

The Impact of Oil Pollution on Socio-Economic Life in Udu Local Government Area in Delta State

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Abstract: The study examined the impact of oil pollution on socio-economic life in Udu Local Government Area of Delta State, with the aim of assessing the effects of oil pollution on socio-economic life of the inhabitants of Udu Area in Delta State. Eighty (80) structured questionnaires was generated to obtain response from forty (40) farmers from the crude oil polluted communities and forty (40) farmers in the non-polluted communities, in order to compare the socio-economic impact of oil spill on oil polluted communities and non-polluted communities. The communities that were selected in oil polluted communities are (Ukpiovwin and Oghior) and two from the oil polluted communities are (Owhrode and Egini) which served as control site for comparison. The questionnaires were administered through a systematic random sampling techniques to every first farmer, after each five buildings in each quarter. The result from the analysis revealed that oil pollution has effects on socio-economic life of the inhabitants of Udu Area in Delta State. And the result from the t-test analysis showed t value of 4.258, indicating significant effects of oil spillage on inhabitants of Udu Area in Delta State. The study further recommended mopping up exercise, payment of compensation and enlightenment programmes by the oil companies to the host communities.

Keywords: Oil, Pollution, Socio-economic life, Udu Area.

INTRODUCTION

The exploration and exploitation of crude oil in the Niger Delta Region of Nigeria has ironically become a source of agony and disillusionment to the people of the region [1]. Prior to the discovery of oil in commercial quantity in 1956 and its consequent exploitation, the Niger Delta Region presents a myriad of beautiful colours representing a distinction of rain forest, mangrove swamps, palm forest, a natural paradise bursting with both plants and animals, marine life and very suited environment for conservation as games reserves, tourism and so on [2]. But with the exploration and exploitation of crude oil since 1956 the region has been given a completely different feature.

These noticeable features includes gas flaring that dot the landscape, acid rain and ecological devastation. However far more reaching environmental destruction is oil pollution that resulted from oil spillage [3]. According to Bayode, opinioned that oil pollution causes damage to human health, farmlands, human safety, long-term ecological malfunctioning and poor environmental well being [4].

Socio-economic activities of farming, fishing, water supply etc are greatly affected in oil polluted communities. For example, oil pollution in rivers could result in massive extermination of fishes and thereby threaten the social and economic life of the

communities whose livelihood depend on the contaminated water. This has been the fate of many of the riverine oil producing, fishing dependent communities [5]. In similar way arable farmlands have been lost to oil pollution as pointed out by Dada [6]. According to him about one quarter of the arable farmlands in the Niger Delta Region have been rendered barren due to oil spillage and leakages. Ekpu [7], attributed poor soil fertility and low crop yield in the oil producing communities following the effect of oil pollution arising from oil spillages into the environment. From the foregoing, its obvious that the effect of oil pollution on the environment of the Niger Delta Region is on the increase and has also raised a great concern to the inhabitants of the oil producing communities that suffer polluted soil, air, water, degraded forest, farmland and very high atmospheric temperature for over four decades. It is in this context that this study sought to assess the impact of oil pollution on the socio-economic life of the inhabitants of Udu Local Government Area in Delta State, in order to ameliorate the situation arising from oil pollution.

Study area

The study area is located in the South Central part of Delta State in the South-South zone of Nigeria. It lies between latitude $4^{\circ}30'N$ to $6^{\circ}35'N$ and longitude $4^{\circ}30'E$ and $5^{\circ}00'E$. It is bounded in the north by Uvwie and Warri South Local Government Areas, in the East

and South by Ughelli South Local Government Area and in the West by Ughelli South and Warri South

Local Government Areas respectively (see fig. 1).

