

AN ASSESMENT OF THE SOCIO-ECONOMIC EFFECTS OF THE NNPC OIL PIPELINE PROJECT ON SOME COMMUNITIES IN THE MASEV AREA OF BENUE STATE, NIGERIA

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ABSTRACT

Globally, oil and gas exploration and transportation result in various problems, which include spills. Spills are known to negatively impact on the environment and human health as well as social and economic activities. Impacts of oil spills are increasingly multi-dimensional and are believed to be one of the main causes of insurgencies in Nigeria. A study was carried out to assess the socio-economic impacts of oil spills in some Masev Communities of Benue State traversed by the Nigerian National Petroleum Corporation (NNPC) oil pipeline project. An extensive area of prime agricultural land has been affected. Information from the NNPC Depot in Makurdi showed that most of the oil spill cases that took place in Benue State from 2000 – 2005 were recorded within this stretch and that people living within these communities made several complaints to NNPC and Benue State government on the effects of the pipeline project on their environment within the period. The study used a combination of primary and secondary data sources to collect information on communities selected from both the affected and some unaffected areas within the same geographical location. The researchers used questionnaires, interviews, and discussions to collect information on 14 socio-economic variables. The data so obtained were analyzed using appropriate quantitative analysis. The result of the analysis on the affected communities, based on the data from the respondents, showed that most of the respondents believed that oil spillage from the NNPC pipeline project had strong negative effect on many aspects of their socio-economic life. The study ended with the conclusion that petroleum oil spillage had negative effects on the socio-economic life of the Masev communities within seventeen villages in the Ugee, Mbalom and Mbasombo Council wards in Gwer LGA, of Benue State, from oil spill incidences from the NNPC oil pipeline project, which occurred from 2000 to 2005. It also suggested possible measures to prevent or control similar disasters in future.

Keywords: Benue, oil spill, effects, NNPC, oil pipeline project, communities, Masev, Nigeria

Introduction

There is global concern over oil spills and the associated multi-dimensional negative impacts on the environment and socio-economic life of the people where the spills occur. The spills are traceable to oil and gas exploration and transportation systems. Since the discovery of oil in Nigeria in 1950s, the country has been suffering the negative environmental consequences of oil development. The growth of the country's oil industry, combined with a population explosion and lack of enforcement of environmental regulations has led to substantial damage to Nigeria's environment, especially in the Niger Delta region (Nwilo and Badejo, 2005; Osuji and Onojake, 2004; Atubi and Anokala, 2006; Anifowese, 2008; Abii and Nwosu, 2009; Agbogidi and Egbuchua, 2010). These reports established the negative socio-economic impacts of spills from oil pipelines in Nigeria which include: damage to farmlands, damage to fishery and wildlife, loss of income and source of livelihoods, food Shortage and hunger, destruction of traditional means of livelihood/unemployment, destruction of cultural areas and spirituality, conflicts, community destruction, forced displacements, migration and environmental refugees (Okonkwo, 2014). Available reports showed that not much research has been carried out in this direction in the communities traversed by the NNPC oil pipeline within the Guinea Savanna area of Nigeria (The Directorate of Environment, Ministry of Water Resources and Environment, Benue State, 2011). A case study is the Masev area of Benue State.

2.0 MATERIALS AND METHODS

2.1 The Study Area

The study was conducted within latitudes $7^{\circ}15'N$ and $7^{\circ}39'N$ and longitudes $8^{\circ}13'E$ and $8^{\circ}37'E$, and covered the communities within the stretch of NNPC oil pipeline from Shawa, (near Tarku) to Apir Depot (near Makurdi). This is a part of the Enugu - Makurdi section of the NNPC oil pipeline within the Port Harcourt region (*Figure 1*). This stretch of the underground oil pipeline of about 48km traverses the Ugee, Mbalom and Mbasombo council wards within the Masev area in Gwer LGA of Benue State, Nigeria (*Figures 2 and 3*). The Masev area was made up of the thirteen local council wards of Gwer LGA in Benue State. The area was mainly made up of rural settlements engaged in agriculture, fishing, and hunting. The local people, therefore, mostly depend on the natural environment for their livelihood. This underground pipeline passes through ecologically fragile Guinea Savanna areas (Idogaet *al.*, 2005). The project therefore threatens valuable ecosystems in the areas.

