



## Research Article

# Oil Exploitation and the Attendant Physical Planning Implications in Ilaje Local Government Area, Ondo State, Nigeria

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**Abstract:** Available data shows that petroleum which stand out as the mainstay of the Nigerian economy has unimaginably impacted on the growth, development, civilisation and sustainability of the Nigeria's spatial development than any other natural resources recorded in the past decades. However, the impacts recorded over the decades do not translate to sustainable land utilisations, management and development in the coastal areas of Nigeria, where oil exploitation processes have resulted into intense environmental degradation, ecological devastation and the diverse physical planning distortion in Ilaje Local government area. The paper adopted direct observation, questionnaire administration and oral interview respectively in the quest to obtain the needed data. The paper identified distortions in land uses, land degradation, increased poverty and difficulty in land use planning. The paper therefore as a result of the effects of oil exploitation, advocated for land appropriation in the coastal area, use of bioremediation approach, and empowering interviewing organisation towards revamping the deplorable ecological landscape of the area.

**Keywords:** Physical Planning, Oil Exploitation, Degradation, Poverty.

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## INTRODUCTION

Nigeria, being a member of Organization of Petroleum Exporting Countries (OPEC) since 1971 has remained the largest natural gas reserve in Africa, the second largest oil reserve in Africa and African continent primary oil producer (Adati, 2012).

The Petroleum industry in Nigeria has brought exceptional changes to the Nigerian economy, particularly in the last five decades when it replaces agriculture as the basis of the Nigeria economy. The oil industry has risen to the unassailable loftiness of the Nigerian economy, contributing the lion share to gross domestic product (GDP) and accounting for the bulk of the Federal Government revenue and foreign exchange earnings, since early 190s (Apata, 2012). Since the 1970s, Nigeria's socio-economic and political fortune have been intricately linked with oil exploration and exploitations, with petroleum providing about 95 per cent of export earning and accounting for over 80 per cent of government budgetary revenue that all tier of government heavily depend on and as well as generating over 40 per cent of the gross domestic product (Olubayo, 2012).

Crude oil, which stands out to be the mainstay of the Nigerian economy has had profound impact on the growth, development and civilisation of Nigerian than any natural resource recorded over the years. Oil has also become a very important decisive element in defining the politics and diplomacy of states (Legborsi, 2007). The discovery of oil in Ilaje Local Government was what enlisted Ondo State as one of the oil producing states in Nigeria as part of the Niger Delta region.

The coastal environment of Ondo State like other coastal regions is a rich and valuable ecosystem and structure, which has continuously been adjusting to the demand of man, dynamic man-made and other natural processes (Irikana, 2011). Akinbamijo, (2008) attested to the fact that excessive oil exploitation could lead to warming of the global climate and cause a significant increase in sea level rise major changes in regional food production, new stresses on ecological systems and new threat to human health.

The aftermath of oil exploitation in the study area for the past five decades are ecological devastation, neglect, poverty associated with intense environmental degradation. The fact is incontrovertible that the environment of the Niger Delta has been intensely polluted with tragic consequences for the economy of the people and the totality of the quality of life. (Abosede, 2010).

