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Oil Spills and Fish Farming in the Niger Delta Region of Nigeria

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Abstract: The ecosystem in the Niger Delta Region is highly diverse and supports numerous species of rich aquatic and terrestrial biodiversity which serves as the primary source of livelihood for the people. In order to address the oil pollution predicament this has made fishes to extinct and severe impact on human health. Three objectives and two hypotheses were raised to guide the study. Relevant and extant literatures were reviewed. This study is quantitative method and as such the questionnaire instruments was used to extract information from 45, 000 fishers in the core Niger Delta States. The demographic characteristics were analyzed by using simple percentage count and the chi-square statistical tool was used to test the hypotheses to determine the degree of freedom and significant relationship between variables. Based on the analysis, it was discovered that oil spills are usually due to continuous pipelines vandalism, gas flaring and oil drilling in the core Niger Delta States that destroy fishes and other aquatic elements in the environment. The study recommended among others that government and multinational oil companies should provide adequate measures to cushion the effect of pipelines vandalism, gas flaring and oil drilling in the Niger Delta. Government should also create synergy with non-government organizations to provide proactive measures for environmental sustainability in the Niger Delta Region.

Keywords: Oil Spills, Pipelines Vandalism, Environmental Sustainability, Fish Farming, Aquatic Elements, Biodiversity Elements.

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INTRODUCTION

The Niger Delta region in Nigeria is located on the Atlantic coast of southern Nigeria, where the Niger River divides into several branches. This is the country's oil region. It is the second largest delta in the world, with a coastline extending about 450 km, ending at the mouth of the Imo River, (Adewumi et al., 2022). The Niger Delta region, which spans over 20,000 km2 , is described as the largest wetland in Africa and among the three largest in the world. Izah (2021) noted that about 2370 km2 of the Niger Delta area consist of rivers, creeks and estuaries, while stagnant swamp covers about 8600 km2. The Niger Delta also has the largest mangrove forest in Africa (Izah, 2021). Many people in the Niger Delta make their living through fishing and agriculture, as the region is blessed with rich mangroves and fish-rich rivers (Adebayo, 2020).

The ecosystem of Nigeria's Niger Delta region is diverse and supports many species of plants, animals and humans on land and water. The Niger Delta wetland ecosystem is of great economic importance to both local people and the country as a whole. The region is known for its rich aquatic and terrestrial biodiversity and is the main source of income for rural residents (Okonkwo et al., 2022). With high levels of involvement in fishing activities and increasing revenues from oil exploration, the Niger Delta region is expected to have high levels of fish production and low poverty levels, but the reverse is the case (Orebiyi and Ekang, 2021).

The region covers an area of 20,000 square kilometers and is described by scholars as the largest wetland in Africa and among the three largest in the world, encompassing about 2,370 square kilometers of rivers, streams, estuaries and wetlands. has an area of about 8,600 km2 (World Bank, 2011).). This highly diverse ecosystem is home to many species of aquatic flora and fauna and terrestrial life, Oil was first discovered in the region in 1956 and since the early 1970s it has dominated the country's economy. IyayiIyayi (2021) described the Niger Delta region as one of the richest wetlands in the world.

Over the years, crude oil has remained the backbone of the Nigerian economy, contributing more than 90% of revenue and about 45% of GDP (Ekeghe, 2022). Elum et al. (2022) shows that Nigeria's economic and political fortunes are closely linked to crude oil. Therefore, it can be assumed that without crude oil, the Nigerian economy may collapse. Currently, crude oil is produced in nine states in southern Nigeria (Ejechi, 2022) and the federal government and multinational companies are empowered to exploit this resource. As a result, oil-producing countries and the petroleum community have little or no voice in the decision-making process regarding crude oil exploration (Elum et al, 2022). However, this may change with the recent enactment of the Petroleum Industry Act (PIA). Currently, little attention is paid to the negative impact of these exploration projects on oil producing communities in Nigeria. q Oil exploration in the Niger Delta region has led to oil spills and many problems. These problems include water pollution, danger to aquatic life, and destruction of agricultural land,(Nwilo and Badejo (2022). According to Nwilo and Badejo (2022), from 1976 to 1996, it is estimated that more than 6,000 oil spills occurred in the Niger Delta region and about 2 million barrels of crude oil spilled into the environment. This raises serious concerns because this ecosystem is the main source of income for people in the are over the years, oil exploration has had a negative impact on the natural environment of oil-producing communities. (UNEP, 2011). Elum et al (2022) found that oil exploitation has accelerated environmental degradation and perpetuated food insecurity due to fish and crop deaths and loss of agricultural land and rivers. for fishing activities, leading to loss of livelihood.