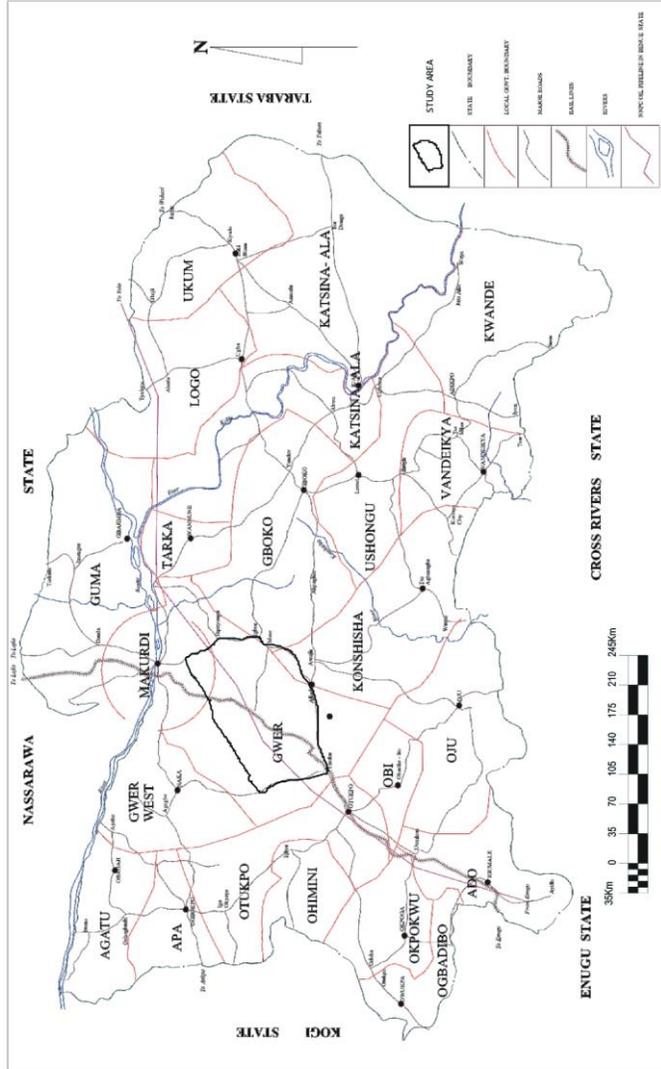
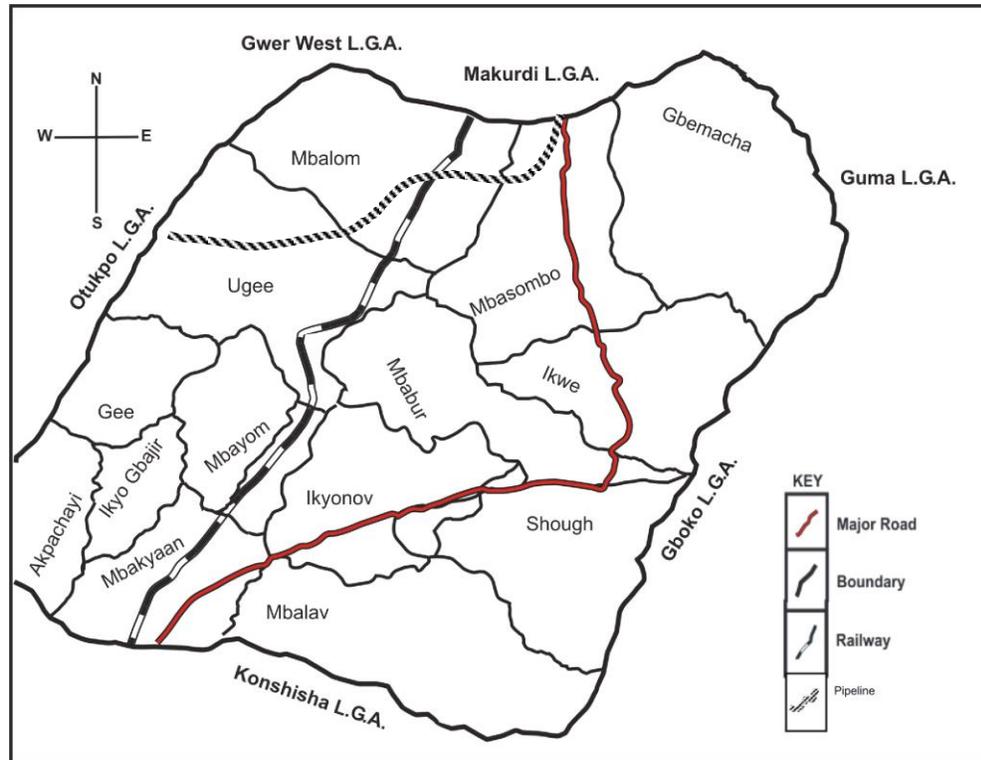


