

Socio-economic impacts of oil exploration activities in Burutu LGA, Delta State, Nigeria

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ABSTRACT

The study examined the socio-economic impacts of oil exploration activities in Burutu LGA, Delta State, Nigeria. Primary data acquisition involved the administration of 380 copies of semi-structured questionnaire. The study employed descriptive statistics for data presentation while the Excel worksheet 2010 and SPSS version 24.0 aided the study in data analysis. Findings revealed that the overall impact of flaring activities was high (69.6%). The impacts of oil spill from oil exploration activities are evident on land (18.2%), soil (14.5%), fish catch reductions (55.5%), and environmental degradation (11.8%). The disruption of the economic base of residents was felt by 60.0% of the sampled population; while 55.4% of respondents indicated reduced income level; 26.1% indicated displacement from original position; and 49.1% have observed increased conflicts in the study area. Thus, poor environmental management practices will therefore continue to promote environmental degradation in oil bearing communities in the study area. The study recommended amongst others that environmental preservation and conservation should be the core priorities of oil multinationals in the face of oil exploration activities in the study area.

Keywords: Oil Exploration, Activities, Socio-economic Impacts, Environmental degradation, Burutu LGA

I. INTRODUCTION

Man's activities are not carried out in isolation. It is carried out in space, irrespective of its being social, economic, industrial or cultural (United Nations, 2020). These activities are all carried out in one or all the components, which make up our planet, and of course, these components are inextricably yield to one another (World Health Organization, 2011). Man's activities through industrial development for socio-

economic commitments have overtime changed and degraded the environment. The magnitude of the environmental impact of man's activity is monumental on our planet which is all part and parcel of man's exploration and exploitation of natural resources in order to achieve his goal and satisfaction (Ite, 2013). Environmental pollution is a phenomenon associated mostly to the activities of oil companies in the process of exploring for oil and gas in both land and water (Ubani and Onyejekwe, 2013).

Oil exploitation and exploration has impacted most disastrously on the socio-physical environment of the Niger Delta oil bearing communities massively threatening the fragile subsistent peasant economy and bio-diversity and hence their entire social livelihood and very survival (Kadafa, 2012). The exploration and production of petroleum (oil and gas), and its subsequent transportation and distribution in the Niger Delta have led to degradation and subsequent pollution of aquatic habitats with serious threats to associated flora and fauna (Ode et al., 2010). It was further revealed by Ajugwo (2013) that the oil-producing communities have experienced severe marginalization and neglect overtime. Several socio-economic implications of oil exploration activities on oil bearing communities in Niger Delta have been revealed by several scholars (Olumuyiwa et al., 2013; Ajugwo, 2013; Okoh, 2013; Fentiman and Zabbey, 2015). From all ramification, the impact of oil explorations activities have been evident on residents health, local culture, land, rivers, indigenous-self determination, conflicts, amongst others (Aghalino and Eyinla, 2009; Edino et al., 2010; Ismail, 2012; Ozabor and Obisesan, 2015).

Burutu LGA in Delta State is home to several Oil Multinationals and can boast of several oil producing communities (Gbigbi, 2013). Oil exploration activities in the area have contributed

to environmental degradation and pollution of rivers that serves as a means of livelihood to fishermen and women. For instance, the findings of Gbigbi (2013) concluded that oil spillage has presumably had a negative impact on fishing activities leading to reduced agricultural output, poor harvest and low income level among the artisanal fishermen. These have led to calls for resource control by oil producing areas in order to reduce socio-economic impacts of oil exploration activities in Burutu LGA. Earlier studies by Agbogidi et al., (2005) have exposed the challenges of oil exploration activities on the environment in some communities in Delta State. The study revealed that oil exploration and production activities have caused damage to farmlands and water bodies as a result of oil spillage leading to a decrease in agricultural output and hence the income earning capacity of the people has declined appreciably. The results also showed an increase in the occurrence of health hazard, air/noise pollution and heightened deforestation in these communities. Recently, Fie and Victor (2020) studies on understanding offshore petroleum activities on socio-economic dynamics, sampled oil bearing coastal communities of Nigeria using Burutu LGA as one of the LGA examined in their study. This study only focused on socio-economic dynamics (age, gender, marital status, educational qualification and annual income) of these coastal communities and not socio-economic impacts in the face of oil exploration activities. Therefore, recent studies on the socio-economic impacts of oil exploration activities of oil multinationals in Burutu LGA are rare in literature. Thus, the current study examines the socio-economic impacts of oil

exploration activities on residents in Burutu LGA, Delta State, Nigeria.

