SAND MINING, LAND DEGRADATION AND CONFLICT MANAGEMENT IN EVBUOBANOSA, EDO STATE, NIGERIA

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CERTIFICATION

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DEDICATION

I dedicate this thesis to my parents Elder and Mrs. Okwudei Andrew. Thanks for all you have done for me. I promised you that I would be a Doctor and to the glory of God, I have bagged my Doctorate.

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ABSTRACT

Sand Mining (SM) is the extraction of sand aggregate from land surface and water bodies. Globally, sand is a critical resource for construction purposes. In Nigeria, SM is a process that degenerates into land degradation and conflict involving a network of people and structures. Extant studies have focused more on sand extraction and environmental degradation than its associated structures and conflicts. This study, therefore, examined land degradation and conflict management due to SM, with a view to determining the extent of SM, the structural organisations involved, livelihood implications of resultant land degradation, the networks of associated conflict and the conflict management mechanisms in Evbuobanosa Dukedom, Edo State, Nigeria.

Theory of Ecological Marxism guided the study, while the exploratory design was adopted. Qualitative data were purposively collected from Abudu, Evbuobanosa and Iru communities. Secondary data were sourced from the records of Federal Ministry of Mines and Steel, Benin-city office. Key Informant Interviews were conducted with 10 community leaders, six youth leaders, four pit owners and four environmental management experts. In-depth interviews were conducted with 40 sand miners, four SM association leaders, six tipper drivers, 18 farmers and eight fishermen. Eighteen Focus Group Discussion sessions were held with sand miners (9), farmers (4) and community members (5). Two case studies were also conducted with sand miners. Data were content-analysed.

Sand was mined extensively, legally and illegally. Most mining sites (81.4%) were illegal with depth of 1-3 meters, each covering about 1011m^2 and mined until stopped by regulators. Illegal miners thereafter, moved elsewhere to continue mining. Legal mines had depths ranging from 25-34 meters covering between 1011m^2-32,374m^2 and could reach down to the water table. The structural organisation of SM included the positional elites: community elders and legal miners, and artisanal working-class, illegal miners, mine workers, tipper loaders and drivers. Legal miners had renewable five-year mining permits. Site operations were largely mechanised and performed by three principal workers: manager, cashier and machine operators under close monitoring of legal miners to forestall fraud. Illegal mining was executed manually, on land and in water with slightly differing structures. On land, sand scouts/encroachers, loaders and drivers were involved, while diver-excavator, *jerker* (sand shoveler from canoe to beach), tipper drivers and loaders were involved in water excavation. Sand mining exacerbated flooding and induced landslides with devastating impact on the farmers. The SM drove aquatic lives out of the reach of fishermen. Legal and illegal miners clashed over sites and with indigenes. The conflict networks included guilds, kins, and fraternities: *Asigidi*, *Osokpikan*, *Ogboni*, Vikings, Black Axe, and *Eiye* among other fraternities. Conflict management mechanisms included negotiation and appeasement between parties. Unresolved cases were referred to the elders' council, *Ogwedion*, where defaulting parties were sanctioned with traditional fines: *Odegbe`n'ekpetin*.

Sand mining in Evbuobanosa, Edo State is structured on positional elite-artisanal working class relational-platform, accommodated by traditional arrangements and legal-rational permits. Its conflict management mechanisms were based on traditional institutions. Government needs to implement sustainable mining regulations to minimise land degradation.

Keywords: Sand mining, Legal and illegal mining, Land degradation, Conflict management

Word count: 491

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CHAPTER ONE

INTRODUCTION

1.1 **Background to the study**

Sand mining is the extraction of sand, clay, and stones from their natural formation (Rao, 2006; Ashraf, Maah, Yusoff, Wajid and Mahmood 2011). The mining of sand could be from pits, the riverbed, sea as well as the shores and beaches of rivers and seas. Sand is used for a variety of projects like building construction, road construction, the construction of artificial islands, and coastline stabilization (Xiping, Erfeng, Honggiang and Zong, 2005; Ashraf, et al, 2011). Globally, sand is mined and used as part of the component for the construction industry and is a major component in the construction of buildings, roads, dams and even artificial islands in some cases (Charlier, 2002, Diaz, Cutter and Hobbs, 2004). The mining of sand leads to the degradation of the environment as a result of the excavation of the topsoil and exposes the ecosystem to denudation and erosion (Charlier, 2002; Saviour and Stalin, 2012; Khan and Sugie, 2015). Sand mining can lead to the creation of pits, collapse and breakage of river banks, mudslides as well as accelerate deforestation and reduction of water quality(Diaz, Cutter and Hobb, 2004; Fitzpatrick, Kappers and Kaye, 2006). In Nigeria, excessive sand mining is common, especially in the Niger Delta (Ejumodo, 2014; Okonkwo and Ibeanu, 2016).

Around the world, sand mining is a common practice. In Asia, sand is mined for the construction of buildings, bridges, roads and artificial Islands especially in the Persian Gulf (Hwang, Gon Lee, Choi, Kim and Won Lee, 2014; Saviour and Stalin, 2012). In Bangladesh, sand mining has led to the disappearance of settlements due to erosion occasioned by sand mining (Khan and Sugie, 2015). This has resulted in conflict between the sand excavators and locales who suffer the consequences of the resulting environmental degradation (Xiqing, Erfeng, et al, 2005; Khan and Sugie, 2015). Hwang et al, (2014), detail how sand mining has resulted in the depletion of fish and other marine life in the Gyeonggi Bay in Korea. In India, sand mining has led to the depletion of

groundwater, the degradation of the same, the deepening of the riverbed, the widening of the river as well as damage to civil structures like drinking water schemes, culverts and bridges (Rao, 2006; Saviour and Stalin, 2012). In Malaysia, sand mining has led to the depletion of timber resources and wildlife habitat, degraded stream habitats and fisheries productivity, biodiversity, and affecting water quality due to increased sediment particles arising from mining activities (Xiqing, et al, 2005; Ashraf, et al, 2011). These have resulted in tension and confrontation between the locales and sand miners.

Furthermore, in North America, sand mining has led to the removal of naturally occurring plants and organisms, and the disruption of the existing biodiversity (Timura, 2001; Nairn, Johnson, Hardin and Michel, 2004). In the United States of America, sand mining has resulted in shoreline degradation and alteration, disruption of the seabed configuration of aquatic fauna(Byrnes, Hammer, Thibaut and Synder, 2004; Kelley, Ramsey and Byrnes, 2004). These changes in the environment have led to disruptive conflict over Salmon fisheries in Alaska, USA (Gillham, 2008). Schulz (2014) observes that local communities have agitated for compensation and have sought redress to counter the ills of resource extraction. Grettler (2001) notes that the extraction of natural resources including sand and the sometimes deleterious effect of such on the environment often pits the local inhabitants against the exploitative capitalists. The limited supply of environmental resources (which can be endangered through sand mining) gives rise to social effects like economic decline, human migration and sickness which could contribute to conflict (Matthew, Gaulin and McDonald, 2003; Mackendrick and Davidson, 2007).

Similarly, in South America, sand mining activities have been prominent. In Ecuador, the indigenous people who are mostly peasants have been engaged in long-running disputes and conflicts with the capitalists who are accused of land grabbing for mining of solid minerals and sand (Casas, 2014). The land has been acquired, forests cleared, the soil eroded and the biodiversity altered. Furthermore, in Brazil, increasing prosperity has led to the building of more physical structures (Casas, 2014). In the process, the land ordinarily being cultivated by peasant farmers was taken over by miners who excavated sand for construction purposes necessitating the cutting down of forests, eroding hitherto fertile soil and degrading the existing biodiversity (Madden and Fox, 1997; Casas, 2014;

Burns, 2015). This has created resentment and has resulted in conflict between the deprived citizens and the sand miners.

Also, in Europe, sand mining has played a significant role in environmental discourse in recent times. The increased consciousness about environmental issues has made sand mining a focal subject of analysis. In Finland and Norway, there has been strong environmental activism against the extraction of sand from the land and water bodies (Ranniko, 1996; Burns, 2015). Sand mining has been implicated in the distortion of the primeval natural environment, deforestation and the degradation of the existing biodiversity. Sand mining in Europe has contributed to the modification of riverbanks, beaches, river channels, and the spread of living organisms (Charlier, 2002). Gillham (2008), shows how Europeans have been involved in social movements to protest the environmental degradation in their society. Conflicts about the environment may ensue because people believe that the environment should be conserved and preserved, the beautiful landscape should be undisturbed, animal and plant species have as much right to exist as humans (Charlier, 2002; Gillham, 2008; Burns, 2015). In Belgium, sand mining had provoked protests by fishermen who were concerned about the deleterious effect it would have on the environment and their traditional occupation, fishing (Charlier, 2002).

Similarly, in Africa, sand mining is common practice. Asamoah and Osei-Kojo (2016) show how mining has been occurring in Ghana. They aver to the conflictual effect of mining in the sense that it has led to the pollution of water bodies and its culmination in unwanted pregnancy among young ladies as they are easily wooed by the financially empowered miners. In the same vein, Werthnann (2007) and Luning (2008) illustrated how mining had been occurring in Burkina Faso. They showed how mining activities had to be subjected to the prevalent customs and practices of the people to minimize the conflictual interest of miners and locales for whom land represented linkages with the ancestors and their ethos. Furthermore, in Tanzania, sand is mined for use in the local construction industry (Mbonile and Kivelia, 2008). They posit that sand mining had led to environmental degradation in the Dar es Salaam axis of the country.

In Nigeria, sand is mined for its various uses in the construction industry. There are excavation sites dotting the landscape where sand mining takes place. In some areas,

mining takes place around the riverbank, inside the river, seashore or even inside the sea (Byrnes, Hammer, Thibaut and Snyder, 2003; Nairn, Johnson, Hardin and Michel, 2004). The Niger- Delta is known for its vast petroleum resources, the environmental pollution and degradation occasioned by the extraction of Hydro-carbons as well as the conflict in the region arising from these. However, in the Niger-Delta region, sand mining has added to the degradation of the environment and contributed to conflict among members of the society (Ajibola, 2015; Okonofua, 2016). This research would examine how land, a major component of the environment has been degraded by sand mining and the conflict that could result from this.

Sand mining activities in the Niger Delta have resulted in land degradation such as mudslides, loss of arable land and denigration of the ecosystem and conflict. In fact, some hitherto existing beaches have disappeared occasioned by sand mining activities (Omeje, 2006; Rice, 2009; Ejumodo, 2014). Areas that traditionally harboured large schools of fish and which served as fishing grounds for fishermen have been distorted by sand mining activities and in some cases, obliterated (Adekola, Fischbacher-Smith, Fischbacher-Smith and Adekola, 2017; Aluko,2003; Amusan, 2001; Ebiede, 2011). Sand mining and environmental degradation have been going on pari pasu within the Niger Delta. Recurrent sand excavation from the soil surface has exposed the environment to leaching and accelerated erosion (Adekola, Fischbacher-Smith, Fischbacher-Smith and Adekola, 2017; Ejumodo, 2014). Many of the areas where sand has been mined are currently sites of active gully erosion. The activities of these sand miners have led to accelerated deforestation and the distortion of the scenery of the environment.

1.2 **Statement of the problem**

In Nigeria, especially the Niger-Delta region, people are involved in sand mining as an economic activity. Many streams and rivers in the Niger Delta and their flood plains are endowed with vast deposits of sand and gravel that are extracted easily and cheaply for different purposes (Ejumodo, 2014; Burns, 2015; Dokpesi, 2015). As such, it serves as a source of employment, creating time structure as well as providing a form of social

identity. As a result, people are attracted to this venture especially because of mass unemployment in the Niger Delta. The involvement of more people in sand mining activity has led to increased degradation of the environment (Rice, 2009; Okonkwo and Ibeanu, 2016). In their involvement in sand mining activities, people create social networks, new ties and bonds of friendship among themselves and strengthen existing relationships. In their interaction during the sand mining, certain social structural arrangements that are created build solidarity, foster close working relations among sand miners, facilitate smooth mining operations and present a common front to address issues that confront them in their sand mining activities. This creates a sense of community among them and enhances their ability to be better in their activities through the synergy created from collaborating. Nevertheless, the same structures of solidarity may also generate conflicts due to differing interests.

The Niger-Delta region is experiencing land degradation, but primary scholarly and institutional attention is directed at its oil resources and consequent conflicts that the area is known for (Aluko, 2003; Dokpesi, 2015; Okonkwo and Ibeanu, 2016; Okonofua, 2016). Significant scholarly interest has been directed towards environmental degradation and oil conflict in the area (Omeje, 2006; Ejumodo, 2014; Ajibola, 2015). However, significant environmental degradation has been occurring in the area due to sand mining activities. Sand mining activities in the Niger-delta lead to erosion, land degradation and conflict. The interaction among sand miners, between sand miners and the larger society, may lead to the intensification of different levels of conflict. This study seeks to understand the processes involved in sand mining and environmental degradation and how it leads to conflict.

While much of the discourse in the Niger Delta has focused on the vast petroleum deposits in the region, insufficient attention has been paid to sand mining activities, sand mining and environmental degradation-induced conflicts in Evbuobanosa dukedom. Hence, this research shall uncover the social dimension of sand mining-induced land degradation and the networks which sustain the consequent conflict.

1.3 Research questions

1. What is the livelihood dimension of land degradation resulting from sand mining activities?
2. What is the structural organization of sand mining

1.4 Research objectives

The general objective of the study is to examine the political economy of sand mining and land degradation and conflict. The specific objectives are to:

1. Discuss the extent of sand mining in the study area.
2. Determine the structural organization of sand mining.
3. Investigate the livelihood dimension of land degradation due to sand mining activities.
4. Examine the network of sand mining and land degradation-induced conflict.
5. Examine the conflict management mechanisms in the study area.

1.5 Significance of the study

The persistence of environmental degradation and conflict over the exploitation of natural resources is of concern to most stakeholders in society. Valuable lives and property are lost annually due to the preponderance of conflict. These conflicts are usually multi-dimensional. Largely, the Niger-Delta conflict has been studied with reference to the petroleum industry. There is little scholarly examination of land degradation and conflict due to sand mining. The research uncovered the structural organisation of sand mining in the region as well as the nature of environmental degradation due to sand mining. It is imperative to note that this research sought to examine the peculiar network of conflict due to sand mining and environmental degradation.

By examining sand mining, land degradation as well as conflict in the Niger Delta, the frontiers of sociological theory and research, would have been extended. This would contribute to the existing body of knowledge and literature on the social milieu of sand mining and its attendant conflict in the Niger Delta. Furthermore, the sociological insight that would be garnered from the research can serve as a valuable reference to deepen the understanding of conflict in resource exploitation and exploration theatres.

1.6 **Operational definition of concepts**

Conflict- This is used to refer to struggle, disagreement and or contestation by individuals or groups over scarce resources. It may or may not be violent.

Conflict networks: Used to refer to the linkages between actors in conflictual situations.

Ecosystem- A localized group of interdependent organisms together with the environment that they inhabit and depend on.

Land excavation: This is used to refer to the removal of the top soil to facilitate sand mining.

Land degradation- This is used to refer to the deterioration of the land through the diminution of resources such as water and soil; the destruction of habitats and ecosystems; pollution.

Indigene- A person that is believed to originate from a particular place or area where he or she is found as an autochthon.

Political economy- This is used to refer to the interaction of political and economic processes in society; dealing with the distribution of power and wealth between groups and individuals, and the processes that create, sustain and transform these relationships over time.

Sand mining- This is used to refer to the extraction of sand, clay and stones from an open pit, beaches, as well as ocean beds and river beds

CHAPTER TWO

LITERATURE REVIEW AND THEORETICAL FRAMEWORK

2.0 **Preamble**

This chapter focuses on the review of pertinent literature in line with the theoretical underpinnings for this research. It reviews the relevant existing literature as it relates to the political economy of sand mining, environmental degradation and conflict in Evbuobanosa Dukedom. Also, it discusses the theoretical foundation for the research.

2.1 **Conceptualising sand mining and environmental degradation**

Sand mining involves the extraction of sand, clay and stones from an open pit, beaches, dunes, as well as ocean beds and river beds. It is the abstraction of sand from their geographical formation (Ashraf et al, 2011). Sand is mined for use in the construction of roads, buildings as well as other physical structures. Clay is also mined and is used for the production of tiles, pots and ceramics. It serves as a source of employment and revenue for those engaging in its activities (Charlier, 2002; Saviour and Stalin, 2012; Khan and Sugie, 2015).

The demand for sand is increasing to meet its rising need in the construction industry. The physical infrastructural requirements of the industrial society necessitate the use of sand in their creation globally. According to the United Nations Environmental Programme report UNEP (2014), globally, between 47-59 billion tonnes of material is mined yearly. Sand and gravel account for between 68% to 85% of the mined materials. This suggests that sand mining is widely practiced in many different countries of the world. People mine sand for the different uses they can put it to. It is an invaluable component in the construction sector. For every physical infrastructure that needs to be built, sand is a necessary component. It is being utilized more than many people can imagine (Charlier,

2002; Saviour and Stalin, 2012; Khan and Sugie, 2015). It is a material that is ubiquitous, but not of the same quality in all cases.

Sand mining comes in the form of aggregate consisting of clay, stone, gravel, sand and silt. These aggregates are extracted from the soil, riverbank or seashore to be used in the creation of some physical structures (Diaz, Cutter and Hobb, 2004; Fitzpatrick, Kappers and Kaye, 2006). The mining of sand can be done using dredging machines, especially in large-scale industrial sand mining or using some other machines like bulldozers and pail loaders. The mined sand is pumped from the water onto the shore by specially designed pumping machines (Saviour and Stalin, 2012; Khan and Sugie, 2015). It is then evacuated using tippers or very large barges to the desired destination. However, there are also small-scale artisanal sand miners who may not have access to complex industrial machines for their mining activities. Instead, they utilize simple tools like buckets, shovels or spades to scoop sand from the floor of the river or river bank onto small boats, wheelbarrows and pans for onward evacuation. Economic hardships and quest for livelihood drive many Nigerians - a majority with little knowledge of sustainable development - into small-scale sand mining.

When sand is pumped using dredgers and pumping machines in the case of industrial sand mining, some aquatic life usually gets entangled in the process and gets pumped out of the water with the aggregate being mined(Xiqing, et al, 2005; Khan and Sugie, 2015). Also, the sand mining process induces and exacerbates erosion in the immediate environment where the mining is taking place as well as downstream in the case of river sand mining (Idemudia and Ite, 2006; Kunnie, 2013; Okonofua, 2016). Globally, erosion is a common phenomenon. The degree, however, varies from place to place.

In their study of Coastal erosion and site destruction in the West Indies, Fitzpatrick, Kappers, and Kaye (2006) assert that silt, gravel and clay which are transported and deposited through weathering processes are eventually mined as sand from the landscape they form. This indicates the materials are often scooped as sand in the process of mining. It also signals the occurrence of erosion and degradation in the environment consequent on sand mining.

As sand is mined, the quality of the existing natural environment is diminished. This is especially evident where there is indiscriminate and excessive mining of sand aggregates. The hitherto existing landform and structure are distorted and eroded (Hwang, Gon Lee, Choi, Kim and Won Lee, 2014; Saviour and Stalin, 2012). The aesthetic beauty of the landscape is altered in some cases and its ability to sustain plant and animal life is impugned. In some cases, the areas where sand has been mined become sites of active gully erosion. In other cases, they develop into sites of active mudslide where human life could be seriously endangered as well as animals in such an environment (Saviour and Stalin, 2012; Khan and Sugie, 2015). The mining of sand has been linked with the creation of artificial lakes and water pools in some areas. These pools of water constitute environmental hazards as they serve as breeding grounds for disease-causing vectors.

Environmental degradation occurs in different forms. The degradation could be on the soil or land surface, the water as well as in the air. The environment would be deemed to be degraded if any of its component parts diminishes in reasonable quantity or quality over a while. The degradation of the environment is an issue that has given stakeholders cause for concern in recent times. For Charlier (2002), sand mining has been occurring in different societies. Beaches and near-shore areas have been exploited for sand and gravel. Some countries that derive substantial income from shore tourism have been confronted with the challenge of marine mining. To maintain the aesthetic nature of the beach, artificial nourishment has become a necessity. Even then, the material for the beach reconstruction is sourced usually, not too far off-shore and such programmes frequently have peculiar ecological complications.

This, of course, suggests that sand mining whether it is done on the seashore, beach or inside the water inadvertently reflects on the environment. The magnitude would be the difference in any instance. The degradation of the environment for the land ordinarily entails the decimation of the capacity of the land to continually sustain human, animal and plant life that it hitherto could sustain (Toohey, 2012). It encompasses the removal of the essential components of the land or soil that makes it fit to support the ecosystem.

In the same vein, the degradation of the environment for the water bodies such as rivers, streams or the sea entails the pollution of the water with some deleterious material such as

crude oil resulting from oil spillage. In this case, the harmful substances in the water endanger the continuous survival of aquatic life. It makes the water unsafe for drinking, cooking, bathing fishing. Furthermore, degradation of the water could also encompass the distortion and disfiguration of beaches.

Land degradation is used here to signify a loss of land productivity through various processes such as erosion, salinization, waterlogging, depletion of nutrients, deterioration of soil structure or pollution, it is the diminution or destruction of the biological potential of the land (Bojo, 1991). Land degradation includes an overall reduction in natural vegetation cover and the lowering of the soil's potential to produce crops. (Fox, Chigumira and Rowntree, 2007). Land degradation involves both soil erosion and loss of soil fertility; hence, measurements of land degradation usually focus on the severity of soil erosion. The organic content of the soil is often low due to the widespread burning of dung and crop residues for energy, and the excavation of sand which increases the susceptibility of the land to erosion.

The factors influencing soil erosion and, therefore, land degradation are multiple and mutually reinforcing. The massive removal of vegetative cover is the driving force behind land degradation. This loss is largely due to an expanding population, with its corresponding increased demand for crops, grazing land, and fuelwood. The removal of vegetative cover for use as fodder, fuel and the extraction of sand aggregates lead to an increase in surface runoff and, thus, to higher soil erosion. With the removal of topsoil (a reduction in soil depth), there is less root anchorage for plants. In addition, there is a loss of soil nutrients and a reduction in water holding capacity. Land degradation affects agricultural production and livelihood in different ways. Erosion means loss of soil depth, which decreases the value of soil material as a medium for holding water for plant growth (Teketay, 2001).

2.2 The political economy of sand mining and conflict

Political economy has to do with the interplay of political and economic processes in society. It is concerned with the allocation of power and wealth among the diverse groups, interests and individuals as well as the processes that produce, uphold and transform these interactions progressively. Power and wealth are valuable resources that are unequally distributed in society (Omeje, 2006; Gillham, 2008; Ebiede, 2011; Burns, 2015). It tries to understand the relationship between individuals, groups and institutions as they compete for limited political, economic and social resources in their quest to further their benefits and achieve their individual goals and aspirations. It essentially relates the role of power and political institutions and relationships in resource allocation. The authority system in any society as the political resource-exercising hub, more often than not, impacts the economic activities of any given society.

Different categories of people are inadvertently involved in the sand mining process. Randeria (2003) and Rao (2006) identified the government, contractors and local farmers as interested parties in sand mining activities. Other stakeholders are community leaders, other members of society as well as artisanal groups among sand miners. These different groups wield varying levels of power and influence with regards to determining who mines sand, where he or she mines it when it is mined as well as the level of discretion that is acceptable in the mining process.

The history of mining is a history of human displacement, hard labor, and the appropriation of land, from slave labor to the labor-intensive mining of the nineteenth century and early twentieth century. Since minerals extracted from mining operations are vital to an array of mining has long been a socially determined process in which landed property is economically realized. With the collaboration of powerful states and their compliant elite agents, international monopolies dominated the mining industry during much of the twentieth century, including many areas. Yet, through the shifting phases of capitalism, many former colonial and metropole elites transitioned to international orientation, and then increasingly toward a transnational orientation. In this context, the political economy of mining, including in economically built-up areas of the planet, has in recent decades contingent on chains of transnational capitalist accumulation, globally

competitive markets, flexible labor, and the rising role of subcontractor and exploratory companies. Transnational mining corporations, (TNCs) mining operations are developed through a series of phases. First, transnational mining firms or smaller globally active exploration companies locate and assess mineral deposits. When positive results are obtained, a larger transnational mining conglomerate usually takes over, often buying out or gaining a controlling position over smaller exploratory firms. Once political and contractual guarantees are secured, the second phase begins—the development and operation of the mine. Market pressures have thus pushed state managers (looking for global investors) to standardize their regulatory and contractual processes. TNCs are utilizing a growing of exploratory companies and are developing mining sites by relying on numerous contractors and subcontractors. This is in marked contrast to the mining operations of decades ago.

Burns (2015) asserts that it is the periphery, not the developed centre that is the locus of high exploitation and increasing environmental degradation. He further opined that the social structures in society give certain advantages to some groups or classes over others. These advantages group or class acquire their advantage as a result of their ownership of capital as well as exerting influence over the political authority system required by a given system of production. This suggests that the different actors in society have differing levels of access to resources and wield different levels of authority. This difference can be seen in the ideologies that groups have which reflects in how they view the world around them. This is in line with the ideas of other scholars that there is unequal allocation of resources and authority in society (Hartmann, 1998; Timura, 2001; Charlier, 2002; Kousis, 2004; Rudy and Konefal, 2007; Gillham, 2008; Elliot, 2014). An individual's position in the social strata would influence his or her ability to access scarce resources in society. This could, therefore, help perpetuate the desire to increase a person's share of the commonwealth and increase the opportunities with its ensuing privileges.

Transnational capitalists in many industries, including mining, have developed by operating under new globally competitive conditions. This has been a historical process replete with contradictions, as changing phases of capitalism eventually develop economic crises and stagnation or upsurges from working people and other oppressed communities

(as can be seen in the many struggles against mining corporations by labor, activists, and local communities in the Caribbean and Latin America). Consistent with many other global industries, mining has been reorganized along increasingly flexible lines. Capitalist production has become more attuned to fluctuating markets, reflected in the rise of operational intervals, where mines shutter and then reopen at a faster pace. A variety of capitalistic advancements have strengthened the hand of management and created new pressures on state policymakers, labor, and local communities. Major technological and organizational innovations, for example, have allowed capital to lessen labor costs, while at the same time gaining new leverage (Rudy and Konefal, 2007; Gillham, 2008; Elliot, 2014). Through capitalist globalization, the very labour-power of workers has become incorporated into transnational value chains, including within industries such as mining.

Furthermore, the state acting through its agents at the National, regional or local levels, is ultimately responsible for whatever happens within its territory. The state creates the framework for mineral exploration through different policies and regulations. She allocates mining licenses and determines who can mine at a particular location. Thus, the state is at liberty to promote the economic interest of a particular group or groups whose interest it may decide to enhance and protect at any given time. In forging agreements with mining companies, all stakeholders, including communities and their representatives – Civil Society Organizations included – ought to be involved. They ought to be allowed to participate in decision-making processes that affect their livelihoods (Ebiede, 2011; Elliot, 2014; Hilson, 2016; Limpitlaw, 2020). This entails allowing communities to select the type of corporate social responsibility initiatives that are most relevant to their community. The voices of the community need to be heard even if they do not welcome the establishment of the mine in their area; a compromise is supposed to be sought rather than shrouding processes in secrecy and excluding one of the most important stakeholders – the community – from these processes.

The interplay of power and economy with regards to resource extraction and allocation produces benefits for some groups, while for some other groups, it leads to or promotes marginalisation, violence and exclusion within certain locations. Some groups are primed to dictate what happens around them as a result of their power in the social strata. The

relationship between state agencies and extra-governmental interest groups traditionally focuses on the nature of agency manipulation of and by these groups. Conflict is inevitable between interest groups in competition for scarce natural resources. With regards to wielding influence based on level of access to wealth and power, Bowden and Leahy (2014) opine that businessmen and women attempt to mobilize members of the public to oppose environmentalists in a bid to protect their economic interests. This gives the impression that the different groups in society are willing to deploy the different resources at their disposal to further their aims and objectives. The business owners who usually have a vested interest in mineral extraction sometimes have professionals in different areas who promote the narrative that suits the interests and needs of their rich benefactors (Bowden and Leahy, 2014). They create and promote certain ideas which legitimize whatever position they are advocating. Their economic advantage gives them an impetus to advance their goals.

Writing about the precarious situation of people who are at the receiving end of environmental resource exploitation-induced conflict, Cubitt (2014) suggests that the less privileged in this unequal resource exploitation debacle are usually left to grapple with more powerful forces and stronger actors. From the onset, these seemingly less powerful actors might not be able to muster the resources required to pursue and protect their interests as they usually lack the social and cultural capital required to successfully navigate in the 21st century. However, this may not always be the case. Environmentalists, Non-governmental organizations (NGOs) and other interest groups are becoming more prominent in their desire to speak up for the voiceless and fight for socially disadvantaged groups and individuals on the margins of society (Csutora, 1997; Maxwell and Reuveny, 2000; Grettler, 2001; Omeje, 2006; Toohey, 2012; Burns, 2015; Purnomo, Utomo, Pertini, Laila and Pariasa, 2021.). As such, the environmental Non-governmental organizations act as a voice for the voiceless, defender of the weak and oppressed as well as advocate for the downtrodden in society.

Understanding the conflict is not a simple task as there are multiple intersecting variables, some of which involve processes that are common across mining regions, although some are deeply contextual. A complex layering of land claims, and also a set of settlement

pressures and spatial relationships have contributed significantly to the generation of conflict. Land, settlement and spatial factors have operated in interplay with the turbulence and volatility that is commonly associated with mining (Rubin and Harrison, 2015). As a finite resource, land is contested by groups for the different uses they can put it to.

The mineral extraction industry in Nigeria is dominated by large corporate players. These corporate organisations operate joint venture production arrangements with the Nigerian state. Thus, in a quest to safeguard its equity interest, the Nigerian state often interferes to suit the interest of the mineral extracting organisations using various laws, public policy and even military reprisal in a bid to resolve the conflict between the big companies and their host communities. Often, the state's intervention has intensified the conflict (Omeje, 2006; Kunnie, 2013). Hence, the state is perceived as an ally for the corporate organisations in their bid to exploit the mineral resources to further their corporate interest. According to Charlier(2002), sand mining is subject to National and international regulation with regards to their extraction, but authorities often either lack the will, the political clout or the required capacity to implement laws.

Omeje (2006) was of the view that political institutions further play very active roles in resource conflict in the Niger Delta. Most Nigerian oil-related laws and policies appear to advance the government rent-seeking interest as well as the corporate interest of petro-business usually to the detriment of concerns of the aborigines with regards to the preservation of the environment, human security as well as sustainable development. This is in line with the ideas of other scholars that large corporate organizations who are well connected with the state are actively involved in mining activities in many parts of the world (Maxwell and Reuveny, 2000; Csutora, 1997; Idemudia and Ite, 2006; Ebiede, 2011; Kunnie, 2013). These organizations use their clout and influence to lobby for favourable policies and create a conducive environment for them to operate unhindered. They usually have direct access to the corridors of power and as such, the power of the state is often at their disposal to see through their positions and enhance their interests.

On the other hand, at the local community level, there are different political structures that are designed for the administration of the society. These political structures include the

family heads, the clan head, chiefs and kings. They are part of the traditional political institutions that are saddled with the responsibility of culturally maintaining law and order concerning the norms and values of the society (Grettler, 2001; Idemudia and Ite, 2006; Omeje, 2006; Ebiede, 2011). While they wield political influence traditionally, they also have a say on who gets what resources, when he gets it, for how long he should have it and why he should have it. In other words, they influence the allocation of value and resources within their domain based on their political and traditional authority. These traditional power brokers are poised to make or mar the economic fortunes of an individual or group to the extent that it lies in their power to do so (Maxwell and Reuveny, 2000; Grettler, 2001; Peterson et al, 2002; Omeje, 2006; Okonofua, 2016). They are usually the community leaders who represent the community and should ideally protect her interest while negotiating with other interest groups with regards to mining rights, community development as well as any other issues that might require the community to interface with other groups. A community is defined through norms and a presupposition that its members are long-residents who share aspects of cultural similarities, have social interactions as well as share economic opportunities (Dorow and O'Shaughnessy, 2013). It is these shared attributes, opportunities and social relations that provide the platform for interest aggregation and expression among members of communities who share common goals and interests.

In the same vein, Theisen (2008) posits that the elite in the society often anticipates resources that would likely appreciate and appropriate such for themselves. Influential members of the society deploy their power to secure resources they expect would become scarce at a later date. This results in rent-seeking and more scarcity for weak groups who consequently, resort to violent means to access the resources. State policies are manipulated by the elites in the society to suit their purposes, thereby diminishing institutional responses to grievances and escalating the attendant risk of violence. This further buttresses the idea that the elite in society exploit their peculiar advantage to promote their economic interest at any given time with the view to also ensure that their position is not jeopardized in perpetuity. This aligns considerably with the positions of other scholars with similar thoughts (Csutora, 1997; Maxwell and Reuveny, 2000;

Grettler, 2001; Omeje, 2006; Toohey, 2012; Burns, 2015). Lending more credence to the plight of the downtrodden in resource exploitation, Cubitt (2014) posited that the non-privileged members of the society are usually unregarded and sometimes treated with little or no respect. Their peculiar conditions make them easily susceptible to poor health, limited life chances as well as poor living conditions. This suggests that those who are at the receiving end in the quest for resource exploitation are left at the mercy of providence to survive. They are like pawns in a game, subject to the whims and caprices of the more powerful groups in society who are more concerned with feathering their own nest.

The socially disadvantaged are left to fend for themselves however they deem fit. Their disadvantaged position concomitantly dovetails in other areas of life as their cultural capital is minimal. Natural resource discoveries introduce "high rent activities" to the economy, increasing the bribes that involved economic actors can pay while still reaping profits, and thereby incentivizing bureaucrats to request bribes (Theisen, 2008; Toohey, 2012; Hilson, 2016). Furthermore, the economic costs (e.g., lost tax income) for governments of accepting corruption are lower when the economy is dominated by sectors, such as natural resource extraction, in which capital investments are less price-sensitive but very susceptible to bribery. In resource-dependent economies, governments, therefore, have weaker incentives to invest in costly monitoring and control institutions for detecting and punishing corruption. Indeed, leading government actors may themselves benefit from bribes relating to control over resource production and export. Mass environmental migration can alter the power equation among the elites. To safeguard their interests, these elites can actively build up a strong group identity within their communities and can incite one group to take action against the other.

In their effort to organize the natives, the elites of the community may use the ethnic differences between migrants and natives as a major instrument of mobilization. Fear of retaliation by the natives may be used by the elites in the migrant community to counter their native counterparts. This type of conflict is an expression of a feeling of insecurity among the elites of native and migrant communities and an attempt to protect their interests against each other in developing societies (Boni, Garibay and McCall, 2015; Burns, 2015; Bugri and Kumi, 2018). Environmentally induced migration can not only

transport conflicts from rural to urban areas in developing countries, but it also has the potential to transmit these conflicts from the areas of environmental destruction to places that are far away from the epicenter. This transmitted group conflict can spark riots and internal wars in the host society. Environmental migrants can spread disruption across national borders. International media generally focus on native-migrant conflicts in the industrialized developed countries but, in reality, this has been a worldwide phenomenon. Environmental migrants have also been subject to hostility from the natives in several developing countries. The conflict between native and migrant communities can take place in the developing regions because of both internal as well as trans-border migration of environmentally displaced people. Trans-border migration, besides being a cause of tension between sender and host states, may, at the same time, germinate conflict in the place of settlement (Ashraf et al, 2011; Bugri and Kuni, 2018). The existing natural differences between the natives and migrants, either by themselves or through the use of these differences as instruments by the elites of both communities for their political interests, can potentially bring the conflict to the surface. These migration-aided conflicts may also contribute negatively to the process of nation-building in many developing states by arousing greater ethnic rivalries. Developing countries with multi-ethnic compositions are likely to be more vulnerable to large-scale ethnic unrest, particularly if the migrants are identified with one major ethnic group of the country.

2.3 **Environmental degradation in the Niger-Delta**

The Niger-delta region has been described as the largest wetland in Africa and the second-largest in the world after the Mississippi. It is prominent for its vast reserve of crude oil deposits. It contains the most expansive deposit of oil in Africa and some of the highest quality oil worldwide (Idemudia and Ite, 2006; Okonofua, 2016). According to Ross, (2003) the region has an estimated 31.5 billion barrels of crude oil deposit and an estimated 124 trillion cubic feet of proven natural gas. This makes it a resource-rich region in Nigeria. Consequent to this, the region plays host to several oil-prospecting and mining organizations.

However, the Niger Delta is also known for its restiveness occasioned by decades of neglect and underdevelopment. The oil industry has had a deleterious impact on the Niger Delta area through gas flaring and oil spillage. Ebiede (2011) notes that resource exploration in the region has had some negative effects. The oil industry has unsettled the pristine nature of the Niger-Delta environment. This disruption does not impede the continued exploration of crude oil, but it degrades the environment to the level that it encumbers the livelihood of the natives of the Niger Delta who hitherto relied on the environment. Resources such as freshwater, aquatic life, arable land, plants and animals are seriously threatened in the Niger Delta. This suggests that the environment in the Niger Delta has been degraded by mineral exploration activities. This degradation affects the indigenes who depend on the environment for their daily life such as water for drinking and cooking, fishing and farming. This is consistent with the views of scholars that the Niger-Delta environment has been subjected to serious pollution and environmental thereby jeopardizing the livelihood of its inhabitants (Amusan, 2001; Idemudia and Ite, 2006; Ebiede, 2011; Kunnie, 2013).

Amusan (2001) posits that the Niger-Delta region has been severely degraded with little or no serious plan to remedy the situation. The environment in the region has been subjected to grave harm. Mineral resource exploration has deprived the locals of fishing and farming due largely to gas emissions and oil spillage, which are primary causes of air and water pollution. The physical environment has been subjected to long-term alterations through the extraction of mineral resources in the area. The federal government of Nigeria has encouraged the activities of oil prospecting without paying sufficient attention to remedial activities for the resultant environmental damage. Also, the opaque nature of the activities of the multinationals has made it difficult for the government and the local citizens to adequately seek redress from them. The activities of multinational corporations are obfuscated with regards to their duty of care for the environment and the host communities where they carry out their mining activities.

This is further buttressed by Okonofua (2016) who asserted that the Niger Delta has witnessed environmental degradation of horrendous proportions. He posited that the region was one of the most polluted in the world with deleterious effects on the delta's

ecology and the concomitant reduction in the region's stock of arable land. The activities of oil prospecting companies have impacted negatively on the environment and made it less safe for the host communities.

This is consistent with relevant literature that the exploitation of mineral resources in the Niger-Delta region has had a debilitating effect on the environment. The frequent oil spill into the streams and rivers has made the water unfit for human consumption. UNEP (2011) posits that water from some water wells in the area was heavily contaminated with harmful carcinogens, especially benzene, thereby making the water unfit for consumption. This clearly shows how the water quality in parts of the Niger Delta has been impaired. The water gotten from surface wells is contaminated with benzene, a known carcinogen. These are wells that had served the people with fairly good drinking water in the past. The underground water from where those well are supplied has already been contaminated. This level of environmental pollution makes it hard to drink water gotten from the environment. Notwithstanding, the Niger-Deltans, the indigenes, drink the water because they do not have a better alternative. The level of environmental degradation, deprivation and insouciant attitude to the plight of host communities makes life very hard for people in such environment (Ebiede, 2011; UNEP, 2011; Kunnie, 2013; Okonofua, 2016). Where the community members have a perception, either rightly or wrongly that they are being taken for granted by the mining entities and the government it is expected that they would express their angst and displeasure through methods of their choosing.

Apart from rendering the water unsafe for human use (in terms of drinking and cooking), the people residing in parts of the Niger delta can no longer swim inside the river as it is hazardous to health. According to the UNEP report (2011), parts of the Niger Delta, especially Ogoni land has been seriously exposed to petroleum hydrocarbons in a deleterious manner. The pollution in the area has left mangroves denuded of leaves and stems as well as coating their roots in a bitumen-like substance. What this portrays is that the water found in the different streams and rivers that are found in the area has been heavily polluted. Consequentially contaminated and degraded. Water that is supposed to be a source of life is no longer healthy to support life, whether human life, animal life or even plant life. The environmental degradation in the creeks has turned a hitherto life-

supporting resource into a deleterious component that jeopardizes the very life it is supposed to be supporting in its immediate environment (Idemudia and Ite, 2006; Kunnie, 2013; Okonofua, 2016). The plight of the people of Niger Delta and their experience with environmental degradation is a tale of neglect, injustice and lackadaisical attitude by the authorities toward the indigenes.

Similarly, the environmental damage in the Niger Delta has seriously influenced the traditional occupation of the indigenes- fishing. The level of ecological denigration in the area has made it difficult to fish, to set up and maintain a fish farm. The fish farms that were established by entrepreneurs around the creeks were plagued by a ubiquitous layer of floating oil. Fishermen also had to go further upstream or downstream in search of less contaminated fishing grounds where they can ply their trade (UNEP, 2011). This has made it harder for the residents to eke out a living from their traditional occupations of farming and fishing.

What this implies is that the existing fishermen in the area who were used to fishing as a form of livelihood can no longer practice their conventional trade in their traditional fishing ground due to the degraded nature of their streams and rivers. If they must fish, they would have to scout for new fishing grounds that are less polluted or have not yet been contaminated. Again, the level of devastation in the Niger-Delta environment is such that even private fish ponds are affected by environmental pollution. The water that is available in wells and stream that should be used for the fish ponds are already contaminated. It is a tale of environmental degradation of monstrous proportions (Amusan, 2001; Idemudia and Ite, 2006; Ebiede, 2011; UNEP, 2011; Okonofua, 2016).

The air as part of the environment in parts of the Niger Delta is contaminated as a result of the severe environmental degradation that the region has suffered from. Benzene content in the air in the area exceeded WHO recommended safe level. Benzene concentrations were higher than what was obtainable in other more developed regions where crude oil was exploited (UNEP, 2011). Again, this shows how badly the atmosphere around parts of the Niger Delta has been severely polluted. The air contains benzene (a colourless volatile toxin) in proportions higher than the safe and acceptable level. This level of environmental

devastation significantly increases the risk of people who would ordinarily breathe the available air in the area and makes them susceptible to several health risks. The unsafe air arising from the severe air pollution in the area would inadvertently affect the health of the residents in those communities.

With regards to the land surface, the Niger Delta has suffered devastating degradation. The arable land in the area has been severely polluted by oil spillage (Ebiede, 2011; UNEP, 2011; Okonofua, 2016). Findings from the UNEP (2011) report on the degradation of Ogoniland in the Niger Delta shows that the soil surface in parts of the Niger Delta has been contaminated by crude oil and its ancillary pollutants up to five meters depth. In plain language, it simply means that the soil has been degraded such that it can no longer be used for Agricultural purposes in its current state. That means, the indigenes in that environment cannot plant on the soil and expect it to grow and yield meaningfully (Amusan, 2001; Idemudia and Ite, 2006; Ebiede, 2011; UNEP, 2011; Okonofua, 2016). The land surface has been denuded and the ecology altered to the extent that it can no longer sustain traditional agricultural practices that it had hitherto been used for. The relentless extraction of mineral resources has had a deleterious effect on the ecosystem.

2.4 **Sand mining, land degradation and conflict**

The United Nations Environmental programme (UNEP) describes sand mining as 'the temporary or permanent lowering of the productive capacity of land (UNEP, 1992). For Hegde et al, (2008), sand mining is a vital economic activity that enables those involved in it to meet their basic economic needs. According to Khan and Sugie (2015), when the rate at which sand is being extracted transcends its rate of replenishment, the environment would undergo considerable substantial as well as possibly irrevocable alteration. They further posit that mining inside the stream is a primary reason for swift canal incision and the attendant bank failure occurrences. This is further corroborated by Ashraf et al (2011) who asserted that the extraction of sand and gravel from stream channels leads to channel incision also known as "bed degradation" through head cutting and hungry water. In head cutting, the mining of a quarry in the active channel lowers the

stream bed, creating a nick point that locally steepens the channel slope and increases flow energy. A pit mine locally raises water table-dependent arboreal flora. Saline water might encroach into the freshwater body for locations close to the sea. This may alter the nature of the brackish aquatic environment that had hitherto existed.