Fig. 2: Administrative Map of Benue State showing the study area
Scale:1:1,300,000 .Source : Benue State Bureau of Land and Survey
Makurdi



Scale: 1:106250 Fig 3: Sketch of Gwer L.G.A. indicating the Wards affected by the project ,

Source: Gwer L.G.A. Health Department, Benue State.

Within the period (2000 to 2005), some Masev communities under the auspices of Masev Development Association and Masev Forum, staged a peaceful demonstration and made several appeals to the government of Benue State as a result of the perceived non-challant attitude of the NNPC Depot, Makurdi on the loss of life, arrest and harassment of people, devastation of farm land, ground and surface water and aquatic life in Mbalim, Mbasombo and Ugee Council Wards as a result of oil spills from the NNPC oil pipeline within some communities in the three

council wards (Masev Development Association Aliade, 2011, Gwer Local Government Council, 2004) . Hence, efforts were made to investigate factual information regarding petroleum oil pollution and its impact on the socio-economic activities in some Masev Communities of Benue State traversed by the Nigerian National Petroleum Corporation (NNPC) oil pipeline project.

2.2 Sampling Procedures for interviews and discussions

2.2.1 Administration of questionnaires

A sample of 10 villages within the affected area (Table 1) was selected for the study based on their closeness to the pipeline, oil spill sites identified during the reconnaissance work and within the three affected council wards of Ugee, Mbalom and Mbasombo typified by the spill sites at Anshua and TseAgula (Plates 1 and 2). Six villages were also selected from the unaffected areas within the same geographic location. Questionnaires were then administered to selected respondents in these villages. A total of 160 questionnaires were served in the affected villages, and 60 in unaffected villages. Data were collected by the use of checklists, field observations, focus group discussions and interviews. Data on mitigation measures and management strategies were obtained from the NNPC Depot office, Apir and some units of Benue State Government associated with environmental protection and risk management. Table 1 showed the list of villages selected for assessment.

Table 1: Selected affected and non-affected Villages for Assessment

	S/N	Villages	Council Wards	Number of questionnaires(checklist)
Affected	1.	TseUwuaShawa	Ugee	16
Villages	2.	TseUgesaMbalim	Ugee	16
	3.	AnchihaMbakyan	Ugee	16
	4.	TseAkuPakaMbaguso	Mbalom	16
	5.	TseBerTuran	Mbalom	16
	6.	AnshuaMbasada	Mbalom	16
	7.	TseOkabiMbamar	Mbasombo	16

	8.	TseAgulaMbamar	Mbasombo	16
	9.	TsaikpaMbagbar	Mbasombo	16
	10.	OrwuatsagaMbagbar	Mbasombo	16
		Total		160
Unaffected Villages	1.	GenyiMbalim	Ugee	10
	2.	TarakuMbalim	Ugee	10
	3.	TseWanyaTuran	Mbalom	10
	4.	AyarUbuluku	Mbalom	10
	5.	TseTsuweMbakor	Mbasombo	10
	6.	AnchihaMbamar	Mbasombo	10
		Total		60

Plates 1 and 2 below are photographs of two oil spill sites within the Masev communities