II. MATERIALS AND METHODS

Description of the Study Area

Burutu LGA lies on the coast of the Niger Delta on two sides of the Forcados River, a channel of the River Niger, 30 kilometers upstream from the Bight of Benin. It once served as a sea route transport for the Royal Niger Company in the late 1800's (Encyclopaedia Britannica, 2021a). Burutu is situated geographically between 5.35°N latitude and 5.51°E longitude and 1 meter elevation above the sea level. The ambient air temperature of Burutu LGA ranged from 30.4 to 30.8°C. The wind velocity in the study area ranged from 1.0 m/s to 1.20m/s (NIMET, 2021). Generally, rain falls all the year round but over 80% of this occurs in the months of May to September. The relative humidity values ranged from 82.4% to 82.7% in the study area (NIMET, 2021). The Rivers which are Forcados, Ramos, and Burutu are tributaries from River Niger which empties into the Bight of Guinea (Encyclopaedia Britannica, 2021b). The vegetation types of Burutu are characterized by mangrove forest, secondary swamp forest, patches of fallow/farmlands, and Tree crops amongst others (Gbigbi, 2013). The predominant economic activities engaged by the people of Burutu are fishing and farming (Gbigbi, 2013). Burutu LGA is home to the Ijaw speaking tribe which is the largest linguistic and cultural group. The Oil Multinationals in Burutu LGA includes Agip, SHELL BP, and Chevron amongst others (Silas, 2018).