There is no doubt that the disastrous impact of the oil spill has hampered agricultural and fishing productivity in particular and in the long run will have disastrous consequences for the economic lives of people in the region. region. this area (Paul, 2020). Furthermore, to study the prospects and challenges of the environmental impact of oil exploration in the Niger Delta region of Nigeria and the remediation of contaminated lands in the region.

Fish is the main source of animal protein for the people of the Niger Delta. Entire populations depend entirely on marine ecosystems for their livelihoods and therefore any environmental degradation affecting water resources reduces the potential for sustainable livelihoods, thereby increasing poverty. . Due to the rich aquatic life and vast freshwater expanse of Nigeria's Niger Delta, the region has enormous potential to produce and supply a very high proportion of the country's fish demand, estimated at about 2. 2 tons. per year in 2008 (Food and Agriculture Organization (FAO), 2017). Despite this potential, Nigeria still imports more than 60% of the fish it consumes annually. However, with population growth and environmental degradation in the Niger Delta due to oil and gas exploration activities, fish supplies are dwindling and the survival of the ecosystem is continuously threatened. Essentially, fish are considered key indicators of environmental pollution, providing evidence of pollutant transfer in marine ecosystems (Plessl et al. 2021). To ensure the supply of quality fish protein, it is imperative to monitor the safety of aquatic habitats from human activities.

It is clear that the oil spill has destroyed the subsistence economic activities of indigenous peoples in these oil-producing communities. The situation is so serious that even drinking water sources are contaminated, agricultural and fishing activities are hindered, and the region's ecosystem is rapidly deteriorating. This situation is briefly described by Chijioke et al. (2021), with reports that the region is suffering from various environmental and humanitarian crises. As reported by Moneke et al. (2022), the air in the area is also affected as the incidence of respiratory diseases in the population is increasing with an overall incidence of 43%. The health and well-being of residents in these oil-polluted environments is also directly affected (Moneke et al., 2022), with residents of oil-producing communities in the Niger Delta having a higher incidence of respiratory diseases were higher than in residents of communities not in oil-polluted environments. oil community. manufacturing community in Nigeria.

Although crude oil should be a gift and a natural blessing to any region, it has proven to be a hazard to the Nigerian oil community due to the negative effects of oil spill incident. Oviasuyi and Uwadiae (2021) attribute this to government inaction and alleged lax regulation in the region. This raises the question of what federal and state governments and other government agencies are doing to help people in these areas.

The scale of poverty and environmental degradation in this region highlights the ineffectiveness of government interventions. The negative impacts of oil extraction on the economic and social well-being of residents of oil-producing communities have been studied. This systematic review aims to critically assess the negative impacts of crude oil spills on community-inhabited petroleum facilities and the government interventions deployed to mitigate them. . It is hoped that the findings of this study will highlight the suffering of people in oil-producing communities in Nigeria due to oil spills in their communities.

Degradation of environmental ecosystems has led to widespread poverty and lack of resource benefits in oil-bearing communities (Elum et al, 2022). This gave rise to popular anger against the federal government's

policies, leading to several instances of civil unrest in the region (Apata, 2020). .