Sand is needed for construction. With the exponential growth of the construction sector in modern contemporary society, especially in urban areas in infrastructure, the extraction of sand from rivers and lakes has also become big business (Hegde et al, 2008; Fletemeyer, Hearin, Haus and Sulivan, 2o18; Dybas, 2020; Pickens, Taylor, Finkbeiner, Hensen and Turner, 2021). Not only is it very lucrative, but it also has a low working cost. The collision between growing human needs and the availability of renewable natural resources is gradually becoming more acute in many developing countries. The spread of deserts, loss of forests, declining water supplies, changes in the climate and extinction of species threaten the survival of the present and future generations in these regions.

Also, Diaz, Cutter and Hobbs (2004) are of the view that sand mining "directly disturb benthic communities and indirectly disturb trophically dependent pelagic species" (pg. 63). What this means is that sand mining physically alters the pre-existing bio-ecological configuration in the environment. It distorts the local habitat and degrades the ecosystem. In the same vein, Hwang et al, (2014) provide evidence that sand extraction activities from water bodies negatively affect the fish assemblage and other aquatic organisms. The composition as well as the location is disrupted and altered. This is further buttressed by Nairn et al (2004) who stated that sand mining activities result in "change in fish populations because of the removal of infauna, changing the prey base". This suggests that sand mining activities aside from physically dislocating physical earth structure also dislodges fish and other biological organisms which are embedded in the environment, thus, disrupting the cycle of life in the environment.

For Hedge et al (2008), sand extraction results in soil erosion, denudation of surface soils, excessive exploitation of groundwater and crop yield loss. Integral to these activities have also been environmentally destructive practices in the interior mainly due to lack of financial resources, primitive extraction and processing techniques, poor monitoring procedures, and a scarcity of information needed to understand the significance of

environmental impact. As a consequence, the environment is subjected to deforestation, pollution, dredging, discoloration, and siltation.

Mining activities result in the removal of channel bedrock and the clearance of vegetation. This might result in the loss of stream reserve habitat, reduced light penetration, the dislocation of species accompanying the streambed deposits as well as reduced feeding opportunities for aquatic organisms (Saviour and Stalin, 2012). Sand mining physically impacts the environment by causing the crumpling of riverbanks, destruction of adjacent land and structure, downstream and upstream erosion as a result of the increased carrying capacity of the stream as well as alterations in the forms of accretion and deviations in the nature of habitat (Diaz, Cutter and Hobbs, 2004; Ashraf et al, 2011; Saviour and Stalin, 2012; Khan and Sugie, 2015). In other words, sand mining degrades the quality of the aquatic environment and marine life. The biodiversity that sustains and perpetuates the balance in nature is artificially distorted arising directly or indirectly from the activities of mineral extractors in the environment. The ecological balance of the aquatic life gets significantly distorted as a result of the disruption that inadvertently takes place occasioned by mining activities.

The UNEP global environmental alert service (2014), holds that sand extraction directly impacts the level of water turbidity, biodiversity, the landscape as well as water table level. This suggests that sand mining has been linked with the alteration of water table levels in some areas. In other words, sand mining reduces increases the depth at which water can be gotten from a particular area. That in itself would make it harder for people to have access to water especially if they have to get it from wells. This is in line with the findings of other scholars on sand mining altering the availability of water in areas that have witnessed intensive sand mining activities over time(Ashraf et al, 2011; Saviour and Stalin, 2012; Khan and Sugie, 2015). The sand that is being extracted persistently is also very crucial for the life and flow of rivers, and for the natural water systems that feed wells and springs alongside the rivers. These wells and springs provide essential water for agriculture and for the millions of people who continue to depend on groundwater sources for drinking and other domestic uses. Without an adequate layer of sand, rivers can

suddenly change course leading to flooding and destruction. Dredging in creeks can result in saltwater ingress into freshwater aquifers.

Degradation is a disinvestment in the stock of land if more value than replaced (by nature or man) is extracted from it. The perpetuation of this disinvestment would threaten livelihood security in the long run. This would happen due to the differences between the equilibrium and actual rate of extraction or the replacement (social) and actual costs of using land (Reddy, 2003). Population increases have resulted in extensive forest clearing for agricultural use, overgrazing, and exploitation of existing forests for fuelwood, fodder, and construction materials (Bishaw, 2001; Bhoopathy and Subramanian, 2022). As more people make demands for a resource that is not increasing proportionately with the population, the pressure on the environment would inadvertently increase the competition for those resources.

In their study of sand mining in rural Bangladesh, Khan and Sugie (2015) discovered that the laws guiding the extraction of sediments and sand were not observed. Influential elites from the local communities illegally privatized sand and sold it for their private gain. The extraction of sand with scant regard to the regulations guiding its operations resulted in social tension between stakeholders in the community. Conflict results from incompatible interests or irreconcilable differences of stakeholders who compete for scarce resources, values, power and goal (Hubler and Pothen, 2021; Shitima and Suykens, 2023). The conflict that arises from resource exploration and exploitation can alter the course of history in some societies. In some cases, these conflicts have defined the perception about society and served as a basis for charting the course of their existence.

More often than not, environmental conflict is rooted in moral authority, that is, the basis people use to ascertain what is right or wrong, acceptable or unacceptable (Peterson et al, 2002). The moral authority regarding the environment is interconnected with culture. As such, environmental conflict usually dovetails into social conflict and is often shaped by societal norms of moral understanding (Peterson et al, 2002; Kousis, 2004; Hubler and Pothen, 2021). Conflict is an integral part of human existence. It could be desirable as it could lead to new and sometimes better ways of doing things and understanding society. This, therefore, makes conflict a sweet-bitter experience for the different stakeholders,

depending on the perspective of the party in question and their position in the outcome of a conflict. Perspectives (2010) asserted that illegal sand mining takes place at different points along the banks of the Betwa River. Even though the law stipulates that a lease for sand mining be given out to fishermen, very powerful contractors obtain the mining lease in the name of fishermen, pay them a pittance and conduct the mining. Hundreds of trucks laden with over 40-46 tonnes of sand per truck leave a mining site daily (Perspective, 2010). This paints a picture of an environment where sand is mined with scant regard to the environmental consequences as long as the mining interests are met. The livelihoods of the hitherto indigenous people are treated with reckless abandon. The courses of the river altered and the groundwater recharge systems were imperiled.

Similarly, the mining of sand from the ground lead to the creation of pits that could serve as breeding grounds for mosquitoes and consequently, the spread of some diseases for which they serve as vectors (Charlier, 2002; Rao, 2006; Saviour and Stalin, 2012). The impact of sand mining is evident at the spot where sand is mined as well as the contiguous environment. The haphazard and irregular mining of sand has resulted in the creation of water stagnation in the riverbed and impeded the natural flow of water which has impacted Agricultural produce as a result of inadequate water for irrigation. Also, the usage of huge machinery for sand extraction has resulted in reverbed erosion, the collapse of banks as well as impairment of infrastructures like bridges and transmission lines (Rao, 2006; Mushonga, 2022). In the same vein, the UNEP (2015) shows that as more sand is mined, its reservoir on land is getting depleted. People are turning to marine sand to resolve this.

Consequent to the deleterious repercussions that sand mining has on the environment, human relation in society is impacted. As the environment gets degraded, the limited resources are further constrained. As people strive over these resources, they inadvertently get entangled in conflicts. The scarcity of valuable resources such as forests, fisheries, cropland and water results in a plethora of adverse social consequences including economic decline, social segmentation, migration; which in turn contributes to conflict (Grettler, 2001; Matthew, Gaulin and McDonald, 2003; Purnomo et al, 2021). This position is similar to that of Peterson et al, (2002) who asserted that disagreement among

people with incompatible goals regarding natural resources is a major challenge for the 21st century. This suggests that there is a nexus between competing goals regarding the environment and its resources on one hand and conflict on the other hand. When the environment is altered due to exploitation of its resources, the people most affected in a negative manner are the ordinary folks that rely on the environment for their livelihood (Grettler, 2001; Peterson et al, 2002; Matthew, Gaulin and McDonald, 2003; Randeria, 2003; Asamoah and Osei-Kojo, 2016). This is true of most societies especially developing societies where laws and policies are not fully developed to adequately protect the most vulnerable members of society. Randeria, (2003) asserts that communities whose claim to land, forests, water and customary way of life are threatened by resource exploitation activities fight to guarantee their protection. These fights could be in terms of physical fisticuffs, disagreement with a process, litigation and in some cases sabotage and destruction of property and even loss of lives.

Rannikko (1996) sees environmental conflict as involving economic interests, cognitive conflicts, value conflicts, and interests' conflicts. When the various ways people interact with the environment and landscape are examined, value conflict becomes apparent. People fight over values and resources. They are engaged in conflictual activities to protect their interest or gain in any situation where they think that their interest is best protected. In all the conflicts, the same actors may be noted, each with distinct weight: the companies, the national and provincial governments, the environmentalists and the local society - all confront each other directly or indirectly, with variable results.

Individuals and groups can experience relative deprivation when they perceive a gap between the situation they believe they deserve and the situation that they have achieved. But the deprivation postulation significantly over-predicts the likelihood that violent conflicts may occur from grievance; it proves insufficient in explaining the incidence of such events (koehnken, Rintoul, Goichot, Tickner, Lottus and Acreman, 2020). For grievances to erupt into violent conflict, it is inherently assumed that there is the presence of two other factors. First, the aggrieved individuals must participate in some sort of collective capable of violent action against the authorities, such as ethnicity, religion and class. They must be a community of interests sharing certain norms, economic

opportunities and interacting to further their identified interests. People must also feel the relevance of their group identity to their grievances—that they are aggrieved as a group. Second, the political structure must fail to allow these groups to express their grievances peacefully at the same time as it offers them openings for violent action (Gleditsch and Urdal, 2002; Purnomo et al, 2021; Mushonga, 2022). The political system would not be sufficiently responsive in addressing the grievances of the agitating groups. The people would then have genuine reasons to seek redress and agitate to protect their interests. It is important to note that these subsequent agitations can take different forms. As long as the aims of the group are achieved and their interest is enhanced, they would make a case for themselves.

2.5 **Land degradation induced conflict in Africa**

The African continent is blessed with vast deposits of natural and mineral resources. From the Diamond mines of South Africa and Botswana to the Petroleum and Natural gas fields in Nigeria, Angola and Libya, From the Gold mines of Ghana and Burkina Faso; it is a tale of massive natural resources. It is a continent blessed with exotic wildlife from the Kenyan Safari to the Democratic Republic of Congo; Africa is a resource-rich continent. This massive deposit of natural resources and very aesthetic landscape is evident from the dunes of North Africa, through the Saharan desert up to the Table Mountains of South Africa. This creates a picturesque kaleidoscope of natural beauty that should be cherished for generations.

However, the abundance of resources inadvertently stimulates the desire to explore and exploit it. For decades, most African countries have been very active hubs for mining activities (Amusan, 2001; Idemudia and Ite, 2006; Ebiede, 2011; UNEP, 2011; Okonofua, 2016; Mushonga, 2022; Shitima and Suykens, 2023). The different natural resources have been heavily exploited for their economic value. This has brought a lot of money to the governments of the different countries, the mining corporations and some other stakeholders (Idemudia and Ite, 2006; Luning, 2008; Ebiede, 2011; Okonofua, 2016). Some African countries owe their wealth to the mining of mineral resources (Luning,

2008; Ebiede, 2011; Okonofua, 2016). For instance, income from crude oil accounts for over 80 percent of the foreign exchange earnings in 2016. As such, the mining of natural resources is very strategic for the economy. Most armed conflicts and wars are over objectives that can broadly be defined as resources. The availability of these resources determines people's well-being, and scarcity of such resources can lead to violent conflict under certain conditions. Greater resource scarcity tends to have social effects that increase the likelihood of internal violent conflict. Resource scarcities can lead to constrained agricultural and economic productivity, exacerbating widespread poverty.

In Zimbabwe, there has been intense conflict in the gold mining region of the country. This conflict has been attributed to Machete gangs (International Crisis Group, 2020). Some of these conflicts have been violent and have resulted in the deaths of several people. In response to these conflicts, the Zimbabwean state had to deploy officers of state security apparatus to quell them and restore order. The conflict often arises from disagreements about the manner mining was been carried out by the licensed and unlicensed gold miners in the region. Different stakeholders have expressed concerns over the contamination of drinking water with mercury by miners. The concerns stem from the deleterious effects that water contamination could have on the health of members of the community. The government has been grappling with challenges having to do with violent upheaval over concerns about mining-induced degradation.

The Nigerian state has had to grapple with land degradation-induced conflict. The Niger Delta region of the country which has vast deposits of petroleum resources has been experiencing environmental pollution, land degradation and air contamination as a result of the extraction of crude oil in the area. The people in the region had had to resort to militancy to force the government to address the decade of neglect and environmental degradation arising from mining. The gas flaring in the area has taken its toll on the environment. The frequent oil spills have resulted in the pollution of water, farmlands, fish ponds and water wells (Amusan, 2001; Idemudia and Ite, 2006; Ebiede, 2011; UNEP, 2011; Okonofua, 2016). When the people in the area could no longer wait for the government and the multinational oil companies to address their plight, they had to result in violent conflict against the operations of the petroleum industry. These violent activities

led to the destruction of petroleum pipelines, flow stations and other infrastructure. Lives were lost and property destroyed. The government was forced to address these issues by militarization, creation of specialised agencies as well as other political gestures to appease the people of the region.

Although mining may bring local benefits such as new employment, it is also often highly disruptive, with pressures including major demographic change, relocation of communities, negative environmental effects, and large cultural impacts. With mining, these pressures are not merely cumulative but are also the consequence of a near-inherent instability. There is the overarching boom-bust cycle, with initial mineral discoveries and mining investments leading to huge growth pressures, but also the eventual collapse as reserves are depleted or their extraction is no longer viable. But, within this broad cycle, there are multiple sub-cycles of expansion and decline as commodity markets surge and retreat, and as factors such as corporate strategy and government policy moderate or exacerbate the market effects(Rubin and Harrison, 2015; Hubler and Pothen, 2021). Local conditions of scarcity will, either on their own or in combination with other tension-enhancing factors, lead to armed or violent conflict. Although there have certainly been and will continue to be localized, violent conflicts over resource scarcity of one form or another, conditions of scarcity do not necessarily and deterministically lead to armed, violent conflict. Other possible responses to scarcity, such as out-migration or resource substitution, merit consideration, too. Resource degradation or scarcity issues may also generate new forms of cooperation or resource management, so resource scarcity issues, although bound to territory in many ways, are not inherently prone to generate conflict.

The social impact of mining, the social cost is significant. The response of host communities differs from place to place. Levels of support and opposition often change with the stages of mining and may be affected by positive initiatives undertaken by the mining company or by negative impacts that were not anticipated. Traditionally, communities have tended to support mine projects until the high costs were revealed. But an increasingly common pattern is one in which a community is nearly unanimous in opposition to a mine for many years until the project receives its operating permit or until mining starts to degrade the things of value that people were trying to protect. At this

point, some of those who opposed the mine will start to try to offset these costs with benefits through jobs, compensation, or development projects (Cress and Dalupan, 2003; Hackney, Vasilopoulos, Heng, Darbari, walker and Parsons, 2021).

Others may try to negotiate protection for environmental and social values that have not yet been affected. Typically, there are short-term winners and losers in communities with operating mines, and typically the elite of a community are better able to capture benefits, while marginal community members and women suffer more of the negative impacts. Conflict associated with proposed and operating mines is now common, as community members assert the right to refuse a mine or advance claims on mining companies for alleged damages (Coumans, 2011; Hubler and Pothen, 2021).

With the mining of these natural resources, the environment has been negatively impacted. There has been serious environmental degradation in some of the areas where there has been intensive mining for some time. In the oil-rich Niger Delta, the exploration of petroleum resources has resulted in serious environmental degradation due to massive oil spills and gas flaring (Amusan, 2001; Idemudia and Ite, 2006; Ebiede, 2011; UNEP, 2011; Ugbem, 2014; Okonofua, 2016). In parts of the Niger Delta that are severely affected, the livelihood of the people has been disrupted beyond measure. The land can no longer support their agricultural practice because it has been severely contaminated with hydrocarbon arising from recurring oil spillage in the area. The rivers and streams have been polluted and as such, the people can no longer fish inside such rivers. The wells from which they ordinarily get drinking water have been contaminated. The air they breathe in is laden with heavy metals above the safe and allowable limit. In summary, the environment has been destroyed due to the mining of crude oil.

As such, indigenes of the region have been involved in conflict with the different stakeholders in the mining industry. Especially, the petroleum companies have borne a great part of their anger. The Niger- Deltans have organised themselves as pressure groups and the youths as militants. They have resorted to destroying petroleum pipelines that crisscross the region. Furthermore, they have proceeded to sabotage the activities of oil companies by kidnapping their workers. This substantially disrupted the activities of the oil companies, especially their onshore mining activities. In response, the federal

government of Nigeria militarized the Niger-Delta region (Omeje, 2006; Ebiede, 2011; Ajibola, 2015). This did not stop the sabotage of petroleum activities in the region. Ultimately, the federal government granted amnesty to the militants; which eventually coupled with some other programmes restored some level of peace and sanity in the region. In the context of mining, grievance mechanisms are an important means for local communities to advance their claims for justice. Dedicated channels for handling grievances serve as early warning systems for both the mining entities and the communities, prevent the risk of conflict escalation, and help identify systemic issues rather than dealing with community grievances on a makeshift basis (Kemp, Owen, Gotzmann and Bond, 2011).

2.6 **A global view of environmental degradation induced conflict**

Natural resource exploitation comes at a cost. Before recent exploitation, indigenous populations have their already established ways of life which they have already adapted to. Patterns of living and interactions which have been established and entrenched become threatened and might even disappear. A conflict arises whenever resource stakeholders have incompatible interests related to a certain resource

Cubitt (2014) shows how conflicts have been occurring in the arctic due to environmental degradation. According to him, Sami of the Murmansk area in Russia was losing the pasture for their reindeer as well as migration routes as a result of oil installations and pipelines. As such, the livelihood of the indigenous people has been seriously threatened as a result of Petroleum and Natural gas exploration that was occurring in the region. From the foregoing, it is implied that the mining of activities in the arctic region has systematically been degrading the environment, and the indigenous people have always been the most affected. In their little way, they have tried to resist and protest against the threat to the environment which serves as their basic source of livelihood (Hackney et al, 2021; Shitima and Suykens, 2021). As such, they have deployed their energy and resources to put up resistance against a practice that they feel would impact them negatively.

This is further corroborated by Reborrati (2012) who studied socio-environmental conflict in Argentina. Reboratti also discovered that when residents of Gualeguaychu on the Argentine side of river Uruguay perceived the deleterious effects of resource exploitation on their livelihood, they mobilized themselves massively to protect their environment and their livelihood. By so doing, they were able to draw attention to their plight and fight to ensure that they could continue to earn a living within their immediate environment. Also, Boni, Garibay and McCall (2015) show how conflicts have been occurring in the Wirikuta/Catorce region of northern Mexico. The people had resisted the continued extraction of Silver and other minerals from their area.

Similarly, Perspectives (2010) gives a picture of how sand mining in parts of India has severely degraded the environment. This degradation has resulted in altercations between miners and members of the community. The forests are a major casualty of mining. Also, groundwater, surface water as well as the entire water cycle are adversely affected by mining. This contributes towards increasing the irregularity of rainfall patterns as well as declining groundwater recharge. The water cycle gets disrupted with its concomitant implications for aspects of human, plant and animal life in the affected areas. The degradation of the environment alters the configuration of the life cycle that had hitherto existed in those areas.

A structure of morals is created by cultures that prescribe what is acceptable or not acceptable in any society. As such, individuals from different backgrounds in terms of ethnicity, religion, educational attainment and religious inclination tend to share a similar set of beliefs and values in social life that produces personal as well as group identities. The moral cultures of different interest groups extend this process into a swirl of escalation (Peterson et al, 2002). Cultures create a system of morals which in turn dictates cultural practices. Conflict thrives on differences in interest and the propensity to guard against perceived threat (Peterson et al, 2002; Omeje, 2006). The origins of these threats can be traced generally to a group's violation, whether actual or superficial, of other groups' (usually indigenous people) settlements, taboos and livelihood. This infringement could be in terms of land estrangement or ecological denigration.

The conflict related to environmental resource exploration and use causes injury and indirect acts of violence and affects several people. Conflicting situations involving human use, abuse, and views of natural resources extend to many scenarios of preventable detriment, degradation, and reduced quality of life. Industrial-scale dumping, government-sponsored toxic waste production, and unchecked or unconstrained environmental degradation despite the presence of technology or policy options that could alleviate the misuse of natural resources are features of contemporary society(Dinh, Lin, Ong and Doh, 2022; Mushonga, 2022). Conflict need not be military, armed conflict to inflict damage and it may emerge in different forms with multiple scales of social, political, economic and territorial impacts. Additionally, other types of territorial activity, such as ambitions toward access to or control of resources, may be examined as relevant and enriching for an understanding of how society is integrated with natural resources particularly in instances where resource use is disputed(O'Lear, 2005).

Generally, conflict develops and escalates through phases: mystification, de-individualization and demonization of opposition (Peterson et al, 2002). The human penchant for fear of the unknown blossoms in a situation where competing moral cultures are mystified. Also, since none of the parties might probably completely comprehend the values adopted by the other, efforts geared towards such are considered illogical (Peterson et al, 2002). Any arrangement involving the two precipitates resentment and annoyance, as members of the different groups are unaware of the cultural norms of the other, thereby, eliciting hostile reactions from the rival group. Hence, one culture's moral authority is concurrently the norm or custom most blatantly flouted by members of the other culture.

Furthermore, as conflict progresses, it becomes de-individualized. Individually, members of a community might hold relatively moderate views. Although values are exemplified by individuals, they develop within the framework of the societal and cultural milieu. Therefore, even though many people may hold fair opinions, they often seek cultural identification and authentication (Peterson et al, 2002). Those with the greatest level of incongruity tend to be the first to both identify and tackle conflict, thus, shaping and defining the situation for other members of the society (Amusan, 2001; Peterson et al,

2002). When this occurs, those who hold more moderate views about a situation are either forced into accepting the emergent dominant view or forced into silence thereby resigning into nonparticipation.

Conflict can progress through proxies. The central forces can outsource part of the rough aspect of conflict to surrogates who operate as periphery to the central forces. The conflict in the periphery casts a shadow on the centre and generates a genuine conflict of its own in the centre in which the partners in conflict act as proxies or representatives on behalf of the conflicting groups in the periphery - not necessarily being entrusted to act on behalf of one of these groups. Minority groups in the periphery are then represented by minority activist groups in Europe, whilst European companies cooperating with or working in the peripheral region, become the target of protests (Peterson et al, 2002; Omeje, 2006). Minority groups in the periphery that are under pressure can thus profit from the ideological split within the central stakeholders, whereas groups in the central realm of conflict that are partly opposed to the underlying moral principles and values of their society can benefit from these conflicts in the periphery in their turn, as it allows them to act out a systemic opposition to their home society on behalf of a remote group.

These alliances between two minority groups do by no means imply that these two minority groups can be regarded as equal players, alliances may rather be marked by strategic essentialism in the sense of agreeing to cooperate in fields in which cooperation is beneficial to both, whilst neglecting issues in which their views and values differ. Alliances between these distant groups on both sides of the conflict are established along with shared sets of values, based on a partially shared discourse. In contrast to the former form of patronizing protests, the basis of a partially shared discourse is new and strengthens the alliance (O'Lear, 2005). The new element then is marked by the fact that a conflict of interests is not the subject of transnational organized protests, but it is a conflict of values and world views that is exported to a stage abroad. Exporting a conflict of values and world views is thus only possible through a partially shared discourse, or else it would be impossible to communicate the conflicting values on a larger stage. It becomes clear that the conflict of proxies is partly due to globalisation, with internationally active

companies becoming increasingly vulnerable through increased connectivity (Schafer, 2000; Bhoopathy and Subramanian, 2022).

Mining activities also cause great stress to the social fabric of mining areas. A highly-mobile population, many artisanal miners are economic migrants, from both within and beyond a country's borders. Conflicts frequently erupt between artisans, local communities, and the authorities. In Madagascar, illicit miners have come into conflict with the local Bara community, who regard the diggers as desecrators of sacred lands. Diggers have also come into conflict with government authorities for mining inside the Isalo National Park(Bockstael and Vlassenroot, 2009). Competition for scarce and threatened resources and services can lead to disputes and even be the cause of armed conflict among and within states. Normally, the causal relation is not considered to be direct but mediated by social variables such as poverty and inequality. Competition for resources, in the contexts of poverty and perceived distributional injustice, can thus lead to amplification of existing social fault-lines such as ethnic difference, a pathway that is most likely where the state and other institutions are dysfunctional.

Although mining may bring local benefits such as new employment, it is also often highly disruptive, with pressures including major demographic change, relocation of communities, negative environmental effects, and large cultural impacts. With mining, these pressures are not merely cumulative but are also the consequence of a near-inherent instability. There is the overarching boom-bust cycle, with initial mineral discoveries and mining investments leading to huge growth pressures, but also the eventual collapse as reserves are depleted or their extraction is no longer viable. But, within this broad cycle, there are multiple sub-cycles of expansion and decline as commodity markets surge and retreat, and as factors such as corporate strategy and government policy moderate or exacerbate the market effects. (Rubin and Harrison, 2015)

Fitzpatrick, Kappers and Kaye (2006) show how sand mining has been carried out in the West Indies. They posit that sand mining along the beaches of Carriacou in the West Indies has resulted in serious erosion in the Caribbean. In the Pacific Islands of Nauru, Tuvalu and the Marshall Islands, sand mining from the reef has resulted in irreversible environmental damage including shoreline modification (Charlier, 2002; Da and Billon,

2022; Shitima and Suykens, 2023). This has inadvertently led to conflict between the people and the sand mining authorities.

Furthermore, sand mining and environmental degradation in parts of Europe have resulted in conflict (Csutora, 1997, Charlier, 2002; Hackney et al, 2020; Miller, 2021). In Belgium, it has resulted in protests due to the environmental consequences. Fishermen were at the forefront of such resistance because it directly affected the environment from which they earned their livelihood. In Norway and Scotland, especially around its islands, exploitation has encountered environmental opposition (Charlier, 2002). In Hungary, there had been reported cases of conflict due to environmental degradation (Csutora, 1997). The drinking water source was polluted resulting in illness for the members of the community. The authorities shied away from accepting responsibility for environmental pollution. This ultimately resulted in a confrontation between the people and the Norwegian authorities. Similarly, France has witnessed some level of conflict resulting from gravel mining-induced environmental degradation. Gaillot and Piegay (1999) posited that sand aggregate mining has had a deleterious effect on the environment. There has been the ecological and geomorphic impact of river channel degradation particularly due to gravel mining in Corsica, France. These impacts have altered the hitherto existing realities in the communities and their interaction with the physical environment.

Furthermore, Jacobs (2013) chronicles how environmental degradation in South America, Brazil specifically has resulted in conflict. People guard their land possession jealously to prevent encroachment from other land users. Buttressing this view, Toohey (2012) posits that in Brazil, “extreme violence arises during…illegal logging, illegal mining and illegal deforestation for cattle ranching” (page73). He further asserts that the exploitation of the Amazon forest has resulted in conflict with varying degrees of intensity. In the same vein, Argentina has had its fair share of environmental degradation-induced conflict. In the mid1980s, there was serious conflict in Gastre, Argentina due to a plan to establish a facility for the storage of nuclear waste in the area. The people rose and protested ferociously as a result of their fears about the danger to the environment and their life by extension of such a project (Reborrati, 2012). The mining of minerals led to an uprising in

2002 over the environmental contamination fears in the people arising from mineral extraction in the country.

The people most directly affected by environmental destruction are those who live in communities located close to mining sites. In Mexico, as in other developing countries, these communities tend to be inhabited by poor rural families with diversified economic strategies that include small-scale farming and ranching as well as temporary and permanent (for some family members) labor migration. Indigenous communities, in particular, are being increasingly affected as mining operations expand into the relatively isolated areas that they have inhabited since the conquest, the so-called regions of refuge, where subsistence agriculture predominates. As in other parts of Latin America, the arrival of mining companies (and other forms of capital extraction) inevitably gives rise to conflicts over the production of territories over what type of relationship between society and environment should predominate in a territory; over how these territories should be governed and by whom; over what significance these spaces should have; and over what types of links these territories should have with others. To be sure, this includes not just conflicts between local farmers and mining companies but also internal conflicts between community members who oppose mining activities and those who support them(Tetreault, 2015). The people in the communities might have opposing views and perspectives on how issues should be handled. These differences in perspectives can lead to factionalisation of the community members can escalate in conflictual situations if not handled properly.

In some cases, mining entities have resorted to trickery, coercion, and bribery to gain entrance to communities and dispossess them of their resources. There are promises of jobs, economic prosperity, and social development projects but no mention of environmental costs. In this way, mining companies are sometimes able to strike a deal with local leaders and obtain some sort of signed agreement to "rent" land before undertaking major works, thereby avoiding the politically costly route of having to expropriate the land (Tetreault, 2015). Beyond asserting the "business case" for a more enlightened view of company-community conflict management, interactional and value-based dimensions of the company-community relationship must also be considered in

rethinking this complex ethical terrain. How companies interpret and respond to the complexities of these relationships will have definite and lasting implications for whether just practices prevail, or remain in the realm of rhetoric.

The most active environmental groups in the field are those that are related to distinct environmental movement networks with minimal institutionalization. They are in a very early development phase of environmentalism, characterized by relying more on sensitive issues than in handling empirical and verifiable information, using an aggressive tone, wrapped in doomsday rhetoric and prone to detect all kinds of conspiracies aimed at environmental destruction. The latter leads them to reject any opinion that contradicts their views, either from the official, academic or business levels, sectors that are often involved in its alleged schemes. Not only unreliable from the point of view of the information they manipulate, but they have also ceased to have any significant response among the public, especially in urban youth. These groups are usually built around iconic persons, some of whom have a long history of environmental agitation, and rely heavily on informal social networks that use the Internet as their main vehicle. Their most characteristic feature is that they hold absolute positions, which usually do not shift, expressed in slogans defined by the negative. The social background of participants involved in protests is very diverse and it is very difficult to establish any general rules. Sometimes the initiators belong to the middle class (merchants, civil servants, teachers, farmers), others are indigenous or peasant leaders or representatives of associations of small farmers.

In the United States of America, sand mining has taken a toll on the environment. The removal and alteration of near-shore beach sand have resulted in beach erosion. The haunt is diminished or obliterated for some aquatic animal species. Also, the natural storm protection for coastal communities that beaches, as well as dunes, hitherto provided is reduced (Montague, 2008). The excavation of sand coupled with the construction of building infrastructure along the beach has reduced the suitability of the beach as an appropriate nesting place for sea turtles to lay their eggs and allow them to incubate. The near disappearance of dune field also implies that the natural buffer required to protect sea turtles is minimal (Montague, 2008). This further buttresses the

environmental degradation of endangered animal species. This scenario has exacerbated the concerns of environmentalists.

Furthermore, environmental degradation-induced conflict has also been occurring in Asia. In its article in 2010, Perspectives provides an insight into the catastrophe going on in Bundelkhand in India. It shows how an elite class exploits the resources with reckless abandon while at the same time jeopardizing the prospect of the working class to earn a living. This gives the impression that the elite through their quest for resource maximisation degrades the environment without considering the consequences for other members of the society who are not in concert with them. The destruction of the environment benefits a few people in the present, but they appear to pay cosmetic attention to the sustainability of the environment. Their focus is on increasing their economic well-being. They would pay attention to other issues to the extent that it does not significantly affect their economic interests (Kim and Yoo, 2020). Whenever any other consideration is in play, they would opt for the option that would further enhance their private interests. The primary objective of businesses is to make a profit. To that extent, they would pursue their goals with all the resources at their disposal.

2.7 **Sustainable mining**

Sustainable mining has to do with the extraction of minerals from the environment without jeopardizing the ability of succeeding generations from surviving in the same environment. It suggests that mining operations should be carried out in a manner that does not irretrievably degrade the land water and the environment at large. Across different societies, stakeholders have expressed concerns over how mining activities tend to extract resources from the environment in a manner that shows scant regard for how succeeding generations can exist on the same resource. These concerns have given rise to calls for sustainable mining policies and practices (Ghebremusse, 2020; Limpitlaw, 2020; Okpaleke and Abraham-Dukuma, 2020; SDSN, 2020). There is a consensus among scholars, stakeholders and the international community that resource extraction should be carried out in a manner that is efficient, sustainable and beneficial to the different

stakeholders involved. It deals with the balance in the relationship between economic considerations and concerns about ecology. Sustainability refers to a balance between economic interest and ecology (Kirsch, 2010). The Extractive Industries Transparency Initiative provides a framework for transparent assessment of mining concerns globally to promote sustainable mining (Geipel, 2020; Rentier and Cammeraat, 2022). The more transparent mining activities are, the easier it would be to hold the government and mining organisations to sustainable mining practices.

A responsible mining sector has a responsibility to maximize development benefits while at the same time, also improving environmental and social sustainability (Alternatives, 2015). Sustainable mining practices require that the revenues derived from the extraction of resources should be utilized to ensure the lasting wellbeing of those affected by mining activities, especially those suffering material deprivation as a result of mining activities. Furthermore, for Alternatives (2015), sustainable mining practice by mining entities entails that:

> If a mine is to make a positive contribution to local and regional sustainability, a sufficient portion of its revenues must be used to ensure that what is ultimately left behind compensates for what is lost and moreover, improves the sustainability of livelihoods and ecosystem. In addition to focusing on actual mining activities and legacies, sustainable mining would also ensure minimal environmental impacts and maximum social benefits from the smelting, manufacturing, use and disposal of mineral products (page 64).

Globally, different countries are making laws and enacting policies to promote sustainable mining. In Africa, several countries have mining policy frameworks that regulate the extraction of resources. Namibia has a mining policy framework that seeks to promote transparent and clear processes that require adequate consultation with communities in the planning and development stages of a mine (Crawford, Mooney and Musiyarira, 2018). The policy also requires the unambiguous identification of sustainable development opportunities, the protection of indigenous rights as well as cultural heritage and the submission of integrated, social economic and environmental impact assessment (Crawford, Mooney and Musiyarira, 2018). In the comprehensive Environmental Impact

Assessment before the granting of a mining license, there has to be a record of baseline environmental conditions of the proposed area for mining. Also, the expected environmental and social impacts of mining activities coupled with the planned mitigation efforts that would be included before a mining license can be granted. The aim is to reasonably promote sustainable mining practices beneficial to the miner, the host communities and the sustenance of the ecosystem.

Similarly, in Ghana, the law requires that the miners and the host communities reach a compromise on proposed mining activities. Where the miner has reason to extract mineral resources from land hitherto being used for other purposes, the indigenous owners have to be adequately compensated by thr prospective miners (Bugri and Kumi, 2018). In some cases, people whose land was acquired for mining purposes got monetary compensation and were also resettled in other areas (Bugri and Kumi, 2018). The Ghanian minerals and mining Act of 2006 requires that those whose land was acquired for mining purposes have to receive compensation that is fair, adequate and timely. The mining entities were required to negotiate with host communities on what was appropriate as compensation. Also, the mining entities were required to extract resources in a manner that was sustainable and beneficial to the different stakeholders. The intention was to promote sustainable mining practices that would protect the environment, the community and the society at large.

In South Africa, the National Environmental Management Act 107 of 1998 stipulates how the environment should be protected through sustainable mining activities. This environmental management framework statute requires that prospective mining entities should consult with stakeholders and communities where they intend to mine and obtain their consent before licenses can be issued. The goal of such a requirement is to ensure that the critical stakeholders who would be affected by the activities of mining organisations are sufficiently carried along and their interests protected before exploration and extraction of minerals can proceed. Furthermore, the environment comprising of water, land, atmosphere, organisms, plants, animals, physical-chemical, aesthetic and cultural properties have to be protected and sustainably exploited without endangering their continuous existence (Kotze and Plessis, 2014). In essence, therefore, it is envisaged

that mining activities while beneficial in the short or medium-term should also benefit succeeding generations in the medium and long term. Mining companies are required to uphold high standards of transparency in their operations to promote accountability and inclusiveness.

In Nigeria, the Minerals and Mining Act of 2007 is the legal framework that encapsulates the guidelines for the mining industry. The Act clearly states the category of entities that can obtain mining licenses and the duration of such licenses. The Act also provides for a mineral Resources and Environmental Management Committee (MIREMCO). The committee is made up of different stakeholders in the mining industry. The functions of the committee in Section 19(3) are to:

> -Advise the minister of environment on issues affecting returns of necessary reports affecting grants of mining titles
>
> -consider issues affecting compensation and make necessary recommendations to the minister.
>
> -Discuss, consider and advise the minister on matters affecting pollution and degradation of any land on which any mineral is being extracted.
>
> -Consider such other matters relating to mineral resources development within the state as the minister may from time to time, refer to the committee.
>
> - Advise the departments established in accordance with the provisions of this Act for the supervision of mineral exploitation and the implementation of social and environmental protection measures.
>
> Advise the Local Government Areas and communities on the implementation of programs for environmental protection and sustainable management of mineral resources.
>
> -Advise and offer necessary assistance required by holders of mineral titles in their interaction with state governments, local government councils, communities, civil institutions and other stakeholders.
>
> - Advise the minister in resolving conflicts between stakeholders and
>
> - Advise the minister in respect of matters connected with implementation of this Act.

The Nigerian Minerals and Mining Act of 2007, inherently envisions that mineral extraction would be carried out in a sustainable manner that protects the stakeholders and the ecosystem. The MIREMCO advises the government on pollution and environmental degradation arising from mining activities. It is saddled with the responsibility of advising the government on the implementation of programs for environmental protection and sustainable management of mineral resources. The intention is to harness the expertise of the different stakeholders and aggregate them to enhance the protection of the environment and promote sustainable exploitation of mineral resources. Also, section 61 (1b and 1d) of the Mining Act stipulates that mineral exploration and mining shall be conducted in an environmentally and socially responsible manner.

Where mining activities have degraded the environment, the mining entities are required to maintain and restore the land to a safe state from any disturbance resulting from exploration activities. Such restoration activities include but are not limited to the filling of shafts, wells, holes or trenches made by the mining entities in the course of mining operations. The remediation shall comply with applicable environmental laws and regulations. As such, when mining organisations degrade the land in the course of their operations, they are legally required to carry out remediation activities on the environment to make it safe for other members of society. The remediation requirement was designed to protect the physical environment from severe degradation arising from mining activities. Also, the Nigerian Extractive Industries Transparency Initiative (NEITI) is an institutional initiative by the Nigerian government to make mining activities less opaque and further scrutinize their activities. The expectation was that more transparency in the mining sector would encourage sustainable mining practices in the operation of mining organisations in the country.

In its quest to ensure sustainable development globally, the United Nations proffered sustainable development goals (SDGs) to address different issues related therein. The Sustainable Development Goal 6 (SDG 6) has to do with ensuring the availability and sustainable management of water and sanitation for all. This goal was put forward in recognition of the critical need for clean water for humans and other components of the ecosystem. Clean water, sanitation and hygiene are germane in disease prevention,

livelihood improvement and a sustainable and healthy environment. The mining industry has strong imprints in water usage as well as the quality of water. A large volume of water is often utilized in the mining of mineral resources. By increasing its water efficiency and recycling its wastewater usage, the mining industry can reasonably reduce its water footprint in terms of quantity and quality (sdg6). Water recycling reduces wastage in water usage and is environmentally friendly. Also, the mining industry can promote access to water supply by ensuring shared usage of water infrastructure. Mining organisations can grant access to host communities to share their water infrastructure especially in developing and underdeveloped countries of the world.

The United Nation's sustainable development goal 7 (SDG7) advocates for affordable, reliable, sustainable and modern energy for all. It envisions increased access to energy, greater adoption of renewable energy as well as improved energy efficiency. The SDG7 proposes universal access to energy while minimizing the negative effects on the planet. The mining industry is energy-intensive, as such, it consumes a lot of energy in its extractive activities. Energy sustainability can be enhanced by mining entities through their incorporation of energy efficiency measures into their operations. Also, they can adopt renewable energy like solar and hydro sources to power their mining operations. Renewable energy improves energy efficiency (Limpitlaw, 2020). Energy efficiency can be enhanced by improving energy infrastructure maintenance, reducing energy demand onsite as practically as possible and undertaking periodic energy audits to improve efficiency (CCSI, 2016). Incorporating renewable energy entails the deployment of off-grid power sources such as solar, wind to power mining activities. Also, there should be intentional and concerted efforts to collaborate and support local energy initiatives and allow others to benefit from the benefits of energy infrastructure. These would reasonably promote and enhance sustainability in the mining ecosystem, protect the environment and improve the society at large.

Furthermore, the United Nations' sustainable development goal 13 (SDG13) requires that urgent action be taken to fight climate change and mitigate its impacts on the environment and the ecosystem. This requires reduction of emission by improving energy efficiency, increased adoption and use of renewable energy sources in mining operations as well as

increased utilization of low-emission fuels. It also entails the transparent measurement and reporting of direct, indirect and product-related emissions. The Sustainable Development Goals 13 also require capacity building to effectively handle climate and be resilient. This resilience-building entails planning for climate change impacts on mines and communities, strengthening of emergency response plans as well as modeling of climate-related environmental impacts (CCSI, 2016).

In the same vein, sustainable development requires that mining entities recognize climate change in their planning and investing portfolios. This can be achieved by using scenario planning to inform views on their climate and energy risks and opportunity assessments as well as utilizing climate prognosis in planning and positioning. Similarly, they are strongly encouraged to adopt corporate climate change programs, carbon management and disclosure policies as well the inclusion of climate change on their board agenda. These would significantly promote sustainable mining practices in the short, middle and long term.

Also, sustainable mining envisions that mining entities would participate in climate-related research and development such as experimental pilot programs geared towards reducing emissions. They are encouraged to engage in industry climate dialogues that would benefit the industry, communities and society at large. Similarly, mining companies are expected to publicly lend their support to carbon pricing initiatives and aim at reducing their carbon footprint. This gamut of issues would inadvertently strengthen and promote sustainable mining practices in society.

In the quest for sustainable mining, it is expected that the mining sector should consciously promote water conservation and recycling of same. This entails the recycling of water in the mining process. Metals can be recovered using wastewater. As much as possible, they should strive to adopt mining practices that would significantly reduce water consumption in the extraction process. In the same vein, they should work towards using alternative water sources such as seawater in their mining activities where practicable. The recycling of water would reduce the pressure on available freshwater sources for host communities and the society at large.

Furthermore, sustainable mining entails the monitoring of water sources near mining sites as well as downstream. The monitoring is to ensure that changes in the water quality and quantity can be detected as quickly as possible. This would make it easy for remedial procedures to be activated to further protect community water sources. The host communities should be included in the monitoring process as critical stakeholders. Also, data about water quality and quantity should be shared openly and transparently to increase accountability and promote healthy relationships among stakeholders. Water should be managed holistically. The water management processes of the mining industry should align with the government's water management policies and programs this would help in comprehensively managing the water sustainably. Water management is a daunting task. Mining organisations can collaborate with the government, the host communities by offering their expertise, synergising to create an integrated water management system. As a resource, water is used in different spheres of life. It is needed as a critical resource for domestic use. It is also used industrially by companies for their different operations. As such, it has to be utilized and managed efficiently to meet the ever-growing demand for water.

Since sustainability is tied to the ability to maintain a specific level of resources for both present and future demands, sustainable development in mining is challenging to achieve if the rate of the processes that extract minerals from the earth's crust continues to increase. Sustainable mining activities are those that are carried out while taking into account socioeconomic, environmental and sustainable development objectives. Mining is sustainable in part due to the investigation and development of new technology. Analysis of existing and future mining demands is one of the three key components of sustainable mining (Salam, 2020). The economic and political structures of tribal people are integral to their culture, and when they lose their lands, these structures are essentially obliterated. By emphasising money and financial power, corporate values have swept aside the sacredness of nature, respect for elders' knowledge, ritual contact with the ancestors, growing their own food on family land, making their own houses and tools, and exchanging food with neighbours in an egalitarian spirit (Padel and Das, 2010) . Without idealising it, it is obvious that traditional tribal society is marked by a strongly egalitarian

ethos, which typically extends to women, as well as a claim to sustainability in the 'real' sense of enduring over generations without fundamentally harming the natural environment. The preservation of local people's cultural rights and other rights is crucial to social sustainability.