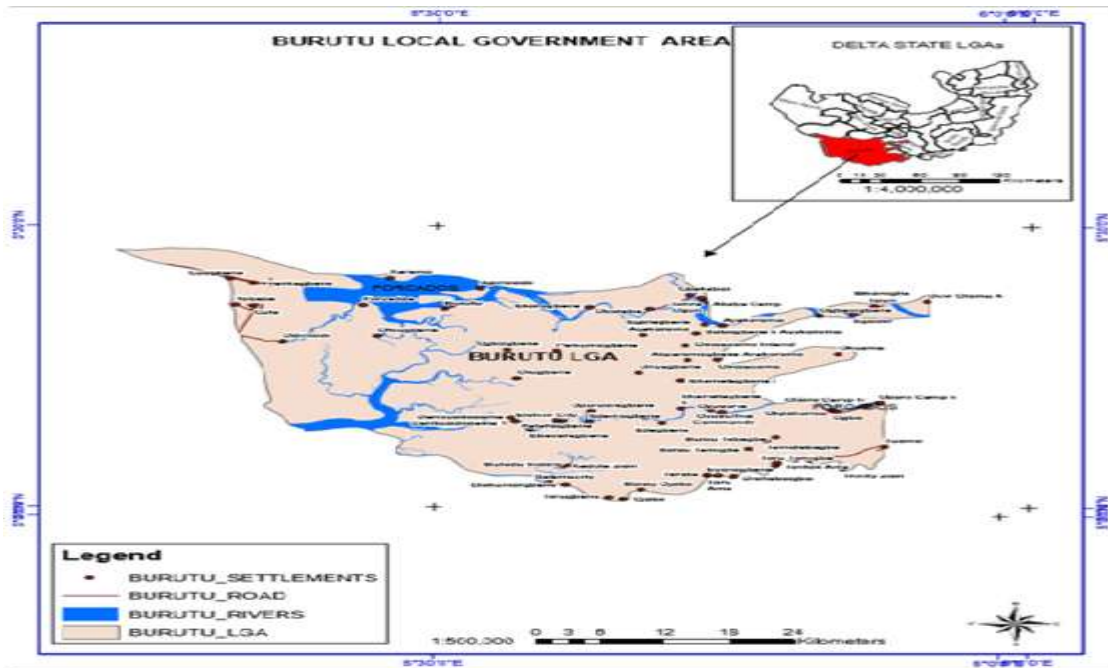


Figure 1: Burutu LGA, Delta State

III. SAMPLE SIZE AND DATA ACQUISITION

The qualitative research method was employed for the study. The study employed direct observation and questionnaire survey to extract first hand information as regards the stated questions for the study. The study area population relied on information from National Bureau of Statistics (NBS) (2020). A population figure of 16,410 persons was obtained for the study. However, sampling a population size of this figure is too tasking. Thus, the study utilized Cochran's formula to determine a sample size for the study (Equation 1).

$$n_0 = \frac{Z^2 pq}{e^2}$$

$$n = \frac{n_0}{1 + \frac{(n_0 - 1)}{N}}$$

..... Equation 1

Where; n= Sample size; N= Population size; n₀ = Cochran's recommended sample size (385)

A sample size of 376 was obtained from the application of Cochran's formula for determination of sample size and this was rounded up to 380. The probability sampling method which ensures that all elements of the population have equal chance of being selected for the questionnaire

survey was employed for the study. The data collection instrument was the questionnaire. Thus, 380 copies of the questionnaire were administered among residents in Burutu LGA using communities around Oil Multinationals as criteria for selecting respondents for the study. The study employed simple random sampling technique to select respondents which will ensure independence of observations from individual respondents that would be selected. The study utilized structured questionnaire format for data collection which were inform of likert scales to either agree or disagree with questions. Respondents were given adequate time to respond and contribute to the study. A total of 380 copies of the questionnaire were randomly and systematically administered whereby a total of 330 copies were returned for data presentation and analysis.

IV. DATA ANALYSIS:

The study employed the descriptive statistics techniques in form of Tables and Charts to present obtained data from the field. Completed questionnaire samples returned were coded in excel worksheet 2010 and imported into the Statistical Package for Social Scientist (SPSS) 24.0 version whereby data obtained were analyzed for the study.

V. RESULTS AND DISCUSSION Socio-economic Characteristics of Respondents

The gender ratio for sampled respondents showed that the total number of sampled males

were 51.5% while the remaining 48.5% were females. The age ratio of sampled respondents revealed that 3.6% of sampled respondents were between the age ratios of 18-25 years; 24.8% of the respondents were within 26-30; 45.8% were between the ages of 36-40 years old; 17.6% of sampled respondents were between the ages of 41-45 years; while the remaining 8.2% of sampled respondents were above 45 years of age. The marital status of sampled respondents indicated that 43.6% were single; 38.8% of sampled respondents were married; while the remaining 17.6% were divorced. The level of education of sampled respondents for the study showed that 29.1% of sampled respondents had primary level education; 38.5% of sampled respondents had secondary level education; 18.8% of sampled respondents belong to the tertiary level of education and 13.6% of

sampled respondents had no formal education. The type of occupation of respondents for the study revealed that 40% of sampled respondents were into fishing; 18% of respondents are farmers; 13% of respondents are into trading; 9% of sampled respondents are hunters; 8% are civil servants; while 5% remaining are into other occupational activities. The information for the average monthly income of sampled respondents revealed that 19.7% of respondents earn between N1,000 and N20,000; 23.3% of respondents earn between N21,000 and N40,000; 19.4% of respondents earn between N41,000 and N60,000; 17.3% of respondents earn between N61,000 and N80,000; 9.4% of respondents earn between N81,000 and N100,000; while the remaining 10.9% of respondents earn above N100,000.

