

Crisis of Natural Resource Governance in Nigeria's Extractive Industry: Examining the Phenomenon of Artisanal Mining/Quarrying

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Abstract

This paper examines the phenomenon of artisanal mining/quarrying as a critical manifestation of crisis of natural resources governance in Nigeria. By way of exploratory analysis, predicated on the stakeholder theory of corporate governance, the paper posits that failure of governance in Nigeria's extractive industry has led to unwholesome, unregulated and unsustainable exploitation of natural resources. From the standpoint of the untoward impacts and complications of artisanal mining/quarrying in Nigeria, the paper posits that unregulated exploitation of natural resources poses a threat to economic sustainability, as well as environmental and human security in the country. The paper makes a case for a mutual multi-stakeholder entrustment system whereby the government synergizes with relevant civil society, community, as well as corporate and non-corporate stakeholders in an effort to bringing about proper governance in the Nigerian mining sector.

Index terms— governance, corporate governance, stakeholder, natural resources(s), artisanal mining/quarrying.

1 Introduction

overnance is, arguably, the most crucial challenge of government and politics in contemporary states. It refers to the capacity of the state to develop and leverage civic synergies to enable her effectively oversee its jurisdiction, enforce its values, implement its policies, control its population, as well as harness and exploit its resources for the advancement of the common good. The challenge of governance among states in the world today has seen variously affirmed in the notions of 'governance crisis', 'governance deficit' and 'governance failure' (RGI, 2013; ELI, 2014; Okoli & Orinya, 2014). It also prominently resonates in the 'state failure' literature (King & Zeng, 2001; Hoeffler, 2009).

Governance is in a very deplorable state in many developing countries. This is principally as a result of weak government and civil society institutions. The situation in Africa appears much more hopeless and precarious. In many African polities, there exists a plethora of 'ungoverned', 'ungovernable' and 'had-to-govern' civic spaces (cf. cLean & McMillan, 2003:226). These are spheres within the civic realm that are more or less devoid of a 'regulated life'. A case in point is the natural resources domain, which has been largely under-governed or ill-governed in most countries of the Continent (Ezirim, 2010).

Natural resources refer to Nature-given material assets that can be harnessed by mankind to sustain life and create wealth. They include all organic valuables accruable from the earth, land, waters, the wild (forests) and natural vegetation. Examples of such resources include minerals, metals, wildlife, fish, timber, wood, sand, clay, to mention but a few. These resources are freely supplied by Nature in both subsistence and surplus quantities for human exploitation and use.

42 Over the years, management of natural resources has posed a huge challenge to many countries. Most resource-
43 rich countries in Africa have no established and viable natural resources governance regime (UNEP, 2013). Where
44 such a system exists, it has often been characterized by inefficiency and mismanagement ??Darby, 2010). In this
45 regard, it has been observed that: Some countries negotiate poor terms with extractive companies, forsaking
46 potential long term benefits. Many countries do not collect resources revenues effectively. And even when
47 resource revenues do end up in government coffers, they aren't always spent in ways that benefit the public
48 (RGI, 2013:3). Hence, while some African countries may not have an effective mechanism for natural resource
49 governance, a good number of them operate natural resource system that are too grossly inefficient to guarantee
50 peaceful, equitable and sustainable resource exploitation (UNEP, 2013). With particular reference to Nigeria,
51 natural resource governance has been pertinently problematic, especially within the sphere of the extractive
52 industry. The solid minerals sub-sector of the extractive industry in Nigeria has hardly been properly harnessed
53 and regulated; thus giving a lot of room for unwholesome and unsustainable exploitation of resources and resulting
54 in untoward environmental and economic consequences. It is against this backdrop that this paper examines the
55 phenomenon of artisanal mining/quarrying as a critical manifestation of crisis of resource governance in Nigerian
56 extractive industry.

57 2 II.