Environmental disasters in the Nigerian oil and gas sector are mainly caused by technological and/or human challenges and have significant immediate and long-term impacts on the affected population, especially fish farmers. Over the years, oil spills have become very frequent and the parties involved have taken little or no action to provide relief to the people in the affected areas. Available data shows that more than 9,500 cases of oil spills have occurred in the Niger Delta between 2011 and 2021 and an estimated 450,000 barrels of oil have been released into the environment, especially domestically, negatively affecting the oil fish farming activities. –productive community (Akinpelu, 2021).).

The oil spill had a significant impact on the people of Nigeria's oil-producing states, causing immense and dehumanizing pain and suffering to the people of the region, as individuals could no longer invest in their traditional fishing, agricultural production, and hunting activities (Chijioke et al., 2021). As a result, the once economically and environmentally productive Niger Delta region (which includes five of Nigeria's nine oil-producing states) has suffered from significant soil pollution, deforestation, and toxic waste. on available water sources, loss of biodiversity as well as recurring phenomena and environmental pollution. widespread oil pollution. oil spill (Akinpelu, 2021). As a result, it has been globally designated as one of the five environments most affected by crude oil. According to the Nigerian Bureau of Statistics (2020), poverty rate in the Niger Delta region using poverty rate, Abia State is 30.67%, Balyesa 22.61%, Akwa Ibom 22.82%, Cross River 32.29 %, Delta 6.2%, Edo . 11.99%, Imo 28.86%, Rivers 23.91% and Ondo 12.52%. Compared to other Southern states with no oil exploration activities, such as Lagos 4.50% and Ogun 9.32%, it is clear that oil pollution affects indigenous people and their livelihoods, especially is fishing and fish farming in the Niger Delta states.

Oil spills have a major impact on the ecosystem where they are released and can form ecocides (Okon, 2022). Large areas of mangrove forests, which are particularly sensitive to oil (mainly because the oil is stored in the ground and released each year during floods), have been destroyed. It is estimated that 5-10% of mangrove forests in Nigeria have been wiped out by oil (Numbere, 2020). Ikenga et al (2022) lamented that the increasing poverty in the region in the face of huge oil resources is a constant concern as it has led to friction between oil companies and the community. co-located in the Niger Delta region. Despite having approximately 853 km of coastline closest to the Atlantic Ocean, as well as freshwater marshes and mangroves, streams, coastal rivers, estuaries, bays and other near and offshore waters, as well as recent federal, state, local, and private sector efforts, governments. Despite its participation in the development of the fisheries sector, the irony is that Nigeria still depends on fish imports to meet most of its fish needs. This results in net imports of about 60% of fish consumed in Nigeria (Food and Agriculture Organization-FAO, 2017). This study intends to redress the superiority of this shortcoming.

Objectives of the study

The general objectives of the study is to examine the effect of oil spills on fish farming in Nigeria with reference to oil bearing communities in the Niger Delta Region. The specific objectives are to:

i. determine the relationship between oil spills and fish farming in oil bearing communities in Niger Delta
ii. examine the effects of oil spillage on fish farming in oil bearing communities in the Niger Delta Region

iii. determine the interventionists organizations established by government to address the suffering of the people occasioned by oil spillage in oil bearing communities in the Niger Delta Region

Research hypotheses

The following hypotheses were formulated to guide the study:

$H0_1$: There is no significant relationship between oil spillage and fish farming in oil bearing communities in Niger Delta

$H0_2$: There is no significant relationship between the effects of oil spillage and fish farming in oil bearing communities in the Niger Delta Region