Table 1: Socio-Economic Characteristics of Sampled Respondents

Parameter	Frequency	Percentage (%)
Gender		
Male	170	51.5
Female	160	48.5
Age		
18-25 years	12	3.6
26-35 years	82	24.8
36-40 years	151	45.8
41-45 years	58	17.6
Above 45 years	27	8.2
Marital Status		
Single	144	43.6
Married	128	38.8
Separated	58	17.6
Level of Education		
Primary	96	29.1
Secondary	127	38.5
Tertiary	62	18.8
No formal education	45	13.6
Occupation		
Fishing	42	47
Farming	37	18
Trading	35	13
Hunting	50	9
Civil Servant	73	8
Others	93	5
Monthly income		
N1,000 – N20,0000	65	19.7
N21,000-N40,000	77	23.3
N41,000-N60,000	64	19.4
N61,000-N80,000	57	17.3
N81,000-N100,000	31	9.4
Above N100,000	36	10.9

Impacts of Oil Exploration Activities
Overall Impact of Flaring Activities

The overall rating of the impact of flaring of oil exploration activities on the environment as perceived by residents is displayed on Figure 4.1. It was revealed that majority of sampled respondents

(69.6%) indicated a very high impact while 14.5% indicated a low impact. However, the remaining 15.9% were either not aware or were not sure of the impacts of flaring activities. Distance to flaring sites can be a factor for the variation in responses received for the study.

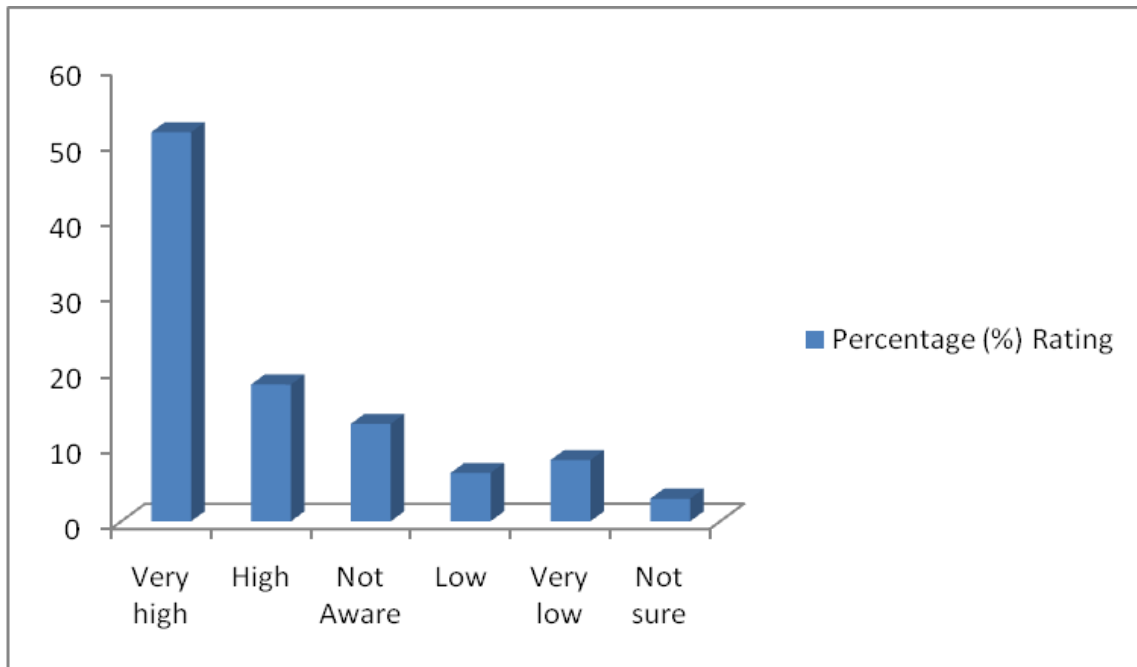


Figure 1: Overall rating of the Impact of Flaring Activities on the Environment

Overall Impact of Oil spill from Oil exploration Activities

The overall impacts of oil spill from oil exploration activities are displayed on Figure 2. These impacts were identified as soil pollution

(14.5%), reduction in number of fishes (55.5%), land pollution (18.2%), environmental degradation (11.8%). All identified impacts is directly or indirectly affecting residents socio-economic livelihood.

