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Effect of Environmental Degradation on the Inhabitants of Obodo Community in Warri South Local Government Area of Delta State, Nigeria

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ABSTRACT: This study examines the effect of environmental degradation on the inhabitants of Obodo community in Warri South Local Government Area of Delta State in the Niger Delta Region (NDR) of Nigeria. The study utilized structured questionnaires that were randomly administered to 105 recipients, of who 80 responded. These respondents represent a cross-section of the stakeholders (oil industry/company workers, farmers, teachers, transporters as well as public servants). The questionnaire consisted of 20 structured questions grouped into two categories to cover various aspect of oil and gas related environmental pollutions. Simple percentages and chi-squared test were employed in analyzing the collected data. The study showed that there were significant relationship between environmental degradation and economic hardship within Obodo community in the NDR of Nigeria. The study recommends that Government and the various oil companies should always take steps to enhance, resuscitate and improve on the environmental related challenges of the communities within the Niger Delta.

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The Niger Delta is located along the Atlantic coast which forms the southern boundary of Nigeria, and it is the entrance of Rivers Niger and Benue into the ocean through a web of rivers, creeks, and estuaries (Akujuru, 2014). As the largest wetland in Africa (Ereibi, 2011), the area consists of four ecological zones: lowland rainforest, freshwater swamps, mangrove swamp forest and coastal barrier island which are part of the naturally endowed ecosystem acclaimed as having one of the highest concentrations of biodiversity on earth (Inomiesa, 2015; Ugochukwu, 2008). The Niger Delta Region (NDR) has the high biodiversity characteristic of extensive swamp and forest areas, with many unique species of plants and animals (Inomiesa, 2015; Akujuru, 2014). The high rainfall in southern Nigeria in the rainy season leads to regular inundation of the low, poorly drained terrain of the Niger Delta (Ugochukwu, 2008). In the recent past, the issue of environmental degradation due to oil and gas exploration and production in the NDR has assumed a polemical dimension by scholars and researchers (Ereibi, 2011). Previously, there have been numerous cases of environmental degradation in Africa, as well as in some advanced nations of the world that is unaccounted for. Therefore, threatening the existence of man on the surface of the earth, if a rescue mission is not initiated or done on the environment (Ukhurebor et al, 2012; Osuoka, 2005). It is important to see what natural principles and cycles are violated by the exploration and production activities around the NDR. It is understandable that nothing or little is done in mitigating the effect of this environmental degradation. Nigeria, which is at present the 7th largest oil producing Nations in the world with most of its production in the Niger Delta (Omotor, 2019), has suffered a lot and is still suffering

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from the environmental degradation and deterioration as a result of oil and gas exploration and production (Ereibi, 2011). No place is safe, the offshore is not, the aquatic body has suffered and is still suffering from uncontrolled oil spillages, marine accidents and lose of bio-diversities; in the same likeness the onshore and inlands have suffered and is still suffering from air pollutions, gas flaring, pipeline explosions, erosion and leaching of poisonous substances, communal crises, acidic rain, and lose of bio-diversity (Omokaro, 2006; Friends of the Earth, 2004; Amnesty International, 2005; Reis, 1996). Generally, oil and gas activities (exploration and production) are a major threat to the existence of man. It is a major contributor of Green House Gas emissions, CO_2 emission and Global Warming, Ozone layer depletion, pollution of arctic and anthracitic regions due to relief drift and geological diffusion (Ukhurebor et al, 2021; Omokaro, 2006).Until the production and utilization of renewable and green energy meets the global energy demand, the world will continue to rely on oil and gas and other fossil energy carriers to meet its day-to-day energy needs (Emegha et al 2022). And as a result, the environment is prone to hazards, social and environmental impacts due to explorations and production of oil and gas along with other fossil energy carriers (Ukhurebor et al, 2021). Today, some of the prominent identified social impacts in the Niger Delta have been inter-tribal and intra-tribal crises, inter-communal and intra-communal crises, militancy, youth unrest, adoption of foreign investors and expatriates, obstructions of justice and violation of human rights to mention but a few are endemic in the region (Ereibi, 2011). To curb the menace of these environmental and economic issues a lot has to be done not only corrective but also pro-active to save mankind and the environment (Omokaro, 2006). In this study, the impact of environmental degradation due to oil and gas exploration on the economic status of the Niger Deltas is investigated.

Some reports has claims that the activities within the region have impoverished its people instead of enriching them, therefore causing a serious degrading of their natural resources, which add up to their economic stronghold (Ereibi, 2011; Ugochukwu, 2008). Due to environmental pollution, there is drastic decline in the region's biodiversity and ecological resources, which are the main sources of their income and the people's mode of survival (Ashton et al., 1999). Also, there is an aspect of the health hazards posed to the inhabitants as a result of oil pollution of the environment, and hence there are environmental challenges as well as economic problems created by adverse effects of oil mining, which has culminated into low agricultural productivity and poor farm yields sufficient enough to threaten the food security of the Niger Deltas. This study examines the effect of environmental degradation on the inhabitants of Obodo community in Warri South Local Government Area of Delta State, Nigeria.

