



Muhammadu Buhari Administration and Gold Mining Development in Nigeria from 2015-2023

Michael Terver Akpar & Luper Paul Iorkongoso

Department of political science, Fr. Moses Orshio Adasu University (formerly Benue State University) Makurdi

Received: 10.05.2025 / **Accepted:** 09.06.2025 / **Published:** 12.06.2025

***Corresponding Author:** Luper Paul Iorkongoso

DOI: [10.5281/zenodo.15646918](https://doi.org/10.5281/zenodo.15646918)

Abstract

In this paper, we examined the operations of Nigeria's gold mining subsector with a view to evaluating the contributions of President Muhammadu Buhari administration towards the development of the subsector. Our research noted the lacklustre performance of the sector before the inception of the administration under review occasioned mainly by the activities of illegal miners. We further noted that the efforts of the administration to streamline the operations of the sector through the introduction of various laudable policies and programmes, including especially the Presidential Artisanal Gold Mining Development Initiative (PAGMI), the Segilola Gold project, licensing by the federal Government of three companies to build the first set of gold refineries in Nigeria.

Keywords: Gold Mining, Nigeria, Buhari Administration, Illegal Mining, PAGMI, Segilola Gold Project, Gold Refineries, Mining Policies, Artisanal Mining, Mining Development.

Original Research Article

Citation: Akpar, M. T., & Iorkongoso, L. P. (2025). Muhammadu Buhari administration and gold mining development in Nigeria from 2015–2023. *ISA Journal of Arts, Humanities and Social Sciences (ISAJAHSS)*, 2(3), 128-135.

INTRODUCTION

The possession of natural resources is a key element in the development of societies. Countries have over the years relied on their rich minerals resources to develop their societies. For examples, Australia, Canada, Russia, India, Saudi Arabia and Botswana, amongst several others, are all known to have made ample use of their mineral resource wealth to finance the development of societies. Canada benefitted from mineral export, earning up to AUD 97.7 billion in 2017 alone (NRCAN,2018). Nigeria, together with Botswana, Angola, South Africa and Liberia fall into the category of mineral economies: each of these countries has an extractive economy that is matured and which relies on mineral revenue (Solomon, 2000).

Nigeria, particularly, is a country that is blessed with a lot of natural resources, both in hydrocarbons and in solid minerals. Nigeria has large reserves of petroleum, natural gas, coal, iron ore, tin, limestone, niobium, zinc, and gold. Unlike crude oil which is mostly extracted by large multinational corporations and a highly organized and formal setting, most often the mining of solid minerals in Nigeria is plagued by a high level of illegal mining activities across the country,

particularly in the Northern regions where the bulk of these mineral deposits are located. The gold deposits are more prominently found in Anka, Maru, Gurmana, Bin Yauri, Tsohon Birnin Gwari-Kwaga, Okolom-Dogondaji, in Zamfara State and also near Iperindo in Osun State.

Gold mining began in Nigeria in 1913 and reached its peak in the 1930s. When the Second World War began, there was a decline in the mining activities because the mines were abandoned by the colonial companies such as Niger Company, which later change to Champion (Nigeria) and Tin Field Company (Aoy & Abejide,2014). In the early 1980s, the Nigeria Mining Corporation (NMC) was established to explore gold and other solid minerals. However, the company was plagued by a lot of teething problems which greatly hampered its ability to effectively engage in the mining of gold and other solid minerals. The first of such challenges was the paucity of funding from the government. The second related challenge was the excessive focus of government on crude oil production and exportation. Cumulatively, the successive governments were indifferent towards the mining of solid materials. As a result, there has not been coordinated large scale mining of gold in the country. The sector has, therefore, been dominated by

small scale and often unlicensed mining activities by local artisanal miners. The nature of these unlicensed and illegal mining activities has often led to apprehension and tension in places where the activities take place. Some of the states that have experienced high levels of illegal gold mining in the country include Zamfara and Kogi states. The illegal mining of gold in Nigeria is usually carried out mostly in collaboration with illegal mine traders from neighboring countries and some South Asian countries, especially China. Due to the diffuse and clandestine nature of illegal mining operations, activities in most of the illegal gold mines in northern Nigeria have gone unchecked by agencies of the government (Johnson, 2017).