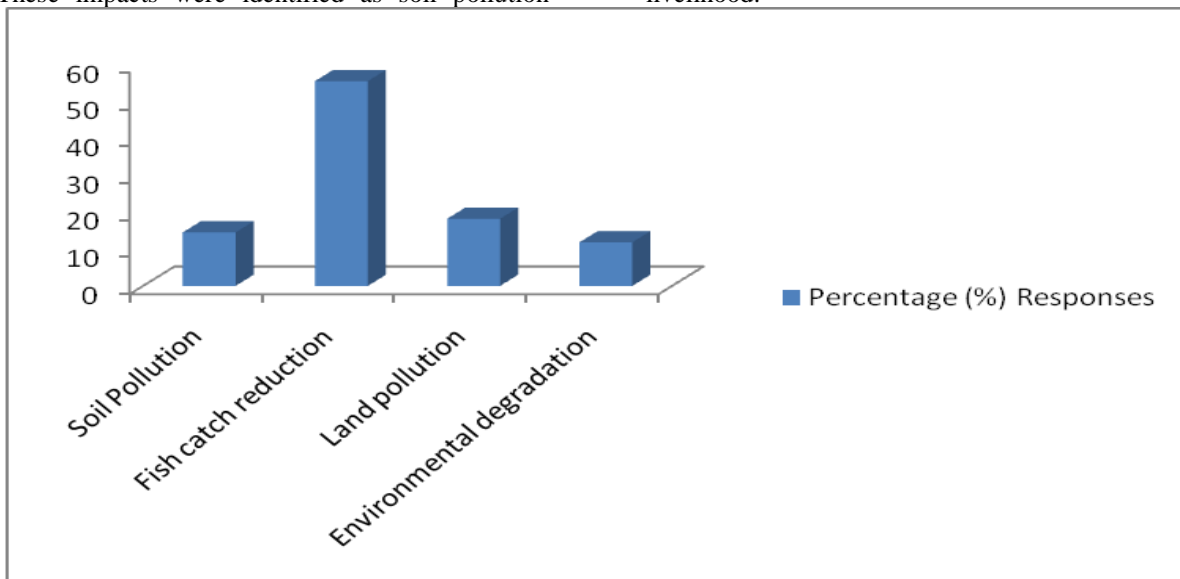


Figure 2: Overall Impact of Oil Exploration Activities

Disruption of Economic Base of the People

The level of disruption of economic base of the people from oil exploration activities was displayed on Figure 3. It was revealed that oil exploration activities have disrupted the economic

activities of 60.0% of sampled respondents; while 31.5% of respondents have felt no disruption of their economic base; and the remaining 8.5% of the sampled respondents are not sure.

