



VULNERABILITY OF COMMUNITIES TO THE IMPACT OF CRUDE OIL EXPLOITATION IN GOKANA LGA OF RIVERS STATE

ONYEJEKWE, MARY (1)
Inyang, Oduduabasi E (2)
Chuma, Obiamaka V (3)

ABSTRACT

Crude oil exploitation became popular in Nigeria in the early 50s. It has since being the dominant economic stay of the country. Majority of the crude deposit are found in the Niger delta region of the country including Gokana the study area. As the main source of revenue for the government, crude oil exploitation has not come without it antecedence consequences. It was therefore necessary to conduct the present study to analyze how communities in Gokana are vulnerable to the negatives effect of crude oil exploitation. Structured questionnaire was used to elicit information from 525 respondents from the four communities of K-Dere, Kpor, Biara and Bodo all in Gokana LGA River state. The communities were selected using an oil impacted map of the study area through a Simple random approach. The result reveals that there was a significant negative effect of crude oil exploitation on socio-economic wellbeing of Gokana inhabitant at ($\beta= 0.148$; $t=2.716$; $p< 0.01$). Majority of the respondent know about the degree to which unrefined petroleum misuse posture danger to the work and resource of the general population, also respondent agreed that poverty was the major factor that increases the peoples vulnerability to the impact of crude oil exploitation, Specifically, the people are aware of the hazard and risk

associated with crude oil exploitation, Majority of the respondents had built their capacity to include incorporate procurement of new unaffected area for development, and taking part in non-cultivating exercises. It was therefore recommended that a multi-sectoral approach to disaster management be employed which basically involves preventing the risk of disaster, further recommendation include that a permanent disaster management institution be established and also an adequate preparedness, rehearsal, knowledge and development should be enhanced.

© GSJ

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

Since the disclosure of oil, as a part of the modern insurgency, one of the key global menaces that came along this revolution is oil spillage. Based on information gathered, it is discovered that there is over 0.7-1.7million tons of petroleum spilled into our oceans, rivers, etc. per year (www.science.irank.org). The Niger Delta district is among the ten most imperative wetland and marine environments on the planet. Furthermore, obviously the oil business situated inside this area has undisputedly contributed limitlessly to the development and advancement of the nation. Be that as it may, study has demonstrated that unsustainable oil investigation movement inside the area have rendered itone of the five most truly petroleum hurt organic frameworks on the planet. Oil slicks have represented a noteworthy danger to the earth, that if not adequately checked can prompt the aggregate pulverization of the biological systems. Exxon Valdez spills (FME, et. al. 2006).

The disclosure of oil in Nigeria is backtracked at 1956, when Shell British Petroleum (now Royal Dutch Shell) made their examination in a town called Oloibiri in Bayelsa state, arranged inside the Niger Delta of Nigeria (Anifowose, 2008; Onuoha, 2008), beginning business creation in1958.. Human activities, as regards to those of oil examination and abuse, raise different issues, for instance, ocean side breaking down, utilization of biodiversity, gas flaring, flooding, oil spillage, clutter defilement, land debasement and soil productivity mishap and deforestation,sewage and wastewater contamination, all of which are major ecological issues. In Niger Delta, oil investigation and misuse has been on for more than quite a while. What's more, it has too terribly affected nature of the area, and obviously has antagonistically influenced individuals living inside that district. Odeyumi and Ogunseitani (1985), created a paper on the headway of the oil and petrochemical industry in Nigeria with much accentuation on contamination unsettling influences amid the 25 years of its presence, calling attention to the causes and their consequences for the social, horticultural, financial, and natural trademark on human and other biotic tenants of the district. He too offered proposals to serve as associate for the activities of the Nigerian National Petroleum Cooperation (NNPC), in the neutralizing activity, control, and treatment of oil pollution inside the oil districts. Celestine (2003) analyzed the effects of genuine oil extraction on the earth of the Niger Delta, inside the oil bearing gatherings, and a segment of the normal issues that labels along, for instance, resource debasement, sullyng, and dejection in the Niger Delta social order. Tolulope (2004), like others, created on the oil spillage events in Nigeria, giving watchful thought in its negative consequences to the earth, concentrating on much on natural threats, and the inclination of petroleum things to filthy the earth. Twumasi and Merem (2006) dove significantly into the usage of GIS and remote recognizing in the tropical shoreline front zone environment, with

much emphasis on the impact of progression in the Niger Delta region environment. The paper introduced an unmistakable diagram of various issues, ecological impacts and variables. The deciding results uncovered a decrease in water bodies, mangrove woodlands and a wide instance of oil slicks. Chukuezi (2006) composed a paper on the ramifications of oil investigation and ecological debasement to maintainable improvement in the Niger Delta area. This has been aggravated into different social tight clamps inside the locale. The anticipation of natural debasement is an errand that must be given a basically consideration. As demonstrated by Amu (1997), the unmistakable verification of issues, plan and applying appropriate consents is a significant issue that ought to be resolved and needs in any case change in the present true blue structure and mentality towards driving prosecution of trademark issues and in like manner an adjustment in characteristic approaches.

© GSJ

1.2 Statement of the Problem

The Niger Delta district contains diverse biological communities, including mangrove swamps, downpour woods, crisp water overwhelms, and is noted to be the biggest wetland in the whole Africa, and said to be among the ten most vital wetland and marine environments on the planet. Be that as it may, because of oil contamination and spills in the zone, it is currently seen to have debased streams and waterways, biodiversity misfortune and woods decimation. To put it plainly, the range is a natural no man's land. This antagonistically influences the occupation of the inhabitants of the range whose survival exceptionally relies on upon produce of the biological system.

In Gokana LGA, oil mishandle as a delayed consequence of the closeness of oil, is a quick result of crude petroleum era in light of the proximity of oil foundation, and is thusly a situation which is seen to be man-made. These, genuinely, may similarly provoke changing both the scene and the budgetary activities in the region. Spillages could in like manner be as an outcome of flawed systems used in the midst of creation and improvement of grungy through the oil foundation, as era incorporate diverse particular and mechanical methods, whose reasonability and profitability can't be guaranteed.

Jike, (1987) has contended that despite the fact that oil organizations have made a gigantic entirety of benefits in the nation's assets, these organizations have made practically nothing, unimportant improvement to the nation when contrasted with the made benefit. In Gokana LGAs, where a large portion of the oil spillages ascending from oil investigation are seen, these contaminations represent a noteworthy danger to the earth, which has prompted all out obliteration of the biological community. This has made life so critical for survival to residents of the area and have made the ecosystem completely annihilated, posing a great threat to the environment (Oyem, 2001). Constant oil spillages have led to destruction of avast potion of indigenous farmlands rendering them useless. Therefore, despite the value of oil to the nation's economy, members of the community perceive it to be a great threat to their source of livelihood. In Gokana, a sweeping domain of the mangrove organic group has been pulverized. This is the same mangrove which served as a wellspring of fire woods for the indigenous people, and a living space for the zone's biodiversity, now not ready to survive the destructiveness of oil in its surroundings. The straightforward certainty is that oil investigation, rig offices and pipeline definitely prompted relocation of ranchers and their farmland, bringing about such a large number of young fellows to be out of work, inside the group.

As demonstrated by Jike (2002), the opposing effect that develops as an outcome of oil spillage, being a prompt invalidation to the possibility of attainable change is disregarding the kind of progression which ought to address the issues of the present without impacting the limit, without limits times to address their own specific issues. This basically implies the continuous cognizant and coincidental arrival of unrefined petroleum into the earth is bringing about a great deal of corruption to the wellspring of occupation of the Gokana individuals. It affects such areas as the wetlands, forests, ponds and fisheries resources, rivers, swamps, and streams. Subsequently its effect on marine life is made pernicious by poisons and spoiling impacts, coming about because

of the compound organization of the oil, and additionally the assorted qualities and variability of characteristic systems on their affectability to oil sullying. Another unfriendly impact of oil spillage and its sidekick to this zone is that of its negative impact on untamed life in the region, which certainly have prompted a constrained relocation of an extensive variety of primates, which before now were exceptionally obvious inside this zone before the coming of oil investigation (Jike, 2001). In light of report from the indigenous individuals of Gokana, the wellsprings of occupation to the general population have been profoundly crushed by the different substance exercises of these oil organizations, with consistent deferral in the installment of pay and eminences which is frequently politicized. As a result to these, there has been relative increment in pipeline vandalization by the host groups, being that the pay is in many cases not paid and in the few situations where installment is made, it gets the chance to wrong hands, never achieving those it is implied for.

This study, therefore attempts to evaluate and investigate these views as well as the vulnerability of host communities to oil exploitation in Gokana Local Government Area.

1.3 Aim and Objectives of the Study

The aim of this study is to examine, the vulnerability of communities to the impact of crude oil exploitation in Gokana Local Government Area of Rivers State.

The Specific-Objectives of this study are to:

- i. Examine the nature of vulnerability to oil exploitation by examining the risk level of the people.
- ii. Provide hazard /pipeline and oil facilities map of the study area
- iii. Examine the factors that increase the vulnerability of the people to oil exploitation
- iv. Examine the capacity of the people to cope with the impact of oil exploitation

1.4 Research Questions

1. To what extent do oil exploitation activities pose problem to the sources of livelihood and asset of the Gokana people?
2. To what extent is the area vulnerable to the impact of oil exploitation?
3. What are the major factors that increase the vulnerability of the people to oil exploitation in Gokana LGAs?
4. What is the level of awareness of the people to hazard and risk associated with oil installation?
5. To what extent have the people built their capacity to withstand and cope with this hazard?

1.5 Research Hypothesis

HO: There is no significant negative effect of crude oil exploitation on the socioeconomic wellbeing of Gokana people

1.6 Justification of the study

The Gokana Local Government area of Rivers State is an agrarian society, having over 60% of its inhabitants predominantly engaging in agriculture as their main source of livelihood and survival. The community has a good number of oil and gas facilities most of which are operated by SPDC. This examination should subsequently consider into finding the great side, and also the terrible side of oil investigation, misuse and creation exercises inside the chosen groups. It would likewise investigate the threats posed to Gokana and its environs.

1.7 Scope of the Study

The research intends to analyze community vulnerability to oil exploitation in Gokana land, since the effect of oil exploitation cannot be fully dealt with in a single work. The examination will bargain briefly with group helplessness to oil-investigation on the general population, taking a gander at the advantage that are liable to be influenced by oil investigation and the way of harm and interruption to resource when a risk happens, how the vocation and resource can be shielded and fortified from the effect of danger and the limit of individuals from the group to address these perils in Gokana LGA of Rivers State.

1.8 Study Area

1.8.1 Location and Delimitation

Gokana Local Government Area is found in Rivers State of Nigeria (Fig 1). It has its home town in Kpor. It has a territory of more than 126 km², and a populace of 228,828 as indicated by the 2006 registration. Gokana is partitioned into sixteen towns, each headed by a ruler. The sixteen towns are further subdivided into towns. (Waterways State service of data, 2006)

1.8.2 Climate

The air of the zone of study is a tropical rainstorm environment with long, overpowering tempestuous seasons, and short dry seasons. Simply the months of December and January can truly be known as a month of dry season. The harmatan season is not all that saw with its heaviest precipitation happening in the midst of September with a typical of 370mm of deluge. December on the typical is the driest month of the entire year, with an ordinary precipitation of 20mm. (Streams State administration of information 2006).

Rainfall is seasonal, variable and heavy with total annual rain of about 4,700mm which decreases to about 1,700mm. Rainfall is adequate for crop production. Mean maximum monthly temperature within the region ranges from 28⁰C - 33⁰C while the mean minimum monthly temperature is within 17⁰C - 24⁰C (Rivers State ministry of information 2006). The mean month to month temperature is 26⁰C. The distinction between the temperature amid the dry seasons and wet seasons is just around 2⁰C. Generally, dampness is high in Rivers State consistently and diminishes somewhat in the dry season (Rivers State service of data 2006).

