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Economy beyond Oil: Harnessing Nigerian Solid-Mineral Deposits for Sustainable Development

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Abstract: *The world is continuously looking for alternative to oil and reasonable discoveries have been made to that effect. The deposit of bitumen in Igbokoda, Ondo State of Nigeria is unarguably the second largest deposit of bitumen in the world, yet it remains untapped among other huge solid mineral deposits found all over the country. No wonder high percentage of Nigerians live below poverty line, unemployment is on the rise and productive capacity of the country is at its lowest ebb. In view of the above, the study adopts an eclectic approach to examine the challenges and prospects of the solid mineral sector in Nigeria. Drawing from the secondary data and existing literature explored, it is revealed that huge successes were recorded from the massive utilization of solid minerals before the discovery of oil in commercial quantity in Nigeria. The paper recommendations that for Nigeria to break loose from the problems inherent in a mono-cultural economy, there is need for urgent shift to solid-mineral exploration.*

Keywords: *Nigeria, Oil, Sold-Minerals, Economy, Development,*

Introduction

There is no gainsaying the fact that Nigeria is a mono-economic country since it currently operates majorly an oil economy. No wonder it has been caught in the web of multiply debt burden and has been unable to fund its annual budget without borrowing. With volatility in the global oil prices and often the volatile growth of the economy, the country has wasted much of its opportunities to break away from underdevelopment despite its massive natural and human resources endowments

The dependence of Nigeria on crude oil to grow the economy has brought nothing rather than misery to the generality of the population. Despite the huge revenue proceeds amounting to over US$600 billion in foreign exchange (Ngozi, Charles, and Mansur, 2003), the country could best be described as witnessing a "jobless growth" (Nasir, 2014). The mining of solid minerals in Nigeria accounts for only 0.3% of its Gross Domestic Product, due to the influence of its vast oil resources. The domestic mining industry is underdeveloped, leading to Nigeria having to import minerals that it could produce domestically, such as salt or iron ore. Rights to ownership of mineral resources is held by the Federal government of Nigeria, which grants titles to organizations to explore, mine, and sell mineral resources. By the 1940s, Nigeria was a major producer of tin, columbite, and coal. The discovery of oil in 1956 hurt the mineral extraction industries severely, as government and industries both began to focus on this new resource. Prior to the early crude oil booms of the 1970s and the 1980s, solid minerals such as coal, tin and columbite contributed immensely to the economy of Nigeria. For example, coal was the source of power generation as well as the main source of energy for the railway transportation systems. Nigeria was at one point in time too, the largest world producer of tin and columbite mined on the Jos, Plateau and the earnings were used to develop the economy (Akongwale, S.; Olumide, S. A.; Udefuna, P. N., 2013). As rightly captured by Adekeye (1999) coal and tin ranked high as Nigeria's foreign exchange earners during the colonial period and after the country's independence in 1960.

Historically, Nigeria's mining industry was monopolized by state-owned public corporations. This led to a decline in productivity in almost all mineral industries. However, Obasanjo administration began a process of selling off government-owned corporations to private investors in 1999. It is important to note that the mining sector did not command economic planners and policy makers' attention after independence.

According to NEITI audit report on the solid minerals industry 2007-2010, over N2.21 billion was paid as royalty by operating companies, N51.4 billion as taxes by some companies/major players in the industry. Ground rents/annual surface rents payments attracted over N173.94 million in addition to N122.92 million in levies to the government (NEITI, 2013). The Central Bank of Nigeria (CBN) for the same period under review as captured in the NEITI audit report, also reported that over 1,618 export

transactions were carried out by 86 companies with a total revenue collection of N8.91 billion. The solid mineral sector has a lot to offer if the right attitude and political will is redirected at revamping and developing the sector.

