

ENVIRONMENTAL IMPACTS OF OIL EXPLORATION (OIL AND CONFLICTS: NIGER DELTA AS A CASE STUDY)

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ABSTRACT

The article highlights and explains the environmental impacts of oil exploration and exploitation in Nigeria, using Niger Delta as a case study. The environmental impacts discussed are negative impacts and they can also be described as oil conflicts. This borders around damages made in Niger Delta, and how they can be curbed using existing protocols, rules, laws and organizations by preventing further damages of the flora and fauna bodies in the Niger Delta. The article finds that curbing the oil conflicts in the Niger Delta has been sabotaged by both the companies involved with exploration and the government at large. It concludes that oil conflicts can be curbed or even totally eradicated if everyone shows concern in the implementation of the laws and regulations provided as a result of the conflicts.

Keywords: *Conflicts, Exploration, Pollution, Degradation, Damages*

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BACKGROUND OF STUDY

The impact of exploration with reference to Niger Delta is germane and calls for concern.

OIL AND THE NIGERIAN ECONOMY

From the creation of Nigeria, in the year 1914 to the end of colonialism, agriculture remained the chief source of the economy. During the colonial period from 1914-1959, Nigeria was exploited for its agricultural products. The major products were cocoa from the west, groundnut and cotton from the North and Palm oil from the east with Niger Delta inclusive. Oil exploration began in 1956 in Nigeria but was not significant in the Nigerian economy until early 1970. Revenue from oil in the early 1960's accounted for less than 10 per cent of Nigeria's revenue base¹.

The *Oil and Gas Journal of 2005* estimated Nigeria's oil reserves to be at 35.2 billion barrels. In Feb 2005, Nigeria announced the award of 5 oil blocks in the *Joint Development Zone* shared by the neighboring areas such as Sao Tome, and Principe. The JDZ at the time held reserves of 11 billion barrels, and could yield up to 3 million barrels a day. Nigeria also had an estimation of 176 trillion cubic feet of proven natural gas reserves, where the country would have done one of the top ten natural gas endowments in the world and the largest endowment in Africa.

DEMOGRAPHY AND GEOGRAPHY:

Niger Delta is a large area of southern Nigeria, which houses close to 30 or more people. The major states in Niger Delta include Rivers, Bayelsa, and Delta where most of our research work is based on. Its surrounding states include Akwa-ibom, Cross River and Edo. The Niger Delta is bio-diverse with its mangroves providing carbon sequestration capacity and it permits a wide range of plant variety and animal life, as well as agriculture and fishing which tends to be their

¹ Dr Kadafa .A. Ayuba, *Environmental Impacts of Oil Exploration and Exploration and Exploitation in the Niger Delta of Nigeria*, (2012) 12 GJSF 3.
<https://globaljournals.org/litem/1298-environmental-impacts-of-oil-exploration-and-exploration-in-the-niger-delta-of-nigeria>. Accessed 11th October 2020.

reliance for their livelihood. When discussing the possible oil conflicts in relation to Niger Delta, we can't help but mention or lay emphasis to the problem statement of the disastrous impacts on the Niger Delta environment. Oil exploration and exploitation has been on- going for decades in the Niger Delta, and as such made the reality in that region an uninteresting one as it has affected people adversely in that region. We should also take to cognizance the fact that the indigenes live there and most of them have 95% of their lifetime achievement in that area still².

Niger Delta consists of diverse ecosystem of mangrove swamps, fresh water swamps, rain forests and is actually the largest wetland in the whole of Africa, amongst the ten important wetlands in the world. Though this is a fact to be proud of, Nigeria in itself due to ignorance and negligence has not taken cognizance to this and due to that oil pollution which is the major disaster there now makes this wetland to be characterized by contaminated streams and rivers, forest destruction and biodiversity loss in general. In return, the effect of this bounces back on the indigenes, as most of them as earlier mentioned have their lives dependent on the ecosystem services. With the effects of this environmental impact on the indigenes, there has been an up shoot of abject poverty of most of them. It is no news that the oil industry located within this region has contributed immensely to the growth and development of the country which is a fact that cannot be disputed but unsustainable oil exploration activities has rendered the area almost inhabitable and it now takes the place of one of the five most severely petroleum damaged ecosystems in the world. Previous studies have shown that the quantity of oil spilled over 50 years was at least 9-13 million barrels, which is equivalent to 50 Exxon Valdez Spills.

² *Ibid*

The oil industry is mainly confined into the offshore and onshore parts of the Niger Delta. The industry is usually considered to be divided into distinct classes of the upstream and downstream sector³.