According to Auwal (2012, p.4) "combination of inadequate legislation and poor law enforcement has made the mining sector to be largely informal, much of which is outside regulatory framework. This has serious consequences for the country. Three key issues are obvious. First, unregulated mining activities exacerbate environmental degradation. This is because mining is done without regard to environmental protection and sustainability. Secondly, illegal mining leads to loss of revenues that should accrue to the government. In 2009 alone, it was reported that the federal government lost about \$100 million to illegal mining (Auwal, 2012). Third is that unregulated mining poses health hazard to communities. There have been reports of lead poisoning in areas where these mining activities are concentrated. In April 2010, over 162 children from two communities, Daretu and Giadanbuzu in Bukkuyum Local Government Area of Zamfara State were reported dead and laboratory investigations showed that they died of lead poisoning. Further investigation revealed that the people of the community were engaged in artisanal mining of gold and they usually took them home to process locally (Auwal, 2012). The persistence of illegal gold mining in Nigeria has continued to pose serious challenges to both the economy and health of the citizens. It was within this milieu that the Mohammadu Buhari administration came into office on May 29, 2015. The thrust of this paper is to, among other things, examine the impact the policy measures adopted by the administration on the growth and development of the gold mining industry in Nigeria from 2015 to date.

Understanding Illegal Mining

Until the twentieth century, the history of mining was one of small-scale operations, often crude in terms of technology and hazardous to health and safety but nevertheless providing the necessary mineral raw materials for society. In contrast, resources development in the twentieth century has been marked by the growth of large mining utilizing economics of scale (Adekeye, 2001:2). Depending on how the mining sector is managed, whether legally or illegally, it could either reduce or reinforce poverty. According to the Department of Mineral Resources (2014) illegal mining refers to conducting mining activities without mining rights. Once granted, mining rights stipulate, among others, the duration of mining and the size of the mine. Dozolme (2016) defines illegal mining as an illicit activity which involves conducting mining operations without land rights, mining license, exploration or mineral transportation permit or any other document that could

legitimize such mining operations. Furthermore, the Global Initiative against Transnational Organised Crime Report (2016) defines illegal mining as a blatant violation of the law. In most cases, such mines operate in protected areas or fail to comply with environmental, tax and labour law. In a nutshell, illegal gold mining is the process of extracting gold from the ground in the absence of land rights, mining license, exploration or mineral transportation permit or any document that legitimately allows the operation. Such activities are not subject to regulation by either the Environmental Protection Agency or the Minerals Commission.

The most common denominator in the illegal mining concept is embarking on mining activities without a permit or license from the Department of Mineral Resources. The Benchmarks Foundation (2016) attributes illegal mining to improper closure of mining shafts, which makes it easier for illegal miners to access the abandoned mines (cited in Arnold, Duxita, & Ramolobi, 2017). The illegal gold miners' operations often cause major environmental damage, use mercury for processing which pollute the environment (Ghana Extractive Industry Transparency Initiative, 2013). They operate on the surface or underground and it normally takes place at a hidden place such as forest, existing farms or river banks. It does not need any educational qualification or experience, it is done by all categories of persons who are physically strong; men, women and children. They use manual and traditional methods like pick-axes, shovels, barrel, head pans and nets and the miners work in a group of three to five (Edwin and Gabriel, 2012). Mercury is added to the concentration and used by the miners to separate the gold (Aryee, 2003).

Social and Economic Impacts of Mining

The social impacts of large-scale mining projects are controversial and complex. Mineral development can create wealth, but it can also cause considerable disruption. Mining projects may create jobs, roads, schools, and increase the demands of goods and services in remote and impoverished areas, but the benefits and costs may be unevenly shared. If communities feel they are being unfairly treated or inadequately compensated, mining projects can lead to social tension and violent conflict. Communities feel particularly vulnerable when linkages with authorities and other sectors of the economy are weak, or when environmental impacts of mining (soil, air, and water pollution) affect the subsistence and livelihood of local people (Environment and Development, 2002).

There is quite some debate about the contributions of illegal mining to sustainable development and sustainable livelihoods. For the thousands of poverty-stricken and hungry people in both rural and urban areas, illegal mining is a welcome solution to their problems. To many people, particularly those involved in gold and semi-precious minerals, artisanal mining represents the fast-track process to their earthly riches. Yet, there are those who view artisanal and illegal mining with high contempt. This contempt is based on the belief that artisanal and illegal mining represent the greatest environmental disaster in the making. Reiterating further on other forms of social consequences of artisanal mining, Ochoga (2021) he made the case that, women and girls are prominent in

the middle and upstream sectors of the industry, which involve processing and marketing. Also, in highly prosperous areas especially rich in gemstones, the enormous influx of miners commonly results in the creation of enclaves of overcrowded shanty settlements. There is increase in duty labour involving young boys and girls and school dropouts. This commonly leads to shortage of farm lands and hence loss of agricultural product. In addition, substantial immigration and human trafficking consequently result in increase in sexual trade, prevalence of Sexually Transmitted Diseases (STD), unwanted pregnancies and early marriage (Adeleke, 2001).