Review of related literature

The impact of oil spills on fish farming is becoming increasingly important, not only because it provides a basis for understanding reprehensible oil exploration practices but also because it reveals ideological and intellectual perspectives about the relationship between oil spills and environmental degradation.(United Nations Agriculture Organization, 2017, Inoni et al., 2020). According to Kadafa (2022), the oil industry established in this region has contributed greatly to the country's economic growth, but unsustainable oil and gas exploration has caused the Niger Delta region to become one of the 5 most important ecosystems in the world. However, Adati (2021) expressed that the increase in the number and frequency of oil spills affects fish production in the Niger Delta region. Ikenga et al (2022) note that the main recommendations made in times of ecological disasters do not only concern the enactment and enforcement of environmental laws, but more importantly that states should committed to implementing the basics of good governance in the Niger Delta region. Inoni et al (2020) provide evidence of declines in agricultural productivity in the period following persistent environmental degradation from oil spills and pipeline sabotage. Ojimba (2022) notes that the impact of crude oil pollution on farms has reduced agricultural land area, significantly to 1%, thereby reducing marginal physical product (MPP), while On unpolluted farms, yields increased. According to Ikenga (2012), the impact of local armed militias on the socio-economic development of the Niger Delta is so severe that sustainable development is not visible. He also regretted that if nothing is done to improve the situation, the situation could become more precarious, greatly affecting the national economy.

Physical inputs, crude oil pollution variables, and their interactions show strong negative (decreasing) returns to scale on oil-contaminated farms, but on uncontaminated farmland, the result is The results show strong returns to scale. Technical efficiency results show that less than 22% of farmers use resources more than 80% efficiently on oil-contaminated agricultural land, while technical efficiency on unpolluted agricultural land shows that high is 33%. These results indicate that environmental degradation poses a serious threat to fish farmers by reducing both their physical capacity and psychological desire to raise fish. The purpose of agriculture can be defeated before it is properly implemented, especially when individuals have no hope of compensation when crops and fish are destroyed or water is polluted, as is often the case. found in the Niger Delta region (Ojimba, 2022). According to Ikenga (2015), oil theft is considered illegal oil refueling and so those responsible are likely no strangers to the Nigerian Army, Navy and local tankers. elsewhere in the Niger Delta region.

Ebegbulem et al., (2020)] critically assessed the impact of oil exploitation on poverty in the Niger Delta region of Nigeria. The author's extensive review of the literature and conclusions drawn from empirical results reaffirm regional neglect and the consequences of

pollution as an obstacle to economic progress. The study further concluded that the biggest negative trend related to oil exploration and exploitation in this region is environmental degradation.

However, a recent study by Sam et al., (2022) suggested that in mind to test the soil and engage in large scale cleaning up funding is essential for improvement of damage soil. It important that the government been attracted for the cleaning up of the affected area in the Niger Delta region. However, the benefit of oil exploration and exploitation to the Nigerian economy, cannot be over emphasised because it is expedient that these practice yield positive regards to the government. According . Akpokodje and Salau (2021) who investigated the relationship between oil pollution. And productivity of agriculture in the area of Niger Delta claimed from empirical analysis based on Cobb Douglas production function model of Ramon Lopez. The results show that increased oil spills and deforestation contributes negatively production of agriculture as land, labour and capital which are factors of production..in his argument, Ikenga and Agah (2007) nnotef that youth unrest and resource control policies depend on the insensitivity of the federal government and multinational oil companies to the plight of people. people of the Niger Delta. They further noted that as a result of the deprivation and denial, the youths formed arms groups in diverse forms to pressed forward their demand for self-determination and the control of their resources (Ikenga and Agah, 2007)

In the same vein, Ogwu et al, (2020)] revealed that the actions of oil companies operating in the Niger Delta have tremendous influence on the survival of ecosystems and biodiversity of the region. In a similar study, Ekpenyong and Udeme, (2022] observed the mean concentration of toxic petroleum hydrocarbons in the tissues of various fish species sample to be increasing as a result of oil spills. Investigating the impact of petroleum activities on various episodes of economic crisis in Nigeria, Paul, 2020:

Aminu and Abdulrahman, (2022) evaluates the historical pattern of oil spills using a descriptive technique to analyse data obtained from secondary sources and affirming that the transmogrification of the economy from agricultural based to petroleum-based laid the foundation for the current economic crisis in Nigeria. Also, Ekanew and Nwachukwu(2022) while exploring the extent of environmental degradation in Niger Delta region and examining the efforts of oil companies in remediating the degraded farmlands in Niger Delta finds that oil pollution causes damage to human health, agricultural land and fish ponds as well as long-standing ecological malfunctioning. Atubi et al (2021), examining the impact of environmental degradation on human health in nine selected oil producing communities in Delta State, Nigeria using cluster and principal component analysis, have observed that gas flaring has a statistically significant but hazardous impact on humans. health in affected areas. generates high temperatures and emissions into the atmosphere. However, illegal fuel burning and pipeline vandalism contribute greatly to oil spills and environmental degradation. Odalonu (2020) observes that illegal fuel supply and sabotage of oil pipelines often stem from the destructive tendencies of restless youths, disgruntled by the government's neglect of communities oil production and the corruption of the ruling class in accumulating wealth through cooperation with oil companies.

Unfortunately, the social evils caused by young people have the opposite effect of increasing the level of oil spills on the environment and negatively impacting the land's water resources and agricultural production. Furthermore, Abdullahi et al (2022) analyze the impact of oil on the Nigerian economy using annual secondary data from 2000 to 2009. Techniques used for

the analysis include linear regression model and shows that oil has a significant direct effect on the economy. Unfortunately, the mismanagement of oil revenues is putting Nigeria in a dilemma over the resource curse Aliu and Ammani, 2021:

Aluko, (2020). Considering the current situation in the Niger Delta and the need to improve economic activities for the people, studying the impact of environmental degradation on specific issues such as fish production to help planners Policy determination to identify and designate areas is urgent. focuses on implementing various economic development policies of the region. Recent quantitative assessments of oil spills on fish production in other regions, especially the Arctic, have classified fish in two distinct ways. Nevalainen (2020) describes pelagic and demersal fish differently depending on their natural habitat and the impact of the oil spill. The study suggests that although pelagic fish and fish eggs may be directly exposed to oil spills, bottom fish are not easily exposed to oil spills, except when they flow deep to the seabed. However, a prolonged oil spill may make it impossible for bottom fish to survive and avoid the oil spill by moving out of the danger zone. The implication is that if the oil spill is allowed to spread, it will seep deep into the seabed over a long period of time, causing further damage to the environment, thereby affecting fish production.

Similarly, (Carroll et al., 2022), evaluating the impact of a simulated oil spill on cod fisheries in the northeastern Arctic, found spatial regeneration of fish populations . In all simulations, the adult fish population still had maximum reproductive potential with a reasonable number of young fish swimming to replace the old fish population. However, variations in the age of the fish determine the survival rate after the impact of an oil spill. The study concluded that the reproductive health of the adult fish population was not affected in all simulations. However, the results provide essential information to support oil spill management in fisheries.

Another very intriguing study, Langangen et al., (2021), used data on cod in the northeastern Arctic to estimate spatial variation in natural mortality, isolating study the effects of oil spills on fish in retrospective and prospective studies. While the first study studied the impact of a single oil spill, the second study estimates the likely outcomes of potential future oil spills. In this case, the prospective study suggests that spatial variation in natural mortality may alter the impact of the oil spill on fish. However, in this study, we used a retrospective approach to analyze the impact of the oil spill on fish production in the Niger Delta. Here, we strongly deny Langangen et al.'s (2021) assertion that scientific studies of the impacts of oil spills on fish stocks tend to ignore the fact that models do not The timing of natural mortality may influence the magnitude of the impact over time. . To achieve this goal, we apply a parametric Cobb-Douglas production function to fish yield and oil spill data, assuming that the oil spill kills fish at the egg or larval stage and adulthood.

The oil spill risk assessment is based on a probability of constant mortality rate for all fish categories; hence the spatial variability is difficult to estimate given the paucity of data.