1.8.3 Human Activities

The native Gokana week is made up of five days, Maa, Bon, Zua, SJon, Koo(pronounced cur). Koo is the official sabbath or rest day when our indigenes were to stay at home and not go to the farm. The Gokana people have a rich cultural heritage. The main religions are Christianity and African traditional religions. Although most of its customs, tradition and festivals have become extinct due to urbanization and rural-urban migration, some have survived. Amongst this is the "NaaBiraDae" festival, celebrated around late March to early April in honour of the goddess of the night. it lasts for 15 days or three local weeks and during this period, no woman, child or uninitiated adult male is allowed to go out, except emergency services such as the police. The Gokana language, of the Ogonoi group of the Cross-River branch of the large Niger-Congo language family, is the main spoken language. Weddings, burials (of people who died in old age)and the naming of a child are important ceremonies among the people of Gokana and they are celebrated in style Gokana kingdom is headed by a king called the "GbereMene" of Gokana Kingdom. (Rivers State ministry of information, 2009)

1.8.4 Petroleum activities

As one of the oil bearing LGA, a number crude oil facilities are scattered all over the area. These include oil wells, flow stations/outlets, pipes and manifolds some of which are visibly seen while others are buried underground. Not fewer than thirty – five flow stations/outlets are found in the area interconnected with pipes ranging from 10 – 28 inches in diameter. About three piping system traverse the area with one running from north – west to south – west measuring about 9,759.27 meters in length. The second piping system runs from north to south with about 10,037.71 meters in length while the third runs from north – west to east with about 11,179.64 meters in length. These oil facilities are potential sources of related environmental hazard which also make the communities highly vulnerable in case of any disaster.

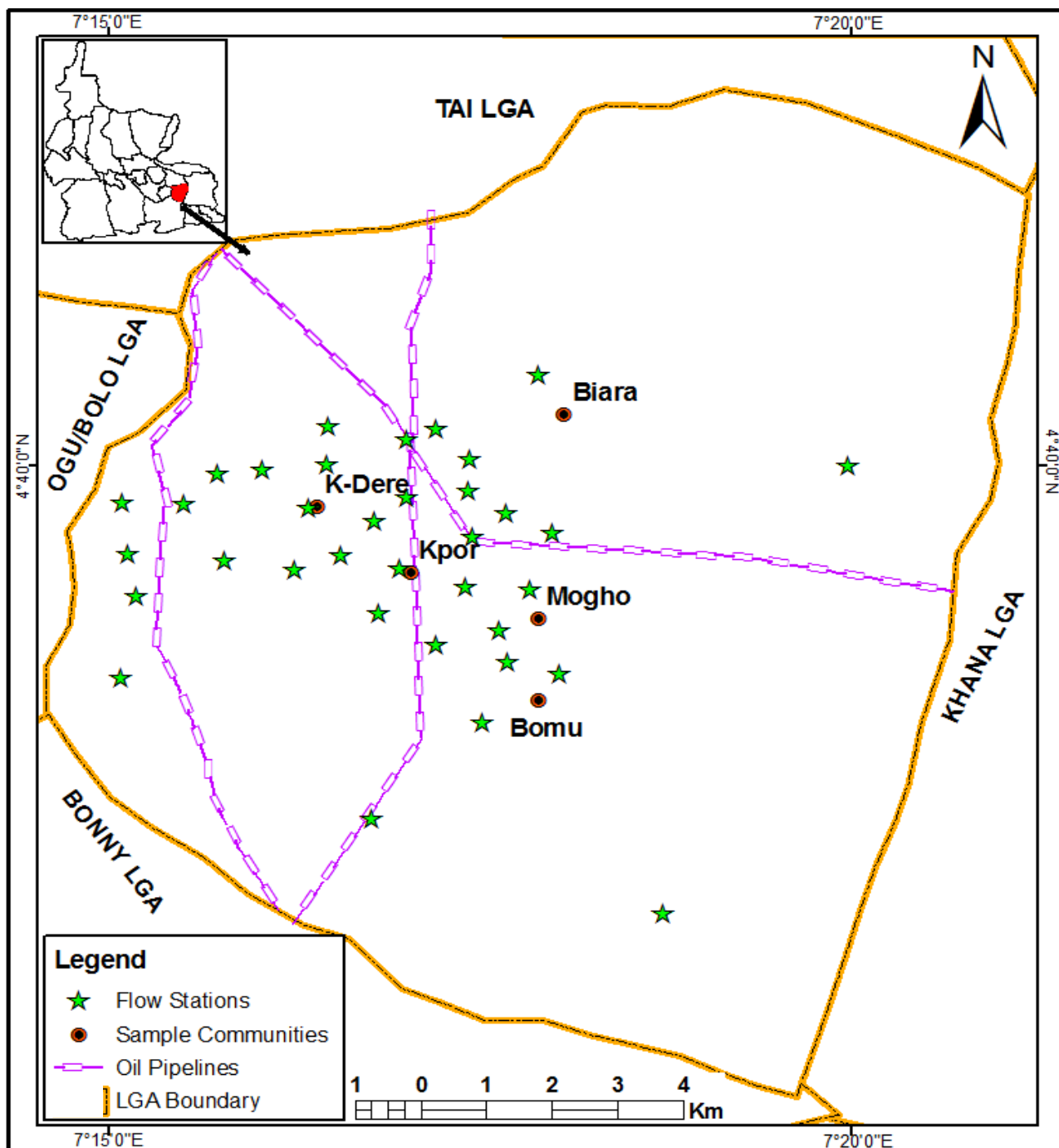


Figure 1:Gokana Local Government Area Showing Sample Communities

CHAPTER TWO LITERATURE REVIEW

2.1 Theoretical Framework

The hypothetical audit for this study is for all intents and purposes in light of powerlessness structures and idea. The distinctive perspectives on helplessness are reflected in different explanatory ideas and models of how to systematize it. Since these theoretical models are critical and basic strides towards creating techniques for estimation of helplessness and the precise ID of imperative markers (Downing, 2004), the accompanying gives a comprehension into different systems, for example, the two-fold structure of defenselessness as per Bohie's definition, weakness inside the system of peril and hazard elements are the essential focuses inspected in this study.

2.2 Vulnerability within the Framework of Hazard and Risk

The debacle hazard group characterizes helplessness as a segment inside the connection of peril and hazard. This school of thought intermittently sees weakness, ability to adapt and introduction as isolated substances. To diagram this school of examinations three approaches are consequently shown: The significance of risk inside the fiasco peril framework by Davidson (1997), got by Blumstein (2003), which reflects the "threat triangle" made by Crichton (1999), and the UN/ISDR structure for catastrophe danger diminish (2004). Davidson's (1997) sensible structure, grasped by Bollin (2003), considers powerlessness to be one a player in disaster risk. The connected structure perceives four arrangements of catastrophe threat: hazard, presentation, shortcoming and point of confinement measures.

This calculated structure sees hazard as the whole of danger, introduction, powerlessness and limit measures. While risk is characterized through its likelihood and seriousness, introduction is described by structures, populace and economy. Conversely, defenselessness has a physical, social, monetary and natural measurement. Limit and measures which appear to be firmly identified with the subject of adapting limit envelop physical arranging, social limit, monetary limit and administration.

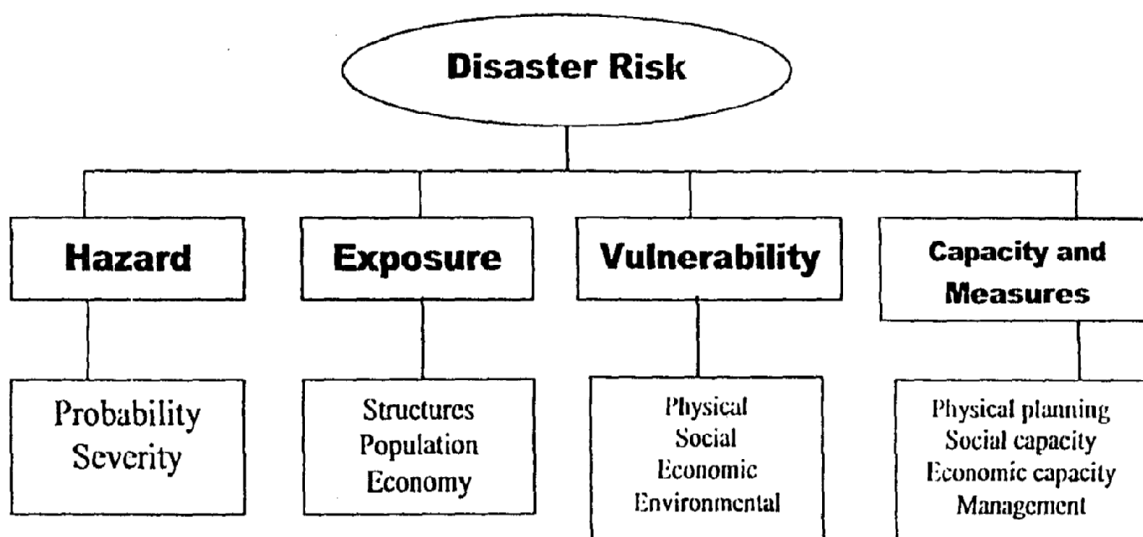


Fig. 2.1: The conceptual framework to identify disaster risk. Source; Davidson, 1997

There are other frameworks within the concept of vulnerability which also view or assess vulnerability differently, it is somewhat necessary to mention other frameworks considered necessary in the assessment of vulnerability. They incorporate the International Strategy for Disaster Reduction (ISDR). To framework this school of examinations three philosophies is along these lines showed: considers vulnerability to be one a player in calamity threat. The connected structure perceives four classes of disaster threat: hazard, presentation, lack of protection and point of confinement measures.

However the two frameworks above have been considered in this study, because of its direct relevance to the topic, here the Double Structured Vulnerability relates to the capacity to anticipate fire outbreak through the various activities carried out in the market, in order to enable traders resist and mitigate the hazard. Here also, the traders are supposed to interact with their environment and exposed the external and internal stressors thereby increasing the coping capacity of the people. On the other hand, powerlessness inside the Framework of Hazard and Risk inspected the likelihood of flame event and the seriousness when it happens, its impact on the structure, the population, (sellers, buyers and sub-urban communities), the economy of the affected people. The study examined vulnerability based on the physical, social, economic and environmental aspect.



2.3 Concept of Vulnerability

Absence of security is an imagined that made out of the human sciences and was natural as a reaction with the simply peril sorted out point of view of calamity danger in the 1970s (Schneidcrbauer and Ehrlich, 2004). Since the 1980s, the pervasiveness of danger composed assessment systems in context of specific intercessions has been progressively attempted by the option point of view of utilizing shortcoming as the beginning stage for risk diminishment. This approach joins the shortcoming of people and gatherings revealed with their social, money related and social abilities to adjust to the damage that could happen (Hilhorst a Bankoff, 2004) Additionally, a few makers perceive social vulnerability accessible, which deals with the weakness of individuals and the conditions central for the survival and change, and biophysical slightness on the other (WBGU, 2005).

