the risk of exposure to numerous pollutants that have devastating effects on humans, animals and the geophysical environment ((Momoh *et al.*, 2020; Aluko *et al.*, 2018; Nwajiuba, 2005).

Potential for Erosion on and off the site: Activities associated with construction (including land clearance, excavation and grading) in the proposed area would increase the potential for erosion. Once a catchment area has been levelled, the runoff (as a proportion of rainfall) is vastly increased. Therefore, during periods of heavy rainfall the volume of water carried by drains in levelled areas can be massive. The resulting rise in water levels can cause flooding and erosion. After construction and during the operation and maintenance of the Okobo coal field mining project site, there will be an increase in the number of impervious surfaces around the construction site. This exposed area is likely to increase the potential for erosion of the site. Extensive erosion could result in a change in the land use pattern of affected areas (Matthews-Amune and Kakulu, 2012).

WHAT CAUSES SOIL EROSION?

Soil erosion is a global challenge and the sign are all over for us to see, this menace doesn't matter whether it is in the rural or urban settings, erosion affects even untouched soils of pristine natural areas. The purpose for this is that erosion is caused by so many factors, originating from both natural processes and human activities. In some cases, it is the combination of more of these factors that influence soil stability and health. Mining is one of the major causes of erosion due to improper reclamation plans. Knowing very

well that mining is one of the activities that enabled the growth of our economies; has severely scarred the face of our planet and destroyed many unique habitats without mercy. Some of the world's largest mines cut as deep as 0.75 miles into the earth's surface and spread over an area of more than 2,000 acres.

Soil degradation and Soil/Groundwater Contamination: Soil degradation is defined as the long-term loss of soil productivity and the ability to provide crucial ecosystem services for the proper health and functioning of our planet. This includes services such as decomposition of organic matter and cycling of nutrients, formation of new topsoil and groundwater replenishment. A common problem of degraded lands is the sealing of the soil surface. This minimizes water infiltration and causes a myriad of changes to local hydrology. Increased runoff, for example, leads to frequent flooding after rain, while soil overall becomes drier because it loses its water holding capacity over the long term.

Construction equipment generates some volumes of waste oil. If fuelling, maintenance and servicing protocols for construction machinery at the worksite are not controlled, there is potential for impact due to leakage and/or spill. Improper discharge and/or storage, and leakage can result in the contamination of soils, surface water and groundwater. There is a potential for faecal coliform impact on the water from the shallow well located in the vicinity of the pit toilet. Possible contamination of groundwater due to project activities if not properly managed (Aluko *et al.*, 2018, (Matthews-Amune and Kakulu, 2012).

Reduction in air quality: According to Msheliza *et al*, 2021, he reported that approximately ninety-five per cent (94.07 %) reduction in air quality occur in okabo Kogi state. This may be due to impacts from air pollution resulting from activities such as crushing and grinding, during excavation, loading, beneficiation, haulage activities and emissions by internal combustion engines, diesel vehicles conveying the coal on the untarred road and coal-fired plant. It has been observed that the mining operators have not laid down adequate measures to prevent harmful emissions of dust into the ambient air which has health risks and hazards to plants, animals and humans and also greatly contribute to global warming and climate change. Project activities like vegetation clearing, excavation etc. will impact the air quality due to the generation of dust and gaseous emissions from the movement of heavy types of machinery. The particulate matter that would be released into the air could reduce visibility. The particles may settle on leaf surfaces thereby blocking stomata pores through which gaseous exchange occur during respiratory/photosynthetic activities. These impacts are, however, reversible and of short duration. Exhaust fumes from heavy machinery may contain gaseous hydrocarbons and noxious oxides like CO₂, NO₂ and SO₂. Gaseous discharges and dust particles from vegetation clearing, excavation and heavy machinery and vehicles during construction, if not controlled, could affect lung functions and may lead to aggravating respiratory disorders such as bronchitis and asthma. These impacts are direct and long-term (Aluko *et al.*, 2018).