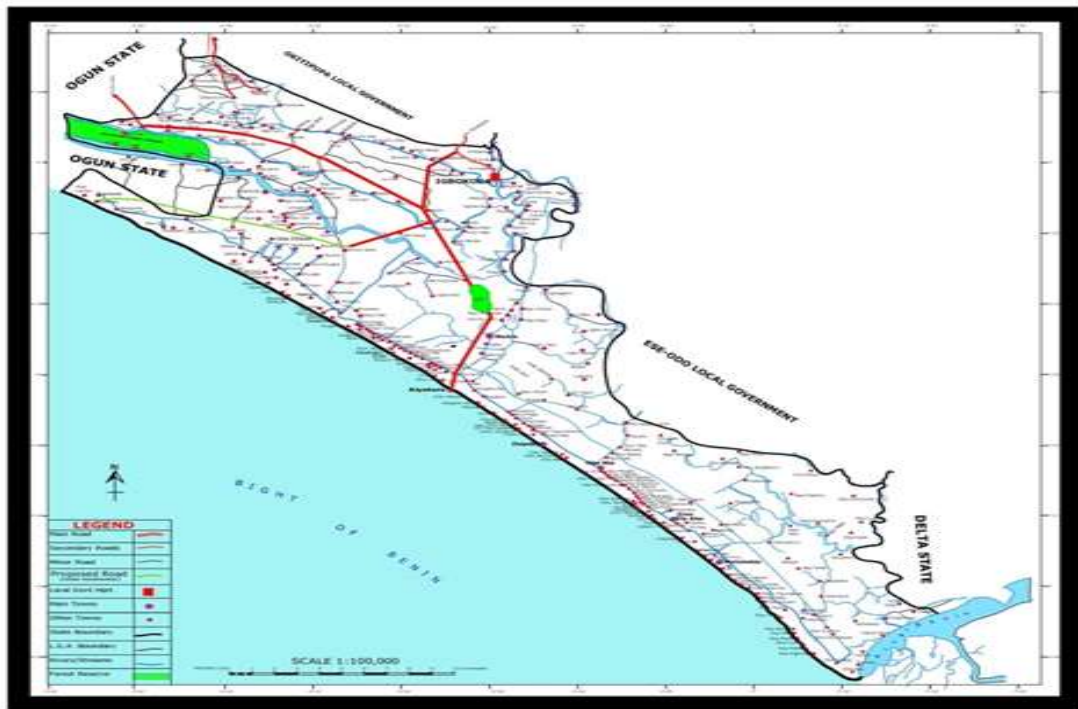
It is discernible from the foregoing that oil exploitation have great impact and therefore poses great challenges to the physical environment of the local communities where such activities are taking place. Assessing these impacts in Ilaje local government of Ondo State is the concern of this study, with emphasis on physical planning viewpoint.

### The Study Area

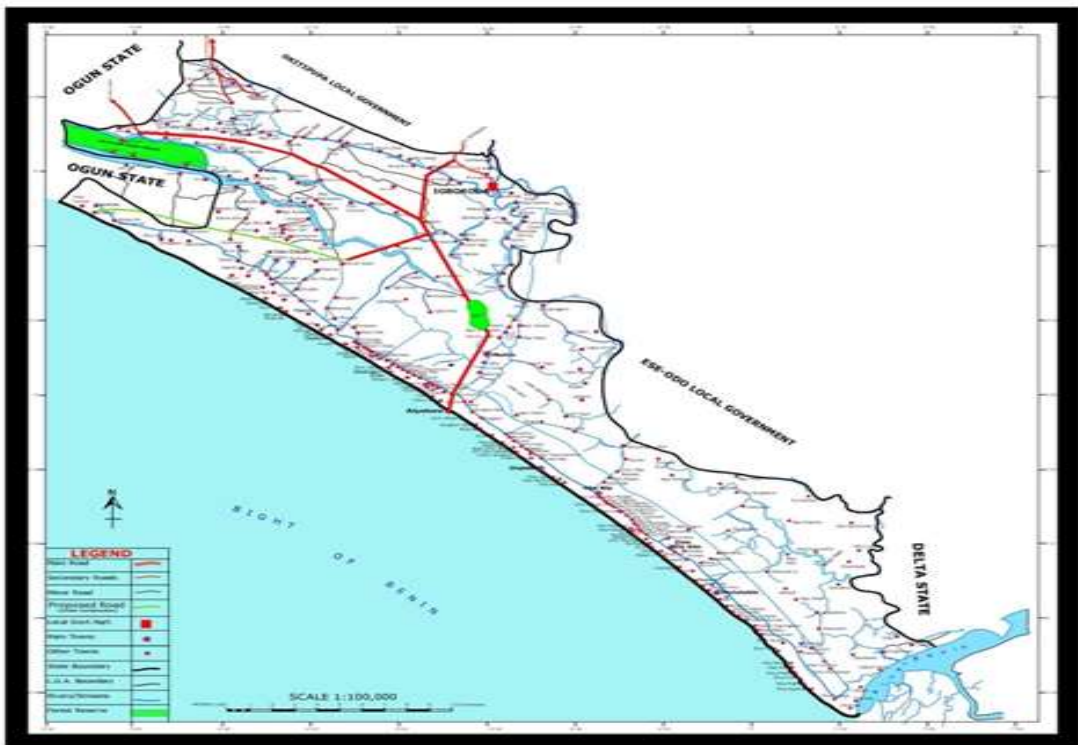
The study area is in the extreme southern part of Ondo State as shown in map 1. This is the Nigeria Delta Area and the oil producing region of Ondo State. It is bounded in the west by Ogun State, in the north by Okitipupa and Ese-Odo Local Government Council Areas, in the south-east by Delta State and the Atlantic Ocean. An expansive coastline, 180km-long is it southern

boundary, thus making Ondo State the state with the longest coastline in Nigeria (Akinrinmade, 2012). The region extend from

longitude 4° 28'E to longitude 5°E and from latitude 5° to 45'N to latitude 6° 25'N.