Plate 1: Oil Spill site at Anshua



Plate 2:Oil Spill site at TseAgula

2.3 Research Methods

The study adopted the Likert checklist method for the assessment of the socio-economic effects of the NNPC Oil pipeline on some Masev communities affected by the pipeline project. The variables adopted were derived from a checklist of potential socio-economic issues normally dealt with in environmental impact assessment of oil pipeline projects (Babatunde, 2010). This checklist was designed on a five-point response continuum scale based on the Likert Scale: strong positive effect was categorized 5; positive effect 4; no effect observed 3; negative effect 2

and strong negative effect 1 (Neba and Ngeh, 2009). The quantification of the effects into five categories enabled determination of the degree to which each item contributed to the impact of the oil pipeline. An addition of all the variables totalled 15 points. These were divided by five to obtain a mean of 3. Thus any mean above 3 indicates a positive effect and below three a negative effect. A mean of exactly 3 implies that no impact was observed. The effect of the oil pipeline on each variable was assessed in quantitative terms in order to determine the degree of effect which the oil pipeline project exerted on the socio economic life of the people using frequency analyses. Fourteen socio-economic variables were investigated and analyzed using appropriate quantitative methods (absolute and relative frequency distribution including percentages, means, standard deviation, and variance). This was done separately for the chosen villages in the affected areas and for those in the unaffected areas, in order to assess the effect of the project per geographical area (affected and unaffected). The socio-economic variables and their codes were: A1 – Education, A2 – Farmers economy, A3 –Local employment, A4–Local trading, A5 – Damage to cultural, archaeological and religious sites, A6 – Damage to agricultural lands and crops, A7 – Loss of property, A8 – Health, A9 – Damage to surface water, A10 – Damage to aquatic life, A11 – Association with neighboring villages, A12 – Loss of life, A13 – Environmental pollution and A14 – Damage to wildlife habitat. The results of the investigations are presented in *Tables 2 and 3*.

3.0 RESULTS AND DISCUSSION

3.1 Assessment of the Effects the oil pipeline on the affected Communities.

The absolute and relative frequency distribution of the socio-economic effect of the oil pipeline project on some Masev communities affected by the pipeline project, was presented in Table 2. The values in brackets are relative frequency distribution in percentages

The Mean, Variance and Standard Deviation were calculated using the following formulae: Mean = $\Sigma(x * p(x))$, Variance = $\Sigma((x - \text{mean})^2 * p(x))$, Standard Deviation = $\sqrt{\text{Variance}}$, \bar{x} = weighted mean, f = frequency, n = total number of respondents, P(x) = f/n. This is in line with the Likert checklist method.

From Table 2, 92.5% of the respondents believed that the pipeline project had a strong negative effect on education (A1) in the study area while 7.5% of them believed that the project had a negative effect on it. This was because the disasters from the pipeline caused a great decline in finances to sponsor their children in schools. Similarly, 92.5% of the respondents observed that the project had a strong negative effect on the economy of the farmers (A2), while 7.5% of them believed that it had no effect on the variable. This was because the major sources of income of the people were very adversely affected by oil spills from the pipeline project.

In addition, 55% of the respondents believed that the project had a very negative effect on local employment (A3) in the affected areas, while 17.5% of them believed that the project had a negative effect on it. This was because unemployment had increased within the affected communities. However, 27.5% of them believed that the project had a positive effect on this variable. This was the highest score on the positive effect column in all the socio-economic variables in this study. This was probably because in some of the villages, a number of respondents reported that NNPC engaged some of their District Heads and relations as surveillance contractors for the pipeline.

From the analysis also, 67% of the respondents believed that the project had a strong negative effect on local trading (A4), while 32.5% of them believed that it had a negative effect on this variable. This was attributed to the decline in buying and selling activities within the locality.

Table 2 also showed that 67.5% of the respondents believed that the project had a strong negative effect on damage to cultural, archaeological and religious sites (A5), while 32.5% of them believed that the project had a negative effect on the variable. This is because a number of their cultural, archaeological and religious sites were affected by the establishment of the oil pipeline and its externalities. Similarly, 85% of the respondents believed that the project had a strong negative effect on damage to agricultural land and crops (A6) and a further 15% believed that it had a negative effect on the variable. This was because the pollution of their agricultural land has led to a decline in crop yield within the affected villages.

