
**RE-INVENTING AND RE-ENGINEERING MINING AND QUARRY INDUSTRIES:
A PANACEA TO THE DILEMMA OF ECONOMIC DEVELOPMENT IN NIGERIA**

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ABSTRACT

Nigeria is richly endowed with vast but untapped natural resources which include solid minerals. Mining industries have been viewed as key driver of economic growth and development process, and as the lead sector which drives economic expansion to higher levels of social and economic well-being. Contribution from mining and quarry industries to Nigeria's GDP is still very low at 0.5 percent compared to other countries like Ghana, Botswana and Indonesia which are usually between 2-8 percent. One of the major factors responsible for this is the over dependence on the proceeds from the sale of crude oil. Consequently, this is done at the expense of other sectors such as solid mineral, agriculture etc. It is against this background that this study is focused on examining how this sector could be re-engineered and re-invented in order to address the dilemma of economic development in the country. In the light of this, this paper employed the ex-post factor design as its methodology as well as structural functionalist theory as its framework for analysis. Findings from the study reveals that mining and quarry industries have contributed to the growth and economic development of Nigeria. The paper concludes that the contributions of this sector is marginal owing to certain myriad of problems that beset the sectors such as inadequate funding, poor policy implementation, legal debacle, problem of skilled personnel, etc. Above all, the paper maintains that, mining and quarry industries can be rejuvenated to serve as means of economic diversification.

INTRODUCTION

Nigeria is no doubt a middle-income emerging market economy with a Gross Domestic Product (GDP) based on purchasing power parity (PPP) valuation of US \$401 539 million in 2011, GDP per capital of \$2471 and annual GDP growth rate of 7.5 percent (OECD, 2012). It is ranked 30th economy in the world and its currently underperforming manufacturing sector is said to be the third-largest on the continent, producing a large proportion of goods and services for the West African region. It is the world's eighth largest exporter of oil and Africa's second largest economy, after South Africa. With its large population estimated to be over 170 million people, Nigeria accounts for 15 percent of Africa's population and contributes 11 percent of Africa's total output and 16 percent of its foreign reserves (Oteh, 2009).

For too long, the economy has been dependent only on one economic activity (oil), at the detriment of other sectors of the economy like mining, quarry, manufacturing, etc. (Afolabi, 1991). Nigeria is richly endowed with vast natural resources that are widely distributed across the country. Among these resources are solid minerals, petroleum and natural gas. About fifty solid minerals have been discovered in five hundred locations in the country (Madueke, 2009). Consequently, mining is practically done in all the states of the federation. Mining industries have been viewed as key drivers of economic growth and as key component that drive economic expansion which can lead to higher levels of social and economic well-being.

The decline of solid minerals industry in Nigeria started with the discovery of crude oil. Consequently, Nigeria became a mono-product economy which makes it vulnerable to intentional oil politics and its repercussion, no doubt, led to the neglect of these huge economic potential. This made Nigeria to experience the “Dutch disease” reflected by an appreciating exchange rate and subsidized imports, while discouraging non-oil export which in Nigeria’s case includes the solid minerals sector which hitherto the discovery of crude oil was a major contributor to economic growth, (Martin & Subramaman, 2003 cited in David, Noah and Agbalajobi, 2016).

The collapse of oil price, the increasing rate of youth unemployment, the youth restiveness in Niger Delta, the global economic recession, among others, have combined to force the Nigerian government on the need to diversify the revenue base of the country’s economy. It is believed that mining sector can also make significant contribution to the economic growth and development of the country by reducing the over-dependence on oil as the major source of foreign exchange earning especially now that Nigeria’s economy is in recession. In realizing this, several efforts have been employed by successive Nigerian governments to establish some agencies in an attempt to revamp the sector. Among these are: The Nigerian Mining Corporation (NMC), The Nigeria Coal Corporation (NCC), The Nigeria Uranium Mining Corporation (NUMC), The Associated Ores Mining Company (AOMN) (Adekeye, 1999).