**Map 1: Indicating Ilaje Local Government Area in its Regional Setting**  
Source: Sogbon, 2005



**Map 2: Ilaje Local Government Area in its Local Setting**  
Source: Sogbon, 2005

### Literature Review and Conceptual Framework

This aspect contains a critical and in-depth evaluation of previous research works, which are intended to further expand the importance of embarking on this particular study.

### Environmental Degradation and Assaults

Apart from the income it generates, the oil industry is associated with environmental problems such as oil spillage and gas flaring, which wreck the biological diversity of the

communities lying in the site of exploration. Thus, while the land and water resources of the Niger Delta hold vast oil potentials, the ecology of the region is not only becoming extremely endangered, but also already facing serious abuse and degradation from oil exploration activities. The environmental damage, which seriously threatens the agriculture of the people and rural life, has become a matter of great concern.

Wide spread environment assault is known to exist in virtually all the oil producing countries of the developing world. The case of Nigeria is also similar to the rest of the world with vast Land, water and air contaminated in the process of oil exploration thereby threatening means of livelihood. In effect, the rural inhabitants are being forced to migrate in search of alternative place of abode and occupations. Thus, most of them end up settings in less favourable settlements.

### Oil Exploitation and Land Degradation

Vegetation in the Niger-Delta comprises of extensive mangrove forests, brackish swamp forest and rainforest. These large expanses of mangrove forest are estimated to cover approximately 5,000 to 8,580km<sup>2</sup> of land (Oil Spill Intelligent report, 1978). A lot of land degradation and forest deforestation were caused by oil induced fire and pollution on the environment. A number of oil induced fire outbreaks have occurred in the Niger-Delta leading to deforestation and destruction of farmlands such as the Jesse fire incident that occurred on October, 17th 1998. It was discovered that thousands of lives were lost while large expanse farm lands or natural ecology were destroyed by the fire inferno (Ofehe, 1999). Another fire incident occurred in September, 2004 in Okrika community, Rivers State that lasted for 3 days and destroyed the plants and animals inhabiting the affected area (Zabbey, 2004).

### Oil Exploitation, Communities Displacements and Poverty

It is obvious, but sad, that several oil bearing communities are no longer residing where they original called house/settlements in the study area and in many Nigeria Delta States as a result of the menace of multiple extractive activities taking place. This was noticed by Mathew (2004) that the out migration of displaced rural farmers in Isoko land and other Niger Delta oil bearing communities as a result of environmental degradation caused by oil extraction in the region has led to a significant percentage of the local inhabitants to remain in cyclical poverty and penury. Bisina (2006) states that oil activities in the area has resulted in the situations whereby complete polluted water is bequeathed to the children. The communities' shoreline had been washed away or eroded due to the high volume of deep-sea exploration and exploitation activities.

### Loss of Mangrove Forests and Extractive Activities

Vegetation in the Niger River Delta consists of extensive mangrove forest, brackish swamp forests, and rainforests. The large expanses of mangrove forest are estimated to cover approximately 5,000 to 8,580km<sup>2</sup> of land. Mangroves remain very important to the indigenous people of Nigeria as well as to the various organisms that inhabit these ecosystems. However, oil exploitation activities have adverse effects on the ecosystem and the local biodiversity of the oil bearing and producing area (Adati, 2012).

## RESEARCH METHODOLOGY

The evidence presented in this paper were sourced through direct observation, focus group discussion, questionnaire administration and secondary data. Meanwhile, nine communities were purposively selected for the study with a total of 296 questionnaire administered on them. A sampling size of 3% of the existing residential building was universally taken across the selected communities after which an appropriate sampling interval of 30 buildings was determined alongside with the systematic sampling technique that was adopted for the study.

