

## **Theme: Artisanal and small-scale Mining in Northern Nigeria**

### **Does the role of Legislation in Artisanal & Small-scale Mining ensure less Environmental Degradation in Mineral harnessing?**

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#### **I. INTRODUCTION:**

Nigeria is endowed with abundant natural resources, chiefly oil and gas on which the Country generates its source of revenue. It is one of the top exporters of crude oil around the World including the United States of America. Nigeria, a member of the Organisation of Petroleum Exporting Countries (OPEC), is an exporter of coveted high-(bonny light) and medium-grade crude oil (Pinto 1987). Administratively, it has gone through different systems of governance. It was under the British colonial rule until the 1960 when it got its independence and had a Democratic Government. Nigeria has also gone through 24 promulgation of Environmental policies from the Pre-colonial era till date. It started from an era when the protection of the environment was not a relevant issue, such that matters of water and air pollution were treated under the Criminal Code Act 1916 as offense of Nuisance. Following its independence in 1960 and the discovery of oil, it was apparent that the then policies were not adequate to tackle the environmental issues arising. This was due to the fact that most of the provisions on Environmental Protection were scattered throughout different laws, resulting in an ad hoc response to different needs in different situations (Ladan 2012). Nigeria has quite a number of environmental regulations regulated by different array of institutions mainly: ministry of solid minerals development, federal ministry of environment, federal ministry science and technology, federal ministry of water resources, federal ministry of agriculture and natural resources etc. The recent addition is the regulatory agency called National Environmental Standards and Regulations (NESREA) which was enacted in 2007 at the same period the Nigerian Minerals & Mining Acts, 2007 was enacted.

It is worth mentioning that the Modus Operandi of these policies is the Command and Control method, Top-bottom approach. It is interesting to note that despite the natural abundance it has, and the untapped reserve in crude oil, to which (Odularu 2008) argued that 'Nigeria's proven oil reserves are estimated to be 35 billion barrels, natural gas reserve are well over 100 trillion ft<sup>3</sup> (2,800 km<sup>3</sup>), the social status of more than half of its population has not changed much'. This is evident in the rate of poverty especially in the communities where these resources are harnessed. Secondly, the rate of environmental degradation in these areas are catastrophic. The natural ecosystem is polluted, Biodiversity of water system is lost because of enormous oil spillage and gas flaring has been an issue for decades. Indigenous varieties of crops are lost due to continuous exploitation and exploration of more oil wells. Ogru, 2001 argued that 'severe ecological damage has occurred in the Niger-delta area where most of the oil industries are based' (Ogru 2001). The critical question one will want to ask is, where is the place of legislation in all these Environmental mishaps? The best solution for oil dependence is diversification. When the economy is dependent on a single export sector, it becomes subject to excessive volatility, which hurts the poor' (Ross 2003). The present matter at hand is that Nigeria has made a proclamation to diversify the source of its revenue generation from Oil and gas to Solid Minerals in order to drive economic benefits that could reduce poverty and put the country on the same level with its developed counterparts. To date, the method of delivery of its regulation has not changed from what was obtainable in the oil and gas sector, which is the top-bottom approach. One begins to wonder if using this system in the new diversified mineral sector will be any better, this is owing to the fact that there is no significant achievement in reducing environmental degradation within the oil-rich communities despite the existence of seemingly active legislation. (Ogru 2001) further highlighted that 'statutory rules and regulations for environment protection applicable to the oil industry in Nigeria appear to be generally inadequate and ineffective (Ogru 2001).

This paper seeks to discuss and answer the research question 'does the role of legislation in artisanal & small-scale mining ensure less environmental degradation in mineral harnessing? This will be discussed drawing referential from the legislative challenges learnt from the oil sector of Nigeria. It will analyze the overview of ASM in Nigeria, the current policy in existence, Environmental challenges of ASM in Nigeria, faults or weaknesses of current policies and seek to find solutions through policy recommendation. The

methodology –Secondary data from literature review of peer-reviewed journals, government reports, World Bank report and some research surveys. The tendency to opine that legislation in ASM should ensure less environmental degradation is most likely but the analysis of the literatures reviewed will deduce a more substantial finding.