Nonetheless, the neglect of the mineral industry (mining and quarry) has led to disorder in the minefields with attendant problems such as the presence of illegal miners whose activities are characterized by inefficient mining, illegal trading of highly priced minerals, severe ecological degradation, spread of ailments from metals such as lead poisoning disease and huge loss of revenue to the government through smuggling. The above therefore brings these questions into focus: To what extent can mining and quarry industries contribute more significantly in revamping the country’s economy? Where and how has the federal government got it wrong in the mining and quarry industries? What are the factors that militate against the success of these sectors in Nigeria? How can these sectors be re-engineered and re-invented to serve as a panacea to the dilemma of Nigerian economic development?

It is in view of these questions that this study is carried out to suggest how mining and quarry sector could revive Nigerian economy and lead Nigeria to development.

METHODOLOGY

This study adopts ex-post-facto design. In addition, qualitative method of data collection was employed in generating information for this study. Data were collected from secondary sources such as published books, journals, conference papers, periodicals and official documents from the Ministry of Solid Minerals and National Bureau of Statistics (NBS), Abuja. Content analysis was used to analyse the data.

THEORETICAL FRAMEWORK

Theory provides the structure on which research findings are analyzed, interpreted and predicted. In an effort to articulate a theoretical framework that can explain how mining and quarry substructure of the economy can interrelate and interconnect to ensure the survival of the whole economic structure, this paper adopts structural functionalist theory. Proponents of this theory include **Auguste Comte (1788-1857)**, **Herbert Spencer (1820-1903)**, **Emile Durkheim (1858-1917)** and later, the theory was refined by **Talcott Parson (1902-79)**. These scholars view society as a system, i.e. as a set of interconnected parts which together form a whole. They argue that the basic unit of analysis is society and its various parts are understood primarily in terms of their relationship to the whole (**Haralambos & Holborn, 1980**). The interrelationship and interdependence of these units of the social system is essential to the existence of the whole system. Also a defect in any part of these system may lead to the collapse of the whole social system.

In relation to the topic under study, Nigerian economy is a whole system that has sub-structures. For economy as a system to survive, all the substructures must mutually cooperate, interlace and interdepend on one another since they exist within the same organizational framework. This explains that each component part or sector of the economy co-exists and this complex relationship existing between and among the resources of the economy and the outputs that emanate from such resources over a specific period of time, keep the whole system of the economy alive. The developed countries of the world have been able to achieve economic fortune because their economies are articulated. Each of the economic structures and sub structures are highly connected and interdependent. An output in one particular sector serves as an input in other sector for maximum economic development. However, Nigeria and other sub-Saharan African countries are beset with economic challenges because their economies are disarticulated, disjointed and petroleum sector is over dependent on at the detriment of other sectors of the economy – agriculture, industry - mining & quarry, etc. The output from agriculture which is intended to serve as input to other sector like industry, health etc. are not feasible because the industries are dysfunctional and ineffective. Also the output in mining and quarry industries which supposed to serve as input in automobile, technological industries is a mirage in Nigeria. This is what is applicable to other sectors of the Nigerian economy.

This lopsidedness and over-dependence on one sector of the Nigerian economy as the major source of income at the detriment of other sectors like agriculture, mining and quarry industries has drastically affected the country's economy, particularly in the recent time when the country could not finance her annual budget. The increase in inflation rate from 9.2 in June 2015 to 18.5 in December 2016 due to the drastic fall in the price of crude oil in the international market from over \$100 per barrel to \$42 per barrel, has pulled the Nigerian economy into recession. Hence, the need to diversify the economy

from oil based to other sectors like mining, quarry, agriculture, industry etc. (National Bureau of Statistics, January 2017).

MINING AND QUARRY INDUSTRIES IN NIGERIA: WHERE AND HOW THE FEDERAL GOVERNMENT GOT IT WRONG?