In the extractive industries, protecting natural processes for environmental sustainability is a "hard nut" to crack. Particularly, open-pit miners constantly alter the ecosystem and environment of a region. Economic and environmental factors form a complex web in the case of a sustainable mining business (Kokko, et al, 2015). The goal of sustainable mining is to strike a balance between social, environmental, and economic factors. At the very least, economic, social, and environmental factors are part of sustainable development. There are numerous elements that go into each of these three aspects of mining and sustainable development. Mine-related environmental impact is unavoidable. On the other side, environmental disaster shouldn't happen, especially since they frequently lead to social disasters (Schoenberger, 2016).

An essential instrument for sustainable development policy is the Environmental Impact Assessment (EIA). Before administrative decisions are taken, a mandatory Environmental Impact Assessment can, in theory, also provide a framework for public engagement, social impact assessment, and balancing out asymmetrical information about a mining project (Kokko et al.2015). When an Environmental Impact Assessment gathers environmental data for project planning and administrative decision-making, the goal is environmental sustainability. The project developers who are in responsibility of gathering environmental information, for instance with the assistance of private environmental consulting organisations, are the key informative sources in the Environmental Impact Assessment process. Information for the coordinating and other public authorities can also come from the views of the affected public as well as from statements made by municipalities, other public authorities, or specialists. The accuracy of the information can be checked, for instance, during conversations while the Environmental Impact Assessment is being put together and by public authorities.

The environmental data provided in Environmental Impact Assessment reports is more than just statistics; it also serves as proof presented by project developers to persuade

governmental officials and the general public that the environmental impacts would be kept within the parameters established by environmental rules (Kokko et al, 2015). In light of this, one may wonder how the environmental Impact assessment process, even with public involvement and environmental impact assessment documentation, can lessen knowledge asymmetries between project developers and the administrative authorities in cases like industry-specific pollution abatement technology.

The relationship between the environmental impact assessment and the permit procedures determines the environmental impact assessment's function as a source of information for authorizing. In addition, social sustainability is essential for the growth of the mining sector (Kokko et al. 2015; Lesser, 2021). When evaluating the social implications of mining projects, environmental impact assessments vary by country in terms of their scope and their requirements. It should be noted that social effects are interpreted differently depending on the situation. According to the International Principles for Social Impact Assessment, these effects are all processes of social change that are brought about by planned interventions (policies, programmes, plans, and projects), whether they are intended or unexpected, positive or bad (Kokko, et al, 2015). The mining industry's inherent characteristics also have an effect on the social impact on nearby communities. For instance, the beginning of production or the start of building not only demand significant investments but also requires a sharp increase in the workforce. It is possible that the qualified individuals needed for mining activities do not reside in the area, necessitating outside recruitment. A social impact analysis can be performed to evaluate if the community will approve a mining project. Therefore, evaluations of the mine's operational phase should concentrate on how the terms of acceptability (Kokko et al. 2015) and knowledge learned through a social impact analysis regarding those criteria serve as the conceptual foundation for a Social license to operate rather than simply seeing social impact analysis as a feature of the environmental impact assessment method.

On the whole, sustainable mining activities involve concerns about the health and safety of communities and concerned stakeholders, environmental concerns, as well as equitable distribution of economic benefits accruing from mining activities. Despite the fact that dialogue, relationships, and trust are crucial for societal Service license to Operate and that

incorporating them into both processes and outcomes should increase the likelihood of obtaining a societal service licence to operate over incorporating them only into outcomes, the challenges of sustaining dialogue, relationships, and trust persist (Lesser, 2021). Communities should exist in safe spaces that allow them to achieve their aspirations.

The resources found in host communities should be extracted to benefit the different stakeholders without jeopardizing the capacity of succeeding generations to meet their basic needs and achieve their goals and aspirations. Resource extraction for today should also factor in the ability of succeeding generations to exist, survive and thrive on the same land It also entails effective stakeholder engagement, respect for indigenous people, their beliefs and culture. Also, it requires continuous learning and adaptation to changing dynamics of social interactions as well as full mine or operation life cycle and resource use efficiency.

2.8 **The gap in literature**

The issues on the environment have been prominent in individual and institutional research. Prominent literature is replete with issues on mineral resource extraction. There has been a lot of discussion on environmental degradation in society especially environmental degradation arising from the exploration and exploitation of mineral resources. Not much research has been carried out on sand mining activities in the Niger Delta. Whereas the Niger Delta has been extensively researched upon, as well as the consequent environmental degradation and the ensuing conflict, very little has been said about sand mining in the area. There has been a dearth of scholarly work on the ongoing land degradation in the Niger Delta due to sand mining.

Furthermore, while the Niger-Delta conflict occasioned by crude oil exploration and its concomitant environmental degradation has been variously highlighted by different scholars, not much has been done on the conflict arising from contestation over sand mining rights. There has been very little research carried out on the conflict that results from land degradation in the Niger Delta. The conflicts arising from sand mining have not been given prominence in popular literature. In the same vein, the networks which support

conflict have not been adequately highlighted. Issues relating to sand mining and land degradation in the Niger Delta have been largely ignored. This is because of the serious focus on the crude oil deposits and their attendant issues. The gamut of issues around the petroleum industry has ensured that attention is primarily focused on the industry in the area.

2.9.0 **Theoretical framework**

The theory for this analysis would be the theory of Ecological Marxism. It would guide the analysis of issues in this discourse.

2.9.1 **Theory of Ecological Marxism**

Ecological Marxism is a neo-Marxian theory. Its major proponents are Murray Bookchin, Brett Clark, James O'Connor and John Bellamy Foster. It posits that there is a need to look for the origins of environmental problems in the system of inequality created by humans to understand it. Environmental Marxism holds that unequal access to resources accounts for the visible patterns and procedures of ecological degradation and conflict in society. The rich destroy nature to get richer and accumulate more wealth, while the poor do so simply to survive. The material quantity that supports the elite class is several times more than the same that supports the working poor. Ecological Marxism asserts that the exploitative industrial capitalist system is the source of climate change. Capitalism denigrates and upsets the earth system, and in the process foists its wastes on it.

The Theory of Ecological Marxism derives its principles from traditional Marxism. As a theory, Marxism holds that there is continuous class struggle between the bourgeoisie and the proletariat in society. The bourgeoisie who are the elite ruling class controls capital and the means of production (Ritzer, 2010; Ritzer and Stepnisky, 2017). The proletariat

class also known as the working class has no control over the means of production except their labour. The working class sells their labour to the ruling class in return for a means of survival. The elite class exerts influence on the working class through their control of the social institutions in the society. For Karl Marx, the economy is the base on which the other institutions in society are built on. By controlling the economy, the bourgeoisie are able to determine the course of other social institution in the society (Ritzer and Stepnisky, 2017).

Furthermore, ecological Marxism seeks to explain the environmentally destructive inclination of capitalism. Such explanations are commonly referred to as the contradictions of capitalism by Marxists. With regards to the environment, that contradiction entails the penchant for capitalism to ruin nature in the quest to further enlarge the capitalist system. O'Connor (1998) considered the fashion by which capitalism damages the natural environment as part of its innate contradictions. He posited that there are limitations to economic growth premised on environmental factors. Those ecological limits to growth are the factors that impede the persistent endeavour of capital to grow and create an impediment with regards to the conceptual assertion of capitalism for boundless expansion.

Conceptually, ecological Marxism focuses on the use of nature as an invaluable asset for profit maximisation. It has to do with how the ownership structure under capitalism in terms of the allocation of rights and possession influences access to nature and its raw materials and compels access to raw materials to become less attached to social class. Furthermore, it encapsulates the different processes by which the capitalist system creates adverse environmental states that imperil nature's stability. In other words, an ecological dialectics has the ability to provide Foster's desired "unity of technique" and to serve as the unifying "one science" that young Marx requested. "The emergence of ecology as an unified discipline is indisputable evidence of the truth of Marx's original claim that, in the end, only "a single science" will exist (Foster et al. 2010). Foster and his co-authors explicitly state with this concept of natural praxis that they do not view the dialectics of nature as a purely objective, subjectless sort of dialectics, but rather as a subject-object dialectics along the lines emphasised by Lukács, with the exception that sensuous activity

is given a more central role and the unit of interconnectedness is now thought of as the wider ecology in which society is embedded (Cassegard, 2017). Thus, the authors promote a dialectics that, on the one hand, emphasises the senses as being essential to emancipation and, on the other hand, aims to broaden the scope of dialectical mediation to include the biosphere as a whole.

Ecological Marxism derives from the concept of metabolic rift as enshrined in Marx's theory of alienation (Foster, Clark and York, 2010). Metabolic rift analysis interrogates the displacement and destruction of the kinds of energy contained in nature under capitalism. It looks at the way the capitalist structure influences energy transfer as well as the uneven allocation of energy that ensues from the exertions of capital to control the flow of energy. Alienation is the estrangement or separation of human beings from themselves as producing beings, from the process of production itself, from the species being and from other human being. The metabolic rift is a tangible illustration of the estrangement of human beings from the material conditions of life as well as separation from nature. Metabolism is the exchange of matter and energy in an organism and between organisms as well as between organisms and their environment that are essential to all life (Kovel 2002; Foster and Burkett, 2008; Foster, Clark and York, 2010). Social metabolism refers to the labour and production process and the universal metabolism for natural processes more generally. As living and rational human beings, humans could only survive well in a metabolic relation to the other components of nature.

The social metabolism in Ecological Marxism represents the human who is a self-medicating being of nature through production. Ecological Marxism focuses on the separation of humankind and Mother Nature on the denigration of the natural course of action and life. That indeed is the tangible certainty of humanity and the ecosystem in the alienated system of the industrial era and capitalism. All commodities have use value and exchange value. The antagonistic friction between use value and exchange value is crucial to the contradiction of capitalism and its conflict with its external natural environment.

The exploitation of natural resources, including what Marx liked to refer to as the "vital forces" of humanity itself, by capitalism is an extreme example of a dissipative system. It maximises the throughput of energy and resources, which are subsequently discharged

back into the environment, in its never-ending quest for more surplus value. The recognition that the destruction and disruption of nature under capitalism were exacerbated by a system of commodity production that based its value calculations entirely on labour, while treating nature as a realm of non-value, was what made Marx's ecological value-form analysis unique in this regard. Marx's theory of metabolic analysis provides a strong foundation for understanding this split in the Earth system brought on by the growth of capitalism. A greater, cumulative structural crisis develops inside the universal metabolism of nature as a result of all of capitalism's technical attempts to close such ecological gaps, given the system's ongoing contradictions. Marx forewarned that an alienated metabolism that weakened the foundations of existence could abbreviate and wreck human history.

As a theory, Ecological Marxism emphasizes the conflict between the forces of production and the relations of production. This contradiction encompasses the ways by which the capitalisms course is influenced as a result of the interplay between the forces of production and the relations of production that exemplify capitalism. This is considered as the first contradiction of capitalism which Foster (1992) “the absolute general law of capitalist accumulation”. Similarly, the capitalist system is also characterized by a contradiction between the forces and relations of production taken as a whole and the ecosystem which leads capital to annihilate the foundation of its potential wealth by damaging the environment. This is considered as the second contradiction of capitalism, which Foster (1992), refers to as “the absolute general law of environmental degradation under capitalism”. He postulated that it is impossible to eliminate the second contradiction of capitalism without first eliminating the first contradiction of capitalism.

In other words, the current attempts to eliminate ecological destruction and to promote sustainability can only come about by transcending capitalism (Foster, Clark and York, 2010). According to Foster, dialectical thinking can be seen as an essential component of our cognition that results from the emergent, transient nature of the reality that we observe. The argument made in this instance is that dialectics, a heuristic tool, must be used by both the natural and social sciences to understand how their subject matter moves. Simply said, dialectics is a way to understand the emergent, ephemeral reality that

Epicurus referred to as a world of "change combining contingency and coevolution" (Cassegard, 2017).

As such, the greater capitalism's development, the greater its environmental pressures, and the higher the degree of the environmental damage it inflicts. The theory posits that there is a very strong contradiction between capitalism and nature which would diminish the ability of nature to replenish itself and ultimately lead to its destruction and ecological ruin. The advancement of capitalism and its overall propensity to enlarge and accelerate accumulation as well as the effect of that process on environmental degradation increasingly becomes apparent with time as the ecological system creates hindrances to the expansion of capital (Foster, 2000; Kovel, 2002; Burkett, 2009). For ecological Marxists, endeavours aimed at resolving the first contradiction of capitalism further hastens the second contradiction of capitalism. In its developed stage, capitalism becomes progressively ecologically destructive.

The traditional foundations of capital and wealth are increasingly being undermined by the relentless drive of the accumulation of capital. Capitalism has an inherent drive to amass resources relentlessly (O' Connor, 1998, Foster, 2000; Foster and Burkett, 2008). As a system, it is inherently tailored to the maximum accumulation of matter, energy and value irrespective of human needs or natural limits. This leads to an increase in the contradiction between the quest for environmental resilience and economic growth. It emphasizes the contradictions that exist in capitalism; contradictions that undermine the social and environmental factors that sustain the system. The major challenge is the commodification of land, natural resources and human labour in a bid for wealth accumulation. This has created a gap in the seamless harmony between society and nature, by accentuating the issue of ecological sustainability.

Similarly, ecological Marxism is concerned with the interchange involving the denigration of the ecosystem and human development in ways that are unexplained in conventional economic measurements like Gross Domestic Product. For instance, the annihilation of species or the devastation of whole ecosystems is reasonably consistent with the growth of capitalism and economic development. The labour and production process derives vitality as well as means from the larger metabolism of nature. However, the incompatible form of

the production system in capitalism involuntarily leads to conflict. Thus, systematically emasculating the ecological foundations of human existence. The degradation of the environment is an irrevocable fissure in the interactive course of action of social metabolism.

Similar to Ecological Marxism is the political economy framework deals with the power relations and ecological exploitation. It examines the political interplay between power relations of the different stakeholders in the economic exploitation of the environment. It places a lot of emphasis on the politics of environmental phenomenon (Bergius, Benjaminsen and Widgren, 2018; Benjaminsen, and Svarstad, 2019.). Political economy and ecological Marxism are similar in the sense that they both share common tenets of Marxian political economy and historical materialism.

Ecological Marxism helps us to understand the earth system's predicament. It assists us to connect environmental crisis to industrial capitalism’s alienated social metabolism. Ecological Marxism offers a dialectical systems view that enunciates the environmental conundrum as concomitantly economic and environmental, entrenched in capitalism. Ecological crises are not confined to capitalism, rather ecological crises are characteristics of highly stratified societies in general but only become more pronounced in the capitalist system.

Using Ecological Marxism therefore to understand sand mining, environmental degradation and conflict, it can be inferred logically that the quest to accumulate wealth through sand mining would progress without much regard to the impact on the environment. Sand miners would go all out to exploit the environment and enhance their capital wealth stock. The more value sand miners tend to derive from sand excavation in the environment, the more degraded the environment also tends to become. Thus, the rise in capital accumulation from sand mining is inversely related to the level of environmental well-being in the area where the sand producing the wealth is mined.

Furthermore, those who tend to profit the most from sand mining activities are those who appear to be more capitalistic in their approach; that is, those who tend to be involved in it with the sole aim of maximizing profit and value accrual irrespective of the cost to the

environment and other stakeholders. With this kind of mindset, there is bound to be a conflict of interest between those who would profit maximally and those who would lose out in the process. The conflict ensuing could be violent or non-violent depending on the level of flexibility adopted by the parties in protecting their positions as well as the level of support they enjoy from other stakeholders in the sand mining process.

Furthermore, Ralf Dahrendorf's postulation on conflict can shed further light on the diffuseness of conflict. Dahrendorf averred that conflict in society was diffused. He was of the view that different positions in society commanded varying amounts of authority. Authority was not resident in individuals but was bestowed on positions. Authority usually entails both superordinations as well as subordination. As such, those in positions of authority within social groups are expected to wield authority bestowed on such positions and assert some form of control over subordinates. Such control or domination over subordinates arises because of the expectations attached to positions and not necessarily the personal attributes of the person occupying a superordinate position. Since authority resides in positions and not in the person, an individual might occupy a superordinate position in one setting and occupy a subordinate position in another setting. Conversely, an individual might occupy a subordinate position in a setting and occupy a superordinate position in another setting.

Society is held together by "ligatures" (linkages or bonds which exist within any given society) and "options" (Olutayo, 2002). These bonds give meaning to the position occupied by an individual in society. It is the extent of bonding as well as the allocated position that defines the options or choices at the disposal of an individual. For Dahrendorf, society is composed of several units which he referred to as Imperatively Coordinated Associations, that is, an association of people controlled by a hierarchy of authority positions. Those in positions of authority and those in subordinate positions are defined by their different interests. While persons occupying superordinate positions would strive to maintain the status quo, those in subordinate positions would seek to alter the status quo. Some interest groups would ultimately evolve into conflict groups, actively engaged in group conflict.

Using Dahrendorf's postulation to understand sand mining, land degradation and conflict, it can be surmised that the different individuals and groups involved in sand mining would do so from a position of strength or weakness consequent on the clout they can wield from the aggregate of their social standing in the society. The propensity for conflict would depend on how much of a threat a group is perceived to be by another group as well as the level of strength the different groups might possess relative to the other. Also, the resources available in terms of human and material resources at the disposal of individuals or groups and the possibility for forming alliances with other groups would influence the desire for conflict, the direction of conflict and the intensity of the conflict.

CHAPTER THREE

3.0 METHODOLOGY

This section presents the research design, the study location, study population as well as sampling technique. Also, it includes data collection methods, instruments, methods of data analysis as the ethical consideration.

3.1 **Research design**

Research design is an extensive blueprint that is used to collect data in empirical research. The research adopted an exploratory research design. This is ideal when there are very few or limited earlier studies to refer to. Studying the subject of interest using this approach enabled the researcher to have a good grasp of phenomena. The emphasis is on facilitating deeper engagement of issues and gaining insight into sand mining activities, land degradation and conflict.

3.2 **Study area**

The research was conducted in Evbuobanosa Dukedom, which covers communities in Aibiokunla Wards one and two. Specifically, the communities to be covered are Abudu and its environs, Evbuobanosa and its environs, Iru and its environs. Evbuobanosa dukedom is located in the Niger-Delta region of Nigeria. Specifically, it is located in Edo state and includes Abudu, the local government headquarters of Orhionmwon local government area, Evbuobanosa (Owa) and Iru. The dukedom is part of the historically Great Benin kingdom under the Oba of Benin. Evbuobanosa kingdom lies in the southern part of Edo state and is built on the bank of river Orhionmwon. The duke of Evbuobanosa kingdom is traditionally referred to as the Enogie of Evbuobanosa. While the National population Commission puts the population estimate for Edo state in 2006 at 3,233,366 ,

Abudu, the major town in Evbuobanosa dukedom is estimated to have a population of 26,773 as of 2006 (Ojeifo and Eseigbe, 2012).

Evbuobanosa dukedom has very fertile and economically viable land with a large population of peasant farmers and some plantation farmers. Some of these farmers also double as traders. Abudu, the largest town in Evbuobanosa dukedom as well as the local government headquarters of Orhionmwon local government area, is a major trading route because of its strategic location on the Benin-Asaba-Onitsha Expressway. The people of Evbuobanosa Dukedom are predominantly Benin ethnic group, Ika ethnic group as well as Igbo, Ukwuani, Itsekiri, Urhobo and Ijaw ethnic groups. The major occupation of the people is farming as well as sand mining for construction purposes. Some others are engaged in trading, fishing, and palm wine tapping as well as in the civil service. The area is well known for the abundance of sharp sand gotten from the Orhionmwon River and its bank as well as clay and red laterite sand found in most parts of the dukedom. It is a major sand mining hub as it serves as a sand-providing centre to neighbouring towns. A map showing the study area is presented below.

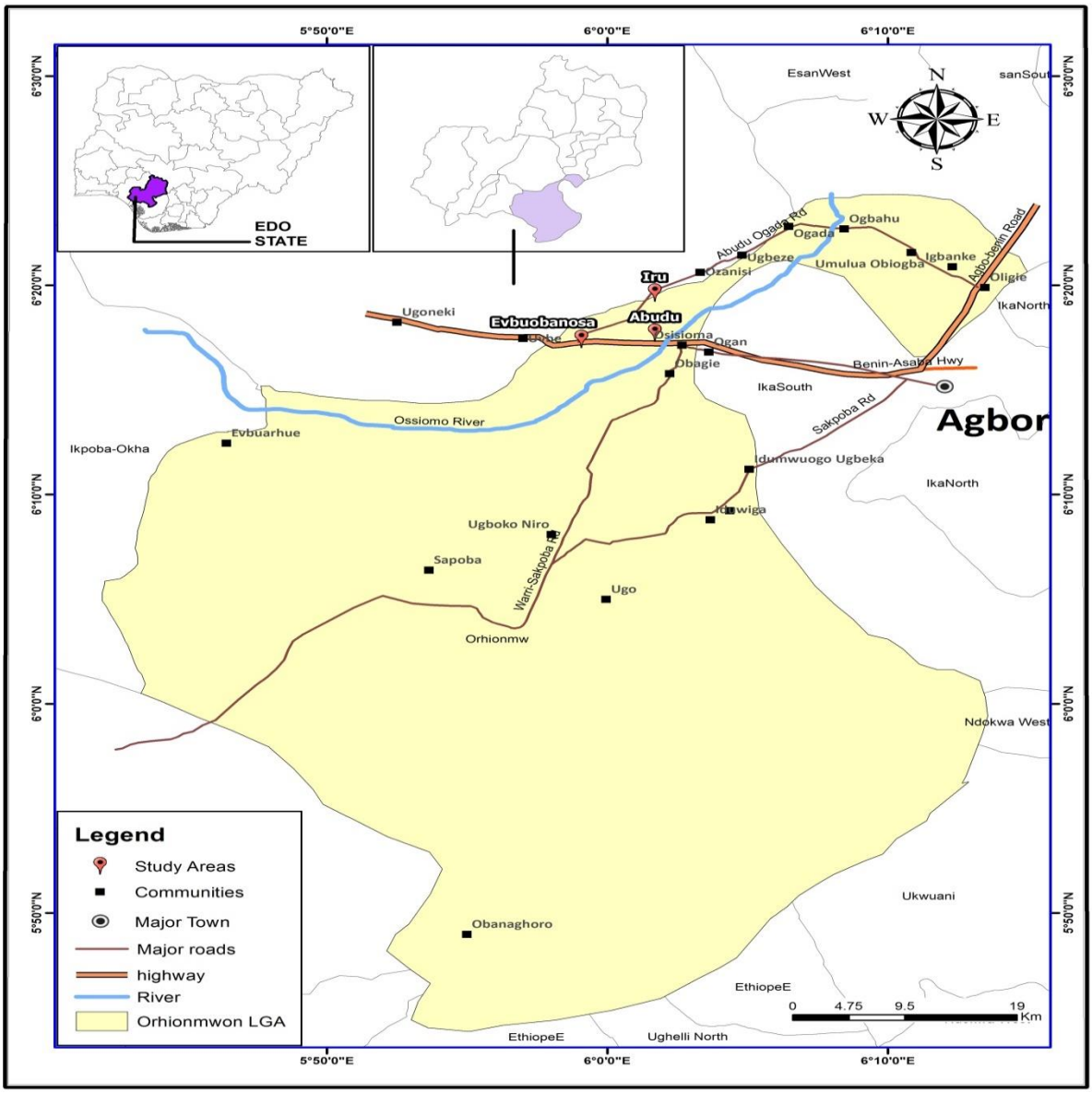

Plate 3.1 Map of the study area.

3.3 Study population

The target population for this study consisted of male and female adults in Evbuobanosa dukedom. Particular emphasis was placed on those who are actively involved in sand mining activities or were previously engaged in sand mining.

3.4.0 Methods of data collection

Generally, data can be collected from primary as well as secondary sources. There was a triangulation of techniques. Primary data was collected from respondents in the study area. Secondary data was gathered from scholarly textual materials relating to the subject of interest from published materials directly related to sand mining, land degradation and conflict. The study adopted the qualitative approach to data collection. This involved the utilization of In-depth interviews (IDIs), Key Informant Interviews (KII) and Focus Group Discussion (FGD). The purpose was to facilitate a holistic understanding of the factors under investigation and to deepen insight on the phenomenon of interest. The instruments are presented subsequently.

3.4.1 Observation

The researcher engaged a non-participant observation technique for this study. The different stages of sand mining, patterns of group and inter-group interaction relevant to sand mining, environmental degradation and conflict were observed and recorded to provide deeper insight into the different activities. The sites of active land degradation resulting from sand mining were intently observed. Also, the researcher undertook a firsthand observatory study of the contentious mining sites without disrupting their activities in order to observe the patterns of group interactions without being actively involved in the events being observed. Throughout the research process, observations were recorded in field notes, audio/video recording for analysis.

3.4.2 **Key informant interview (KII)**

Key informants were identified within the study area for interview. The key informants included 2 local chiefs, 8 prominent community leaders, 6 youth leaders as well as 4 sand mining pit owners from the study area that were purposively selected. They were expected to provide a historical account of sand mining, land degradation and conflict in Evbuobanosa dukedom. The researcher engaged 4 experts to know the extent of sand mining in the area. One of the experts was an expert in environmental management, another was an academic, another was from the state government and the fourth expert was from the local government area. Hence, a total of 24 KIIs were conducted with the aid of an interview/discussion guide.

3.4.3 **In-depth-interview (IDI)**

The researcher conducted in-depth interviews with community leaders in the study area that were purposively selected. Specifically, the researcher interviewed 40 sand miners comprising of 10 each from the four major mining sites, 4 sand mining association leaders, 8 fishermen, 6 truck drivers, 18 farmers within the sand mining sites. For the purpose of the study, a total of 76 IDIs were conducted with the aid of an interview/ discussion guide.

3.4.4 **Focus group discussion (FGD).**

The researcher conducted 18 FGDs on sand miners and members of the host community where sand is mined; 8 in Abudu (4 for sand miners and 4 for community members), 6 in Evbuobanosa (3 for sand miners and 3 for community members) and 4 in Iru (2 for sand miners and 2 for community members), all within the study area. The researcher ensured that the groups for the FGD were homogenous. The FGD groups comprised of sand miners, farmers and opinion leaders in the study area. The FGDs were conducted with the aid of an interview guide.

3.4.5 **Case study**

Two (2) case studies on current sand mining-induced conflict sites were conducted in the study area; 1 in Abudu and 1 in Evbuobanosa. The researcher made a deliberate effort for the selection to be homogenous. The importance of this to the entire study was to be able to provide keen insight into the social mix that precipitates conflict due to sand mining and land degradation.

3.4.6 **Secondary sources**

To understand the extent of sand mining in Evbuobanosa Dukedom, there was the need to collect secondary data. This included natural resource statutes and ordinances, sand mining operation guidelines. This was sourced from archival sources as well as the Federal Ministry of Mines and Steel, Edo State Ministry of Environment and Orhionmwon Local Government Council.

3.5 **Method of data analysis**

The data was analysed using content analysis and where necessary, verbatim quotations were presented in the course of the data analysis. The researcher examined the narratives, FGDs, IDIs and KIIs for similar themes and patterns in responses dwelling on sand mining in Evbuobanosa dukedom, land degradation and its propensity for conflict.

Table 3.1 Research objectives and data collection instrument matrix

Objectives	Secondary sources	Observation	KII	IDI	FGD	Case Study
Objective 1	X	X	X			
Objective 2			X	X	X	
Objective 3		X	X	X	X	X
Objective 4		X	X	X	X	X
Objective 5			X	X	X	

Table 3.2 Analysis pathway

Familiarisation of Data	Translation of Data	Transcription of Data	Back Translation and validation	Coding of themes
The Researcher got acquainted with the data from the field. He sorted and organised it into categories.	The data was translated to the English language from Bini and Nigerian creole languages.	The data was transcribed from audio to written format.	The data was back-translated to Bini and Nigerian creole languages to ensure accuracy.	The dominant themes were coded and content analysed.

3.6 **Ethical consideration**

In an attempt to abide by the ethical research standards, which refers to the abstract set of standards and principles that are used to determine appropriate and acceptable social (research) conduct, and due to the nature of the study, all ethical issues were strictly applied. The informed and voluntary consent of the respondents/participants which was verbal and/ or written was sought, secured and protected. The right of refusal and withdrawal of the possible participants at every stage of the study was emphasized before and during the course of the study. Also, the anonymity of the respondents/participants and confidentiality of responses were strictly respected and assured. Similarly, the privacy and confidentiality of participants were respected before, during and after the study.

CHAPTER FOUR

RESULTS AND DISCUSSION

4.1.1 **The nature/ process of land excavation**

The land has to be excavated before sand can be mined. Sand mining involves land excavation as a necessary part of the mining process. The capitalist exploits the environment to increase their wealth stock and perpetuate their position in society. Their principal focus is to create wealth for themselves and accumulate as much resource as they can garner. As long as they are getting richer, they would continue to expropriate the commonwealth of the community themselves. In this light, they tend to extract as much sand as is profitably possible to further their interest in wealth accumulation.

The extent of land excavation and sand mining is determined largely by the nature and process of land excavation. In the quest to interrogate the extent of sand mining and land excavation, it is important to understand the nature and processes of land excavation. The United Nations Environment Programme (UNEP) report of 2019 shows that globally between 40- 50 billion tonnes of sand aggregate are extracted annually (UNEP, 2019). Growing population, rapid urbanization and its attendant infrastructural development have resulted in an ever-growing demand for sand aggregates. Sand mining in Evbuobanosa dukedom is one of the foremost economic activities being carried out in the area. In the different communities that make up the dukedom, it is commonplace to see sand being extracted either from the land surface or from the river. The sand mining industry employs several people in the different levels of sand mining operations, especially young people. In the different sites where excavation of sand is carried out different operations relevant to the extraction of sand occur with varying levels of technological advancements. The nature of sand extraction is both manual and mechanized. There is a blend of both traditional and modern approaches in the extraction of sand aggregates.

The extraction of sand from the river is principally manual. The mining process involves the use of wooden boats with or without a motor engine. Although most of the boats have motor engines for ease of navigation, there are still some boats that are paddled manually with the use of wooden poles and paddles. With these boats, the miners row or paddle their boats to points on the river where the quality of sand aggregate that they intend to extract can be found in reasonable quantity. When they get to the point of interest, upon confirmation that the right quantity and quality of sand aggregate is available, they anchor their boat and dive inside the water with their buckets. They scoop the sand with their bucket from the river bed, resurface and empty their bucket load of sand inside their boat. The process is repeated until the boat is full or they have the desired quantity, thereupon, they row or paddle back with their wares to the beach.

At the beach, another set of people known as jerkers offloads the sand from the boat to the beach with shovels. When the sand aggregate is sold at the beach, another set of people known as loaders uses shovels to transfer the sand from the beach floor to the sand trucks popular known as “Tipper”. The sand trucks convey the sand to the different destinations where they are used mostly for construction purposes. A respondent narrates the process this way:

> We dig the sand by using wooden boats, some others use motorized engine boats and we all mine with the use of shovel for digging, spade and bucket. Some go as far as let me say **40** kilometres away from this community. To extract gravel and sand, similar processes are involved. The farther you go, the more you get sand and gravel to mine cheaply. And for the actual mining itself, the deeper you dig the better the quality of sand aggregate you get. The deepest mining points tend to produce the best gravel in terms of size that you want. Now, gravel works in the same way as filling gravel. The filling gravel comes during a flood, the flood brings the gravel and fills it, then we have what we will call underground gravel those are there. When we go searching, we use a pole to search for the gravel, then when you search with your pole, you will touch the gravel, you will feel that this is gravel because when you use a pole, you will know the difference between sand and gravel. You do not need to deep dive to look at it before digging it. It is through the pole that you know that this is gravel, this is sand. After confirmation, you start digging. After mining the gravel, you will now take it to the land where we have the Jerkers, that will jerk it from the boat to the land, then before the buyers will come with the tippers. That is just how we mine sand' (Male / Sand miner/ Abudu IDI 4 / Feb 2019).

Plate 4.1. River Ossiomo where sand mining takes place

This is further corroborated by another miner:

> We use our physical strength to do the work. We use manual labour to excavate the sand from the river. That is why those that work here if they do not take good care of themselves, their physique changes because they mostly use their physical strength. It is even better now. In the past, when we were not using motorized boats, we were pulling our boats with our hands, paddling them manually (Male/ Sand miner/ Abudu IDI 2 / Feb, 2019).

Also,

> River Orhionmwon is not the river that you will depend on dredging machine because the sand is not filling like that (not replenishing itself very quickly). Many people have tried in the past to mine sand from the river using dredging machines and they failed. This is because when you start dredging, you might successfully dredge for about one month and everything will dry up. So, you might want to relocate the dredging machine to another site on the river, but because of the swampy nature of the area, you cannot go downstream easily. So, you only mine around the beach where it is less swampy. When the minable sand in that area is exhausted, you stop mining and wait again for it to be replenished. Before you work again, it will take some time. If you start the work by June in the rainy season, by August you will have to quit till January again before you mine for another two months which is not very profitable (Male/ Sand miner/ Abudu IDI 10 / Feb 2019).

The mining of sand from the river using manual labour as is applicable in this case involves three different sets of operators before the sand aggregate gets inside the sand truck or Tipper. The sand miner, that extracts the sand from the river bed with a bucket, the jerker, that offloads the sand from the boat to the beach using a shovel and the loader who transfers the sand from the beach into the bucket of the sand truck using a shovel. The chain of operation is labour intensive and engages several people daily. This is consistent with the views of several scholars that extraction is a valuable source of employment and livelihood for several people in different communities, especially in those communities where there is very active involvement in extractive activities (Charlier, 2002; Saviour and Stalin, 2012; Khan and Sugie, 2015).

Plate 4.2: Sand at the river bank extracted from the river bed in Abudu

Similarly, sand extraction from some pits is done manually. In this case, the sand truck or "Tipper" drives inside the "borrow" pit while loaders excavate sand directly from the pit and transfer it to the bucket of the sand truck using a shovel. In the mining processes described above, the nature of sand extraction is manual and labour intensive. People use simple tools and crude implements to extract sand aggregates in their areas of operation.

On the other hand, sand is also extracted from mining pits using excavators, loaders and other earth-moving machines. In this case, the process is not labour intensive as it is mechanized, involving the use of heavy earth-moving machines. The bulldozers remove the existing vegetation and any physical hindrance such as trees, stumps and stones. The excavator extracts sand and loads it inside the bucket of the sand truck. One excavator operated by an individual can load fifteen to twenty sand trucks in an hour. More can be achieved within a short period using these machines. Several tonnes of sand can be extracted daily and evacuated (Stalin and Saviour, 2012; Khan and Sugie, 2015). This arrangement makes it easier to have deep excavation of sand. This is consistent with the views of Ashraf et al, 2011 that sand extraction can lead to the excavation of vast quantities of sand aggregates over some time.

At the Ovbiogie/ Ibibie mining pit, the mining depth was over thirty meters below surface ground level. Also, few people are involved in this extraction process. There is limited interaction between and among workers in this operation process due to the noise from the machines and the need to pay close attention to the operations of the machines. The noise from the machines limited the level of discussion and interaction that could be meaningfully engaged in given the atmosphere under which they had to operate. This depicts the views of ecological Marxism with regards to the forces of production and the relations of production. It deals with alienation, the estrangement of human beings from themselves as producing beings, from the process of production itself, from the species being, and from other human beings (Kovel, 2002; Foster and Burkett, 2008; Foster, Clark and York,2010). When workers are separated from themselves by the process of production itself, they are alienated and their interactive inclination as social beings is checkmated. This estrangement from themselves increases their level of isolation and disillusionment. Ordinarily, humans are social beings and as such, they always desire and

actively seek for avenues to interact with themselves. The interaction among themselves creates and strengthens bonds of friendship, camaraderie and reinforces their humanity. These bonds are critical to the maintenance and wellbeing of the individual.

When there is estrangement occasioned by the production process as was observed at the mining pits, the level of job satisfaction can be impacted. O'Connor (1998) and Foster (2000) see this as one of the inherent contradictions of capitalism. The capitalist system is inherently tailored towards the maximum accumulation of matter, energy and value irrespective of human needs or natural limits. As such, the overarching desire and urge for wealth and more wealth drives the capitalist to create and maintain a working milieu that perpetuates and entrenches the estrangement of the worker. For Ecological Marxism, this type of resource extraction is focused on increasing the wealth stock of the capitalist with scant regard for its effect on the social well-being of the workers. Alienation of employees is seen as collateral damage that is acceptable as long as more capital accrues to replenish and increase the wealth stock of the bourgeoisie in the production process. As long as the ultimate goal of wealth creation is on course, the estrangement of workers is a necessary bye product that can be accommodated to further enrich the capitalist. The workers are expected to cope with such a condition as long as they choose to work.

A respondent captured it thus:

> We use the bulldozer to clear the ground surface and remove vegetative materials like plants, trees and tree stumps as well as to remove rocks. The excavator also prepares the sand aggregate for loading by breaking the sand down into smaller lumps and packing it in heaps. What we do here, when the sand trucks come to carry sand, the pail loader and the excavator are used to load sand on the trucks using their buckets (Male/ Pit manager/ Abudu IDI 1/ Feb 2019).

and,

> As an operator, my responsibility is to ensure that when the sand trucks come to the mining pit to fetch sand, none of them should spend more than five minutes while being loaded. The more sand trucks we can load daily; the more money we make. There is no time for small talk and banter on the job. Of course, I cannot complain as long as I get paid for my services (Male/ Excavating machine operator/ Abudu IDI 3/ Feb 2019).

At the sites where sand was mined with the use of heavy earth moving machines and excavators, more sand was extracted daily compared to areas where the extraction was carried out manually. This was so because while it would take three men 15 to 20 minutes to load sand onto a Tipper, it takes the machine less than two minutes to load sand onto a tipper. As such, a lot more sand can be evacuated from a mining pit by sand trucks daily if it involves the use of machines compared to what could be possible if it was done manually with human labour. This capitalist inclination for more resource extraction and the amassing of resources leads to an increase in the contradiction between the quest for environmental resilience and economic growth (Kovel, 2002; Foster and Burkett, 2008). There is a voracious desire for wealth accumulation through the exploitation of the natural environment with very scant regard for the sustenance of the ecological balance on the part of the capitalist. As long as the exploitation and extraction of natural resources would increase his balance sheet and financial standing, whatever can be done to further that goal without opprobrium is acceptable. This contradiction undermines the social and environmental factors that sustain the system resulting from the commodification of land, natural resources and human labour in a bid for wealth accumulation. This also means that few people were involved in the extraction process when sand excavators were involved.

Society is held together by “ligatures’’ (linkages and bonds that exist within any given society) and “options” (choices at the disposal of an individual) Olutayo (2002). These bonds and linkages give meaning to the position occupied by an individual in the society; the extent of such bonding, as well as the allocated positions, define the options, choices and possible routes or courses of action that are open to the individual. The mining pit owner, based on his social status and position in the society can explore the advantages inherent in his linkages to maximize his options and possible value attraction and creation opportunities to grow his wealth. As such, the social position of the individual to a significant extent determines the role he or she can play in the resource exploitation activities and how such roles can be played. Each heavy machine such as an excavator and loader was operated by one person. Using the machine, he extracted and loaded sand aggregates within a very short time efficiently and effectively. However, he tended to have

few colleagues to interact with as the method of extraction did not require many people. The machine operator had limited options in terms of interaction based on his social standing and position in the mining pit. He was constrained by the social milieu in which he operated. This constraint was less for the mining pit owner as he had a more enhanced social standing and had more flexibility as a result of the options at his disposal in this context. That is to say, an individual's position in the production process constrains his or her options on how they can interact with the work process and others in the work environment.

Moreover, at the sites where sand extraction was carried out manually, a lot of people were involved in the extraction process. Many people were needed for the operations as it was labour intensive. For mining pits where it was labour intensive, three or four persons would load a sand truck within 12 to 15 minutes. More man-hour was required to extract more sand aggregate. In this situation, people could easily interact with themselves. There was a tendency for people to share their life experiences, fears, concerns and aspirations with their colleagues in the workplace. More people worked, more people earned money from the sand mining activities and more families were directly impacted financially by the activities of the industry. However, it should also be noted that mining from land pits manually was more time-consuming and less efficient when compared to mining with machines. Also, mining manually from some land pits was more dangerous (Toohey, 2012; Khan and Sugie, 2015). For instance, at the Ovbiogie/ ibibie mining pit (when it was operated manually) there were several instances of fatal landslides that resulted in the loss of human life. While people were actively scooping sand from the floor of the mining pit, the upper part of the pit would collapse on them burying them alive. In some cases, they were lucky enough to be rescued alive but in many cases such landslides were fatal.

Plate 4.3: Picture of Wooden Motorboat for Sand Mining

4.1.2 **The extent of land excavation and sand mining**

In the study area, sand mining is actively occurring. At different mining sites, sand was excavated. It is instructive to note that most of the sand excavation sites from the different mining sites were widely known. There was extensive sand excavation in the area. Mining in Nigeria is under the purview of the federal government of Nigeria. It is under the Federal Ministry of Mines and Steel Development. The Nigerian Minerals and Mining Act, 2007 vests the control and governance of mines and mineral resource development activities in the Federal Ministry of Mines and Steel Development. However, the Mining Act also prescribes that there should be the Mineral Resources and Environmental Management Committee(MIREMCO) to interface between the federal, state and local government to address possible conflicts of interest that could arise from mining activities.

There were 34 mining sites scattered throughout the study area. Most of them were being mined actively while a few were old mining pits that have been abandoned due to severe gully erosion that has limited access to such pits. Six of these 34 mining sites were licensed, having small-scale mining licenses or quarry mining leases. Of the 6 licensed mining sites, 2 of them were 34 meters (111 feet) below the ground. Each of the two covered an area of about 8 acres (32,374m^2) of land (Oluku and Asikhia, 2021). Also, another of the licensed pits had excavated up to 25 meters (82ft) below the ground and covered an area of about 4.5 acres (18,210m^2). The fourth licensed pit had excavated up to 27meters (88.5ft) below the ground and covered an area of about 3.5 acres (14,163M^2) of land. The fifth of the licensed mining site had excavated up to 26 meters (85ft) below the ground surface and covered an area of about 4 acres (16,187m^2) (Oluku and Asikhia, 2021).. The sixth licensed mining site had excavated up to 27 meters and the expanse was about 4.5 acres (18,210m2). These licensed mining sites used machines exclusively for excavation. In the past, they used manual labour, but they had mechanized their operations to utilize heavy machines. The large commercial mining pits were approved by the Federal Ministry of Mines and steel development. To operate, the sand mining pits obtained mining permits from the federal mining regulator. The Federal Ministry of Mines and Steel Development assesses the peculiarity of the environment and specifies the scope and extent of sand mining that can be undertaken in an area.

Plate 4.4: An expansive licensed mining pit

However, 28 of the mining sites in the area were unlicensed. The miners on those sites operated without obtaining the necessary approval from the government. They often operated until whenever the government officials came to stop from extracting illegally. When stopped, they usually relocated their operations to other sites and continued their operations. The depth of the unlicensed mining sites ranged from 1.2metres (3ft 11inches) to 3.1metres (10ft). The unlicensed sites usually covered an area of about 0.25 acres ($1011m^2$). These sites were exclusively mined manually using spades and shovels. This partly explains why they were not very large compared to the licensed sites that used machines for excavation.

Furthermore, the Edo state government through the state ministry of Environment sometimes interjects into the operations of sand mining pits based on what it terms Ecological concerns. For instance, in 2018 it temporarily stopped the mining of sand from licensed sand pits in the state based on concerns about the deleterious effects of sand mining on the ecology of the state, especially gullies. The state government was concerned that some sand mining pits were located at less than one hundred feet from the road and constituted imminent threats to the lives of its citizens.

The National Bureau of Statistics estimates that 14,672.20 tons of sand and 46,190.51 tons of Laterite were mined from Edo state in 2018 (NBS, 2019). In the Evbuobanosa dukedom, sand mining is widespread. Expert assessment at the mining sites posits that sand mining from the river in the area was reasonable and sustainable as it was largely manual and at a level that is amenable to natural replacement. At the mining pits in the study area, the expert opinion is that the active mining sites are being reasonably mined and are considerably located from major roads and houses. However, one of the mining pits was less than 600m from National electric power line towers. Conscious efforts must be made to veer the course of the mining away from the path of the national electricity power lines towers.

Plate 4.5: An unlicensed mining pit

It is pertinent to state that the sand extracted at a commercial level is to boost economic activities and further feather the nest of the elite sand miners. The core capitalist is interested in extracting as much sand as possible to increase his wealth stock and grow capital. This is necessary to sustain the taste and lifestyle of the elite capitalist. On the other hand, the artisanal sand miner extracts sand simply to survive. For him, whatever he can get from sand extraction is to meet his basic needs daily and not necessarily to lead an affluent life. Thus, the extent of sand mined by the capitalist extractor and the artisanal miner differs significantly in tandem with their different capacities, desires and ambitions.