58 3 Conceptualizing and Contextualizing Governance

59 Governance is a system of engendering control and regulation in any public domain. It encompasses governmental
60 and non-governmental measures geared towards ensuring guided and regulated life in governmental, civil and
61 corporate practices. According to Roba, Gibbons and Mahadi (2013:1):

62 Governance is the means by which society defines goals and priorities and advances cooperation. It includes
63 policies, laws, decrees, norms, instruments and institutions. Governance is not the province of government
64 alone, and includes informal institutional arrangements like voluntary codes of conduct for private businesses,
65 professional procedures and partnerships among all sectors. These include numerous and varied arrangements
66 but an essential element is that they mobilize diverse constituencies to agree on common goals and help realize
67 them.

68 4 Table 1 : Definitions of Governance

69 5 Definition Source

70 Governance is the system of values, policies and institutions by which a society manages its economic, political
71 and social affairs through interactions within and among the state, civil society and private sector. It is the
72 way a society organizes itself to make and implement decisions -achieving mutual understanding, agreement and
73 action. It comprises the mechanism and processes for citizens and groups to articulate their interests, mediate
74 their differences, and exercise their rights and obligations. It is the rules, institutions and practices that set limits
75 and provide incentives for individuals, organization and firms.

76 6 UNDP (2004): Strategy note on Governance for Human 77 Development

78 Governance refers to the rules, processes and behaviours by which interests are articulated, resources are managed,
79 and power is exercised in society. The way public functions are carried out, public resources are managed and
80 public regulatory powers are exercised is the major issues to be addressed in its context.

81 7 The European Commission (2003): Communication on

82 Governance and Development Governance is the traditions and institutions by which authority in a country is
83 exercised for the common good. This includes (i) the process by which those in authority are selected, monitored
84 and replaced (ii) the capacity of the government to effectively manage its resources and implement sound policies,
85 and (iii) respect of citizens and the state institutions that govern economic and social interactions among them.

86 World Bank (http://goworldbank.org/MK_OGR_258V).

87 Source: Compiled by the authors, 2015.

88 Governance is a multi-stakeholder process involving a variety of actors, ranging from the state, the private
89 sector to the civil society. It is the mutual engagements and intermediations among these three spheres of society
90 in realizing the common good that define the essence of governance. Figure 1 highlights the organic relationship
91 between the various spheres of governance within the societal context. As indicated in figure 1, governance
92 derives from the dynamic interactions and negotiations among the stakeholders from the state, the private sector
93 and the civil society. The process is superintended by the government in whose stead governance acquires civic
94 mandate. The core principles of governance have been identified as transparency, responsibility, accountability,
95 participation and responsiveness. Table 2 highlights the main concern/thrusts of these principles.

8 III.

9 Nature of Natural Resource Governance

Natural resource governance is a fundamental aspect of contemporary development question in developing countries (Ibeanu, 2009; ?zirim, 2010). As a development issue, it "is considered within the framework of power, process and practice; and how these shape natural resource access, control and use" (Mandondo, 2000:1). According to ?oba et Natural resources governance is an important aspect of contemporary environmental governance praxis. It is a critical issue in Africa, a Continent that is currently undergoing a dialectical transition in relation to resource management. As observed by UNEP (2013:5), the Continent can be said to be adapting to a number of concurrent environmental challenges associated with population growth, urbanization, climate change, and the impacts of conflicts. This adaptation process requires a new, pragmatic ways of organizing environmental governance in such a manner that natural resources are managed and accessed by different users peacefully, equitably and sustainably.

IV.

10 Theoretical Framework: The Stakeholder Theory of Corporate Governance

Stakeholder theory of corporate governance was developed by Freeman (1984) to emphasize that firms owe corporate accountability to a broad-range of stakeholders. A stakeholder can be defined as "any group or individual who can affect or is affected by the achievement of the organization's objectives" ??Abdullah & Valentine 209:91). The theory derives its epistemological foundations from a wide range of disciplinary traditions including philosophy, ethics, political theory economics, law and organizational science ??Abdullah & Valentine, 2009:91).