Mining and quarry industries are no doubt important sectors of Nigerian economy. They have the capacity to revive the economy and lead the country to sustainable development. In an effort to revamp and re-engineer these industries as means of reducing the over dependence on oil as a major source of foreign exchange earnings and as a means of diversifying the economy, successive governments established some agencies, namely: the Nigeria Mining Corporation (NMN) The Nigeria Coal Corporation (NCC) The Nigeria Uranium Mining Corporation (NUMC) The Associated Ores Mining Company (AOMC), creation of mining calaster system in mineral tittle administration, the Minis inspectorate office response for the enforcement of legislative and collection of royalties, The Mining Environment Compliance Department, the Artisanal and Small Scale Mining Department, responsible for organization and encouragement of scale mines.

One of the aims of the government efforts was to increase production in these sectors to at least 183.012 long tons aggregately. Nigerian peak production was in the late 1950s and by 1966 production was at 565.681 long tons (David, Noah and Agbalajobi, 2016). However, production in this sectors declined especially when abandoned by colonial companies and production never recovered. This made the objective for establishment of these agencies a mirage.

Apparently, the National Iron Ores Mining Company which was given the mission to explore, exploit, process and supply iron ores could not achieve its objective simply because the federal government failed to provide enabling environment for it to strive. The existing deposit of minerals such as columbine waframine tantalum, iron ores, uranium etc. which are deposited across the Nigerian states like Lagos, Ogun, Edo Osun, Kogi Cross River Adamawa, Taraba, Kano, Bauchi, among others, shows how naturally endowed Nigeria is in terms of mineral resources. These resources could ordinarily transform the economy but failed to do so (Nwaobi, 2008). Marble and iron ores experienced about the highest average production growth from an output of 1830.0 tones production increase production increased to 5,680.0 tones in 1987 by a staggery 3301.59 from 2.1370 in 1985 to 72,691 tones in 1987. There were decline in production in 1980, 1990 and 1983. However marble output increased by 31.89 to 22,61600 tones. In spite of this impressive growth, the share of marble solid minerals production, Nigeria has been very negligible less than 1% except in 1956, 1987, 1990 and 1991. The Nigerian Marble Mining Company at. Igbeti in Oyo State, and Jukura marble plant, lokoja which both constitute the main producers, of marble in the country could not pull the GDP of these sectors above 1% this was largely because of lack of political will on the part of government to fully implement the solid minerals development policy.

Nigeria launched Solid Minerals Development Policy which is fundamentally binged on the Minerals and Mining Act of 2007. However, there were earlier efforts toward the development of the solid mineral sector though with very little success. Some of these

policies include: The New National Policy of Solid Mineral Development (1998), the enactment of the Seven-Year Strategic Plan for Solid Mineral Development in Nigeria (2002-2009), establishment of the Nigeria Geological Survey Agency, establishment of Sustainable Management Of Mineral Recourse Project, a World Bank assisted programme, establishment of the Miners Environment Compliance Department to ensure best international practices and establishment of the Artisanal and Small Scale Mining Department as a focused department for small entrepreneur and local content.