Review of related literature

Olumide S.A., Akongwale S. and Udefuna P.N (2013) also looked at the non-oil sector and focused on the solid mineral sector using both quantitative and qualitative analysis in showing that the sector has great potentials in contributing greatly to the economy, stating that the sector can stand as a source of job creation and by this eradicate poverty and also help in wiping off problems that are linked with the "enclave" nature of the Nigerian economy through the strengthening of the sector policy and the government creating a conducive atmosphere in order for the private sectors to be in control. Oyedokun O.M and Igonor E.E (2013) reviewed the development on solid minerals situated in the south west region of the economy based on the recent reforms which happen to be beneficial in sustaining possible mineral exploration, mining activities, ensuring quality returns on investment and promoting good investment climate through the use of statistical analysis and international literature associated with mining and investment. Results showed that the occurrence of mineral resources goes beyond the political boundaries and having examined the current mining policy reform, discovered that the economy is in a process of being changed into an alluring mining destination for both the foreign and local investors. Stephen J. Mallo (2012) examined the mining sector stating that the mining of minerals only contributed 0.3% to the GDP of the economy despite the huge mineral potentials of Nigeria. He also looked at the mineral policy framework, the state of public mining companies' privatization including its limit of volume held in transforming all sectors in the economy through the provision of employment, wealth creation and by providing Nigerians with the necessary skills needed. Also in his review of the literature on the related subject matter analyzed a similar work on the mining sector from Oscaline O. (2012) investigations which showed the federal government stated that the solid mineral sectors contribution to the economy might have risen from less than 3% to about 11% in the past one year which was as a result of the recent sectors reform which led to improvements in the sectors operation and resulting to a rise in the private investment through the foreign and local companies. Mr. Sada M. (2012) former Minister of Mines and Steel Development stated that improvements are being seen in the sector while nothing that benefits were gotten from the minerals and mining sector with their contributions rising to about 11%. He added that most of the revenue generated by the sector was not alleged for by the operatives thus stating that more useful adjustment should be made to promote effectiveness, liability and also the reduction or elimination of corruption. In developing solid minerals sector to enhance economic growth, Fatima Sule, (2014) made an analysis from available records showing that the Nigeria's mining industry is underdeveloped stating it has only contributed 3% to the country's GDP with viewers 11 stating that the country's solid minerals are being exploited due to the emergence of petroleum, with the revenue generation gotten from crude oil becoming the main strength of the country's economy. However they mentioned that positive moves are being made to rejuvenate the solid minerals sector due to its usefulness in the country's development plans. A policy was formulated to regulate the operations in the mining sector with seven selected solid minerals such as gold, coal, iron ore, limestone, barytes, bitumen and lead/zinc. Mr. Sada M. former Minister of Mines and Steel Development stated that the listed minerals have great potentials and the ability to generate jobs and wealth for the nation. Mrs. Alison-Madueke D., former Minister for petroleum also stated that the seven selected solid minerals was based on the fact that these minerals could be seen in commercial quantities over the geopolitical zones of the nation while Malam Goni S. former director of Nigeria's Cadastre Office made emphasis on the commitment of the government's approach on the well-formed effective exploitations on minerals, stating that they would add significantly to the nations development. He also made mention of the Mineral and Mining Act of 2007, that the government should be stabilized in order for the foreign investors to be assured on the mining industry through the introduction of new inducement and institutional policy changes.

A study by Maduaka A.C. (2014), analyzes the long-run relationship and also the importance of solid minerals and its impact to the economic development. Using the time series data for real exchange rate, real GDP, solid mineral output, and gross capital formation, a preliminary graphical study of the trend in solid minerals contribution to Nigeria's real GDP shows that over time, the linkage of solid minerals to the real sector steadily declined with a couple of structural breaks. However, result reveals a possible long run interaction amidst solid minerals, capital accumulation and real exchange rate and based on the co-integration tests, the estimated normalized level coefficients shows the anticipated long run beneath the unregulated model with the unrestricted long run equation result revealing solid minerals to be positively responsive to real GDP which shows a feedback relationship between solid minerals production and real GDP.

Adeniyi et al (2013), in their analysis on the legal regime for exploring solid minerals for economic growth in Nigeria, employing mainly qualitative analysis. The study revealed that the solid mineral sector remains crucial to economic development, wealth creation and poverty alleviation in any nation that is blessed with such mineral deposits and concluded that Nigeria government should adopt best practices and mechanisms that have been used by different countries to formalize and regulate mining explorations in order to attain sustainable development in the mining sector in Nigeria.