Stakeholder theory is premised on a number of assumptions, viz:

? firms have a network of relationships to serve;

? the purpose of a firm is primarily to create wealth for its multiple stakeholders;

? firms have obligations to society;

? firms should be socially responsible (Abdullah & Valentine, 2009; ??usuf & Alhaji, 2012).

The crux of the stakeholder theory is that businesses should be responsible and responsive to competitive cooperate and extra-corporate interests and/or concerns. The interests refer to the needs of the investors, shareholders, employees, suppliers, customers, partners, government, organized labour, host communities, and the general public. These have been categorized into consubstantial, contractual and contextual stakeholders (Rodriguez, Ricart & Sanchez, 2002).

11 Table 3 : Three Categories of Corporate Stakeholders

12 Category Elements

Applied to the purpose of the present discourse, stakeholder theory recommends a resource management paradigm that recognizes and serves the diverse needs and interests of relevant stakeholders in such a manner that makes for equitable, efficient and sustainable exploitation and utilization of natural resources. This affirms the need for a strategic synergy between the government, the corporate sector, the local communities and the civil society in effectuating natural resource governance in Nigeria.

V.

13 Nigeria's Natural Resource Profile: Gratia en Abundancia

Nigeria is a typical instance of a natural resource-rich country. The country parades over forty (40) different species of natural resources that are commercially viable and globally competitive (RMRDC, 2014). These resources are graciously but arbitrarily distributed by Nature across the various states and geopolitical zones of the country.

Nigeria's natural resources can be broadly categorized into liquid and solid minerals. Liquid minerals include fresh water, natural gas, crude oil and allied hydro-carbon resources. Solid minerals on the other hand include metals, stones, sand, clay, etc. In addition to the above broad categories, there are other water-based, wild-based and land-based natural resources, such as game (wildlife), timber, wood, fish, rangeland and farmland, among others. Table ?? shares some vital insights in this regard. Nigeria's natural resource base is characterized by immense diversity and abundance. The extractive sector has been dominated by the ebullient petroleum industry, which has been the mainstay of the country's political economy for decades. This sector also hosts the agricultural and solid minerals sub-sectors that have been so grossly neglected by successive governments since the era of oil and gas boom (Okoli, 2015). Within these sub-sectors, there is a burgeoning mining/ quarrying industry that is, incidentally, largely operated by artisans and small scale investors (ELI, 2001). The activities of illegal extractors have also predominated in the mining/quarrying sub-sector. By and large, Nigeria's natural resource profile reveals a richly endowed resource base that has been so poorly harnessed and exploited. The reason for this state of affairs is the absence of a robust natural resources governance regime capable of delivering the good.

14 VI.

153 Nigeria's Natural Resource Governance Deficit: Insights from the World's Resource Governance Index (rgi)
 154 The Resource Governance Index (RGI) is an initiative of the Revenue Watch Institute, an International
 155 Non-Governmental Organization (I.N.G.O) that seeks to "promote the effective, transparent and accountable
 156 management of oil, gas and mineral resources for the public good" (RGI, 2013:ii). RGI measures the quality
 157 of governance in the oil, gas and mining sectors of 58 counties, assessing the quality of key governance
 158 components, namely: institutional and legal setting, reporting practices, safeguards and quality control, and
 159 enabling environment (RGI 2013:1). The index is predicated on the understanding that proper governance of
 160 natural resources is key to the sustainable development of countries with abundant oil, RGI ranks the focal
 161 countries as either 'satisfactory', 'partial', 'weak', or 'failing' within the aggregate score range of 100 to 1. Within
 162 this standard range, 10-71 is rated satisfactory, 70-51 is rated partial; 50-40 is rated weak; while 40-1 is rated
 163 failing. The 2013 edition of RGI lists Nigeria among the group of countries with a very weak performance in
 164 terms of natural resources governance. Table ?? Table ?? indicates that Nigeria scored 42 on the standard
 165 aggregate range of 100 to 1. The implication of this record is that Nigeria was maintaining a gross governance
 166 deficit in natural resources management. Although Nigeria's assessment in the 2013 RGI was hinged upon the
 167 performance of her hydrocarbon (petroleum) sector, indications are rife to the effect that her performance in the
 168 mining/quarrying sector would be much more damning. It is to this important sector of the Nigerian natural
 169 resource domain that we now turn.
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15 VII.