The rationale for these solid mineral development policies was hinged on the demand for mineral commodities which has been on the rise. This is partly attributed to emerging economies of Asia and Latin America as well as the burgeoning global population which ordinary should create great economic opportunities for Nigerians and lead Nigeria to economic development. Despite the huge economic potentials in mining and quarry industries, the sector has largely failed to live up to the expected growth and development projection that followed the first oil boom in the 1970 (Anyawu, Oyefusi Oakkhenan and Dimowo, 1997). In 2010, Nigeria was ranked 142nd out of 169 countries by the United Nations Human Development Index. This suggests that up to 5% of Nigeria are considered to be poor. Nigeria, no doubt, has evidently grappled with resource curse, the term which refers to the paradox that countries with an abundance of national resources such as fossil fuels, solid minerals etc. turn to have lower economic growth and poor development outcomes in contrast to those countries with fewer national resources (David Noah and Agbalajobi, 2016). Evidence of this argument abound in the cases of Ghana, Bostwana in Africa and Indonesia in the Asian region that have fewer national recourse particularly in the area of mining and quarry compare to Nigeria. These sectors of the economy in these countries have contributed between 2-8 percent of the GDP as against 0.5 percent in the case of Nigeria. The major factor responsible for this is as a result of over dependence of the Nigeria's economy on the proceeds from the sale of crude oil for over five decades this is at the expense of other sectors such as solid minerals and agriculture which ordinarily proceeds from crude oil would have been used by the federal government to develop the economy by means of diversification.

Given the role played, by the solid mineral sector, although marginal, prior to the discovery of oil, it is apparent that mining and quarry industries had the capacity to contribute immensely to the economic development of Nigeria in the pre-independence years. However, previous solid mineral development policy decisions could not produce outcomes for which they were adopted and the current solid mineral development policy does not seem to add much to the GDP of the economy. Thus the sector has not developed beyond its current abysmal level because the sector has failed to achieve its primary objective as stipulated in the Mining and Steel Development policy 2016, which include:

- i. To achieve sustainable increase in GDP contribution by the minerals sector.
- ii. To generate quality geo-science data.
- iii. To establish transparent licensing regime.
- iv. To formalize artisanal and small scale mining operators.
- v. To eradicate poverty through Artisanal & small scale mining operations.
- vi. To generate employment opportunities.

- vii. To create wealth through value addition.
- viii. To increase capacity of mineral based industries.
- ix. To attract private investment capital (Ministry of Mines and Steel Development, 2016)

Nevertheless, informal artisan and small scale mining operators who have devised means to explore the sector are regarded as illegal. Thus, the sector could not create wealth value addition, increase capacity of mineral based industries that would generate employment opportunities for Nigerians.

Furthermore, the right to ownership of mineral resources are held by the Nigerian government. The government grants title license to organization to explore mine and sell minerals resources. This is a set back to the development of the sector (Madueke, 2008). Thus, the effectiveness of these objectives rely on its full implementation but policy abortion is one of the problems of economic development in Nigeria. Sound political will on the part of government is therefore required as a requisite to re-invent the mining and quarry industries. In recent times, the contribution of mining and quarry industries is at its low ebb owing to poor quality geo-science data that can help in the area of maximum exploration and extraction of minerals and quarry. There is poor licency regime private investor to investormully in the sector.

However, in recent time, Nigeria mineral potentials is not fully explored in spite of several solid mineral development polices with fantastic objectives owing to over reliance on oil proceeds which remain vulnerable to external shocks in the global oil price and lack of political will. The primary objective of the Buhari Administration on solid mineral development is to take maximum advantage of the increased international commodity price and the global resurgence of exploration activities, coupled with the political benefit to the Nigeria economy as a whole that has for too long depend mostly on oil revenue. Hence, the need for economic diversification. If what Malizia and Feser (2002), Miler (1972), Siyan (2001), Awe (1996), Nnadi and Falodun (2003) and Umoh (1986) mean by economic development is long period of sustained growth, the per capital real increase Gross Domestic Product (GPD) of a commodity accompanied by fundamental changes in the structures of the economy and an overall sustained improvement in the material well-being of the people, then the structural change in the economy which take the form of increase on industrial employment can be achieved through a higher per capital increase over rate of growth of population over a long period of time Evidence has shown that inspite of the economic potentials in mining and quarry industries, these potentials have not translated into economic growth and development. Their contributions to the Nigeria's economy is still below 1%. However, for the sector to develop beyond its current abysmal level, a critical evaluation and reform of policy is imperative which could develop further the enabling environment for the sectors to be re-engineered and re-invented in order to achieve its primary objectives.