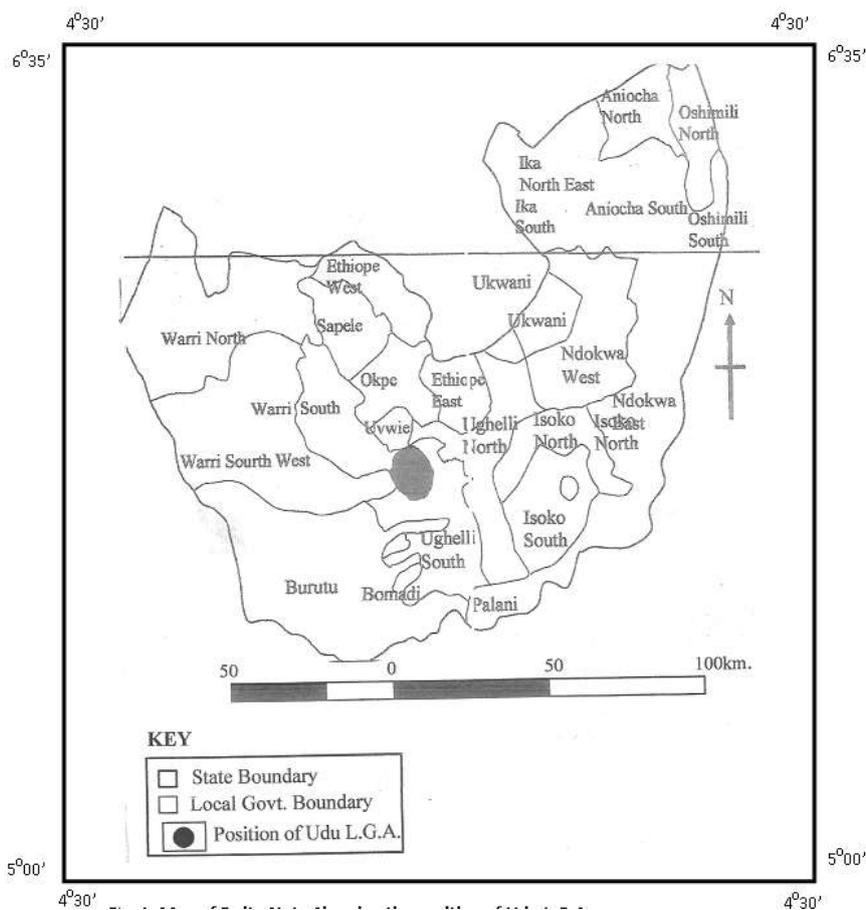


Fig-1: Map of Delta State showing the position of Udu L.G.A (Sources: Ministry of Lands, Survey and Urban Development, Asaba, 2004)

The mean elevation of the area is between approximately 20 – 40 metres above sea level. The area is largely drained by river Okpare in Ughelli South Local Government Area, from South to West and River Enerhen in the North [8].

In most cases whenever spillage occur in any of the communities under study, the river serves as a major means to aid the spread of the effluent among settlements along the river course.

The study area is part of Niger Delta and it is underlain by sedimentary rocks, consisting mainly of yellow and white pebbles, clay and sandy clay occur in lenses[8]. Three geological formation of Benin, Agbada and Akata formations occur in the area and they lay one below the other. The soil is deeply weathered, deeply leached, friable, and they lack distinct and well defined horizons. The soil has low silt and clay content, low cation exchange capacity and consequently low pH [8].

The annual mean temperature is about 26^oC and the mean annual rainfall is 185mm with September being wettest month. Relative humidity of the air is

high with a range of 65-90% [9]. The natural vegetation of the study area is the equatorial rainforest with evergreen forests that consists three canopies of trees. The influence of man activities has reduced the forest mainly to secondary growth. With the concentration of oil activities in the study area, has repelled the presence of forest vegetation. The main trees found are Mahogany, Agba, Opepe and Black Afara [8].

The predominant occupation of the people are farming, fishing, and petty trading. Cassava farming serve as the major food crop in the area. Other food crops include: maize, yam, pepper, cocoyam and vegetable. With frequent cases of oil spillage in the area especially in Ukpiovwin and Oghior, most farmers have abandoned their farmlands.

Petroleum exploration and exploitation has posed a serious environmental threat to the study area. The two communities under study are located among two oil fields Utorogu Oil Field and Abura Oil Field respectively belonging to Shell Petroleum Development Company (SPDC) which was established in 1961, Abura Oil Field belongs to National Petroleum Development Company (NPDC) established in 1974.

There is also a flow station that serves as a collating center to all oil wells in the area. There are networks of gas and pipelines that crisscross the inhabitants farmlands from the various oil well heads to the flow station. There are also other important companies in the area. They include: The Delta Steel Company (DSC), Ovwian/Aladja and Utorogu Gas Plant etc.

MATERIALS AND METHODS

Eighty (80) structured questionnaires were designed for eighty (80) cassava farmers, forty (40) for crude oil polluted communities and another forty (40) for non polluted communities.