Akongwale et al (2013) in their analysis on the role of solid minerals on economic diversification in Nigeria, employing both qualitative and quantitative (descriptive) analysis, the study shows that the solid mineral sector in Nigeria has the potential to contribute immensely to the economy of Nigeria. Specifically, it reveals that the development of the solid mineral sector could help to combat poverty in Nigeria via job creation; especially, given its forward linkage with other sectors of the economy. Most importantly, it could help alleviate some of the problems associated with "enclave" nature of the Nigerian economy that has for too

long being vulnerable to fluctuations in global oil prices. And concluded that the realization of these potentials need the strengthening of Nigeria's existing solid mineral development policy and creation of an enabling environment by the government for the private sector to take the lead in the sector.

Adekeye (2010) in his study on the impact of conflict on mining in Nigeria revealed that there is much more to be gained from the development of mining sector than is usually organized and there is very much to lose from the non-development of the sector.

Agba (2007) in his study on economic analysis of natural resources sustainability for the mining sector component in Nigeria, employing both qualitative and quantitative (descriptive) analysis, the study revealed that Nigeria stands to benefit from the development of solid minerals sector and concluded that the government must provide enabling environment for the private sector investment in mining. Finally, from the review of the literature above, almost all the studies employed mainly qualitative and descriptive analysis in their research work as against this current research which focus on the ex-post facto assessment of economy beyond oil: harnessing Nigerian solid-mineral deposits for sustainable development.

Sustainable national development

The sustainability concept is a modern world concept which refers to long-term human and material sustenance. Sustainability is central to all development efforts. Without it, investments in the development effort are short-lived and of no effect. In more broad and encompassing definitions, sustainable development is defined as development that meets the needs of the present without even compromising the ability of future generations to meet their own needs. The definition as expounded by the World Bank Commission on Environment and Development (WCED) (1987). These are measured by the Human Development Index (HDI). The three components of HDI offer an alternative to Gross National Product (GNP) for measuring the relative socio-economic progress of nations. It enables people and their governments to evaluate progress over time and to determine priorities for policy interventions. It also permits instructive comparisons of the experiences in different countries (UNDP, 1994).

Development of Nigeria's Solid Minerals Sector: A Historical Perspective

The exploitation of the solid minerals sector dates back to 1901 when many European companies started to organise mining of tin around Jos in small holdings and gradually moved into other areas of the country. Their activities were then overseen and guided by the colonial officers. In December 1903, official geological surveys commenced when the colonial government inaugurated the Minerals Survey Committee. The Committee was to carry out reconnaissance of the mineral potentials of the Southern and Northern Protectorates before undertaking the more detailed and more expensive task of geological mapping of the regions. The outcome of the survey include the discovery and documentation of the lignite bodies of Asaba-Ibusa-Ogwashi environ, occurrences of galena, tinstone, columbite, monazite, limestone and clays in various localities of Southern Nigeria. In Northern Nigeria, significant contributions include location of some occurrences of iron-ore near Lokoja, marble close to Jakura and tin in parts of Kabba, Ilorin and Zaria. In 1909, coal was discovered along the Udi escapement as the major output of the mineral survey of Southern Nigeria. Exploitation effort was made with the setting up of the Geological Survey of Nigeria and the subsequent disbanding of the Regional Mineral Surveys. The activities of the Geological Survey of Nigeria during the World War II was mainly in search of strategic minerals such as wolframite and tantalite in pegmatites of Central Nigeria and further on tin and columbite of Jos Plateau. The post-war period witnessed a change in orientation which was geared towards control, order and supervision in the sector; hence the enactment of the Mineral Act of 1946. Efforts were also concentrated on solid mineral fuels notably coal seemingly required as energy sources for industrial and economic propagation. Thus increased political awareness, prompted the then British Government to set up a Commission of Enquiry which recommended that independent bodies be set up to manage government established businesses. In 1950, by the Ordinance Number 29, the Nigerian Coal Corporation was created and charged with the responsibility to prospect, mine, treat and market coal by-product in Nigeria. Thus coal production attained a peak value of about 1 million tonnes per year by 1952/1957 and became one of the major foreign exchange earners for the then British colony. After the country attained independence, the activities of Geological Survey of Nigeria was intensified to examine and assess several occurrences of valuable minerals. In 1964 and 1967, government enacted the Explosive Act and Regulation which regulates the importation of explosives, manufacture, storage, transportation, sales and use of explosives. The Quarries Decree of 1969 regulates the issuance of licences and leases for the exploitation of all naturally occurring quarrible minerals. In 1970/1974 Plan Period, direct Government participation in the sector began with the establishment in 1972 of the Nigerian Mining Corporation (NMC) to prospect for mine, refine and deal in all minerals except coal (which all along has been mined only by the government-owned Nigeria Coal Corporation.) All newly discovered minerals are vested in the Nigerian Mining Corporation (NMC) and no further concessions were granted to Private enterprise. In addition to direct participation during the Plan period, government also undertook extensive mineral survey, exploration and mineral deposit appraisals. Further effort to develop the sector was made during the 1990/1992 Rolling Plan Period. Based on government's on-going re-establishment of the Nigerian economy and wide framework of the 1989 Industrial Policy of Nigeria, encouraged investments and promote a greater Private sector participation in exploration and mining operations. In 1995, the Ministry of Solid Minerals Development was established by the government in order to enable the sector have necessary attention needed. Although efforts have been made to develop the sector, but have been relegated to the background with the discovery of petroleum. The sector has always been an appendage of one Ministry or the other where it received little or no attention. Poor or inadequate funding has always been its lots while poor staffing and absence of a National Mining Policy further compound the