The requirements of all relevant Nigerian environmental laws and legislation (World Bank, 2005; Umejesi, 2010) including *inter alia*, those of:

- i. **Environmental Impact Assessment (EIA) Act No 86 of 1992**, which restricts public or private development projects without prior consideration of the environmental impact.
- ii. **National Environmental Standards and Regulations Enforcement Agency (NESREA) Act (2007)**, which empowers the Agency to enforce all national environmental laws and regulations (except those related to the oil and gas sector) and international treaties or conventions to which Nigeria is a signatory. The Agency has issued 24 environmental regulations, which prescribe pollution abatement measures, limits and other safeguards for various industries and noise, surface and groundwater discharges among others.
- iii. **Nigerian Minerals and Mining Act 2007** The Nigerian Minerals and Mining Act 2007 ("the Act") was passed into law on March 16, 2007, to repeal the Minerals and Mining Act, No. 34 of 1999 to regulate the exploration and exploitation of solid materials in Nigeria. In addition to environmental considerations, this Act also considers the rights of host communities in mining areas.
- iv. **National Policy on the Environment**, to achieve sustainable development for the country and emphasis on (a) securing for all Nigerians a quality environment adequate for their health and well-being; (b) conserving and using the environment and natural resources for the benefit of present and future generations; and (c) restoring, maintaining and enhancing ecosystems and ecological processes essential for the functioning of the biosphere and the preservation of biological diversity and to adopt the principle of optimum sustainable yield in the use of living natural resources and ecosystems.
- v. **Land Use Act (1978)**, which recognizes the rights of all Nigerians to use and enjoy land and the natural fruits thereof insufficient quality to enable them to provide for the sustenance of themselves and their families.
- vi. **Endangered Species Act 11, 1985** Section prohibits the hunting or capturing or trading in the threatened animal species. **Land Use Act, 1978**
- vii. **The Nigerian Urban and Regional Planning Act 1992** Act 88 of 1992 established a Development Control Department (DCD) charged with the responsibility for matters relating to development control and

implementation of physical development plans at Federal, State and Local Government levels within their respective jurisdiction.

viii. **Kogi State Environmental Protection Board Law No.3 of 1995**, which states, among others, that no person shall cause any waste generated in the process of manufacturing or business operation to be discharged without treating or purifying it following the standards approved by the Board.

KOSEPB which was originally known and called KOSEPA (Kogi State Environmental Protection Agency) was established by Edict No. 3 of 1995 enacted by the Kogi State Government.

This an agency set up to monitor the activities of the companies within Kogi state, and ensure companies comply with environmental laws and guideline.

KOSEPA was state version of the then Federal Environmental Protection Agency (FEPA) which was established by Decree No. 58 of 1988 and replicated by all the states of the Federation,

The aim and objectives of KOSEPA include:

- (a) To promote a safe and healthy environment for the people to live in.
- (b) To ensure sustainable development in terms of the use of the environment.

Following the phase-out of FEPA and the evolution of the Federal Ministry of Environment (FMENV), the Kogi State Ministry of Environment and Physical Development was created in 2001 as done in other states of the Federation.

SEPA's continued to exist as parastatals under the state ministries of Environment. However, KOSEPA became a Board when a bill for the law establishing the Board was signed into law on 18th July 2006 while the law was amended in 2008.

The Board has a staff strength of forty-two (42) in four (4) departments namely:

- 1. Administration and Finance
- 2. Monitoring and Enforcement
- 3. Planning and Conservation
- 4. Laboratory service

The specific functions of the Board are as follows:

- (a) Monitoring the air, land and water to detect the presence of pollutants and other environmental nuisances to abate it.
- (b) Reviewing or processing the Environmental Impact Assessment (EIA) of the major development projects and conducting Environmental Audit (EA) of existing major projects for certification.
- (c) Inspection of industries to ensure environmental compliance.
- (d) Control of noise pollution.
- (e) Checkmating activities that degrade the environment e.g quarrying, sand mining, trenching and indiscriminate creation of burrow pits.

But the political will to enforce strict implementation of this policy is far from the agency as most mining companies violate the environmental law of the state, go unpunished, this deficiency has led to environmental degradation of most communities in Kogi state most especially host communities like Ankpa, Obajana, Itobe, Okaba, and some part of the state capital.