The administration of the questionnaires involved four (4) communities in which forty (40) questionnaires were administered to forty farmers from the two crude oil polluted communities (Ukpiovhien and Oghior) and forty (40) to farmers of non oil polluted communities (Owhrode and Egini). The

stratified random sampling technique was adopted for the selection of respondents for the questionnaires administration. Each community was stratified into five strata based on family quarters whereby five questionnaires were systematically administered in each stratum. This was based on every first three cassava farmers after four building on both left and right sides of every first street in each of the selected communities. The questionnaires were administered in the language of the respondents.

The percentage and student t-test model was adopted to ascertain if a significant difference exist in socio-economic life between oil polluted and non polluted communities.

RESULT AND DISCUSSION

Data collected are presented in table 1-8 and discussed below.

Table 1: Socio Economic Characteristics of Respondents in both Oil Polluted and Non Oil Polluted Communities

Sex	Polluted Area %	Non-polluted Area %
Male	15	62.5
Female	85	37.5
Total	100	100

Source: field survey, 2012

Table 2: Comparison of Respondents in both Oil Polluted and Non Oil Polluted Communities

Sex	Polluted Area %	Non-Polluted Area %
0-45	25	72.5
46 – above	75	27.5
Total	100	100

Source: field survey, 2012

Table 3: Educational Background of Respondents in both Oil Polluted and Non Oil Polluted Communities

Level	Polluted Area %	Non-Polluted Area %
No education	87.5	15
Educated	12.5	85
Total	100	100

Source: field survey, 2012

Table 4: Comparison of Annual Income of Respondents in both Oil Polluted and Non Oil Polluted Communities

Range	Polluted Area %	Non-Polluted Area %
High	17.5	92.5
Low	82.5	7.5
Total	100	100

Source: field survey, 201

Table 5: Comparison of Source of Water Supply and Background of Respondents in both Oil Polluted and Non Oil Polluted Communities

Source	Polluted Area %	Non-Polluted Area %
Rain, Well & River	74.5	25
Borehole	25.5	75
Total	100	100

Source: field survey, 2012

Table 6: Comparison of Source of Scholarship Background of Respondents in both Oil Polluted and Non Oil Polluted Communities

Source	Polluted Area %	Non-Polluted Area %
Oil Company	60	8.7
Others	40	91.3
Total	100	100

Source: field survey, 2012

Table 7: Comparison of Existing Infrastructural Facilities in Oil Polluted and Non Oil polluted Communities

Facilities	Polluted Area %	Non-Polluted Area %
Many	12.5	82.5
Few	87.5	17.5
Total	100	100

Source: field survey, 2012

Table 8: Comparison of On-going Projects in Oil Polluted and Non Oil Polluted Communities

Projects	Polluted Area %	Non-polluted Area %
Many	20	78.2
Few	80	21.8
Total	100	100

Source: field survey, 2012

Table 9: Pair sample statistics

	Mean	Std. deviation	Std. error	95% confidence interval of difference		t	df	Sig. (2-tailed)
				Lower	upper			
Pair 1 Polluted Non. Polluted.	26.83	33.5167	11.556	17.115	81.2845	4.258	4	0.013

Table 1 showed that majority (85 %) of the respondents in the oil polluted communities are females while 15% are males. This result suggests that majority of the male population have abandoned their communities and farming activities, as the income generated cannot support their household any longer. The researcher also gathered from personal interview that majority of the few male left behind engaged in business such as block moulding, fetching of firewoods etc, and others move from oil polluted communities to other viable communities. While in non polluted communities 62.5% of the respondents are males while 37.5% are females. This suggests that cassava farming is not left for the females alone, but that some males are still available in the non polluted oil communities as the land is fertile to encourage good yield. This result is in line with the findings of Areola [10].

Table 2 revealed that 75% of the respondents in oil polluted communities had ages ranging between 46 years and above and only 25% falls below 45 years. This finding suggests that large scale rural-urban migration of able bodied young men and women has taken place, as a result of land degradation occasioned by incessant oil spills in the area can be associated with the relative presence of aged farmers. And the

implication of this is low productivity of crops. While in non polluted communities on the other hand revealed 72.5% of the respondents have ages ranging between 27-44 years. This implies presence of able bodied young men and women that can be active in farming or other meaningful activities. This result corroborates the findings of Dada[6].

Table 3 showed that 80.5% of the respondents in the oil polluted communities had formal education while 19.5% in oil polluted communities had no formal education. The implication of this is that there is high rate of illiteracy in the oil polluted communities. The researcher gathered from personal interview from a respondent in the oil producing communities that her child was given scholarship of ten thousand (N10,000:00) in the year 2000 by an oil company operating in the area. The first payment was received in 2005 when the child has already been driven from school as a result of lack of money to buy books and other needs. While in the non oil polluted communities, 70.5% of the respondents had formal education. The implication of this is that there is high level of illiteracy in the oil polluted communities than the non polluted communities where what is being realized from farming and other related activities is not able to afford

education for their children. This result is in line with the findings of Dada[6].