Biophysical shortcoming in this affiliation is an idea produced using general normal change research, where it is widely used to delineate the degree to which a framework is powerless against offensive impacts of environmental change and to what degree it can't adjust to such effects. In spite of the way that there is still much shakiness about what the S powerlessness covers. Cardona (2004) underlines the way that the possibility of shortcoming explained the thoughts of peril and disaster. He considers defenselessness to be an innate slant to be affected by or to be vulnerable to damage; that suggests shortcoming addresses the structure or the gathering's physical, monetary, social or political shortcoming to hurt as the postponed outcome of a dangerous occasion of general or anthropogenic root (Cardona, 2004). One of the best-known definitions was figured by the International Strategy for Disaster Reduction (UN/ISDR), which depicts shortcoming as:

The conditions coordinated by physical, social, cash related and normal variables or strategy, which fabricate the feebleness of a get-together to the effect of risks. (UN/ISDR, 2004). Inquisitively, the United Nations Development Program (UNDP) depicts feebleness as:

A human condition or process working out as intended in light of physical, social, budgetary and ecological parts, which pick the probability and size of insidiousness from the effect of a given risk (UNDP, 2004), while the significance of deficiency utilized by the ISDR joins particular conditions that impact the shortcoming of a social occasion, the UNDP definition explains absence of insurance as a human condition or process. The human focused definition utilized by UNDP sways the technique used to discover its Disaster Risk Index, particularly concerning the count of relative feebleness (UNDP, 2004). The Disaster Risk Index measures the relative powerlessness of a nation to a given danger by segregating the measure of individuals butchered by the measure of individuals uncovered. Utilizing individuals butchered isolated by individuals uncovered as the pointer to assess relative deficiency contrasts and the understanding that shortcoming is on a very basic level a human condition. Moreover, the nonappearance of fitting information at the general level has kept UNDP's chances to set up a more expansive record. Yet one needs to consider the way that human society is the essential focal point of thoughts of vulnerability, a significant request must be lit up: can human shortcoming enough depicted without considering at the same time the lack of protection of the "including".

Moreover, different creators, for example, Vogel and O'Brien (2004) stress the way

- scale subordinate (as for time, space and units of examination, for instance, solitary, family, territory, system)
- Dynamic (the qualities and fundamental forces of powerlessness changes after some time).

With respect to idea of social powerlessness, Cannon, Twigg and Rowell, (2003) contend that social helplessness is substantially more than the probability of structures breakdown and foundation being harmed. They depict social powerlessness as an arrangement of attributes that incorporates an individual:

- Initial prosperity (nourishing status, physical and emotional wellness)
- Livelihood and flexibility (assets and capitals, pay and abilities)
Self-assertion (farthest point and eagerness to build up a protected home, utilize a secured site)
- Social security (accessibility and control measures)
- Social and political structures and affiliations (social capital, institutional environment and whatnot).

The definition by Cannon, Twigg and Rowell, (2003) sways the way that lack of protection is just for the most part controlled by the sort of risk; it is by and large managed by flawed occupations, the level of self-security or social assurance capacities and institutional settings that depict the general relationship in which a man or a get-together encounters and reacts to the negative effect of a risky occasion Cannon, Twigg and Rowell, (2003). In any case, the possibility of social vulnerability similarly does not have a run of the mill definition, which infers that unmistakable makers use it in a surprising way. Current composition reveals the way that social defenselessness can join diverse perspectives and parts which are associated with socially made vulnerabilities. Likewise, the possibility of social shortcoming is not obliged to social fragilities, but rather fuses subjects, for example, social imbalances with respect to wage, age or sexual orientation, and qualities of groups and the earth, for example, the level of urbanization, development rates and monetary imperativeness (Cutter, Bouff and Shirley 2001). Cutter, Bouff and Shirley (2001) portray six credits to depict social frailty in perspective of the experiences of more than two numerous years of investigation on this point. They underline that social shortcoming is:

- The differential presentation to stresses experienced or expected by different units revealed a dynamic method
- rooted in the exercises and various attributes of human performing craftsmen
- Often controlled by interpersonal associations in social, money related, political and common associations
- manifested at the same time on more than one scale
- They underline that social deficiency is:
- The differential presentation to stresses experienced or expected by various units uncovered a dynamic strategy

- rooted in the activities and different traits of human performing skilled workers
- Often controlled by interpersonal relationship in social, cash related, political and normal affiliations
- manifested in the meantime on more than one scale
- influenced and driven by different weights.

Therefore, the likelihood of social weakness infers more than budgetary effects, since it can in like way' incorporates portions of potential physical underhandedness in the made environment (Cutter, Boruff and Shirley 2003). Other bosses, for occurrence, Carreno, Cardona and social setting conditions (that backing the second demand influences) from one perspective, and the Physical damage realized by presentation and physical defenselessness the developed environment on the other hand (related to first-orchestrate influences) (Cardona and Hurtado, 2000).

The possibility of social feebleness is significantly more exhaustively used than just little the estimation of ordinary social parts of lack of protection (sex, age and wage spread). Seen from the point of view of the social slighthness school of thought, "social deficiency" can also fuse cash related and physical viewpoints, in case they are the announcements of a socially amassed helplessness. In spite of the way that the sensible social event of shortcoming varies, for event, between Cutter et al. (2003) and Carreno, Cardona and Barbat (2005a), both school of thought underline the way that shortcoming should not be kept to: an estimation of the fast effects of a hazardous occasion, rather, it must be seen as the estimation of the more expansive environment and social circumstances, in this way engaging People and gatherings to adjust to the impact of risky events or, then again, obliging their ability to contradict the opposite impact of the dangerous event (fire). This underlines the way that weakness can similarly consider as far as possible and adaptability of potentially affected society. In any case, it is essential to perceive that moreover the examination of mischief illustrations can add to the recognizing confirmation of revealed vulnerabilities and also to the estimation of present and potential vulnerabilities later on. Accordingly, the test lies in working up an adjusted methodology between the general setting and the broad scale markers on one side, and more right and particular pointers on the other, which can in addition be set up on uncovered vulnerabilities some time as of late.

2.4 Vulnerability and Sustainable Development

General presentations and records, for occurrence, the Hyogo Framework for Action 2005-20 15, the UN/ISDR report "Living with danger" (UN/ISDR, 2004) and the UNDP report "Reducing disappointment hazard" (UNDP, 2004), stress the need to join risk and helplessness diminishing into saving progress. In like manner, it is critical to get a handle on the affiliations other than the distinctions amongst risk and weakness lessens, from one point of view.

It appears that global endeavors to decrease calamity danger are progressively being seen inside the connection of economic advancement. Then again, incorporating debacle hazard decrease and powerlessness lessening into manageable improvement does not show up in such vital records as AGENDA 21 or the Millennium Development Goals (MDGs).

Truly, some MDGs, particularly MDG 1 ("annihilating great destitution and yearning"), MDG 3 ("advancing sex balance) and MDG 7 ("guaranteeing ecological maintainability") are in a roundabout way connected to specific parts of catastrophe danger and powerlessness decrease; for instance, mitigating compelling neediness regularly additionally diminishes weakness. Be that as it may, the principle center of the MDGs is on financial improvement and there is no reference to hazard or weakness decrease as a major aspect of these formative procedures. This solid accentuation on issues of financial advancement disregards the way that during a period of worldwide natural change (disabling ecological debasement forms), conventional financial improvement systems are demonstrating wrong to accomplish a harmony between financial requests from one perspective and the ecological limits of different biological communities on the other, The MDGs give careful consideration to the new requests and difficulties that worldwide ecological change will make on the financial improvement methodologies that attempt to address maintainable advancement (Kemp-mann and Pilardeaux, 2005).

In spite of the fact that the MDGs can be connected to debacle hazard decrease techniques and their objectives, the present connections and interrelations of worldwide natural change, financial advancement and manageable improvement stay dynamic. The UN/ISDR report "Living with danger" expresses the need to connect reasonable advancement and danger diminishment specifically:

Propelling practicality in a fiasco diminishing infers seeing and making best usage of relationship among social, money related and normal goals to diminish tremendous threat risk. All nations require a solid and distinctive characteristic framework that is gainful and life supporting, a sound and assorted economy that adjusts to change and sees social and natural cutoff points. This can't be capable without the joining of debacle diminishing systems, one of the six gages of sensibility fortified by solid political commitment (UN/ISDR, 2004). Supportable change is movement that addresses the issues of the present without trading off the point of confinement of future times to address their own particular issues. (WCED, 1987).

2.5 Factors Affecting Human Vulnerability

According to the International Federation of Red Cross and Red Crescent Societies principle contemplations that impact or make the masses to be exposed fuses;

- Poverty
- Increase populace thickness
- Rapid urbanization
- Changes in lifestyle
- Environmental debasement
- Lack of mindfulness or data
- War and common strife

All these components are much of the time and interrelated for instance. Neediness regularly brings about individuals moving to urban territories looking for work. Restricted assets and opportunities in urban regions result in individuals settling in hazardous areas and can likewise deliver strains prompting common turmoil.

1. **Poverty:** Most debacle studies demonstrate that the wealthiest individuals from a populace either survive a calamity unaffected or can recoup rapidly. Destitution for the most part makes individuals helpless against the effect of dangers. Destitution is behind the motivation behind why individuals in urban ranges bend compelled to live on slopes that are inclined to avalanches or why individuals settle close volcanoes or streams that constantly surge their banks and why individuals use combustible materials without appropriate security safety measures..
2. **Increased populace thickness:** There is a conspicuous association between the number and size of misfortunes from a debacle and the span of the populace. In the event that there are more individuals and structures where a calamity happens, then it is likely there will be a greater amount of an effect. Populace development implies that more individuals will be compelled to live and work in hazardous zones and that more individuals are vying for predetermined number of assets.
3. **Rapid urbanization:** Growth and relocation circular segment identified with the real marvel of quick urbanization. It is described by the country poor or regular citizens in a zone of contention moving to metropolitan regions looking for monetary open doors and security. Thus, improvements in science and technology (with accompanying application in agriculture, communication, production, and building techniques), have made it possible for more and more people to be concentrated in cities and in highly density conditions that were previously impossible.

This urbanization trend that has led to the emergence of mega-cities with population of over 20 million people in some places has also made such cities to become prone to various hazards and failures. Among these are the depletion of available resources to the extent that they become inadequate to sustain life; production of harmful wastes in such amount that cannot be absorbed in the given space; increasing potential for hunger and disease; danger of accidents such as explosions of fuels stocks located for convenience near the population that needs them, leakages of chemical and other toxic wastes used in industrial production, and fire systems failures and breakdowns (for example, of telecommunications systems on which people depend for their work, health, and information) (Siyabade, 2006).

Thus, the processes of urbanization that have made urban dwelling attractive have also introduced a whole new set of hazards. Vulnerability to such hazards seems to increase in correlation with the number of people accommodated within a fixed geographical space.

4. **Changes in lifestyle:** All social orders are always showing signs of change and in a persistent condition of move. These moves bend regularly to a great degree troublesome and uneven and may leave crevices in social ways of dealing with stress.
5. **Environmental degradation:** Many debacles are either brought on or exacerbated by ecological debasement. Deforestation prompts fast rain keep running off which adds to flooding.

Disaster can likewise happen when individuals who are helpless against them don't know how to escape damage's direction or what defensive measures to take some individuals may not think about safe departure courses and methodology while others may not know where to swing to for help with times of calamity. Here the attitude of the people to tire hazard is very important, because most fire outbreaks are due to lack of safety precautions.

6. **War and common strife:** This can be viewed as perils; that is amazing occasions that deliver fiascos. War and strife regularly bring about uprooted individuals who are more helpless as a consequence of their separation

2.5 Helplessness Assessment

Helplessness appraisal is a strategy for recognizing dangers, and deciding their conceivable consequences for the group. It is carried out at community level, with the inputs of members of the community, and coordinated by the Community Development Committee (CDC). The CDC in each community is made up of members from the community, NGOs, and government agencies that can play active part in disaster management in the community. Disaster management is a sure way of ensuring the sustainable development of a community. According to Ordinoha (2010), the essential steps involved in Vulnerability Assessment include:

- Hazard ID
- Hazard portrayal
- Community and environment portrayal
- Description of impacts and helplessness
- Hazard prioritization; and
- Recommendations for activity

Under this study, danger recognizable proof, risk depiction, portrayal of impacts and weakness and peril prioritization are talked about.