171 Artisanal Mining/Quarrying in Nigeria: Nature, Drivers and Implications

172 Artisanal mining/quarrying is a pattern of natural resources extraction that is based on rudimentary and
 173 under-skilled operational modality. According to Abu-Sada (2002: 52), it is a mining activity in which a person
 174 labours at extracting certain minerals by rudimentary means and with a minimal capital or equipment. Artisanal
 175 mining/quarrying is characterized by a number of features, among which are that:

- 177 ? it is essentially rudimentary and not mechanized;
- 178 ? it is more or less subsistent in scale;
- 179 ? it is largely informal and illegal;
- 180 ? it is operated with minimal capital and equipment;
- 181 ? it is operated by under-skilled artisans and local peasants;
- 182 ? it is under-regulated;
- 183 ? it is characterized by low productivity;
- 184 ? it is labour intensive;
- 185 ? it is marred by operational inefficiency;
- 186 ? it is under-developed;
- 187 ? it is environmentally hazardous and unsustainable. Artisanal mining/quarrying is an important source of
 188 livelihood in the contemporary world. According to Abu-Sada (202:52-53):

189 Globally, an estimated 13 to 20 million men, women and children from over fifty developing countries are
 190 directly engaged in the artisanal mining sector, and an estimated 100 million more are indirectly dependent on
 191 the sector for their livelihood.

192 Nigeria's mining sector is dominated by artisanal practice. As observed by ELI (2014:1), "unlike countries such
 193 as Ghana and Burkina Faso, Nigeria does not have a well developed large scale mining sector, and the majority of
 194 mining in the country is carried out by artisanal and small-scale miners". The peculiar artisanal character of the
 195 Nigeria mining sector has been vividly captured thus: Over 90% of mining activities in Nigeria are Artisanal and
 196 Small-scale Mining (ASM) of which 75% are carried out illegally. The sector is unguided and unregulated. The
 197 policies in place are inadequate and miners are untrained. This makes ASM to adopt poor quality operational
 198 techniques that cause environmental disaster and losses of substantial revenue through exports as well as royalties
 199 and taxes (Opafunso & Alaba, n.d:1).

200 Artisanal mining in Nigeria is informal by nature. This implies that it largely operates outside the extant
 201 laws and regulatory regime (ELI 2014). As pointed out by ELI (2014:1), "while the current laws and regulations
 202 do address artisanal and small-scale mining activities, mainly by focusing on extension services, they do not
 203 provide meaningful incentives and assistance for formalizing miners". The instruments have also failed to provide
 204 proper dis-incentive for unwholesome and opportunistic mining/quarrying. Consequently, there is a prevalence of
 205 unregulated and do-as-you-please mining/quarrying artisanship in the different parts of Nigeria. This has often
 206 led to adverse environmental and public health consequences. For instance, "in 2010, unregulated small-scale
 207 mining in the northern states of Zamfara gave rise to an epidemic of childhood lead poisoning, with at least
 208 four hundred (400) children under the age of five dying within a six-month period" (ELI, 2014:1). The Zamfara
 209 incident underscored the vulnerability of the rural poor in the face of livelihood crisis occasioned by state neglect
 210 and associated structural imperatives. As succinctly observed by Abu-Sada (2012: 63):

211 The lead-poisoning epidemic occurred within a context of poverty, inequality, high gold prices, and lack of
 212 essential public health services. High gold prices were a result of the recent global financial crisis. This created an
 213 opportunity for local villagers and subsistent farmers to supplement meagre incomes. However, without adequate
 214 safety measures or essential public health services, their efforts resulted in tragedy.

215 The structural materialism of lead-poisoning in Zamfara state is a subject of political epidemiology (Okoli,
216 2014b). The thinking in that regard is that such an occurrence is a product of human vulnerability occasioned
217 by dire socio-economic and livelihood conditions that is made possible by governance failure. Suffice it to note
218 that the general failure of governance by the Nigerian state was responsible for bringing about the scenario that
219 culminated in the tragedy.

