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Environmental degradation and community response to eco system invasion in delta state

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Abstract

Delta State has long been facing many environmental challenges, mainly from oil exploration activities by the multinational companies which have, to a large extent affected the ecological environment of the State. This study examines community response to environmental degradation in Delta State. The study specifically examines the influence of environmental degradation on communal conflict and pipeline vandalism. Survey research design was employed. Three oil-producing communities were sampled for this study. They are Ebedei in Ukwuani local government area, Uwheru in Ughelli North local government area and Esama in Bomadi local government area, representing the three senatorial zones of the State. Ukwuani local government area has a population of 119,034, Ughelli North local government area with a population 320,687 and Bomadi local government area has a population of 86,016. The total population of these three local government areas is 525,737. Based on Krejcie and Morgan's (1970) table for determining sample size, for a given population of 525,737, a sample size of 400 would be needed to represent a cross-section of the population. The study employed simple percentages as the technique of data analysis and it revealed that conflicts in oil producing communities in Delta State are reflective of the extent of the environmental degradation in that area. The study also showed that pipeline vandalization is caused by youth restlessness resulting from the economic hardship in Delta State. The study concludes that environmental degradation is fuelling communal conflicts and pipeline vandalism in Delta State. The study recommends that the State government need to embark on programme and projects that have direct bearing on the people of the region. The study also recommends that the multinational corporations operating in the region need to address seriously their corporate social responsibility to host communities.

Keywords: Communal Conflict; Community Response; Environmental Degradation; Pipeline Vandalism

1. Introduction

Over the years, the Niger Delta area where oil exploration and exploitation is taking place has mostly been polluted (Penz *et al.*, 2011). The rate of pollution is accompanied by extreme environmental degradation. This scenario has come with detrimental consequence such as endocrine disruptors on the native settlers of that region. Some of the affected resources include potable water, river and agricultural lands. This has caused poverty and has also spawned violence among the youths. Considering that risk analysis has been a factor used to explain the health consequences of environmental degradation (Adekola *et al.*, 2017).

At the moment, every part of the World is challenged by environmental degradation, which explains why environmental degradation has assumed a widespread status. The global society has suggested practical solutions to solving environmental issues especially, environmental degradation that originates from human activities. In part of the world

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where industrial activities ranged from oil exploration, exploitation, manufacturing, refining and inter alia. These activities have caused a lot of environmental issues by affecting humans, plants, animals and aquatic lives as a result of environmental pollution (Adekola *et al.*, 2012).

Environmental degradation is the deformation of the environment through depletion of the ecosystem and the extinction or annihilation of wildlife (Caro *et al.*, 2022). Industries and socio-economic activities, as well as natural factors, contributes to environmental pollution which has affected human welfare through the contamination of potable water, farmland and the atmosphere.

Over the years, the activities of multinational cooperation in the area, have resulted in the issues already enumerated and discussed above, and have cost the inhabitants of the area their occupation in farming, hunting and fishing. Aside this, It has also spoiled their air and drinking water, resulting in starvation and widespread health issues. In response, the youths of the area have resorted to killings, pipeline vandalism, kidnapping of oil experts for a fee, oil bunkering, armed robbery and general acts of crime and youth restiveness in the area, thereby creating more problems than solve any.

Oil was discovered in large quantities in Nigeria in 1956 and exploration began in the same year. Before oil, agriculture and fishing had assured the Niger Delta people of a bright future. Since 1956, oil has been extracted from the Niger Delta with destructive consequences on the environment, bringing about environmental degradation and destruction of the people's primary means of livelihood. Land and water were badly polluted, and the health of the people affected because of leaks from oil pipelines, gas flaring and acid rains. Several petitions and non-violent protests by Delta communities, women and youth against environmental destruction failed to receive attention. Rather, opposition to peaceful protests earned the people military invasions of their communities, clampdowns and jailing. The rise of militarism and terrorism in the Niger Delta was the result of the Federal Government and Oil Companies' clampdown on non-violent protests for environmental justice in the Niger Delta.

Environmental degradation can occur naturally through avalanches, quakes, tidal waves, storms, wildfires; or as a result of human activities such as accidental oil spill, thermal power stations, burning of fossil fuels, exhaust fumes, bush burning and deforestation, desertification and nuclear leakage, gas flaring and vehicular emissions (Anifowose *et al.*, 2012). The man-made efforts (oil theft, bunkering, and pipeline vandalism) are often the cause of local residents who are expressing their frustration on the oil companies for not developing their land.