The economic benefits of small-scale or artisanal mining have received a lot of attention both in local and international literature. Lungu and Shikwe (2007) argued that mining, especially when diversified to small scale, is critical to poverty reduction as well as economic development of a country. Zamora (2000) also noted that up to 3.5 million people are active in the artisanal and small-scale mining sector in Africa. Akabzaa and Darimani (2001) contend that small scale mining has traditionally played an important role in the economy of Ghana. The sector earned the government of Ghana about \$163 million between 1989 and 1994 and provided direct or indirect employment to over 1 million people in the country. It was estimated that 76 per cent of those who abandoned farming in the eastern region of the country moved into small-scale mining (Boateng, Codjoe & Ofori, 2014). It is further stressed that the sector, if properly managed, could provide employment to many rural communities and generate significant revenue for the government.

The extractive industry at every scale of development has been promoted as an avenue for sustainable resource development practice. However, this is feasible only if the accrued rent or earnings from the depletion of non-renewable resources are continuously being reinvested into other sustainable undertakings or to support services in the host communities (Labonne & Gilman, 1999). The transition towards a more equitable system will not only require integrated and enabling policy frameworks but also the commitment of the state and industry actors to invest in high standard of environmental performance (Organization for Economic Co-operation Development, 2002). In the absence of this, relationships between the state and local communities are often characterized by tensions due to real or perceived failure of the state to re-channel economic benefits of resource extraction to the host community (Omoredede, 2014).

There is no doubt that despite the economic benefits associated with mining, the extraction process comes with adverse effects on both the human and physical environment. Aigbedion and Iyayi (2007) study of the environmental effects of mineral exploitation in Nigeria indicates that the three stages of mineral development: exploration, mining and processing have caused different types of environmental damages. It is observed that the environmental damage caused by the small-scale quarrying of laterite, clay, gravel and stone in numerous parts of the country by private entrepreneurs is less but more difficult to control. They noted that the recent search for gemstones in Oyo, Kwara, Edo, Ondo, Niger, Zamfara, and Kebbi states by illegal miners in particular has resulted in

haphazard pitting and trenching of the older granite pegmatite's that host the minerals without regards to mining regulations.

On the specific risks of small-scale mining practices, Hayes and Pers (2012) reported that 24 percent of child miners work alongside with their mothers in a Democratic Republic of Congo mine. They identify the social consequences of such practice to include the risk of contamination from minerals, having to be absent from school, and the difficulty of coping with formal education when they are later released to attend. In an earlier work by Heemskerk (2003), it is observed that long-term involvement in mining activities is directly related to the level of risk tolerance exhibited by residents in a Suriname artisanal community. That is, the longer the length of stay the more risk tolerant residents become. It is further observed that factors such as income level, personal injury, and death of family members often influence the decision to continue or quit involvement in mining activities. The effects of children exposure to mercury in gold mining areas in Indonesia and Zimbabwe have also been reported (see Bose-O'Reilly, Drasch, Beinhoff, and Rodrigues-Filho, 2010) as well as the politics of risks associated with mining development in Ghana and Burkina Faso (see Armah, Luginaah & Odoi, 2013; Lunung, 2014).

In Nigeria, Lar, Ngozi-Chika and Tsuwang, (2014) reported how the incident of lead poisoning in northern Nigeria caused the death of more than 400 children. Also, a study carried out by Babatunde, Ayodele and Elegbede (2013) reported workers' exposure to various physical, chemical, and agronomical hazards including physical injuries (45.8%), chronic cough (33.1%), other respiratory symptoms like mucoid/bloody sputum (17.8%), and progressive breathlessness (22.9%) among the residents sampled. It has been pointed out that the fact that many other combinations of explanatory variables specific to the community have not been explored in any previous studies suggest the need to understand factors underlying the tolerance of residents of mining communities despite the observable risks. However, the reality of the existence of such risks is undeniable and remains a serious cause for worry.