RE-INVENTING AND RE-ENGINEERING MINING AND QUARRYING INDUSTRIES: A PANACEA TO THE DILEMMA OF ECONOMIC DEVELOPMENT IN NIGERIA

Solid minerals in general and mining and quarry sectors in particular, have the potential to contribute significantly to the economic development of a country if they are properly re-invented and re-engineered. Mining can create significant economic benefits which include the direct benefits that come in the form of income and employment as well as the indirect benefits that come in the form of local or international purchase of mining inputs (Akongwale, 2013). These contributions are discussed as follows:

1. Employment and Poverty Alleviation: The solid mineral sector (mining & quarry) has the potential to contribute immensely more than it is currently contributing to the country's revenue. It can provide jobs in allied sectors, as well as help to alleviate poverty in Nigeria. **The National Bureau of Statistics (2011)** conducted a socio-economic survey to determine the contribution of the mining sector to job creation and the fight against poverty. It was discovered that, in 2009, mining and quarry industries generated 4,858 jobs for Nigerians while in 2010, 5,792 jobs were also created, with average monthly salary of N26,575,32 and N22,475,30 between 2009 and 2010 respectively.

The mining and quarry sub-sector also contributes considerably to the economy especially in terms of the amount it provides as wages to those engaged in it. Between 2009 and 2010, it experienced close to 22% uptick in the number of persons employed formally in the sector from 4,558 in 2009 to 6,792 in 2010. The emolument increased marginally from N1.55billion to 2009 to N1.56billion in 2010. These figures refer to their engagement in employment in the sector and does not include the statistics of those employed in auxiliary sectors and small business that provide services for the sector. One of the allied sub sector of the solid mineral industry is the building and construction industry. The number of persons employed and those engaged by this increased between 2009 and 2010. The total wage bill that accrued to workers in this sector rose from N27.26billion in 2009 to N32.23 billion in 2010 couple with the increase in workers employed (Ayodele, Sabastine and Nnadozie, 2013).

Mining and Quarry sub sector impacts on related sectors of the Nigerian economy: The growth rate of this sector, even though unstable shows that periods of high growth will impact positively on sectors such as building and constructions, real estate and cement industry that depend to some extent on the raw materials produced in the solid minerals and mining sector. This indirect and important role of the solid minerals and mining is very important since activities in the building, construction, real estate and cement industries are leading economic indicators. Specifically, the sectors are important to the overall economic growth and development as indicator such as housing starts are leading economic indicators which give direction to the economy. The construction in particular is important for its multiplier effect because of the close relationship between the sector and others such as transportation, building materials, agriculture, financial, etc. (David, et al, 2016).

Industrialization Development in Nigeria: Solid mineral and particularly mining and quarry sub sector has contributed to the development of industries in Nigeria. The establishment of industries in the country is necessitated by the availability of raw materials. The sector is seen as engine of growth for example the establishment of the Ajaokuta Steel Company (ASCL) in Ajaokuta, Kogi State and Delta Steel Company in Aladja created by the National Iron Ore Mining Company with the mission to explore, exploit, process and supply Iron Ore. Also, the establishment of the Nigerian Marble Mining Company at Igbeti in Oyo State and the Jakura Marble Plant at Lokoja, in Kogi State were also necessitated by the availability of these minerals etc. (Auty, 1990). Demands of the mining industry creates spinoff industries promote sustainable growth in Nigeria facilitate infrastructural development which then can be used by other industries. Bulk materials such as Iron Ore, Copper or Coal, mining creates great demand for transport infrastructure. The gold output of even a world-class gold mine can be flown out, with a need only for road sufficient to supply output. More so, infrastructure are dedicated entirely to the needs of the mining industry as in the case of railroads that are used for large multibank iron ore or coal frame. Construction of railways across the length and breadth of Nigeria was done along this line. Also, mining operation facilitate large scale power project in Nigeria this is because a large mine need substantial power.