- **The upstream sector:** This is basically exploration services carried out within the oil wells. They include prospecting production and transportation of oil which in simpler terms mean the searching for of oil deposits in commercial qualities, the actual pumping of the discovered oil out of the ground and the movement of the unrefined crude oil to the refineries⁴.
- **The downstream sector:** This is the most important stage where the oil is now refined into various products like petrol, diesel, kerosene etc. This is the most important stage because it is the stage where the crude oil is transformed into its most valuable stage. The actual stage that makes oil exploration a very lucrative business. After this stage, the refined products are transported to customers by pipelines, sea road and rail tankers. These activities have adverse effects on the flora and fauna of these oil-rich areas. These effects and their remediation is the basis of this research⁵.

OIL ACTIVITIES AND ITS IMPACT ON THE ENVIRONMENT

- **Oil Pollution**

The World Health Organization explains pollution to be when the environment is altered in composition or conditions directly or indirectly as a result of the activities of man on it. It leads to air, land, and water pollution thereby rendering them unsafe for human use. Irrespective of the

³ Emmanuel Teryila Tyokumber, *Review of Ecological Effects of Oil Exploration in the Niger Delta, Nigeria, (2014)* *International Journal of Agricultural Sciences and Natural Resources: 1(4):76-80*
<https://www.researchgate.net/publication/28472794-Review-of-Ecological-Effects-of-Oil-Exploration-in-the-Niger-Delta-Nigeria>. Accessed 11th October 2020.

⁴ *Ibid*

⁵ *Ibid*.

preventive measures including technical and manual, international and national, mistakes that warrant oil spillage are still bound to happen as accidents always happen. It has also been proven that all activities of the oil industry have negative effects respectively on the environment⁶.

- **Physical Pollution**

This happens in the preparation of the well site, because a lot of trees will have to be cut down which is known as deforestation, and this act in turn affects the terrestrial ecosystem. This act also leads to the exposure of the soil surface and then in turn makes the soil nutrients diminish and by extension a reduction in agricultural activities happens. This was first observed in the 1960's when surveyors started clearing forests and swamps⁷.

- **Noise Pollution**

During prospecting, the most reliable exploration tool used in the oil industry is the Seismic technology. It creates seismic waves at the subsurface of the earth. While this equipment is used, explosives and fire electrical devices are also used simultaneously for the effectiveness of the equipment and this in conjunction with the first mentioned has led to the flee of the fauna, in other words the migration of the animals. This in general poses as a threat to the environment because the animal waste that would have been used to enrich the soil as manure and fertilizer is nowhere to be found in some areas. The agricultural potentials have therefore been reduced as a result of this. It is also a fact that the noise generated from the above oil exploration acts mentioned above affects both animals and man especially if close to residential areas competitively⁸. One would think that there's an end to this, but production never ends and as such the assurance that the noise will end as well is not guaranteed, even if it stops someday, a

⁶ *Ibid*

⁷ *Ibid*

⁸ *Ibid*

lot of damage would have been caused already. The noise in question also results from the vibrations of all other mechanical movement of components of the drilling ring⁹.

- **Air Pollution**

Under the negative impacts of oil and gas the aspect solely responsible for air pollution is Gas flaring. Gas flaring associated with oil production in the Niger Delta is generally unsafe for natural ecosystems and biodiversity. It contains more than 250 toxins. The implication of Gas flaring in Nigeria includes the fact that 100% losses of crop produce cultivated 200 meters away from the Izombe Station. Leakages and fire accidents are also associated with gas production and transportation. For instance, the *Nigerian Liquefied Natural Gas (NLNG) Pipeline from Kala-Akama and Okrika* mangrove Swamps in Niger Delta leaked and caught fire. This fire burned uncontrollably for 3 days and caught across local plants and animals inhabiting the affected area were killed¹⁰.

- **Chemical Pollution**

Prospecting causes topsoil destruction and chemicals get infiltrated in the aquifers. This generally has led to the degradation and alteration of the ecosystem in the environment and also it has led to the total destruction of the mangrove forest in *Igbokoda area of Ondo state in 1988/1989*. Oil production pollutes the environment when chemicals have been dumped or come in contact with the soil, or even from the drilling of mud and oil around well heads. Other sources of chemical pollution happen when a valve has failed around flow stations and also during material failure along pipelines. This kinds of pollution also happens off shore but the most affected areas are the swamps, because these are like stagnant water bodies, and the chemicals or oil spills into it and are covered by oil and oil associated chemicals. This results to damage the

⁹ *Ibid.*

¹⁰ *Ibid*

ecosystem as fishes, birds and other animals in the vicinity are killed or frightened away leading to the loss of sanctuaries and natural animal habitats. In all of this, due to the polluted and destroyed environment, food chain has been somewhat truncated and this sometimes has a toll on the health of both humans and animals¹¹.