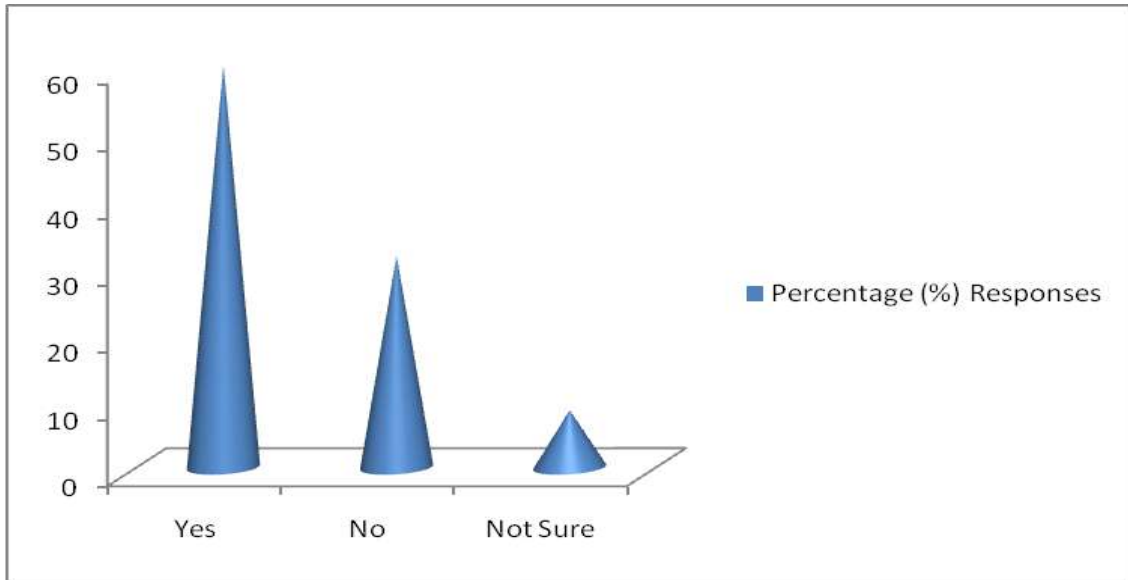


Figure 3: Disruption of Economic Base of the People?

Reduced Income Level

The percentage number of sampled respondents with reduced income level as a result of the environmental degradation from oil exploration activities is displayed on Figure 4. The percentage number of sampled respondents that

have experienced reduced income level was 55.4%. However, 38.4% of sampled respondents have not experienced any reduction in their income level as a result of the oil exploration activities; while the remaining 6.2% of sampled respondents were not sure.

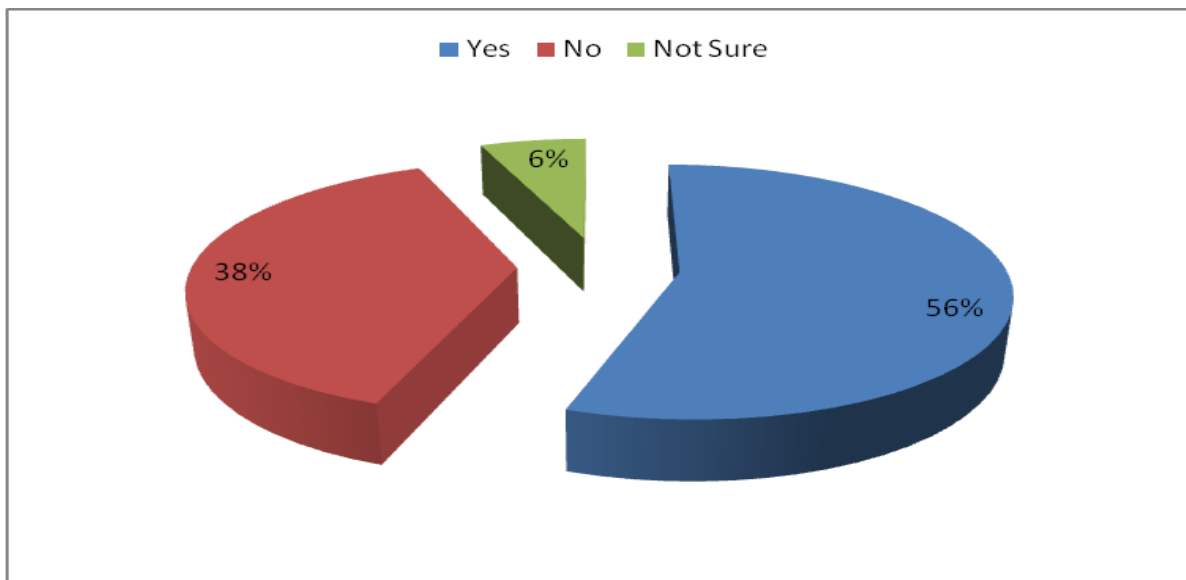


Figure 4: Oil Exploration has Reduced Income Level?