### **1.1 Overview of Artisanal & Small-Scale Mining in Nigeria:**

The area of study is the northern part of Nigeria and the mining hub of the Nation. Despite the abundance of mineral resources, chiefly Gold and Lead-zinc, most of the communities have very low or no literacy level and are poor in terms of social amenities and lacks Infrastructural developments. Community dwellers would frequently turn to mining at off-season when the rains are gone. The number of persons involved in this activity according to finding is close to 13 million worldwide. The international labour organisation extrapolates that the number of people directly employed in small-scale mining is between 11.5-13 million. Nigeria has above 1million engaged in ASM activities. This number will give a general overview of the massive scale of environmental degradation as a result of ASM activities in the Northern Region of the Country. Globally, this is obtainable in mostly developing countries where there are other issues of priority like climate change, insecurity and poverty. The resources needed to combat the menace environmental degradation from ASM activities is not readily available despite existing regulations. (Andrew 2003) argued that ‘virtually all of the governments of countries with a significant amount of small-scale mining lack the resources to properly improve and enforce regulations on these operations’ (Andrew 2003).

### **1.2 Current Mining Policies obtainable in Nigeria:**

The Nigerian Mining sector is regulated by policies formulated and implemented by the Federal Ministry of Solid Minerals Development. The current policies are:

1. The Nigerian Minerals & Mining Act,2007;  
This 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 Government of Nigeria (section1, NMMA, 2007).
2. The National Minerals and Metal Policy,2011
3. Nigerian minerals and mining regulation,2011

(Okeke 2015)

The Technical departments of the Ministry are as follows:

- Artisanal and small-scale mining department
- Mines environmental compliance department
- Mines inspectorate
- Mining cadastre office.

the cardinal responsibilities of these technical departments are to implement, regulate the policies of the ministry by ensuring that mineral exploitation is done with less environmental damage, inspect mines, report injuries, coordinate relationship between communities and mining operators, approve licences/leases and collect royalties and other forms of revenue.

### **1.3 Environmental Challenges of ASM in Nigeria:**

The environmental challenges obtainable in Nigeria’s ASM are basically massive deforestation of forested regions to give way to mining pits. Other examples are pollution of water bodies which adversely affect aquatic life and biodiversity. This is seen in areas where gold is mined and processed. Thirdly is the use of mercury to extract gold using the amalgamation process thereby releasing both vaporised mercury during heating and metallic mercury as a result of spillage of mercury. Metallic mercury eventually finds its way to rivers and agricultural lands whenever it gets washed off by precipitation.37% of global air emissions of mercury (Hg) are produced by artisanal and small-scale gold mining (ASGM). Studies published in articles from 1990-2012 in 19 different Countries in South America, Asia and Africa indicated that as a result of high concentration of vaporised mercury in the environment, a high concentration of mercury was evaluated in the urine and hair of individuals living in or near ASGM locations. These concentrations were higher than the World Health Organisation threshold (Gibb & O’Leary 2014). However, UNEP declared a legally binding document as a global instrument on Hg emission in 2009 which gave birth to Minamata convention on mercury, ratified by so many countries including Nigeria. This is a perfect example of what a comprehensive policy can produce. Perhaps, this is the best policy approach that governments of developing countries should adopt to combat environmental degradation from ASM operations in the long run. A legally binding documents ratified by affected countries on tacking other menaces like deforestation not just mercury emission could yield positive results. The need for technological assistance and transfer in countries with developing economies and health care infrastructure is critical. In resource-limited areas such as northern Nigeria, use of natural resources is an economic necessity. However, mining has exposed the communities to high lead concentrations, with devastating effects on the population. (Dooyema et al. 2012)

At this juncture, it is worth mentioning that despite the efforts to encourage local and international investors to engage in organised mining operations in the Country with the aim to diversify the source of revenue generation, the percentage of artisanal and small-scale miners' operators is more significantly higher. Over 90% percent of the mineral produced in Nigeria are harnessed through ASM operations, including gold which has a high commercial viability. The poor performance of the large-scale mining sector in Nigeria has left most of the industry in the hands of ASM operators, who conduct over 95% of mining (Oramah et al. 2015).