METHOD AND MATERIAL

The study employed a cross sectional design to gather data from Bayelsa, Delta States for this study. The main interest of this design is to measure existing conditions and prevailing practices based on the data collected through questionnaires.The targeted populationfor this study was Forty five Thousand (45,000) fish farmers in the three States. The simple random sampling technique was used to pull out the sample size from the total population. This technique was appropriate for this study because it allows the selection of a group of people for the study from a very

large population. Therefore, the sample size of this study was determined using Taro Yamane (1967) Formula Below:

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

Where:
n = sample size
N = population size
e = level of significance (our level of significance is chosen at 5%)
k= constant (1)
Applying the formula at significant level of 5%

$$\text{population Size} = \frac{45000}{1+45000[0.05]^2}$$

$[0.05]^2=0.0025$

$$n = \frac{45000}{113.5}$$

Sample Size=396.47
Therefore, sample size for the study is 397

Therefore, Three Hundred and Ninety Seven (397) copies of questionnaireswas administered to two communities each in the selected States to reflect the actual return rate in which 300 questionnaires were duly returned. The responses from the questionnaire were presented in statistical tables and converted to percentages for analytical purposes. Descriptive and inferential tools like simple percentages and mean rating were also used to analyze the data and present findings. Therefore, the calculation of mean rating presented as: strongly Agree (SA)=4, Agree (A)=3,Strongly Disagree (D)=2, Disagree (SD)=1

$$\text{Mean score} = \frac{4+3+2+1}{4} = \frac{10}{4} = 2.5$$

Chi-square statistical tool was employed to test the hypotheses to ascertain the degree of freedom and significant relationship between the variables being studied. The chi-square statistical tool is relevant and appropriate in this research because it enables the researcher to determine causative effect of the independent variable on the dependent variable. It is very instructive to note that measurement between independent and dependent variables helps the researcher to present constructive findings and draw an acceptable conclusion.

RESULTS AND ANALYSIS

Testing or Research Hypotheses

$H0_1$: There is no significant relationship between oil spillage and fish farming in oil bearing communities in Niger Delta

Source of Variation	**Responses**		**Df**	**X^2-Cal**	**X^2-Crit.**	**Alpha Level**	**Decision**
	Observed	**Expected**					
SA=4	595	604.35	12	189.17	21.026	0.05	Significant
A=3	170	160.65					
SD=2	590	580.65					
D=	145	154.35					

Source: Author Computation 2023

As presented in the chi-square (x^2) summary Table above, the calculated chi-square (x^2) value of 189.17 is greater than the chi-square (x^2) table value of 21.026. The null hypothesis which stated There is no significant relationship between oil spillage and fish farming in oil bearing communities in Niger Delta is rejected. This means that there is a significant relationship between oil spillage and fish farming in oil bearing communities in Niger Delta Region. Hence, the multinational oil companies and government should take urgent steps and proactive measures to address the issues of oil spillages which have destroy the livelihoods of the people in

oil host communities in the Niger Delta Region.

$H0_2$: There is no significant relationship between the effects of oil spillage and fish farming in oil bearing communities in the Niger Delta Region

Source of Variation	**Responses**		**Df**	**X^2-Cal**	**X^2-Crit.**	**Alpha Level**	**Decision**
	Observed	**Expected**					
SA=4	440	552.26	12	169.222	21.026	0.05	Significant
A=3	320	207.73					
SD=2	650	537.73					
D=1	90	202.26					

Source: Author Computation 2023

As presented in the chi-square (x^2) summary Table above, the calculated chi-square (x^2) value of 169.22 is greater than the chi-square (x^2) table value of 21.026. Therefore, the null hypothesis which stated that: There is no significant relationship between the effects of oil spillage and fish farming in oil bearing communities in the Niger Delta Region is rejected. This means that there is a significant relationship between the effects of oil spillage and fish farming in oil bearing communities in the Niger Delta Region. The effects are severe and as such it has contributed to untold hardship to the people in the communities because fishing is the livewire of the people