The Niger Delta region is the point of highest concentration of such industrial activities, which bears the highest effect of environmental degradation in Nigeria. According to Stewart-Koster *et al.* (2015), the incredibly well endowed ecosystem contains one of the highest concentrations of biodiversity of the planet, flora and fauna trees, arable terrain that can sustain a wide variety of crops, lumber, or agricultural trees and more species of freshwater fish than any ecosystem in West Africa.

The potentials of this area notwithstanding, the mining activities in addition to other human-related and natural factors have contributed to depleting the environment of the area, thereby making it unsafe for plants, animals, aquatic and human lives Amnesty International (2013). The extinction of aquatic lives also makes the occupation of fishing unprofitable (Anifowose *et al.*, 2012). Awajiusuk and Lomo-David (2012) reported the effects of gas flaring and oil spillage on both aquatic lives and agricultural yields. These resulted in providing people with limited options in search of favorable habitats. Some live in asbestos and zinc houses and under very unhygienic conditions. This culminates in the loss of farmlands, the stunted growth of cash crops, economic trees, polluted rivers and homes. The prolong refusal by the government and provider organizations to remediate the polluted site is best described as corruption (Leitao, 2016).

The people of the Niger Delta region have been known to be very vocal and agitated over their purported natural resource devastation in the face of chronic poverty, weak infrastructure and the poor state of social services. Reports abounds that oil and gas exploration have destroyed their livelihood sources amidst other health and social implications. Series of violent agitations and clashes have been recorded in the regions over claims of environmental and social injustice.

There are limited studies that examined the influence of environmental degradation on communal conflict and pipeline vandalism in Nigeria (Omoredede, 2014; Shehu & Ali, 2015; Ogbija *et al.*, 2015; Jiboye *et al.*, 2019; Mina *et al.*, 2020; Nwokorie, 2020; Nkem *et al.*, 2021; Anthony *et al.*, 2021; Olowoporoku *et al.* 2021). The work of Omoredede (2014) focused on the impact of oil and gas resource exploration on the environment of Delta State oil producing communities of Nigeria. While Olowoporoku *et al.* (2021) examined the determinants of residents' perception of environmental hazards and risks in coastal towns of Delta State, Nigeria. Also, Atubi (2015) examined the factors of environmental

degradation in oil producing communities of Delta State, Nigeria. Likewise, Ogbija *et al.* (2015) investigated the effects of environmental degradation on human health in nine selected oil communities in Delta State using well-structured 450 copies of questionnaires. Lastly, Shehu and Ali (2015) investigated both public perceptions of environmental problems in Delta State, as well as its willingness to solve these problems. To the extent of literature reviewed, no study has specifically examined how environmental degradation influences communal conflict and pipeline vandalism.

In the light of the foregoing, the major objective of this study is to examine how the host communities in Delta State of Nigeria respond to environmental degradation. The other specific objectives are to;

- Examine how environmental degradation has contributed to communal conflict in Delta State of Nigeria.
- Assess how environmental degradation has contributed to the pipeline vandalism in Delta State of Nigeria.

The study focuses on Delta State for the period of 2022, primary data were generated through questionnaire. There are five sections in this study. The introduction is captured in section one, literature review is in section two. The methodology was covered in Section three; the data analysis and findings were covered in Section four; and the conclusions and recommendations were covered in Section five.

2. Literature Review

2.1. Conceptual of Environmental Degradation

The environment according to Word Bank (2019) is the natural and social conditions surrounding all mankind including future generations. It is made up of biophysical components and processes of natural environment of terrestrial, marine and celestial. All layers in the atmosphere, inorganic and organic matters, socio-economic components and processes of human endeavours are also considered. According to Ogboru and Anga (2015), the environment can justifiably be said to be the natural habitat of man with several components within which various kinds of activities and processes occur. In line with the definition of Federal Environmental Protection Agency (1992), environment includes water, air, land, and all plants and human beings, or animals living there in and the interrelationships which exist among these or any of them. These elements mentioned here have a symbiotic relationship and any distortion of their natural state could lead to environmental degradation.