For loss of property (A7), 80% of the respondents observed a strong negative impact while 15% of them observed a negative impact. This was because a lot of their properties were destroyed by oil spillage and security operatives who were policing the vandalisation of the pipelines. However, 5% of the people observed positive effect on this variable. The minor positive effect observed here was because a few respondents stated that, at the inception of the pipeline construction, some of their elders were paid a meager compensation by the NNPC.

Table 2: Absolute and relative frequency distribution of socio-economic impacts on Masev Communities affected by the pipeline project

Code	Variable	Strong Positive Effect	Positive Effect	No Effect observed	Negative Effect	Strong Negative Effect	Mean	S.D	Var.
		5	4	3	2	1	X	S	V
A1	Education	-	-	-	12	148	1.1	0.3	0.1
		-	-	-	(7.5)	(92.5%)			
A2	Economy of farmers	-	-	12	-	148	1.2	0.8	0.6
		-	-	(7.5%)	-	(92.5%)			
A3	Local employment	-	44	-	28	88	2	1.7	2.9
		-	(27.5%)	-	(17.5%)	(55%)			
A4	Local trading	-	-	-	108	52	1.7	0.5	0.2
		-	-	-	(67.5%)	(32.5%)			
A5	Damage to cultural, archeological and religious sites	-	-	-	108	52	1.7	0.5	0.2
		-	-	-	(67.5%)	(32.5%)			
A6	Damage to agricultural land and crops	-	-	-	24	136	1.2	0.4	0.1
		-	-	-	(15%)	(85%)			
A7	Loss of property	-	8	-	24	128	1.3	0.7	0.5

				(5.0%)		(15%)	(80%)		
A8	Health of the people	-	-	12	76	72	1.6	0.6	0.4
				(7.5%)	(47.5%)	(45%)			
A9	Damage to surface water	-	-	-	4	156	1.0	0.2	0.0
					(2.5%)	(97.5%)			
A10	Damage to aquatic life	-	-	-	72	88	1.4	0.5	0.3
					(45%)	(55%)			
A11	Association with neighboring villages	-	-	148	12	-	2.9	0.3	0.1
				(92.5%)	(7.5%)	-			
A12	Loss of life	-	-	80	12	68	2.1	1.0	0.9
				(50%)	(7.5%)	(42.5%)			
A13	Environmental pollution	-	-	-	100	60	1.6	0.5	0.2
					(62.5%)	(37.5%)			
A14	Damage to wildlife habitat	-	-	-	72	88	1.4	0.5	0.2
					(45%)	(55%)			

Key: A1-A14 = Socio economic variables. For the means, 1 - Strong negative effect, 2- Negative effect, 3 - No effect, 4- Positive effect and 5 - Strong positive effect.

Table 2 also showed that 47.5% of the respondents believed that the project exerted a negative impact on the health of the people (A8), while 45% of them believed that it had a strong negative effect on the variable. This was because many people from the communities had suffered from environmental pollution and waterborne diseases. However, 7.5% of them believed that it had no effect on the variable.

Similarly, 97.5% of the respondents believed that the project exerted a strong negative impact on surface water (A9), while 2.5% of them believed that it had a negative effect on the variable. This is because a lot of their surface water was polluted by oil spillage. In addition, 55% of the respondents believed that the project had a strong negative effect on damage to aquatic life (A10), while 45% of them believed that it had a negative effect on the variable. This is because their fishing activities and collection of crabs declined.

The table also shows that 92.5% of the respondents believed that the project had no effect on association with neighboring villages (A11), while 7.5% of them believed that it had a negative effect on the variable. This was probably because their migration to neighbouring communities in search of help caused some disturbance to such communities.

From the analysis also, 42% of the respondents believed that the project had a strong negative effect on loss of life (A12) while 7.5% of them believed that it had a negative effect on the variable.. However, 50% of the respondents believed that the project had no effect on loss of life. For environmental pollution (A13), 62.5% of the respondents observed negative effect, while 37.5% of the then observed strong negative effect. This is because many people had suffered from environmental pollution. Table 2 also shows that 45% of the respondents believed that the oil pipeline project had a strong negative impact on damage to wildlife habitat (A14), while 55% of them believed that it had a negative effect on the variable. This is because there was a decline in their hunting activities.