- **Oil Transportation**

One would ask or wonder how this results in pollution. To be able to answer this question or settle the curiosity that comes with it. We should be able to answer or tell how oil is usually transported by pipelines, and tankers. Oil transportation by pipelines on land or through sea, is a serious and possible means of pollution and this form of pollution results from seepage or leakage, or the breaking of pipes as a result of wear and tear, or by a person whether mistakenly or intentionally, and this is very common in Niger Delta. From the quantity of spilled oil, it can be determined whether or not the pollution could be slight or massive. The direct, physical, chemical or fire damage caused by this pollution, always alters the ecosystem permanently. Gas, crude oil and other transportation or other products could also be by land, tankers or by sea. This could also pollute the water either by little wash always or sips, into huge spillages as a result of ship accidents such as the *Armoco Cadiz Spillage of 1979 and the Exxon Valdez Spillage of 1980's*¹². This results also in the destruction of the flora and fauna and results in irreplaceable damage to the ecosystem¹³.

¹¹ *Ibid*

¹² Dr Kadafa .A. Ayuba, *Environmental Impacts of Oil Exploration and Exploration and Exploitation in the Niger Delta of Nigeria*, (2012) 12 GJSF 3.
<https://globaljournals.org/IJTEM/1298-environmental-impacts-of-oil-exploration-and-exploration-in-the-niger-delta-of-nigeria>. Accessed 11th October 2020.

¹³ Emmanuel Teryila Tyokumber, *Review of Ecological Effects of Oil Exploration in the Niger Delta, Nigeria*, (2014) *International Journal of Agricultural Sciences and Natural Resources*: 1(4):76-80
<https://www.researchgate.net/publication/28472794-Review-of-Ecological-Effects-of-Oil-Exploration-in-the-Niger-Delta-Nigeria>. Accessed 11th October 2020.

In the downstream sector, refined products are less destructive than the actual crudes but generally speaking, leaking pipelines and tanker collision can lead to loss of lives due to the combustible nature of refined petroleum products. Used oils like naphthalene result sometimes in contamination of the environment due to careless dumping. Farmlands become degraded and water bodies remain polluted especially the stagnant ones, this in turn reduces the fishing and environmental activities. Part of our main findings includes the investigation by Ukpong in 2001. It discovered that Niger Delta Ecosystem at various locations from the viewpoint of sustainable agriculture, fishing and environmental quality. The study showed a high level of degradation in areas of oil exploration and their effects on plants and animals. This highlights a vivid fact that communities where oil activities take place are subjected to environmental abuse and as such needs redemption.

The above mentioned are but a few ways in which the Niger Delta has been affected. Most times structure erection of this oil companies can also have an effect on the environment. During the construction of the *NLNG* Gas plant in Bonny, foot prints of Hippopotami were found there. These giant animals known to have flourished in the Finima Area which the *NLNG* plant now occupies. In this case it is obvious that the activities of the company caused the wildlife to migrate due to the disturbances from the oil companies¹⁴.

This is a proof that oil exploration activities can either reduce biodiversity in an area, or make them go totally extinct.

¹⁴ Collins Ugochukwu, Jürgen Ertel, *Negative Impacts of Oil Exploration on Biodiversity Management in the Niger Delta of Nigeria*, (2009) 26(2):139-147.
<https://www.researchgate.net/publication/247897086-Negative-impacts-of-oil-exploration-on-biodiversity-management-in-the-Niger-Delta-Area-of-Nigeria/link/56057d080aea25fce33558e.download>

EFFORTS TO CONSERVE THE BIODIVERSITY OF THE NIGER DELTA

In all of these issues, there have still been efforts to curb the negative impacts of oil exploration in the Niger Delta. They are mostly in form of laws and agencies, and the first I will be highlighting is:

- **THE OIL POLLUTION ACTS OF 1990**

This is responsible for many oil concerned improvements in the nation concerning oil spillage prevention, mitigation, clean up and liability. The objective of this law was to reduce oil spillage, it also ensures that the federal response system is adequately prepared to manage the impacts of oil spills that occur¹⁵.

- **THE NESREA PROTECTION AGENCY**

This was formerly known as the 1988 Federal Environmental Protection Agency Act. This Act is legally vested with the responsibility of protecting and sustaining the Nigerian environment through the formulation and implementation of regulatory frame works. *The environmental Impact Assessment Act (Decree no: 86 of 1992)* requires an environmental impact assessment to be conducted, “where the extent nature” or location of a proposed project or activity is such that it is likely to significantly affect the environment¹⁶.