Environmental degradation is the deterioration of the environment through human activities resulting in the depletion of resources, contamination of air, water, and soil, the destruction of the ecosystems and the extinction of flora and fauna (wildlife). They further stated that this could also be any change or disturbance capable of producing harmful effects on the environment, social, economic, technological and institutional activities, and consequently producing results that are undesirable for present and future generations. Environmental degradation occurs when earth's natural resources (water, air, soil) are depleted. Environmental degradation constitutes a systemic destruction and depletion of the earth's ecological systems such as water resources, mangroves, plants, and the natural soil and air, which are the source of life (Jimoh *et al.*, 2011).

2.2. Concept of Community Response

When there is environmental degradation, it is ordinary members of the public, not emergency services, who will be the first to respond. This is called community response. Because communities will most likely need to look after the environment for a while after environmental degradation occurs. Community response to environmental degradation can range from denial and resignation to protests, violent conflict and forced migration. Environmental degradation is a major cause of violent conflict and human displacement.

Environmental degradation is a global concern with local, state, national, regional and international responses required to protect ecosystems from political and economic forces anchored in patriarchal systems of greed and control. As powerful forces vie for short-term financial gains, marginalized communities suffer the consequences, frequently fighting for voice and recognition as they face violent conflict (Sloan *et al.*, 2018).

2.3. Concept of Communal Conflict

Communal conflict is defined as violent conflict between non-state groups that are organised along a shared communal identity. They are products of social relations. It involves threat or action of one party directed at a community's rights, interests or privileges or of another party, because of differences over economic issues, power or authority, cultural values and beliefs. Communal conflict could be defined as a struggle over values or claims to status, power and scarce

resources in which the aim of the conflicting parties are to gain the desired values but also to neutralize, injure or eliminate their rivals. Lyman (2001) contends that communal conflict is any disagreement or dispute between two or more communities which is capable of even degenerating into riots or wars, thus disrupting the peace, tranquility and economic life and progress of anyone or all the communities concerned. Such disruption or disturbance may lead to loss of life and property often valued at high cost.

Also, communal conflict is the term used to describe conflict that occurs between competing groups within a state. It may arise over disputes concerning access to scarce resources or political power. Such conflicts may lead to violent warfare between the two or more defined communities that are involved within the state. Land is also often at the heart of communal conflicts that centre on groups' main livelihood.

2.4. Concept of Pipeline Vandalism

Pipeline vandalism, in the context of this paper, refers to the willful or deliberate act of damaging petroleum pipelines with the sole aim of stealing crude oil and associated petroleum products. In the Nigerian oil and gas industry, the effects of pipeline vandalism among others include huge economic losses from pipeline and plant shutdown, environmental pollution, fire outbreaks usually resulting in loss of lives. Scarcity and shortage of petroleum products as well as decrease in electricity supply with the attendant socio-economic problems can also be attributed to pipeline vandalism.

Pipeline is one of the effective means of uninterrupted and steady supply of crude oil. This medium ensures that consumers get their product at the right time. This mode of transportation has existed for over a century, and helps to reduce accident, spillage, and environmental pollution. Vandalism is an action involving deliberate destruction of public or private property. Within the civic domain, vandalism denotes willful destruction of public or government property in keeping with criminal or political intent. Oil pipeline vandalism therefore implies deliberate breaking of oil pipelines with the intent to steal petroleum products or to sabotage the government (Vivan, 2012). In Nigeria, oil pipeline vandalism has been perpetrated principally by criminal syndicates who are motivated by the desire to loot oil products for material gains. Oil pipeline vandalism is also known in Nigeria as oil bunkering, which is the act of drilling into the pipelines with the intent to steal products.

3. Empirical Review

3.1. Environmental Degradation and Communal Conflicts

Chokor (2004) appraised the environmental concerns and resource values of the poor living in difficult and degraded environment in rural Nigeria. In the study, 831 respondents validated the nature of environmental problems and priorities in relation to their experiences within the community. The results showed that the poor are environmentally rational but often handicapped in doing the right thing. While most respondents have a holistic and long-term view of the environmental implications of natural resource use, a host of sustainable traditional environmental resource conservation measures previously embraced by communities have been abandoned in order to meet the exigencies of short-term survival. The self and socio-economic survival goals, rather than the community and the 'common good', appear to form the predominant contexts for the individual's environmental thinking and decision-making. Resource scarcity, declining yields and associated inflation/high cost of living were seen as the major signs of resource degradation.

Saliu *et al.* (2007) examined the conflicts in the Niger Delta of Nigeria and argues that conflicts in the region arise as a result of grinding poverty and environmental degradation, which has for long been the plights of the people of the region. The study concludes that recent efforts by the new administration of Yar'adua aimed at bringing peace to the region may not yield positive results unless such efforts address the crisis of poverty and environmental degradation in the region.