Environmental Challenge of Kogi State

The existence of mining activities in Kogi state has positively impacted so much on the economic development of Kogi State and it is so obvious that the blessing comes with challenges due to poor reclamation and illegal mining, according to Jaiye Dukiya (2021) mining operations generally alter the morphological makeup of the mining site as a result of excavation, quarrying and dumping of debris heaps. Once an abandoned mining site has been left without proper reclamation such area becomes a badland resembling erosional features like a canyon, mesa-buties and enduring (submorphic) hollows, And their sizes hinge on the dept of the targeted mineral and how far those material has been extracted from the site.

According to Jaiye Dukiya (2021), morphological changes can be particularly pronounced in hard rock mines, which tend to have very steep slopes and for which little material is left for refilling (e.g., in stone quarries). At the mining site in Pandogari, the overburden dumps left behind at the time of opening the mine, and the abandoned site like wells often causes ground subsidence by dewatering. The mining activities also interfere with the surface watercourses. A Series of major river tributaries and brooks were diverted from the mining wells which also affected the river regime. Apart from this, the washing of the mined minerals and the rainstorm find their way into the neighbouring streams thereby causing river turbidity and alkalinity. For instance according to Akinyede *et al* (2003), quoting Walter Lichem (2003), about 5000 times more people die each year from water-related diseases. The fact remains that; illegal miners are not mindful of any environmental implication of their activities and therefore have no plan for mitigation of any form. The alteration of the soil profile and rock-bedding plain at the mining site also interfere with the groundwater

regime. There is a resultant loss of groundwater quality due to the infiltration of contaminated wastewater and in washout and leaching of dumps, heaps and the mine itself.

Corporate Social Responsibility(CSR) in mining company of Kogi State.

The corporate social responsibility of Mining companies in Kogi state is observed to be too poor compared to resources taken away although in the course of this work it was discovered that Dangote coal mining company installed a solar driving borehole for the host community and few students are given various degree of scholarship which the community lamented that it does not outweigh the resources taken away from their community

According to Raufu (2005), the principle behind CSR is that it is a social investment that derives from the notion that “a company has a responsibility to the community in which it operates” adding that the CSR has come to be part of public relations because it affects the image of an organization. The purpose of CSR is image management, which is the essence of public relations between the community and the company. Deepankar Sharma & Priya Bhatnagar (2013) outline several reasons why CSR and other such voluntary initiatives are important for mining companies. Deepankar Sharma & Priya Bhatnagar (2013) outline some of the importance of CSR to the State:

The Hazards Management Program

According to UNC Institutional Integrity and Risk Management Environment Health and Safety The Hazards Management Program (HMP): this is a written safety and environmental plan for a work unit, which enhanced a framework for ensuring compliance with regulations about the protection of personnel and the environment. The UNC equally give the primary objective of the HMP are to make available safety information for an employee in each work unit, to provide documentation of compliance with occupational and environmental regulations, and to enhance information to the Environment, Health and Safety (EHS) department for use in determining job-specific training requirements.

Environment, Health and Safety(EHS)

The duty of EHS is to review the submitted HMPs, examining work locations, and ensure compliance with the regulations.

Supervisor

The supervisor has the responsibility of developing an HMP, relating its contents to his/her employees, maintaining safety/environmental compliance, and dispatch a copy to EHS.

Hazards Management Plan (HMP)

The HMP has nine essential elements

1. Work Unit Data

This Element produces data to EHS on the work unit location, supervisor, and after-hours phone number in the event of an emergency. EHS produce a work unit number by using the department and/or shop number to designate smaller workgroups within a department.

2. Personnel

This section detects each worker in the work unit along with their Professional Personal Identification (PID) number. EHS will take this information and enter it into a database. Once a work unit is established in the EHS database system, the work unit needs only to confirm that the information is correct or make modifications during yearly HMP updates.

3. Hazardous Materials Inventory

This element names all hazardous materials used or stored by workers in the work unit, including the manufacturer's name. (ex. Paint, oil, aerosol spray cans, compressed gas, etc.). List the size of the container in grams, liters, pints, quarts, or gallons and then list the number of items of that quantity in parentheses. Safety Data Sheet (SDS) – A dairy or data store that contains current copies of SDSs of materials being used or stored must be maintained and be **readily accessible** to all employees within the work unit. An SDS document must be on hand for every chemical that is used in the shop.