2.7 Disasters in Nigeria

Nigeria, similar to whatever is left of the world, is acquainted with an expansive arrangement of average or human incited catastrophes. While some of these calamities are energetic, others are moderate onset, working out as intended terrible circumstances inciting loss of lives, property and corruption of the earth. These disasters happen as dry season, desertification, flooding, scourges, shoreline front crumbling, dam dissatisfaction, building breakdown, oil spillage, ocean effect or setback, bomb impact, shared clash, fire, air accidents and boat occurrence, amongst others.

For the most part, remarkable calamities in Nigeria fuse the yearly scourges, for instance, cholera, measles and cerebro-spinal meningitis. In like manner, Nigeria experienced different

ethnic, political and religious savage conflicts in Kaduna, Lagos, Kano, Plateau, Bauchi, Borno, Baraba, Benue, Delta, Anambra, Ondo, Osun, Ogun thus on ENEMA, 2007).

Past these occasions, risks acted by persistent oil slicks and hopeless harm to regular and coastline biospheres, developing levels of mechanical debasement, waste and amazing climatic changes, and its negative results make Nigerians to be powerfully at risk to a wide number of new and making perils. The absence of assurance of Nigerians to risks is a fragment of a few parts. These unite the level of desperation; masses change and task; and the state of human settlements and their structure. Other causative parts join the level of common debasement, level of open care, the surge of open approach and environment on fiasco association (NEMA, 2007).

2.7.1 Hazard identification

This involves the identification of all the hazards present in the community. To ensure that the views of all segments of the community are reflected, a modified problem listing and matrix-ranking method is used. This involves the listing and ranking of all the hazards in the community by all the stakeholders in the community.

Other techniques used in hazard identification include:

- Carrying out studies on the historical backdrop of crises in the group, by gathering data from government sources, daily papers records and more established individuals from group;
- Inspecting the group for proof of past crises, existing perils and existing defenselessness; and,
- Carrying out a literature search on hazards faced by people in similar communities

2.7.2 Hazard Description

Hazards are described in terms of five basic characteristics. These are:

- Intensity (how big, fast, and powerful) — in cyclone, it is a measure of the speed the wind, while in earthquake; it is a measure of the number and strength of the tremors.
 - Frequency (the likelihood of a danger bringing on an event of a given enormity)
 - Extent (the zone that a danger may impact)
 - Time layout (alerted time, range, time of day, week, year); and
 - Manageability (whether anything ought to be conceivable about the danger)
- A further depiction of a surge danger is given underneath, in light of the way that it is perhaps the commonest in Nigeria.

2.7.3 Description of the likely effects of the hazards

According to Ordinoha (2010), hazards can have the following effects on the community:

- Death
- Injuries
- Social disruption
- Disruption of social services, and damages to infrastructures
- Damages to private properties

- Disruption of the economy; and
- Damage to the environment

The tangible and intangible losses likely to be suffered by members of the community have been described and presented as in the Table 2.1 below.

© GSJ

Table 2.1; Tangible and intangible losses to be suffered by members in a community

Effects	Measure	Palpable losses	Impalpable misfortunes
Death	Number of persons	Loss of monetarily dynamic people; lessened capacity of therapeutic offices in managing typical cases	Social and mental consequences for remaining group
damages	Number and seriousness of damage	Restorative therapeutic, transitory loss of financial movement by profitable people; poor ability of treatment offices in managing ordinary cases	Social and mental agony and recuperation
Social interruption	Number of displaced and destitute persons	Transitory lodging, recuperation work, financial creation	Mental, social contact, cohesion, group spirit
Interruption of social administrations and infrastructural harm	Administration, upset area, level of harm	Bother and mischief to administration clients, substitution and repair cost	Care about loss of service
Private property harm	Property sort, level of harm and area	Substitution and repair costs	Social misfortunes, diminished independence
Interruption to economy	Number of working days lost, volume of creation lost, measure of exchange lost	Estimation of lost generation	Opportunities, intensity notoriety expanded weakness
Environmental harm	Scale and severity	Cleanup cost, repair costs	Outcomes of poorer environment, wellbeing dangers, danger of future fiasco, expanded defenselessness

2.7.4 Hazard prioritization

Since the resources available to the community for the management of the hazards in the community are limited, prioritization is needed to determine the hazards to be managed most desperately, and those to be managed, later, or not under any condition. This decision is better taken by members of the community, because they are the people who are affected, and are the ones required to take action.

Hazard prioritization can be done using the matrix ranking method, with the following criteria:
The risk posed by the hazard. This is a measure of the likelihood of a given harm; here the traders are expected to examine how exposed the market is to lire hazard.

The manageability of the hazard (whether anything can be done about the hazard); here the possible installation of fire extinguishers in all the shops in the market is necessary. This enhances the coping level

The weakness (how harming is the potential damage created by the risk), here if fire occurs how can they (traders) recover from the effect of such losses, example institutional assistance, insurance etc.

Vulnerability — scores by considering the number of people and value of properties that might be destroyed by the hazard, using the following criteria:

- Effect on such helpless gathering as the matured, incapacitated and kids
- Populace densities
- Location of masses social occasions
- Location and estimation of properties
- Location of fundamental workplaces
- Highlighting the danger on the guide of the group helps this procedure. The helplessness measure is weighed.

2.8 Vulnerability to Disasters in Nigeria

Shortly after Nigeria became independent in 1960, the country was plunged into a nation-wide political crisis that led to the civil war in 1967 which lasted for three years. That was a major man-made disaster. There have also been disastrous communal and religious riots in different parts of the country as well as natural disasters that include flood, drought and epidemics. Regular calamities had tripled subsequent to the 1960s murdering several individuals and obliterating properties worth a huge number of naira every year. There has additionally been emotional ascent in the recurrence and greatness of fiascos as of late, debilitating expansive populaces living in various situations. It has been observed that the fact that Nigeria's economy is relatively weak and its expansive environment is under-protected makes the nation especially vulnerable to disasters, (Siyanbade, 2006).

Defenselessness can be considered as the extent to which a populace may endure hurt as a consequence of presentation to change or stretch. We can discuss auxiliary or physical weakness and human helplessness. Basic helplessness "is the degree to which a structure is prone to be harmed or upset by a risk occasion" while human defenselessness "is the relative absence of limit of a man or group to suspect, adapt to, oppose and recoup from the effect of a peril" Siyanbade, (2006). Human powerlessness to calamity is expanded by certain elements that include: brisk urbanization, masses improvement, and nonappearance of finding out about how to reasonably contradict the effects of disasters and dejection.

2.9: Components That Determine the Extent of Oil Spill Damage

Etkin, (1999) have assessed the interfacing variables that effect the expense of tidying up spills with a particular finished objective to build up a cost estimation model or the segments that pick the level of oil spill hurt. He contemplated the standard specific segments affecting the level of harm done by oil spillage, which joins: kind of oil spilled, total spilled and rate of spillage, zone and instance of oil spillage.

2.9.1. Kind of Oil Spilled: One of the segments that pick reality or level of damage done by oil spillage is the kind of oil. Light foul oils and light refined things (e.g. gas, diesel) which don't continue on the surface of the ocean or where spilled, for any fundamental time in light of brisk vanishing of the eccentric sections and the straightforwardness with which they scramble and spread truly. Accordingly the level of harm done by this sort of oil is normally insignificant. Differing sorts of oil are overwhelming fuel oils and liberal crudes. Recommendations oils are essentially steady when spilled because of their more unmistakable level of non-fickle parts and high consistency. Such oils have the potential, hereafter, to travel incredible divisions from the essential spill zone. This expectedly prompts sweeping sullying and harms (IOSC, 2003). Generally, Light refined things may constitute a flame and effect peril if spilled in constrained circumstances. Such oils in addition have a tendency to be more poisonous than heavier oils as they can provoke mortalities of marine plants and creatures on the off chance that they enter the water section. Generous unsavory, emulsified foul and overwhelming fuel oils, taking all things into account of lower lethality, will constitute a hazard to other untamed life and seabirds (White and Molloy, 2003).

2.9.2 Amount Spilled: The measure of oil spilled is in addition an essential segment in choosing the level of harm done. Thusly, given no collection in different segments, a 100,000 ton spill will accomplish altogether more extensive sullying furthermore cause more unmistakable devilishness than say, a 10,000 ton spill (White and Molloy, 2003).

2.9.3. Territory and Pattern of Oil Spillage: And in like manner imply spill volume, the zone and case of oil slick can be key. The extent furthermore the instance of a spill can have an important bearing on the degree and expense of a scene since it chooses the level of devilishness to the earth and cash related assets. The physical traits of the spill site (e.g. winning winds, tidal degree, streams, water significance, or ocean profundities topography and thickness of the spilled oil) and in addition its division from the coast are fundamental parts that impact oil slick dispersal in like manner, since they have a stunning bearing on the possibility of mounting a tidy up response adrift and a gainful rescue operation. They will comparatively to some degree pick the level of shoreline pollution. It is in addition vital to express that typical complexities will similarly happen in the affectability of these assets for oil contamination and along these lines the money related effect of a spill (White and Molloy, 2003).

2.10. The Ecological Effects of the Oil Industry

The exercises of the oil business are not without some undesirable mood killers on the ecological environment.

Three such undesirable areas influenced are dictated by Odu (1981).

- Destruction of vegetation amidst examination and lying of channels
- The decided closeness of light, warmth, commotion and sometimes filthy overflowing from flares.
- Oil contamination of nature through adventitious triumphs, oil pipeline spills, failure of limit tanks and effluents from refinery.

All parts of the business including examination creation, refining transportation and showcasing add to a clearing degree, towards extending the centralizations of pollution in the earth. Examination entering is done to assess whether crude petroleum is accessible in business sum. As an inland and toward the ocean operation, the strategies for disposing of the unrefined petroleum and related normal gas conveyed at this stage add to ecological contamination through oil spillage. Moreover in the midst of business production of crude petroleum, incidental triumph while exhausting has in like manner been represented as a wellspring of pollution in territory and seaward operation. The impact of oil slicks on solid land is changed, depending generally upon the biota, geological segments and the measure of spillage. Oil corrupting has had destructive impact on various plant species and vegetation advantage (Odu, 1981). Nwankwo and Ifedi (1988: 58-64), perceived the running with parts as a touch of the contamination issues connected with oil examination and creation in the Niger Delta.

2.10.1 Contamination of Streams and Rivers

Over the scope of oil examination and period in the Niger Delta, differing materials are discharged into the earth. Amidst examination, drill cuttings, drill muds and liquids are utilized for enabling era, and in light of present circumstances, the conduits and streams are powerless against corruption. For Example, streams and streams may be contaminated from practices exhausting direct into wetlands, moreover groundwater aquifer contamination may possibly be shown in the water organizations of conductors, assume streams and conduits may be maintained by groundwater.

2.10.2 Forest Destruction and Bio-assorted qualities Loss

The noteworthy constituents of drill cuttings, for instance, barytes and bentonite muds when dumped on the ground expect plants improvement until trademark methods become new top soil. In water according to Nwankwo and Ifedi (1988), these materials disperse additionally, sink, killing marine animals.

2.11 The Impacts of Oil Pollution on the Environment and Wellbeing of the Gokana People.

Oil contamination has affected on the Gokana individuals in a few ways. These are assembled into three interrelated effects viz.:

- a. Unfavorable effects on Biodiversity
- b. Financial Impacts
- c. Physico-wellbeing ways

2.11.1 The effect on Gokana Biodiversity

The most significant and antagonistic effect of oil contamination in Gokana with expansive ramifications on every other part of our customary ways of life and employments, had been the aggregate loss of biodiversity and annihilation of natural surroundings to a great extent because of soil debasement.