DISCUSION OF MAJOR FINDINGS

The following are the major findings:

i. The study discovered that oil spills are usually due to continuous vandalism of oil pipelines in Delta, Bayelsa and River States that destroy aquatic life and pollute the environment
ii. The study revealed that the toxic substances produced by gas flaring and other chemicals reactions occasioned by oil exploration has affected fishers in the core states thereby limiting fish farming
iii. The study found that the chemical that kill fishes in the river have health implications to human being. Oil drilling and other oil-related activities has made fish extinctions in the Niger Delta Region

Therefore, it will be wise to say that oil activities depress fish farming in the long run because of the unwholesome environmental degradation that accompanies crude oil exploration in the country. These oil-driven environmental factors affecting fishing activities include gas flaring, oil well blowouts, improper drilling mud disposal, and pipeline leakages (Ojakorotu and Okeke-Uzodike, 2022). Furthermore, this study finds that more fish farmers' involvement in fish production improves fish outputs in the country, exerting a positive and substantial influence on fish outputs. Sustainable improvement in fish production required skilled and able-bodied youths to engage in the fishing process. This would drastically increase fish production in the country, providing jobs for the unemployed youths and reducing incidences of restiveness in the county. However, credits to fish farmers through the agricultural credit guarantee scheme funds (ACGSF) positively affect fish outputs in the long run, only if fish farmers have access to loans. Some of the challenges include a high rate of loan default by farmers, a lack of full cooperation by participatory banks, and the failure of the government to extend the rural branch network to cover the rural fish farmers.

CONCLUSION

The discovery and exploration activities of crude oil in the Niger Delta have had severe environmental and human consequences for the indigenous people who inhabit the surrounding area of oil extractions. Hundreds of thousands of households in the Niger Delta rely on fishing for money and sustenance, both in inland rivers and offshore. Damages to fishing activities in the Niger Delta region is widely recognized as one of the primary consequences of the oil industry by both governmental and non-governmental sources. Oil spills and other oil-related pollution have also severely harmed the mangroves of the Niger Delta, which are essential fish breeding habitats and difficult to clean when contaminated. Given the significance of fisheries as a source of revenue and food in the region, it is difficult to understand why oil pollution has not been monitored.

The Niger Delta River is an important ecosystem that needs to be protected, for it is home to nearly 250 species of fish, of which 20 are endemic. Oil spillages contaminate the water bodies due to the chemical content of crude oil. The release of such chemicals into the fishing environment affects the quality and quantity of fish and, in some cases, the complete extinction of some fish species in the region, thereby affecting the livelihood source of fish farmers that rely mainly on fishing to support their family.

Environmentalists and people, in general, blame the oil companies, but the Federal Government provides the laws, legislations and licenses to the oil companies, which must be followed. Lack of enforcement of existing regulatory laws is a major constraint in legislation. The majority of the laws that regulate oil companies' activities are poorly enforced and uncoordinated. Some of these laws are outdated; they need to be harmonized and reviewed according to reality on the ground. Through the National Oil Spill Detection and Response Agency (NOSDRA), the Federal Government of Nigeria should thus examine spill response procedures, establish independent monitoring, modify legislation, strengthen enforcement measures, and better explain institutional roles and duties. In addition, the Nigerian government should evaluate spill compensation, establish a spill insurance fund, and conduct a full examination of the spilt environment.

RECOMMENDATIONS

Based on the findings and conclusion drawn, the following recommendations were made:

i. Government should provide adequate measures to cushion the effect of pipeline vandalism which has contributed to fish extinct in the core Niger Delta states
ii. Government and the multinational oil companies operating in the core Niger Delta States should provide proactive measures to clean up the polluted rivers as a result of severe oil drilling and gas flaring which has contaminated the environment
iii. Government and oil companies should adequately strengthen the environmental protection laws and create synergy with non-government organizations to provide remedies for environmental sustainability in the core Niger Delta States

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