Local Development through Social Corporate Responsibility (SCR): Where mining takes place, opportunities such as creation of Community Health Care Centres, schools, roads, etc. are obvious to abound. For instance, construction of Kabba-Obajana road by Dangote Cement Industry at Obajana in Kogi State and provision of other social amenities to the people of the locality among others. All these contributions are considered miniature since the sector can contribute exponentially to the economic development and can lead the country overall development if the sub-sectors are reinvented and re-engineered. However, there are myriad of challenges that have contributed to the abysmal contribution of mining and quarry industries, these problems are exposted below.

CHALLENGES MILITATING MINING AND QUARRY INDUSTRIES IN SERVING AS A PANACEA TO ECONOMIC DEVELOPMENT IN NIGERIA

In spite of the giant stride that mining and quarry sub-sectors have made in promoting economic growth and development in Nigeria as discussed above, a lot of challenges are militating against the optimum performance of the sector, particularly in recent time when the country's economy is in recession. Some of these challenges will be discussed below.

Over dependency on Crude Oil: The discovery of crude oil in 1956, oil glut of the 1970s and early 1980s have drastically affected the solid minerals industry to an extent that the overall contribution of mining to the National Gross Domestic Product (GDP) has been declining and was about 0.5% in 2009. The domineering role of oil did not allow past government to attend to global challenges that evolved in the development of solid minerals. Also, the level of investment in solid mineral exploration and development is far below that of oil and gas industry that has seen as exponential growth since Nigeria became a petrol state.

Solid Mineral Act (1999) & Land Use Act of 1978: The solid mineral acts, in consonance with the provision of the 1979 and further strengthened in the 1999 constitution, made mining and other solid minerals an exclusive of the Federal Government. The constitution does not empower the federating units – state and local government to take part in the mining industrial activities. The provision of the constitution and the solid mineral Act make mining solely a state-owned venture, that is, Federal Government of Nigeria. Also, another the key factor responsible for the low contribution of mining and quarry sector to GDP is the land use Act. The Act restricts the supply of urban land and forces developers and miners to follow complex procedures to obtain mining and building permits. According to the Act, the government is the owner of most of the country's land which is held in trust on behalf of the people. Nevertheless, there have been attempts at reviewing the Act although with little success.

Inadequate Funding: Government do not pay attention to solid mineral industry. This is because, larger percent of the Nigerian national budget goes for recurrent expenditure, less of government money is available for capital expenditure which has direct impact on building and construction sector and therefore indirectly on the solid mineral and mining sectors. Prior to the present Administration of President Buhari, only about 30% of the budget of the federal government is allocated for capital expenditure. Only recently, it has increased to 40%. The poor implementation of the budgets means that the 30% or 40% allocation is not even use judiciously. Consequently, one can conclude that poor budget implementation indirectly militate the solid minerals, mining & quarry sector (Ayodele, 2013).

Inadequate Skilled Manpower and Poor Economic Condition: This is another great challenge facing mining/quarry sector in Nigeria. There are no skilled manpower such as geologists that will survey and provide adequate data about the available solid minerals in the country. However, the local mines who out of their skills and initiative engage in the exploration of these resources are regarded as 'illegal miners'. Also government does not create enabling environment, economic condition to incorporate private sector and local-illegal miners formally into the sector. Economic condition such as granting small scale loan to these people are not available.

Corruption and Poor Implementation of Solid Mineral Development Policy: These are also major challenges to solid minerals mining and quarry sector in Nigeria. The reason for this is that, most times the implementation of mining policy, the little amount allocated to the sector to implement development policy is being diverted by certain cabals. This can also be said to building and construction sector, industrial sector, power sector, among others.

Lack of Modern Technology: There is no adequate modern technology for the exploration, processing of solid minerals or even extracting it. The available local technology are outdated and are below international expectation in the mining and quarry industries. Nigerian industries or facilities are incapacitated to produce much needed

modern technology for extraction, exploration and processing in mining and quarry industries, thus, is a great challenge to the development of this sector.