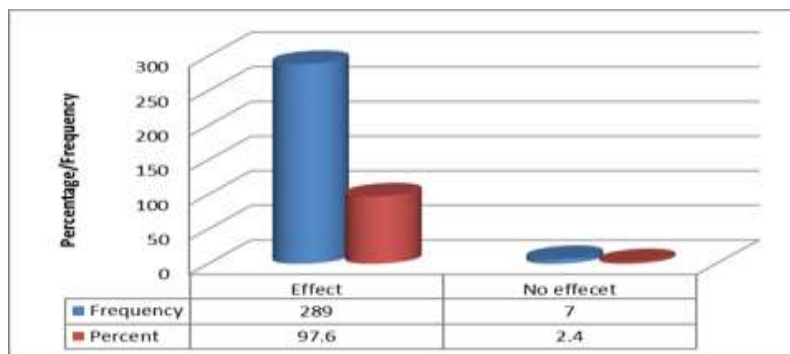
**Table 1. Selected Towns, their residential buildings and sample sizes**

S/No	Towns Selected	Number of Residential Buildings	Sampling Size
1.	Igbokoda	2,330	70
2.	Ayetoro	3,204	96
3.	Mahin	676	19
4.	Zion Pepe	896	27
5.	Ugbo-Nla	1,404	42
6.	Atijere	589	18
7.	Araromi Seaside	100	3
8.	Mahintedo	143	4
9.	Ugbo	496	15
	<b>TOTAL</b>	<b>9838</b>	<b>296</b>

Source: Akinrinmade, 2012.

### Findings and Discussions

This section of research is centred on presentation and analysis of the data collected through questionnaire survey on the incidence of oil exploitation and the attendant physical planning implications in the study area. These include.

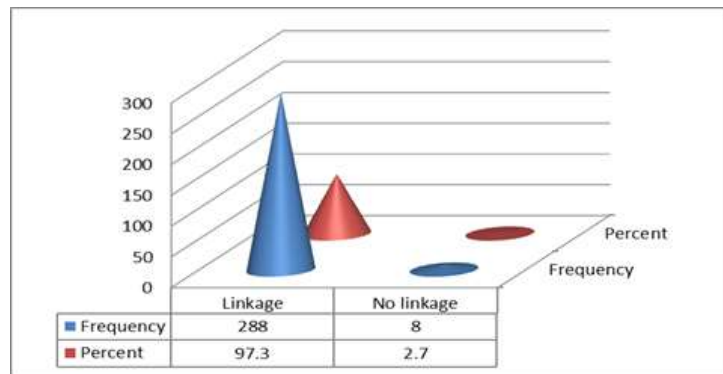


**Figure 1: Effect of oil Spillage on the Growth of Vegetation**

Source: Authors' field work, 2014. (Up dated 2017)

A total of 289 out of 296 respondents confirmed that oil exploitation activities retard the growth of the vegetation in the area particularly at the spillages impacted axis. The value of this accounted for 97.6% of the total respondents in the study area. On the other hand, 7(2.4%) opposed the attestation of the other group, meaning that oil exploitation either through oil

spillages or other means did not retard the growth of the vegetation of the area. The implication of this is that incessant oil spillage renders the soil infertile and the ability or capacity of the soil to support germination and growth of plants are jeopardized.



**Figure 2: Oil exploitation and Land Degradation**  
Source: Authors' field work, 2014. (Up dated 2017)

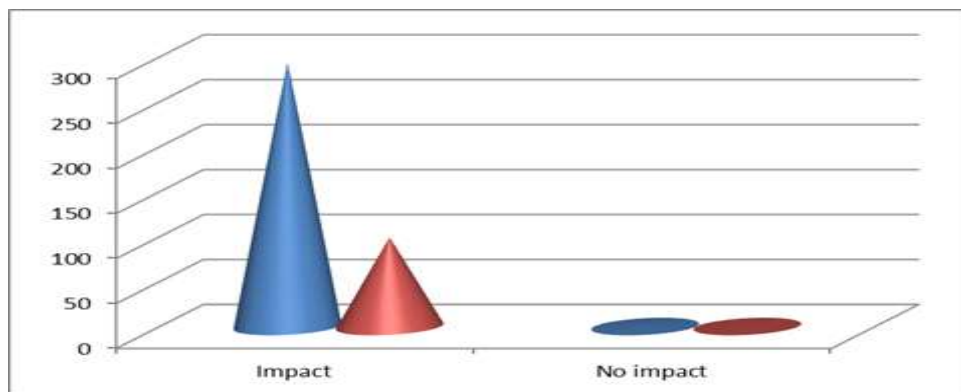
As depicted in figure 2, 288 respondents attested that there is a linkage between oil exploitation and land degradation in the area. This value accounted for 97.3% of the total respondents. On the contrary, 8 respondents, representing 2.7% were with the opinion that there was no linkage between oil exploitation and land degradation in the study area. This result however, showed that there is a close relationship between oil exploitation and degradation in the area. Where oil spillages happen, the growth of plants are retarded, the ability to reduce the impacts of rainfall particularly torrential rainfall on the physical environment is minimised and the ability or capacity to hold forth during flooding is hindered. It means, therefore, that the possibility of being faced with land degradation is relatively high.