The Interface between Artisanal Gold Mining and Economic Interests

An interesting aspect of the activity artisanal miners is the 'who gets what' situation of the operation. The work of mining operators and how much they bring to the table has been very evident for various stakeholders who are directly and indirectly involved. Illegal mining was the dominant livelihood strategy, most of the community's daily social and economic activities depended heavily on the illegal miners. Power relations play an important role at this point of 'who gets what'. At the end, those at the top of the mining hierarchy get most of the proceeds, which comes at the expense of the labour of the actual miners. They justify this with the claim that even though much of the daily operations depend on the miners, there are quite a lot of background activities that go into the process. Bongo, a mining operator who had worked in the mines for three years gave a detailed description of processes thus:

There is a license holder, who has a mining permit on one or two concessions. That is the top level and these concession owners are usually famous businessmen, politicians and local chiefs. We the workers do not have any personal contacts with them and we do not know who they are. These investors hire someone who has some extensive knowledge about mining activities to oversee the daily operations. They could be family members, a friend or middlemen they can trust. Almost everything that is in and around the mining site runs through these recruited operations managers ((Bright,2014:79).

Although, illegal mining has no organised hierarchy but the activity like any corporation or business is organised with decision making at various stages of the operations. The top of the hierarchy decides on when to sell and hoard the gold. The miners, like many other mining operators, direct their focus towards mining, processing and then selling the gold to the operations manager. How the gold gets to the formal market is entirely out of their concern. This is the point where middlemen become the single most important piece of the whole activity; selling the gold to the Precious Mineral Marketing Company or

occasionally smuggling it to external markets outside the country.

The Buhari's Administration and Development Gold Mining in Nigeria

As presented in the various literature, illegal mining is bane of the development of the gold industry. Upon assumption of office, the administration of President Mohamadu Buhari was confronted with this hydra-headed problem which had defied the efforts of previous administrations. Without equivocation, the administration embarked on the following policies/programmes; the Presidential Artisanal Gold Mining Development Initiative (PAGMI); the Segilola Gold Project, licensing of three companies to build the first set of gold refineries in Nigeria; and in 2020, the Central Bank of Nigeria (CBN) added Nigerian gold to its reserves for the very first time. Also, the president set up a committee to develop a document brief towards curbing illegal mining of gold so as to boost revenue generation for the government. The aims and the projected benefits of the PAGMI initiative are outlined in Table 1.

Table 1: The PAGMI Prescription

PAGMI is an initiative designed to mine and aggregate gold from artisanal and small-scale miners under the National Gold Purchase Programme. Artisanal and small-scale mining (ASM) is largely an informal sector where subsistence miners who are not officially employed by a mining company work independently, mining minerals using their own resources, usually by hand. PAGMI purchases gold directly from artisanal miners, processes it to export standard and sells it at international market rates to capture value for the Nigerian economy. Reports suggest that up to 95% of gold revenues are not remitted to the country. This initiative directly tackles this issue.

Source: Authors' construction

As shown in the table the PAGMI Management Team developed innovative ways to move to ensure the Nigerian mining success story goes beyond artisanal and small-scale mining. The initiative targets aggregating 3-5tonnes of gold within 12 months. This initiative has helped to deliver tremendous fiscal and economic benefits to the nation. This is because the Solid Minerals Development Fund worked with relevant government agencies to identify the support and funding needed to deliver on this aggregation target (PAGMI, 2022). Crucially, PAGMI have successfully delivered a pilot scheme in Kebbi State and plans are already at advanced stage to roll it out and expand it sustainably across other states. The government is committed to providing all the necessary support required. Pursuant to this, President Buhari has urged PAGMI to ensure that the Solid Minerals Development Fund fast-tracks delivery of other directives to support the Presidential Fertilizer Initiative. The president urged stakeholders to expedite action on the recommending appropriate percentage of accruals to be dedicated to the Solid Minerals Development Fund (Uba,2022).

The dedication of a portion of accruals to create a sustainable income stream for the Solid Minerals Development Fund is essential for delivering the mandates assigned to the Fund. It is this premise that the development of a sustainable funding stream for the Fund concluded the implementation of the Fund's Establishment Act, which is a key focus area for this