The eventual outcomes of the unchecked oil pollution in Gokana have been the completed destruction of organic frameworks. Mangrove backwoods have tumbled to the dangerous way of oil slicks and are being supplanted by noxious nypa palms, the rainforest has tumbled to the hatchet of oil affiliations, untamed life and redirection have been taken off and farmlands have been rendered vain with gross results on the advantage to adequate sustenance.

Amidst oil slicks, the procedure of photosynthesis which overhauls plant masterminded qualities is crippled resulting to the technique is diminished in perspective of the way that spilled grungy have a high absorbance property so when the disagreeable spreads on to the surface of leaves, the last feel that it is hard to photosynthesize and therefore come up short terribly, inducing biodiversity debacle.

The harmful rough additionally influences underground herbs and bushes, while microbial life forms which frame vital gatherings in the sustenance web, are likewise pulverized

2.11.2. Financial Impacts

The financial effects of oil establishment are talked about beneath

One repercussions of oil tainting in Gokana zone is the obliteration of the routine neighborhood monetary candidly steady system of calculating and developing.

The mix of the impacts of oil slick and dangerous tempest happening by virtue of gas flaring has been soil degradation which sways crop yield and reap. Fish are taken off from in-shore or shallow waters into Remote Ocean as a result of flaring.

A complete aftereffect of this is the poor harvest yield as the dirt has been rendered unprofitable and poor fish get, as most fish has been slammed into critical waters and the Gokana individuals don't have the ascertaining contraptions to go into Remote Ocean figuring. The whole impact of this sustenance need and which has affected the limit of most families to maintain them.

Another repercussion of oil defilement is that having pummeled biodiversity, it has in like manner rendered the rustic part unfruitful. Subsequently, the vast majority of the young and ladies have gotten to be jobless since their neighborhood financial emotionally supportive network of angling and cultivating is no more practical.

Oil slicks and Gas flares knows no limitations so there are repulsive effects on social qualities and social pleasantness. A champion amongst the most telling effects of oil contamination on the Gokana society is that it has incited the demise and conceivable decimation of therapeutic plants and herbs that are set up in our standard course of action and extraordinary nearness and have noteworthy monstrousness to the get-together. This corruption is expert by the way that the bigger part of these herbs and plants are found in favored wrinkles, spots of adoration and forests, which have fallen under direct annihilation over the scope of oil misuse and the lethality of oil spoiling.

A charming point to note in such way is that under Nigerian law, a licensee of an oil mining lease is hindered from sharpening its mining lease where, spread alia, the reach is a holy boondocks but this is routinely insulted with rejection by the rampaging oil affiliations.

One zone in which oil tainting has dealt with a dead ring to our customs and traditions is the extreme autonomy which it has developed amongst people from our gatherings which is contrary to our aggregate lifestyles. This had incited the separating of customs, traditions and social qualities, for instance, respect for our senior natives.

By the Gokana custom, seniors are given the customary energy to be regulators of the gathering and its protectors in times of tension and injury, for instance, in the midst of oil spills and other natural scenes.

The standard structure ensures that no single individual have the benefit to assume what has a position with the gathering for him or herself. However with the section of the oil associations, another level of relationship is made between the oil associations and the more seasoned people drove by the customary rulers who most times now see their gathering people as subjects and them as huge men as an aftereffect of the largesse and phenomenal treatment that are given to them (individuals rather than the gatherings) by the oil associations subsequently removing them from the overall public.

The outcome is that in times of trouble or oil contamination like oil slicks and fire fires, a large portion of these older folks consider themselves first and gather monies and others from the oil organizations or they will shape organizations keeping in mind the end goal to front them for contracts to do the "tidy up activities" which are really code words for "concealments".

Instead of being the gathered defenders of the general population, older folks are being seen as teammates with the oil organizations in this manner dissolving group regard for their status and consequent clash amongst them and the adolescent. Along these lines, the social congruity that once existed is broken and friction follows.

CHAPTER THREE

RESEARCH METHODS

This research work adopt a survey design, as data will be collected from a wide range and variety of sources, so as to aid the Researcher to investigate assess and analyze the vulnerability of communities to crude oil exploitation in Gokana Local Government Area. To achieve the aim of this study, certain research procedures were adopted, to which the research methodology will be dedicated to.

3.1. Research Design

Research plan needs to do with structure, tone, or method an exploration study is to embrace in the study. It is the vital arrangement and structure received to accomplish answers to the exploration question. These included graph, certain, coherent, observational and participatory examinations. The expressive overview plot and the applicable examination kind of course of action were utilized as a part of the conduct of this examination. The unmistakable review diagram was picked in light of the way that it portrays record, examine and decipher the conclusions that exist in the study. The significant examination sort of plan was in like way fitting for the study that was tried, as it allows the power to focus on a particular occasion or circumstance and to see, or attempt to perceive, the unmistakable shrewd techniques at work. The nature of this study which is predicated on the frailty to oil examination: An intelligent examination of Gokana neighborhood government scope of Rivers State in Nigeria recognizes the choice of the research strategy.

The study was a blend of both subjective and quantitative exploration strategies. Subjective data that was used over the span of this research, involved an interview and review contextual analysis. This was valuable as in the system allowed the researcher to view conduct in a trademark setting without the impersonation that occasionally encompasses its test or study research (Wimmer, 1999). This method expanded the analysis profundity of understanding of the wonder under scrutiny. The quantitative investigation technique using review was additionally embraced in light of the way that the utilization of numbers allows more foremost exactness in reporting results.

3.2. Population of Study

Concerning the present study, the total population was 228,828 as was documented by the national population commission. From this population, a convenience sample size was selected using the taro Yamane formulation for sample determination as explained in 3.3 below.

3.3. Sample size.

The sample target consisted of 525 respondents, was drawn from the groups influenced by oil exploitation in the area of study. The sample population was obtained using Taro Yamane formula for selecting sample population as explained below.

$$n = \frac{N}{1+N(e)^2}$$

Where:

- n = sample population
N = total population
e = level of precision (0.05), Yamane (1967:886)

3.4 Examining Procedures

The significance of examining in its eminent capacity of factual extent of a given population can't be over underscored. The study zone is so large that examining turned into the most powerful way to deal with touches base at a conclusion under the circumstance. Straightforward irregular testing was the technique utilized as a part of selecting the example from the populace. The basic irregular methodology was used to choose the grown-up male and female individuals from the group, significantly from the four chose towns in Gokana LGA these incorporate (K-Dere, Kpor, Biara and Mogho) that were chosen for the studies. These people group were picked in view of the way that they are the groups that experience the most exceedingly terrible hit of Oil misuse.

This disposed of inclination and however much as could reasonably be expected consider the genuine circumstance inside the groups, as opposed to restrict oneself to a chose thought of a chose few.

3.5. Information Collection Techniques and Instrumentation

So as to complete this study, the analyst depended vigorously on an organized poll which is a fitting instrument for information gathering. This was utilized in light of the fact that they could be used as eye to eye techniques as level of instruction is low. This study was organized in basic and clear terms with both prompt and sound request to meet the standard of all classes of people to be met.

The organized poll that was formulated for this study contains two segments, "A" and "B" individually as found in informative supplement II.

3.6. Perception

Perception valuable in the gathering of information for this exploration study was regarding the regions of and areas of waterways and streams that had been influenced as an aftereffect of oil exploitation in the group, and additionally their adapting assets. The use of discernment over the range of this examination was particularly important, as it was used to compliment other information gathering instruments (singular meeting, Focus Group Discussions and Questionnaire). It additionally served to recognize vital variables and give supportive preliminary information, and what is more the way that it helped the expert to offer access to get together that would by one means or another be troublesome to analyze. Possibly the most basic purpose of enthusiasm of this framework, was that the study happened in the basic setting of the activity being viewed and in this way can give data rich in point of interest and subtlety.

3.6.1. Documentation

Documentation was moreover used as a piece of getting unequivocal data for the portrayal and illumination of the examination study. The reports contained the utilization of web information script, magazine articles, and in addition assorted each day papers and other imperative documentation. All these sources were incredibly noteworthy to the expert, as the data amassed was used and helped the analyst to get however much valuation for the examination issue as could sensibly be ordinary, besides making a proper appreciation of the examination disclosures

3.7 Data Collection Procedure

The expert went to the four towns chosen for the methodology. Thusly remembering the final objective to guarantee that productive work is finished in the region, approval to do the study in the different picked towns by the overall voices in control (for occasion the town heads and manager) was searched for and all around recorded. A systematized request setup was utilized as a part of meeting every subject and starting there, the field surveys were accumulated, comments noted and made at the spaces gave in the review.

3.8 Method of Data Analysis

Reactions gathered from the things on the survey framed the premise for information coding. The information gathered was subjected to a regression analysis using SPSS package 20.0 version.

Additionally, the subjective information, gathered from the individual meeting, was transcribed and deciphered into subsections and was used for inductive thinking and also content investigation in order to find out the degree of effect. The information or data gained from the observational strategy was utilized to supplement what was acquired from both quantitative and subjective data.

CHAPTER FOUR

DATA PRESENTATION AND ANALYSIS

This Chapter deals with presentation and analysis of data of this study. Data was assembled from five hundred and forty five (545) people out of the Six hundred review scattered which secured K-Dere, Kpor, Mogho and Bomu, all in Gokana LGA thusly offering reactions to each objective. The presentation and examination of the quantitative information will be, in light of current circumstances, illustrative, getting a handle on a useful system, utilizing rehash check, rates, tables and graphical methods of insight.

The vital bit of this examination (Section A) strategizes with the demographic data or individual particulars of the study individuals. The respondents intertwine the comprehensive group dwelling in the get-together of study (Gokana), inside the four towns (K-Dere, Kpor, Mogho and Bomu,) decided for the study. This joins indigene and non-indigenes of Gokana who have domiciled there for a drawn out stretch of time, not minding their occupation.

The accompanying are the tables showing the eventual outcomes of the data accumulated

4.1 Socio financial Profile of Respondents

Examination from Table 4.1, exhibits the scattering of the illustration, which was overseen in four vital towns in Gokana LGA that was chosen for the study, including K-Dere, Kpor, Mogho and Bomu. Amongst 221 people and 304 females, the respondents included indigenes and non-indigenes of Gokana, who have lived there for a drawn out stretch of time. This table likewise shows the aggregate number of people and females in different towns inside Gokana that were decided for the study as showed up underneath.

Table 4.1 Distribution of Respondents

Towns	Male	Female	Total
-------	------	--------	-------

K-Dere	45	49	94
Kpor	64	46	110
Mogho	45	87	132
Bomu	67	122	189
Total	221	304	525

Source; Author's field work 2016

Examination from Table 4.2 underneath, displays the deferred result of sexual presentation or sex information collected from the indigenes of Gokana LGA. It displays that a sum of 221 or 42.09% of the respondents are male, while a total of 304 or 57.90% of the respondents constitutes females. By the day's end, a more recognizable rate of the respondents in the study area or where the oil misuse are being done in the towns are female

Table 4.2 Sex Distribution of Respondent

Sex	Frequency	Percentage%
Male	221	42.09
Female	304	57.90
Total	525	100

Source; Author's field work 2016

In table 4.3 underneath, the age development of the respondents that were utilized as a part of the study is appeared. The age range (years) utilized for the study is imparted as takes after: 16-25, 26-35, 36-45, 46-55, and 56 or more, with the aggregate rehash and rate showed. Taking after the age stream utilized it was found that the respondents inside the age degree of 16-25 were 55 or 10.47%, 26-35 were 57 or 10.87%, 36-45 were 56 or 10.66%, 46-55 were 187 or 35.6%, while 56 or more were 170 or 32.38% solely.