Edino *et al.* (2010) explored how the people in the Niger Delta region perceive gas flaring and what their attitudes are toward it. Ubeji town, a community where gas flaring takes place, was selected as a case study. It was found that the residents perceive gas flaring as hazardous to health, environment, and general well-being of the community. Most residents seem to be resigned to the continued presence of gas flaring activities in the community. The study, however, raised several questions on modeling perception and attitudes toward environmental problems in areas where political tension and economic adversity are prevalent.

Solomon and Madubuike (2011) examined the social impact of environmental changes on selected rural communities in Nigeria Niger- Delta. The data were generated from literature materials and oral interview of respondents over a

period of 18 months. This touches on social and cultural dislocations, political and ethnic conflicts, as a result of environmental degradation occasioned by oil exploitation and exploration. It concludes that broadening and strengthening rural livelihood as well as concerted efforts by all stakeholders at environmental reclamation and sustainable use of the environment, will go a long way in the social and economic stability of the region in general and the rural- communities in particular.

Mbachu (2012) assessed the perception of the people concerning the impact of oil production activities on the environment, health and socio-economic lives of the people of the Niger Delta. The data used in this thesis was obtained from primary and secondary sources. In order to assess the community perception of the impacts of oil exploration, a community in the Niger Delta was selected and questionnaires were administered to 52 respondents from this target community. These questionnaires were analyzed using the SPSS software package. Findings revealed that oil exploitation and its attendant pollution have impacted negatively on the environment and socio-economic activities of respondents. Oil exploitation was strongly linked to pollution of the air, soils, waters and usurpation of the social life of the community.

Evelyn and Tyav (2012) examined the issue of environmental pollution and its attendant consequences on the Nigerian society. The study employed personal observation and secondary sources examined the effects of environmental pollution in Nigeria. The findings showed that environmental problems in Nigeria generally are many, diverse in nature, and are caused by man's interaction with nature for exploits in a number of ways-both in the cities; where industrial activities predominate, and rural areas; where agriculture thrives.

Paleowei *et al.* (2014) evaluated relations impact in managing the environmental crisis emanating from the activities of the companies operation in the region. Data are sourced from both primary and secondary. The primary source is from oral interviews and observations, while the secondary source is from the literatures and the analysis is qualitative. It explains and evaluates the relationship between community relation or the corporate social responsibilities of the companies operating in the region and its impact on the environment. It observes that though there is community relations at communities where companies are operating, there is no relationship between community relations and the corporate responsibility and environment management in the Niger Delta Region.

Omoredede (2014) assessed the impact of oil and gas resource exploration on the environment of Delta State oil producing communities of Nigeria. Primary and Secondary data were used to source data for the set objectives. The theoretical framework was based on the resource curse theory and the environmental externalities theory. It was established that various problems such as oil spillage, retardation of vegetation growth, soil infertility, ill-health to members of the community, displacement of the people of the area, constant protestation of host communities, socio-economic deprivation, and perceived marginalization of the people are associated with oil resource exploration. This research concludes that the oil bearing communities have not adequately been compensated for harm done them through degradation of the ecosystem caused by several years of oil exploration. Their oil resource wealth has been turned to oil resource curse as they are disempowered, and condemned to perpetual under development.

Ndubuisi *et al.* (2018) analysed the relationship between environmental degradation and economic growth in Nigeria. Descriptive survey research was used and data were collected via Central Bank of Nigeria statistical bulletin and Nigeria National Petroleum Corporation statistical bulletin. The population of the research was the whole oil companies operating in Nigeria. Pearson Coefficient of Correlation was the statistical tool used to analyse the hypotheses and that was done with the aid of Statistical Package for Social Sciences. The result of the analysis showed that there is no significant relationship between oil spillage and economic growth, high significant relationship between gas flaring and economic growth and the no significant relationship between number of fire outbreaks and economic growth of Nigeria. The study thus concluded that there is no significant relationship between environmental degradation and economic growth safe for gas flaring which has a high significant relationship with economic growth.