Displacement from Original Positions

The number of displaced persons from the study was displayed on Figure 5. It was revealed that 26.1% of sampled respondents have experience one form of displacement or the other; while the remaining 73.9% of sampled respondents have never experience displacement in the face of oil

exploration activities in the study area. The study showed that only few have experienced displacement from their income sources. This figure may change with time if no deliberate actions are taken to resolve environmental impacts of oil exploration activities.

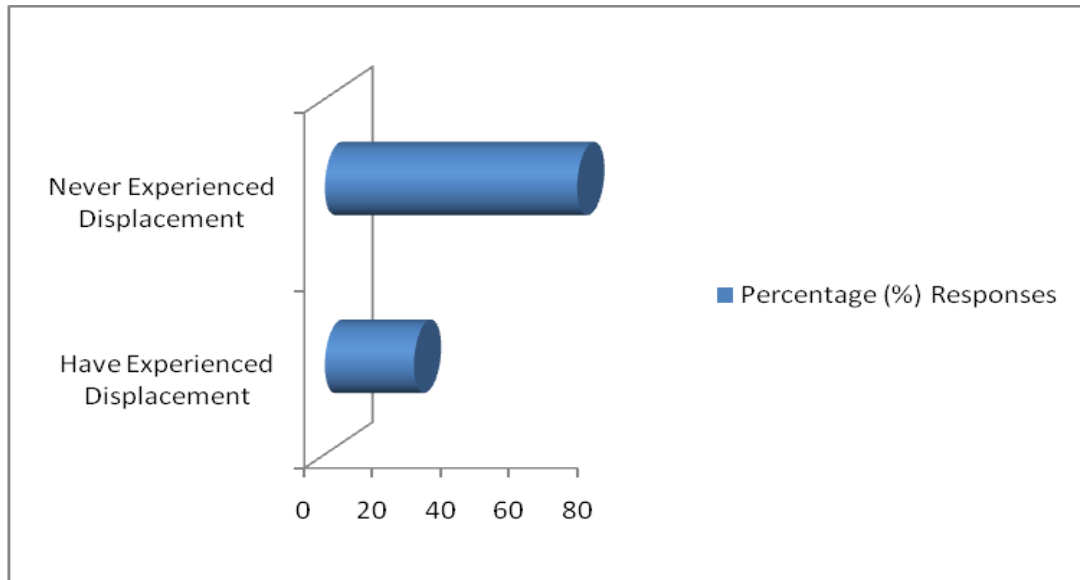


Figure 5: Any form of displacement due to Oil Exploration Activities?

Increased Communal Conflict

The study discovered that oil exploration activities have contributed to increased conflicts among residents in oil bearing zones of Burutu LGA. The information is displayed on Figure 6. It was revealed that oil exploration activities of oil

multinationals have increased conflicts in the study area (49.1%). However, 27.0% of sampled respondents did not agree that oil exploration activities are the causes of increased conflicts in the study area. The remaining 23.9% of sampled respondents were unsure about this.