**Table 2: Showing Extent of Land Degradation through Oil Exploitation**

Extent of Degradation	Frequency	Percent
Highly Degraded	284	95.9
Fairly Degraded	10	3.4
Not Degraded	2	7
Total	296	100.0

Source: Authors' field work, 2014. (Up dated 2017)

As shown in table 2 above, 284 respondents which accounted for 95.9% associated the horrible degradable state of the study area principally to oil exploitation activities. However, 10 were of the opinion that the extent of linkage between oil exploitation and land degradation is minimal as the environment is fairly degraded, which represents 3.4% of the total respondents. Only a negligible percentage of 0.7% attested that there is no relationship between oil exploitation and land degradation in the study area. In other words, they confirmed that oil exploitation did not cause any land degradation in the study area. From the foregoing, it implies that the study area is facing serious land degradation challenges through oil exploitation activities.



**Figure 3: Physical Planning Impact of Oil Exploitation**  
Source: Authors' field work, 2014. (Up dated 2017)

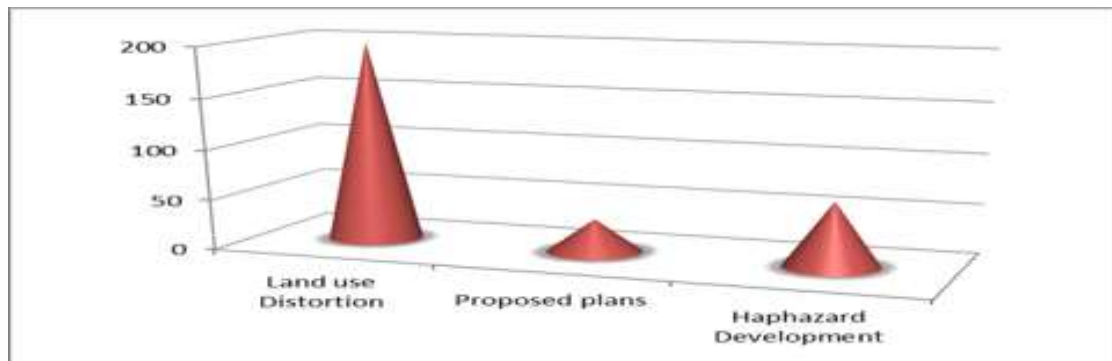
As revealed in figure 3, 2 respondents agreed that oil exploitation in the study area did not have any physical planning implication. This number accounted for 0.7% of the total respondents. 294, which is the highest frequency, representing 99.3% of the total respondents attested to the fact that there is a close relationship between oil exploitation and physical planning implication in the study area. From the survey, it means that land

use planning, which has to do with the allocation land uses in order to secure the ration and orderly development of land toward the creation of sustainable human settlements has been distorted. The implication of this is that orderliness, conveniences, safety, healthy living and aesthetically pleasing require for human, working, living and recreation could not be achieved in the study area. This shows that there is alteration of

the biological habitats such as land, water and swamps among others. Ajakaye (2008) said an estimated 5 – 10% of the Nigerian mangrove ecosystems have been wiped out either by settlement or oil exploitation.

Dedication of land for different uses such as agricultural, industrial, recreational and commercial among

others become relatively impossible because of the incessant and unimaginable destruction and alteration of the physical environment through oil exploitation activities particularly, oil spillages and other related activities in the area.