MATERIALS AND METHOD

*Study Area:*Due to the broad network of oil and gas activities within the region, the NDR has become tantamount with oil pollution which damages the environment and poses serious health and economic threat to residents. Obodo Community in Warri South Local Government Area (LGA) of Delta State, Nigeria is the main focus area of this study. The people are primarily into small scale farming. A few of them are into public services. Itsekiri is the main ethic group within the community. The community enjoys the humid hot topical climate of the Niger Delta plains along with a fairly high temperature all year round. Rainfall is virtually observed at all time with flooding during the rainy season. Some common crops cultivated within the community include plantain, cocoyam, maize, cassava and banana. Due to oil spillage, yields are however on the low since vegetation in the community has been significantly damage by exploration activities.

*Data Analysis:*Data collected for the study were coded and compacted into manageable size. The frequencies of occurrence of events and percentages were worked out and presented in tables. The process of data analysis was facilitated by the use of the Statistical Packages that automatically saved the experimental information into the Microsoft Excel File format. Replicate analysis was necessary to establish reproducibility and ensure good precision of the analysis. The research methods embrace both quantitative and qualitative designs. In order to achieve direct observation and communication with participants, questionnaires were administered to one hundred and five (105) recipients, of who eighty (80) responded, and who were identified as a representative cross-section of the stakeholders. These questionnaire recipients included oil industry and company workers, Farmers, Teachers, Transporters as well as Public servants. Statistical analysis of response were undertaken to achieve a quantifiable and valid claim on the situation in Nigeria.

RESULT AND DISCUSSIONS

Demographic characteristics of data: Table 1 shows the number of participants that were interviewed across the various age groups in Obodo community. From the table, it was seen that the (31-40) and (41-50) age groups accounted for the highest percentage of

the study area, which shows that these age groups are the most active groups. It should be noted that in spite of the increased response in (21 – 30), (31-40), (41-50) and (51-60) age groups, all other groups are still susceptible to the various effects of pollutions from oil and gas exploration. The major reason why these age groups (21-30) (31-40), (41-50) and (51- 60) are more active with corresponding higher percentages is due to the facts that these age groups are more dynamic economically, as well as participate directly or indirectly in the day by day activities of the society. One more reason why these age groups have high percentages is because they are commonly considered as the labour-force age brackets within any community in Nigeria (Inomiesa, 2015).

Table 1: Age characteristics of Obodo Community

Age	Frequency	Percentage (%)	Cumulative Percentage (%)
Less than 20	6	7.5	7.5
21- 30	16	20	27.5
31 – 40	23	28.75	56.25
41- 50	17	21.25	77.50
51- 60	15	18.75	96.25
61 above	3	3.75	100
Total	80	100	

Sex characteristics of Obodo Community: Table 2 illustrates the percentage of participants in terms of gender. The table indicates that the male number of respondents was higher than female within the community. Also, from the table, the total male respondents accounted for 43 (53.75 %) while the female folks accounted for 37 (46.25%). Usually, men in the Niger Delta Region are known to be the family heads as well as bread winners of their families which are due to their involvement in all features of the economy. The study with high proportion of male-headed families is in harmony with the National Population Commission (NPC) reports in 2008 on household statistics, which indicated that over eighty-percent of households in Nigeria are headed by males (Igben, 2021). However, the table also shows that the female respondents were relatively high with 46.25 %. This was due to most women or female folks in Obodo community majorly bearing the burden of the family directly or indirectly either because of unemployment of their husbands or due to the polygamous family pattern. Earlier studies indicated that due to environmental degradation and long term government neglect of the NDR, the female-folk had taken up additional responsibilities to support and care for their children (Inomiesa, 2015). Accordingly, Igben (2021) indicated that the women in the NDR have embark on menial jobs and various businesses within walking distance of the oil and gas companies in order to care for their homes. These commercial activities have attracted high patronages from the community (Inomiesa, 2015; Igben, 2021).

Table 2: Sex characteristics of Obodo community

Gender	Frequency	Percentage (%)	Cumulative Percentage (%)
Male	43	53.75	53.75
Female	37	46.25	100

The main occupational activity in Obodo Community: The occupational activities of the household within the community are indicated in Figure 1. Fishing was the main occupation employing 30.00 % of the targeted population. This is followed by farming (22.50 %), transportation (20.00 %), public service (15.00 %) and others (12.50 %) respectively. Traditionally, the two most important occupations of the people of Obodo Community in Warri South is fishing and farming. Fishing and farming are majorly carried out in the region due to its numerous water bodies and fertile lands. In view of that, the results obtained indicate that fishing and farming accounted for over 50 % of the economy of the people (Figure 1). However, some respondents to the questionnaires are of the opinion that the recent yields of these occupations (fishing and farming) have not been very good. They ascribed this to the direct effect of environmental degradation and oil exploration activities going on within the community. Commonly, they complained of recurrent oil spills that penetrate the creeks along with water bodies which is damaging to aquatic lives. This had made fishing in some of the rivers in the community impossible, thereby affecting their livelihood. The various oil spills also destroy the farmlands by rendering them non-productive for the crops that normally grow in the community. According to Ugochukwu (2008), revamping the rural economy in NDR is a major challenge. Optimization and modernization of agriculture as well as fishing activities will definitely contribute to the economic emancipation of the locals, thus reducing poverty in

the region. This will make the people to feel a sense of belonging and put oil wealth to good use.