220 Artisanal mining/quarrying has been most prevalent in the northern part of Nigeria, with a pocket of states
221 in the southern part of the country also taking their fair share of the incidence. Table 5 chronicles some critical
222 flashpoints of artisanal mining/quarrying in Nigeria. The impacts of artisanal mining/quarrying in Nigeria have
223 been dire. It has been associated with adverse economic, ecological, health and humanitarian consequences
224 that negate sustainable human security in the affected population in particular and national security in general.
225 Some of these consequences include loss of life, population displacement, human injury, environmental degradation
226 (land, air water, pollution), as well as economic losses. The complications of the practice have been overly evident
227 in the public health hazards that are associated with it. A case in point is the lead-poisoning incidents in Zamfara
228 (2010) and Niger (2015), which led to huge death tolls and complex public health emergency. There have also been
229 cases of mine collapse or implosion, leading to human casualties in some parts of Nigeria (Okoli, 2014a). Table 6
230 highlights the various dimensions of adverse impacts and complications of artisanal mining/quarrying in Nigeria.
231 Despite the above adverse affects of artisanal mining/quarrying, a number of gains have been ascribed to it. This
232 includes employment/job creation, income generation and sustenance of livelihood. These economic opportunities
233 have made artisanal mining a flourishing enterprise in Nigeria. In recent times, the practice has been bolstered
234 by high prices of precious metals and stones as well as industrial minerals, a sheer lack of viable alternative
235 livelihoods for the teeming rural population, and a ready supply of rudimentary equipment for small-scale mining
236 (ELI, 2014). Complicated by the apparent inability of the government and community authorities to effectively
237 control and regulate the activities of the mining sector, artisanal mining in Nigeria have become a common
238 livelihood practice that is highly lucrative for the practitioners but detrimental to the society. This underscores
239 the imperative of effective regulation of the practice in Nigeria.

240 **16 VIII.**

241 **17 Evaluating Governance Crisis in the Nigerian Artisanal** 242 **Mining Sector**

243 The crisis of governance in the Nigerian artisanal mining sector has been evidenced by the lack of simple and
244 transparent legal and fiscal framework, weak institutional structures, lack of capacity to implement extant
245 regulations, and lack of political will to effectuate relevant policies (ELI, 2014:1-2). The situation has been
246 complicated by lack of organization and stability among miners, improper mining regulations, illiteracy paucity
247 of technical and financial capital, and livelihood insecurity among miners (ELI, 2014:2).

248 The absence of a viable regulatory mechanism in the artisanal mining sector means that there is no incentive
249 for best corporate practices among the miners. It also implies that there is no deterrence in respect untoward
250 mining activities. Formalizing and regularizing the activities of artisanal miners have been problematic. Existing
251 legislations merely emphasize on the provisions of extension services to miners without any concrete plan to
252 support them financially and technically. The requirement that artisanal miners form co-operatives in order to
253 enable them access technical assistance from government through the instrumentality of the Ministry of Mines
254 and Steel Development (MMSD), now Ministry of Solid Minerals (MSM), has since proved counterproductive.
255 Artisanal miners who could not readily organize themselves into such platforms naturally relapse into informal
256 and illegal practice (ELI 2014:2).

257 The operational efficiency of the existing fiscal, institutional and legal frameworks to harness and regulate
258 artisanal mining has been, in the main, marred by the ineptitude, corruption and laxity of those mandated to
259 enforce them. The failure of community leadership systems to mediate and moderate the activities of artisanal
260 mining in their domains adds to the complex scenario to accentuate the artisanal mining escapade.