In Evbuobanosa dukedom, sand mining is a thriving enterprise. In the towns that make up the dukedom, there is an abundance of sand that is easily and very readily extracted. Along river Ossiomo, which is the major river in the dukedom, different grades of sand aggregates are frequently extracted by miners. On the bank of the river as well as its tributaries, there is a thriving industry of sand mining. Besides that, there is an abundance of sharp sand also known locally as *erosion sand* which is extracted for use in the construction industry. The people in Evbuobanosa are predominantly Christians, Traditional worshippers and a few Muslims.

Abudu, the local government headquarters of Orhionmwon local government area is the largest town in Evbuobanosa dukedom. It is majorly situated on the western bank of River Ossiomo, which is known locally as Orhionmwon River. The community is a centre of commercial activities and is renowned for its sand mining industry, farming, fishing, trading and educational institutions. It also hosts a petroleum pump station owned by the Pipeline and product marketing company (PPMC), a subsidiary of the Nigerian National Petroleum Corporation (NNPC). The community also has a vast forest reserve for logging activities and was a transit logging camp for African Timber and Plywood (AT and P).

As a local government headquarters, the town has a divisional police station, a post office, a local government secretariat, a General Hospital as well as a Primary health centre. It also has several government offices such as a ministry of works, ministry of Agriculture, Federal Road Safety Commission FRSC unit office, federal cultural centre, ministry of finance, a customary court, a magistrate court, high court of justice and other government

establishments. It also has several educational institutions like primary schools, secondary schools and a college of education. Abudu is located along the Lagos Asaba express way.

This makes the town easily accessible from different parts of the country. Furthermore, the people in Abudu are involved in commercial activities such as petty trading, farming activities, palm wine tapping, sand mining, fishing, hunting and weaving. There are several civil servants in the community who work in the different government institutions in the town. Most of the people in the community identify themselves as Christians; some are adherents of African Traditional religion while a few of them are Muslims.

The river Ossiomo is a major mining point for sand aggregates in the community. Sand mined from the river is usually offloaded at Agogbede beach, bridge beach or reserve beach. Sand is mined from inside the river and brought to the beach for sale. Different grades of sand aggregates are mined from the river bed. Some respondents put it this way:

> Yes, we all mine from the same river. God has so blessed this river. There are some areas in this river where you find big stones; there are other areas where you find small stones and some other areas where you find sand. These different materials and their sizes are naturally separated inside the river. Someone can mine sand or gravel of large size, while another person can mine a smaller size of the same material from the river (Male/ sand miner/ Abudu FGD 2/ Feb 2019).

Also,

> This community is well known for sand mining. The sand extracted from this community is exported to different parts of the country. God has so blessed the community with economic sand that we do not need to struggle to get sharp sand from the river. Even from the ground around us, there is plenty of laterite sand that can be used. Abudu supplies sand as far as Agbor, Umunede, Abavo even Owa-Oyibu all in Delta state (Male/ Community youth leader/ Abudu KII 3/ Feb 2019).

The river bed is extensively mined for its rich deposit of sand aggregates that is frequently replenished from weathering and erosion of rock materials upstream. Sharp sand, gravel and clay are often extracted from the river in this community. From the sand mined from the river, different other grades of sand popularly known as *skywater* are derived. The sand extraction industry is very popular in this community and employs several people,

especially youths. The mining of sand from the river in the community is usually done manually using buckets, shovels and boats. Hundreds of people especially youths are actively involved in the sand mining industry in the community. The youths are involved at different levels in the sand extraction processes.

Furthermore, apart from sand mining from the river, sand is also mined from borrow pits within the community. The sand extracted from these pits is mined manually in some small pits and mined with excavators in other larger pits. The sand aggregate from these pits is not processed into *skywater*. Rather, they are sold the original way or as extracted because the particles are not as fine, smooth and distinct as the aggregates extracted from the river. The sand aggregate extracted from these mining pits is mostly laterite sand that is used for filling in house construction as well as for road construction. It should also be noted however that some form of sharp, coarse sand is extracted at some other mining pits in the community. These extraction processes from the mining pits are carried out manually, using shovels to scoop sand from the pit and for transferring the same to the tipper.

Evbuobanosa community is the seat of the duke popularly known as the Enogie, as well as its traditional headquarters. The Enogie (Duke) of Evbuobanosa is the traditional ruler of the dukedom. Evbuobanosa town was formerly known as Owa. It was called Owa by the earliest migrants to the community who, migrated from Owa kingdom in present day Delta state. The community was renamed Evbuobanosa after king Obanosa, who was the king of Bini kingdom in the early 19th century when the town was founded. The major ethnic groups in the community are Bini and Ika. The town is bounded on the east by Abudu, on the west by Okiri river and Uvbe town, on the north by Iru and Evbuohen communities and River Ossiomo on the south. Farming, fishing, hunting, handcraft, weaving, trading, palm wine tapping and sand mining are the major occupations in the community. The town has primary schools, secondary schools and a private polytechnic. The community also plays host to a motorbike racing course.

Sand is extracted from the ground close to the riverbank in the community. Laterite sand is also extracted from borrow pits around the community for construction purposes. Where

sharp sand is extracted from the ground, it usually forms small ponds of water as the water table is not very far in those areas.

> In this area, people mostly mine sand from the ground. We mine sand to build our houses and other construction issues. It is very cheap to mine sand from the ground around here (Male/ sand miner/ Evbuobanosa IDI 3/ Feb 2019).

Also,

> The people that mine sand here are not so many compared to those that mine sand in Abudu. Many tipper drivers prefer buying sand from Abudu because it is closer to Agbor, where they usually come from than coming down to Evbuobanosa. Of course, the level of sand mining here is not as much as what is obtainable in Abudu (Male/ Sand miner/ Evbuobanosa IDI 2/ Feb 2019).

Even though Evbuobanosa is the traditional headquarters of the dukedom, it is not the centre of commercial activities or sand mining. Abudu is the major centre of commercial activities and sand mining. This is so because the major river from where sand is mined, Ossiomo River passes through Abudu town and there are good beaches along the river inside Abudu town, where sand that is extracted from the river can be brought to the market easily.

Sand is extracted from some communities that are contiguous to Evbuobanosa dukedom. One of such contiguous communities is Ogan. The community is a dukedom under the duke of Ogan traditionally known as the Enogie of Ogan. The community is a border community between two states, Edo and Delta states. It is also a border community between two ethnic kingdoms, the Bini kingdom and the Agbor kingdom. The major ethnic groups in Ogan dukedom are Bini, Ika, Ukwuani, Igbo, and Esan. The community plays host to a Leprosarium, the Ossiomo leprosarium, a specialist centre for the treatment of leprosy. The people in this dukedom are mostly peasant farmers, cocoa farmers, citrus farmers and oil palm farmers. There is a thriving trade in foodstuff and other farm produce in the community.

In Ogan community, sand is mined on its northwestern borders close to the Ossiomo River. Here, sand is mostly mined using excavators and other earth-moving machines.

There is only one mining site in this community and it is quite large. The mining site in this community is about two kilometers from the federal express, the New Benin Asaba Road. The mining is controlled by the Enogie (duke) of the community for and on behalf of the community. The administration of the mining pit is managed by the Enogie through his appointees. Sand trucks frequently ply this route to carry sand aggregates and supply the neighbouring towns of Agbor, Umunede, Owa-Oyibu, Owa-ofie, Alifekede, Oza, Owa-Alero, Abavo all in Delta state, as well as some communities in Edo state such as Oheze, Oloten, Okuor, Uson, Iguododo and its environs.

Similarly, in Ovbiuwa and Ebiebi communities, sand is extensively mined from a very large mining pit that is about one hundred feet deep. Here, sand is mined exclusively with excavators, pail loaders and other earth-moving machines. The mining pits at these sites are over thirty meters below ground level. There is massive and extensive land excavation and sand extraction going on at this site. The sand from this mining site is very suitable for building houses and railway construction besides other uses. Some of the sand for the construction of the Aladja - Ajaokuta railway line was extracted from this site. The current mining site where this excavation is going on is new. The original site for earlier excavation has been abandoned. The old mining site was abandoned because the access road to the mining site, an earth road was in a very deplorable state. The access road had become impassable for sand trucks due to heavy erosion and poor maintenance.

The current mining site for Ovbiuwa and Ebiebi communities is about three kilometers from the federal expressway, the Benin -Asaba highway. It is easy to access. The mining activities at the site are rigorous, extensive, mechanized and recently, relatively regulated. There is no manual extraction at the site. The following responses buttress that:

> As you can see, here, we extract sand using excavators and other pail loaders. The quality of sand that we mine here is very high. Well, this mining site is situated far away from residential areas. We adhere to the mining regulations released by the government from time to time (Male/ pit manager/ Ebiebi IDI 2/Feb, 2019).

Also,

Plate 4.6: An active mining pit with a background view of the National Electricity power line

> Government officials come here periodically to check what we are doing. We try as much as possible to ensure the safety of everybody on site. As you can see, this site is very busy. Several trucks ply this mining route daily. Our machine operators are always very busy attending to the truck drivers (Male / Pit owner/ Ebiebi IDI 1/Feb, 2019).

And,

> We mine this sand for and on behalf of the community. It is relatively easy to mine sand here as it is done with the aid of heavy machines, graders and excavators. We have enough land to expand the mining site. Our goal is to ensure that every truck driver that needs sand can get it from this mining site (Male/Pit manager/ Ogan IDI 1/Feb, 2019).

From the foregoing, it can be deduced that sand mining in Ogan and Ovbiuwa Ebiebie communities was highly developed as it was done exclusively with the use of excavators and other heavy machines for commercial purposes. Consequently, fewer people were involved in the mining process as it was mechanized and not labour intensive. Subsequently, it was optimized for profitability and not necessarily job creation for the youths. This reinforces the views of Ecological Marxists that capitalist exploitation of natural resources feathers the nest of the capitalist and furthers their goal of profit maximization (Foster, Clark and York, 2010). Intending to maximise profit and minimise cost in mind, job creation is not the objective of the capitalist, rather, wealth accumulation using the least possible human resource is the aspiration. The elite mining pit owner employed technology to extract sand from the ground in a manner that he judged to be efficient and effective to lubricate the wealth spinning wheel without much concern for the number of jobs that would be created or lost. As long as the use of machines is an option, although more capital intensive, would ultimately lead to more profit, it was a preferred option over and above the manual approach that employed more people, empowered more distinct households but created less profit for the elite miner. Profitability for the capitalist sand miner was the ultimate goal.

Furthermore, it was observed that no extraction of sand was carried out from the river in these communities. Rather, sand was extracted exclusively from the land. This might be as a result of the swampy nature of the riverbank on the Ogan, Ovbiuwa axis. Also, since quality sand can be gotten from the ground at a reasonably cheap rate, why bother about

mining from the river? Perhaps, considering the nature of the terrain and the topography, the sand miner with capitalist tendencies decided that it was more profitable to mine sand from land pits where heavy earth moving machines can be used than mining from the river, which might not be as profitable to the investor at the moment. The researcher observed that about five sand trucks were loaded from the site every ten minutes. The mining sites operated from Mondays through Saturdays. They did not operate on Sundays as they observed it as their rest day. They also used Sundays for their different association and guild meetings. Most of those meetings were avenues where people addressed issues that pertained to matters of general interest for them.

4.1.3 **Impact of land excavation on topography, erosion processes, flooding, vegetation and value of land**

Land excavation in Evbuobanosa dukedom has had varying levels of impact on the communities. The extraction of sand has altered and reasonably distorted the landscape in the areas where sand has been and is being extracted. The picturesque and calm ambience that once pervaded the countryside has been replaced by pits and wasteland dotting the area. The scenery in the area is a kaleidoscope of green vegetation and scorched patches of mining pits, both old and new. Areas that were hitherto even and undulating are now marked with dangerous pits. The topography has been modified by the sand mining activities in the area. Also, in areas where sand has been mined from the ground close to the river, there are pools of water and ponds in those locations. When sand is extracted from a piece of land, the canopy of trees and plants that hitherto dotted such locations are often removed to get to the soil surface to extract sand.

The land degradation arising from the extraction of sand is in tandem with the postulation of ecological Marxists that capitalist resource exploitation denigrates and upends the environmental equilibrium (Foster and Burkett, 2008). The greater the level of capitalism's development, the greater its environmental pressures and the higher the degree of the environmental damage it inflicts. The annihilation of species and the devastation of whole ecosystems is consistent with the growth of capitalism and its drive

Plate 4.7: Pail loader loading sand into the tipper

for economic development. The relentless wealth accumulation tendencies of the sand miner propels and sustains the inevitable distortion of the environment, in a bid to maximize profit, accumulate as much wealth as possible and increase the accrual of value through the commodification of land and its ancillary components and natural resources.

Furthermore, the excavation of sand aggregates in the area has affected the soil structure in parts of Abudu, Ogan, Evbuobanosa and its environs. In mining sand from the land, the interest is usually on laterite sand or sharp sand. These sand aggregates of interest are not always found on the surface or topsoil. To get to them, the topsoil is usually removed and dumped elsewhere. In the process, the humus content of the soil, the vegetation cover, as well as the organisms that are naturally found on the upper layer of the soil, can be destroyed, moved or misaligned. These excavation activities ultimately alter the configuration and structure of the soil. The denudation of the soil's cover to extract sand aggregates invariably exposes the soil to degradation (Bojo, 1991; Teketay, 2001). The hitherto existing soil formation and structure are misaligned, distorted and vitiated. When this process continues over some time, the damage to the land environment becomes more pronounced and worrisome as more tracts of land become affected in this manner. This process can be very disruptive of the preexisting ways of life of the people. Those that are used to farming their ancestral farmlands suddenly discover that their once cherished way of life has disappeared due to sand mining activities in the area. A respondent captured it this way:

> You know normally, when they start mining sand, they will take a very small land. It is not big but over time there would be a landslide and the pit start going wider and wider. It starts expanding. Even though it is a community pit, we have people that are farming there, and their forefathers have been farming there from time. So when the pit starts growing wider it starts to occupy their farmland and they will be angry because you are now sending them away from their father's land and they do not have a place to farm (Female/ Community leader/ Abudu KII 4/Feb, 2019).

Also,

> Now if they dig the corner of the river, now the river will expand then the current will be low then when the current becomes low, the area will be filled with sand then our boat will not be able to cross, it will be landing, so because of that, we do not even encourage it. We don't encourage people to

> dig the corner of the river because it will affect us and destroy the land. After all, there are some areas whereby when they dig the corner of the bush or they dig the land what normally happens is that when the flood comes, the flood will face that area and destroy it then the place will be very wet. Immediately the flood destroys it, everywhere becomes river then the land will now reduce. There is this big borehole across the express, if you notice, if you stay from that borehole, you could see that, you know the river the grass around it is water and that is what happened there, they dug sand and everything is now river (Male/ Sand miner/ Abudu IDI 4/Feb, 2019).

Also,

> Sand mining affects the land. As they are digging this sand from the river, the river flow gets widened. Sand extraction alters the water channel whereby those lands can no longer be used for farming. The resultant flooding can lead to losses for those that have a fish farm close by. The flood occasioned by excessive sand mining can result in serious losses for fish farmers whose fish ponds are located close to mining areas or areas susceptible to such flooding (Male/ Community leader/ Evbuobanosa KII 2/Feb, 2019).

In the same vein,

> There are some areas in the forest reserve where because of pollution, flooding of people's farmland occasioned by inappropriate sand mining, the community restricts the mining of sand and sets boundaries. This is to avoid and minimize the occurrence of flooding that could destroy people's farmland and their crop. There is a way you would attend to the river that would cause water to flow into farmland (Male/ Community leader/ Abudu KII 6 /Feb, 2019).

Also,

> Where sand has been mined, farming cannot be practiced there because the topsoil that holds manure has been removed. Of course, the farmers that used to farm there would no longer be happy with the mining activities. Not all the farmers are benefitting from the mining. There would be a conflict between the farmers and the sand miners. As I mentioned earlier, sand mining can result in flooding, assuming it results in flooding and affects the farmland, it would destroy so many crops (Male/ Community leader/ Evbuobanosa KII 4/Feb, 2019).

Also, when sand is excavated, in many cases, the processes involved result in erosion and flooding. As sand is excavated from the land, pits are formed. The pits are artificial

depressions that can serve as a reservoir for storing runoff water from rainfall. By these pits being depressions occasioned by sand mining, water flows into them quickly. In the process, the rate of soil erosion is accelerated as a result of the quickened pace of surface water runoff.

Similarly, in the area, the underground water table is not high especially on the western part of river Ossiomo. Consequent on the low water table, when sand is excavated in some areas, underground water oozes to the surface and becomes artificial ponds or lakes. These artificial water ponds or lakes arising from sand mining exacerbate flooding and soil denudation. A respondent explains it this way:

> This area is a bit swampy and close to the river, the water table is not too far, like the one they have there when the construction company was dualizing the road (New Benin Asaba express highway), that place was not a lake until they just went to mine sand, use and later they met water and now it is now a lake. It is a threat, it has formed a lake there now whether it is dry season or rainy season that place used to be our farmland. Even if you are going to the farm now, you don't leave your children alone so that they do not go and fall inside. For instance, there was a time a girl went there to bathe and she got drowned and died (Female/ Community leader/ Abudu KII 12/ Feb 2019).

Also,

> Like where I mine gravel, mining always affects the riverbank because like the underground type of gravel, now the underground has to do with everything in the whole of that area is filled with gravel, maybe it is covered by mud or smoke sand, now when you continue to dig one particular area, the sand will the washing, the gravel will be washing, just like that it will be extending to the bush, then the bush will now begin to break, everywhere will be falling sometimes the wood, big tree that is standing by the bank of the river will still fall and there are someplace if you get to some area that was very shallow when we start digging when we extract gravel from it, we see that the place will become wide, that is what normally happens (Male/ Sand miner/ Abudu IDI 9/ Feb 2019).

Also,

> Sometimes, while paddling through the river, I observe that as water flows, some parts of the bank get washed away slightly. But that is more prominent at the peak of the rainy season when the river is full and the water level rises significantly (Male/ Sand miner/ Abudu IDI 9/ Feb 2019).

Likewise,

> When sand is also extracted from the river it affects the river and the river bank. It makes the river to be very deep because when you are packing the sand you are also digging and so it becomes deep (Male/Youth leader/ Abudu KII 4/ Feb 2019).

In addition,

> When you mine sand from the river, it deepens the river. At the upper course of the river where sand is mined, the erosion is even higher as the replacement level is low. So there will be erosion and at times water takes from the bank of the river also. During the rainy season, it takes from the bank of the river to cover it and this leads to erosion of the river bank (Male/ Community leader/ Evbuobanosa KII 2/Feb, 2019).

In very simple terms, sand mining leads to and exacerbates land degradation in Evbuobanosa dukedom. The flooding and erosion that results from sand extraction inadvertently lead to a reduction in the quality of land in Evbuobanosa dukedom. The structure of the land and the pristine nature of the vegetation is altered significantly. To mine sand from land, the vegetation on the land would necessarily be cleared to enhance easy access to soil aggregates that are the focus of interest. This corroborates the works of Ashraf et al, 2011; Khan and Sugie (2015), that sand extraction physically impacts the environment by increasing erosion and destroying adjacent land. The removal of the soil's vegetation reduces the available and naturally occurring CO2 reservoir for the control of emissions (Fox et al, 2007). This further buttresses the work of Diaz, Cutter and Hobbs (2004) that sand mining distorts the ecology of the land, water and vegetative ecosystem and upsets the pre-existing equilibrium. Again, this is in tandem with tenets of ecological Marxism that capitalist exploitation of natural resources diminishes the ability of nature to replenish itself and ultimately leads to its destruction and ecological ruin. The more a depletive natural resource like sand aggregate is extracted from the environment, the more the pristine nature of the environment is distorted and other ecological components displaced and dislocated in the quest for money, more money and scarce value resource accumulation by the capitalist. As the drive for the accumulation of scarce resources gets intensified, the ecological component of the environment suffers the deleterious effect of such situations. Whatever can be exploited to gain more wealth is exploited.

Plate 4.8: Tippers waiting to be loaded by excavators at Abudu

The removal of the topsoil as a result of sand mining restricts the capacity of the land itself to be used for any other economic purpose in its excavated state. Sand extraction from land affects the land itself. If sand is extracted from a piece of land, that land more or less becomes wasteland as it can no longer support farming activities. This becomes more critical in an environment where agrarian farming is a major occupation for the people and the supply of land is relatively fixed. In many cases, the pit becomes a sort of reservoir where surface runoff water accumulates. While this can be a sort of mechanism to help control floodwater in the rainforest region, it can also be a problem as such open pits can be hazardous to humans and animals in the area.

When a piece of land has been excavated for mining purposes, depending on the location it can serve as a dumpsite for the management of communal waste. In an area where there is land pressure, parts or all of the pit can be refilled and reclaimed for use in construction. However, if there is little land pressure, the excavated land can be left like a wasteland. In Evbuobanosa dukedom, the pressure for land is not strong enough to warrant the expensive reuse and reclamation of excavated land. A respondent captured it this way:

> The sand that is mined in the environment reduces the quality of the land, in the sense that if they are mined from a place, you cannot keep farming there again. You cannot farm there again and leaving it like that is also a threat. For instance, like the borrow pit you have there, that place was not a river before they just went to mine sand, use and later they met water and now it's a lake it is a threat it has formed a lake there now whether it is dry season or rainy season. That place used to be our farmland, you can no longer farm there. Even if you are going to the farm now, you do not leave your children alone so that they do not go and fall inside because you don't know tomorrow now, that water that is coming out now, that is now a lake can erupt and cause more hazard tomorrow (Female/ Community leader/ Abudu KII 12/ Feb 2019).

Also,

> When sand is extracted from a place, it is no longer good for farming. Such a place can no longer support crops or even trees. It might take decades for it to be naturally regenerated, and in that time, the land is useless for any kind of crop farming. Nobody will like to buy that kind of land especially when they can get better land at a very cheap rate (Male/ Community leader/ Evbuobanosa IDI 4/ Feb 2019)

Similarly,

> The sand that is extracted in the environment reduces the quality of the land, if they mine sand from a place, they cannot farm that place again. And it is very close to the federal express. That means that it is hazardous to the environment and community and it degrades the land (Female/Community leader/ Abudu KII 4/ Feb 2019).

From the above, it can be deduced that sand excavation from the area negatively affects the value of the land. The monetary and use-value with regards to agriculture and construction is diminished as there is less land pressure in the area. This is in line with the findings of Hwang et al (2014) that extractive activities diminish the economic value of the extractive site for agricultural purposes. This further corroborates the assertion by Nairn et al (2004) that sand mining results in the removal and dislocation of living organisms from their natural habitat thereby distorting the biological ecosystem. When the possible use of land is constricted as a result of human activities that have altered its constitution, such land becomes of a limited value to its owners either for use in Agriculture or other allied purposes. This also aligns with the findings of Okonofua (2016) that mining in the Niger Delta results in the reduction of arable land for agricultural purposes due to the concomitant land degradation.

On the other hand, it is pertinent to note that it is not in all cases that sand mining leads to a reduction in the value of the land. In instances where a particular piece of land is needed for sand extraction, the owners of such land can demand a decent amount of money from the potential pit owner, especially if he is not in very dire need of money. When a piece of land is not be sold at forced sale value, it tends to command a fair price and might even be sold higher than other plots of land in the vicinity based on the near desperate need for the piece of land by the potential buyer.

> When the construction company dug a borrow pit that affected my land, I was compensated. What they paid me for the land was more than I would ordinarily have sold the land because they were the ones that needed the land. Since I was not in a hurry to sell the land and they came asking for the land, I had to ask for a very good price and they paid me (Male/ Community leader/ Abudu KII 6/ Feb 2019).

This suggests that what affects the value of land depends on the use to which it is to be put, the location, the financial standing of the seller and the buyer, the negotiating ability of the parties involved as well as the urgency involved. This aligns with the positions of Gillham (2008), and Elliot (2014) that an individual's position at any given time influences his or her ability to access and utilize scarce resources maximally in society. This is also in sync with the tenets of ecological Marxism that the origins of environmental incongruence can be found in the systems of inequality created by humans. The unequal access to resources accounts for the distinct patterns and procedures of ecological schism and disparity in land and value holding related issues. Those that occupy high status and positions on the social strata tend to have higher cultural capital that predisposes them to maximise the inherent opportunities and advantages that accrues to such positions. On the other hand, those that occupy low-status positions on the social strata tend to have lower cultural capital that also inclines them to work within the limitations imposed by their peculiar circumstances. As such, the ability of a person to accurately access the value of land is inherent in his or her capacity to factor in the different intervening variables and deploy such knowledge to its optimum use.

The Nigerian minerals and mining Act (2007) provides guidelines on the management of mining pits and abandoned pits. The title holders who are licensed to extract sand are required by the mining Act to maintain, restore and provide remedial activities for abandoned pits. The remedial actions were to be in line with extant environmental laws and regulations. However, the titleholders who mined sand in the study area did not observe these legal requirements.

It is pertinent to state that the sand extracted at a commercial level is to boost economic activities and further feather the nest of the capitalist. The core capitalist is interested in extracting as much sand as possible to increase his wealth stock and grow capital. This is necessary to sustain the taste and lifestyle of the elite capitalist. On the other hand, the artisanal sand miner extracts sand simply to survive. For him, whatever he can get from sand extraction is to meet his basic needs daily and not necessarily to lead an affluent life. Thus, the extent of sand mined by the capitalist extractor and the artisanal miner differs significantly in tandem with their different capacities, desires and ambitions. The extent of

exploitation of land resources through sand mining is fueled by the avaricious inclinations of the miners with respect to their wealth accumulation drive.

4:2.1 **Structural organisation of sand mining at mining pits**

Sand mining activities are organised to ensure non-disruption of economic activities at the mining sites. The ownership structure in terms of the allocation of rights and possession as well as continuous access to land resources is controlled by the elite subtly. For the capitalist sand miner, his interest is enhanced when sand extraction progresses seamlessly. The goal is to accumulate as much wealth as possible to perpetuate the advantages of the elite class in society. The artisanal sand miners are principally concerned with their daily survival and as such, work as much as they can to eke out a living. The artisanal sand miners exist as a class in itself without the enabling class consciousness that would transform it into a class for itself.

The mining of sand in Evbuobanosa dukedom and its environs is well organized. There are different layers of organisation in the mining setup. There is a formal structure as well as an informal structure. The formal structure has two forms, depending on whether it is from the beach or the mining pit. With regards to the mining pit, there is the pit owner or owners, the pit manager, the excavator/machine operators, the truck drivers and the security men. The mining pit is usually owned by an individual or a group. The owner or owners is/are the ones with the mining right to excavate sand from the pit and are usually the owners of the site where they mine sand. Their claim to the ownership of land is usually as a result of their ancestral claim to the piece of land based on inheritance or prior purchase from those who hitherto had such ancestral claim over the land. They bear the cost of establishing the mining site and are responsible for its maintenance. The pit owners are the ultimate decision-makers at the mining site as they wield authority based on their ownership of the business premises. They are responsible for seeking approval and/or mining license and the renewal of same when necessary. The profit and risk of the business are mainly borne by them. This is in sync with the findings of Peterson et al (2002) that moral authority, the basis people use to ascertain what is acceptable or

unacceptable dictates the direction of work organisation in mineral extraction from the environment. A pit owner pit proffers it thus:

> The community permitted me to open up this pit in their area. I make a monthly cash return of two hundred and fifty thousand naira to the community. I also have to financially settle the community youths at intervals. Part of the agreement is that I must employ youths from this community at the pit. I have a secretary who also functions as the manager. For every truckload of sand, the community collects two hundred naira from the truck driver while the government also collects two hundred naira. To operate this pit, I get the necessary approvals from the ministry of environment and the local government area (Male/ Pit owner/ Abudu IDI 7/ Feb 2019).

Also,

> To mine sand from the ground or a pit, you have to register with the local government council. If you want to open a pit, you have to register the pit; you would still need to see the owner of the land and settle with the owner of the land and reach an agreement on settlement terms, either **50 - 50, 60 - 40** or outright purchase. When they were constructing this road, for all the mining pits where they extracted sand from, they paid money to the community as owners of the land (Male/ Pit Owner/ Abudu KII 8/ Feb 2019).

Also,

> Here, everybody knows his job and they perform their roles. The machine operators do their fair share by ensuring that every tipper is filled with sand as soon as possible. Of course, they are well paid. As the manager, I ensure that everything works very well without any hitch. It is my responsibility to ensure that our customers, the sand contractors and tipper drivers are satisfactorily served whenever they come. The security guard protects the human and material resources at the site. The secretary records every transaction and keeps a good record of the happenings here. Things run smoothly because people do what they are supposed to do (Male/Pit manager/ Abudu IDI 11/ Feb 2019).

Similarly,

> From the money they pay part of it is for the community part of it is for those that also pay the laborers, normally the sand is for the community. The sand is owned by the community; it is communally owned. It's communally owned. So when they pay they give part to the community and they give part to workers that are also working there (Female/ Community leader/ Abudu KII5/ Feb 2019).

Likewise,

> The community usually sends a representative to the mining site, to monitor who goes to dig and how they dig. And it is not a permanent job, the community can decide to put you, and maybe after a year they can pull you out and put someone else (Female/ Community leader/ Evbuobanosa KII 1/ Feb 2019).

This response further corroborates the assertion by Randeria (2003) and Rao (2006) that the different stakeholders especially the government, local farmers, community leaders wield varying levels of power and influence with regards to determining who mines sand, where he or she mines it when it is mined as well as the level of discretion that is acceptable in the mining process. As such, the actions of the miner are checkmated by the competing layers of oversight by the different stakeholders.

The pit manager is responsible for the day-to-day administration of the mining pit. He keeps records of the business activities and sees to the smooth running of the mining pit. He coordinates the activities of other workers and stakeholders in the mining site. It is his responsibility to ensure that things work seamlessly in the mining site. He ensures that all the sand extracted and evacuated is adequately paid for and that the different stakeholders in the extraction process get their fair share of the revenue accrued promptly. When there are challenges, he is the first port of call and he handles them. However, if the challenges are very enormous, he might involve the pit owner(s) in resolving such issues. The pit owner is often around the mining site to supervise the activities of the workers and ensure that they are not shortchanging the business. He is interested in ensuring that the amount remitted is exactly what is generated from the extraction activities. His presence would minimize the possibilities of collusion among the workers.

The machine operators are responsible for the operation of the excavators, loaders and other machines at the mining site. They are usually highly skilled in the handling of such heavy machines. They are the ones that extract sand from the ground using excavators and other machines. They extract the sand from the ground and load it on the sand trucks. They are usually paid daily or weekly.

The truck drivers are responsible for the evacuation of sand aggregates from the mining site to the construction sites where they are needed. They usually buy the sand aggregates from the mining site and resell them to the end-users. Sometimes, the truck drivers are involved in conveying sand aggregates from the mining site to the construction sites where they are needed while a sand contractor makes the negotiation between the different stakeholders. This aligns with relevant literature that resource extraction and exploitation generates a lot of money for the different stakeholders in the extractive process (Amusan, 2001; Idemudia and Ite, 2006; Luning, 2008; Ebiede, 2011; UNEP, 2011; Okonofua, 2016). Suffice to say that the aforementioned arrangement mostly holds when sand is extracted from the mining site using excavators and other heavy machines for sand extraction.

When sand is extracted manually from the pit, usually the unlicensed mining pits, the truck driver pays a certain amount of money to the unlicensed sand encroacher /pit owner, the community and government representatives and pays the loaders, who usually move about with him. This buttresses the assertion by O'Lear (2005) that different stakeholders sometimes stake their claim to be involved in natural resource extraction. Individuals and groups would make their tent where they think their interest is better served. They would ordinarily act based on their enlightened self-interest. Stakeholders actively protect their stake in any venture of interest to them. As such, they organize themselves into groups that they think would facilitate the promotion and security of their varied interest.

The unlicensed sand encroacher scouts for a suitable mining site and reaches an agreement with the community elites and elders to mine sand. For every tipper load of sand extracted, the community elders received five hundred naira. The community elders might also get some considerations such as a reduction in price when they purchase sand for their personal use. The encroacher goes to the site with tipper drivers and loaders. The loaders are attached to tippers and often move around with the tipper drivers in the tipper. Wherever the tipper goes, they go. The loaders manually shovel sand aggregate from the pit into the bucket of the tipper. For every tipper loaded manually with sand, the loaders receive one thousand naira as a loading fee for loading the tipper. Sand extraction in this process is completely manual. The main tool for extraction is a shovel or spade.

Plate 4.9: Pail loader operator at work in Abudu

The unlicensed sand encroacher scouts for suitable mining sites, usually in land areas belonging to the government such as government forest reserves and mines sand there. The mining often progresses until government officials stop them for illegal sand mining. Thereafter, the encroacher scouts for another suitable mining site and proceeds there with tipper and loaders to mine sand. They would extract sand in the new location until they are stopped again by government officials. The illegal sand mining process continues. It is important to state that after a while, the sand encroacher can go back to an illegal mining site from which they had been stopped from mining previously if they believe that government officials would not disturb them for some time. This cyclic mining process continues for as long as the sand encroacher can scout for new mining sites and lead the tipper driver to the site with loaders to extract sand.

4:2.2 **How sand mining is organised at the riverside**

Sand extraction at the riverside is unlicensed. Those that mine sand from the riverside do not have a license from the government to mine sand from the river. The mining of sand is organised to minimise conflict, promote the interest of the different stakeholders and maximise returns. In the system of mining sand from the river, there are sand miners, sand merchants, sand truck/ tipper drivers, community agents as well as community and political leaders. The sand miners are the ones who use their boats inside the river to extract sand from the river bed. They are the ones who take the highest risk by going to the deepest parts of the fast-flowing river, dive in to extract the sand, fill up their boats and bring the wares to the beach where it is sold. They are the real sand miners. They sell the sand that they mine to the sand merchant or truck driver. From the proceeds of their sales, they pay the jerkers, who remove the sand from the boat to the beach floor or ground using shovels. Irrespective of the quantity of sand they can extract and sell, they own the revenue accruing from such sales. The jerkers' role is simply to transfer the sand aggregate from the boat to the beach floor. He does it manually using a shovel. For this, he is usually paid a fixed amount of money per boat of sand that he evacuates to the beach floor.

In some cases, there are sand merchants. The sand merchants are the ones who scout for buyers, usually, people or organisations, who need sand for construction purposes, negotiate with them on the quantity and quality of sand aggregate that they need and agree on the pricing. He then proceeds to secure the service of a truck driver or truck drivers as the case may be and contracts them to convey sand aggregates from the mining site to the construction site. The sand merchant procures the sand from the sand miner or sand digger, gets it loaded onto the sand truck by loaders while the truck drivers convey the sand aggregate to the destination where it is needed. The sand merchant pays all the bills accrued from the purchase of the sand and makes a marginal profit from his services as a middleman.

In some other instances, there is no sand merchant. The truck driver performs all the functions ordinarily performed by the sand merchant. The truck driver also evacuates sand aggregate from the beach to the construction sites, where they are needed. A respondent captured it thus:

> In the past, the tipper drivers had their own body as a union; they know that is here in Abudu that they buy sand. Then, there were contractors; it was contractors that buy sand. The contractor would come to us; meet our secretary, requesting to buy sand. The secretary would go and show them the sand, the different grades of sand; we have smooth sand, plaster sand, sharp sand depending on the one that you want to buy. The contractor would state the ones that he wants to buy and pay the secretary. At the end of the day, the secretary knows the miners whose wares were sold, it would be documented and they would be paid. That is how it was in the past. Now, we the sand miners are the ones selling our wares by ourselves. The drivers and sand merchants now negotiate with us individually by the beach (Male/ Sand miner/ Abudu KII 11/ Feb, 2019).

This suggests that the sand miners are now more involved in the sale of their wares than they were in time past. This is borne out of a desire to be involved personally in the sale of their wares and eliminate the need for middlemen. Does this have any implications? Perhaps. A respondent captured it this way.

> The price of sand at the beach is no longer stable. We used to have a fixed price, but now it fluctuates. Now because there is a lot of sand being mined, and people now sell the sand by themselves, some miners can give the

buyers a discount of ₦500 or even ₦600 to sell their product. There are some buyers though who will not mind the rebate but would look for the quality of sand that they need. the buyer can choose from the sand on display the one that he prefers based on the quality of sand. It is like someone who goes to the market and prefers a dress over and above others. Sand is not all of the same quality (Male/ Sand miner/ Abudu IDI 8/ Feb, 2019).

Also,

For the river aspect, the miners are not working for the community they are working for themselves but if it's for the borrow pit they don't have miners they use pail loaders. They use heavy machinery equipment. It's only for the river aspects that are just working for yourself, you work and sell and give some percentage to the community (Male/ Community leader/ Abudu KII 7/ Feb, 2019).

Also,

The community gives the right to mine sand. To mine sand from the river, you have to join the association. The association pays to the community on behalf of its members periodically (Male/ Community leader/ Abudu KII 1/ Feb, 2019).

Likewise,

Actually, sand is a mineral resource. Now we pay tax, we pay tax to the community then the government on the other part of it collect tax from the drivers. So, as I said it is a mineral resource the community has their own little tax that we pay, so if you can do the job what you do is that you join the union in this place. When you join the union that means you are a member and you have access to go and dig, when you dig you sell, you pay your dues when necessary to the union. And the same time pays the tax because when we register we pay our non-refundable fees every year as a registered body (Male/ Sand miner/ Abudu IDI 10/ Feb, 2019).

In addition,

We have sand diggers union, then we have dredgers union in the reserve, then we have the sand diggers in the town here so those are the two bodies operating. There is a slight difference between the two unions. We do not want to agree to function as one, you know we are human beings, the people in the reserve isolate themselves, they do not want to agree that we are one. Now, we have two places of work here, we have those that are working inside the town. Now those that are working inside the town like the Agogbede area are separate bodies, but we do the same work now those

> in the reserve also do the same work. That is across the express, across the bridge it is still inside the river. Yes, the same river Orhionmwon, which is the town part of the river (Male/ Sand miner/ Abudu FGD 2/ Feb, 2019).

Many truck drivers usually work with their specific loaders, who they move about with to load their trucks, especially when they are loading sand from a mining pit or beach, where loading is done manually. Loaders are attached to tipper drivers and their tippers. They are paid for every load of sand that they load. On average, three or four loaders usually load a sand truck in about twelve to fifteen minutes. When sand extraction and loading is done manually, it creates job opportunities for more people, who work as loaders for the different sand trucks. It is relatively easy to get people to do this work as there are lots of young men, who are actively involved in this industry. As Coumans (2011) asserts, there are short-term winners and losers in communities operating mines. Even though using pail loaders would be a faster option, it is capital intensive as the heavy earth moving machines cost millions of naira and would render several people jobless. Even though using heavy machines for sand extraction reduces the number of households directly involved in sand mining processes, it is an attractive option for the capitalist as it helps maximize profit and wealth creation. It would be a rational decision for a smart businessman to use machines for sand mining if he can afford it.

For every tipper load of sand sold at the riverside, the community has a share of five hundred naira. This is paid to the community representative at the riverside. The community elders administer the community's share of the revenue on behalf of the community. They are stakeholders in the sand extraction process. The community elders are part of the elite class not necessarily based on their financial status but based on their situational position as community leaders. They are in a prime position to influence decisions in the community towards a cause of their choice. Their leadership position as elders places them in a vantage position to set the direction of causes and issues within the community.

4:2.3 **The people involved in sand mining**

The people involved in sand mining from the river are highly skilled sand miners. To mine sand from the river, you must be a very good swimmer as well as a diver. To be able to extract sand from the river, you must not have a phobia for water. Furthermore, you must be able to swim very well to enhance your safety in the water. This is very critical as the extraction usually takes place in the middle of the river, where the water current is usually high. It would be very difficult and highly risky for somebody, who cannot swim to attempt sand extraction from the river.

Similarly, to mine sand from the river, you must be a diver. This involves the ability to hold your breath underwater for a reasonable length of time, while submerged inside the river to fetch sand aggregates from the river bed. The ability to dive makes it easier to mine sand and gravel from the river bed at different depths. Some seasoned sand miners put recount this way:

> We use our physical strength to do the work. We use manual labour to excavate the sand from the river. That is why those that work here if they do not take good care of themselves, their physique changes because they mostly use their physical strength. It is even better now, in the past, when we were not using motorised boats, we were pulling our boats with our hands, paddling them manually (Male/ Sand miner/ Evbuobanosa IDI 5/ Feb, 2019).

Furthermore,

> The river work is not just a job that any person can do without knowing how to dive, being used to the river or just ceasing breathing. When you go in you cease breathing, you dig ceasing breathing, and you do everything ceasing breathing until you come out before you breathe (Male / Sand miner/ Abudu IDI 2/ Feb, 2019).

Also,

> If you want to be a sand digger, you would first attach yourself to a master digger as a journeyman in the process, he would take you to the river, see how well you can swim and dive. If you pass the swimming and diving test, you would start going to work with him until you master the intricacies of the job. If you cannot swim and dive very well, you can start

Plate 4.10: Jerker moving sand from the boat to the beach in Abudu

> as a jerker which does not require you to be an expert swimmer or diver as the job is by the river bank (Male/ Sand miner/ Evbuobanosa IDI 1/Feb, 2019).

Also, the sand miner must be somebody, who can identify the different features of sand aggregates underwater and know what to look for while mining. The expertise involved in sand mining requires that the sand miner should be conversant with the different grades and shades of sand as well as be dexterous enough to identify them when underwater, excavate them and bring them to the beach. Mining involves some level of expertise and understanding of the mineral of interest and the processes involved (Diaz, Cutter and Hobb, 2004; Fitzpatrick, Kappers and Kaye, 2006). The sand miner is vast in the knowledge of sand aggregates and their features.

Those that move the sand from the boat to the beach floor also play a role in the mining process. They are the jerkers. These jerkers must be physically fit and energetic. Their job entails using a shovel to scoop sand from the boat to the beach floor, one shovel load at a time until the sand in the entire boat is completely transferred to the beach floor. It is a tedious job and physically demanding. One must have the skill to scoop sand and throw it to a particular spot without spilling it en route. A respondent captured it this way:

> If you want to join you come, for instance, somebody like me when I came to town I was doing a different business, but when things went the other way round I decided to join. I have to attach to somebody that is in the business, I told him I want to join to do this work. The first question is 'do you know how to swim?' and do you know how to dive? I said yes he had to take me to the river then he tested me and he took me to the shallow place not too deep and he asked me to dive, when he see that I am capable of diving and swimming, we began working together (Male/ Sand miner/ Evbuobanosa KII 6/ Feb, 2019).

Furthermore, people from different ethnic groups are involved in the sand mining industry. While some of them are indigenes, others are not. The enterprise is mostly peopled by the Binis, Ijaw, Itsekiri, Urhobo, Isoko, and Ika ethnic groups. This is how some respondents described it.

> People from different ethnic groups are involved. However, there are several Ijaw, Itsekiri, Urhobo, Ika and Bini ethnic groups in the business.

> Many of them learnt the trade here. (Male/ sand miners' FGD/ Abudu FGD 1/ Feb 2019)

While ethnic group affiliation might not be a criterion for participation as a sand miner, there appears to be a proclivity for those from the riverine areas of the Niger Delta to dominate the industry. A respondent avers this way:

> The extracting of sand or gravel from the river has been mainly for visitors, let me just use the word visitors which means, people from the Riverine area. They are from River state, Delta state, that is, the Ijaws, Urhobo, and Isoko not mainly the Binis. They are those strangers that know much about the river work that is, working in the river extracting gravel from the river, both sand from the river (Male/ Sand miner/ Abudu IDI 9/ Feb 2019)

The reason there are several people in the profession from the riverine areas might be because of their heritage as people, who reside inside and beside large bodies of water in the Niger Delta and by the Atlantic Ocean. Their natural habitat would have made them more accustomed to working inside water bodies. This would give them a head start over and above their neighbours, who dwell upland on drier land. Also, there is the possibility that those from the core riverine areas recruit their kith and kin as fellow miners. People might be more comfortable joining an industry that already has members of their ethnic groups. This is so because they have an already existing social support system from their ethnic kith and kin, which makes it easier for them to be introduced into a new environment, trade and work system. When work is done in partnership or collaboration with kinsmen, there is a tendency to leverage such social networks to promote individual goals as joint aspirations.