Jiboye *et al.* (2019) examined causes of environmental degradation in coastal areas of South West Nigeria. The study was carried out using primary and secondary sources of data collection. Data were analysed using descriptive and inferential statistics. The study shows that waves breaking along the coastline are the main explanatory factors responsible for coastal erosion (84.0%). Flooding in the settlements where it occurs was mostly attributed to tidal rise/tidal waves (97.0%). Tidal wave was believed to be the major cause of water hyacinth (51.8%). Pollution is caused by a mixed factor of over development of coastal areas, migration to coastal areas, population growth and increased tourism. Soil infertility is caused mainly by sea water infiltration into farmlands especially when farmlands are located too close to coast lines (73%). Over development of the coastal area is mainly responsible for sand mining (67.0%). The study concludes that environmental influence remains strong in the coastal environment.

Mina *et al.* (2020) assessed the perception of residents of Rivers State on the current soot pollution, a cross-sectional study was undertaken via an online survey among people residing in the state who were literate and had access to internet-enabled devices. Results indicated that most respondents were aware of the soot pollution and perceived the main causes of soot to be from artisanal refining of crude oil and burning of confiscated crude oil and its products. Majority also perceived that the soot had caused them chronic cough and irritation to eyes, nose and throat. Female respondents were significantly more likely to complain of a health effect from soot pollution. There is a critical need to investigate identified sources of soot and mitigate possible impact.

Nwokorie (2020) analyzed the socio-economic implications of oil exploration in the Niger Delta region. Egbema Local Government Area in Imo State was used as the study area to represent the Niger Delta region. For the relevance of this study, Karl Mark theory of economic determinism was used as the theoretical frame work; and in the research methodology, a structured questionnaire was administered to the indigenes of the selected Niger Delta region to elicit the necessary information needed for this study. At the end of this study, researcher observed that there is a relationship between oil exploration and environmental degradation in the Niger Delta region as well as lack of capacity building and skills acquisition.

Obi *et al.* (2021) identified the risks associated with gas flaring in relation to the environment. Literatures from diverse databases including peer reviewed journals as well as governmental and organizational papers were searched to develop the narrative. Over the years, several laws have been enacted in Nigeria with stipulated dates to end gas flaring, but the targets have not been met. The Federal government of Nigeria updated the legal framework titled flare gas regulations, 2018 to facilitate financial profits through utilization and commercialization of associated gas, with a view to reduce or exterminate flaring. This effort appears ineffective due to weak enforcement and poor monitoring mechanism. The statutory government institution entrusted to enforce anti-gas law may benefit from some sort of motivation to ensure oil operators comply to combat environmental health risks from gas flaring.

Anthony *et al.* (2021) employed the method of hermeneutics to interpret the traditional environmental experiences of the people of Niger-Delta in relation to the prevalent environmental crises in the region. It examines the traditional ecological thought of the region and argues for a transition to an eco-friendly environmental orientation to ameliorate the negative consequences of the environmental degradation.

Olowoporoku *et al.* (2021) examined the determinants of residents' perception of environmental hazards and risks in coastal towns of Delta State, Nigeria. Systematic sampling technique was used to obtain data through administration of questionnaire on 218 residents of Sapele, Oghara and Koko in Delta State. Inferential statistics was used to analyse the data collected. Three broad factors were identified as determinant of resident's perception of environmental hazards and risks. They are availability of environmental amenities, environmental actions and socioeconomic characteristics. Environmental amenities were the highest determinant, followed by environmental action and socioeconomic background.

3.2. Environmental Degradation and Pipeline Vandalism

Atubi (2015) examined the factors of environmental degradation in oil producing communities of Delta State, Nigeria. Results showed that 95.2 per cent of the people had experienced environmental degradation from the oil producing communities and some agreed that most of the effects are still ongoing. The overall major cause of environmental degradation in all the oil producing communities is the negligence of duty by government agencies charged with oversight duties of monitoring and compliance (30.8%), Neglect of Environmental regulations/compliance (26.8%), corruption (23.6%), lack of Environmental Impact Assessment (EIA) reports from companies either at the beginning of the project or periodic assessment (14.7%) respectively. This has however, given rise to high degree of sabotage that causes oil spillage in the area. The data collected were analyzed using the multiple regression analysis. From the analysis oil spillage mode explained 100 per cent while in the case of gas flaring the model explained 74.39 per cent.

Ogbija *et al.* (2015) investigated the effects of environmental degradation on human health in nine selected oil communities in Delta State using well-structured 450 copies of questionnaires. Specific oil spillage and gas flaring data within the selected communities were also used. In all, 77.5 per cent of the residents in oil producing communities were vulnerable to environmental degradation while 22.5 per cent were not during the period of study. The study also revealed that a total of 235 Diarrhoea cases were recorded, 187 Asthma cases, 511 cases of eye infection, 90 cases of Bronchitis and 157 cases of skin infection were reported at the hospitals in the area. This high figure could be linked to environmental degradation of air, water and land which is rampant in the area.