administration. To enhance productivity in the sector, the CBN's intervened to minimize losses by artisanal miners as a result of foreign exchange differentials The apex bank declared a ban on artisanal export of gold for at least one year to give PAGMI a chance to checkmate smuggling and give a temporary waiver on royalties presently set at about three per cent. The Bank called for support of the funding of targeted explorations to catalyse private sector investment and transform PAGMI into a large-scale operator to sustain the initiative (Uba,2019). The PAGMI steering committee in conjunction with other stakeholders like NEITI, EFCC and the Nigerian Customs Service has produced the Responsible Mining Framework in keeping with international standards. presented by the Steering Committee, produced the document aims to eliminate criminality, lead poisoning, child labour, economic sabotage and terrorism financing. Uba (2022) extolled PAGMI as a responsible Mining Framework that would enthrone an effective and transparent gold supply chain and aid efforts to combat money laundering, terrorist financing, human rights abuses, and respect for the environment. He submits that PAGMI had created the opportunity for formalisation and mainstreaming of artisanal miners, thereby giving them the much-needed economic opportunity to lead meaningful existence. Uba (2022) expressed confidence that the validation of the initiative by President Mohamadu Buhari help address

structural and institutional impediments such as rural poverty and lack of alternative livelihood, and difficulty in meeting legal and regulatory requirements all of which tend to push artisanal gold mining operators deeper into the informal economy. He stated that between 2012 and 2018, five billion dollars in gold was illegally smuggled out of Nigeria. He, therefore, advocated increasing the capitalisation of the Solid Minerals Development Fund so as to extend it to other states needing its intervention as this would enable the committee meet up with its 5-tonne gold mining target.

Interestingly, following two months of ramp-up, Thor Explorations (TSXV: THX) announced that commercial production has been achieved at its wholly-owned Segilola gold mine in Nigeria. The Segilola project, located in Osun state, was considered Nigeria's most advanced gold project, with total

probable reserves of 517,800 gold ounces grading at 4.02 g/t. With this development, the mine has become the Nigeria's first-ever commercial gold mine (PAGMI, 2022). The report informed that the open-pit mine, which poured its first gold in late July, 2020 is fully operational and operating at the target daily mine production rate, with approximately 90,000 tonnes of ore material mined to the end of the third quarter of the year (PAGMI, 2022). The report further added that two ore zones have been prepared for the commencement of higher-grade direct tip operation, that the mining fleet has been fully commissioned, and that mine production continued through the wet season, with particularly heavy rainfall in September, 2021 (Thor Explorations, 2022). Below is an aerial view of the Segilola site in Osun state, Nigeria.



Source: <https://thorexpl.com/projects/segilola-gold-project/>

One of the notable achievements of the Buhari Administration in the gold mining sector, according to Uba (2022, p.5) is that: The process plant is also consistently operating in line with its design throughput capacity of 715,000 tons per year. During the ramp-up, a number of minor faults were identified including a faulty heat exchanger at the mill and a faulty valve which was found to be limiting the performance of the gravity circuit. There were also a number of supply chain issues relating to the supply of good quality activated carbon. All faults have been rectified by the EPC contractor and supply chain issues have been resolved (<https://insideosun.com.ng/thors-segiliola-gold-mine-reaches-commercial-production-in-osun/>).

Also, the administration of President Muhammadu Buhari successfully inaugurated Nigeria's first Gold and precious Metals Refining Conglomerate, an operation of Dukia Gold, a Precious Metals Raw Materials Buying Program in collaboration with Heritage Bank. At the inauguration, Nigeria's Vice President, Prof. Yemi Osinbajo, reiterated that Nigeria has the potential reserves of 200 million ounces of gold, and that the commencement of the project would create new opportunities locally and beyond post-COVID-19. Osinbajo

expressed optimism that the launch would enable Nigeria to mine reserves properly, trade responsibly, refine locally, and boost the nation's foreign reserves (Uba, 2022). He added that the project would also create primary employment for local artisanal miners and mining cooperatives, and across the solid minerals value chain. The Vice-President further disclosed that the Dukia Gold & Precious Metals Refinery Project, championed by the High Commissions of Nigeria and Canada has been seven years in the making, and that it would be an extremely valuable new source of trade, jobs and foreign exchange.

Umar (2022:4) further informed that off-take agreements between Dukia Gold and local mining communities and owners of recyclable gold will be a useful provider of jobs in our post-covid economy. He further explained that the official launch of the project would also birth the nationwide Dukia-Heritage Bank Gold and Precious Metals Buying Centres as part of valuable private sector collaboration to help encourage a culture of recycling mineral waste.