Table 4 revealed 82.5% of the respondents in oil polluted communities have farm earning ranging from N19, 000 – N34, 000 with a mean of N30,000 per annum. And 17.5% of the respondents obtained farm earning from N35,000 – N66,000 per annum. The implication of this is that what is realized per annum cannot take care of their domestic, social and education requirements of their children. While in non polluted communities, over 92.5% of the respondents obtained farm earnings ranging from N35, 000 – N82, 000 with mean earnings of N64,000 per annum. This is probably due to large farm size and fertile soil. With this earnings respondents can sustain their large household size both domestically and academically, when compared to farmers in oil polluted communities. This result is in agreement with the findings of Akpofure[1].

Table 5 showed that 74.5% of the respondents in the oil polluted communities get domestic water supply from rain, river and well, and 25.5% from private borehole within the communities. This result shows that majority of the inhabitants from oil polluted communities still depend on rain, river and well as a major source of domestic water. While in non polluted communities, 75% of the respondents get their water from public borehole and the other 25% get theirs from river, rain and well. This result shows that the non polluted communities have more better sources of domestic water compared to those in oil polluted communities. This result is in line with the findings of Ugboma [3].

Table 6 showed that 60% of the respondents have access to oil company scholarship for education of their children. The researcher observed during personal interview that the scholarship per annum for some oil companies are: SPDC = (N25,000); NPDC = (N10,000) and NGC = (N5,000). Majority of the scholarship are not paid as at when due. While in non polluted communities 91.3% of the respondents had their scholarship from their illustrious children, relations, Churches, philanthropists and government support to their farm earnings. This result is in agreement with the findings of Akpofure[1].

Table 7, revealed that 87.5% of the respondents in oil polluted communities indicated the presence of few facilities in their communities. And from this figure, 42.5% indicated that there is primary schools in their communities, 25% indicated the presence of secondary schools and 20% indicated the existence of market. This implies that up till now the oil polluted communities have no civic centre, health centre and hospital to meet their health needs. And 12.5% respondents indicated the availability of facilities within the confine of the oil company in the

communities. The researcher also observed during personal interview that in 1996 to 1998, there was Shell Mobile Clinic that used to visit the communities, but this has stopped since December, 1996. The major reason was attributed to lack of fund and personnel. While in non polluted communities, apart from the government hospital, the respondents indicated the existence of all the facilities in their communities. This implies that the non polluted communities depend more on other sources rather than oil companies as seen in the oil polluted communities. This result corroborates the findings of Akene [11].

Table 8 revealed that 80% of the respondents in oil communities indicated that a few projects are completed in their communities, and 20% indicated that some projects are on-going in the communities, while in the non polluted communities 78.2% of the respondents indicated the completion of many projects in their communities and 21.8% indicated the presence of few projects yet to be completed. This findings revealed that oil companies neglect the provision of basic amenities like electricity, good roads, modern market, contracts, employment etc to their host communities. This result is in line with the findings of Ugboma[3].

Table 9 shows the mean value of non polluted communities as 26.83 (SD=33.5167) while that of polluted communities is 27.00 (SD=39.6064), indicating a difference in socio-economic life in oil polluted and non polluted communities. The table further shows that the calculated t value of 4.258 is greater than the critical value of 3.249 at $p < 0.05$ and thus, the model is significant. The result reveals that oil pollution has a significant impact on socio-economic life of affected communities in Udu Local Government Area in Delta State.

CONCLUSION

This study has revealed that when a resource is polluted, its value is reduced. It is clear that since the inception of oil exploration and exploitation in the study area over forty years ago, oil pollution has done much harm to the area than good. This was manifested in the farm size and farm income of respondents from crude oil polluted communities when compared with non-polluted communities. And similarly, the study held the view that oil companies should prevent or avoid oil pollution rather than undertake purification and payment of compensation after pollution to the affected communities. This is because purification and compensation cannot be equated to the damage that may occur in the environment and in the life of the people. The study suggest that prevention of the occurrence of oil pollution is the best alternative towards achieving sustainable environment for the present generation and the generation unborn. But in case of occurrence, the study recommended mopping exercise, payment of compensation and enlightenment

programmes by the oil companies to the host communities.

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