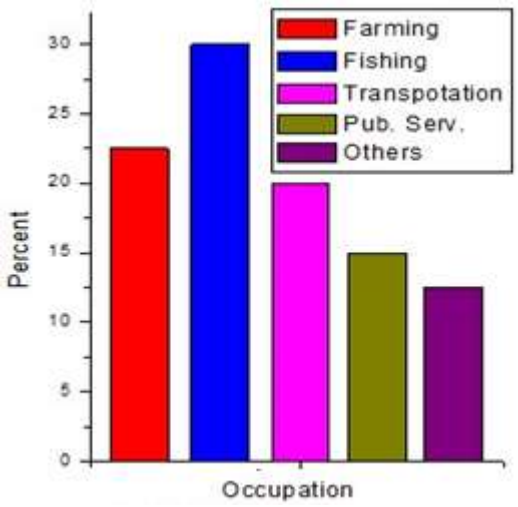

Fig 1: Occupational Characteristics plot of Obodo community

Effect of pollution on Wildlife, Vegetation and Soil quality: Of the 80 respondents (Table 3), 51.25 % of them had the impression that pollution from oil and gas related activities negatively affect our wildlife, vegetations and soil quality. 17.50 % of the respondents do not believe that the wildlife, vegetations and soil quality in the region is negatively impacted by the oil and gas related pollution. 31.25 % are indifferent to the question. The results demonstrate that environmental degradation decreases the level of soil fertility and nutrients, which drastically decrease production output in both farming and fishing activities. The findings agreed with the study by Godson-Ibeji and Chikaire (2016) that indicates that environmental pollutions destroy crops and damage the quality and productivity of soil that the communities use for farming activity. On water, they kill aquatic lives as well as contaminate water used for drinking and other domestic purposes. Related study showed that more than 60 percent of the people of the Niger Deltas depend on the natural environment for their livelihood. Thus, the endemic pollution over the years has destroyed the quality of life as well as water, soil and air within the region (Ukhurebor et al., 2012). The UNDP reports in 2006 revealed that most of the people affected are particularly the poorest and most vulnerable rural farmers who rely mainly on traditional occupations such as fishing and agriculture. However, such damages from oil and gas processes are cumulative and chronic and have harshly impaired coastal ecosystems and hampered the livelihoods and health of the region, therefore, impoverishing the people.

Table 3: Effect of pollution on Wildlife, Vegetations and Soil quality

Effect of pollution on vegetation & Soil quality	Frequency	Percentage
Yes	41.0	51.25
No	14.0	17.50
I don't know	25.0	31.25

*Testing of Hypothesis:*Table 4: Chi-square analysis for the relationship between environmental degradation and economic hardship

Respondent	Number	Percentage %	Df	X^2- Cri.	X^2- Cal.	Decision
Yes	50.00	62.50				
No	16.00	20.00	2	5.99	30.70	Ho_1 is Rejected
I don't know	14.00	17.50				
Total	**80.00**	**100**				

P > 0.05

In Table 4, with alpha level of 0.05, the degree of freedom (DF) of 2, the critical value is 5.99 while calculated value is 30.70. Since the calculated value is greater than the critical value, the null hypothesis is therefore rejected. This shows that there is a significant relationship between environmental degradation and economic poverty within Obodo communities in Warri South Local Government Area of Delta State, Nigeria. Since poverty is a complex multidimensional problem today, there is a strong link between environmental degradation and economic status of the locals. Proper management of resources entail policy that focuses on the protection and conservation of natural resources that must account for those who depend on it for their sustenance, otherwise it could have a damaging effect on the economy statue of the community as well as long term resource conservation. Equally, any developmental policy must focus not only on increasing production of goods but, also addressing the sustainability of the resource base thereby reducing poverty. A definite anti-poverty approach is, therefore, an important step for ensuring sustainable development and poverty eradication simultaneously.

Conclusion: There are no doubts that environmental degradation has created serious and challenging environmental problems in Nigeria. Environmental

degradation has led to contamination of drinkable water as well as the destruction of the ecosystem, and death of aquatic lives in the NDR. Lack of strict compliance to existing environmental protection rules and regulations, with the inability of governmental and non-governmental agencies to enforce these laws have contributed to the polluted ecosystem of the region.

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