A person's position or standing in the social strata would influence his or her ability to access scarce resources and opportunities in the society (Hartmann, 1998; Timura, 2001; Charlier, 2002; Kousis, 2004; Rudy and Konefal, 2007; Gillham, 2008; Elliot, 2014). This makes it easier to perpetuate the proclivity to grow a person's share of the commonwealth and expand the opportunities with its concomitant privileges. This also aligns with the views of Olutayo (2002) that the linkages and options of an individual as espoused by

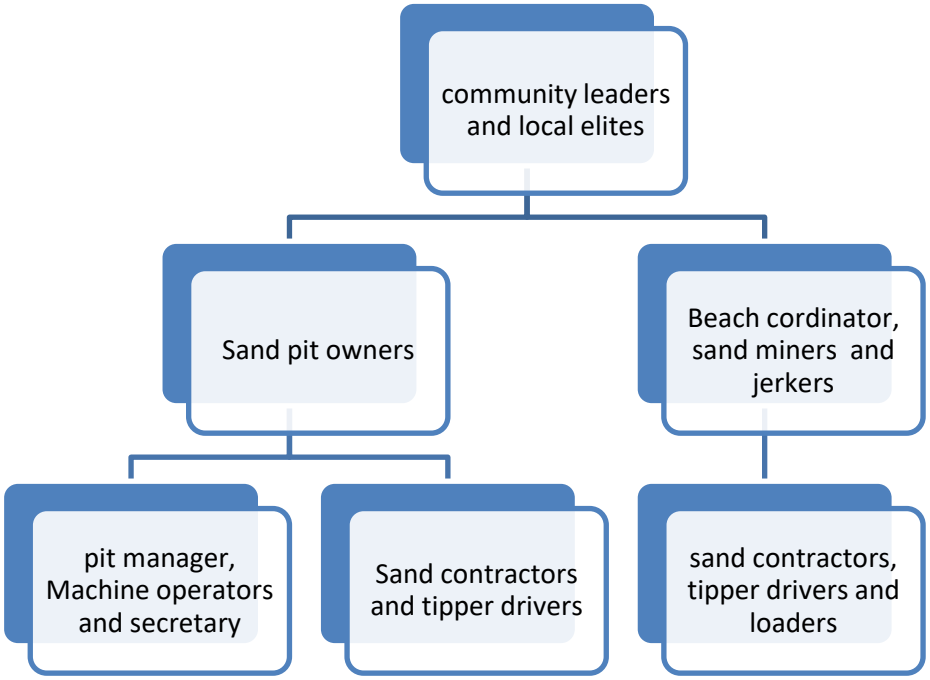

Plate 4.11: Network of people involved in sand mining

Dahrendorf, help chart their path in the wealth accumulation process. Those who have strong and productive bonds in society based on their social positions are primed to exploit more profitable options arising from their cultural capital to maximize the opportunities and advantages that accrue to them. The social positions occupied by people influence their options. Their courses of action are dictated by the social positions they occupy in society not necessarily their economic status.

4:2.4 **The norms, values and rules guiding sand mining**

As is applicable in other spheres of life, certain rules and conventions are guiding those involved in the sand mining industry. These rules might not be written or stated explicitly, they are nonetheless applicable and followed as codes regulating, guiding and guarding the conduct and practices within the industry. These conventions are constantly evolving to keep pace with the ever-changing realities of the society. Principally, sand miners are expected to uphold the basic values of justice, fair play, decency and a work ethic that promotes the dignity of the human person. Every person is expected to uphold a code of honour that promotes the well-being of the individual without jeopardizing the rights of others.

While sand extraction is not practiced in isolation from society, the practitioners are part of the larger society. As such, the general rules that apply in the daily interpersonal relationships in the society also apply among sand miners in addition to their industry-imposed rules and conventions. They are bound by certain mores in their interactions. Their actions and inactions are viewed and judged from the prism of existing norms that define codes of behaviour and practices among the workers. This is how one of the sand miners captured it:

> Within the workers, amongst ourselves we do not fight, no matter what, we can exchange words but we do not fight. Then, if you need something, you can equally ask your neighbor, if you are short of an implement, you have disappointment may be in the beach and when you get to the river, you have disappointment, your engine disappoints you maybe it spoil or whatever, you can ask your neighbor to give you or he sends his engine to you or you following him down or we will collect his engine to come and

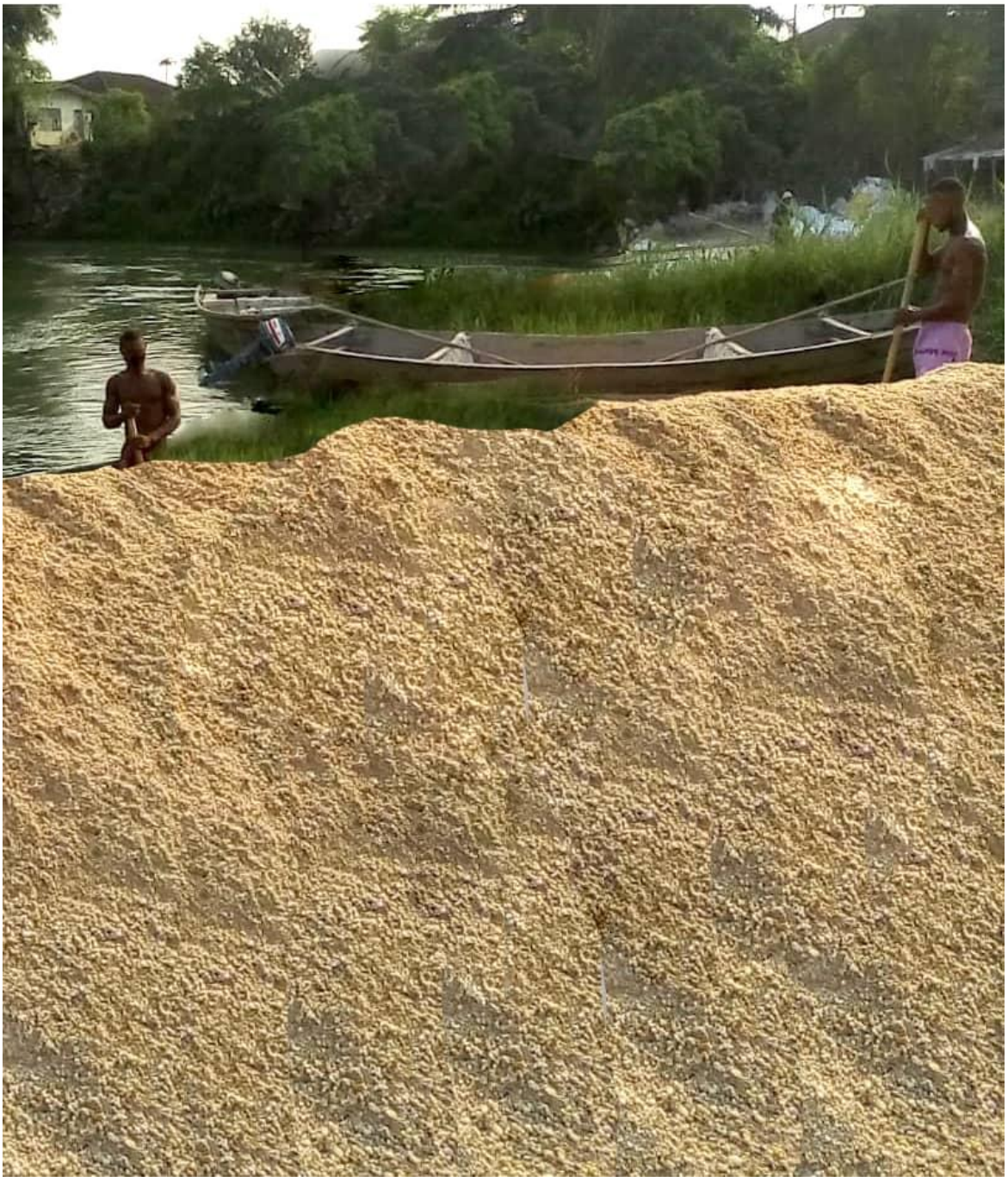

Plate 4.12: Sand miners at work at the riverside in Abudu

> rescue you. Then at the same time, whatever will happen you can ask and they will give you. We have a free relationship with one another. Peradventure a boat sinks, somebody's boat sinks, we come together and remove it because actually, we are all together (Male/ Sand miner/ Abudu IDI 12/ FEB, 2019)

And another presents it this way:

> There are no hard rules. In some businesses like driving they are told not to drink and drive. That does not apply here. Many people drink before going to work. They believe that it makes them more active on-site. They go to work with gin, marijuana and take them during work. They claim them it makes them feel high and energized to do what they have to do. Although it is not everybody that smokes and drinks. Like me, I don't smoke and I don't take alcohol again (Male/ Sand miner/ Abudu IDI 4/ Feb, 2019).

As in other human endeavours, sand miners tend to create and recreate the unwritten rules and conventions that guide their interactions in the course of their daily activities. The ethos, norms, beliefs and values that govern the wider society applies to them with the peculiarity of their work that requires some level of conscious self-preservation and collaboration. The beliefs, ideas and ethos held by sand miners directly reflect their positions in society as well as the dominant philosophical ideas that prevail at any given time. In fact, Ecological Marxists posit that humans are self-mediating beings of nature (Kovel, 2002; Foster and Burkett, 2008; Foster, Clark and York, 2010). People act with regards to the environment based on their views on the relationship that exists between humans and the environment. Their actions and inactions are a reflection of the role they believe the environment plays and their roles in the ecosystem.

Like some other human activities, sand mining activities involve some grouping within and amongst the sand miners. The stakeholders involved in the different levels of sand extraction are organised in different forms and group nomenclatures. The truck drivers who ferry the sand are organised as drivers, with their distinct motor park or garage. They are generally known as tipper drivers and belong to a tipper drivers' union. As tipper drivers, their union aims at promoting their welfare, attending to issues that pertain to them and promoting their interest in society. For some of these truck drivers, the union

and its members create a closely-knit bond of kinship and social support system. They identify and celebrate with members when there is a new birth, marriage ceremony, house warming and birthday celebration. In the same vein, they also commiserate with their members when there is bereavement, accidents, sickness, or other unpleasant life crises. There is a sense of camaraderie, friendship and solidarity inherent in the bond arising from the work-related grouping. When faced with a challenge that affects their work, they speak with one voice as tipper drivers and confront their collective challenge with a united front. They present a common front and act as one in situations where they need to protect their interest. A tipper driver captured it this way:

> As tipper drivers, we see ourselves as brothers. Whatever affects one person is the concern of all. We work together to protect our interests. When someone has a problem, we all join hands together to assist that person. Also, if one of us is also celebrating, we usually celebrate with that person too (Male/ Sand truck driver/ IDI 3/ Feb, 2019).

Also,

> Our association makes rules that guide our trade. As members, we are bound to obey the rules made in the association. Any member that does not follow the laid down rules is fined. The fine depends on the level of infringement that has been committed by the offender (Male/ Sand truck driver/ IDI 6/ Feb, 2019).

From the foregoing, it can be inferred that there is a strong bond among the tipper drivers. They also have rules that guide their conduct in the discharge of their operations as tipper drivers. Those who do not adhere to the stated rules of the trade association are sanctioned for infringing on the rules of the association. That suggests that they uphold their guiding norms and values. Deviants are made to face the consequences by sanctioning them for their non-adherence to rules.

Furthermore, among the sand miners, also known as sand diggers, they have a form of group structure. There are two unions amongst them; the Sand diggers union and Dredgers union. The sand dredgers union is for sand miners, who mine sand from the river and use the beach beside the bridge and inside the forest reserve while the sand diggers union is for sand miners, who mine sand from the river and use the beaches inside Abudu town.

These unions work for the promotion of their members' interests. They serve as a vehicle for the mobilization of members if and when the need arises to protect their common interest. Members pay dues to the union periodically. Also, through the unions, members pay their annual tax to the government and the community. The unions represent the sand miners as stakeholders at different fora to aggregate their views and present their positions when and where necessary. Indeed, these unions help to control the price of sand by ensuring that it is not sold below a pricing threshold. A respondent captured it this way:

> We have sand diggers union, then we have dredgers union in the reserve, we have the sand diggers in the town here so those are the two bodies operating. Now, we have two places of work here, we have those that are working inside the town. Now those that are working inside the town like the Agogbede area are separate bodies, but we do the same work now those in the reserve also do the same work (Male/ Sand miner/ Abudu IDI 12/ FEB 2019).

Also,

> Actually, the sand being extracted is a mineral resource. Now we pay tax, we pay tax to the community then the government on the other part of it collects tax from the drivers. The community has their tax that we pay, so if you are able to do the job what you do is that you join the union in this place. When you join the union that means you are a member and you have access to go and dig, when you dig you sell, you pay your dues when necessary to the union. And the same time pays the tax because when we register we pay our non-refundable fees every year as a registered body (Male/ Sand miner/ Abudu IDI 4/ Feb, 2019).

Also, among the sand miners, there is a strong bond of camaraderie and solidarity. They see themselves as brothers. Whatever affects one is seen as an issue that affects others. They share pleasant moments and celebrate when necessary. If a member is getting married, it is an occasion that should be graced by all to felicitate with and identify with a brother. When a child is born to a member's family, it is an opportunity to rejoice with that member who has been blessed. In the same vein, when a member is bereaved, sick or involved in an accident, others have a duty to show kindness and solidarity by being there for them when they need it the most. The communal bond among members is seriously promoted to the extent that there are sanctions in place for any member who does not

identify with another member who ought to be identified with, as long as they are duly informed. A member avers thus:

> Whatever happens, you can ask and they will give you, we have a cordial relationship. We see ourselves as one, brothers. If peradventure a boat sinks, somebody's boat sinks, we come together and remove it because actually, we are all together (Male/ Sand miner/ Abudu IDI 1/ Feb, 2019).

This suggests that among the sand miners, they have a relatively strong bond and see themselves as one. They serve as a social support system for one another in their time of need. They provide a shoulder to lean on when necessary. In such a situation, people tend to be integrated and can easily bond together to fight for a common cause on issues that they deem as important. This also indicates that the bond that exists among them is not dependent on the ethnic group of the members but on their membership and participation in the same trade.

For sand mining activities that involve the use of simple tools and manual labour in sand aggregate extraction, there is a fine line of structural specialization. The structural specializations include the sand miners, the jerkers and the loaders. There are other processes that take place at the beach to transform some of the sand aggregates. At the beach for some types of gravel and grade, the raw sand aggregate mined from the river is filtered, sorted, weighed and bagged for use in the industrial treatment and filtration of water at water treatment plants and boreholes. This sand processing is known locally as 'skywater'. *Skywater* involves the use of special filters to sieve sand aggregates into uniform grain sizes. The sieved sand grain size is bagged, weighed and labelled for distribution to different parts of the country where they are used for water purification and filtration in the water processing industry. The production of Skywater is a distinct specialization in the sand mining process. It requires a special understanding of the level of smoothness, coarseness and size of each grade of sand aggregate that has to be sieved and packaged for sale.

Those that are referred to as sand miners are the core miners. They are responsible for extracting sand from the river bed and transporting it with their boats to the river beach. The sand diggers as they are known locally own boats and are skillful in identifying

suitable points for the extraction of preferred sand aggregates from the river bed. They are also very skilled swimmers and divers, who can submerge underwater and hold their breath for a reasonable length of time. They also have the ability to dive with their buckets, scoop sand aggregates from the riverbed, resurface with their bucket load of sand aggregates and deposit same inside their boat. This is done until the boat is full and then piloted to the beach for anchorage and discharge. The sand diggers are people who have little or no phobia for water. It is the sand digger who ultimately sells his wares to the buyer or truck driver. From the proceeds, he pays other actors and stakeholders in the production process. A respondent captured it this way:

> The area where there is much money is the digging because let me assume the cost of 6 yards (a measure of the quantity of sand) is N7500. Out of the N7500 let's look at the cost of other expenses like fuel and well the jerking for these 6 yards is N1000 after removing fuel with oil N2000, then N1000 for jerking it will balance N4500, then that N4500 goes direct to the digger and at the end of the month, you pay your dues (Male/ Sand miner/ Abudu IDI 4/ Feb, 2019).

Also,

> There are still people that work as daily labourers and are paid as such. For instance, I own my boat and some people work with me. I still employ people to work with me, a digger like me and he will dig with me. So I pay the person (Male/ Sand miner/ Abudu IDI 13/ Feb, 2019).

The sand digger has a lot of control over his working hours. As a self-employed boat owner, he can start working by 3:00 am or 4:00 am. The earlier he starts working, the earlier he can stop working for the day. If he starts working by 3:00 am, by 6:30 or 7:00 am, he is back with the first load of sand aggregate. He can choose to go back again for a second and even a third load of sand for the day. The extent to which he can work and earn money is largely determined by his ability to work daily. For each boatload of sand, the digger earns four thousand five hundred naira (₦4,500) after paying the jerker and removing the cost of fuelling his boat. On average, a sand digger extracts two boatloads of sand daily. In other words, he makes an average of nine thousand naira (₦9,000) daily. With this kind of income, he can have a fairly reasonable standard of living.

On the other hand, there are sand jerkers whose job is to offload sand aggregate from the boat to the beach floor. They are mostly males. Perhaps because it is a physically demanding and strenuous job, it is a task that requires masculine exertion of energy to accomplish. He is a self-employed fellow who can choose whether to work or not. For each boatload of sand that he evacuates to the beach floor, he earns one thousand naira (₦1,000). His earning capacity depends on his willingness and ability to work, the number of sand digging boats at work as well as the number of jerkers working on a particular day. On average, a jerker can work on three (3) boats daily. Depending on other ancillary factors, the sand jerker makes an average of three thousand naira daily. This is in tandem with the position of ecological Marxism that the poor engage in ecologically related activities to simply survive (O' Connor, 1988). The working poor simply do whatever they can to meet their basic needs and ensure that their households are fed daily.

However, there is a high level of structural mobility in the industry. Those that jerk sand from the boat to the beach floor usually progress to become sand diggers. The most common entry-level position is that of a jerker. Working as a jerker gives an individual the opportunity to understand some of the intricacies of the sand mining industry. It exposes an individual to the different types and qualities of sand. It also helps the individual to intuitively gauge the quantity of sand inside the boat that can fill a sand truck. Also, the entry-level is lower as the basic tool required is just a shovel and the physical strength and willingness to work. After working as a sand jerker for a while, an individual can start acquiring the tools and skills to become a sand digger. The individual can start learning how to swim, dive, explore the river bed, identify the nature and quality of the sand aggregate at the river bed and extract the same with a bucket.

Having got the necessary skills to be a sand digger, the individual can acquire a sand boat through personal savings or loans and contributions by family members and friends. Then, he can become a journeyman by attaching himself to an established sand digger to master the art of paddling a sand boat with or without a motorized engine. Having done the aforementioned, he can stand on his own as a sand digger. A respondent captured it thus;

> The first thing is that you must learn how to swim first. There are some people who do not know how to swim, they start by jerking sand. If you

> know how to swim but cannot deep dive, someone who knows how to deep-dive would take you under their tutelage and teach you. If you want to mine gravel, you use a ladder inside the river. If you are mining simple sand, there are places where you can stand inside the river and mine sand (Male/ sand miner/ Abudu IDI 2/ Feb, 2019).

And,

> Depending on a person's determination, there are some people who jerk sand that cannot dive because their work is at the bank of the river the shallow place where they cannot drown. So if it is someone that knows how to dive and swim, one day he might just decide that I cannot continue with jerking again let me go into digging, we have some people like that, I mean that came in as jerkers and later converted to diggers. We have people like that. Now if somebody can swim, and is into jerking, they work at the river bank and the area is shallow where they can't easily get drowned. It is very possible for somebody to learn how to dive. They can learn how to dive and that will help them to become sand diggers (Male/ Sand miner /Abudu IDI 13/ Feb, 2019).

Also, a sand digger after a while can decide to be a sand contractor supplying sand aggregates to individuals and construction firms. He can choose to stop mining by himself and start buying from other miners and selling the same to end-users. Furthermore, he can decide to start producing *Skywater*. He can employ people to sieve sand aggregate into different grades and package it for sale in different parts of the country. A respondent captured it this way:

> Now we all sell to tipper drivers, but some groups themselves sell to others, what do they call them, sky water and all that, they also sell to drivers. Now after bringing the gravel or the sand, they now filter it to the grades that they want. You know sand has grades that are like 0.8mm or 2.5mm, just like that to the grain. They filter it and filter it to the grains that they want after filtering it, it's the same gravel, the same sand, they filter it to grade by grade, after getting the grade now they now take it to a borehole to use for borehole operation like all those water corporation bodies, now take it outside the state or even to other parts of the country (Male/ Sand miner/ Abudu IDI 10/ Feb, 2019).

The sand miners at the river extract sand and sell it. However, some others further process the sand aggregate extracted from the river to make it suitable for other uses. They filter

the sand aggregate according to the sizes and separate them into grades. The filtered sand aggregates are packed according to their corresponding sizes and sold in packs. The packed sand aggregates are further used by other end users for the treatment of drinking water in the construction of water boreholes. This suggests that the individual would always aim at enhancing his or her social standing in the society and consequently, the production process within the institutional and social milieu they find themselves in. They would strive to improve their social and economic conditions to lead better lives.

Society is held together by linkages or bonds which exist within any given society. These bonds give meaning to the position occupied by an individual in society. It is the extent of bonding as well as the allocated position that defines the options or choices at the disposal of an individual. The elite sand miners as well as the artisanal miners extract sand from a position of strength or weakness consequent on the clout they can wield from the aggregate of their social standing in the society, either in positions of superordination or subordination. Also, the community elites use their position in society to appropriate benefits to themselves from sand mining activities. The structural organisation of sand mining, therefore, is a reflection of the social standing of the parties involved in the society. As people get involved in sand mining operations, their prior positions in society are reflected in the position and role they ultimately play in sand extraction operations. The position and social status held by an individual influences his or her life chances and social capital which in turn determine the kinds of job that they can do and the opportunities that they are exposed to.

4.3.1 **Livelihood dimension of land degradation due to sand mining activities**

The poor exploit the land and its resources in order to earn a living. They labour daily to put on the table and meet their most basic needs to enable them to survive daily. Their labour is exploited by the elites in society. The capitalist exploits land resources to further enrich themselves and increase their existing wealth stock. Their relationship with the human and natural resources is primarily exploitative to create wealth and maintain the same to further feather the nest of the capitalist. The elites use their privileged positions

and status to garner desirable prospects and promote causes that put them in prime positions to benefit maximally from opportunities that come their way.

Livelihood has to do with the employment, work or business that serves as a source of income to live on. Across societies, people engage in different activities to earn an income in order to meet their basic needs, sustain themselves and even meet their other financial obligations in society. When people go to work they expect to exchange their time, skills, knowledge and training for an activity or retinue of activities to earn an income. By engaging in this retinue of activities, they create value. The value so created is exchanged for an income. The income earned from such exchange depends on the quality and quantity of value created, the demand for the type of value created, the negotiation prowess of the parties involved as well as other circumstantial considerations (Ranikko, 1996; Gleditsch and Urdal, 2002; Reboratti, 2012; Toohey, 2012).

Several people earn their livelihood by being involved at different levels of the value chain in the sand mining process; farming, fishing and other activities that are related to land and the environment. As such, whatever affects the land or the environment affects them. When land degradation occurs as a result of sand mining activities in Evbuobanosa dukedom, it affects different aspects of the communal life patterns in the dukedom and contiguous areas.

Land degradation arising from sand extraction activities in Evbuobanosa has a direct bearing on the social relations in the community. The pattern of interaction and association among members of the community is impacted. How is this so? When land is degraded as a result of the activities of sand miners, the prior economic activities of some members of the community are affected. When there is a landslide or erosion of surrounding parcels of land springing from sand mining activities, it creates dissatisfaction among other members of the society, who are not directly involved in the extraction of sand. This discontentment is particularly pronounced among people whose tracts of land are directly affected. In Evbuobanosa dukedom, the land is communally owned as it is in several communities in Nigeria and such land is held by families, who farm and maintain portions of the land. When such land is degraded due to the activities of sand miners, there is usually an altercation between the family that owns the land and those extracting sand

from contiguous parcels of land that resulted in such degradation of the land. Some respondents captured it this way:

> There is a pit around here, some time ago while they mined sand, it collapsed and it led to a landslide. Yes, and it has killed several people; like the one I know of, it has killed up to 4 persons, that is I know about, not the instances that I am not aware of (Female/ Abudu Community member/ IDI 14/ Feb, 2019).

Also,

> Normally, when they start mining they will take a very small parcel of land, not big but over time, there would be a landslide and the pit would start getting wider and wider. It starts expanding and encroaching into other people's plots of land. Agreed, it is a community pit, we have people that are farming there, whose forefathers have been farming there for a very long time. So when the pit starts growing wider, it starts to occupy their farmlands. And they will be angry because, you are now sending them away from their father's land and they do not have a place to farm (Female/ Abudu community leader/ KII14/Feb, 2019).

The foregoing suggests that people engage in sand mining interests as it relates to parcels of land under their control. Such engagements could arise from their concern over the effect of sand extraction in their immediate environment. In some instances, it could result in varying degrees of discontent, anger and altercation. The people affected by the deleterious aftermath of sand mining activities would expectedly be displeased. The anger would be because their means of livelihood has been impacted. When farmlands hitherto being used for farming are lost to landslide, people would expectedly express their dissatisfaction with whatever causes it as their ability and capacity to meet their daily needs is threatened. Even for those involved in sand extraction especially from the river, the process has its hazards. Some respondents captured it this way:

> The job has its own risk and hazards. For those of us that are deep divers for gravel; sometimes we step on pieces of a broken bottle which injures us because we deep dive on barefoot. Also, sometimes because of the murky nature of the water, we can hit our heads against fallen tree trunks inside the water and get injured. Furthermore, sometimes while coming downstream with your motorized boat, if the steering pin on the engine propeller malfunctions, it could result in an accident. The river is good; we don't encounter creatures like a crocodile that can harm us. There are

> snakes, but the snakes we encounter don't attack us inside the water. There is boa inside the river, but it does not disturb us, the noise of the boat engine makes it go away from us (Male/ Sand miners FGD 1/ FGD 2/ Abudu / Feb, 2019).

Similarly,

> There are some areas in the reserve area where because of pollution, flooding of people's farmland occasioned by inappropriate sand mining activities, people's livelihood has been wrecked especially those involved in crop farming, fish farming and wine tapping from raffia palm (Male/ Abudu community Member/ Abudu IDI 15/ Feb, 2019).

These provide some information about how peoples' livelihood in Evbuobanosa dukedom can be disrupted and lost as a result of land degradation and denudation due to sand mining activities. The flooding of farmlands destroys farmlands and farmers lose their crops. The harvest they had hopes of being aborted prematurely because of the flooding that results from degraded land arising from sand mining. Furthermore, fishermen lose their fish ponds to flooding. The loss of fish ponds results in economic shortages from unrealized fish harvest as a result of flooding due to degraded land as a result of sand extraction. These economic losses can potentially make those directly affected become poorer and even struggle to meet their normal challenges and provide for their household. When this occurs, the ability of people to fulfill their economic and social obligations is impeded and discomfited. This is in sync with the views of Peterson et al (2002) that environmental conflict affects the ability of stakeholders to meet their goals and potentials. As people increasingly lose their capacity to meet their basic needs from expected income, they tend to become disgruntled and seek possible alternatives within the limits of available options and resources.

From the perspective of Ecological Marxism, unequal access to resources accounts for visible patterns of ecological degradation and conflict in the society. The rich in society destroy nature to get richer and accumulate more wealth while the poor do so simply to survive. The material quantity that supports the elite class is several times more than the same that supports the working poor (Clark and Foster, 2010). The contestation for the limited resources inadvertently creates tension and conflict between the different interest

groups in society. The different interest groups utilize their relevant resources and networks to promote their interest and enhance their position in the society. While sand extraction activities potentially enable the artisanal miners to meet their basic needs, the hazards associated with it inherently make it a risky venture that endangers the ability of farmers and other members of the society to sustainably exist on the resources sourced from the continuously degraded land.

Social relations have to do with the exchanges, connections and associations between members of the society. These exchanges could be in the form of shared ideas, linkages, norms and values that are held by people, by virtue of their interactions in the course of their daily lives. The social relations in any society embody the contacts that necessarily take place as people share common resources, space and exchange value to eke out a living. Humans are social beings. As such, they need to interact with other people and their environment in their quest to explore, create and perpetuate value. In the course of these interactions, bonds, pacts and alliances are built, strengthened and sometimes strained to the extent of being severed. The process of exchanges and linkages is continuous in human society.

In Evbuobanosa dukedom, there are social exchanges between the members of the society as they create and recreate value in the course of their daily activities. The people exchange ideas and material objects as they interact within the confines of proximate geographical space (Toohey, 2012; Khan and Sugie, 2015). In the process of interacting one with another, certain patterns of relating emerge and get reinforced, refined or discarded over time. These patterns of relationship get reinforced when the social actors within the community think that their goals, ends and interests would be better served through the retention of such relationships. Hence, they come to accept such patterns of relationships and reinforce them by encouraging activities that promote them when these patterns of interactions are deemed as being beneficial (Peterson et al, 2002; Cubitt, 2014).

Plate 4.13: An abandoned Mining pit in Evbuobanosa

On the contrary, when an interaction pattern is deemed to be inimical to the goals and interests of a social actor, such a pattern is refined to see if it can become profitable or discarded altogether. In essence, patterns of social relations are viewed in terms of the inherent benefits, whether manifest or potential that social actors believe can accrue from such relations (Cubitt, 2014).

The degradation of land in Evbuobanosa dukedom as a result of sand mining affects different aspects of community life. Specifically, land degradation affects the social relations in the communities in Evbuobanosa dukedom, the dynamics of how people interact. Some respondents captured these effects thus:

> When I mine gravel, it always affects the riverbank. Like the underground type of gravel, it has to do with everything in the whole of that area's gravel, maybe it is covered by mud or smoke sand, now when you continue to dig one particular area, the sand will be washing, the gravel will be washing, just like that it will be extending to the bush, then the bush will now begin to break. Everywhere will be falling, sometimes the wood that is standing by the bank of the river will still fall and in many cases, if you get to some areas that were very shallow when we started digging when we extract gravel from it, we see that those places will become wide. The other people who work around those areas like those that have fish ponds and some farmers are not happy with such situations, but we have to survive (Male/Abudu IDI 12/ Sand miner/ Feb, 2019).

Also,

> Fishermen don't just fish everywhere in the river, there are particular areas where they fish and those places are the areas where there is low current, that is, the water current there is very low. Fish mostly stay in areas where the current is low. The areas where we dig for sand is where the current is high so sometimes, they go far because of us they don't want to stay nearby most especially the fishermen we have around here all of them are very far away from us… (Male/ Sand Miner/ Abudu IDI 9/Feb, 2019).

The activities of sand miners upset others like fishermen and farmers, whose livelihood is closely tied to the river and the bank of the river. Sand extraction from the river disrupts the configuration of schools of fish. As a result, fishermen have to go farther to areas where they can get undisturbed schools of fish. This alters their pre-existing fishing patterns and creates new fishing realities for them. When such anger and altercation are

not properly managed, it degenerates into serious conflict. The souring of relations is a common byproduct of disagreements over degraded land arising from sand extraction in Evbuobanosa dukedom. The social interactions could degenerate into different levels of conflict depending on how it is managed, the willingness and capacity of the parties to escalate the conflictual issues and the other dynamics of social control in play at any particular point in time. Again, not all interactions between the sand miners and members of the community are adversarial. Some are pleasant and very convivial. A respondent expressed that opinion this way:

> We relate normally with other members of the community. Some members of the community sometimes come around to the riverside to observe what we do and ask questions about the work, we always answer them and some of them would say that the work is hard or physically tasking. Some of them even enter the boat, especially the girls, they climb the boat to see what it feels like and even request that we drive them around the river so that they can experience how it is. Some of them give us money to buy fuel for our boat so that we can drive them around the river on our motorized boat (Male/ Sand miner/ Abudu IDI 5/ Feb, 2019).

Also,

> We feel free, we interact. Sometimes, they (fishermen) will even help you by telling you like "the other side, if you go down a bit, you will see where your mate mined, their gravel was very fine". So, they will even help you. Sometimes they will even suggest an area where you can mine that is shallow and has gravel, they help you. And sometimes if their hook catch fish and they are not around, (you know sometimes some fish struggle and when they struggle they will go), so if you are around, we see such thing, we will just kill the fish and take it to them or kill it and leave it in that place, we will leave it there and then we will tell them that their hook in a particular location caught fish and we have already killed it, so, go and carry it (Male/ Sand miner/ Abudu IDI 1/ Feb, 2019).

The opinions expressed by the respondents suggest that when the parties are not actively in conflict or are able to focus on issues of shared mutual benefit, they relate harmoniously. Of course, the various interest groups at play are all members of the society with different sets of interconnected interests, beliefs, and values in the community. If the economic resources were not being contested for by diverse groups with different abilities and capacities in an adversarial manner, there would be enough to meet the basic needs of

the people. This tallies very well with the position of Ecological Marxism that unequal access to resources accounts for the visible patterns of conflict in the society (Kovel, 2002; Foster and Burkett, 2008; Foster, Clark and York, 2010). For ecological Marxism, the rich destroy nature in order to get richer and accumulate wealth, while the poor do so simply to survive. The degradation of the environment and its attendant conflict is as a result of the exploitative industrial capitalist system. Hence, the origins of soured social relations and conflict are embedded in the drive for capitalist accumulation of wealth and more wealth.

4.3.2 **Impact of land degradation due to sand mining on livelihood, health, security, poverty status, survival and farming**

The degradation of land due to sand mining affects the physical and mental health of community members in Evbuobanosa dukedom. At the basic level, health is the state of physical, social and mental wholeness and well-being of the individual, as well as the community. It encompasses the totality of the individual and the community in a state of wholeness. It is a state of complete physical, mental and social wellbeing and not merely the absence of disease and infirmity. In understanding the health of a people, there is a psycho-cultural perspective, an environmental perspective, a socio-biological perspective as well as the political economy of health perspective.

The psycho-cultural perspective has to do with the mental state of the individual as well as how the way of life of people, their culture, affects their health. The social environment, which derives from social interactions and its concomitant social support system, plays a role in staying healthy and managing ill-health. An individual's state of mind which results oftentimes from the social interactions of the individual can affect the well-being of such a person. Human beings are a product of culture and their perspective and understanding of the world are influenced by the cultural milieu in which they have been brought up. An individual's personality is formed by culture and this affects their reasoning. When people think or believe that a part of their cultural heritage is being denigrated or maligned, it can create a sort of mental turbulence and turmoil that could result in ill health for an individual. When the perception is that an area of the societal

heritage has been lost or is being eroded significantly, such perceptions can be very troubling to the extent that the hitherto existing conceptions and beliefs held by the individual can be seriously questioned and upset. How people think about their health and their behaviour resulting from their thought processes has a way of influencing their health as well as that of the community where they reside. The social and cultural components invariably intermingle with human biology to impact the health of a person.

Land degradation does lead to contamination of air, water and food. The environmental constituents of a geographical location influence the health of a population. People that live in an area where there is a preponderance of dust particles in the air tend to be exposed to certain kinds of illnesses associated with dust such as respiratory complications. Furthermore, it is important to state that economic and political institutions and decisions that create, enforce, and perpetuate economic, social privilege and inequality are fundamental causes of social inequalities in health. When critical stakeholders such as the government and community leaders decide to approve the extraction of sand aggregates from a particular area and not some other areas, they are inadvertently making choices that would expose some people to the deleterious effects of land pollution.

From the perspective of Ecological Marxism, the drive to increase the economic outlook of the society invariably leads to the decimation of the forces of production (Foster, Clark and York, 2010). The contradiction between the forces of production and the relations of production is central to understanding sand extraction processes in Evbuobanosa dukedom. In the extraction of sand, there is a concomitant deterioration in the relations of production as exemplified in the health of the people. There is a trade-off between the continued growth of the sand mining industry in Evbuobanosa dukedom and the health of the people. The continuous boom of sand mining creates wastage of the environment and the relations of production. This wastage in the relations of production is typified by the deleterious effect on the health of the community members.

Furthermore, in Evbuobanosa dukedom, land degradation in the area has implications for the security of the people and the society. Some of the areas where sand was extracted have been degraded. Those pits have become a security risk for the members of the

community. Members of the community have to be very careful when they have reasons to pass through those areas on their way to the farm or any other venture so that they will not fall inside such pits. Those large open pits are obvious dangers lurking in the neighbourhoods and ensnare the members of the community. Also, such pits are a security risk for the children and wards in the community, whose curiosity has to be very restrained while exploring their neighbourhood. A respondent captured it this way:

> This area is quite swampy and close to the river; the water table is not far, like the one they have there, when the federal express was being constructed as a dual carriage lane, that place was not a lake before they just went to mine sand, use and later they met water and now it is a lake. It is a threat it has formed a lake there that is ever-present whether it is dry season or it is rainy season. That place used to be part of our farmland, even if you are going to the farm now, you don't leave your children alone so that they don't go and fall inside. There was a time a girl went there to bathe and she got drowned and died (Female/ Abudu Community leader/ KII 14/ Feb, 2019).

Also,

> So now it is an environmental hazard. Yes, it is a threat and the government is not doing anything about it. The sand being mined in the environment reduce the quality of the land, in the sense that if they are mined from a place, can you keep farming there again|... You cannot farm there again and leaving it like that is also a threat because you don't know tomorrow now, that water that is coming out now, that is now a lake can erupt into something more hazardous in the near future (Male/ Abudu community Farmer/ KII 15/ Feb, 2019).

These concerns encapsulate the apprehensions of members of the society. They are worried that the open pits are increasingly becoming more perilous to them and their family, especially as it has claimed lives previously. When people live in a state of trepidation over an issue justifiably, they can hardly be regarded as living in complete safety (Peterson et al, 2002; Matthew, Gaulin and McDonald, 2003). Whatever threatens the peaceful state of mind of a people is a hazard that can be considered deleterious to the safety and well-being of the people and as such, it is an issue of concern for the well-being of people.

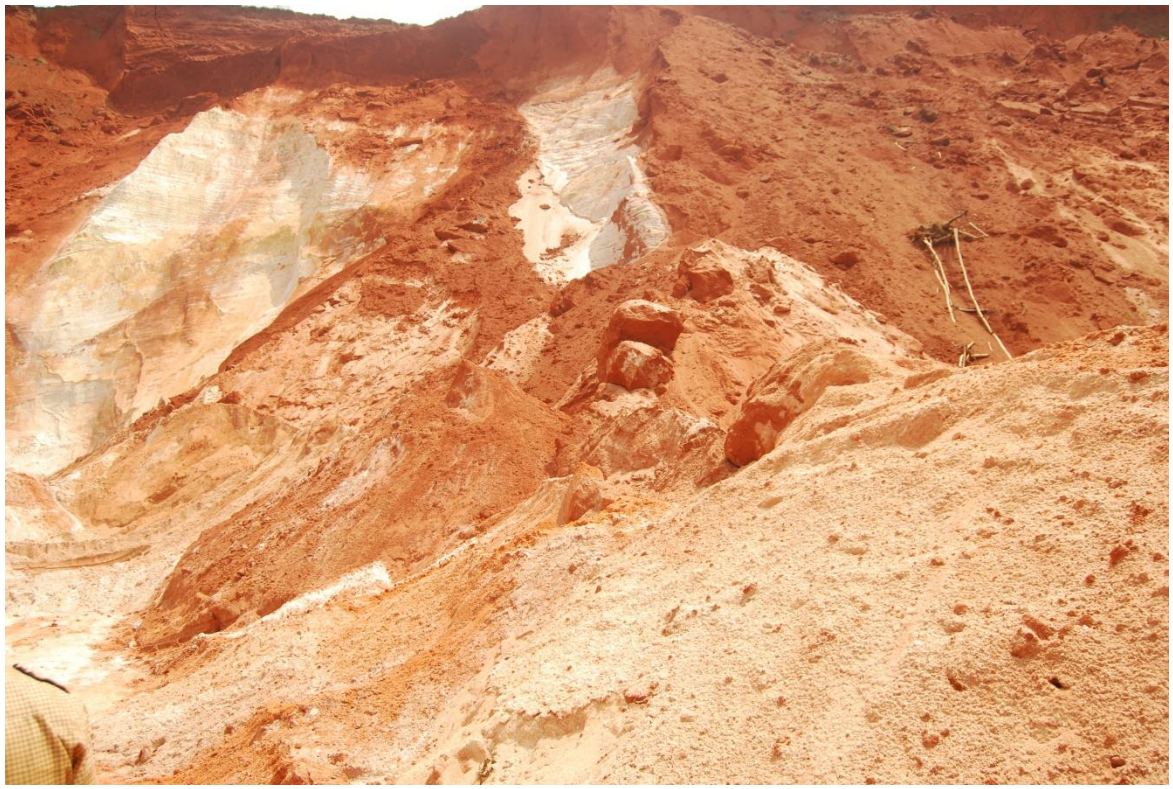

Plate 4.14: An active mining pit experiencing a landslide in Abudu

Also, security is a state of freedom from worries of loss, an assurance that something of value will not be taken away. With the attendant land degradation occasioned by sand mining, an aspect of the people's cultural heritage is invariably lost. The land is a part of ancestral and cultural heritage passed down through generations. There is a special bond that exists between a people and their land. This bond is enunciated and expressed in the beliefs and practices of a people when they swear oaths and bind themselves calling on the gods, their forefathers to bear witness. The land acts as a link, an intermediary between them and their forebears. Similarly, parts of the land in a community contain cultural landmarks like grooves, special trees, timber resources, wildlife habitats, animals and land formations, which the people hold as treasures and even as totems (Xiqing, et al, 2005; Ashraf, et al, 2011). They regard these cultural landmarks as part of their heritage. When parts of such land formations are lost due to degradation arising from sand mining, there is a sense of loss and an ever-present awareness that something of value has been taken away.

Ecological Marxism posits that the contradiction between the forces and relations of production taken as a whole and the ecosystem leads to the destruction of the environment. The extraction of sand and the attendant land degradation reduces the quality and quantity of land and physical formations, which can be lucratively explored and exploited sustainably in Evbuobanosa dukedom. As more and more amounts of non-renewable resources like sand are extracted from the environment, the capacity of the environment to sustain future generations is diminished and impeded (O' Connor, 1998; Foster, 2000; Foster and Burkett, 2008). While it might appear that the current generation is exploiting available resources to enhance their well-being, the capacity and prospects of succeeding generations to live on such resources are diminished. As such, their security is threatened by the actions and inactions of the current generation.

Furthermore, many artisanal sand miners are economic migrants who had come to Evbuobanosa dukedom in search of jobs and livelihood. There are migrants from Bayelsa state, Delta state, Rivers state etcetera, who have come from their different cultural and historical backgrounds into a new environment. While their presence enriches the talent pool of the area, it also creates stress on the social fabric of their host communities. This

societal stress emanates from the injection of different cultural beliefs and ideals that the migrants from other ethnic backgrounds hold which are not in tandem with those of the host community (Kousis, 2004). The interplay of these social factors could create tensions that can threaten the peace and security of the community.

On the other hand, it is also important to note that the influx of economic migrants into the society might not always increase the spectre of insecurity. The influx of these economic migrants might actually help in boosting economic activities within the Evbuobanosa dukedom. As more people get involved in sand extraction in the dukedom, they deploy their knowledge, skills and expertise into developing the sector. The increase in the economic well-being of the community can reduce the likelihood and incidence of social tensions. This is so because the more people earn, the more able they are to meet their basic needs and the more desirous they ought to be for a secured social environment. It is also apt to note that increasing prosperity in an area can actually serve as an attraction for unscrupulous elements to perpetrate acts of criminality in society.

From the perspective of Ecological Marxism, nature is an invaluable asset for profit maximization. Land and its resources is exploited to create wealth and more wealth for the operators in a capitalist system. Capitalism reduces nature to possession and profit (Grettler, 2001). The drive to accumulation of wealth and profit maximization is a fallout of the modern capitalist system with its concomitant production waste manifesting as insecurity and other social vices in the community (O' Connor, 1998; Foster, 2000; Foster and Burkett, 2008). Ecological Marxism posits that the commodisation of land, natural resources and human labour in a bid for wealth accumulation creates a gap in the seamless harmony between society and nature thereby exacerbating insecurity. Hence, the insecurity that arises from the rising tension between the haves and the haves-not stems from the destructive inclination of capitalism to exploit nature and human relations for the accumulation of wealth in the society.