Shehu and Ali (2015) investigated both public perceptions of environmental problems in Delta State, as well as its willingness to solve these problems. A survey consisting of 11 questions was conducted over 250 people in three local government areas in Delta State in Nigeria. According to the results of the survey, oil spillage was found to be the most important environmental problem with its effects on water, soil, and biological resources in the study area. The results also revealed a greater public willingness to participate in efforts to solve the environmental problems in its surroundings. The study concludes that there is a need for a much more robust public awareness campaign, as well as provision of basic necessities to the general public. This will likely enhance public participation, thereby ensuring environmental sustainability.

4. Theoretical Framework

4.1. Resource Curse Theory

The resource curse theory presupposes that nations with rich natural resources may fail to develop in other sectors ultimately bringing about financial problems. The theory also assumes that such a country will also fail to develop infrastructure and other industries; instead they focus on a handful of industries which cripples the economy by encouraging very isolated investments and development; while ignoring the need to develop a more diversified economy. The result is that the country is also forced to a large extent to rely on other nations for a wide variety of goods and services; and may in fact end up with a net loss at the end of the year (Auty, 1993).

The term resource curse was first used by Richard Auty (1998) to describe how Countries rich in natural resources were unable to use that wealth to boost their economies and how counter intuitively; these countries had lower economic growth than countries without an abundance of natural resources. This was exemplified with the “Dutch Disease” syndrome, a situation which makes it difficult to diversify the economy, generally undermining non-oil activities.

Numerous studies including one by Sachs and Warner (2001), and Billon (2001), have all shown a link between natural resource abundance and poor economic growth. Hardin (1968) on his part opines that free access to a finite resource ultimately dooms the resource through over exploitation. Natural resources can and often do provoke conflicts within the society as different groups and factions fight for their share as expressed by Collier and Hoeffler (2002). This tends to erode government’s abilities to function effectively.

4.2. The Frustration-aggression Theory

The frustration-aggression theory advocates that blocked opportunities may result in deviancy (Dollard et al., 1939) is explored to buttress this argument. In the views of Dollard et al. (1939), frustration refers to condition which occurs when a goal response suffers intrusion, while aggression means an act whose goal-response is injury to an organism. The basic tenets of the frustration-aggression theory is that when efforts or means to peacefully achieve goal (s) is denied or prevented, frustration occurs which can produce feelings of rage that can turn into exhibition of aggressive behaviour and violence. While the frustration-aggression theory has been applied to provide an insight in understanding violent behaviour over time, it is accused of overgeneralization in its assumptions.

Means to earn a living is among the primary goals of every sane person and when these means are denied, there could be frustration. As mentioned earlier, farming has been the primary means of livelihood for the people of the Niger Delta region before the discovery of oil. The discovery of oil came along with land degradation by oil companies whose activities has led to the death of almost all of the farmlands in the region (Agboola et al., 2011; Anejionu et al., 2015; Omoregie, 2016). Left with minimal, or perhaps, complete absence of other means of livelihood, some youths and elders in the region were forced to engage in illegal and dangerous activities like oil theft, oil bunkering, pipeline vandalism, illegal oil refinery and others. They do not mind the negative consequences of their activities on the environment, probably, because there is nothing left to them to care for.

5. Methodology

Survey research design was adopted for this study. The population consists of oil communities in Delta State, Nigeria. Three oil-producing communities were sampled for this study. They are Ebedei in Ukwuani local government area, Uwheru in Ughelli North local government area and Esama in Bomadi local government area, representing the three senatorial zones of the state. These are oil-producing communities in Delta state, Nigeria. These communities were chosen because they are oil producing communities. Ukwuani local government area has a population of 119,034,

Ughelli North local government area with a population 320,687 and Bomadi local government area has a population of 86,016. The total population of these three local government areas is 525,737.

Based on Krejcie and Morgan's (1970) table for determining sample size, for a given population of 525,737, a sample size of 400 would be needed to represent a cross-section of the population. Four hundred (400) were randomly selected from the three oil producing communities. Questionnaire was the instrument used for the primary data collection; the questions were translated to the local language with the aid of 3 research assistants for clarity to the women who could not fill the questionnaire. Data was analyzed using simple percentages.