- **NATIONAL OIL SPILLAGE DETECTION AND RESPONSE AGENCY**

The Federal Executive Council of Nigeria has approved a national oil spill detection and response agency. The establishment of this agency was in compliance with the International Convention on Oil Pollution preparedness, response and cooperation, to which Nigeria is a

¹⁵ Collins Ugochukwu, Jürgen Ertel, *Negative Impacts of Oil Exploration on Biodiversity Management in the Niger Delta of Nigeria*, (2009) 26(2):139-147.

<https://www.researchgate.net/publication/247897086-Negative-impacts-of-oil-exploration-on-biodiversity-management-in-the-Niger-Delta-Area-of-Nigeria/link/56057d080aea25fce33558e.download>

¹⁶ Ibid

signatory. Efforts are also being made by this body to ensure the use of environmentally friendly drilling fluid and mud systems¹⁷.

- **NON-GOVERNMENTAL INITIATIVES**

Non-governmental agencies and the oil companies themselves, have also contributed efforts to curb the destruction of biodiversity in the Niger Delta. In November 1981, eleven oil companies operating in Niger Delta including the *Nigerian National Petroleum Corporation (NNPC)* formed the *Clean Nigeria Association (CAN)* to help prevent and control oil spills in the region. Non-governmental organizations such as Living Earth Nigeria Foundation, Our Niger Delta and environmental Rights Action are working together to stop further destruction of the Niger Delta's fragile ecosystem through embarking on public awareness and conservation projects in the area¹⁸.

CONCLUSION

This study investigates the environmental pollution and their adverse effects on the host communities of oil exploration sites in the Niger Delta. As it is an important issue that requires urgent and prompt attention although there are still laws and principles like the *Oil Pollution Act of 1990 and the Polluter Pays Principle*, more ideas and work ought to be put in place for the success of the salvaging of the Niger Delta as the already existing laws are not thoroughly being yielded to by the companies involved. It is also very important to take more actions as earlier stated to curb these pollution because the petroleum production presently forms the major natural based resources on which the country depends. The policy makers within the oil exploration

¹⁷ *Ibid*

¹⁸ *Ibid*

companies ought to look into the matter on ground to also protect the health, safety and welfare of these communities affected¹⁹.

RECOMMENDATION

In my legal opinion, I recommend that some of the health and safety measures given to the members or staff in such oil companies should be extended to the community members and the companies in turn should be able to adhere to relevant government legislation with the goal of protecting lives and properties in their areas of operation to prevent or abolish the present degradation caused by them. This will in turn boost the country's economy in all aspects as those in charge of the agricultural sector at the grass root which are these indigenes in the Niger Delta though not only them will be able to properly bounce back and continue life without much borders.²⁰

¹⁹ Emmanuel Teryila Tyokumber, *Review of Ecological Effects of Oil Exploration in the Niger Delta, Nigeria*, (2014) *International Journal of Agricultural Sciences and Natural Resources*: 1(4):76-80
<https://www.researchgate.net/publication/28472794-Review-of-Ecological-Effects-of-Oil-Exploration-in-the-Niger-Delta-Nigeria>.

²⁰ Ibid

BIBLIOGRAPHY

- *Collins Ugochukwu, Jürgen Ertel, Negative Impacts of Oil Exploration on Biodiversity Management in the Niger Delta of Nigeria, (2009) 26(2):139-147.*
<https://www.researchgate.net/publication/247897086-Negative-impacts-of-oil-exploration-on-biodiversity-management-in-the-Niger-Delta-Area-of-Nigeria/link/56057d080aea25fce33558e.download> Accessed 11th October 2020
- *Dr Kadafa .A. Ayuba, Environmental Impacts of Oil Exploration and Exploitation in the Niger Delta of Nigeria, (2012) 12 GJSF 3.*
<https://globaljournals.org/litem/1298-environmental-impacts-of-oil-exploration-and-exploration-in-the-niger-delta-of-nigeria>. Accessed 11th October 2020.
- *Emmanuel Teryila Tyokumber, Review of Ecological Effects of Oil Exploration in the Niger Delta, Nigeria, (2014) International Journal of Agricultural Sciences and Natural Resources: 1(4):76-80* <https://www.researchgate.net/publication/28472794-Review-of-Ecological-Effects-of-Oil-Exploration-in-the-Niger-Delta-Nigeria>. Accessed 11th October 2020.¹