problems of the sector. Also, in the recent past, the sector has witnessed so much undue interference and usurpation of powers of the Federal Government with regards to solid minerals exploitation from States and Local Government Authorities. This has been attributed to ignorance of Mining Laws and quest for revenue by these authorities. Such a situation has proved detrimental to smooth operations in the mine fields.

Current Situation

With the removal of the multinationals and their emigrant specialists caused in part by the civil war and in part by the Indigenization Decree (1972), the magnitude of the private sector in the movement of mining rested on the indigenous small scale miners. The shallow, the near shallow and the external depth deposits seem to have since been totally depleted. This led to the creation downturn particularly in the metallic minerals. As a result, the pace at which the mining activities shifted to technical, building and industrial applications for the home industries and non-metallic minerals needed for construction. Furthermore, the down turn in the nation's economy is adversely affecting exploration and exploitation of even the non-metallic minerals. As at now, mining has become very disorderly. A certain number of determinants responsible for the unattractive trend includes: badly structured and grossly un-implemented Inspectorate Department of the Ministry; dearth of manpower to take a close observation of the minefields with their aim being to ensure the conformity to safety standards and man the gate that identifies the mineral goods exported.

Problems of the Solid Minerals Sub-Sector

Small scale miners' incapacitation

Government has long realized that the growth of any industry, be it manufacturing or mining, is best promoted by the efficiency of small scale operators; they provide most of the employment and generate the diffusion of technology far more effectively than a small cluster of very big operations, for example, in the petroleum industry dominated by a few giant operators, in spite of the enormous contribution of this sector to the public revenues, these giants directly employ no more than 10,000 persons. For this reason, special attention shall be given to the problem of small scale miners to identify their special needs, their requirements and capabilities and the constraints to their rapid development and growth. Not every mineral deposit is of interest to the large scale miner. There are deposits whose reserves or geology would not warrant the investment in capital and equipment that would justify exploitation by a large scale investor for a short period. Such deposits are attractive to small scale miners with very little investment in equipment and overheads. Their problems range from difficulties in obtaining title to the mine lands to lack of access to finance for their initial development and working capital, lack of information about markets, lack of access to technology arising either out of ignorance or lack of the basic technical skill to be able to utilize the current technology. The small scale sector is therefore unorganized, haphazard, and often disorderly in its operations. If the needs of this group can be substantially met, they could make a great contribution to the growth of the economy. For this reason, special programs of assistance will be developed for financial intermediation, technical extension services both for production and for product handling and micro processing and packaging for the market, for assistance in organization into co-operatives or joint stock ventures, for organization of the market etc.

Illegal Mining

With the very wide dispersal of mineral deposits all over the country, the contingency of illegal mining is pervasive; it involves traditional miners who have lost their regular jobs as paid miners, people who are trying to eke out a living in mining areas, applicants who cannot wait so long for delayed approval for their applications, government officials who get involved for pecuniary motives, merchants who encourage the illegal miners to sell their products to them and thus provide a ready market for the minerals at prices higher than they would have otherwise fetched, non-miners who buy minerals from holders of Form K licenses issued for specific minerals like tin, columbite, tantalite and gemstone destined only for export and use this vehicle to repatriate their naira holdings at all costs. These last groups are mostly foreign speculators who do not want to go through the Central Bank procedures. Illegal mining gives rise to environmental degradation, utter disregard of safety and health requirements, loss of revenue to government and general lawlessness and disorder in the minefields.