5.1. Data Analysis and Results

Table 1 Simple Percentage Table Showing Responses on Primary Data Collected on Environmental Degradation and Community Response to Eco System Invasion in Delta State

Environmental Degradation and Community Response to Eco System Invasion in Delta State		SA	A	UN	D	SD	Total (%)
1	The farm lands of local people of Delta State have been taken over by land degradation due to land pollution from crude oil and to gas flaring.	201 (50%)	177 (44%)	5 (1%)	3 (1%)	14 (4%)	400 (100%)
2	Communal clashes have increased with time in Delta State.	221 (55%)	152 (38%)	6 (2%)	17 (4%)	4 (1%)	400 (100%)
3	Inter-ethnic and intra-ethnic clashes in Delta State are caused by the struggle for the ownership of resources, usually land.	187 (47%)	177 (44%)	15 (4%)	16 (4%)	5 (1%)	400 (100%)
4	Till date, communities in the region are still involved in several forms of resistance (demonstrations and protests, petition writing, legal action, hostage taking, armed uprising and community mobilization).	165 (41%)	150 (37%)	6 (2%)	43 (11%)	36 (9%)	400 (100%)
5	The location of gas flaring sites close to inhabited areas is an important environmental anomaly.	139 (35%)	201 (50%)	25 (6%)	18 (5%)	17 (4%)	400 (100%)
6	Pipeline vandalization is caused by youth restlessness resulting from the economic hardship in Delta.	176 (44%)	162 (40%)	14 (4%)	22 (5%)	26 (7%)	400 (100%)
7	Gas flaring is environmentally unethical and has contributed significantly to the degradation of the environment in Delta State.	154 (38%)	192 (48%)	18 (5%)	26 (6%)	10 (3%)	400 (100%)
8	The people of Delta State are highly dependent on their environment for their source of livelihood.	233 (58%)	106 (27%)	23 (6%)	21 (5%)	17 (4%)	400 (100%)
9	The Delta State environment is continually degraded by frequent oil spills.	158 (40%)	164 (41%)	21 (5%)	36 (9%)	21 (5%)	400 (100%)
10	Oil canals and network of pipelines is making it impossible and dangerous for people to undertake economic activities on it.	178 (44%)	177 (44%)	15 (4%)	14 (4%)	16 (4%)	400 (100%)

Source: Field Survey, 2022; SA= Strongly Agree (5); A= Agree (4); UN= Undecided (3); D= Disagree (2); SD= Strongly Disagree (1)

The respondents were asked if the farm lands of local people of Delta State have been taken over by land degradation due to land pollution from crude oil and to gas flaring. Results gotten from the field survey in the above table clearly indicated that 201 (50%) indicated strongly agree, 177 (44%) of the respondents indicated agree, 5 (1%) of the respondents indicated undecided, 3 (1%) disagreed while 14 (4%) indicated strongly disagree. This implies that a greater percentage of the respondents strongly agreed that their farm lands have been taken over by land degradation due to land pollution from crude oil and to gas flaring. It can therefore be concluded that the land have been contaminated, with studies reporting devastating effects on residents' health and livelihoods. Vast areas of the state's waterways and mangrove swamps one of the most diverse ecosystems in Africa have been destroyed or put at risk. Farmland has been cloaked in oil, contaminating crops and exposing people to high levels of heavy metals such as chromium, lead and mercury.

From the field survey, it was observed that 221 (55%) of the respondents strongly agreed that communal clashes have increased with time in Delta State. The responses from the respondents also indicate that 152 (38%) of the respondents agreed that communal clashes have increased with time in Delta State, 6 (2%) of the respondents were undecided, 17 (4%) of the respondents disagreed to the assertion and while 4 (1%) of the respondents strongly disagreed with the statement. The current communal conflicts in Delta state can be traced to disputes over land, natural resource revenues, and political representation which have led to widespread violence. The table shows that 187 (47%) of the respondents strongly agree that inter-ethnic and intra-ethnic clashes in Delta State are caused by the struggle for the ownership of resources, usually land. 177 (44%) agreed to the assertion. 15 (4%) were undecided on the assertion, 16 (4%) disagreed to the assertion, while 5 (1%) strongly disagreed that that inter-ethnic and intra-ethnic clashes in Delta State are caused by the struggle for the ownership of resources, usually land.