Within this project, the Buhari administration also commissioned the nationwide Dukia-Heritage Bank Gold and

Precious Metals Buying Centres, part of valuable private sector collaboration. This provides a sustainable way for Nigerians to exchange their gold jewellery and other precious items for cash. This system of exchange will not only help encourage a culture of recycling, but will also serve as a complementary source for the raw materials needed for the Dukia Gold & Precious Metals Refining Company. Umar (2022) underscored that this partnership with Heritage Bank Plc has boosted the mining industry production, and have given birth to a new market, a platform that has contributed immensely to the transformation of Nigeria's economy. According to him:

the operationalization of this initiative aligns with the Federal Government's overall Economic Transformation Agenda, especially as it relates to the full steam diversification of the Nigerian economy, job and wealth creation, development of the solid mineral space amongst others... the economy of Nigeria is being recalibrated, given the impact of the global pandemic, the government's committed aspiration to build a robust and resilient economy has been further enhanced through the operationalization of this initiative working with all stakeholders across States and Government parastatals, the Central Bank, private sector and other international actors towards the development of the solid minerals sector and its appendages (Umaru, 2022, P.1).

From the forgoing presentations, it could be stated without equivocation that the initiative has enhanced a regulated market that would see precious metals and other commodities take centre stage in the quest to ensure irreversible economic growth and development in alliance with a modernized exchange for commodities trading in Nigeria. It is estimated that through these large -scale collaborations, the Federal Government of Nigeria has realized an annual average of \$150 million in taxes, \$25 Million in royalties, and \$500 million accretion to foreign reserves from the integration of artisanal gold mining activities implemented by PAGMI (CBN, 2021). The PAGMI has also resulted in the creation of over 500,000 new mining and formalized jobs, leading to poverty alleviation for more than 1 million households (PAGMI, 2021). Based on the data presented in this chapter, it could be seen that the PAGMI initiative has helped to scale up gold mining activities across the entire gold mining belt of the country. Under the initiative, agreements have also been reached with Thermofisher and Metler Toledo, leading producers of gold testing and weight equipment to equip up to 50 buying centers. This milestone is another demonstration of the Buhari administration's commitment to economic diversification, improvement of rural economies, and extensive job creation.

CONCLUSION

This paper has examined the operations of Nigeria's gold mining subsector with a view to evaluating the contributions of President Mohammadu Buhari administration towards the development of the sub-sector. Our research noted the lacklustre performance of the sector before the inception of the present administration occasioned mainly by the activities of illegal miners. We further noted the efforts of the present

administration to streamline the operations of the sector through the introduction of various laudable policies and programmes, including especially the Presidential Artisanal Gold Mining Development Initiative (PAGMI), the Segilola Gold Project, licensing by the Federal Government of 3 companies to build the first set of gold refineries in Nigeria, and the 2020 the Central Bank of Nigeria (CBN).

REFERENCES

- Abdullahi, S.K (2012). *Foundation of Political Economy*, lecture note, Department of Political Science UDUS. Unpublished.
- Aboribo R. I. (2008). God fatherism in Nigerian politics: A bourgeois instrumental of exploitation. *Journal of Social Science and Policy*, 5(4),6.
- Aigbedion, I. & Iyayi, S. (2007). "Environmental effects of mineral exploitation in Nigeria". *International Journal of Physical Science*, 2(2),33-38.
- Akabzaa, T. and Darimani, A, (2001). *Impact of mining sector investment in Ghana: A study of Tarkwa mining region*. A draft report prepared for Structural Adjustment Participatory Review International Network. Retrieved from http://www.saprin.org/ghana/research/gha_mini ng.pdf
- Anifowose, R. & Enemuo, F (2008). *Elements of Politics*. Sam Iroanusi Publications.
- Ahmed YM (2013). *Characterization of Artisanal and Small-Scale Mining in Parts of Taraba State, Nigeria*. An Unpublished Ph.D Thesis submitted to the Department of Geography, University of Jos in Fulfilment of the Requirement for the award of the Degree of Doctor of Philosophy of the University of Jos, Nigeria.
- Aina, T. (2003). *What is Political Economy? The Nigerian Economy Approach*. Nigerian Economic Society, Lagos
- Aoy R. & TS Abejide, (2014). The British mining & oil regulations in Colonial Nigeria": C. 1914-1960S:An assessment. *Singaporean journal of business economics and management Studies*, 2 (10),65
- Arnold P, Duxita M & Ramolobi L.G.M. (2017). "Implications of illegal mining in gauteng province". *International Journal of Humanities and Social Science Invention*, Vol. 6 (4), 56-57.
- Armah, F., Luginaah, I., and Odoi, J. (2013). "Artisanal small-scale mining and mercury pollution in Ghana: a critical examination of a messy minerals and gold mining policy". *Journal of Environmental Studies and Sciences*, 3:381-390.
- Aryee, Benjamin N.A, Bernard K. N. & Atorkui. E. (2003). "Trends in the Small-Scale mining of Precious Minerals in Ghana": A Perspective on its Environment Impact. In: *Journal of Cleaner Production* 11 (pp. 128-146).
- Auwal, I.M. (2012). *Policy brief on solid mineral sector for the National Assembly: civil society legislative advocacy centre*. July 2012. <http://www.cislacnigeria.net/wp-content/uploads/2012/07/Policy-brief-on-solid-minera->