POLICY RECOMMENDATIONS

The fact has become apparent that we are in a global era of small government – minimal government involvement in business and investment activities. Given the failures of most of the past government on solid mineral policy, when there was direct government involvement in the solid mineral exploration. Therefore, to re-invent and re-engineer this sector, there is need for the government role to be more open-minded, market-oriented and in a private sector led economy. The role of the government in the development of the mining and quarry sector should be that of a facilitator/regulator and not that of the drivers of growth in the sector. Hence, the government is expected to create a conducive macroeconomic and socio-economic environment which will facilitate trade investment in the field mineral sector (mining and quarry). In the same vein, government fiscal policy – tariffs and tax system should be favorable to industries in the sector.

Specifically, other government policy action should include:

1. **Encourage private sector participation:** Government should come out with stable policy guidelines that will create enabling environment for the private sector to invest more in and quarry mining sector. The primary strategy should be to make the private sector the key to the development of the solid mineral sector. Private sector should play a leading role in local sourcing or raw material, manpower development, technological innovation and adoption and support for research and development in the mining and quarry sector.

2. Government should ensure transparency, accountability and maintaining of compliance with mining laws and regulations and incorporate those local/illegal miners into the main stream of the sector so that mining sector can be used to create more jobs and wealth for the country and as well as a means of diversification of the Nigerian economy.

3. **International Awareness:** Government's efforts should be directed at drawing international awareness to investment and business prospects in the solid mineral sector in Nigeria. Currently, the investment environments in Nigeria are skewed only toward oil/energy related sectors. Also, important is the fact that most of the investors that can finance huge scale solid minerals exploration are foreign investors.

4. **Infrastructural Development:** This is important if any meaningful Foreign Direct Investment is to be attracted to the solid mineral sub sector. As earlier pointed out, the role of the government is to create the enabling environment and not to be in charge of the business sector and thus stimulate growth of investment and business. Thus, government should focus on improving infrastructure such as power supply, good roads amongst others as this will encourage more foreign investors, who have the requisite finance and expertise to contribute to the development of the solid mineral sector.

5. **Manpower Development:** From the foregoing, it is evident that solid minerals has a very high prospect for job creation in Nigeria. To expand this further, investors should be required to promote on the job training for young school leavers especially for those in SME solid mineral related jobs. There should also be a strict adherence to labour and standards. Importantly, the use of foreign employees in such sectors should be limited or curtailed.

6. **Promote Raw Material Supply:** Private investors should be encouraged to explore and process raw materials locally for use in the solid mineral development sector. Also, there is need to support geological surveys to explore new areas for mineral development.

7. **Timely Review of policy:** The evolving nature of the solid mineral industry, the failure of previous solid mineral development policy and the dynamics of the global market it means that there is a need for timely review of government solid mineral development policy taking cognizance of changes in standards, technology, markets and other matters that may arise from the implementation of these policies.

CONCLUSION

The paper has examined how re-inventing and re-engineering mining and quarry industries can contribute more significantly to the Nigerian economy. It also x-rays the challenges that have been facing the sector since the discovery of oil and oil boom in Nigeria. The paper argues that solid minerals – mining and quarry sectors have the potential to contribute exponentially to the economic development of the country even more than what was obtained in the pre-independence period. The paper also maintains that, mining can create significant economic benefits which include the direct benefits that come in the form of local and international purchase of mining input. Therefore, the paper concludes that mining and quarry sector has a great contribution towards economic development in Nigeria. In spite of these tremendous achievement recorded by solid minerals industry in the country, the paper maintains that, its role to the total economic growth and development of the country is marginal.