Furthermore, sand mining and land degradation in Evbuobanosa dukedom have implications on the survival and poverty status of the people. Several people are involved in the sand mining industry. They are involved at different levels of the sand extraction process. These people earn their living and get their livelihood from sand mining. Their

involvement in the sand mining industry ensures that they are able to meet their basic needs of food, clothing and shelter for themselves, their households and their family members. Their involvement also gives them a sense of identity as gainfully employed members of the community. It also creates a rhythmic time structure for them as it keeps them preoccupied and engaged beneficially. Some respondents captured it this way:

> Sand mining is a source of employment for the youth of the community. It promotes self-employment for youths in the community. If you are willing to work in the sand mining industry, you are welcome to join without an entry fee. When you come, you learn the work, make your money and establish yourself as a miner by buying boats and other businesses that you might fancy (Male/ Sand miner / Abudu IDI 2/ Feb, 2019).

Also,

> The area that there is much money is the digging because let me assume the cost of 6 yards is ₦7500 out of the ₦7500 let's look at the cost of other expenses like fuel and well the jerking for these 6 yards is ₦1000 after removing fuel with oil ₦2000, then #1000 for jerking it will balance ₦4500, then that ₦4500 goes direct to the digger… (Male/ Sand Miner/ Abudu IDI 8/ Feb, 2019).

In the same vein,

> There are still people that work by being hired like now I own my boat and there are people that work with me. I still employ people to work with me, a digger like me and he will dig with me. So I pay such persons periodically (Male/ Sand Miner/ Abudu IDI 9/ Feb, 2019).

Likewise,

> Today now I can boast to tell you that in Abudu the highest place of employment in Abudu is in the river because like the filtering side of it the filtering of the sand will almost the whole youth are there. Let me say 20% of Abudu youth are into the business the digging part, the same thing, then the jerking. In short, it is helping to reduce crime. It engages them in business, unlike before because most of the youth today any youth in Abudu that dress well just study him very carefully you see that he works at the bank of the river (Male/ Sand miner/ Abudu IDI 6/ Feb, 2019).

Also,

> It creates jobs. It generates revenue for the community. The community collects two hundred naira per truckload of sand. In the community, it creates employment for the youths who want to work. It also ensures that

> the members of the community have easy access to sand for their construction purposes (Male/Abudu Community leader / Abudu KII 6/ Feb, 2019).

In addition,

> Okay, like in Abudu here, they don't have many other sources of income for the community, except the sand and farmers. So let me now use this example, there was a time that we had this strike, it affected the inhabitants. The traders in the community were affected as well as other spheres of life; there was no income, which was the only source of income into Abudu day by day. When they come to buy sand, the diggers, the jerkers, all those that are involved in the business, they exchange money for goods, that where money flowed into the community. If they are not there, you know what it means. Builders will not build, now the middlemen that are contractors will not have goods available in this area they will go far which means the cost of the products will be high so we believe with this business here now it brings down the cost of building in this society alone (Male/ Sand miner / Abudu IDI 12/ Feb, 2019).

Sand mining is a significant and integral part of the economy of Evbuobanosa dukedom. The value chain employs several people (Peterson et al, 2002; Luning, 2008). As people work and earn income from their involvement in sand extraction, their purchasing power is enhanced. For those involved, their livelihood is assured as they can afford to meet their basic needs and those of their dependents from the proceeds of their involvement in the sand mining industry. With the ability to meet their basic needs, the immediate survival of those involved in sand mining is assured. They can focus on increasing the quality of their livelihood and that of their dependents. With an increased quality of life, the prospects of living in poverty is minimized and the possibility of coming out of poverty is enhanced (Luning, 2008; Khan and Sugie, 2015). Thus, for them, sand mining is a venture that they would want to be sustained in order to protect their source of livelihood.

With the degradation of land arising from sand mining, the survival of those who depend on the land for their livelihood is impeded. With the degradation of the land, those whose livelihood is hinged on producing from a non-degraded land would be compelled to seek an alternative location where the land is suitable to earn a living. Farmers are the most affected in their occupation by the degradation of the land. Sand mining leads to flooding and exacerbation of flooding of farmlands, as well as landslides. With this situation, it

becomes more arduous to earn a living from farming in the degraded area. A respondent captured this way:

> Sand being mined in the environment reduces the quality of the land, in the sense that if they mine from a place, that place would no longer be suitable for farming. You cannot farm there again, it becomes wasteland (Male/ Abudu Farmer / KII 16/ Feb, 2019).

Also,

> When they start mining they will take a very small portion of land… it is not big but over time there would be a landslide and the pit start going wider and wider. It starts expanding and our farmlands get subsumed and destroyed by the expanding sandpit (Female/ Abudu community leader /Abudu KII 4/ Feb, 2019).

Likewise,

> The areas where they excavate sand from the ground to get plaster sand, we used to farm it and grow crops there. But with the extraction of sand, we can no longer farm those plots of land as nothing can grow there. The topsoil that contains nutrients for the soil has been removed and left bare. We have to move to other areas to farm (Female/ Evbuobanosa Farmer / Evbuobanosa KII 3/ Feb, 2019).

In addition,

> When they extract sand from this area, it leads to serious erosion; this area is prone to flooding. The erosion that occurs as a result of sand mining destroyed my cassava farm three years ago. I had to depend on people to feed me after that incident that year (Male/ Abudu Farmer / Abudu KII 16/ Feb, 2019).

From the foregoing, it can be deduced that the degradation of land as a result of sand mining has a deleterious effect on the livelihood and survival of farmers. The land they work to earn a living gets denigrated by sand mining. This implies that their ability to meet their basic needs is reduced as they would have to look for alternative means of livelihood either by farming elsewhere or engaging in some other occupations. The destruction of farmlands as a result of sand mining activities implies that those affected might possibly slip into poverty if they are not able to get a commensurate alternative in time. They have to struggle against several challenges imposed by the exploitation of

natural resources through the forces of capitalism, in order to survive in the modern Capitalist system (Grettler, 2001; Luning, 2008).

From the perspective of Ecological Marxism, the annihilation of species or the destruction of whole ecosystems is reasonably consistent with the growth of capitalism and economic development. The labour and production process derives vitality and means from the larger metabolism of nature. The production system in capitalism invariably creates tension and friction; systematically emasculating the ecological foundations of human existence (Kovel, 2002; Foster, Clark and York, 2010). The rich destroy nature in order to get richer and accumulate more wealth, while the poor do so simply to survive. The material quantity that supports the elite class is several times more than the same that supports the working poor. As part of the contradictions of capitalism, it inherently contains the inclination to ruin nature in a quest to further enlarge the capitalist system. In other words, land degradation lost sources of livelihood and increased disruption of patterns of life are considered as collateral damage in a bid for wealth accumulation in modern capitalism (Burkett, 2009). While the rich in the capitalist system get richer through the exploitation and degradation of the natural environment, the working poor does whatever they can in the face of daunting challenges to survive.

4.3.3 **Impact of land degradation on social norms and values**

Values are collective ideas about what is right or wrong, good or bad, desirable or undesirable in a particular culture (Kendall D., 2004). They provide us with a benchmark, a yardstick by which we can evaluate people, objects and events. Values are beliefs and ideas that people hold which define what is right or wrong expressing what should be done. Norms are socially acceptable ways of behaving when playing a particular role (Livesey, C., 2014). They are established rules of behaviour or standards of conduct. Values tell us what to do, norms tell us how to do them. For instance, many cultures in Nigeria have respect for elders as a core value, that is, elders should be respected. However, the norm of respect for elders differs from one culture to another: that is respect for elders is expressed differently across cultures. What should be done, values is not in

doubt, how it should be done, norms vary. According to Rannikko (1996), conflicts related to the environment can be classified into three: Cognitive conflict, value conflict and interest conflict. For him,

> … value conflicts become very visible when we examine the different ways people relate to the environment and landscape. For many representatives of new occupational groups, to which most environmental activists belong, the countryside means landscape and recreation, which they see as esthetic and unchanging. For farmers and lumberjacks the countryside and nature represent a livelihood and they relate to this in practical and functional terms (page 68).

In other words, the values that people from different social backgrounds attach to the environment reflect the use they have for the environment. Land as a component of the environment is viewed based on the possible use that the assessor has for it. Value, therefore, could vary based on the variables at play in any given scenario. This variation in the value attached to land could result in the way land is ultimately treated by the parties evaluating its use.

In Evbuobanosa dukedom, Land degradation arising from sand mining has affected different aspects of the people's ways of life. Prior to the commercial boom in sand mining, the community was largely very communal in its worldview. Everybody cared for his neighbour and wealth-generating resource was communally owned and redistributed. A good example is land. The land was owned by the community and controlled by families within the community. Such a valuable resource as land was not owned by an individual but by the community and administered through the family institution. The goal was to promote inclusiveness in wealth distribution and allocation. With the growth of modern capitalism, this communal ownership of wealth-generating resources is being undermined. The land is increasingly being seen as a resource that can make an individual rich. The recent trend is for powerful individuals within families to appropriate their family land and use it to further the goals of the individual even to the extent of selling such communally owned land. A respondent captured a scenario where an individual's value can conflict with that of the community and how it is addressed.

> In the reserve area where because of pollution, flooding of peoples farmland occasioned by inappropriate sand mining, the community restricts the mining of sand and sets boundaries. This is to avoid and minimize the occurrence of flooding that could destroy people's farmland and their crop. There is a way you would attend to the river that would cause water to flow into farmland. So the community would avoid it by controlling the process of sand mining. The community has the right to restrict the level of mining to save crops of farmers from being affected by flooding occasioned by sand mining close to the river bank. But if the sand miner thinks because it is his job he can mine sand anywhere he likes, the community would call you to order (Male/ Abudu Youth leader / Abudu KII 3/ Feb, 2019).

Also,

> Some people do mine or dig sand by the corner of the river. Now like in Abudu here, in the reserve where we work if you dig sand by the corner of the river, the community will penalize you, you will pay goat, and drinks and several things even if you are caught once because the law is that you dig the river and not the corner of the bush. So anything that makes the community catch anyone or anybody digging by the corner of the river, they will take him to the community head, the Ogwedion, then he will now pass judgment on you and you will pay a fine (Male/ Sand Miner/ Abudu IDI 2 / Feb, 2019).

What this suggests is that individuals in their quest to make some money for themselves sometimes exploit sand from flood-prone areas that would easily lead to flooding of farmlands destroying people's crops. Their personal values and actions inadvertently come into conflict with those of the host community. In such instances, the community asserts its authority and stops the individual from endangering the livelihood of others in the quest to eke a living for himself from sand extraction. The community compels individuals in such circumstances to subject their desires to those of the larger society. The supremacy of the interest of the larger society is invoked over and above those of the individual.

As living and rational human beings, humans could only survive well in a metabolic relation to the other components of nature. For Ecological Marxism, social metabolism represents the human who is a self-mediating being of nature through production (Foster, Clark and York, 2010). All commodities have use value and exchange value. The antagonistic friction between use value and exchange value helps understand the

contradiction in capitalism to its conflict with its external natural environment. In other words, as people commodify the environment to grow their wealth stock, they inadvertently create a conflict between the natural environment, which sustains humanity and the profit they can make as individuals by pursuing their personal goals and objectives as opposed to those of the larger society. The norms and values of the individual in a capitalist society are not necessarily in tandem with those of the larger society. By its nature, capitalism requires that the individual should strive to accumulate as much wealth as possible for himself with scant regard for what happens to the larger society.

4.3.4 **Coping strategies to mitigate the social impact of land degradation**

Human beings have the ability to adapt themselves to suit any situation where they find themselves. It is a survival instinct that helps to perpetuate humanity and make them thrive in very daunting situations. With time, people evolve ways through which they handle unpleasant circumstances in their environment. The processes through which they manage these adverse situations might differ from one place to another but ultimately, human communities evolve mechanisms through which they handle the different challenges that they are confronted with in their environment.

In the communities of Evbuobanosa dukedom, like in other human societies, they have developed different ways through which they cope with the social impact of land degradation. One of the ways through which they attempt to mitigate such is by minimizing the occurrence of land degradation due to sand mining. This is done through communal control of sand extraction in areas that are more prone to easy and visible land denudation, flooding and control. Community representatives are deployed to ensure that sand is mined in only designated areas and in ways that diminish the propensity for land degradation. Some respondents captured it this way.

> People do mine or dig sand by the corner of the river. Now like in Abudu here, at the reserve where we work if you dig sand by the corner of the river, the community will penalize you, you will pay goat, and drinks and several things even if you are caught once. This is because the law is that you dig the river and not the corner of the bush. So anything that makes the community catch anyone or anybody digging by the corner of the river,

> they will take him to the community head, the *Ogwedion* (traditional elders council), then he will now pass judgment on you and you will pay *odegbe n'ekpetin* (traditional fine of she-goat and a carton of drink) amongst other things (Male/ Sand miner /Abudu IDI 4/ Feb, 2019).

Also,

> The community penalizes people who do not adhere to the rules on sand mining. Like where we work now, we have a community representative there that collects dues, those community dues. So that person is the eyes of the community and immediately something like that happens if he warns you for the first time, you continue, he will now go and report to the community that somebody is digging and he asked him to stop and he refused, so the community now will take action they will send you to come and arrest the person. The reason is that if people continue digging like that, they will destroy the land, and farmlands will be affected, so when they destroy the land, the community suffers, because when they destroy the land it also affects us (Male/Sand Miner/ Abudu IDI 10 / Feb, 2019).

Ultimately,

> There are some areas in the reserve area where because of pollution, flooding of peoples farmland occasioned by inappropriate sand mining, the community restricts the mining of sand and sets boundaries. This is to avoid and minimize the occurrence of flooding that could destroy people's farmland and their crop. There is a way you would attend to the river that would cause water to flow into farmland. So the community would avoid it by controlling the process of sand mining. The community has the right to restrict the level of mining to save crops of farmers from being affected by flooding occasioned by sand mining close to the river bank. But if the sand miner thinks because it is his job he can mine sand anywhere he likes, the community would call you to order. Even though we want to develop, we should do so without jeopardizing the ability of future generations to even survive on that same land (Male/ Abudu Youth leader / Abudu KII3/ Feb, 2019).

From the foregoing, it can be deduced that the community creates fines as a deterrent to minimize the way land is degraded. There are monitors commissioned by the community to ensure that sand is only mined from designated areas and that those who mine sand from excluded areas are made to pay a designated fine, usually a big she-goat and a carton of drink. The aim is to deter people from extracting sand in a haphazard manner and from flood-prone areas and other areas that are prone to landslides. To ensure that these rules

are respected, the youth leadership of the community was empowered by the community to act as an enforcement unit for the arrest and enforcement of the decisions of the traditional elders' council. This is in sync with the views of other scholars that the traditional institution plays a key role in maintaining law and order in the society (Ranikko, 1996; Gleditsch and Urdal, 2002; Reboratti, 2012; Toohey, 2012).

Another way through which the deleterious effect of land degradation on the social life of people in Evbuobanosa dukedom is mitigated is through the operations of social support systems. These social support systems like the family and kinship network, age group associations, religious bodies, social clubs and associations as well as guilds and professional associations help in cushioning the effects of social dislocations. The family and kinship network is the first port of call for most people who are faced with the vicissitudes and vagaries of life. The family and kinship network acts as a very important buffer, helping people to confront their challenges and giving them every possible support. The linkage from the family and kinship bond is very strong because of the consanguineal relationship as well as the affinal relationship that exists between them. Consanguineal relationships are bonds created by blood, the linkages that people have as a result of common descent from the same ancestor while affinal relationships are bonds created by marriage (Kendal, 2004; Livesey, 2014).

When people are challenged in Evbuobanosa dukedom, they get support from their kin. They also get support from the different groups and associations in the community. These groups could be the age groups, their guilds, clubs or religious associations. These associations and groups help and support individuals in the society to deal with life crises and mitigate social malaise as they arise. The social malady can be in the form of strained relations, loss of livelihood, illnesses or even death of a loved one. The social support system from kin and associations could come in the form of: solidarity visits, words of advice and encouragement, religious admonition, training opportunities, physical presence in times of need, financial support and provision of material things like food, household items, clothing and business tools. Some respondents captured it this way:

> When we have problems, the church helps in overcoming such by praying with us, advising us and even giving us things and money to help us

> manage especially foodstuff. They are always there to support us with their physical presence and encouragement (Male/ Sand miner /Abudu IDI 9/ Feb, 2019).

Also,

> The clubs and associations that I belong to helped me a lot during my trying period. For instance, when a flood destroyed my farm, I was disillusioned. I lost my crop and all the investment that I had put into the farm. Flood ravaged everything. It was the members of the associations that I belonged to that came to my rescue. They provided food for me, encouraged me and even gave me money to start another business. If not for them, I wonder what would have happened to me. They saved me and my family from starvation. If not for their assistance, I believe I would have gone mad (Male/ Abudu farmer/ Abudu KII 16 / Feb, 2019).

The network of social groups, associations, clubs and religious organisations help people to cushion the effect of difficult life situations and cope with life's challenges. They provide a shoulder to lean on for people, especially in an environment where there are no effective governmental social security programmes for the most vulnerable members of the society. These groups and associations are run by people at the grassroots or very close to the grassroots. As such, their programs are easily accessible to people in times of need. Also, because of their proximity to the grassroots and accessibility, the people trust them and they play their part in ensuring the sustenance of such programs.

Using Dahrendolf's postulations on the diffuseness of conflict, the interpretations by Olutayo (2002) provide great clarity. Society is held together by linkages or bond which exist within any given society- ligatures. These linkages and bonds are the active ingredients that provide coherence and promote solidarity among members of society. The extent of bonding existing within any given society defines the choices, pathways of possible actions that the individual can take - options. Based on the bonds and linkages existing among members of Evbuobanosa dukedom, as expressed through the operations of different groups and associations, they utilize the support system available in those groups and associations to cope with the challenges arising from sand mining, land degradation and conflict.

The exploitative relationship between the elite sand miners and artisanal miners ensures that the poor have just enough to survive daily and an incentive to work the next day while enriching the purse of the elites. The unequal allocation of opportunities and resources perpetuates the exploitative cycle while creating a façade of empowerment for the working poor.

4.4.1 **The network of sand mining and land degradation induced conflict**

Conflict is an integral part of every human society. The contestation for values and resource allocation could result in varying degrees of conflict in society. These conflicts don't necessarily need to be violent. Some of the conflictual situations can be simmering underground for a reasonable length of time and then cascade into a more intense form of conflict. The intensity of conflict would be defined by the value placed on the resources being contested for, the number of contending parties as well as the relative strength of the feuding parties (Csutora, 1997; Timura, 2001; Grettler, 2001; Peterson et al, 2002; Reboratti, 2012}. Sand is a very valuable resource in Evbuobanosa dukedom. Its value stems from the revenue that can be derived from its extraction and sale. The sand being extracted from Evbuobanosa dukedom commands a very high price in the market and is accorded preference by operators in the construction industry based on the quality. The sand got from Evbuobanosa dukedom can be used for the construction of different kinds of houses, road construction as well as railway construction. This wide array of possible uses that the sand can be easily used for makes it a prime resource worthy of being contested over.

There have been conflicts in Evbuobanosa dukedom and its environs over sand mining and sand mining-induced land degradation. Different groups have contended with one another over mining rights, royalty distribution and appropriate compensation for degraded land arising from sand extraction. Traditional landlords have had issues with their children over the most appropriate ways to mine sand and distribute the resources generated therefrom.

> There are issues about mining rights in this area. If you mine sand in a place, someone else can come and lay claim to the mining right. You see issues like I am the one that should mine this area, I am the one that should mine that area; you don't have the right to mine! These are common. For instance, there is an abandoned pit not far from here, the feud within the family about its management led to its abandonment. The man that was managing the pit died. You know this our African lifestyle, the man was polygamous and had several wives and children. Upon his death, continuity was a problem. There were issues within the family, who will manage the pit, so it was not properly managed, his brothers wanted to manage it for the family but the younger ones, his children disagreed. The sons felt since they were entitled to their father's estate. That was one of the factors that led to the abandonment of that pit. They could not maintain the road and erosion took its toll on the road and the mining pit (Male/ Abudu Community leader / Abudu KII 6/ Feb, 2019).

Also,

> Sand mining generates a lot of revenue. If you can manage it very well, you will make a lot of money. As long as the road to your mining pit is well maintained and the truck drivers are sure that if they get there would be sand, you will have patronage. The money in the business also makes it to be prone to conflict. This mining pit was involved in conflict for over 10 years. There was conflict over who actually owns this land and who should collect royalties for mining sand here. The case went as far as the Supreme court who eventually gave judgment in our favour. We were not the ones collecting the revenue that accrued for this site previously. If you are not strong and dogged, those that are stronger than you will take what you should ordinarily benefit from and you will lose. You have to pursue your interest and protect it with everything at your disposal. If you think you are not strong enough, you can seek assistance from those who are in a position to render such assistance (Male/ Ebiebi Community leader/ Case study 1/ March, 2019).

There is a web of networks that connects those that are involved in sand mining. The linkage is in the form of who they are, their position in the sand mining production chain, their social status as well as their idiosyncrasies. The people who are involved in the extraction of sand from the river are mostly those from the lower class with little or no formal education. They are people from backgrounds that can be termed common, that is, non-elite families. They mostly have basic education or none at all. When they get involved in the sand mining industry as sand diggers or "jerkers", they invite people who are like them, those who share some peculiarities with them to become part of the sand

mining business. Most of them are given to present time orientation, that is, they place a lot of emphasis on immediate gratification always wanting to spend whatever they earn on their immediate wants. These consumption patterns are aimed at proving to themselves and whoever they choose to impress that they can afford expensive things irrespective of whether it is a pressing need or not.

In terms of sand mining-related conflict, there are clear linkages between those that are involved in it. Depending on the nature of the conflict, sometimes it can be between sand miners and truck drivers, sand miners in one location and sand miners in another location or sand miners and other interest groups in the society. If the conflict involves sand miners and truck drivers, the sand miners would bond together as they would see it as 'we' versus 'them'. They would display a high level of solidarity among themselves to ward off the perceived external threat. They would strive to preserve their peculiar advantages and secure their position in the society (Peterson et al, 2002; Reboratti, 2012). Similar levels of solidarity and bonding would be displayed if the conflict is between sand miners in one location and those in another location. However, if it involves them and other interest groups in the society, there is the possibility that there could be cross-cutting conflict.

The likelihood of conflict of interest increases depending on the dynamics of the composition of the other interest group(s). This is so, as individual sand miners being members of the larger society can have vested interest in some other groups. When that occurs, the sand miner would have to decide on how best to navigate through the web of conflicting interests. A respondent narrated a case to buttress the solidarity shown by sand miners when there is conflict.

> Truck drivers pay tax to the government, now before then the drivers were paying ₦100 for each truck daily, that is, the truck driver would register in the money with one hundred naira (₦100) and collects a ticket which serves him for the entire day. The government changed its revenue collecting contractor who unilaterally increased the daily registration fee to two hundred naira (₦200) daily. That caused problems and because of that the drivers refused coming to buy and when they stop buying our business is affected so that was why the youth and the gravel and the sand diggers now came together and reacted against it because the truck drivers stopped coming to Abudu to carry sand. So that was when the sand diggers now told the government revenue collector that either you people agree to ₦100

> or you will not collect anything again that was when the conflict now started before they now start fighting, they burnt a house, destroy parks destroy houses and all that, so the drivers ran away and all that (Male/ Sand miner /Abudu IDI 2/ Feb, 2019).

Sometimes though, the conflict might not be an individual conflict, it might be a communal conflict and in that case, it is not an isolated discord between two micro-groups in the community but whole communities contesting with themselves for the control of prized resources. Another respondent captured these dynamics:

> If there is a conflict between two communities, it is not necessarily the youths that are involved, depending on the type and extent. In many cases, some communities take themselves to court usually the customary court for land matters. The conflict that always happened between communities involves land. If the court cannot do otherwise, they take it to the Oba's palace, which is the Bini customary system of doing things. The customary court is like something that is attached to the palace. If you see the three judges there, many of them are people that have experience in traditional law and jurisprudence. The president of the customary court may not be a lettered magistrate or judge, but he is very knowledgeable. He might be a justice of the peace (JP) or somebody that is versed in the customary laws of the people, their beliefs, their values and norms. But if the communities say that they cannot take the court judgment, the last resort is the palace. The palace would set up a committee to go and investigate, and once they pronounce a judgment, you cannot do otherwise because it is a monarchical system, whatever they say is settled, it is final (Male/ Evbuobanosa Community leader / Evbuobanosa KII 2 / Feb, 2019).

It is apt to state that the conflict that occurs as a result of sand mining and land degradation can be quite complex. The web of such conflict revolves around family landowners, sand miners, sand truck drivers and community members. All the stakeholders are interested in protecting their interests and positions.

From the viewpoint of Ecological Marxism, unequal access to resources accounts for visible patterns of ecological degradation and conflict in society. The rich in society destroy nature in order to get richer and accumulate more wealth while the poor do so simply to survive. The material quantity that supports the elite class is several times more than the same that supports the working poor (Clark and Foster, 2010). The contestation

Plate 4.15: The network of sand mining induced conflict

for the limited resources inadvertently creates tension and conflict between the different interest groups in society. The different interest groups utilize their relevant resources and networks to promote their interest and enhance their position in society.

4.4.2 **The groups that are active in conflict procurement/ causation**

Conflict procurement is concerned with seeking out discord either overtly or in a subtle way to promote some interest or to further an end. The procurement of conflict can be done by individuals or groups, who are desirous of promoting a particular agenda within the context of the existing social milieu. A group can engage in conflict to protect its position, to expand its sphere of influence, to initiate a new social order, to consolidate a particular position as well as to prevent another group from achieving its aims and objectives. In conflict situations, different parties with their distinct strengths and constitution are involved. Depending on the nature of the conflict and the relative weights of the conflicting parties, they can engage in conflict as they are or they can solicit support from other groups in order to be able to triumph over their adversary (Grettler, 2002; Reboratti, 2012). If a party in a conflict, either an individual or a group has enough resources both human and material, it is more likely that its position in conflict prosecution would be enhanced.

Again, if a group has a lot to protect in terms of interest and resources, it might be keen to deplore its resources to defend its interest and ensure that it does not lose. Whatever be the case, groups tend to engage in conflicts with the aim of making an impact. They might not necessarily win out rightly but they can stake a claim to be considered as stakeholders in the allocation of resources. In Evbuobanosa dukedom, the different competing interests jostle with each other to protect their interest and claim. Some respondents expressed their views on conflict procurement in this manner:

> We don't go looking for trouble, but if anybody seeks for our trouble, he would get a load of it. We would not be the first to look for your trouble, but we would definitely give a good account of ourselves if the need arises. In this area, if you are not able to take care of yourself, so many people would take advantage of you (Male/ Abudu Community youth member / Abudu IDI 16 / Feb, 2019).

Also,

> Conflict can arise if someone takes the working tools or materials that belong to someone else, especially when the owner cannot use them to work because someone else has taken them. When the imposter returns from work, the original owner of the tools would insist that the proceeds of work by the imposter would have to be shared equally. This is a major cause of conflict (Male/ Abudu Sand miner's FGD / Abudu FGD 2/ Feb, 2019).

In addition,

> The youth, middle-aged people below fifty years are the ones involved in a conflict. The youths are the most active group in the society and as such, they are the ones that easily get into fights. Conflict mostly occurs between miners. Sometimes conflict results from stealing somebody's wares or tools, or fraud. Also, underpayment between the miners and the buyers. If there is no proper agreement, conflict may occur (Male/ Sand miner /Abudu IDI 4 / Feb, 2019)

From the responses above, it can be inferred that conflict can be caused by individuals or groups, who feel that their interests have been undermined by the actions or inactions of some other party. Most of those who procure conflict are usually adults who believe that their interest would be better served if they engage in a conflictual tackle. The licensed sand miners get involved in conflictual situations. The unlicensed miners on land as well as in water also get involved in conflict procurement. They are all involved in the quest to promote and protect their interest.

For Ecological Marxists, conflict is an integral part of society, which is engaged in by groups or parties whose interest would be enhanced by contesting for what they want. As such, people procure conflict in other to protect their interests or enhance their position in society. Conflict, therefore, is functional in the sense that it serves as a tool for the enhancement of the objectives of the causative party (Kendal, 2004). In other words, if the cost of wealth creation and accumulation is a conflict between parties, it can be accommodated as collateral damage, a necessary occurrence that would enhance the prospect of achieving set goals. As part of the drive for wealth accumulation through resource exploitation, the networking for contestation is a by-product that is expected at

some point as part of the "waste" that is inadvertently produced during the course of wealth creation and resource protection. It is considered as some form of collateral damage that results from resource exploitation and wealth creation. As long as wealth is created and the interest of the exploiting elite is satisfied, some other actors and considerations can be sacrificed.

4.4.3 **Individuals and personalities in land degradation and conflict**

As people engage in the creation of wealth and capital, they partake in different kinds of activities that require the expropriation of different kinds of resources from the environment. Sand mining requires the extraction of sand aggregates from the environment. In the process of extraction, the land gets degraded and denuded. During the sand extraction process, frictions are generated between the different stakeholders in the ensuing tension and adversarial engagements. With the attendant land degradation resulting from sand mining, the tension tends to get exacerbated and results in differing levels of conflict depending on the dynamics of other factors at play.

Different individuals and groups are involved in sand mining-induced land degradation and conflict. The individuals involved include the sand miners from the river, the sand jerkers, the sand contractors, the excavating machine operators, the pit owners, the sand truck drivers, youth leaders in the communities, elders, traditional authority figures, farmers as well as other members of the community. These individuals and personalities are involved to varying degrees in the sand mining processes. Their levels of involvement to a large extent reflect their stake in sand mining; their level of interest in the process, the amount of resources at their disposal as well as their projected cost and benefit analysis in the near future. Some respondents captured the interventions of some of these stakeholders like these:

> Someone can mine sand or gravel of large size, while another person can mine a smaller size of the same material from the river. Meanwhile, the larger size grain attracts customers more. When someone mines the large grain size and another person who mines the smaller grain size decides to add it to the larger grain size, it can result in dispute (Male/ Abudu Sand miners FGD/ Abudu FGD 1/ Feb, 2019).

Also,

> There is always conflict. We had a union before whose major aim was to help control the price of our goods. Currently, we don't have a union because of some reason. If there is disagreement, the elderly ones among us would look into the issue and adjudicate to ensure that peace reigns. Our boys, maybe because they do hard work, are very aggressive. This work is not easy, when our people (sand miners) are angry, added to the physically demanding work that they do, they can stab you (Male/ Abudu Sand miners FGD/ Abudu FGD 1/ Feb, 2019).

In the same vein,

> Then, there are sand contractors, it is sand contractors that buy sand. The contractor would come to us, meet our secretary, requesting to buy sand. The secretary would go and show them the sand, the different grades of sand; we have smooth sand, plaster sand, sharp sand depending on the one that you want to buy. The contractor would state the ones that he wants to buy and pay the secretary. At the end of the day, the secretary knows the miners whose wares were sold, it would be documented and they would be paid (Male/ Abudu Sand miners FGD/ Abudu FGD 2/ Feb, 2019).

Furthermore,

> The fishermen use the bank of the river. However, sometimes, you might mistakenly drive to the corner of the river and the engine propeller of your boat can hold the net and get stalked, in that case, you cut off the net. This can create discontent in the fisherman, who would usually ask any sand miner about the person that cut the net as would probably not know the particular sand miner involved. When this happens, the sand miner would apologize on behalf of his colleague and that would suffice (Male/ Sand miner / Abudu IDI 10 / Feb, 2019).

Also,

> When the construction company was dualizing the road, that place was not a river before they just went to mine sand, use and later they met water and now it is a lake, it is a threat. It has formed a lake there now whether it is dry season whether it is the rainy season that place used to be our farmland, even if you are going to the farm now, you don't leave your children alone so that they do not go and fall inside, like there was a time a girl went there to bath and she got drowned, the girl died. So now it's an environmental hazard. Yes, it is a threat (Female/ Abudu Community leader/ Abudu KII 12/ Feb, 2019).

Similarly,

> The sand being mined in the environment reduce the quality of the land, if they mine sand from a place, they cannot farm that place again. And it is very close to the federal express. That means that it is hazardous to the environment and community and it degrades the land (Female/ Abudu Community leader / Abudu KII 4/ Feb, 2019).

Moreover,

> There is a pit around here some time ago, while they mined sand it collapsed and it led to a landslide. Yes, and it has killed several people. like the one I am very familiar with, it has killed up to 4 people that I am very familiar with. And there are some cases of fatality on the mining site that I am not very conversant with. (Female/ Abudu Community leader/ Abudu KII 5/ Feb, 2019).

Furthermore,

> When they start mining they will take a very small land... it is not big but over time there would be a landslide and the pit start going wider and wider. It starts expanding. That it's a community pit does not change the fact that we have people that are farming there, whose forefathers have been farming there for a time. So when the pit starts growing wider it starts to occupy their farmland and they will be angry because you are now sending them away from their father's land and they don't have a place to farm (Female/ Abudu community leader /Abudu KII 12/ Feb, 2019).

Also,

> Like where I mine gravel, it always affects the riverbank because like the underground type of gravel, now the underground has to do with everything in the whole of that area is filled with gravel, maybe it is covered by mud or smoke sand, now when you continue to dig one particular area, the sand will the washing, the gravel will be washing, just like that it will be extending to the bush, then the bush will now begin to break, everywhere will be falling sometimes the wood, big tree that is standing by the bank of the river will still fall and there are someplace if you get to some area that was very shallow when we start digging when we extract gravel from it, we see that the place will become wide, that is what normally happens (Male/ Sand miner/ Abudu IDI 2 / Feb, 2019)

Additionally,

> Now if they dig the corner of the river, now the river will expand then the current will be low then when the current becomes low, the area will be filled with sand then our boat will not be able to cross, it will be landing, so because of that, we don't even encourage it. We don't encourage people to dig the corner of the river because it will affect us. Yes, and destroy the

> land because there are some areas whereby when they dig the corner of the bush or they dig the land what normally happens is that when the flood comes, the flood will face that area and destroy it then the place will be very wet. Immediately the flood destroys it, everywhere becomes river then the land will now reduce (Male/ Sand miner / Abudu IDI 4/ Feb, 2019).

In effect,

> There are some areas in the reserve area where because of pollution, flooding of peoples farmland occasioned by inappropriate sand mining, the community restricts the mining of sand and sets boundaries. This is to avoid and minimize the occurrence of flooding that could destroy people's farmland and their crop. There is a way you would attend to the river that would cause water to flow into farmland. So the community would avoid it by controlling the process of sand mining. The community has the right to restrict the level of mining to save crops of farmers from being affected by flooding occasioned by sand mining close to the river bank. But if the sand mining thinks because it is his job he can mine sand anywhere he likes, the community would call you to order. Even though we want to develop, we should do so without jeopardizing the ability of future generations to even survive on that same land (Male/ Abudu Sand miners FGD/ FGD 1/ Feb, 2019).

From the foregoing, it can be deduced that the personalities involved in sand mining, land degradation and conflict in Evbuobanosa dukedom are inherently stakeholders who, are interested in protecting their stake and maximizing the value that they can get in the process. While some of them are acting in their narrow personal interest, others are acting in the interest of the larger society. This is in line with the findings of Peterson et al (2002) and Ashraf et al (2011) that sand mining is primarily done to satisfy the interest of the dominant stakeholders.

From the perspective of Ecological Marxism, the unequal allocation of resources and access by different persons and groups give some groups certain advantages to promote their interest. These advantages allow certain groups to exploit natural resources from the environment to increase their wealth stock. The harnessing of natural resources from the environment such as sand invariably leads to the degradation of the land from which such resource is abstracted. In the process, land, sand (a natural resource) and human interaction are inextricably commoditized in a bid for wealth accumulation. Furthermore, the tensions so created result in varying levels of conflict (Kovel, 2002; Burkett, 2009).

The persons involved in these interactions are usually people who have the means to influence causes in their interest and are willing to deploy such to achieve their predetermined objectives.

In Evbuobanosa dukedom, when there are conflictual issues, support can be got from within the community or outside the community depending on the nature of the conflict, the extent of the conflict and the intensity of the conflict. Also, the caliber of the parties in conflict plays a role in the kind of forces deployed to prosecute a fight (MacKendrick and Davidson, 2007; Theisen, 2008). Some respondents shared their views on the network of mercenaries and militants involved in conflictual issues in the communities of Evbuobanosa dukedom.

> Some time ago, we had a problem here because of the road; the buyers decided that they will not carry sand and gravel from Abudu that they will start carrying the sand from Ogan and suspend our own. Now they said they are not coming to Abudu to carry sand but they are going to Ogan to carry sand. that Ogan sand, they will be working at Agbor the drivers will be working so we will now be starved. We the diggers organised, we assembled ourselves and talked to Agbor sand merchants. We spoke to them they refused they said no. what we did is that we went to the police station, we requested that the D.P.O. should call the Ogan miners to our attention otherwise, we would disrupt their mining operations. If not, stop working there. they said we are just telling you to make peace but if you refuse we will take our action by ourselves now when we went there we were about 3, I was among to go and inform them on what to do so that peace will reign say they will detain us that we what to create trouble in the community so we said okay sir you can detain us only for that statement that the D.P.O made, one person left and told the others we were still there saying sir detain us until other police now said that sir there is a problem, he asked which problem then the D.P.O came out and saw crowd, he said what is the problem, they said you said you want to detain our people because they came to tell you that we should make peace. The D.P.O. said wait, he drove by himself to Ogan to call the people in that side that they should come, they should call our drivers, that was the same day we settled that matter if you people said you will not come in here to carry gravel and sand then at the same time, stop coming to Ogan for peace to reign. The Ogan people went to tell them these people came here to make peace that we will all agree. So, both parties agreed that yes we will settle this matter here and the following morning they began to carry the sand (Male/ Sand miner / Abudu sand miner's leader / Abudu KII 10/ Feb, 2019)

Also,

> When there are conflicts in this environment, the elderly, the young and the youths, all of them are involved because it is land, like for instance now if it is my father's land I will go and fight. I will get angry so both my father, me, everybody in my family will want to be involved in the conflict. We would tell ourselves that this is our family land, it is our family and we will stand and fight for it. Depending on the nature of the fight and the strength of the parties involved, they could recruit militants. If it's a small family, they know that the people that they going to fight is more than them, they recruit, but if it's a big family, it depends on your approach, if you go the first time and they resist you, you go home and you may not really have to go and recruit from outside. It is from the community, you have friends in the community. The militants that get involved in it, the people that they recruit to fight, are not necessarily from outside the environment. They just network from within the environment, maybe a sister family, or a cult group (Male/ Community youth leader / Abudu KII 3/ Feb, 2019).

From the foregoing, it can be inferred that when people in Evbuobanosa are in conflicting positions, they get support for their positions by drawing on their extensive social contacts. The support could come from their extended family members, their in-laws as well as their kinsmen. When the conflict is seen as an existential threat to the well-being of the family, other kinsmen easily show their solidarity and could contribute their quota into ensuring that the best possible outcome is achieved in the conflict (MacKendrick and Davidson, 2007; Theisen, 2008). Furthermore, support can be got from local mercenaries in the form of cult members, members of secret societies as well as other groups and associations, wherein solidarity can be received from. In other words, the network of militants and support groups for the prosecution of conflict revolves around kinship groups, cult groups and associations within the area.

When there is conflict in a community, the warring parties engage themselves based on their relative strength and weaknesses. It is commonplace for parties to solicit and procure the support of other groups or parties in their quest to emerge victorious from the conflict. Alliances are formed, defined and redefined. The allies in such conflicts could be those with whom there are long-standing bonds and linkages, those with a common interest or those who are willing to offer their services for a fee. These mercenaries can be sourced from within the community or from outside the community. It is pertinent to note that these mercenaries are individuals and groups in whom the contending allied group or party

had sufficient confidence in their ability to sway the outcome of the conflict in their favour (Hartmann, 1998; MacKendrick and Davidson, 2007; Theisen, 2008; Reboratti, 2012). The mercenaries could be members of the community who, have had some military or paramilitary training at some point, kinsmen, in-laws, club members, members of the same religious groups, business associates as well as members of a cult group or fraternity. The confraternities are very active and serve as networks of conflict in the area.

4.4.4 **Cults, fraternities and confraternities**

A cult is a loose-knit, individualistic type of religious/spiritual organisation that collects around a set of common themes, beliefs or interests (Livesey, 2014). They are religious or quasi-religious organisations that tend to achieve dominance, prominence for their members through subtle means. A confraternity is a group of people organised to achieve certain objectives. A fraternity is a group of people of a brotherhood that make a commitment to each other for life with shared friendships and knowledge. Cults, fraternities and confraternities are used interchangeably in Evbuobanosa dukedom to mean the same thing.

The activities and operations of these cults and confraternities are steeped in rituals, symbols and sacred practices. They provide access and opportunities for economic empowerment and mobilization for political power. The promise of power that these confraternities present serves as a strong allure for potential members who seek this power for the opportunities that they can explore. The initiation rituals of these confraternities are steeped in secrecy. A lot of their meetings are nocturnal, often conducted at night and in secret locations. Their modus operandi is not easily accessible to the uninitiated. They intentionally shroud their activities in secrecy to make it harder for the uninitiated to fully grasp their level of strength and sophistication (Northcott, Judah and Macjob, 2021). Their programs are not open to the public and only members are allowed to participate. Intruders are not welcome. However, those that are willing to become part of them are welcome as long as they meet the requirements for membership.

Elite confraternities include *Asigidi*, *Osokpinka* and *Ogboni*. The working class or commoners confraternities common in the area include Vikings, Black Axe, Eiye, Jury, Maphites and warlord. The elite confraternities Asigidi and Osokpinka are largely confraternities based on the beliefs and realities of the people in the area. They draw their membership from the elite members and middle class in the society. These confraternities are brotherhoods that hold a promise of camaraderie, solidarity, friendship and the advancement of the common good of its members. Members are expected to uphold a code of conduct that aims to enhance the well-being of members. They aim at helping each other to become better and providing support where necessary. When a member has a business venture, other members are obliged to patronize the business venture and help to promote it. When a member is celebrating any achievement or celebration such as wedding, funerals, child naming ceremonies or house warming ceremonies, members are expected to rally round him or her and provide whatever support that they can offer.

Similarly, when members are involved in feuding situations with other individuals or parties, members of their confraternities are expected to rally around them provide social support to ensure that they emerge victoriously. The Asigidi and Osokpinkan Confraternities have their origins steeped in the Benin Kingdom. The Asigidi confraternity was formed to eradicate poverty among its members, promote their welfare and promote the worship of their grand lord Asigidi. It was formed in Benin City but has spread to different parts of Nigeria. Membership is voluntary. People voluntarily choose to join them for personal reasons. However, in some instances, people might be pressured into joining them if their parents have been members of the groups and have pledged or sworn to an oath that their ward would take their place after their demise. In such situations, those whose parents have pledged that they would be part of the confraternities are often pressured to become members whether they are interested or not. When children of deceased senior members are not willing to join the fraternity, they expose themselves to the possibility of being hurt, frustrated or haunted by the fraternity. Members believe that membership of these fraternities is a necessity in the quest for political power in society. In fact, people nursing political ambitions are encouraged to network with

members of these fraternities to strengthen their chance of gaining political power in society.

The Osokpinkan was formerly known as Ewegbe Society. Its origins and practices can be traced to trado-religious activities in the Benin kingdom. It is a society that works for the political, social and economic entrenchment of its members. The Reformed Ogboni Fraternity popularly known as Ogboni was a secret society whose origin can be traced to the old Oyo Empire. It was a society for the elite that was designed to check the power of the monarch. It has since evolved into a society for the elites where commercial, political and social interests are promoted and encouraged for members. Its members are usually members of the ruling class, senior civil servants, political office holders, lawyers, doctors and other members of the bourgeoisie in the society. Their members were those in positions of authority as well as the controlling heights of the Nigerian society. A major attraction for these elite confraternities is the promise and prospect of support from highly placed members of the fraternities for their members who require support in their political, economic and social endeavours. They provide the leverage necessary to enable members to overcome life challenges with the judicial system, the police and other government institutions (Eguavoen, 2008; Iwilade, 2014).