Despite the existing legislations/policies in Nigeria's Mining Sector, the issue of environmental degradation in ASM is significantly high. Previous solid mineral development policy decisions could not produce the desired outcome for which they were adopted, and the current solid mineral development policy does not seem to be adding much to the GDP of the economy (Ayodele, Akongwale & Nnadozie 2013). Hilton corroborated this finding from other countries when he reiterated that 'it is reported that in Brazil and Zimbabwe, recent legislation has not led to any significant improvements in the social and environmental conditions at small-scale (gold) mines (Hilson cited in Bugnoson 1999) (Hilson 2002).

#### **1.4 Faults/ Weaknesses:**

The major legislative fault in the Nigerian Solid minerals sector is the enactment of environmental regulations, policies under different institutions with similar or same roles under the same administrative dispensation. This fault is enough to create overlapping duties and conflicts of roles between environmental institutions. This created a diversification of what their mandates ought to be in terms of protecting the environment to allegations and counter allegations between institutions. An example is the enactment of the Nigerian Minerals & Mining Acts, 2007 and the enactment of NESREA Act, 2007, whose major role is the formulation of environmental policy, monitoring, compliance and enforcement of environmental standards and promoting best practices in all sectors including the mining sector. Bearing in mind that the Federal Ministry of Environment has also the same mandate. The department of Mines Environmental Compliance (MEC) under the NMMA, 2007 has almost or the same function. This is obviously a repetition or duplication of duties. With all these, the issues of environmental degradation keep rising instead of reducing. This might exactly lead to what happened in the oil and gas sector which eventually led to the present, enormous environmental problems, chaos and volatility in the communities. It is ineffective for environmental pollution control and prevention not to pursue adequately inter-agency cooperation and collaboration including information sharing and exchange among government agencies and other federating units that have similar mandate or overlapping functions' (Ladan 2012).

Secondly, the top-bottom type of approach used in Nigeria's policy implementation has not yielded much dividend in terms of public's responses or feedback. Developmental issues either remain stagnated or get worst as a result of the somewhat dictatorial format of top-bottom approach. The oil and gas sector despite its global position as the 10<sup>th</sup> exporter of crude oil had no positive impacts on the livelihood and social status of the Nigerian citizenry especially those in the communities where crude is harnessed. Consultation in the story of Oil and Gas sector was lacking or not comprehensive, a repetition of what is exactly happening in the ASM Sub-sector of Nigeria. All forms of consultation in the life of a policy before making a recommendation to a cabinet, is needful especially the consultations that require the input of the communities (Bridgman & Davis 2003) reiterated that 'for many technical decisions, consultations is a mandated part of decision-making, such as requiring the use of environmental impacts statement'. The place of the community in policy formulation and policy implementation cannot be overemphasised. In the case of sub-Saharan Africa, the predominantly 'top-bottom' approach taken to formalise and support ASM has resulted in, inter alia, the dissemination of inappropriate processing and environmental technologies, the implementation of Bureaucratic licensing schemes and design of ineffective and/or incompatible regulations (Childs 2008). Communities are usually the custodians of most natural resources used as raw materials in industrialization. Participatory inputs of their concerns and indigenous knowledge, in addition to implementing a decentralised, bottom-up policy approach should be a force to be reckoned with. Australia is a good example of such policy approach.

Thirdly, evaluating a policy is as important as understanding or identifying the environmental challenge itself. Evaluation gives room for reassessment of the implemented policy and draw a conclusion if there are loopholes that needs to be tightened up. Re-evaluation could lead to a policy review to capture newer challenges especially in the advent of so many anthropogenic activities and growing population. In Nigeria, often, once a policy is implemented, evaluation is neglected despite accumulated newer issues arising. This was exactly what happened in the oil and gas sector of Nigeria and the same trend is observed in the mining sector, despite the menace of ASM on the environment. The enacted policy of 2007 of the Mining sector has neither being reviewed nor evaluated despite growing concerns of ASM. (Weiss 1999) analysed that 'despite seeming neglect of evaluation, scholars in many countries have found that evaluation has real consequences: it challenges old ideas, provides new perspectives and helps to re-order the policy agenda'.