Methodology

The paper adopts an eclectic approach. First, it is descriptive in nature in the sense that it provides a detailed account of urgent need for harnessing solid-mineral deposits and how it could promote sustainable development in Nigeria. It is exploratory because the paper delves into the hidden wealth in the subject of study and national development by espousing the investigative stance of exploratory research. Also, it is explanatory because it attempts to look at the effect of the contributions of the solid-mineral sector to economic development of Nigeria. The paper also employed historical research design, as it seeks the opportunities and potentials in harnessing solid-mineral in Nigeria and experiences of the past.

Nigeria's solid mineral endowment

The Table below shows distribution of solid Mineral deposits across Nigeria

S/N	STATES	MINERAL TYPES
1	ABIA	Glass sand, limestone, salt, shale, ball clay, galena, granite, marble, laterite, bentonite, phosphate, kaolin, pyrite, feldspar, lignite, gypsum, sphalerite, clay
2	ADAMAWA	Granite, clay, gypsum, limestone, uranium, kaolin, coal, trona, barite, salt, marble, magnesite, laterite
3	AKWA IBOM	Clay, glass sand, salt, silica sand, granite, coal, kaolin, limestone, lignite
4	ANAMBRA	Iron stone, clay, sand stone, kaolin, pyrite, lignite
5	BAUCHI	Trona, kaolin, cassiterite, gypsum, mica, tantalite, galena, iron ore, gemstone, silica sand, sphalerites, barites, columbite, lead/zinc, muscovite, quartz, tin, glass sand, salt, monazite, feldspar, graphite, wolfram, coal, stone aggregate, tantalum, rutile, tungsten, copper, talc, ilmenite, zircon
6	BAYELSA	Silica sand, salt
7	BENUE	Bentonite, crude salt, limestone, glass sand, gemstone, barites, feldspar, marble, mica, slilica sand, galena, quartz, lead/zinc, clay, coal, gypsum, kaolin, anhydrite, calcium, sulphate, brick clay, crushed and dimension stone, fluorspar, wolframite, bauxite, shale, magnetite, ilmenite, brenite
8	BORNO	Natural salt, silica sand, topaz, sapphire, mica, quartz, gypsum, uranium, iron ore, magnesite, feldspar, granite, aquamarine, nepheline, limestone, kaolin, bentonite, laterite, refractory clay, trona, gold, tin, potash
9	CROSS RIVER	Limestone, salt, coal, manganese, mica, ilmenite, gold, quartz, glass sand, tourmaline, kaolin, tin ore, sharp sand, clay, talc, granite, galena, lead/zinc, goethite, muscovite, uranium, barites, rutile
10	DELTA	Laterite, kaolin, gravel, silica sand, ball clay, bauxite, granite, sharp sand, clay
11	EBONYI	Lead/zinc, salt, limestone, ball clay, refractory clay, gypsum, granite, silver
12	EDO	Charnockite, copper, gold, marble, granite, gypsum, diorite, lignite, limestone, ceramic clay
13	EKITI	Lignite, clay, charnockite, quartz, limestone, granite, gemstone, bauxite, cassiterite, columbite, tantalite, feldspar, kaolin
14	ENUGU	Coal, lead/zinc, limestone, barites, kaolin, iron ore, silica sand, salt, laterite, clay
15	GOMBE	Limestone, coal, lignite, gypsum, clay
16	IMO	Kaolin, laterite sand, limestone, salt, marble, shale
17	JIGAWA	Potash, talc, glass sand, granite, laterite, kaolin, silica, iron ore, quartz, limestone
18	KADUNA	Gemstone, gold, granite, Muscovite, manganese, clay, graphite, sand, zircon, kyanite, tin, columbite, ilmenite, bismuth, lithium, wolframite, cassiterite, talc, feldspar, rutile
19	KANO	Thorium, wolframite, monazite, granite, hyalite, beryl, amethyst, gold, tin, clay, laterite, cassiterite, columbite, galena, ilmenite, phyrochlorite, kaolin, gemstone, silica, silver
20	KATSINA	Gold, manganese, laterite, feldspar, black tourmaline, amethyst, quartz, kaolin, mica, gypsum, sillimanite, clay, granite sand, uranium, asbestos, tourmaline, serpentine (chrysotile asbestos), chromites, ilmenite, diamond, graphite, iron ore, potash, silica
21	KOGI	Iron ore, gemstone, clay, sand, marble, limestone, feldspar, dolomite, phosphate, mica, cassiterite, granite, ornamental stone, coal, kaolin
22	KEBBI	Bauxite, clay, gold, salt, iron ore, feldspar, limestone, quartz, manganese, kaolin, mica
23	KWARA	Kaolin, silica, clay, dolomite, quartz, marble, feldspar, gold, tantalite, cassiterite, granite, limestone
24	LAGOS	Bitumen, silica sand, sharp sand, gravel, laterite
25	NASARAWA	Emerald, garnet, sapphire, topaz, barites, Galena, monazite, zircon, glass sand, coal, cassiterite, gemstone, amethyst, beryl, chrysolite, salt, kaolin