Table 4.3 Age Distribution of Respondents

AGE RANGE(YEARS)	FREQUENCY	PERCENTAGE%
16-25	55	10.47
26-35	57	10.85
36-45	56	10.66
46-55	187	35.6
56 AND ABOVE	170	32.38
TOTAL	525	100

Source; Author's field work 2016

From the information appeared in table 4.4 above, it is watched that wedded individuals constitute 337 or 64.19% of the aggregate respondents, while singles were half or 9.52%. Women constituted 27 or 5.14% and widowers 38 or 7.23% autonomously, while divorces constitute 73 or 13.9%.All together this induces that the vast majority of the respondents are hitched individuals in the study district because of the high repeat and rate got.

TABLE 4.4 Marital Status of Respondents

MARITAL STATUS	FREQUENCY	PERCENTAGE%
MARRIED	337	64.19
SINGLE	50	9.52
DIVORCE	73	13.9
WIDOW	27	5.14
WIDOWER	38	7.23
TOTAL	525	100

Source; Authors field work 2016

The table underneath demonstrates that the most lifted number of the respondents, 323 or 61.52 percent, had no formal heading, while 67 of the respondents attempted, or 12.76 percent of them had as of late key get ready, and 94 or 17.90 percent of the respondent had colleague taking everything into account, 41 of the respondents or 7.80 percent of them had tertiary get ready, which unites either a first Degree or Higher National Diploma (HND), or even a Masters Degree. Thusly, when all is said and done, around 39 percent of the respondents had some kind of formal course, against 61 percent of the respondents who don't have any sort of formal preparing or the other.

This is an observation which tends to negate the irritating rate of absence of instruction pervasive in commonplace gatherings.



Table 4.5 Educational Distribution of Respondent

EDUCATIONAL LEVEL	FREQUENCY	PERCENTAGE
NON FORMAL	323	61.52
PRIMARY	67	12.76
SECONDARY	94	17.90
TERTIARY	41	7.80
TOTAL	525	100

Source; Authors field work 2016

4.2 Analysis of oil exploitation hazards in Gokana LGA

The table below highlights risk associated with oil exploitation in Gokana LGA.

Table 4.6; Respondent Opinion on Risk Associated with Oil Exploitation

Communities	Associated Risk				
	Deforestation	Erosion	Destruction of Marine Ecosystem and effluent waste discharge	Massive destruction of agricultural farm land	Total
K-Dere	32	23	25	14	94
Kpor	20	32	25	33	110
Mogho	25	42	14	51	132
Bomu	24	26	66	73	189
Total	101	123	130	171	525

Source: Author's fieldwork, 2016

Table 4.6 above show individuals residing in the various communities that make up the study area opinion on risk associated with oil exploitation, out of the 525 people under study in about 4 communities, opinions were based as follows; deforestation (101 persons), erosion, (123 persons), destruction of marine ecosystem and effluent waste discharge (130 persons), massive destruction of farm land (171 person).

Thus with the analyzed result it implies that Massive destruction of farm land was a major hazard associated with oil exploitation in Gokana LGA.

4.3; Oil Facilities vulnerable to the impact of oil Exploitation;

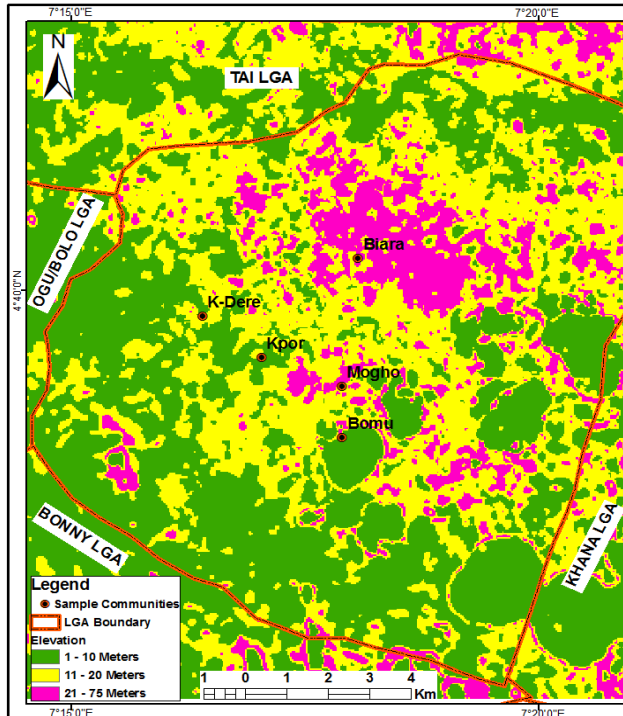


Fig 4.1; Digital Elevation Map and Communities

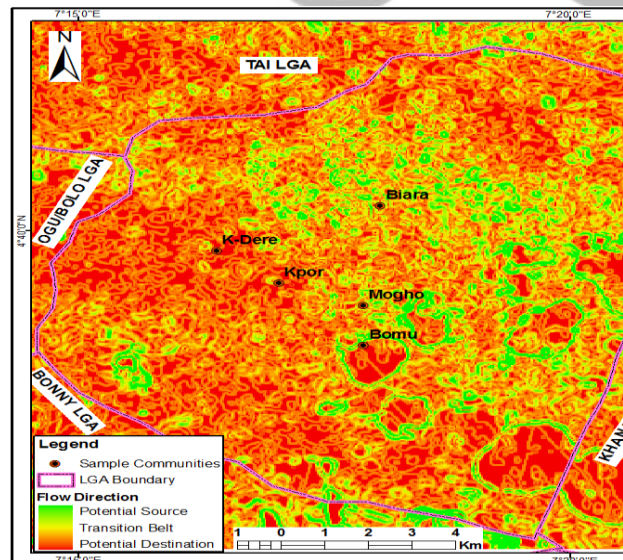
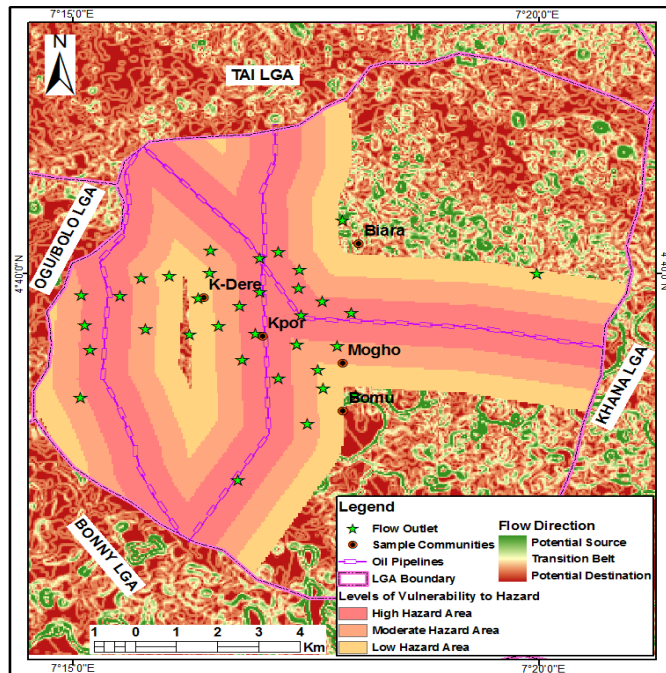


Fig 4.2; Flow Direction and communities



4.3.1 Analysis and Discussion from the Maps

It is a well-established fact that crude oil exploitation has immediate and recurrent impacts on communities in Gokana LGA. The effects incorporate tainting of characteristic wellspring of water including streams and waterways, issue of oil slick, timberland decimation and bio-assorted qualities misfortune, natural impact of gas flaring and in addition gushing release and transfer. Contemplating oil spills (as found in Plates 1 and 2) which happen more consistently in the gatherings under study as a result of transportation and publicizing, mischief to oil pipelines and disasters including road trucks and tankers produce oil spills and hydrocarbon releases have an extensive measure of impact, in light of the way that the risk of oil unfavourably impact the earth, plant, animal and water resources.

Thus, in an attempt to determine the areas vulnerable to oil exploitation in event of oil spills and its spatial extent in the study area, geographical information system (GIS) technique was deployed. With the modelling capability of GIS, complex analysis were carried out with available data. DEM and the oil pipeline data of the study area served as the input data in investigation of the levels of vulnerability to crude oil exploitation in with particular reference to its spatial extent.

In any situation, it is quite obvious that movement of substances (in this case oil) would follow an upstream (source) – downstream (destination) pattern. Here, the relief of the area play vital role in contaminants/materials migration. Also, area located close to the source would be highly impacted while locations farther are likely to be less impacted. Slope layer was then extracted from the DEM to show the flow direction to oil spill hazard in the area. As seen in figure 3, areas with relatively high elevation represent the potential source of hazard while the transition zone is the area characterized by moderate relief. Low – lying area thus becomes the potential destination. In terms of vulnerability to flow direction, Biara is the only community that falls within the transition belt while K-Dere, Kpor, Bomu and Mogho communities’ area potential destination. This means that these communities would be heavily polluted.

Correspondingly, a support method was additionally sent to find out the parallel degree of defencelessness of test groups to pipeline danger. Cradle is a zone around a guide highlight measured in units of separation or time. A cushion is helpful for nearness investigation. The cradle calculation in GIS environment used 500, 1000 and 1500 meters interim to execute the examination. This brought about three (3) helplessness classes as found in Figure 3.

High hazard area (500 meters radius from the pipeline) covered an area of about 26.27km² which Kpor community falls into this category of vulnerability. Also, moderate hazard area which is 1000 meters away from the pipeline covered a total land area of about 20.38km² within which Mogho is located. K-Dere and Bomu communities are found within the low hazard area (1500 meters away from pipeline hazard) spanning about 15.15km². This is to say impact decreases as distance increases thus making Biara to be relatively free from possible hazed.

However, the extent to which changes could harm the environment, or to which the community can be affected by the impact of a hazard or exposed to the possibility of being attacked or harmed is also shown in Plate 3. Area demarcated with red is crude oil that had seeped through the fence of the heavily polluted facility and contaminated several surrounding soils outside the complex.



4.4 Analysis of factors that Increases the Vulnerability of the people to oil Exploitation

The table below highlights the analysis of factors that increases peoples Vulnerability.

Table 4.7; Factors that Increase Vulnerability of the people to Oil Exploitation

Communities	Factors				
	Ignorance	Poverty	Poor public enlightenment	Others	Total

K-Dere	10	23	51	10	94
Kpor	20	25	34	31	110
Mogho	38	42	20	32	132
Bomu	34	45	20	90	189
Total	102	135	125	163	525

Source: Author’s fieldwork, 2016

Table 4.7 above show individuals residing in the various communities that make up the study area opinion on Factors that increases the vulnerability of the people to oil exploitation, out of the 525 people under study in about 4 communities, opinions were based as follows, Ignorance (102 persons), Poverty, (135 persons), Poor Public Enlightenment (125 persons), Others (163 person). Thus with the analyzed result it implies that Poverty was a major factor that increase the vulnerability of the people to oil exploitation in Gokana LGA

4.5 Awareness of people to hazard and risk associated with oil exploitation

The table below highlights the level of awareness of people to hazard and risk associated with oil exploitation.

Table 4.8 Awareness of Respondents to hazard and risk associated with Oil exploitation

RESONSES	FREQUENCY	PERCENTAGE
STRONGLY AGREE	432	82.28
AGREE	50	9.52
DISAGREE	29	5.52
STRONGLY DISAGREE	14	2.66
TOTAL	525	100

Source; Authors field work 2014

As appeared in the table over, most of the respondents, 432 (82.28%), emphatically concur that they know about the risk connected with oil misuse in their group and the purpose behind such, as accumulated, was because of appropriate illumination by Nigerian government and oil organizations situated in the zone. 50 individuals concurred that they know about the peril connected with oil establishment in their group, additionally because of the reasons expressed. 29 individuals differ and 14 individuals firmly differ that that they know about the risk connected with oil establishment in their group, but instead pointed out that if such peril ever existed it will be because of the low quality of materials utilized as a part of the development of pipelines that are utilized for oil transportation. They likewise ascribed a portion of the causes because of the poor geology of the range, which as a rule prompts monstrous disintegration, hence making channels burst, which ought to have been checked by the administration or the oil organizations penetrating in their group.