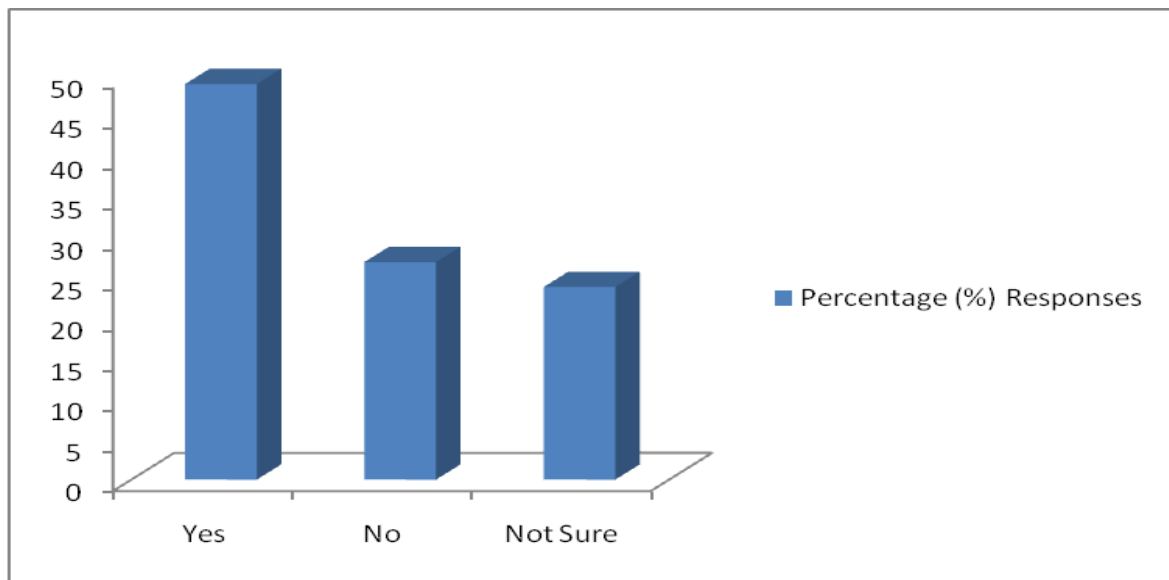


Figure 6: Oil Exploration activities have led to increased Communal Conflicts?

VI. DISCUSSION

Findings of the study have revealed that the overall impact of oil exploration activities like flaring is evident on residents in Burutu LGA. The impacts are evident on soil, land, fish farming, and environmental degradation. Majority of residents in coastal communities in Burutu LGA are fishermen and women and farmers. Thus, impacts on rivers, soil and land through oil spills and flaring activities will mean direct or indirect impact on the socio-economic livelihood of the people. Findings agrees with the findings of Ode et al., (2010), that confirmed that the oil development in Niger Delta has dramatically changed the local communities, and brought challenges to the traditional economic, cultural and daily living conditions. Although crude oil production has boosted Nigeria's economy, the trickle down effects are hardly felt by ordinary members of the host communities. Instead of sharing in the benefit of the oil sector, the local communities are mainly suffering the negative impacts from this development. Aka (2017) also identified such oil exploration impacts on the environment polluting lands, water and air in the Niger Delta. The study identified impacts in the form of black soot, oil spill and flooding in four communities in Rivers State; indicating the most affected communities as Aluu, Rumuolumeni and K-Dere.

The economic bases of the people have been disrupted due to oil exploration activities of oil multinationals. People have experienced income reduction and displacement and increased communal conflicts overtime. This also agrees with the findings of Ipingbemi (2010) who researched on the socio-economic implications of oil pollution on host communities and discovered that it usually lead to community conflicts and the disruption of occupational activities of the dwellers. Agbogidi had earlier stressed the socio-economic implications of oil exploration activities in some communities in Delta State, and concluded that oil exploration and production activities have caused damage to farmlands and water bodies as a result of oil spillage leading to a decrease in agricultural output and hence the income earning capacity of the people has declined appreciably. Similarly, Gbigbi (2013) have concluded that oil spillage has presumably had a negative impact on fishing activities leading to reduced agricultural output, poor harvest and low income level among the artisanal fishermen. The bottom line will be that increased efforts by government and most particular the oil multinationals will go a long way in ameliorating problems and aiding oil bearing

communities in adjusting to the menace of oil spills in the study area.

VII. CONCLUSION AND RECOMMENDATION

The study has revealed the socio-economic impacts of oil exploration activities on residents in Burutu LGA, Delta state, Nigeria. It was discovered that environmental degradation in form of land, soil, rivers and air pollution have been evident thereby affecting the economic bases of the people. Thus, the study recommended that: oil bearing communities should be involved in the decision making processes as this will go a long way in addressing core issues and challenges; environmental preservation and conservation should be the core priorities of oil multinationals in the face of oil exploration activities; adequate corporate social responsibilities should be the focus of oil multinationals at all times in order to aid community development; community conflicts can be minimized if the government, oil multinationals and community leaders are open on the core needs of the communities and ways of resolving issues arising from pollution and development.

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