The observations of the respondents on A6, A9, A10 and A14 showed that they believed that the pipeline project had a strong negative effect on bio-diversity in the project area. However, 27% of the respondents stated that the project had a positive effect on local employment (A3) in their communities because their district heads and some of their relations served as oil pipeline contractors to NNPC.

3.2 Assessment of the effect of the oil pipeline on some neighboring communities

Table 3 showed the absolute and relative frequency distribution of the socio-economic effects of the NNPC oil pipeline project on some Masev communities which were neighbors' to the affected communities. The respondents believed that the oil pipeline project had no effect on the following variables: Education (A1), Economy of farmers (A2), Local trading (A4), Damage to cultural, archaeological and religious sites (A5), damage to agricultural land and crops (A6), loss of property (A7), health of the people (A8), Damage to surface water (A9), Damage to aquatic life (A10), Association with neighboring villages (A11), Loss of life (A12), environmental

pollution (A13) and Damage to wildlife habitat (A14). The no effect response was probably because the oil pipeline project did not pass through their land. However, 25% of the respondents stated that the project had a positive effect on local employment (A3) in their communities because their District Heads and some of their relations served as oil pipeline surveillance contractors to NNPC. Similarly, 25% of the respondents from these neighboring communities believed that the project had a negative effect on association with neighboring villages (A11), because the migration of people from the communities affected by the project to their villages caused some disturbances to them.

3.3 Oil Spill incidences in the Study Area from 2000 to 2005 and their Consequences

Interviews and discussions were conducted by the researchers with major stakeholders to validate the findings generated from questionnaires. The stakeholders included traditional rulers, NNPC staff, oil pipeline surveillance contractors, some staff of the Benue State Government units whose duties include environmental protection, security, risk and emergency management, youths, elders, women, traders and some politicians within the study area. A lot of information generated from the interviews supported those obtained with questionnaires. The results are presented in Tables 4 and 5 which show a record of oil spill cases within the study area from the year 2000 to 2005 and their consequences. Tables 4 and 5 show that from 2000 – 2005, 34 cases of oil spill took place in 17 villages within the Masev communities in the Ugee, Mbalom and Mbasombo council wards of Gwer L.G.A., Benue State. Out of these 11 cases took place in 7 villages in the Ugee council ward, 11 cases in 4 villages in Mbalom council ward and 12 cases in 6 villages in Mbasombo council ward. The consequences included loss of 19 lives, health problems, harassment and arrest of individuals and destruction of houses and properties of some individuals. Others included pollution of soil and water, devastation of vegetation, destruction of food crops and plants including rice, soybeans, guinea corn, maize, yams,

Table 3: Absolute and relative frequency distribution of socio-economic impacts of the NNPC oil pipeline project on the bordering villages to the Masev Communities affected by the pipeline project

Code	Variable	Strong Positive Effect	Positive Effect	No Effect observed	Negative Effect	Strong Negative Effect	Mean (X)	S.D (S)	Var. (V)
A1	Education	-	-	60 (100%)	-	-	3	0	0
A2	Economy of farmers	-	-	60 (100%)	-	-	3	0	0
A3	Local employment	-	15 (25%)	45 (75%)	-	-	3.25	0.4	0.2
A4	Local trading	-	-	60 (100%)	-	-	3	0	0
A5	Damage to cultural, archeological and religious Sites	-	-	60 (100%)	-	-	3	0	0
A6	Damage to agricultural land and crops	-	-	60 (100%)	-	-	3	0	0
A7	Loss of property	-	-	60 (100%)	-	-	3	0	0

A8	Health of the people	-	-	60	-	-	3	0	0
				(100%)					
		-	-		-	-			
A9	Damage to surface water	-	-	60	-	-	3	0	0
				(100%)					
		-	-		-	-			
A10	Damage to aquatic life	-	-	60	-	-	3	0	0
				(100%)					
		-	-		-	-			
A11	Association with neighboring villages	-	-	45	15	-	2.8	0.4	0.2
				(75%)	(25%)	-			
		-	-						
A12	Loss of life	-	-	60	-	-	3	0	0
				(100%)					
		-	-		-	-			
A13	Environmental pollution	-	-	60	-	-	3	0	0
				(100%)					
		-	-		-	-			
A14	Damage to wildlife habitat	-	-	60	-	-	3	0	0
				(100%)					
		-	-		-	-			

Key: A1-A14 = Socio economic variable. For the means, 1 - Strong negative effect; 2- Negative effect, 3 - No effect; 4- Positive effect and 5 - Strong positive effect.

cassava, millet, sorghum, beans and bambara nuts. Table 4 shows that the respondents believed that, within the same period, 20.5 square kilometers of farmland was affected and 1778 fifty kg bags of crops were destroyed. Table 5 shows that out of the 19 people reported dead, the respondents were of the opinion that 12 people were killed by security operatives, while 7 others died out of water-born diseases.