261 **18 IX.**

262 **19 Towards Effective Regulation of Mining Sector in Nigeria**

263 Effective regulation of artisanal mining and quarrying in Nigeria requires a multi-stakeholder approach based
264 on mutual and synergistic entrustment. Under this regulatory regime, artisanal miners are required to form self
265 help co-operatives in line with their sectoral interests in specific localities. Each mining cooperative is to work
266 in synergy with the government, local authorities and other relevant stakeholders in ensuring that exploitation
267 of natural resources is not done in a manner that jeopardizes the common interest of all parties -the common
268 good. The end of this is the evolution an equitable and safe natural resource management regime that will
269 fairly distribute the gains and pains of resource exploitation to all stakeholders and ultimately ensure sustainable
270 societal well-being. This model of natural resources governance is sketched in figure 2.

20 Conclusion

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Natural resources constitute a critical aspect of wealth of nations. The manner these resources are managed hold critical implications for national sustainability of states. Where natural resources are well managed through an efficient governance regime, the outcome is economic vibrancy and prosperity for the nation. But where the resources are mismanaged through abusive or unregulated exploitation, the result is the paradox of 'resource curse' or 'unfortunate fortune'.

The natural resource domain in many developing countries has been a difficult and volatile terrain. The vacuum of governance in the sector has often engendered the dialectics of conflict, violence, corruption, crime and disaster. This has impeded national sustainability in many resource-rich nations. Nigeria is a natural resource endowed nation. However, her heritage in terms of resource gifting has not brought her any sustainable fortune owing to poor management of her abundant natural resources. Crass deficiency in terms of the state's extractive and regulatory capacities, as well as dysfunctionality of the basic institutional cum legal frameworks of governance, is at issue in this regard.

This paper has demonstrated that resource governance deficit has been the bane of efficient and sustainable exploitation of natural resources in Nigerian mining sector. The paper observed that the prevalence of artisanal mining/quarrying in Nigeria within an unguided and under-regulated operational regime is an indication of crisis of natural resource governance. Bereft of relevant effective institutional, policy, fiscal and legal operational mechanisms of regulation, artisanal mining/quarrying in Nigeria has been operated at huge social, economic, ecological and humanitarian costs that threaten economic and human security. To ensure that this sector is effectively managed in the interest of national sustainability, a multi-stakeholder approach to resource governance based on mutual entrustment is a desideratum. ^{1 2}



Figure 1: Figure 1 :

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Principle	Explanation
Transparency	Openness and frankness of actions, processes and procedures; open access of information, etc
Responsibility	Conscientious conduct; actions that fulfils good conscience, rule of law , etc
Participation	Mutual stake-holding, inclusion and civic ownership of the process
Accountability	Stewardship; being accountable to stakeholders
Responsiveness	Ability to serve the needs and aspirations of the society

Source: Adapted from UNEP (2013:14).

Figure 2: Table 2 :

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Mining	Coal, columbite, salt, lime stone, gold, diamond, and allied solid minerals
Quarrying	Sundry stones, sand, clay and cognate solid minerals
Petroleum	Crude oil, natural gas
Forestry	Timber, wildlife (game), eco-tourism resorts, fuel-wood, charcoal
Water	Fish, fresh water, aqua-life, etc
Land	Rangeland, farmland, flora

[Note: Source: Author (adapted from Darby, 2010:13; FAO 2014).]

Figure 3: Table 4 :

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Abia	Glass-sand, limestone, salt, shale, ballclay, galena, granite, marble, laterite, bentonite, phosphate kaolin, pyrite, feldspar, petroleum, lignite, gypsum, sphalerite
Adamawa	Granite, clay, gypsum, limestone, uranium kaolin coal, trona, barite, marble, magnesite, laterite
Akwa-Ibom	Clay, sand, granite, coal, petroleum, naturalgas, kaolin, limestone, lignite
Anambra	Clay iron stone, natural gas, petroleum, sandstone, kaolin, pyrite, lignite
Bauchi	Kaolin, trona, gypsum, cassiterite, mica, clay, tantalite, galena, gemstone, sphalerite, sand, barite, columbite, zinc, lead, monazite, feldspar, graphite, wolfram, coal, agate, tantalite, rutile, tungsten, copper, talc, ilmenite, zircon
Bayelsa	Salt, petroleum, natural gas, silicasand, bentonite, petroleum, limestone, glass-sand
Benue	Gemstone, barite, feldspar, marble, mica, galena, sphalerite, sand, clay, coal gypsum, kaolin, anhydrite, brick clay, crushed and dimension stone, fluorspar, wolframite, bauxite, magnetite, limonite