- sector.pdf
- Auty, R. M. (1993). *Sustaining development in minerals economics: the resource curse thesis*. London: Routledge.
- Auty, R. M. (2004). *The political economy of growth collapses in mineral economies*. Minerals & Energy-Raw
- Babatunde, O, Ayodele, L & Elegbede, O. (2013). Practice of occupational safety among artisanal miners in a rural community in southwest Nigeria. *International Journal of Science, Environment, and Technology*, 2(4),622-633
- Boateng, D, Codjoe N, & Ofori, J. (2014). Impact of illegal small-scale mining (galamsey) on cocoa production in Atiwa District of Ghana. *International Journal of Advanced Agricultural Research*, 2,89-99
- Bohon, S, Dahms, H.F, Dandaneau, S. P, Freu, R.S, Gellert, P, Jalata, A. & Shefner, J. (2003). *Political Economy*. Tennessee: The University of Tennessee, College of Arts and Science; Development of Sociology.
- Bose, O.R.S, Drasch, G, Beinhoff, C & Rodrigues, F. S.(2010). "Health assessment of artisanal gold miners in Indonesia". *Science of the Total Environment*, 408:713-725.
- Bose, O.R.S, Lettmeier, B, Gothe, & R, Beinhoff, C. (2008). "Mercury as a serious health hazard for children in gold mining areas". *Environmental Research*, 107:89-97.
- Bright, B.A. (2014). "Galamsey (Mining) as a livelihood approach in Ghana": *From a poverty Reduction strategy to a Money-spinning Business* (Master's Thesis), University of Olo, Norway.
- Edwen. E.O. and Gabriel. 2012. "The impact of illegal Mining on Ghanaian youth"; Evidence from Kwaebibirem District in Ghana: *Research on Humanities and Social Sciences*. Retrieved from <http://www.iiste.org/Journals/index.php/RHSS/article/view/2383/2382> [Accessed 12 July 2013].
- Eteng, I. (1997). "The Nigerian State, Oil Exploration and Community Interest": Issues and Perspectives, in Oil and Exploitation, the State and Crises in Nigeria's Oil-Bearing Enclave, *Friedrich Ebert Foundation*, Lagos, pp1-31.
- Gold's contribution. Retrieved on 2011-09-26 from World Gold Council Homepage. http://www.gold.org/about_gold/story_of_gold/golds_contribution
- GHEITI, (2013). "Reflections on illegal Mining Activities in Western Region". Retrieved from http://www.geiti.gov.gh/site/index.php?option=com_content&view=article&id=72:reflections-on-illegal-mining-activities-in-western-region&catid=1:latestnews&Itemid=29 [Accessed 10 July 2013].
- Grätz, T. (2009). "Moralties, risk and rules in West African artisanal gold mining communities": A case study of Northern Benin. *Resources Policy*, 34(1-2), 12-17.
- Hayes, K. & R. Perks (2012) "Women in the artisanal and small-scale mining sector of the Democratic Republic of the Congo". In: P. Lujala and S. Rustad (eds.), *High-Value Natural Resources and Peacebuilding*. London: Earthscan.
- Heemskerk, M. (2003). "Risk attitudes and mitigation among gold miners and others in the Suriname rainforest". *Natural Resources Forum*, 27(4). 267-278.
- Horval (1968) "Political Economy Fundamental and Method, in Ogundiya and Amzat "The basic of Social Science". Mathouse Surulere, Lagos, Logos state, Nigeria 2013, p.316.
- Johnson, O. (2017, October 23). "Illegal gold mining in Nigeria: influence on economy and citizens". Retrieved from <https://www.naija.ng/1124741-illegal-gold-mining-nigeria-influence-economy-citizens.html#1124741>
- Kambani S. (2000). "Policy and strategy options for small - scale mining development in Zambia". *Minerals & Energy Raw Materials Report*. 15(3).
- Kambani M. (1998). "The Economic and Environmental Implications of Small-Scale Mining in Developing Countries". Dar es Salaam. University of Dar es salaam. Pp.13-27.
- Lawal, M. (2002). "Constraints to small-scale mining in Nigeria: policies and strategies for development". Centre for Energy Petroleum Minerals Law and Policy Annual Review-the Dundee Yearbook of International Natural Resources and Energy Law and Policy, pp.17
- Lar, U, Ngozi, C. C & Tsuwang, K. (2014). Environmental health impact of potential harmful element discharges from mining operations in Nigeria" *American Journal of Environmental Protection*. 3(6-2). 14-18.
- Luning, S. (2014) "The future of artisanal miners from a large-scale perspective? From valued pathfinders to disposable illegals? *Futures*. 62(Part A), 67-74.
- Maier, C.S. (2008). "The Political Economy Approach <http://en.wikipedia.org/wiki/political-economy> (Accessed 15 November, 2015).
- Marx, K. 1867 Cited in Osiruemu, 2007. "Is Poverty an Urban Phenomenon?" *Proceedings of the National Conference on Urban Poor in Nigeria*: 1-23.
- Murtala C. (2011) 'An Extensive Analysis of Mining in Nigeria Using a GIS'. *Journal of Geography and Geology*, 3(1).
- Nrcan, (2018). *Mineral and the economy*. Retrieved from <https://www.nrcan.gc.ca/mining-materials/facts/minerals-economy/20529>
- Olasunkanmi. (2017). "Poverty Rate Of The 36 States Of The Federation: Zamfara Top The Chart With 91%". Retrieved from <http://tellmystory.com.ng/poverty-rate-of-the-36states-of-the-federation-zamfara-top-the-chart-with-91/>
- Omoredede, C (2014) Assessment of the impact of oil and gas resource exploration on the environment of selected communities in Delta State, *Nigeria International Journal of Management Economics and Social Sciences*, 3(2), 79-99.
- Organization for Economic Cooperation and Development (2002). 'Environmental impacts of foreign direct investment in the mining sector in sub-Saharan Africa.' Conference on Foreign Direct Investment and the Environment 78 February, Paris, France CECD.
- Oledipo SO (2006) Status of Nigerian Mineral Resource Industries (ASSM Perspectives). Being a presentation at the Nigerian Mining and Geosciences International