4.6 Adaptation strategies by Respondents

The table below highlights adaptation/coping strategies adopted by the people

Table 4.9; Coping Strategies of the people

Communities	Strategies				
	Securing of new unaffected area for development	Relocation to different towns	Purchasing food crops from other towns	Engaging in Non Farming activities	Total
K-Dere	9	20	20	45	94
Kpor	29	23	24	34	110
Mogho	21	22	24	65	132
Bomu	23	76	45	45	189
Total	82	141	113	189	525

Source: Author's fieldwork, 2016

Table 4.9 above show Coping strategies of the people to Oil exploitation, out of the 525 people under study in the 4 communities, opinions were based as follows, Securing of new unaffected area for development (82 persons), Relocation to different towns, (141 persons), Purchasing sustenance crops from different towns (113 persons), Engaging in non-cultivating exercises (189 man).

Thus with the analyzed result it implies that Engaging in Non-farming activities was a major coping strategies of the people to Oil exploitation in Gokana LGA

4.7 Discussions of Findings

Concluding from the consequence of the study completed, Majority of the respondent are aware of the extent to which Oil exploitation possess a lot of threat to their livelihood and asset, also they identified the hazard caused by these oil exploitation to include massive destruction of farm land ,destruction of marine eco systems erosion and deforestation. The reason for them being aware is due to their cordial relationship the oil companies and the government

Another element of discussion was the major factor that increases the vulnerability of the people to oil exploitation, the respondent identified Poverty as the major factor which increases their vulnerability to these oil installations although other factors such as ignorance, poor public enlightenment was also identified.This has further disintegrated the personal satisfaction of the

occupants of Gokana LGA. All the aforementioned issues have prompted poor way of life and high wrongdoing rate and additionally high frequencies of Adoption of oil exiles in return for cash. The study also shows that majority of the respondent are aware of the hazard and risk associated with oil exploitation but due to poverty and other factors they have low capacity to help themselves.

From the aftereffect of this study, it has been shown that the occupants of Gokana LGA have utilized different adapting methodologies and also readiness techniques towards the unforeseen issues of oil abuses in their group. Consequently, since this examination is construct for the most part in light of the defenselessness of oil misuses, a bit of the adjusting strategies used or got by this gathering of study, for calming the negative effect of oil foundation as found from this study, joins taking an interest in non-developing activities, purchasing of sustenance yields/things from unaffected neighboring towns, acquiring of new unaffected region for improvement, relocation to different towns/towns and distinctive means like searching for assistance from managerial and non-administrative affiliations.

In this way different readiness systems utilized by the group towards amplifying their way of life incorporate early collecting of rural produce, taking part in proper putting away of rural create and auctioning off of rural produce.

In rundown, Gokana LGAs is confronted with a great deal of issues connected with oil misuse, and this exploitation has revealed a portion of the components connected with the powerlessness of oil abuse, how defenseless the general population to the effect of oil abuse on the group, and additionally their level of attention to the danger connected with oil misuse and the 'readiness arrangements' to turn away or adapt such anarchy.

The goals of this study have included nonappearance of openness to every one of the towns in the social event of study, and that most by a wide margin of the outcomes and conclusions from this study have been extrapolated from the projections and disclosures from the four (4) basic towns in the get-together of study. One can't vacant the issue of self-inclination from the examination part who is likewise from a substitute oil making pack in Nigeria, and who in like way drives forward through the same negative effect as that seen in Gokana LGA. In a general sense, the examination part's vigorous estimations can be a section in the outcome examination, which is a baffling variable that can affect the outcome.

4.8 Research Hypothesis

HO: There is no significant negative effect of crude oil exploitation on the socioeconomic wellbeing of Gokana people.

Summary of regression analysis between crude oil exploitation variables and Quality of life in the study area

Variable	Beta Estimate	Std. Error	T	Sig	Remark
(Constant)	-	.297	7.716	.000	
Crude oil exploitation	.148	.026	2.716	.007	Reject Ho
R	.164				
R ²	.027				
Adjusted. R ²	.023				

Standard Error	0.82683
D-Watson	1.545
F Value	7.346

Source: Field Survey, 2016.

Dependent variable (quality of life)

Decision:

The overall fit of the regression model is good given the ANOVA F-value of 7.346 and significant at 0.05 critical level.

The Durbin Watson statistic which measure the serial correlation of the variables shows 1.545 Since the value is greater than one, it is an indication that there is autocorrelation among the successive values of the variables in the model. Hence, linear relationship exists between the dependent and independent variable of the model.

In addition, each independent variable is evaluated to determine their contribution to the overall model and thus decide whether to accept or reject the earlier stated hypotheses. The absolute value of Beta estimate (β) is used in order to compare and determine the influence of the independent variables on the dependent variable. Table shows that crude oil exploitation is a good predictor of quality of life the under study. Specifically, at 0.05 probability level, crude oil exploitation ($\beta=0.148$; $t=2.716$; $p<0.01$) is significant towards quality of life achievement. It can be observed that crude oil exploitation positively correlated toward predicting changes in quality of life since their probability level was greater than 0.01. Thus, the null hypothesis was rejected and alternate hypothesis was accepted.

Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df 1	df2	Sig. F Change	
1	.891 ^a	.794	.793	.38116	.794	1022.413	1	265	.000	1.698

a. Predictors: (Constant), crude oil exploitation

b. Dependent Variable: quality of life

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	148.541	1	148.541	1022.413	.000 ^b
	Residual	38.500	265	.145		
	Total	187.041	266			

a. Dependent Variable: quality of life

b. Predictors: (Constant), crude oil exploitation

Coefficients^a

Model	Unstandardized Coefficients	Standardized Coefficients	t	Sig.
-------	-----------------------------	---------------------------	---	------

	B	Std. Error	Beta		
(Constant)	.568	.071		7.954	.000
1 Crude oil exploitation	1.505	.047	.891	31.975	.000

a. Dependent Variable: quality of life

CHAPTER 5

SUMMARY, RECOMMENDATIONS AND CONCLUSION

5.1 Summary

The summary of major findings shows that:

- Majority of the respondents in Gokana LGA know about the degree to which unrefined petroleum misuse pose danger to the work and resource of the general population
- Majority of respondents in Gokana LGA agreed that poverty was the major factor that increases the peoples vulnerability to the impact of crude oil exploitation
- Majority of the respondents in Gokana LGA are aware of the hazard and risk associated with crude oil exploitation
- Majority of the respondents in Gokana LGA had built their capacity to include incorporate procurement of new unaffected area for development, and taking part in non-cultivating exercises.

5.2. Conclusion

In the perspective of the study, it was uncovered that the powerlessness to the effect of unrefined petroleum abuse is high in the Gokana LGAs, in this manner prompting a high rate of natural debasement in these groups.

Groups where oil establishments are found ought to be the subject of specific by the legislature and even by the different oil organizations situated in their group. This is on the grounds that in groups where oil groups establishments are discovered , with extraordinary reference to the gathering of study (Gokana), where this study was done, which included the level of weakness of the overall public to oil foundations, both fundamental and discretionary data obtained from 600 respondents living in Gokana LGA was gotten. It was drawn arbitrarily from four noteworthy towns (K-Dere, Kpor, Mogho and Bomu). The concentrate in this manner uncovered that the indigenes have an abnormal state of powerlessness to oil establishment.

Also the study sought to ascertain the extent to which oil exploitation pose problem to the sources of livelihood. The result revealed that respondent strongly agreed that oil installation pose threat to their livelihood and asset to Gokana people. The study has additionally learned that central point that expands the powerlessness of the general population to oil establishment with destitution as a main consideration, at the end of the day, the ramifications of this is outright care, sufficient and an up and

coming alternate course of action must be set up to guarantee that nature and its assets are not jeopardized by the exercises of the oil organizations. Likewise, it is critical that administration ought to arrange youth/grown-up illumination programs, and also guarantee that different education projects are completed by experts and are done as often as possible in the group. These courses or projects ought to essentially be founded on edification of the general population on the general threats or impacts of oil establishment on the earth, and its pessimistic consequences for the general population in the group everywhere, the organization must accept a principle part by requesting and executing normal laws that will guarantee the oil conveying bunches, furthermore guarantee the affected gatherings of a predominant vocation

5.2 Recommendations

In light of the above discoveries and resulting discourse, the accompanying suggestions are made to various gatherings required in oil establishment issues in Gokana LGA. These include Oil companies of the Federal Republic of Nigeria, since all contribute clearly and by suggestion to manufacture the shortcoming of the overall public to the impact of oil misuse to the cause and in the gathering. It is proposed that a multi-sectoral way to deal with calamity administration be utilized in Gokana LGA, which fundamentally includes keeping the danger of catastrophes, alleviating the seriousness of fiascos, crisis readiness, and additionally viable reactions to debacle, and post-disaster recuperation and recovery. These measures or practices should be gotten by the council of the Federal Republic of Nigeria remembering the final objective to control the helplessness to impact of disasters, moreover for suitable and beneficial organization of it in Gokana Local Government Areas as cleared up underneath.

It is imperative that a strong preparedness, response, and regulatory/management administration foundation be set up in Gokana LGA, since a large part of the general population are helpless due to hazard and risk posed by oil exploitation. Initial step include exercises and measures taken right on time to guarantee productive reaction to the effects of dangers, including the issuance of fortunate and extreme early warning, the temporary relocation of individuals and property from the injured district etc.

These strategies should include:

- Trainings: Agencies such as NOSDRA (National Oil Spill Detection and Response Agency) and DPR (Department of petroleum Resources) which have been put in place to respond and manage oil spillages should take community participation in oil spill management very seriously.

This they can do by incorporating at least leaders and some members of the K-dere, Kpor, Mogho and Bomu communities of Gokana L.G.A in their periodic trainings and even JIV (Joint Investigation Visits) and also liaise with them to organize trainings and rehearsals in the communities.

Local trainings in the affected communities will help them prepare for this hazard and also reduce the extent of impact of oil spillage in these communities. E.g. enlightening them on who to report to when spillages occur, degree of hazard associated with scooping crude oil when a spill occurs, eating food contaminated by crude oil and engaging in bunkering.

During local training, members of the community should also be discouraged and warned against hazards associated with living close to laid pipelines or ROW (Right of Way) as this will also help reduce the impact of crude oil pollution in case it occurs.

- **Regulatory Enforcement:**Regulatory bodies such as NOSDRA should be stricter with the mandate to fine oil companies when they fail to report, cleanup or remediate spills on time and also increase their penalties. However, early response and cleanup of contaminated areas helps to reduce the extent of impact of oil spillage in the afore mentioned Gokana communities.
- Pipeline facility owners which are the oil companies should keep up with the mandate by the government to carry out maintenance on their facilities (pipelines) as at when due.
- Payment of compensation to affected communities should not be ignored but must be properly done based on the cause of spill and funds should be made available to completely clean up contaminated sites.

REFERENCE

Anifowose .M. (2002). The Oil Industry Extra-Ministerial Institutions and Sustainable Agricultural Development: A Case Study of Okrika L.G.A. of Rivers State, in Nigeria. *Journal of Oil and Politics*, 2(1)

Amu, L.A.O (1997). A Review of Nigeria's Petroleum Industry. NNPC, Lagos.

Aghalino, and Eyinla. (2009). A Photo Gallery of Oil Spills Oil Fires, Fires Images Gas Flares. UrhoboHistorical Society

Badijo and Nwilo (2004) Assessing the Impact of Oil & Gas Transport on Nigeria's Environment. U21 Postgraduate Research Conference Proceedings 1, University of Birmingham UK. .