### **1.5 Policy Recommendation/Solutions:**

First and foremost, the harmonisation of different arrays of environmental institutions to form a single institution with several departments with specific mandate on improvements in the environment through monitoring and enforcement should be clearly spelt to each department. Collective efforts from these departments will achieve the set targets of each department. This is neither as difficult nor as exotic as it might sound, and this is in fact part of the working knowledge of skilled policy practitioners, who realise that achieving concerted action means building both the team and the shared understanding that makes it work (Colebatch 2005).

There is no policy that is a bad policy unless the processes are not coordinated properly. Often, organisations identify problems, formulate and implement policies and the process ends there. In developing countries including Nigeria, there is usually no funding to make concerted efforts to reevaluate the process. Public servants who are responsible for implementation through monitoring and enforcement become so used to their roles that a redesign of the policy process becomes a challenge. Reevaluation of policy on a departmental level then collating different findings to reevaluate the policy on a broader context could yield an improvement in the life of a policy.

Secondly, weak enforcement especially in mining related issues has created a wide gap that policy advisers are strongly to combat. The problems of ASM seem to be making little progress despite the enactments of legislation in most developing Countries. The legislation does exist, but enforcement is too weak. Often, repeated call for legislative frameworks that can accommodate small-scale mining in individual countries may have been heeded in the developing world, in terms of the enactment of formal legislation (Sinding 2005). However, Tarras-Wahlberg et al noted that 'furthermore, National regulations stipulating how mining should be conducted in an environmentally-sound way exist, but are seldom enforced, despite the need for urgent action' (Tarras-Wahlberg et al. 2000).

Thirdly, it is obvious that ASM cannot be eliminated as it is strongly argued to be the source of livelihood in so many communities in poverty-stricken communities despite its negativities. Governments of Nations including Nigeria should find a way of living with it and dealing with it. Alternatives to deal with it, such as Regional Collaboration with relevant stakeholders ravaged by environmental challenge caused by ASM could adopt a regional policy as the case maybe, with International supports from organisations such as the World bank that will coordinate Resources in terms of Funding, Technology and Knowledge.

Implementing achievable policy instruments such as incentives, to turn abandoned pits to fish ponds, water reservoirs for irrigation of crop lands can generate employments for the youths. Other jobs the youths can be employed to do is to replant trees and replace pile of overburdens to excavated pits, using simple technology and research recommendations provided as resources from the World bank.

## **II. CONCLUSION:**

The importance of public policy in the governance of any Nation especially in the Developing nations where social and environmental issues are on the increase is imperative. It provides some form of orderliness in governance and increases productivity in all facets of the nation's sectoral targets including combating environmental issues. The lessons drawn from the ineffective policies in the oil sector of Nigeria should be a lesson to avoid reoccurrence in the mining sector. Nigeria has all it takes in terms of man-power to combat the menace of ASM. Its policies too seem promising but lack of effective enforcement to achieve the desired compliance is lacking. ASM could be a veritable tool in combating poverty in communities but it requires an effective, vibrant policies that will be formulated with equal participation of relevant stakeholders especially the communities. Incorporating community participation could lead to empowerment in terms of knowledge and leadership positions for Communities. It could also provide some sort of employment for individuals who might be working in collaboration with the Federal and environmental agencies in protecting the environment. Evaluating the existing policies, to capture newer challenges, incorporating community participation, decentralised system of policy implementation and resources in terms of funding, research and technology could improve on existing policies in Nigeria's ASM sub-sector. How successful countries will be moving forward on the path of prosperity will depend on how well they are able to design and implement public-policies and compete among themselves to unleash the creativity of private markets (world bank report)

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