The working class fraternities such as Vikings, Black axe, Maphites, Eiye, Jury and warlord mostly had youth members and older patrons. The most prominent confraternity among the working class in Evbuobanosa Dukedom is Vikings. These fraternities operated in the communities as spillovers from the operations of campus fraternities. The local chapters were led by local dons known as Capone. These confraternities recruit members from among members of the society. They have specific members responsible for recruiting new members. These special recruiters are known as canvassers. The canvassers try to get new members by inviting them to join the brotherhood that would enhance their social standing in the society, help them economically and offer protection from intimidation and oppression by other members of the society. They often do not give their potential members full information about the operations of their confraternities. When they are able to successfully recruit a new member, he is made to go through a secret initiation ritual that involves oath-taking and other clandestine activities. After the

initiation process, the new member undergoes an orientation process where he is exposed to the language of the fraternity, their dress code, symbols, rules, their enemies, other members of the group and their mode of operation. Furthermore, there are also 'hitmen' within the confraternities who were responsible for the security and protection of the brotherhood. When the group or members of the group are involved in feuding situations, the hitmen of the confraternities are often at the forefront of escalating and prosecuting conflicts.

These confraternities provide local networks of friendship for their members as they tend to spend their leisure time together and support themselves in times of celebration and grief. Membership of the working class fraternities was drawn from the lower class as well as the lower middle class. Their members included artisans, students of tertiary institutions, secondary school students as well as unemployed young persons. These working-class fraternities claimed to offer protection to their members from oppression by other fraternities and individuals. They often recruited new members through shows of friendship, solidarity and some level of economic support. It is important to state that these working-class fraternities usually have linkages with the operations of fraternities and confraternities in higher institutions. Members who are recruited before gaining admission into institutions of higher learning are often encouraged to identify with their counterparts in the higher institutions for further networking and operations.

For Eguavoen (2008), membership of working-class confraternities does not depend on ethnic or religious membership, especially at the recruitment stage. They also have senior patrons from among elite members of the society who use them to prosecute their feuds and settle scores with their adversaries. The working class fraternities are often used for dirty jobs that involve the use of non-state violence and manpower for thuggery and intimidation purposes. They are patronized by the elites who require their services as political thugs. Their perceived excesses are tolerated as long as they serve the interest of the elites in the society. In return, the elites provide some form of covert political cover for them, especially with law enforcement agencies.

From the Perspective of Ralf Dahrendorf, society is an assemblage of people held together by bonds on linkages existing within any given society which he called "Ligatures". These

bonds and connections hold people together and create some form of communion and solidarity. People relate based on the perceived linkages that exist, either real or imagined. Their interactions are guided by the existing linkages that connect them with other members of the society (Olutayo, 2002). Some of these linkages are consanguineal; some are affinal while others are transactional. These ligatures provide people with possible courses of action, "options". The network of conflict would therefore be contingent on the choices, options and clout available to the individual or group based on their connection with others in the society. People would engage in conflict based on the clout they can wield from the aggregate of their social standing in the society at any point in time.

4.4.5 **Youths and land conflict**

Youths in any society are young, virile and a very active category in the life of a community. They are in the prime of their working life, full of energy, zest and dreams. They embody the dreams and aspirations of the society. The youth have the responsibility to lead the production process in the community, maintain the physical environment and enforce the laws, values and ethos of the community. In some communities, they are assigned some roles in dispute resolution and adjudication (Amusan, 2001; Theisen, 2008). Also, they take on some communal defense roles as security personnel and enforcers of communal decisions.

By virtue of their exuberance, there is a tendency of youths not being assigned some delicate and very sensitive assignments that require a lot of tact, diplomacy and patience. In many conflict zones, it is common to see youths as the arrowheads actively prosecuting and executing such conflicts. In Evbuobanosa dukedom, youths play major roles in conflictual situations. Traditionally, they form the bulk of the fighting force of the community and protect the community from internal and external threats. When there are land disputes involving communities, the youths are at the forefront of agitation to protect and ensure the territorial integrity of communal land and boundaries (Idemudia and Ite, 2006; Elliot, 2014). Unless directed otherwise by the duke through the elder's council, they unequivocally assume the responsibilities of land and community protectors in

concert with other stakeholders in the community. In some instances, they have been known to go against the elders of the community and even the duke if and when they have reasons to believe that the continued existence of the community is in imminent danger and the elders are not taking decisive steps or are in cahoots with the perceived enemies. A case in point is Ogan community, a contiguous community to Evbuobanosa dukedom where sand is also mined.

Ogan community shares boundaries with Abudu, one of the communities in Evbuobanosa dukedom. It is on the eastern bank of River Ossiomo and lies on the Lagos Asaba federal express and it is a sand mining community. It has its own duke traditionally known as the Enogie of Ogan. Ogan community is part of the ancient Benin kingdom and is also a border community between Benin kingdom and Agbor kingdom, as well as between Edo state and Delta state. Sand is mined from a large mining site in Ogan community using excavators and other earth-moving machines. There is no manual excavation of sand from the community. The only mining site in the community is on a tract of land that is owned by the community. The entire sand mining process is controlled by the duke of Ogan and is supervised by his trusted lieutenants appointed by him to carry sand excavation and extraction on behalf of the community.

As the head of the community/dukedom, the Enogie oversees the entire dukedom. However, in 2019, some members of Ogan community led by the youth leaders protested against the perceived imbalance in the way the funds accruing from the extraction of sand were being administered. They alleged that the duke and his household with the active involvement of a few elders, who were the duke's lieutenants, were misappropriating the funds that should have been meant for the uplift and development of the entire community. The agitators went to the duke's palace and demanded that the duke should render an account of the funds derived from sand extraction in the community. In the process, one of the youth leaders was shot dead supposedly by military personnel invited by members of the duke's household. Enraged by the death of their youth leader, the youths of the community mobilized themselves, went to the palace of the duke, destroyed the properties within the palace, burnt the vehicles found in the palace and razed down the entire palace. Therefrom, they proceeded to the houses of the identified lieutenants of the

duke within the community and burnt them down while destroying the properties that they found in those houses including, motor vehicles.

The youths claimed that they have sacked the duke of the community and declared him and the members of his household persona non grata. They alleged that the duke has run the affairs of the community in a manner that was detrimental to the growth and progress of the community, especially the way he and his lieutenants administered the royalty and revenue that accrued to the community from the mining of sand in the dukedom. It is pertinent to note that the violent uprising in the community against the duke, his household and his lieutenants was spearheaded by youths in the community, as a result of their belief that the revenue that should be accruing to the community in terms of royalty from sand mining rights in the area was allegedly being used by the duke's household to feather their nest at the detriment of the larger society.

Some respondents expressed their views on the issues as reproduced below:

> Some members of the community have been disgruntled for a long time over the way the money accruing to the community has been hijacked by the Enogie, his children with the active connivance of some supposed community elders. The money that comes from the sand mining pit owned by the community is believed to have been cornered by them to fund their extravagant lifestyle while the community that owns the land suffers. The youths felt that they have had enough of it and they decided to query the elders and palace chiefs. But a soldier invited by one of the sons of the duke killed the youth leader in cold blood. This angered the other youths who mobilized themselves and sacked the enogie's palace, razing it down (Male/ Ogan Community leader/ Ogan KII 1 / Nov, 2019).

Plate 4.16: Burnt palace resulting from Sand mining conflict at Ogan

Also,

> Trouble started in this community when the youths decided that they can no longer allow the Enogie and his right-hand men to continue to use the sand money that is supposed to be used for the development of the community for their personal use. When the youths demanded that the Enogie should account for the money realized from the community-owned sand mining pit, a soldier invited by one of his sons killed the youth leader. This made the youths very angry. They mobilized and burnt down the enogie's palace, destroyed everything in the palace including vehicles. The Enogie and his family were lucky to escape alive from the community. The youths also burnt down the houses of the enogie's right-hand men who they considered as conspirators with the Enogie in the alleged mismanagement of the community's fund (Male/ Ogan Community leader /Ogan KII 2 / Nov, 2019).

In effect,

> There has been tension for a long time in this community. The people have always been complaining that the money from the sand mining in the communally owned site was being used for personal gains. They have been saying that the management of the fund was very opaque and pointing accusing fingers at the Enogie and his lieutenants. Things reached a boiling point when the youths requested that the Enogie and his lieutenants should render an account of the revenue accrued from sand mining in the community. In the process, the youth leader was killed. The other youths mobilized and razed down the palace of the Enogie, burnt down the houses of his lieutenants and the properties therein. They declared that the Enogie has been sacked from the community and that they no longer want him or his family in the community. As I speak to you, there is no Enogie at Ogan community (Male/ Ogan Community leader / Ogan KII 3/ Nov, 2019).

From the foregoing, it is safe to assert that youths are actively involved in conflictual issues that relate to sand mining, land degradation and conflict. They are critical stakeholders on the issues that affect the society. More often than not, the onus is on them to correct any observed anomaly which they think deserves their attention within the community. This is especially pertinent when the elders who are supposed to be custodians of the cultural ethos and ideals are perceived to be complicit in the anomalies or are handicapped based on some other factors. The youths are willing and able to hold traditional authority symbols to provide an account of their stewardship (Peterson et al,

2002; Idemudia and Ite, 2006; Iwilade, 2014). Their energetic composition makes it easier for them to be agile and alert in handling issues promptly.

Even though they recognise the leadership of the elders and other authority figures, they are not deterred in rising up to the challenge when the occasion warrants accountability from those who have been charged with responsibilities. Furthermore, when confronted with opposition and violence in their quest for a course of general interest on which they agree, they are willing and able to mobilize themselves and deploy force, if necessary to achieve their goals and objectives. They are an army in themselves to confront any challenge that comes their way. Any stakeholder who underrates the capacity of the youth does so at his or her peril. The youths would act whenever they believe that it is their fundamental responsibility to do so in a bid to promote and protect the well-being of their immediate community.

For Ecological Marxism, there is frequent conflict between the forces of production and the relations of production in the course of wealth accumulation in a capitalist system. This contradiction encompasses the ways by which capitalism's course is influenced as a result of the interplay between the forces of production and the relations of production. That is, the forces of production, the different stakeholders including the traditional authority systems and the youths in sand extraction are expected to have some level of friction and conflict as a result of their competing interest for the allocation of value and resources derivable from the sand mining industry (MacKendrick and Davidson, 2007; Foster, Clark and York, 2010). In other words, conflicting interests by the stakeholders trying to protect their stake inadvertently lead to varying levels of conflict in the society.

4.4.6 **The gender networks in land degradation and conflict**

In many societies, there is a division of labour based on gender. Traditionally, men meet instrumental needs while women meet expressive needs. Those job specifications that require the performance of instrumental needs are predominantly performed by males. Some of those jobs require physical exertion of energy. It is common for men to take up jobs that require them to show their masculinity. On the other hand, women are mostly

found in jobs that require them to meet expressive needs (Livesey, 2014). The assignment of responsibilities based on gender is socially defined.

In Evbuobanosa dukedom, the extraction of sand is considered a masculine profession. In the river where sand is mined, no woman is working as a sand digger or jerker. They are all males. This is because the extraction is done manually and requires a lot of physical energy exertion. It is believed that it was physically demanding and not suitable for females. Instead, females are encouraged to engage in other economic activities that are not as physically demanding as sand mining. The gendered division of labour makes it difficult for women to be involved in sand mining activities. A respondent captured it this way:

> The ugly part of it is that you know it is physical work, so it has to do with a lot of manual work. we will look at the future of every digger and since it is the job that we are doing with manpower it will have after effect so that is where we feel very bad about it that we at least when we raise the money we use it to go into other business while sometimes you see that some people that started are no longer into the business. It is not a job for a woman. The physical demand is too much. There is no female sand digger and I would not encourage any woman to do this kind of very hard physical work (Male/Sand miner / Abudu IDI 10 / Feb, 2019).

Consequently,

> Some die in the business when they are old, sickness will come and they just die like that and without even caring because they did not save money for such. So, the problem we have here is that the job is always too ugly because it is manpower work and it has after-effects. It can be physically demanding; what is there is that we know and because of that we plan that after some time we stop and go into a different business and not continue with the hard work (Male/ Sand miner/ Abudu IDI 8 / Feb, 2019).

Sand extraction is considered a physically tasking job and as such, it is not seen as an occupation fit for the womenfolk. In Evbuobanosa dukedom as in several other parts of Africa, there is a division of labour based on gender. Men who are supposedly more muscular undertake the more arduous task of sand extraction. The women are engaged as secretaries in the sand mining industry. Their job requires them to take a record of the quantity of sand excavated and evacuated daily by sand trucks as well as record keeping

and money collection. They are involved with tasks that do not require them to be physically involved in the grueling duties of sand extraction. That also implies that women earn less than men in the sand mining industry as they are engaged in tasks considered as being tangential to sand mining in Evbuobanosa dukedom. The men who are engaged in tasks considered to be at the crux of sand extraction earn better than women from their engagements in the industry.

When it comes to conflictual issues, women perform supportive roles towards their husbands, fathers and relatives. They serve as good strategists advising and encouraging the parties they support. They might not be directly involved in violent conflict, but they plan and serve as think tanks helping formulate winning strategies. They also provide emotional support and care before during and after conflictual issues. Women are good at making alliances and their ideas could make the difference between winning and losing in conflictual situations. Their positions in society as mothers, wives, sisters and daughters position them to network and attract relevant support and allies that give impetus to a party's standing during a conflict.

For Ralf Dahrendorf, conflict in society is diffused and is present in all human relations. Different positions in society command varying amounts of authority and status. Authority was not resident in individuals but was bestowed on positions, part of the social organisation. The social position of the individual invariably determined the extent of control available to the person to define the direction of possible outcomes he or she could have. Authority usually entails both superordination and subordination. Hence, those occupying different positions attracted and wielded influence and control over circumstances based on the level of authority resident in their social positions. From this perspective, men and women occupy different positions in the workplace, wielding different levels of authority, having different status positions. This difference in their social positions and their levels of authority invariably translates into disparate and unequal earnings for men and women in the sand mining industry in Evbuobanosa dukedom. While women may not wield the same level of influence and authority as men because of the patriarchal nature of many African societies, they contribute significantly to the success and failure of any venture they are privy to.

4.4.7 **Elders versus youths in land degradation and conflict**

In many African societies, elders are considered as custodians of the ethos, beliefs, ideals and customs of the people, especially in traditional societies. The elders hold moral authority over the youths, children and other members of the society in matters that have to do with the culture and traditions of the people. To a large extent, they serve as the compass of the communal society with regards to cultural norms and values (Peterson et al, 2002; Luning, 2008; Reboratti, 2012; Khan and Sugie, 2015). As such, they hold a position of preeminence that makes them serve as a guide signposting the direction that society should culturally progress. In the same vein, the youths in such societies stand as the beacon of modernisation and the repository of strength and vigor. They are seen as the most productive segment of society (Reboratti, 2012; Khan and Sugie, 2015). While the elders can be seen as custodians of the cultural heritage of a people, the youth are considered torchbearers of an ever-changing world.

In Evbuobanosa dukedom, the positions of the youth and the elders sometimes collide. This collision results from the difference in the views and perspectives of the elders and the youths with regards to a particular issue. While the elders tend to be more conservative in their outlook on issues, the youths tend to be more contemporary and revolutionary. The elders tend to be more diplomatic in their approach to the resolution of things (Peterson et al, 2002; Luning, 2008). They would usually favour allowing time to resolve some incongruence bedeviling the society. On the other hand, the youths would prefer to exhibit their youthful exuberance in resolving any issue (s) over which they have to contend in the society. These differences in the way youths and elders approach issues could be explained from their different experiences, outlook and tolerance levels. Such incongruence in the approaches preferred by both the elders and the youths inadvertently leads to a clash of positions. Some respondents expressed their views this way:

> The youths being young usually like doing things in a brash manner. They like settling scores with their adversaries almost immediately to show that they are not weaklings. But the elders always try to restrain them because they want to maintain peace in the community. Like they always say they what an elder sees while sitting down, a child would not see it even if he climbs a tree (Male/ Abudu community leader / Abudu KII 4/ Feb, 2019).

Also,

> Well, there was a time when the youths burnt a house in this community. There was a conflict between sand miners who were mostly youths, sand truck drivers and the regular taxi drivers union. It was the same truck drivers and the regular taxi drivers who wanted to impose a daily levy on the sand truck drivers who rejected it and revolted. In the ensuing violent confrontation, some houses were burnt including the motor park, although no life was lost (Male/ Abudu community leader /Abudu KII 6 / Feb, 2019).

Similarly,

> It is in an attempt to curb the excesses of youthful exuberance that the elders through the Ogwedion (elders' council) decreed that people should not fight with weapons. Years ago, the Odionwere (traditional head) of this community made a pronouncement openly that no son or daughter should fight with a sharp object. Any man or woman that indulges in such an act should be brought before the traditional council. There is a fine to that extent. That is the reason why today in Abudu, nobody fights with a sharp object. That is a major reason why there is peace in this community. Even though the sand diggers tend to be rash because the nature of their work is physically demanding, they are also conscious of the norms with regards to fighting with their tools or any other weapon in this community (Male/ Abudu community leader /Abudu KII 7 / Feb, 2019).

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From the foregoing, it can be inferred that the youth tend to settle scores as soon as possible with a show of force so as not to be thought weak or taken advantage of. On the other hand, the elders endeavour to rein in the excesses of the youth and douse tension. They do this by involving the youths in the administration of the social activities within the limits of prescribed behavioural patterns. The expectation is that if youths are involved in the adjudication of disputes, they would work towards promoting harmonious living in society. However, it is not in all cases that the relationship between the youths and the elders is adversarial. In fact, both the elders and the youth collaborate to promote peace in the community. Both groups have a shared responsibility to ensure that a peaceful environment is maintained to attract and promote development (Peterson et al, 2002; MacKendrick and Davidson, 2007). This collaboration is very evident in the conflict resolution mechanisms put in place and jointly operated by the two groups. A respondent avers this way:

> Some years ago, about sixteen years ago, the youth body was set up by the sanction of the elders of the community to help in sanitizing youth activities in the community. It was the elders that set up the youth body. The goal was to help sanitize the community in the sense that when there is any issue that wants to take life, they will ask the youth chairman to make that they bring the parties either to the elders or the police station. Meanwhile, the elders cannot move the same way as the youth, one of the reasons while in every quarter today, there is a youth chairman. There is a quarter Odionwere, there is a quarter youth chairman. We have general leaders. The conflictual issues that the youths can handle, the elders would not handle it. The issues that the youth cannot handle, they will take to the elders. So that is why for a long time, peace has been maintained in this area (Male/ Abudu community leader / Abudu KII 1/ Feb, 2019).

In other words, while elders have a traditional council (Ogwedion) for the administration of the community and maintenance of peace, there is also a youth council empowered by the elders' council to help in the adjudication of cases relating to members of the community. The youth council is headed by the youth chairman. The youth chairman is a youth. The different quarters in the community have their respective youth leaders and there is also a central youth council headed by the general youth chairman. An individual who has a disagreement with another party can go to get the conflict resolved from either the quarter youth council, the general youth council or the elders' council depending on their individual preference. If a case is not satisfactorily adjudicated by the quarter youth council, the individual can proceed to the general youth council to seek redress. If any of the contending parties is not satisfied by the adjudication process at the general youth council, the case can be taken to the traditional elders' council (Ogwedion) for redress. It should be noted that the elders' council has precedence over and above the youth council.

From Ralf Dahrendorf's perspective on conflict, authority was resident in positions and not in individuals. Different positions in society commanded varying amounts of authority. Authority entails both superordination and subordination. Hence, across societies, people wielded authority based on the authority bestowed on the positions that they occupy within social groups. Those in superordinate positions asserted authority over their subordinates based on the level of authority vested in the positions that they occupy. Such control arises because of the expectations attached to positions and not necessarily

the personal attributes of the person occupying the superordinate position. The elders by their social position in the community occupied a position of superordination. As such, the expectation attached to that position required that it should have preeminence over and above the position of the youth in the society. The position of the youth in the society compared to that of the elders was a subordinate position and it is expected to be subservient to that of the elders. As such, while the youths had their prerogative to carry out in the society, they were expected to kowtow to the elders, especially in matters of cultural importance requiring experience and wisdom.

Conflict in society is diffused and is present in all human relations. Different positions in society command varying amounts of authority and status. Authority is not resident in individuals but is bestowed on positions, part of the social organisation. The social position of the individual invariably determined the extent of control available to the person to define the direction of possible outcomes he or she could have. Authority usually entails both superordination and subordination. Hence, those occupying different positions attracted and wielded influence and control over circumstances based on the level of authority resident in their social positions. From this perspective, men and women occupy different positions in the workplace, wielding different levels of authority, having different status positions. This difference in their social positions and their levels of authority invariably translates into disparate and unequal earnings for men and women in the sand mining industry in Evbuobanosa dukedom. To an extent, it can also be explained by the patriarchal nature of the society, where men are seen as the head and women are expected to be subservient.

4.5.1 **Conflict resolution and management mechanisms**

In every human society, conflict is ever-present. It might be latent, simmering in the background. At other times, it might be more visible and result in differing levels of tension and feud. According to Coser (1957), elements of strain and potential conflict are contained in every social system. Conflict may not necessarily be destructive. It can be advantageous for groups and societies if properly managed. The goal of conflict

resolution, therefore, is to channel opposing views and processes towards creating new and perhaps better ways of existing and doing things. At the onset, groups and individuals may not be very clear about the outcome of a conflictual position, but they expect that it would be different from what was in existence. The challenge is the ability to navigate through conflictual situations to deliver new forms of existence that conform to the a priori expectations of actors, groups and individuals, in any given feuding situation. There is a conflict resolution pathway for resolving conflictual issues as they occur. This pathway includes identification, mediation, negotiation, trust-building and engagement.

Conflictual situations are identified. This process involves the identification of the feuding parties as well as the issues over which they disagree. During this process, the key stakeholders who are involved in the conflictual situations are profiled to give an inkling of the full range of the issues at stake and the level of involvement of parties. The gamut of issues over which the feuding parties are in contention are brought to the fore and its entire ramifications identified.

The next stage of conflict resolution is conflict mediation. This involves a neutral mediator who negotiates between conflicting parties to seek mutual agreement between the feuding parties. The mediator should be someone who the conflicting parties believe is reasonably neutral and as such can serve as a negotiator for the resolution of the dispute in question. Also, if the negotiator has the necessary skills and expertise to sift listen, and analyze issues clearly, it would make the negotiation process yield the desired results. The mediator brings the feuding parties to the negating table and gets them to see the need for resolution of the conflict.

During negotiation, the conflicting parties present their positions. They stake their claim on the issues at stake. Their positions do not need to be accepted by others, as long as those staking the claim can articulate their positions and make it known, it becomes a point from which the negotiations can proceed. With the claims and counterclaims being presented, the negotiator navigates through the various issues presented and seeks to identify common grounds from which compromises can be reached. Furthermore, the negotiator encourages the parties to shift positions as much as possible to achieve consensus. It is important to state that the negotiating power of a feuding party reflects

their social standing, their economic position in the society as well as their prowess in adequately marshaling their positions when faced with contending positions and claims. The more parties have at stake, the more they want to protect their interest. Negotiation, therefore, becomes an avenue to get as much as possible for the parties involved in the quest for the entrenchment of their interest.

In Evbuobanosa dukedom, there are mechanisms to consciously address disagreements and conflict before they become very intense and degenerate into serious fracas and violence. There are layers of conflict resolution mechanisms that are active to checkmate conflict and nip it in the bud. Among the sand miners, there is an existing process of conflict resolution that involves them sorting out the issues amongst themselves. There exist a mechanism whereby disagreements are addressed as quickly as possible to minimize the possibility of escalation and violence. One of the respondents captured it this way:

> Conflict can arise if someone takes the working tools or materials that belong to someone else, especially when the owner cannot use them to work because someone else has taken them. When the imposter returns from work, the original owner of the tools would insist that the proceeds of work by the imposter would have to be shared equally. This is a major cause of conflict. Such conflict is usually resolved by a third party adjudicates and often recommends a financial settlement between the parties involved (Male/Sand miner /Abudu IDI 5/ Feb, 2019).

Also,

> Conflict is an ever-present feature. We had a union before whose major aim was to help control the price of our goods. At the moment, we do not have a union because of some reason. If there is disagreement, the elderly ones among us would look into the issue and adjudicate with the aim of ensuring that peace reigns. Our boys, maybe because they do hard work, are very aggressive. This work is not easy, when our people (sand miners) are angry, added to the physically demanding work that they do, they can stab you with a knife or pieces of a broken bottle (Male/ Sand miner / Abudu IDI 8/ Feb, 2019).

Also,

> We quarrel among ourselves sometimes. You know we all are humans, maybe I dig here yesterday, now today by digging here today it means we've, let me use the language open like the underground gravel, if you are there and you are not very intelligent, you will never notice that there is gravel there, so it takes wisdom to understand that this type of gravel is there so when you find out and you dig it, sometimes we do hide it we don't let everybody know that there is gravel here. So, sometimes if we hear the sound of an engine, we will even move from there. So when you dig like that the following day you come and see that somebody is there already, you will now say *you self you nor dey take eye see where person dig, he go say them do am for only you*? So if you don't hold yourself, you will exchange words and it leads to fighting. And the kind of interacting, sometime if we see like that we will still tell ourselves oh boy if only me dig for that place sand go cover am so you better join me dig there, there is something there, so the water current brings sand and some time to cover the gravel, so instead of that you will now tell them that something is there, you will dig and he will dig before the storm, it will not be able to cover everywhere so we start digging just like that (Male/Sand miner /Abudu IDI 5 / Feb, 2019).

Likewise,

> If a conflict results in physical injury or bodily harm, it could result in inviting the police to handle the issue. Some people are very hot-tempered; with any little provocation, they would stab their opponent with a broken bottle. Those that are cool tempered, when there is a disagreement, they resolve it amicably. Those days when our union was active, if there is a disagreement, you summon the parties involved to the union council and whoever is found guilty would be fined. When a person is fined, he usually pays before he resumes work. Even if he goes to work, nobody would buy his wares until he pays his fine (Male/ Sand miner/ Abudu IDI 8 / Feb, 2019).

In the same vein,

> You know we are many so, we have advanced people among us, so if the matter like that arises, we will still come together, one will look into it and say actually, what will happen is that we will forget everything, so we settle, we don't take it out from the river to the land, or take it to the community to settle issues like that. We settle it by ourselves we settle it ourselves (Male/ Sand miner/ Abudu IDI 6 / Feb, 2019).

The foregoing suggests that the capacity to reasonably resolve disputes exist and is deployed among sand miners. They act individually and as a group to promote peaceful

coexistence among themselves. Blame is apportioned where it is deemed appropriate and necessary remedial actions are recommended and acted upon to douse tension and ensure peaceful relations are restored within themselves. In fact, those that are adjudged to have acted inappropriately are sanctioned as they deem fit.

Between the sand miners who extract sand from inside the river and the fishermen who fish inside the same river, both parties often interact. Some of the sand miners are of the view that the sphere of conflict between them and the fishermen is very limited. Some respondents captured it this way:

> There is hardly any conflict between us and the fishermen. They are interested in fish while we are interested in sand and gravel. The gravel and sand are mostly mined from the middle of the river while fishermen fish along the corners or bank of the river. This river is different from other rivers, it flows very fast, and it has a high current. If you go to the river Niger, for instance, you would see nets and some wooden poles holding it. But if you try it in this river, in a matter of minutes it would have been transported downstream by the current of the river. So, the fishermen use the bank of the river. However, sometimes, you might mistakenly drive to the corner of the river and the engine propeller of your boat can hold the net and get stalked, in that case, you cut off the net. This can create discontent in the fisherman, who would usually ask any sand miner about the person that cut the net as would probably not know the particular sand miner involved. When this happens, the sand miner would apologize on behalf of his colleague and that would suffice (Male/ Abudu Sand miners FGD / Abudu FGD 1/ Feb, 2019).

Also,

> An apology from the sand miner would be enough to assuage the pain of the fishermen if his net is inadvertently destroyed by the sand miners' boat. Yes, it would. It is not a common occurrence, sometimes it happens once in six or seven years. It happens by mistake. The fishermen's net is always by the side of the river while the sand miners' activities take place in the middle of the river. The sand miner intentionally avoids the bank of the river so that the propeller of the engine of the boat would not be stuck in any form of debris in the river. If debris gets stuck in the propeller, the boat would go off (Male/Abudu Sand miners FGD /Abudu FGD 2 / Feb, 2019).

More so,

> We see these sand miners all the time inside the river. We relate well with them as we are all trying to make ends meet. Sometimes, the sound of their

> boat engine disturbs our fishing, but we have to bear it as they are not doing on purpose to disrupt our work. They are also doing their legitimate job, earning a living. We don't quarrel with them as we have mutual respect for one another. Sometimes, we help ourselves in case of emergency (Male/ Fisherman / Abudu IDI 17 / Feb, 2019).

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Further interrogation, however, shows that there is a propensity for conflict between the fishermen and the sand miners. Some responses buttress this point:

> The fishermen don't just fish everywhere in the river, there are some particular areas where they fish and those places are the area where there is low current, the current that is there is very low, so where the current is low is where the fish stays. Then where we dig sands is where the current is high so sometimes, they go far because of us they don't want to stay nearby most especially the fishermen we have around here all of them are very far away from us (Male/ Abudu Sand miners FGD / Abudu FGD 1/ Feb, 2019).

Also,

> The area where we mine sand, the fish around there can be described as wise. They are wise because they hardly enter hook or net because of the troubled water, the engine going and coming, so they are used to the noise so they believe human are normally coming here every day but for those silent areas far distance they don't experience anything like noise even the marine issue, they are very far away from this area they go down where there is no noise, both other animals in the river they move far (Male/ Abudu Sand miners FGD / Abudu FGD 2/ Feb, 2019).

Also,

> The extraction of sand disturbs our fishing. Fish does not like noise. As such, we have to go far from the sand miners and the noise from their motorized boats. We have to go to a quiet region that is undisturbed to fish. We have already adjusted to it though because there is not much we can do about it. Before the sand miners started using their motorized boats, it was better and less noisy; but these motorized boats make a lot of noise and sometimes, the propeller can destroy our fishing net if we are not lucky. But they always apologize though and we all intentionally try to keep the peace (Male/ Fisherman / Abudu IDI 18/ Feb, 2019).

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This suggests that the activities of the sand miners inadvertently affect the fishing operations of fishermen; they have to go farther and leave the precinct where the sand

extraction is mostly being carried out. The noise generated from the boats of the sand miners scares off the fish and unsettles them into moving to calmer parts of the river. The fishermen have adjusted to the situation and have adapted their fishing strategies accordingly. Both parties have learnt to accommodate themselves in the river and have evolved into being more tolerant of each other's activities around the river.

Also, between the sand miners and other stakeholders in the sand mining industry, there is conflict. This conflict could be with government officials, drivers' unions or some other sand mining entities. Some respondents averred to that:

> The truck driver pays tax to the government, now before then, the drivers were paying #100 for each sand truck. Per day, that is if you register, they will collect ticket #200, now automatically they inflate the ticket without an agreement because even as we are trading with the drivers now the price of the sand or gravel is what they sell in town, is what we sell in the reserve, so everywhere within this locality but like that of their own, now base on that some other people were given contract, the people that were handling that contract then, was collecting #100 so now because another person took over the contract now he inflate the ticket price so that was what caused the problem and because of that the drivers they refused coming to buy and when they stop buying our business is affected so that was why the youth and the gravel and the sand diggers now together and say come we are hungry you people should before you do this you are supposed to go and meet this people tell them that this is what, because in the morning they stop the first driver saying her must pay #200 since in their union they have discussed that every dipper should #100 for ticket in Abudu, now if any one of them go against the agreement in their part and pay #200, that person will pay fine so the driver has to park and wait for another one, another one came and said it's a lie so the driver said if they don't allow them to pay #100, they will stop work and they will not be coming to Abudu to carry sand or gravel again. So the diggers have to react because it's like stopping them from getting their food. So that was when the government now said is either you people agree to #100 or he will not collect again that was when the conflict now started before they now start fighting before the gravel (sand) diggers reacted; they burnt a house, destroy motor park destroy houses and all that, so the drivers ran away and all that (Male/ Sand miner / Evbuobanosa IDI 2/ Feb, 2019).

Also,

> There was a problem like that that arose after that first one; we have a problem here because of the nature of the road. The buyers decided that they will not carry sand and gravel from Abudu that they will start carrying

> the sand from Ogan and suspend our own. Now they said they are not coming to Abudu to carry sand but they are going to Ogan to carry sand. that Ogan sand, they will be working at Agbor the drivers will be working so we will now be starved we the diggers will now go to them, we assembled ourselves we talked to Agbor people we spoke to them they refused they said no what we do is that we went to the police station we asked the D.P.O. they should call the Ogan people to our attention if not stop work there. they said we are just telling you to make peace but if you refuse we will take our action by ourselves now when we went there we were about 3, I was among to go and inform them on what to do so that peace will reign say they will detain us that we what to create trouble in the community so we said okay sir you can detain us only for that statement that the D.P.O made, one person left and told the others we were still there saying sir detain us until other police now said that sir there is a problem, he asked which problem then the D.P.O (Divisional Police Officer) came out and saw the crowd, he said what is the problem, they said you said you want to detain our people because they came to tell you that we should make peace. The D.P.O. said wait, he drove by himself to Ogan to call the people in that side that they should come, they should call our drivers, that was the same day we settled that matter if you people said you will not come in here to carry gravel and sand then it's the same time stop coming to Ogan for peace to reign, the Ogan people want to tell them that the people that these people came here to make peace. And that we have all agreed to make peace. So both parties agreed that yes, they will settle this matter here and the following morning they began to carry sand and in Ogan community, the work also continued (Male/ Sand miner / Abudu IDI 2/ Feb, 2019).

Consequently,

> we have sand, the sand and the gravel do fall when they are jerking it from our beach there, so sometimes, some other diggers go there by night to dig it, so if they dig it, and it affects my beach and my beach will fall so that's not a police matter so what we do is to go directly to the community and they report such person saying this person dig my beach then the community will now say one, you are going to repair that beach, two you are going to pay him this. Why paying this, is that if you pay that thing you will not have the mind to repeat that thing. So the community does settle issues (Male/ Sand miner / Abudu IDI 13 / Feb, 2019).

When there is conflict, the parties involved can choose to go to the law enforcement agencies to resolve it. But many people do not always go there unless it is a criminal matter as they believe that it might take more time to resolve, might be more expensive and they might not have confidence that they would get justice without paying a bribe.

Furthermore, engaging the legal system of the government would require that the parties should secure the service of an attorney to represent them. Also, in resolving conflict, sometimes such cases are referred to the traditional institution for resolution. The traditional leaders would look at such issues and adjudicate with the goal of promoting justice, equity and fairness. Ultimately, the peaceful resolution of cases is sought by the elders who sit on a council. Some respondents captured the resolution process this way:

> There are times when someone or persons are summoned here; we normally inform them that they are summoned. It is not in all cases that we collect money from people for being summoned. Sometimes too, we ask people to pay money for summons. The reason is that without that monetary payment, some people will not take the issues with seriousness. When the summon money is paid, we would know that the parties involved would take our adjudication or settlement seriously. What we normally do, we ask them if they want us to intervene in their issue. If the two parties agree, we can intervene, but if they don't, we would allow them to go. It is not a do-or-die affair. When a case is criminal in nature, we don't handle it, we refer such cases to the police to handle (Male/ Evbuobanosa Community leader / Evbuobanosa KII 2 / Feb, 2019).

As such,

> When conflict arises, before it is resolved, both parties must agree that they want it settled, they also have to agree that they will abide by the settlement from the traditional conflict resolution systems. The traditional institution is an accessible option for people to resolve conflictual issues that arise in the course of their interactions. There should be a penalty for default, they can place a fine for disruption (Male/ Abudu community youth leader / Abudu KII3 / Feb, 2019).

Also,

> When there is conflict, they don't necessarily have to go to the police. Even the Odionwere can settle the disagreement by calling the parties involved and resolving the issues. The people in the community, elders would come together, listen to the conflicting parties, allow them to state their case. The elders would ask them if they want them to settle the matter. The elders would tell them to abide by the settlement of the grievances. If that is settled ab initio, the elders would ask others to contribute. The parties must first agree for the issues to be settled and commit to abide by the judgment of the elders. It is only when they say that they don't want the elders to settle the issue that the elders would ask them to take their case to where ever they choose to go (Male / Evbuobanosa community youth leader / Evbuobanosa KII 4 / Feb, 2019).

Contrariwise,

> To some extent, if the conflict is not too serious, youths can settle it. The elders can mandate the youths to settle a conflictual issue and give them feedback after settling the issue. It is only when the youths cannot settle it that it goes to the elder's council for resolution. If the elder's council cannot settle it, they can take it to the police, the enogie's palace or the Oba's palace. People first try to resolve it, go to the elders' council before escalating it (Male/Evbuobanosa community leader / Evbuobanosa KII 2 / Feb, 2019).

Also,

> Meanwhile, the elders cannot move the same way as the youth, one of the reasons while in every quarter today, there is a youth chairman. There is a quarter *Odionwere*; there is a quarter youth chairman. We have general leaders. The conflictual issues that the youths can handle, the elders would not handle it. The issues that the youth cannot handle, they will take to the elders. So that is why for a long time, peace has been maintained in Abudu. There are fifteen quarters in Abudu. These different quarters have their quarter leaders that report to the central leadership in the town (Male/ Abudu Community leader / Abudu KII 6 / Feb, 2019).

From the responses above, it can be inferred that when conflict arises, most people in Evbuobanosa dukedom prefer to take such issues before the traditional institutions for resolution. They appear to have a lot of confidence in the fairness and ability of the traditional institution to adjudicate and dispense justice in a timely and affordable manner. This might be because the traditional institution is closer to them than the legal-rational institution. Furthermore, the traditional institution is part of their everyday life, their belief system as well as their fears, concerns and aspirations. Many of them might not go to the legal/rational institutions because of their dislike and distrust of government bureaucracy and red tape. They might not really understand the workings of the law in the government system. But they have a good grasp of the traditional customs and cultural beliefs and practices.

The traditional dispute resolution process entails a process that requires the parties in dispute to willingly agree to the resolution of issues. The system tries to ensure that justice

is served and is also seen to have been served by the feuding parties. The system is well-organised with a clear path for appeal and voluntary participation. There is a youth council that resolves conflict in different quarters as well as a general youth council. The youth council is made up of the youth chairman, a secretary and a treasurer as well as three advisers. The council sits to hear cases and reach amicable settlements. Furthermore, there is an elders' council headed by the Odionwere (who is the oldest indigenous man in the community). The Odionwere is assisted by other elders in the community to sit in council and adjudicate on matters. If for any reason the elders' council cannot resolve any issue, it can be referred to the Enogie (duke) of the dukedom and even to the Oba of Benin kingdom, who is the final authority in all traditional matters in Benin kingdom. This aligns with the works of other scholars that the traditional institution is a force to reckon with in several parts of the world. People tend to utilize a system with moral authority that has served them well over a while, especially if they have faith and trust in it to be fair, just and equitable in dealing with issues.

Furthermore, conflict can also be resolved through the formal legal processes. Aggrieved parties can opt to approach the civil courts to adjudicate in their disputes. The customary courts, the magistrate courts and the high courts can be approached as a court of first instance to resolve disputes. Decisions made by the civil courts are binding on the parties. Those not satisfied by the ruling of the civil courts can upper court judgments at a higher court.

4.5.2 **Early warning system**

An early warning system is a series of processes and procedures designed to provide for-warning about the occurrence of an event. The aim is to give the operators prior notice and help them to activate a crisis management process. An early warning system is designed with the goal of minimizing the deleterious effects of There are procedures and mechanisms that have been put in place to notify the leaders of the community of the possible occurrence of violent conflict. Conflict is an intrinsic part of every human society. The continuous drive for wealth accumulation means that people would contend

for limited resources to meet their limitless needs. In many societies, there are systems and structures put in place to signal the imminent possibility of serious conflict. Such systems are known as early warning systems. These systems are designed in such a way that before conflict escalates, the appropriate authorities would be alerted to the possibility of such. These measures aim at minimizing incidences that lead to conflict and possibly mitigating them before they get aggravated. Some respondents captured it this way:

> Yes, we have procedures to detect and prevent conflict. Before, those that were in forefront of the sand mining business were not enlightened, but now, those that are there are more enlightened, that is why we built that union. The union helps in managing the activities of sand miners and presents a common front. Those of us that are more enlightened, lectures others that are less enlightened not to take the law into their hands. If something that could lead to violent conflict was about to take place, we go to the police. So the police have to look into such matters (Male/Sand miner / Abudu IDI 4/ Feb, 2019).

Also,

> Now like in Abudu here, in the reserve area where we work, if you dig sand by the corner of the river, the community will penalize you, you will pay goat, and drinks and several things even if you are caught once. Because the law is that you dig the river and not the corner of the bush. so anything that makes the community catch anyone or anybody digging by the corner of the river, they will take him to the community head, the *Ogwedion* (Elders' council), then he will now pass judgment on you and you will pay *odegbe n'ekpetin* (A big she-goat and a cartoon of drink) (Male/Sand miner / Abudu IDI 12 / Feb, 2019).

Also,

> Yes, they penalize for indiscriminate excavation of sand. Where we work, we have a community representative there that collects dues on behalf of the community. So that one is the eyes of the community and immediately something like that happens if he warns you for the first time, you continue, he will go and report to the community that somebody is digging inappropriately and he asked him to stop but he refused. Then, the community would then take action by asking the person in question to appear before it and arrest the person as the case may be (Male/Sand miner/Abudu IDI 8 / Feb, 2019).

More so,

> Some years ago, the *Odionwere* (traditional head) of this community made a pronouncement openly that no son or daughter should fight with a sharp object. It became a taboo for anybody to use a sharp instrument to fight his or her neighbour. Any man or woman that indulges in such an act should be brought before the traditional council. There is a fine to that extent. That is the reason why today in Abudu, nobody fights with a sharp object. That is a major reason why there is peace in this community (Male/ Abudu Community leader/ Abudu KII 1 / Feb, 2019).

Additionally,

> The youth body was set up by the sanction of the elders of the community to help in sanitizing youth activities in the community. It was the elders that set up the youth body. The goal was to help sanitize the community in the sense that when there is an issue that wants to take life, they will ask the youth chairman to make that they bring the parties either to the elders or the police station. Meanwhile, the elders cannot move the same way as the youth, one of the reasons while in every quarter today, there is a youth chairman. There is a quarter *Odionwere*, there is a quarter youth chairman. We have general leaders. The conflictual issues that the youths can handle, the elders would not handle it. The issues that the youth cannot handle, they will take to the elders. So that is why for a long time, peace has been maintained in Abudu. At the different quarters and levels, peace maintenance is devolved. There are deterrents to fighting with harmful objects (Male/Community leader / Abudu KII 6 / Feb, 2019).

From the responses presented above, it is safe to say that an early warning system for conflict identification and mitigation exists in Evbuobanosa dukedom. Part of the early warning system is the positioning of community representatives among the sand miners to alert the community's leadership about any behavioural pattern that was likely to result in a breach of the peace in the community. The representative was the eyes and ears of the community to raise the alarm whenever an individual engaged in any activity that was deemed deleterious to the well-being of the entire society. He was required to stay with the sand miners daily and collect revenue on behalf of the community from sand truck drivers. With this arrangement, it was easier for the community to have a foreknowledge of a potentially volatile situation before it spirals out of control.

Another component of the early warning system is the ease with which people can seek redress for any grievance from the traditional institution at very little or no cost. For ease

of administration, each community is subdivided into quarters. These quarters have their youth leaders as well as elderly heads called Odionwere. These quarter heads can hold court and sit to adjudicate disputes. An aggrieved individual can go to the youth leaders in the quarter and seek redress. He can also go to the quarter "Odionwere" or elderly head to seek redress. If any of the parties is not satisfied with the adjudication from the quarter leadership, they can seek redress from the central youth chairman or the elders' council headed by the general Odionwere. If they are not satisfied with the adjudication from this level, they can seek redress from the duke of the dukedom, the "Enogie". It is important to state that an aggrieved person can seek redress from any of these traditional authority positions as a court of the first instance. If the individual is still not satisfied with the adjudication from any of these institutions, he can appeal to the Oba of Benin, who is the final authority on traditional matters in the Benin kingdom. It is also pertinent to note that approaching these traditional institutions for redress is largely inexpensive as the individual does not need to secure the service of an attorney and they can be easily approached. This elaborate system makes it relatively easy for the individual to seek redress if wronged and minimizes the chances of the individual or group taking the law into their own hands by engaging in violent actions.