Method for keeping your SDS book in order:

- a. A detail of the chemicals located in the shop area should be inserted at the front of the notebook or data store for anyone to be able to access it fast /find an SDS form.
- b. For easy identification, it is advisable for the SDS book to be prepared in an orderly fashion so that anyone can easily locate a specific SDS form in the event of an emergency. (Preferably in alphabetical order.)
- c. The detail of new chemicals that are being used in the shop should have an SDS available to employees immediately.
- d. From time to time updating of Old SDS forms should be encouraged, and preferably SDS forms of chemicals that are no longer used should be taken out of the current SDS book and placed into a file.

Locations – identify the rooms or work areas (including trucks and other machines) where materials are kept when they are not being used.

Compatibility Group identifies the chemical's features designation:

- A: acids
- B: bases
- C: organics not listed in other groups
- D: flammable/combustible liquids
- E: inorganic oxidizers and heavy metals
- F: organic peroxides
- G: water and air reactive
- H: cyanides and sulfides
- I: highly toxic chemical
- J: compressed gasses
- K: aerosol cans

**The work unit can leave the Compatibility Group blank if they are not familiar with a chemical's designation.

The RCRA Code section is for EHS to complete. This section specifies the hazardous waste code.

Disposal Methods indicates how waste is managed or disposed of in the shop.

- T: trash
- L: commercial laundry
- R: recycled
- H: picked up by EHS

4. Hazardous Equipment

List the name and manufacturer of powered equipment used or stored by your work unit. List the number of pieces of equipment. Indicate the type of power: E-3 for electrical with ground wire, E-DI for double insulated electrical equipment, or P for pneumatic-powered equipment. List the type if other than E or P.

Indicate whether the equipment is fixed or portable.

List the designated users of the equipment.

5. Identification of Required Safety Training

Check the applicable training for the employees within your work unit. If some training is only required for one employee or a select few, complete a separate form for each individual or group. These forms are required to be turned in to EHS so that employees can be identified as needing specific types of training.

6. Personal Protective Equipment (PPE) Hazard Assessment

Review the operations within the work unit and then indicate whether there is a hazard that requires the use of PPE. Call EHS if you need help in deciding what PPE your specific type of work requires.

7. Job Safety Analysis (JSA)

JSAs are to be completed for the following operations:

- a. The most hazardous task.
- b. Least frequent task
- c. If an on-the-job injury has occurred in the performance of this task...

8. Environmental Issues and Hazardous Waste Management

The questions in this section are designed to gather information on your work unit's current waste management practices. The work unit is to describe how wastes from each operation are handled, including empty containers, leftover material (paint, aerosol cans and contaminated items (rags)). This information will be used to tailor waste management programs and training to meet the needs of each work unit.

9. Respirator Section

This section must be completed if employees wear respirators or have been assigned respirators. Describe how the respirators are used, the types of respirators used, and which employees use respirators. Completion of this section will aid in the management of the work unit's respiratory protection program.

II. Findings

Mining activity in Kogi State is of commercial quantity and is of a blessing to Kogi state because it has reduced the unemployment rate in Kogi State and has made a lot of the state youths independent most especially in Ankpa, Obajana, Itobe, and some part of Lokoja but the environment challenge resulting from the mining activities due to poor Hazard Management Plan so the research deems fit to outline a compressive hazard management plan for mining companies in Kogi State in order to reduce the environmental hazard in the state.

It was discovered that the corporate social responsibility of mining companies in the state can not equate the resources taken away so the need for improvement of corporate social responsibility is highly needed

as most settlers still leave in poverty, non-availability of basic amenities, quality education and workable health system and it has led to protest within the host community in most time.

III. Conclusion

This research is to examine the existing framework of mining company in Kogi State most Especially the hazard management plan as well as assessment of the company corporate social responsibility, but was discovered the implementation of the Hazard management plan is poor and the Corporate Social Responsibility is not satisfactory.

The paper produces a compressive hazard management plan and urge the government to mandate the companies to implement it to reduce the hazard effect of the company to its employees and communities as it was discovered that the state management team are not doing enough to cub the menace.

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