BlumsteinDT. 2003. Flight-initiation distance in birds is dependent on intruder starting distance. *J Wildlife Manage.* 67:852–857.

Bolin, C. (2003) Community Based Disaster Risk Management Approach: Experience Gained in Central America. GTZ, Eschborn.

Canon.T., Twigg.J. & Rowell.R. (2003) Social Vulnerability, Sustainable Livelihoods and Disasters. Report for DFID's Conflict and Humanitarian Assistance Department and Sustainable Livelihood Office (London: DFID). available at:
w.w.w.benfield.org/disaster_studies/projrcstssoc_vuln_sustlive.pdf.

Cardona (2004). Oil of Poverty in the Niger Delta.A publication of the African Network for Environment and Economic Justice.

Cardona OD, Hurtado JE (2000) Holistic seismic risk estimation of a metropolitan center, in Proceedings of 12th World Conference of Earthquake Engineering, Auckland, New Zealand.

Carreno ML, Cardona OD, Barbat AH (2005a) System of Indicators for the risk evaluation (in Spanish), Monographs of Earthquake Engineering, IS-52, Barbat AH (ed.), International Center for Numerical Methods in Engineering (CIMNE), Barcelona, Spain..

Celestine, A (2003). Hydrocarbon Exploitation, Environmental Degradation and Poverty: The Niger Delta Experience. Diffuse Pollution Conference, Dublin.

Chukuezi, C (2006). Oil Exploration and Human Security in Nigeria: A Challenge to Sustainable Development. 2006. Federal Ministry of Environment Abuja, Nigerian Conservation Foundation Lagos, WWF UK and CEESP-IUCN Commission on Environmental, Economic, and Social Policy, May 31 Niger Delta Resource Damage Assessment and Restoration Project.

Crichton, D. 1999. "The Risk Triangle", pp. 102-103 in Ingleton, J. (ed.), Natural Disaster Management, Tudor Rose, London.

Cutter, S. L., B. Boruff, and W. L. Shirley. 2001. "Indicators of Social Vulnerability to Hazards." Unpublished paper. Columbia, S.C.: University of South Carolina, HazardsResearch Lab.

Davidson, R. (1997). An urban earthquake disaster risk index.Ph.D. thesis, Department of Civil Engineering, Stanford University, CA, USA.

Davidson (1995)" India: Economic Development and Social Opportunity", Oxford University Press,Delhi and Oxford

- Downing, S. M. (2004), Reliability: on the reproducibility of assessment data. *Medical Education*, 38: 1006–1012. doi:10.1111/j.1365-2929.2004.01932.x
- Etkin, D.S. 1999. Estimating cleanup costs for oil spills. *Proceedings of the 1999 International Oil Spill Conference* : pp. 35-39
- Federal Ministry of Environment Abuja, Nigerian Conservation Foundation Lagos, WWF UK and CEESP-IUCN Commission on Environmental, Economic, and Social Policy, May 31,(2006). Niger Delta Resource Damage Assessment and Restoration Project.
- Granger, D. E., W. F. Herrnkind, and C. D. Bowling. 1995-1997. Sea-to-See and SATS Camp: Expanding Marine Environmental Education in the Big Bend Region of North Florida. Florida Advisory Council on Environmental Education. Florida Department of Environmental Protection.
- Ikporukpo, B. C. O. (1988). Managing oil pollution in Nigeria. In P. O.Sada& F O. Odemerho (Eds.), *Environmental issues and management in Nigerian development* (pp. 224-229). Ibadan, Nigeria: Evans Brothers Ltd
- Jike, V. T. (1987). US and THEM: Social determinants of work attitudes in Nigeria's urban employment sectors . Unpublished doctoral thesis, University of Bath, England
- Kinaka. (1983). *The First Pictorial History of the American Oil and Gas Industry 1859-1983*. Ohio University Press, Athens, OH. 169pp
- NEPDG, National Energy Policy Development Group, (2001). *National Energy Policy, Report of the National Energy Policy Development Group*. May 2001
- Nwilo, C.P. and Badejo, T.O (2004).Management of Oil Dispersal alongthe Nigerian Coastal Areas. Department of Survey &Geoinformatics, University of Lagos, Lagos, Nigeriawww.oceandocs.org/handle/1834/267
- NEST (1991). *Nigeria's Threatened Environment: A National Profile*, Ibadan, Nigeria
- Nwankwo, N. and Ifeadi, C.N. (1988). Case studies on the environmental pollution of oil production and marketing in Nigeria; In: Sad, P.O. and Odemerho, P.O. (eds.) 1988. *Environmental issues and management in Nigeria development*,Evans Brothers, Ibadan, Nigeria.208 –223.
- Oyem, A., 2001. *Christian call for action on Nigerian oil spill*. Sage-Oxford's Christian Environmental Group.
- Odjuvwuederhie, I; DonglasonOmoborand, G; Felicia Adun N (2006).The Effect of Oil Spillage on Crop Yield and Farm Income in Delta State of Nigeria. *J. Central Eur. Agric*; 7(1):41 – 48. Available at www.agr.hr/jcea/issues/jcea7-1/pdf/jcea71-6.pdf. Accessed on 09.09.2010.

Siyanbade, D. O. (2006) Disaster Management in Nigeria: Preparedness and Prevention. Lagos, Olive Tree Publishing Ventures.

Twumasi, Y. and Merem E (2006).GIS and Remote Sensing Applications in the Assessment of Change within a Coastal Environment in the Niger Delta Region of Nigeria. International Journal of Environmental Research & Public Health, 3:1, 98-106. www.ijerph.org

White and Molloy 2003; Loureiro et al. 2005; Punzon et al. 2009;Alló and Loureiro 2013United Nations Development Programme,. Niger Delta Human Development Report. Abuja, Nigeria,2006:185&186

United Nations Environmental Programme Accessed August 10 2010. www.unep.org

APPENDIX I

Center of Disaster Risk Management
and Developmental Studies
University of Port Harcourt,
Rivers State.
18th April, 2016.

TO WHOM IT MAY CONCERN

I am a Post graduate student of University of Port Harcourt carrying out a research on **VULNERABILITY OF COMMUNITIES TO THE IMPACT OF CRUDE OIL EXPLOITATION IN GOKANA LGA OF RIVERS STATE**in partial fulfillment of my Master's Degree in Disaster Risk Management and Development studies.

I hereby solicit your cooperation in providing information. This questionnaire shall be used purely for academic purpose

Thank you

Yours Sincerely

ONYEJEKWE MARY

QUESTIONNAIRES ON VULNERABILITY OF COMMUNITIES TO CRUDE OIL EXPLOITATION IN GOKANA LGA OF RIVERS STATE

PLEASE COMPLETE THE FOLLOWING QUESTIONS BY MARKING THE SPACES PROVIDED WITH A TICK (✓) OR FILLING UP THE SHORT ANSWER QUESTIONS AS REQUIRED BELOW.

QUESTIONNAIRES FOR RESPONDENTS

PART I - SOCIO ECONOMIC INDICATOR

1 Name of Community;

(a) K-DERE (b) KPOR (c) MOGHO (d) BOMU

2. Gender: (a) Male (b) Female

3. Age:

(a) Less than 18yrs (b) 18-30 (c) 31-45 (d) 46- 60 (e) Above 60yrs

4. Marital Status:

(a) Single (b) Married (c) Widowed (d) Separated

5. Educational Background:

(a)No education (b) Non Formal (c) Primary (d) Secondary

(e) Tertiary I - ND, NCE, HND (f) Tertiary 2- B.Sc, PGD, M.Sc, PhD

6. Estimated Monthly Income:

(a)Less than N10,000 (b) N10,000 — N20,000 (c) N20,000- N30,000

(d) N30, 000— N40, 000 (e) N40,000 — N50,000 (f) Above N50,000

7. What is your occupation?

(a) Fishing (b) Livestock sales (c) Sales of Perishable goods (d) farming (e) others –please indicate.....

8. What is the number of employee in your business

(a) 5-8 (b) 9-12 (c) 13-16 (d) 17 -20

SECTION B

INSTRUCTIONS: PLEASE READ THE FOLLOWING STATEMENTS AND RATE THEM BY TICKING (✓) THE COLUMN THAT BEST CORRESPONDS WITH YOUR RESPONSE.

9) Do you think Oil exploitation pose any hazard to the livelihood and asset of the host community?

- 1. Strongly Agree
- 2. Agree
- 3. Disagree
- 4. Strongly Disagree

10) Mention some hazard associated with the negative effect of oil exploitation.....

11) Do you concur to the opinion that poverty increases that poverty increases the vulnerability to oil exploitation

- a).Strongly Agree
- b) Agree
- c).Disagree
- d) Strongly Disagree

12) Thick any other opinion

- a) Ignorance
- b) Poor public enlightenment
- c) Others mention.....

SECTION C

INSTRUCTIONS: PLEASE READ THE FOLLOWING STATEMENTS AND RATE THEM BY TICKING (✓) THE COLUMN THAT BEST CORRESPONDS WITH YOUR RESPONSE.

13) Do you think that oil installation vandalization is the major cause of oil spillage in your communities

- 1.Strongly Agree
- 2.Agree
- 3.Disagree
- 4.Strongly Disagree

14) The rate of soil degradation in Gokana LGA is as a result of continuous spillage caused by oil exploitation

- 1.Strongly Agree
- 2.Agree
- 3.Disagree
- 4.Strongly Disagree

15)The oil company involved in pollution and degradation of this environment has done a lot to sensitize the people to hazard and risk associated with oil exploitation 1.Strongly Agree

- 2. Agree
- 3. Disagree
- 4. Strongly Disagree

16) Crude oil exploitation does not pose any hazard to the host community.

17) Oil exploitation has impacted negatively on the socio-economic well-being of the inhabitants

- 1. Strongly Agree
- 2. Agree
- 3. Disagree
- 4. Strongly Disagree

If Strongly Agree or Agree (please specify): _____

If Strongly Disagree or Disagree (please specify): _____

18) The negative effect of oil exploitation has degraded the agricultural farmlands.

- 1. Strongly Agree
- 2. Agree
- 3. Disagree
- 4. Strongly Disagree

19) The unrest in the oil producing communities is caused by oil exploitation only.

- 1. Strongly Agree
- 2. Agree
- 3. Disagree
- 4. Strongly Disagree

If Disagree or Strongly Disagree (please specify): _____

20) Oil companies provide mass employment to reduce the crime rate in oil communities.

- 1. Strongly Agree
- 2. Agree
- 3. Disagree
- 4. Strongly Disagree

21) More than enough infrastructures have been provided by the oil companies located in the host community.

- 1. Strongly Agree
- 2. Agree
- 3. Disagree
- 4. Strongly Disagree

22) The relationship existing between the community and the oil producing company is very cordial.

- 1. Strongly Agree
- 2. Agree
- 3. Disagree
- 4. Strongly Disagree

23) Compensations are not commensurate with the rate of loss of livelihood.

- 1. Strongly Agree
- 2. Agree
- 3. Disagree

4.Strongly Disagree

24) What are the coping strategies employed by the host community against the effect of oil spillage.

- 1.Migration to other villages/towns
- 2.Purchasing of food crops from unaffected neighboring towns
- 3.Acquisition of new unaffected land for cultivation
- 4.Engaging in non-farming activities

Others (please specify): _____

25) According to your experience, do you receive any special warning concerning an advancing oil installation break down?

- 1.Do not know
- 2.Yes
- 3.No

26)If your response to question 20 above was “Yes”, what preparedness strategies do you engage in for readiness in case of the damaging effect of an oil installations (please specify):

THANK YOU VERY MUCH FOR YOUR TIME AND RELEVANT

RESPONSES.