Thus, for this sector to perform optimally and serve as a panacea to the recent dilemma of the country's economic development, it is therefore imperative for the federal government to re-invent and re-engineer the sector as a means of diversifying the economy from oil. This can be achieved through proper application of some of the recommendations that will be discussed below.

References

- Aboyade, O. (1983), *Growth and Development, with Special Reference to Developing Economies*, London, Macmillan Publishers.
- Adebayo, A. (1996), *Economics: A Simplified Approach*. Lagos, Africa International Publishing Limited.
- Adekeye, J. D. (2010), *Impact of Conflict on Mining in Nigeria*. I.N Albert, I. O and Olarinde, O. N (eds), Trends and Tensions in managing Conflict, Society for peace Studies and Practice (SPSP), Ibadan, Nigeria.
- Akongwale, S., Ayodele, O. & Udefuna, P. (2013), *Economic Diversification in Nigeria: Any Role for Solid Mineral Development?* Mediterranean Journal of Social Sciences Published by MCSER-CEMAS Sapienza University of Rome Vol 4 No6

- Anyanwu, J., Oyefusi, A. Oaikhenan H. & Dimowo, F. (1997), *The Structure of the Nigerian Economy (1960-1997)*. Onitsha, Joanee Educational Publishers Ltd.
- Auty, R.M (1991), *Resources-Based Industrialization Saving the oil in Eight Developing Countries*, Oxford University Press.
- Awe, B. (1996), *Social Factors in Development: A Workshop on Agenda for Sustainable Human Development*.
- Belshaw, D. & Livingstone, I. (2002), *Reviewing Development in Sub-Saharan Africa: Policy, Performance and Prospects*: London, Rutledge.
- David, O., Noah O., & Agbalajobi, S.A (2016), *An Empirical Analysis of the Contribution of Mining to Economic Development in Nigeria*: In Journal of Social Science, University of South Africa, Vol 3, No 6.
- Federal Ministry of Mines and Steel, (2012) *Roadmap for the growth and development of the Nigerian Mining Industry*
- FGN (1978), *Land Use Act of the Federal Republic of Nigeria*. Chapter 202 Laws of the Federation of Nigeria- 1990
- FGN (1999), *The Nigerian Minerals and Mining Act*.
- Gary, M. & Susana, M. (2014), *The Contribution of the Mining Sector to Socio-economic and Human Development*: World Bank Oil, Gas and Mining Unit Paper.
- https://en.wikipedia.org/wiki/Mining_industry_of_Nigeria
- Haralambos, M. & Holborn, I. (1980), *Sociology: Theories and Perspectives*, Fulbarn, Collins Publishers Ltd.
- Killick, T. (1990), *Structure, Development and Adaptation*. AERC Special Paper 2, Nairobi, Kenya.
- Madueke, A. (2009), *Opportunities in Nigeria's Mineral Sector*, Ministry of Mines and Steel Development, Abuja, Nigeria.
- Matin, S. and Subramania, A. (2003), *Addressing the National Resource Curse: An Illustration from Nigeria*: NBER Working Paper No. 9804
- National Bureau of Statics (NBS), *National Living Standard Survey, NLSS (2004)*.
- Nnadi, K. & Falodin, A. (2003), *New Approach Economic*, Ikeja, Longman Nigeria, Plc.
- Olayide, S. (1979), *Economic Survey of Nigeria (1960-1975)*, Ibadan, Aromolaran Publishing Company.
- OEDC (2012), *African Economic Outlook*
- Oteh, A. (2009), *The Role of Entrepreneurship in Transforming the Nigerian Economy*. Seventh Convocation Lecture, Igbinedion University Okada, Edo State.
- Roderick, G.E. (2001), *Mining and Economic Sustainability: National Economies and Local Communities*. Division of Economics and Business, Colorado School of Mines, USA.
- Siyam, P. (2001), *Classical Growth Models and Nigeria Economic Development: A Case Study of Harrold-Donar Model*, In Journal of Development and Society Vol. 1 No. 3, December.