[Note: Borno Silicasand, natural salt, sapphire, topaz, mica, gypsum, feldspar, granite, potash aquamarine, limestone, kaolin, bentonite, laterite, refractory clay, trona, gold, cassiterite Cross River Salt, limestone, coal, manganese, mica, ilmenite, gold, quartz, glass-sand, tourmaline, petroleum, natural gas, kaolin, mica, clay, spring water, talc, granite, galena, cassiterite, goethite, uranium, barite Global Journal of Human Social Science © 2015 Global Journals Inc. (US) cassiterite, granite, coal, kaolin Kwara Clay, kaolin, sand, quart, dolomite, marble, feldspar, god, tantalite, cassiterite, granite, limestone, tantalite Lagos Sand, bitumen, gravel petroleum, laterite Nasarawa Amethyst (Topaz garnet), barytex, barite, cassirite, chalcopyrite, clay, columbite, coking coal, dolomite/marble, feldspar, galena, iron-ore, limstone, mica, salt, sapphire.]

Figure 4: Table 5 :

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THE BRIGHT Country	Resource Governance Rating		Composite Score
	THE POOR Country	Composite Score	
Norway		Vietnam	41
United States		Kuwait	41
United Kingdom	88	Angola	42
Australia	80	Nigeria	42
Brazil	77	Papua New Guinea	43
Mexico	76	Egypt	43
Canada	75	Yemen	43
Chile	74	China	43
Colombia	74	Sierra Leone	46
Trinidad and Tobago	73	Malaysia	46

Source: RGI (2013:4-5).

Figure 5: Table 6 :

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State	Resources being mined
Bauchi	Clay gemstone, sand, copper
Benue	Gemstone, marble, sand, clay, diamond
Ebonyi	Salt, granite, refractory clay, sand
Edo	Gold, marble, granite, ceramic, clay
Kaduna	Granite, gold, clay, sand, gemstone
Kebbi	Salt, iron ore, gold, limestone, granite
Kogi	Clay, gemstone, marble, limestone, granite, sand
Plateau	Gemstone, glass-sand, salt, clay, sundry
Niger	Limestone, granite, old, marble, gemstone
Zamfara	Gold, granite, clay

Source: Authors, 2015.

Figure 6: Table 7 :

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Impact	Empirical Indicator(s)	Instances(s)/Remark (s)
Health im- pact	Lead and Mercury exposure leading to health complications and deaths	(i) 2010 lead poisoning in Zamfara State killing 400 children in 6 months (ii) 2015 lead poisoning in Niger State killing 60 children
	Environmental pollution of air water and land; destruction of flora and fauna; ecological instability leading to landslides, erosion and tremors; landscape degradation; radiation hazards	Abandoned mines in Osun, Kogi, Zamfara and Ebonyi States have often engendered land degradation, leading to erosion, landslides, etc
Social im- pact	Communal strife and violence over resource access, equity, ownership, entitlements and control	Contestations over ownership and control of mining sites have led to

Figure 7: Table 8 :