Furthermore, some customary laws and ordinances limit the use of violent weapons in seeking redress. For instance, there is a law in Abudu that prohibits the use of sharp objects or weapon during a disagreement. It is forbidden for anybody to hold a sharp object whether they intend to use it or not when they disagree with others and it results in fisticuffs. Whoever holds a sharp object and raises it against his or her neighbour would pay a non-negotiable fine of a carton of drink and a big she-goat (*odegbe n'ekpetin*) irrespective of whether the individual uses it or does not even intend to use it. The goal of that ordinance is to minimize very serious bodily harm that can result from using any sharp object or weapon during any disagreement. While it might not eliminate conflict, it serves as a deterrent to the use of sharp objects or weapon during a disagreement by members of the society.

Hence, society strives to create a system that minimizes the occurrence of unpleasant situations like violent conflict through the use of its traditional institutions and moral

authority to mitigate feud. This aligns with the ideas of Peterson et al (2002) that moral authority serves as a basis for controlling the way people act when confronted with situations that are not pleasant to them. The traditional authority system serves as a potent complement to the legal/rational system in maintaining peace and it serves as a force of social control. The traditional institution was easier for many people to access and as such, they patronized it to resolve their disagreements.

4.5.3 **Conflict prevention/ minimisation, corporation and appeasement processes**

As much as possible, the community tries to minimize conflict in society. They do whatever they can to prevent conflictual situations. Several measures are put in place to foster harmonious relationships among the different members of society. This is in recognition of the need to create an enabling environment where the community can progress and achieve the greater good for the greater members of the community.

One of the ways through which the community fosters corporation among its members is by encouraging marriage among different groups in the community. When people inter-marry, they tend to see themselves as in-laws. As in-laws, they work to protect themselves and create a safe environment for their children to thrive and achieve their goals and aspirations. In such affinal situations, they see themselves as relatives bound by marriage with joint responsibility to create a safe environment where they would be safe. As such, they jointly work together and corporate for their mutual interest in society.

Also, the existence of different clubs, guilds, associations and groups of common interest binds members of such groups with similar interests. It is in the enlightened self-interest of people to promote harmony with members of groups and associations with whom they share common interests and aspirations; this necessitates that they should work together. In such situations, when people disagree, they have to find common ground and resolve their differences amicably. For many of these associations and groups, they meet regularly and their routines intertwine to help them forge common bonds and a sense of camaraderie. The solidarity so created helps in promoting peaceful existence in the society. In the same vein, the community creates an atmosphere where people can easily

seek redress peacefully whenever they believe that they have been unfairly treated by some other member(s) of the community. The pathways to seek redress are made to be as accessible as possible for members of the society irrespective of their status in society. Some respondents captured this way:

> Some of us belong to the same club and association. We watch out for each other as we see ourselves as brothers and sisters. In fact, we are sworn to protect each other and to ensure that nobody does anything that would harm the other. As co-members of the same guild, whenever we have any disagreement, we are under obligation to resolve amicably. This resolution starts at the guild or association level. If for any reason such a conflict cannot be resolved at the association level, it is brought before the elders of the community (Male/ Sand miner/ Abudu IDI 9/ Feb, 2019)

Also,

> The community encourages marriage among members of the community. This way, people who are connected by marriage would not fight with themselves. After all, it is believed that when people get married, their in-laws become their parents, brothers and sisters. This bond created through marriage helps to promote harmony and makes it easier for people to resolve their differences as members of the same large family (Male/ Community Leader/ Abudu KII 6/ Feb, 2019)

More so,

> As members of the same community, our interests intersect at different points. For instance, some of our children attend the same school and we belong to the same Parents Teachers Association for our children. We have to corporate for the good of our children. As a matter of fact, some of us attend the same church and live in the same neighbourhood. If we want to live peacefully, it is required that we actively pursue peace with our neighbours at all times (Male/Sand Miner/ Abudu IDI 5/ Feb, 2019).

And,

> The elders and community leaders always harp on the need to maintain peace in the area. They always remind us that it is in the interest of the entire community to promote peaceful relations. In our church meetings, neighbourhood meetings, association meetings there is always and emphasis on protecting peaceful environment for businesses to thrive. A peaceful atmosphere attracts investments and enables people to engage in their business activities (Male/ Community Member/ Evbuobanosa IDI 2/ March, 2019).

From the foregoing, it can be deduced that the community promotes peace by getting the people actively involved in ensuring that they live peacefully with their neighbours. The people are made to understand that it is in their interest that harmony reigns and the community is at peace. After all, people can engage in their business better when it is safe for them to do so. It is difficult for people to engage in their legitimate businesses when it is not safe for them to do so. The ligatures, bonds and linkages that hold society together make it easier for members of the society to stay together and maintain peace. The intersections that exist based on the different spheres where they have to co-operate make it possible for people to intentionally minimise the spectre of conflict in their daily activities. The bonds that hold people together constrain them to be more accommodating with one another and compel them to seek avenues of redress for any disagreement that may arise in the course of their daily activities. In Evbuobanosa dukedom, people tend to live harmoniously out of necessity. Even though the community leaders encourage people to live harmoniously, they do so because they believe that it is in their interest to live in peace with their neighbours. In order to protect their stake in the society, they actively ensure that there is peace. In is in the enlightened self-interest of stakeholders to ensure that there is a peaceful atmosphere that supports the achievement of their goals. Whenever peace is promoted, it is to further the interests of the stakeholders and enable them achieve their predetermined goals. The bonds that exist are tools that the elites exploit to serve their interests. The elites leverage their influence on the social institutions to promote aims and enforce their desired outcomes on processes and social interactions.

However, the conflict resolution mechanisms are mostly controlled by the ruling elite. The networks of conflict management protect the interest of the elite miners. The wealth accumulation drive of the capitalist miners is better enhanced when they can continuously extract sand. This “peaceful” atmosphere for sand extraction is the ultimate goal of the conflict resolution mechanisms and not necessarily fairness. Peaceful coexistence and harmony as promoted and adjudicated by the ruling class is a construct of the powerful to protect their interest and further feather their nest. The ruling elite stand to gain tremendously if the sand extraction process is allowed to run with minimal hitches. The un-impeded process of sand mining promotes the wealth accumulation drive of the

capitalist. As such, they protect their interest by promoting peaceful resolution of disputes that ensures that the status quo is maintained.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Summary

Sand mining is an economic activity engaged in by people as a source of livelihood. There was extensive sand extraction in the area. Most of the sites from which sand was extracted were not licensed. The unlicensed mining sites extracted sand manually, while the licensed mining sites used machines for their operations. The process of sand extraction inherently involves the interaction between the social environment and the physical environment. In this interaction, the extraction of sand aggregate inadvertently leads to land degradation. The exploitation of the natural resource through the extraction of sand from land surfaces and riverbeds leaves the land denuded from its pristine state. As sand is extracted and land is degraded, the interplay of social forces competing for scarce resources often comes into conflict. Sometimes, the conflict can be violent; at other times, it might be non-violent. The conflict usually involves different stakeholders at various levels of interaction.

Several people earn their livelihood from sand mining activities. This occurs at the different levels of the value chain in the sand mining process, farming, fishing and other activities that are related to land and the environment. Hence, whatever affects the land or the environment also affects them.

Social relations is concerned with the exchanges, connections and associations between members of the society. The social relations in any society embody contacts that necessarily take place as people share common resources, space and exchange value to eke out a living. In the course of interactions, bonds, pacts and alliances are built; strengthened and sometimes strained to the extent of being severed. People exchange ideas and material objects as they interact within the confines of proximate geographical space.

The degradation of land as a result of sand mining affects different aspects of community life. Land degradation limits the availability of land resources and sometimes to a souring of relations. When this occurs, social interaction could degenerate into different levels of conflict depending on how it is managed; the willingness and capacity of the parties involved to escalate the conflictual issues as well as other dynamics of social control at play.

Land degradation resulting from sand mining affects the physical and mental health of community members. Health is a state of complete physical, mental and social wellbeing and not merely the absence of disease and infirmity. The social environment which derives from social interactions and its concomitant social support system plays a key role in maintaining health. An individual's state of mind which often results from social interaction can affect his or her wellbeing. Humans are cultural beings and their perspectives and understanding of the world are influenced by the cultural milieu in which they have been brought up. When people think, believe or perceive that a part of their cultural heritage is being denigrated, maligned, lost or eroded significantly, it can be very upsetting for them. How people think about their health and their behaviour born out of their thought processes has a way of influencing their health as well as that of their community of residence. The social and cultural components invariably intermingle with human biology to impact the health of a person.

Land degradation does lead to contamination of air, water and soil. The environmental constituents of a location also influence the health of the population. People living in an area where there is a preponderance of dust particles in the air tend to be exposed to certain illnesses associated with dust, such as respiratory complications.

Security is a state of freedom from worries of loss, an assurance that something of value will not be taken away. With the attendant land degradation occasioned by sand mining, an aspect of the people's cultural heritage is invariably lost. The land is a part of ancestral and cultural heritage passed down through generations. There is a special bond that exists between a people and their land. This bond is enunciated and expressed in the beliefs and practices of a people when they swear oaths and bind themselves calling on the gods, their

forefathers to bear witness and the land as a link, an intermediary between them and their forebears.

Many artisanal sand miners are economic migrants who had come to Evbuobanosa dukedom in search of jobs and livelihood. While their presence enriches the talent pool of the area, it could also create stress to the social fabric of their host communities. These societal stresses emanate from the injection of different cultural beliefs and ideals that migrants from other ethnic backgrounds hold that might not be in tandem with those of the host community. The interplay of these social factors could create tensions that can threaten the peace and security of the community. It is also germane to note that the influx of economic migrants into the society might not always increase the spectre of insecurity. The influx of these economic migrants might actually help in boosting economic activities within Evbuobanosa dukedom. As more people get involved in sand extraction in the dukedom, they deploy their knowledge, skills and expertise into developing the sector. The increase in the economic well-being of the community can minimize the likelihood and incidence of social tensions. This is so because the more people earn, the more able they are to meet their basic needs and the more desirous they ought to be for a secured social environment. It is also apt to note that increasing prosperity in an area can actually serve as an attraction for unscrupulous elements to perpetrate acts of criminality in society.

Sand mining and land degradation in Evbuobanosa dukedom have implications on the survival and poverty status of the people. Several people are involved in the sand mining industry. Their involvement at different levels of sand extraction enterprise enables them to earn a living and assure their livelihood. They are also assured of the ability to provide food, clothing and shelter for themselves, their households and their family members. As people work and earn from their involvement in sand mining, their purchasing power is enhanced with its resultant effect on the quality of life. With the degradation of land arising from sand mining, the survival of those who depend on the land for their livelihood is impeded. With the degradation of the land, those whose livelihood is hinged on producing from a non-degraded land would be compelled to seek an alternative location where the land is suitable to earn a living. Farmers are the most affected in their

occupation by the degradation of the land. The destruction of farmlands as a result of sand mining activities implies that those affected might possibly slip into poverty if they are not able to get a commensurate alternative in time.

In Evbuobanosa dukedom, land degradation as a result of sand mining has affected different aspects of the people's ways of life. Prior to the commercial boom in sand mining, the community was largely communal in its worldview. Everybody cared for his neighbour and wealth-generating resource was communally owned and redistributed. The land was owned by the community and controlled by families within the community. Such a valuable resource as land was not owned by an individual but by the community and administered through the family institution. The goal was to promote inclusiveness in wealth distribution and allocation. With modern capitalism are evident in sand mining, the land is increasingly being seen as a resource that can make an individual rich. Powerful individuals within families now appropriate their family land and use it personally or sell such communally owned land to sand miners. Personal values and interests are now being promoted over those of the community as a whole. As people commodify the environment to grow their wealth stock, they inadvertently create conflict between the natural environment which sustains humanity and the profit they can make as individuals.

The social impact of land degradation is mitigated through communal control of sand extraction in areas that are prone to easy and visible land denudation. Community representatives are deployed to ensure that sand is mined only in designated areas. Also, the deleterious effect of land degradation on the social life of the people is mitigated through the operations of social support systems. Social support systems like the family and kinship network, age group associations, religious bodies, social clubs, guilds and professional unions act as a buffer; helping people to confront their challenges and giving them every support possible.

Different groups have contended over mining rights, royalty distribution and appropriate compensation for degraded land arising from sand extraction. Traditional landlords have had issues with their children over the most appropriate ways to mine sand and distribute the resources generated therefrom. There is a web network that connects those involved in sand mining. The linkage is in the form of who they are, their position in the sand mining

production chain, their social status as well as their idiosyncrasies. Sand mining-related conflict could be between sand miners and truck drivers, sand miners in one location and those in another location or sand miners and other interest groups in the society. The likelihood of conflict of interest increases depending on the dynamics of the composition of the other interest group(s). This is so, as individual sand miners being members of the larger society can have vested interest in some other groups. Sometimes though, conflict might not be between individuals; it might be a communal conflict between whole communities contesting with themselves for the control of prized resources.

Procurement of conflict can be done by individuals or groups who are desirous of promoting a particular agenda within the context of the existing social milieu. Groups tend to engage in conflicts with the aim of making an impact. They might not necessarily win outrightly, but they can stake a claim to be considered as stakeholders in the allocation of resources. In Evbuobanosa dukedom, the different competing interests jostle with each other to protect their interest and claim.

During the sand extraction process, frictions are created between the different stakeholders in the ensuing tension and adversarial engagements. Individuals and groups are involved to varying degrees. Their levels of involvement to a large extent reflect their stake in sand mining, their level of interest in the process, the amount of resources at their disposal as well as their projected cost and benefit analysis in the near future. The personalities involved in sand mining, land degradation and conflict in Evbuobanosa dukedom are inherently stakeholders who are interested in protecting their stake and maximizing the value that they can get in the process. While some of them are acting in their narrow personal interest, others act in the interest of the larger society.

When there are conflictual issues, support can be gotten from within the community or outside the community depending on the nature of the conflict, the extent of the conflict as well as the intensity of the conflict. People in conflictual positions get support for their positions by drawing on their extensive social contacts. When the conflict is seen as an existential threat to the well-being of the family, other kinsmen easily show their solidarity and could contribute their quota towards ensuring that the best possible outcome is achieved in the conflict. Support can be gotten from local mercenaries in the form of cult

group members, members of secret societies as well as other groups and associations wherein solidarity can be gotten from. In other words, the network of militants and support groups for the prosecution of conflict revolves around kinship groups, cult groups and associations within the area.

Youths play major roles in conflictual situations. Traditionally, they form the bulk of the fighting force of the community and protect the community from internal and external threats. Youths are particularly involved in conflictual issues that relate to sand mining, land degradation and conflict. Elders are considered as custodians of the ethos, beliefs, ideals and customs of the people, especially in traditional societies. The elders hold moral authority over the youths, children and other members of the society in matters that have to do with the culture and traditions of the people. They occupy a position of superordination and the expectations attached to that position, require that it should have preeminence over and above the position of the youth in the society. They hold a position of preeminence that makes them serve as guides' signposting the direction that society should culturally progress.

While the elders can be seen as custodians of the cultural heritage of a people, the youth are considered torchbearers of an ever-changing world. The positions of the youth and the elders sometimes collide. This collision results from the difference in the views and perspectives of the elders and the youths concerning particular issues. While the elders tend to be more conservative in their outlook on issues, the youths tend to be more contemporary and revolutionary. The elders also tend to be more diplomatic in their approach to the resolution of things. They would usually favour allowing time to resolve some incongruence bedeviling the society. On the other hand, the youths would prefer to exhibit their youthful exuberance in resolving any issues over which they have to contend in the society. Such incongruence in the approaches preferred by both the elders and the youths inadvertently leads to a clash of positions. This becomes very disturbing when the elders who are supposed to be custodians of the cultural ethos and ideals are perceived to be complicit in the anomalies or are handicapped based on some other factors.

Part of the early warning system to nip conflict at the bud is the positioning of community representatives among the sand miners to provide a timely alert. The community

representative served as the eyes and ears of the community to raise the alarm whenever an individual engaged in any activity that was deemed deleterious to the well-being of the entire society. With the arrangement, it was easy for the community to have a foreknowledge of a potentially volatile situation before it spirals out of control. Another component of the early warning system is the open-access provided for conflict resolution. It is very easy for people to seek redress for any grievance from the traditional institution at very little or no cost. If any of the complaining parties are not satisfied with the adjudication from any level of dispute resolution, they can always appeal to a higher level for redress.

Also, some customary laws and ordinances limit the use of violent weapons in seeking redress. When people disagree in Evbuobanosa dukedom and it results in fisticuffs, it is forbidden for anybody to hold a sharp object, whether they intend to use it or not. Whoever holds a sharp object and raises it against his or her neighbour would pay a fine of a carton of drink and a big she-goat irrespective of whether the individual uses it or not. The goal of that ordinance is to minimize very serious bodily harm that can result from using any sharp object or weapon during any disagreement.

5.2 **Conclusion**

Sand mining in Evbuobanosa dukedom, Edo state is structured on positional elite-artisanal working-class relational-platform. It is accommodated by traditional arrangements and legal-rational permits. The positional elites exert their influence over mining activities to promote their interest and perpetuate their privileged circumstances. The working class mine to survive and are inadvertently trapped in an exploitative frame that preserves the status quo. The existing traditional arrangements are based on customary norms that govern community relations and resource appropriation. The government stipulates mining codes and issues permit to operators based on predetermined criteria.

5.3 Recommendations

It is recommended that the local inhabitants should participate more actively and sustainably to benefit maximally from what is extracted from the ground. This would promote equity and fairness in the distribution and utilization of sand mining resources.

The policy on the remediation of abandoned pits as contained in the Nigerian Minerals and Mining Act should be implemented by the agencies of government. Furthermore, alternative livelihoods like digital skills empowerment should be encouraged among youths in the study area to minimize youth involvement in sand mining induced conflict.

The communal conflict resolution strategies through traditional institutions should be encouraged and strengthened. Also, Non-Governmental Organisations should carry out periodic enlightenment campaigns for sand miners that extract sand from the river on the need to stick to mining only from the riverbed and not from the river banks to maintain land integrity and enhance sustainability. The government should implement sustainable mining policies.

5.4 Contributions to knowledge

Contribution to research The research showed that the activities of sand miners have a huge impact on the social and economic life of the community. The interplay of social forces arising from sand mining-induced conflict makes the threat of violent conflict an ever-present feature that can escalate. Sand mining and land degradation follow an exploitative frame that entraps poor labourers as critical workforce who mine for further enrichment of the mining elite at expense of land integrity and developing implications for the core of poor labourers and community members.

Contribution to theory The study contributed to theory and extended it by showing that the network of conflict management protects the interest of the elite miners. The resources extracted from the land are controlled by the ruling class and they protect these resources through the political, traditional and religious institutions over which they exert influence.

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APPENDIX i

RESEARCH INSTRUMENT FOR "SAND MINING, LAND DEGRADATION AND CONFLICT MANAGEMENT IN EVBUOBANOSA, EDO-STATE"

INTERVIEW GUIDE FOR IN-DEPTH INTERVIEW, FOR RESPONDENTS IN EVBUOBANOSA DUKEDOM

Gender of the respondent_____

Designation/Position of respondent _____

Length of time in position_____

Date of interview_____

Greetings,

This study seeks to examine sand mining, land degradation and conflict in Evbuobanosa dukedom in Orhionmwon local government area of Edo State, Nigeria. This research is purely for academic purposes and part of the requirements for the award of a Doctorate degree in Sociology. The information that will be given by you will go a long way in achieving the aim of this study. Your participation will be appreciated as you are not under any obligation to do so. Information given will be treated with the utmost confidentiality. I thank you.

Sir/Ma, will you like to participate in the interview? Yes _____,
No_____

The extent of Sand Mining in the Study Area

Probe for

1. The nature of land excavation
2. The extent of land excavation
3. The impact of land excavation on
    a. The topography
    b. The soil
    c. Erosion processes
    d. Flooding
    e. The vegetation
4. The impact of land excavation on the value of land.

Structural Organization of Sand Mining

Probe for

1. How sand mining is structurally organised
2. The people involved (in terms of expertise, skills, indigeneship)
3. The norms and values and rules guiding sand mining
4. Social groupings involved.
5. Social bonding, processes involved.
6. Structural specializations in sand mining.
7. Reasons for structural specialisations
8. The possibility for structural mobility.

Livelihood Dimension of Land Degradation

Probe for

9. How land degradation impacts community social relations.
10. The impact of land degradation on

a. Livelihood.

b. Health

c. Security

d. Poverty statuses and survival

e. Production processes

f. Farming

11. How land degradation has affected or impacted social norms and values.
12. Local songs, dirge, philosophies, proverbs on land degradation and impact on people.
13. Locally devised coping strategies to mitigate the social impact of land degradation.

Network of Sand Mining and Land Degradation induced conflict

Probe for

14. The network of sand mining and conflict.
15. The groups that are active in conflict procurement/causation.
16. Individuals and personalities in land degradation and conflict.
17. The networks of local mercenaries and militants.
18. Youths and land conflict
19. The gender networks in land degradation and conflict
20. Elders versus youths in land degradation and conflict.

Conflict Management Mechanisms

21. Conflict resolution pathways in terms of
    a. Identification
    b. Mediation
    c. Negotiation
    d. Trust building
    e. Engagement
22. Early warning system
23. Conflict prevention/Minimization
24. Corporation/collaboration among conflicting groups
25. Appeasement processes.

APPENDIX ii

RESEARCH INSTRUMENT FOR "SAND MINING, LAND DEGRADATION AND CONFLICT MANAGEMENT IN EVBUOBANOSA, EDO-STATE"

INTERVIEW GUIDE FOR KEY INFORMANT INTERVIEW FOR RESPONDENTS IN EVBUOBANOSA DUKEDOM

Gender of the respondent_____

Designation/Position of respondent _____

Length of time in position_____

Date of interview_____

Greetings,

This study seeks to examine sand mining, land degradation and conflict in Evbuobanosa dukedom in Orhionmwon local government area of Edo State, Nigeria. This research is purely for academic purposes and part of the requirements for the award of a Doctorate degree in Sociology. The information that will be given by you will go a long way in achieving the aim of this study. Your participation will be appreciated as you are not under any obligation to do so. Information given will be treated with the utmost confidentiality. I thank you.

Sir/Ma, will you like to participate in the interview? Yes _____,
No_____

The extent of Sand Mining in the Study Area

Probe for

5. The nature of land excavation
6. The extent of land excavation
7. The impact of land excavation on
    f. The topography
    g. The soil
    h. Erosion processes
    i. Flooding
    j. The vegetation
8. The impact of land excavation on the value of land.

Structural Organization of Sand Mining

Probe for

26. How sand mining is structurally organised
27. The people involved (in terms of expertise, skills, indigeneship)
28. The norms and values and rules guiding sand mining
29. Social groupings involved.
30. Social bonding, processes involved.
31. Structural specializations in sand mining.
32. Reasons for structural specialisations
33. The possibility for structural mobility.

Livelihood Dimension of Land Degradation

Probe for

34. How land degradation impacts community social relations.
35. The impact of land degradation on

g. Livelihood.
h. Health
i. Security
j. Poverty statuses and survival
k. Production processes
l. Farming

36. How land degradation has affected or impacted social norms and values.
37. Local songs, dirge, philosophies, proverbs on land degradation and impact on people.
38. Locally devised coping strategies to mitigate the social impact of land degradation.

Network of Sand Mining and Land Degradation induced conflict

Probe for

39. The network of sand mining and conflict.
40. The groups that are active in conflict procurement/causation.
41. Individuals and personalities in land degradation and conflict.
42. The networks of local mercenaries and militants.
43. Youths and land conflict
44. The gender networks in land degradation and conflict
45. Elders versus youths in land degradation and conflict.

Conflict Management Mechanisms

46. Conflict resolution pathways in terms of
    f. Identification
    g. Mediation
    h. Negotiation
    i. Trust building
    j. Engagement
47. Early warning system
48. Conflict prevention/Minimization
49. Corporation/collaboration among conflicting groups
50. Appeasement processes.

APPENDIX iii

RESEARCH INSTRUMENT FOR "SAND MINING, LAND DEGRADATION AND CONFLICT MANAGEMENT IN EVBUOBANOSA, EDO-STATE"

INTERVIEW GUIDE FOR FOCUS GROUP DISCUSSION FOR RESPONDENTS IN EVBUOBANOSA DUKEDOM

Gender of the respondent_____

Designation/Position of respondent _____

Length of time in position_____

Date of interview_____

Greetings,

This study seeks to examine sand mining, land degradation and conflict in Evbuobanosa dukedom in Orhionmwon local government area of Edo State, Nigeria. This research is purely for academic purposes and part of the requirements for the award of a Doctorate degree in Sociology. The information that will be given by you will go a long way in achieving the aim of this study. Your participation will be appreciated as you are not under any obligation to do so. Information given will be treated with the utmost confidentiality. I thank you.

Sir/Ma, will you like to participate in the interview? Yes _____,
No_____

The extent of Sand Mining in the Study Area

Probe for

9. The nature of land excavation
10. The extent of land excavation
11. The impact of land excavation on
    k. The topography
    l. The soil
    m. Erosion processes
    n. Flooding
    o. The vegetation
12. The impact of land excavation on the value of land.

Structural Organization of Sand Mining

Probe for

51. How sand mining is structurally organised
52. The people involved (in terms of expertise, skills, indigeneship)
53. The norms and values and rules guiding sand mining
54. Social groupings involved.
55. Social bonding, processes involved.
56. Structural specializations in sand mining.
57. Reasons for structural specialisations
58. The possibility for structural mobility.

Livelihood Dimension of Land Degradation

Probe for

59. How land degradation impacts community social relations.
60. The impact of land degradation on

m. Livelihood.

n. Health

o. Security

p. Poverty statuses and survival

q. Production processes

r. Farming

61. How land degradation has affected or impacted social norms and values.
62. Local songs, dirge, philosophies, proverbs on land degradation and impact on people.
63. Locally devised coping strategies to mitigate the social impact of land degradation.

Network of Sand Mining and Land Degradation induced conflict

Probe for

64. The network of sand mining and conflict.
65. The groups that are active in conflict procurement/causation.
66. Individuals and personalities in land degradation and conflict.
67. The networks of local mercenaries and militants.
68. Youths and land conflict
69. The gender networks in land degradation and conflict
70. Elders versus youths in land degradation and conflict.

Conflict Management Mechanisms

71. Conflict resolution pathways in terms of
    k. Identification
    l. Mediation
    m. Negotiation
    n. Trust building
    o. Engagement
72. Early warning system
73. Conflict prevention/Minimization
74. Corporation/collaboration among conflicting groups
75. Appeasement processes.

APPENDIX iv

RESEARCH INSTRUMENT FOR "SAND MINING, LAND DEGRADATION AND CONFLICT MANAGEMENT IN EVBUOBANOSA, EDO-STATE"

INTERVIEW GUIDE FOR CASE STUDY FOR RESPONDENTS IN EVBUOBANOSA DUKEDOM

Gender of the respondent_____

Designation/Position of respondent _____

Length of time in position_____

Date of interview_____

Greetings,

This study seeks to examine sand mining, land degradation and conflict in Evbuobanosa dukedom in Orhionmwon local government area of Edo State, Nigeria. This research is purely for academic purposes and part of the requirements for the award of a Doctorate degree in Sociology. The information that will be given by you will go a long way in achieving the aim of this study. Your participation will be appreciated as you are not under any obligation to do so. Information given will be treated with the utmost confidentiality. I thank you.

Sir/Ma, will you like to participate in the interview? Yes _____,
No_____

CASE STUDY INTERVIEW GUIDE

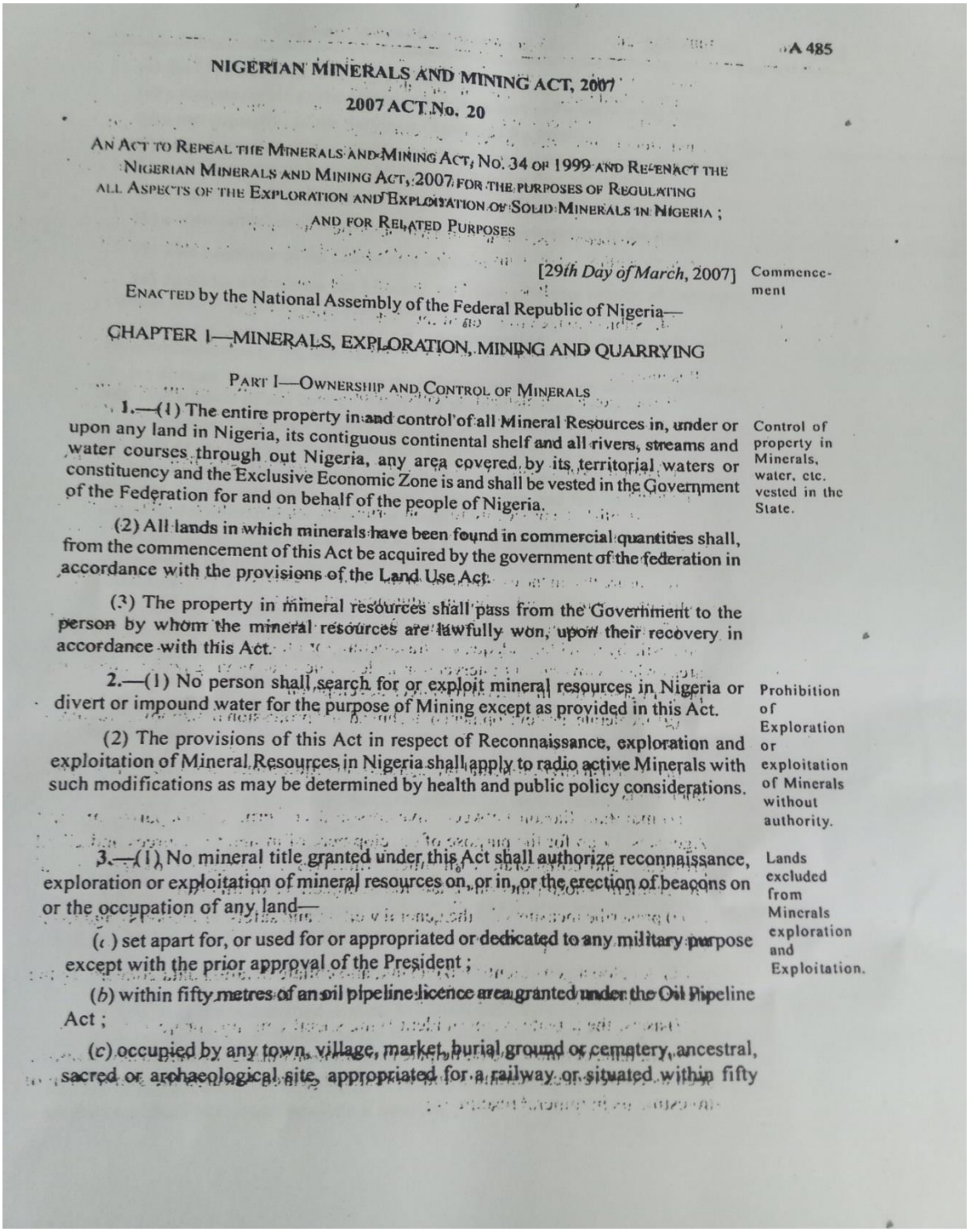
A. Give general information about sand mining in the area.
   Probe for
   a. Ownership and acquisition of mining rights
   b. License acquisition
   c. Sand mining processes
   d. Control of mining pits
B. Sand mining-induced conflict

Probe for

a. Type of conflict
b. Networks of conflict
c. Conflict resolution mechanism
d. Community relations

Appendix v

Nigerian Minerals and Mining Act, 2007



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NIGERIAN MINERALS AND MINING ACT, 2007

2007 ACT No. 20

AN ACT TO REPEAL THE MINERALS AND MINING ACT, No. 34 OF 1999 AND RE-ENACT THE NIGERIAN MINERALS AND MINING ACT, 2007 FOR THE PURPOSES OF REGULATING ALL ASPECTS OF THE EXPLORATION AND EXPLOITATION OF SOLID MINERALS IN NIGERIA ; AND FOR RELATED PURPOSES

[29*th Day of March*, 2007] Commencement

ENACTED by the National Assembly of the Federal Republic of Nigeria—

CHAPTER I—MINERALS, EXPLORATION, MINING AND QUARRYING

PART I—OWNERSHIP AND CONTROL OF MINERALS

Control of property in Minerals, water, etc. vested in the State.

1.—(1) The entire property in and control of all Mineral Resources in, under or upon any land in Nigeria, its contiguous continental shelf and all rivers, streams and water courses through out Nigeria, any area covered by its territorial waters or constituency and the Exclusive Economic Zone is and shall be vested in the Government of the Federation for and on behalf of the people of Nigeria.

(2) All lands in which minerals have been found in commercial quantities shall, from the commencement of this Act be acquired by the government of the federation in accordance with the provisions of the Land Use Act.

(3) The property in mineral resources shall pass from the Government to the person by whom the mineral resources are lawfully won, upon their recovery in accordance with this Act.

Prohibition of Exploration or exploitation of Minerals without authority.

2.—(1) No person shall search for or exploit mineral resources in Nigeria or divert or impound water for the purpose of Mining except as provided in this Act.

(2) The provisions of this Act in respect of Reconnaissance, exploration and exploitation of Mineral Resources in Nigeria shall apply to radio active Minerals with such modifications as may be determined by health and public policy considerations.

Lands excluded from Minerals exploration and Exploitation.

3.—(1) No mineral title granted under this Act shall authorize reconnaissance, exploration or exploitation of mineral resources on, or in, or the erection of beacons on or the occupation of any land—

(*a*) set apart for, or used for or appropriated or dedicated to any military purpose except with the prior approval of the President ;

(*b*) within fifty metres of an oil pipeline licence area granted under the Oil Pipeline Act ;

(*c*) occupied by any town, village, market, burial ground or cemetery, ancestral, sacred or archaeological site, appropriated for a railway or situated within fifty

respectively under this Act, its regulations and in accordance with the provisions of the Public Service Rules in force.

Functions of the Mines Inspectorate Department

17. The Mines Inspectorate Department shall in addition to any other functions prescribed by this Act and subject to the direction of the Minister—

(*a*) exercise general supervision over all reconnaissance, exploration and mining operations to ensure their compliance with this Act ;

(*b*) supervise and enforce compliance by mineral title holders with all mine health and safety regulations prescribed under this Act and any other law in force ;

(*c*) prepare and render records, reports and returns as required by the Minister or as prescribed by Regulations ;

(*d*) take custody of mineral resources required by any Court to be forfeited to the Government ;

(*e*) with the prior approval of the Minister, dispose of any mineral resources forfeited to the Government ;

(*f*) carry out investigations and inspections necessary to ensure that all conditions relating to mineral titles and the requirements of this Act are complied with ;

(g) discharge such other duties as may be assigned from time to time, by the Minister ; and

(*h*) review and recommend to the Minister, programmes for controlling mining operations.

Functions of the Mines Environmental Compliance Department.

18. The Mines Environmental Compliance Department shall in addition to any other function prescribed by this Act and subject to the direction of the Minister—

(*a*) review all plans, studies and reports required to be prepared by Holders of Mineral title in respect of their environmental obligations under this Act ;

(*b*) monitor and enforce compliance by holders of mineral title with all environmental requirements and obligations established pursuant to this Act, its regulations and by any other law in force ;

(*c*) periodically audit the environmental requirements and obligations established pursuant to this Act, its regulations and by any other law in force and make recommendations thereon to the Minister ; and

(*d*) liaise with relevant agencies of Government with respect to the social and environment issues involved in mining operations, Mine closure and reclamation of land.

Establishment of State Mineral Resources and Environmental Mangement Committee.

19.—(1) There is hereby established for each State of the Federation a Committee to be known as the Mineral Resources and Environmental Management Committee, in this section referred to as "the Committee".

(2) The Committee in each State shall consist of—

(*a*) a representative of the Mines Environmental Compliance Department in the Ministry who shall be the chairman of the Committee ;

(*b*) a representative of the Ministry responsible for land matters or mineral related matters in the State ;

(*c*) the Mines Officer responsible for the State ;

(*d*) a representative of the Ministry of Agriculture or Forestry in the State ;

(*e*) a representative of the Surveyor-General of the State ;

(*f*) a representative of the Local Government Council when matters affecting the said Local Government Area are being considered by the Committee ;

(*g*) a representative of the State Environmental Department or Agency ;

(*h*) a representative of the Federal Ministry of Environment in the State.

(3) The functions of the Committee are to—

(*a*) consider and advise the Minister on issues affecting returns of necessary reports affecting grants of mining titles;

(*b*) consider issues affecting compensation and make necessary recommendations to the Minister ;

(*c*) discuss, consider and advise the Minister on the matters affecting pollution and degradation of any land on which any mineral is being extracted;

(*d*) consider such other matters relating to mineral resources development within the state as the Minister may, from time to time, refer to the Committee ;

(*e*) advise the Departments established in accordance with the provisions of this Act for the supervision of mineral Exploitation and the implementation of social and environmental protection measures ;

(*f*) advise the Local Government Areas and communities on the implementation of programs for environmental protection and sustainable management of Mineral resources ;

(*g*) advise and other necessary assistance required by holders of Mineral titles in their interaction with state governments, local government councils, communities, civil institutions, and other stakeholders ;

(*h*) advise the Minister in resolving conflicts between stakeholders ; and

(*i*) advise the Minister in respect of matters connected with the implementation of this Act.

(4) The Committee shall—

(*a*) meet at least once every three months and at such times as the Minister may deem necessary ; and

(*b*) regulate its own procedure ;

(5) The Chairman shall appoint a competent officer from the Mines Inspectorate Unit in the state to be the secretary of the Committee. The secretary shall have no right to vote at any meeting of the Committee.

(6) The Committee shall forward its report to the Minister after each meeting.

(7) Where the committee desires to obtain the advice of a host community or any other person on a particular matter, the committee may co-opt a representative of the relevant host community or any person as a member or such period as it thinks fit, but such a person shall not be entitled to vote in any meeting of the committee and his attendance shall not count towards a quorum.

(*c*) erect and maintain thereon any machinery and plant and subject to the provisions of this Act, construct such ways as may be necessary for or in connection with his Exploration operations ;

(*d*) explore on an exclusive basis for all Mineral Resources and to carry out the operations and work necessary for the achievement of this objective ;

(*e*) take, remove and export specimens and samples not exceeding such limit as prescribed in the Regulations to be reasonably required for purposes of analysis ;

(*f*) conduct bulk sampling and trial processing of Mineral Resources not exceeding such limit as is reasonably required for determining mining potential ;

(*g*) sell specimens and samples obtained from exploration activities or from bulk sampling and trial processing ; and

(*h*) while engaged in exploration, take timber other than protected trees and use water from any lake, or Watercourse not the subject of a Water Use Permit for domestic purposes, in accordance with Regulations ; and sink or drill shafts or wells and dig holes and trenches.

(2) Who has fulfilled all the conditions attached and subject to the provisions of this Act, shall be entitled to the grant of a mining lease for any mineral for which he was authorized to explore (the authority not having been determined by a notice) under the provisions of this Act in respect of any portion of the area included in the licence.

Obligations of an Exploration Licence Holder.

61.—(1) Every holder of an exploration licence shall—

(*a*) conduct exploration activities in a safe, friendly, skilful, efficient and workmanlike manner in accordance with the regulations ;

(*b*) conduct exploration activities in an environmentally and socially responsible manner ;

(*c*) if intending to explore on land occupied subject to a right of occupancy, give notice to the Chairman of the affected Local Government Area concerned and to the holder of the right of occupancy or the user or occupier of the land before commencing exploration activities on the land ; and where the Mineral title area is within more than one Local Government Area, the Mineral title holder shall give notice to the respective chairmen of the Local Government Areas concerned and the holders of rights of occupancy or the users and occupiers of land affected accordingly ;

(*d*) maintain and restore, the land that is the subject of the licence to a safe state from any disturbance resulting from exploration activities, including, but not limited to filling up any shafts, wells, holes or trenches made by the titleholder, and in compliance with applicable environmental laws and regulations ;

(e) not abstract, divert or discharge water or effluent from any Watercourse except in compliance with a water use permit and regulations ;

(*f*) not explore in any forest reserve except with the approval of the Minister and in consultation with other relevant authorities and subject to such conditions as may be specified in the Regulations ;

(2) Where a mining lease has been granted, the lease shall remain in force during such time only as the lessee employs a person who possesses adequate mining experience and qualification in mining, to supervise personally the mining operations being undertaken by the company during the period of the lease.

(3) Where a person with adequate mining qualification and experience in mining is not available to supervise the mining operations being undertaken under a lease, the company shall cease operations until suitably qualified person is available.

Rights of lessee to remove fixtures.

74.—(1) The lessee of a mining lease who has paid all rents, royalties and other payments due to be made by it under this Act or under the terms of its lease may, within three months, in the case of alluvial lease, and six months, in the case of lode lease, after the expiration or other determination of his lease, remove all or any of the plants, building or other property of the lessee.

(2) Where on the expiration or determination of the lease, a lessee is in default in the payment of any rent, royalty or other payments, and in the case of a lessee who has not removed its property within—

(*a*) three months in the case of an alluvial lease ; or

(*b*) six months in the case of a lode lease ; or

(*c*) such further period, if any, as the Mines Inspectorate may allow the plant, building and property of the lessee on the land, the subject of the lease, shall become the property of the Federal Government and may be dealt with and disposed of in lieu of the rent, royalty or other payments, as the case may be.

PART VI—QUARRYING

Application.

75. This part applies in relations to all naturally occurring quarriable minerals, such as asbestos, china clay; fuller's earth, gypsum, marble, limestone, mica, pipe clay, slate, sand, stone, late rite, gravel, etc. which may also be lawfully extracted under Mining Leases.

Prohibition of unauthorised quarrying.

CAP. N 42 LFN 2004.

76.—(1) Not withstanding the provisions of any other enactment, consent or approval provided for under an enactment and in particular, sections 9 (1), 29 (1), 10, 11, 12 and 13 of the National Inland Waterway Authority Act, every operation for the purpose of extracting any quarriable mineral from a quarry including sand dredging in the navigable water ways or else where , for industrial use (in this part referred to as a "quarrying operation") shall be conducted under a lease or licence granted by the Minister under this Act.

(2) Every grant of a lease or licence shall be made subject to the provisions of this Part, the prescribed regulations and the terms of the lease or licence.

(3) Pursuant to section 1 (1) of this Act, except as provided in this part, no person shall conduct any quarry operation on any land in Nigeria its contiguous continental shelf and all rivers, streams and water courses throughout Nigeria, any area covered by its territorial waters or constituency and the Exclusive Economic Zone, or divert or impound water for that purpose.

(4) In this section, "industrial use" includes sale, bargain and usage for or in connection with any industry or trade and excludes sand dredging for the improvement of navigability of waterways, in so far as the sand dredged is not sold or used for commercial purposes.

Area and validity of quarry lease.

77. A quarry lease shall—

(*a*) not be granted in respect of any area of land exceeding 5 square kilometres ; and

(*b*) unless previously revoked or otherwise determined, remain in force for a period of five years ; or any lesser period for which the lease has been granted, from the date of the grant of the lease and shall then expire unless renewed.

Rights of the Holder of a Quarry Lease.

78.—(1) Subject to the provisions of this Act, a quarry lease shall confer on the lessee the right to—

(*a*) enter on the land within the area of the lease or licence granted under this Part ;

(*b*) carry out quarrying operation on the land within the area of the lease and shown on the plan supplied (if required) by the applicant ; and

(*c*) remove and dispose of any quarriable minerals specified in the lease.

(2) Subject to the provisions of this Part and the Regulations, the Holder of a quarry lease who has complied with the provision of this Part and the regulations relating in particular to compensation and the payment of surface rents shall, for the purposes of the quarrying operation, have on the land within the area of the lease, the right to—

(*a*) make all necessary excavations ;

(*b*) erect, construct and maintain such houses and buildings as, in the opinion of the Mines Inspectorate Office, are necessary for his use and for the use of his agents and servants ;

(*c*) erect, construct and maintain such engines, machinery, buildings and workshops and other structures as may be necessary or convenient ;

(*d*) stack or dump any of the products from the quarry ;

(*e*) lay water pipes and make water courses and ponds, dams and reservoirs ; and

(*f*) construct and maintain all such electrical transmission lines, tramways, railway, roads, landing grounds, communication and conveniences as may be necessary subject to laws and regulations governing these infrastructures.

(3) A lessee under a lease—

(*a*) may, on the land within the area of the lease cut, take and use any tree when necessary in the course of the quarrying operation or when required for carrying out the quarrying operation or for domestic purpose ;

(*b*) shall not take any protected tree except with the consent of the proper Forestry officer ; and