**Figure 4: Types of Physical Planning impact of oil Exploitation**

Source: Authors' field work, 2014. (Up dated 2017)

As depicted in figure 4, 33 respondents ascribed the unimplemented proposed development plans in the area to oil exploitation activities which frequently marred the physical landscape of the study area. This frequency accounted for 11.1% of the total respondent in the study area. 64 (21.6%) linked haphazard developments in the study area to oil exploitation activities. While 199 affiliated land use distortion in study area to oil exploitation. The significance of this is that oil exploitation activities in the study posed or inhibit land use and land use planning at different levels and different scales. Another consequential implication of this result is that the rapid and frequent distortion in land use in the study area is also a pointer to the degree of unethical land use planning and management system in the study area, which have unrelatedly given birth to unorganised land use pattern in the study area. It means then that planning for such an area will require vigorous and thorough inventory taking for integrated and sustainable plan to be achieved because of the several menace of oil exploitation that have been entrenched in the study area.

### Physical Planning Implication of Oil Exploitation in the Study Area

The implications of land degradation are enormous on the study area especially as it concerns livelihood of the people. Lakes and ponds in the study area serve as breeding grounds for fish and other aquaculture resources which is the backbone of the local economy. About 82% of the population in the study area takes farming, especially fishing, as either major or minor occupation. In essence, numerous small communities and fishing villages whose livelihoods depend on local fishing would be vulnerable especially with limited diversification of means of livelihood as a result of disappearance/degradation of the lakes and pond due to incessant oil exploitation mishaps in the environment. Some communities formerly located near these lakes and ponds have since relocated because they were no longer there to support them. This means that the local economy has been impacted to some extent which is exacerbating the poverty level in the study area. This consequently hindered efforts of government towards physical planning development programmes in the area. Savaging the region from the present dilemma will require intensive and inclusive collaborative effort, if sustainable human settlements are to be developed.

### Conclusion

Findings of the study revealed that the commencement of oil and gas exploration and exploitation, has brought about environmental problems, associated oil spillage, gas flares, land subsidence, depletion of forest resources, riverbank and costal erosion among others. There are indications that the extraction of

large quantities of oil and gas from the region is continuing to cause subsidence and relocation of more settlements. This is most disturbing especially as sources of livelihoods in the form of farming and fishing which are the major occupations in the area are threatened. In view of the foregoing, the study area is faced with myriads of ecological and environmental problems and diverse of social and economic challenges that are presently making life unconducive for the residents of the area. The heightened devastating activities of oil exploitation on the physical environment of this poor rural communities which by nature depend principally on their environment for sustenance has put them on the track of untold hardships. These are being perceived from economic, social, and environmental dimensions.

It has become crystal clear that if the rich ecosystem of the study area that was distorted marred and degraded through oil exploitation activities is to be reverted in order to meet the present dynamic and continuous demand of man and sustainably meeting the quests of the future generations, quick physical planning, interdisciplinary, biological and legislative measures must be taken to dousing the attendant problems of oil exploitation in the study area. On the basis of these are the following recommendations made.

### Recommendations

The focus of this study is the impact of oil exploration in the Niger Delta areas with a focus on the coastal region of Ondo State. To prevent further environmental degradation and attained the sustainable development in focus, the following underlisted should be observed as recommendations since oil exploration increase on daily basis in the region.

Towards revamping the degraded ecosystem, and giving room for express physical planning of the landscape of the study area, bioremediation, which involves the planting of *vetiveria zizaniodes*, a perennial grass, which has a deep fibrous root network that can both tolerate chemicals in the soil and that can also detoxify soils through time requiring little maintenance.

At reversing the state of degradation of the study area, the various institutions of government and development interventionist organisation should as a matter of immediate attention fast tract all the processes involved in environmental remediation and ecological restoration of the study area.

There should be physical mapping of the study area with a view to appropriating the impacted area for effective planning.

Towards improving the social life of the residents, efforts should be geared toward the provision of social infrastructure and amenities area such as potable water, health care delivery, and road, among others by multinational in oil producing and impacted communities.

There should be establishment of sub regional oil spill detection and response centres domiciling in the oil producing and impacted communities for quick operations during spillage, with a set mind to prevent halting of fishing activities in the area.

To avert sabotage, multinationals, government and the Ilaje Regional Development Council should jointly be involved and responsible for environmental monitoring and surveillance activities in the area.

There should be proper funding of the Niger Delta Development Commission (NDDC), Ondo State Oil Producing Areas Development Commission (OSOPADEC) and other development commissions and bodies who are directly or indirectly responsible in the intervening and development activities in the Niger Delta region of the country.

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