- 292 [Eli ()] *Artisanal and small-scale gold mining in Nigeria: Recommendation to address mercury and lead exposure.*
 293 *Publication of Environmental Law Institute, Eli*
 294 *ELI Project No . 2014. 121001. Washington, D.C..*
- 295 [Roba et al. ()] ‘Booklet 1: Strengthening natural resource governance in Garba Tula. International Union for
 296 the Conservation of’. G Roba , S Gibbons , Y Mahadi . *Nature* 2013. IUCN.
- 297 [Abu-Sada ()] *Dilemma, challenges and ethics of humanitarian action: Reflection on Mzdecins Sans Frontire’s*
 298 *Perception Project, C Abu-Sada . 2012. McGill-Queen’s Press.*
- 299 [Okoli ()] ‘Disaster management and national security in Nigeria: The nexus and the disconnect’. A C Okoli .
 300 *International Journal of Liberal Arts and Social Science* 2014a. 2 (1) p. .
- 301 [Abdullah ()] ‘Fundamental ethics theories of corporate governance’. H Abdullah , Valentine . *Middle Eastern*
 302 *Finance and Economics* 2009. 4 p. .
- 303 [Governance for peace or natural resource. A review of transitions in environmental governance across Africa as a resource for peace
 304 ‘Governance for peace or natural resource. A review of transitions in environmental governance across Africa
 305 as a resource for peace building and environmental management on Sudan’. *United Nations Environmental*
 306 *Programme* 2013. (UNEP)
- 307 [Okoli ()] *How Nigeria can effectively manage her resource for inclusive growth and national development. Draft*
 308 *essay submitted to Centre for Management and Development (CDM), A C Okoli . 2015. Abuja-Nigeria.*
- 309 [King and Zeng ()] ‘Improving forecasts of state failure’. G King , L Zeng . *World Politics: A Quarterly Journal*
 310 *of International Relations* 2001. 53 (4) p. .
- 311 [Yosoff and Alhaji ()] ‘Insight of corporate governance theories’. W F Yosoff , I A Alhaji . *Journal of Business*
 312 *and Management* 2012. 1 (1) p. .
- 313 [Kpmg ()] *Nigerian mining sector. Publication of KPMG, Kpmg . 2012. Nigeria.*
- 314 [Ibeanu ()] ‘Oil, environment and conflict in coastal zone of West Africa’. O Ibeanu . *Beyond resource violence.*
 315 *Abuja: Centre for Democracy and Development (CDD), O Ibeanu, J Ibrahim (ed.) 2009. p. .*
- 316 [Opafunso and Alaba] Z Opafunso , O C (n Alaba . *MNE515-Artisanal and Small-Scale Mining (ASM); Course*
 317 *brief, Federal University of Technology, Akure, Department of Mining Engineering*
- 318 [Mclean and Mcmillan ()] *Oxford concise dictionary of politics, I Mclean , A Mcmillan . 2003. London: Oxford*
 319 *University Press.*
- 320 [Okoli ()] ‘Politics and Epidemics: A discursive reflection on political epidemiology’. A C Okoli . *International*
 321 *Journal of Liberal Arts and Social Science* 2014b. 2 (7) p. .
- 322 [Rmrdc ()] *Raw Material Research and Development Council, Rmrdc . 2014. Abuja-Nigeria.*
- 323 [Hoeffler ()] *State failure and conflict recurrence, A Hoeffler . 2009. 2011. Book Project) Centre for the Study of*
 324 *Africa Economic University of Oxford (Draft Chapter for Peace and Conflict)*
- 325 [Freeman ()] *Strategic management: A stakeholder approach, R E Freeman . 1984. London: Pitman.*
- 326 [Rodriguez et al. ()] ‘Sustainable development and sustainability of competitive advantage: A dynamic and
 327 sustainable view of the firm’. M Rodriguez , J E Ricart , P Sanchez . *Creativity and Innovation Management*
 328 2002. 11 (3) p. .
- 329 [Rgi ()] *The 2013 Resource Governance Index: A measure of transparency and accountability in the oil, gas and*
 330 *mining sector. Publication of the Revenue Watch Initiatives, Rgi . 2013. New York.*
- 331 [Adekeye] *The impact of artisanal and illegal mining on the environment in Nigeria. Draft paper, Centre for*
 332 *Peace and Strategic Studies, J I Adekeye . Ilorin-Nigeria. University of Ilorin*
- 333 [Nwala et al. ()] ‘Wireless sensor and actuator networks as a protective means for pipeline vandalism in the
 334 Nigeria Delta region of Nigeria’. K J Nwala , A Y Adekunle , A S Franklyn , J C Owolabi . *An International*
 335 *Journal of Advanced Computer Technology)* 2014. 1 1. 3 p. . COMPUSOFT