26	NIGER	Gold, kaolin, ball clay, limestone, granite, glass sand, iron ore, red clay, feldspar, graphite, cyanite, silica sand, quartz, asbestos, marble, talc, gemstone
27	OGUN	Gypsum, limestone, quartz, tar sand, kaolin, feldspar, silica sand, mica, granite, clay, phosphate
28	ONDO	Bitumen, gold, marble, clay, diorite, lignite
29	OSUN	Talc, granite, clay, dolomite, ilmenite, feldspar, quartz, limestone, mica
30	OYO	Aquamarine, amethyst, tourmaline, dolomite, marble, talc, clay, feldspar, granite, ilmenite, iron ore, kaolin, quartz
31	PLATEAU	Tin, columbite, tantalite, cassiterite, gemstone, dimension stone,feldspar, monazite, clay, kaolin, dolomite, mica, zircon, marble, ilmenite, barites, talc, galena, quartz, bismuth ore, gamet, tourmaline, copper, topaz, bauxite, silica, sharp sand, granite, gravel, rutile
32	RIVERS	Silica, glass sand, clay
33	SOKOTO	Limestone, gypsum, kaolin, potash, granite, laterite, salt, clay, silica, phosphate
34	TARABA	Salt, trona, barites, uranium, bauxite, sand, granite, clay, fluorspar
35	YOBE	Gypsum, diatomite, clay, sand, bentonite
36	ZAMFARA	Gold, lead/zinc, clay, sand, barytes, iron ore, lithium, wolframite, manganese
37	FCT	Marble, granite, dolomite, iron ore, lead/zinc, feldspar, gold, clay, laterite, sand

Source: MSMD, 2016

From the minerals distribution above, it's obvious that there is no section of the country that would not benefit from massive solid mineral related activities. The mineral spread in Nigeria is significant with evidence of about 34 different solid minerals distributed in Nigeria's richly endowed landscape. Although not all the mineral occurrences ultimately have enough reserves to be of viable interest to mining companies. Nigeria has several previously explored mines that could be re- opened. The gold mining opportunity in Nigeria could be very much like that of Ghana only if abandoned mines could be redeveloped. Nigeria's endowments of solid minerals in commercial quantity cover a wide range such as mineral fuels- bitumen, lignite, coal, uranium, thorium, iron and Ferro alloy metallic minerals iron, nickel, manganese, chromium etc.; non-ferrous metallic minerals such as lead, zinc, tin, aluminum, copper etc.; minor metallic and related non-metallic minerals- antimony, cadmium, zirconium etc.; precious metals - gold, silver, building and structural minerals- limestone, stone, asbestos, gypsum, marble, sand, gravel etc. ceramic minerals- clay, dolomite feldspar etc.; chemical minerals - sulphur, potash, salt etc.; refractory minerals– fluorspar and metallurgical, limestone, refractory clays, dolomite, graphite, etc.; abrasives – corundum, diatomite, quartz sand, etc.; industrial and manufacturing minerals – asbestos, mica, talc, monazite, etc.; gemstones – emerald, amethyst, ruby, sapphire, etc. Nigeria's solid minerals subsector forms a vital part of the Nigerian economy with a great promising increase, at its complete realization, having many resources for the public sector as are currently raised by the petroleum sector. It should be expected to contribute to the gross domestic product about as much as is being contributed currently by petroleum resources. It certainly has the potential of providing more employment than the petroleum sector. Solid minerals can contribute a large proportion of the input into the industrial sector. However, their full development requires considerable input of men and materials over a long period of time; a good part of this is expected to come from outside the Nigerian economy. The policy therefore, addresses the possibilities of attracting substantial foreign investment into this sub-sector. A dominant feature of this sub-sector is that the possession of all minerals is approved in the Federal Government; this is in part legal, i.e. by Decree and by Act of the National Assembly, and in part constitutional. Government is also heavily involved through a number of monopolies there is a long trail of a multitude of very small operators in other solid minerals. The State therefore has to use its power and position in this sector to meet the goals of competence, rectitude and environmental sustainability.