- Conference, Kaduna.
- Okeke R C. (2017). The political economy of recession in Nigeria
- Ross,M. (1999),"The political economy of the resources curse. *World Policcs*, 51(2),297-322 dot10.1017/S0043887100008200, Retrieved from <http://fdx.doi.org/10.1017/S0043887100008200>
- Sachs, J D. & Wamer, A. M. (1999). 'The big push, natural resource booms and growth *J. Devt. Econs.* 59, 43-76.
- Sachs, J. D. & Wamer,A. ML (2001)"Natural resources and economic development: the curse of natural resources' *European Econs Rev.* 45,827-838
- Solomon, M H. (2000),"Growth and diversification in mineral economies: planning and incentives for diversification. South Africa: United Nations Centre for trade and Development.
- Sulaimman Y.B., Kura and Rebe M S. (2013) Political Economy: Fundamental and methods. In Ogundiya and Amzat (ed). The basics of social science. Mathouse Suruere, Lagos, Lagos state Nigeria p.315-320.
- Spall. J (2009), "investing in Gold-The Essential Safe Haven Investment for Every Portfolio. McGraw Hill 2009.
- Tekool (2018). [know-Nigeria/know-about-zamfara-state/know-about-bukkuyum.](https://takool.com/know-Nigeria/know-about-zamfara-state/know-about-bukkuyum/) Retrieved from [https://takool.com/ know-Nigeria/know-about-zamfara-state/know-about-bukkuyum/](https://takool.com/know-Nigeria/know-about-zamfara-state/know-about-bukkuyum/)
- Yamane, T. (1967). *Statistics, An introductory Analysis* (2nd Ed), New York Harper and Row.
- Youngman, F.(2000) *The political economy of adult education and development*. London. Zed Backs
- Zamcra, A (2000)"Small-scale mining: a social and environmental problem turned into an opportunity for economic development". Internet Journal of the Centre for Energy., Petroleum and Mineral Lam and Policy, 6(6); Retrieve from [www.dundee.ac.uk cepmlp/journal/html/article6 -6.htm](http://www.dundee.ac.uk/cepmlp/journal/html/article6-6.htm)