In order to find out if till date, communities in the region are still involved in several forms of resistance such as demonstrations and protests, petition writing, legal action, hostage taking, armed uprising and community mobilization. A total of 165 (41%) of the respondents strongly agreed that communities in the region are still involved in several forms of resistance, while 150 (37%) agreed over the statement. Only 6 (2%) were undecided, 43 (11%) of the respondents disagreed to the assertion while 36 (9%) strongly disagreed to the statement. The study further found out that 153 (40%) of the respondents have a strong agreement that The location of gas flaring sites close to inhabited areas is an important environmental anomaly, 214 (56%) of the respondents agreed to the statement while 8 (2%) disagreed with the assertion. Also, 9 (2%) respondents strongly disagreed with the assertion.

The table reveals that 176 (44%) of the respondents strongly agreed that pipeline vandalization is caused by youth restlessness resulting from the economic hardship in Delta State. 162 (40%) of the respondents agreed to the statement. 14 (4%) of the respondents were undecided. The table reveals that 22 (5%) and 26 (7%) of the respondents disagreed and strongly disagreed respectively that pipeline vandalization is caused by youth restlessness resulting from the economic hardship in Delta State. The respondents were asked if gas flaring is environmentally unethical and has contributed significantly to the degradation of the environment in the region. The study showed that 154 (38%) of the respondents strongly agreed to the statement, 192 (48%) agreed to the assertion. 18 (5%) were undecided as regards the statement, 26 (6%) disagreed with the assertion while 10 (3%) strongly disagree with the statement.

Question was asked to ascertain if the people of Delta State highly depend on their environment for their source of livelihood. It was revealed that 233 (58%) of the respondents strongly agreed with the statement, 106 (27%) of the respondents agreed with the statement. 23 (6%) were undecided while 21 (5%) and 17 (4%) disagreed and strongly disagreed with the assertion respectively. The respondents were asked if the Delta State environment is continually degraded by frequent oil spills. The result from the survey indicated that 158 (40%) of the respondents strongly agreed that the environment is continually degraded by frequent oil spills, while 164 (41%) agreed to the statement. 21 (5%) were undecided, 36 (9%) disagreed with the statement, 21 (5%) strongly disagreed with the assertion.

The simple percentage table shows that 178 (44%) of the respondents strongly agreed that oil canals and network of pipelines is making it impossible and dangerous for people to undertake economic activities on it, 177 (44%) of the respondents agreed with the statement. 15 (4%) were undecided, 14 (4%) disagreed with the statement while 16 (4%) strongly disagreed with the statement.

6. Discussion

The study revealed that conflicts in oil producing communities in Delta State are reflective of the extent of the environmental degradation in that area. Indeed, it is revealed from the questionnaire that these conflicts can be found along different lines depending on the actors involved at a particular point in time. The first of these levels is conflict between host communities and the oil companies; the second level is the conflict between local militants and the

Nigerian state; and the third level, the hostilities between and among the various local communities, all due to the struggle for the limited land resource. This finding is in line with the empirical works of Saliu *et al.*, (2007); Omorede (2014).

The study also showed that pipeline vandalization is caused by youth restlessness resulting from the economic hardship in Delta State. Several cases of pipeline vandalization have been reported in the State. The dramatic increase of cases of pipeline vandalization is suggestive that the more the people are deprived of their means of livelihood, the more restless they become. Hence the poorer the people become, the more the cases of pipeline vandalization. Other reasons youths in Delta State are involved in the vandalization of pipeline may be to express their grievances over the destruction of their environment by multinational oil companies without adequate compensation from these companies. Other impacts of pipeline vandalization are deforestation, destruction of vegetation, pollution and loss of revenue. This finding is in consonance with the study of Atubi (2015).

7. Conclusion

The study concludes that environmental degradation is fuelling communal conflicts and pipeline vandalism in Delta State. The study recommends that the State government need to embark on programme and projects that have direct bearing on the people of the region. Such programme and projects should be such that would empower the people particularly the restive youth to make a decent living from their environment.

Recommendation

The study also recommends that the multinational corporations operating in the region need to address seriously their corporate social responsibility to host communities. Corporate social responsibility of companies must not stop only with the provision of few boreholes, constructions of block of classrooms and awarding of few scholarships. It needs to be extended to other welfare projects as electrification, road construction, while skill acquisition and empowerment programme needs to be instituted for the host communities' benefit.

Compliance with ethical standards

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Disclosure of conflict of interest

No conflict of interest.

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