Opportunities and Potentials in Solid-Mineral deposits in Nigeria

There is no doubt that the oil sector produces about 90 percent of Nigeria's export earnings but the emerging trend according to Onodugo, (2013) indicates that the economy has been growing without job creation and poverty reduction as most of the oil wealth is concentrated in the hands of less than 1 percent of the Nigerian population. Worse still, the sector is disconnected from other tiers and sectors of the economy and thus offer little or no linkage of multiplier effect to the economy as a whole (Godwin, E. E., and Ubong, U., 2015).

The situation today has assumed a chaotic dimension, with the majority of state governments unable to pay workers' salaries in the face of dwindling oil revenue. Most of these states depend on revenue from the federal government to run the economies of the states. Yet the country is said to be the largest economy in Africa and the 26th in the world (Suberu, et'al, 2015). It is clear, therefore, that the adverse consequences of over dependency on oil heightened the need and call to diversify the Nigerian economy away from

oil towards the direction of non-oil exports (Godwin, et'al, 2015). This is anchored on the premise that the non-oil sector (especially solid minerals) has great potentials to propel the Nigerian economy to the desired growth and development path. It was on this premise that Asu, 2013 as cited by Godwin and Ubong, 2015 quotes Femi Adesina, as saying that Nigeria needed to envision and evolve a nation beyond oil or it 'perishes'. "Nigeria must now diversify, or die."

The lack of proper attention to the solid minerals sector, Nigeria today is losing huge amounts in foreign exchange (over US$200m) that would have been otherwise earned or retained at home as a result of importation of minerals that are available locally. This position was further buttressed by Nasir, (2014) that because of the neglect the industry has suffered for several decades, it leads to a situation where minerals that could be produced locally were been imported such as barites which are in high demand in the oil industry thereby losing billions in foreign exchange.

Though Nigeria has great potentials in solid minerals to develop the economy, its contribution to the GDP is still abysmal, and unfavourable compare to others Sub-Saharan countries like Botswana, Namibia, DR Congo and South Africa in respect of GDP and export value generated from solid minerals (David, Noah, and Agbalajobi, 2016). The petrodollar from oil no doubt led to the neglect of this huge economic hub. The "Dutch disease" (Auty, 1993) has crippled Nigeria from reaching its desired growth potentials.

Conclusion and recommendations

Solid minerals have the potential to contribute significantly to the economic development of any country. Mining can create significant economic benefits which include the direct benefits that come in the form of income and employment generation. Therefore, there is every indication that solid mineral have great contributions toward economic development of Nigeria. This study therefore recommends increased government support to public and private resources allocated to mining development in Nigeria. Government should come out with stable policy guideline that will create enabling environment for the private sector to invest more in mining sector, ensure transparency, accountability and monitoring of compliance with mining laws and regulations so that mining sector can be used to create jobs and wealth for the country and as well as diversification of Nigerian economy. Government should come out with stable policy guideline that will create enabling environment for the private sector to invest more in solid mineral exploration, ensure transparency, accountability and monitoring of compliance with mining laws and regulations so that mining sector can be used to create jobs and wealth for the country and as well as diversification of Nigerian economy. It is also recommended that the Federal Government should strongly participate in processing solid minerals. One of the major challenges of expanding the economic base of the country is financial constraints. Therefore in these harsh days of austerity, it would be certainly unfair to expect the government alone to pour into the solid mineral the large sum that is required to revitalize the comatose solid mineral ventures. It is invariably recommended that government should apply all necessary measures to attract foreign direct investment (FDI) to support her efforts alongside indigenous private sector operators.

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