Some staff of the Benue State Government units whose duties include environmental protection, risk and emergency management, interviewed, stated that there were many reported occurrences of oil spill within the communities in the Masev area from 2000 – 2005. They also confirmed

that the consequences included loss of life, health problems, harassment and arrest of people, destruction of farms and crops, pollution of soil and water and destruction of water resources, forests and others. The units are Benue State Ministry of Water Resources and Environment, Nigerian Security and Civil Defence Corp, Benue State Emergency Management Agency and Gwer Local Government Headquarters, Aliade. The respondents in these Benue State Government Units also stated that the most probable causes of oil spillage in the study area were both human and physical; especially corrosion as a result of the age of the pipeline and inadequate monitoring and maintenance.

The respondents from the NNPC Depot Apir stated that there were many cases of oil spill from the NNPC pipeline within the study area from 2000 – 2005. Pumping of their product from Enugu to Makurdi was suspended in 2006. That most of the causes were manmade through vandalism. They also stated that the preventive and palliative measures adopted by the company were as follows:

1. Engagement of traditional rulers within the study area as surveillance contractors who clear the pipeline right of way and keep watch over the pipeline by foot patrol method. That they are expected to report any case of spillage or vandalism to the Depot.
2. Payment of compensation to people whose land and properties were involved in the project at its inception.
3. Repairing the pipes whenever they were punctured.
4. Sending Mobile Policemen to arrest the people who vandalized the lines and

Relating to the host communities of the pipeline through their traditional rulers to explain to them the implications of vandalizing the pipelines.

Table 4: Record of oil spill incidences from 2000 – 2005 in the Masev communities affected by the NNPC oil pipeline project and their consequences

S/N	Villages	Council Ward	Year	Occurrences	Suggested Cause	Effects on People		
						No. of deaths	People Harassed	Soil, Water Crops and forest were damaged
1.	Anchiha, TseAlaka and, TseAkulegaMbakyen	Ugee	2005	7 times	Vandalism	6 people died out of water born diseases		Soil, Water, Crops and forest were damaged
2.	TseBerTuran	Mbalom	2004	1 time	Vandalism/ Physical	-	A lot	Soil, Water Crops and forest were damaged
3.	TseUwuaShawa	Ugee	2000 & 2001	2 times	Physical	-	A lot	Soil, Water and Crops and forest were damaged
4.	TseOkabi and TseAgulaMbamar	Mbasombo	2000, 2001 & 2003	3 times	Physical	6 persons were killed by security men on 11/12/2000	Many people were arrested and their properties destroyed.	Soil, Water and Crops were damaged
5.	TseNyaku and TseAkujiMbamar	Mbasombo	2000, 2001 & 2005	3 times	Physical	-	Many people were arrested and their properties destroyed.	Soil, Water, Crops and forest were damaged
6.	TseAkuPaka	Mbalom	2004, 2005	2 times	Man made	-	-	Soil, Water, Crops and forest were damaged
7.	OrwuatsagaMbagbaa	Mbasombo	2002, 2003, 2004, & 2005	4 times	Vandalism	-	-	Soil, Water, Crops and forest were damaged
8.	TseTsaiKpaMbagbaa	Mbasombo	2003 & 2004	2 times	Vandalism & physical	-	-	Soil, Water, Crops and forest were damaged
9.	Tse Kula AyarUbuluku	Mbalom	2005	3 times	Not known	-	-	Soil, Water, Crops and forest were damaged
10.	AnshuaMbatsada	Mbalom	2005	5 times	Vandalism	One woman died out of water borne disease	-	Soil, Water, Crops and forest were damaged
11.	TseUgesaMbatanyan, Azukuna and TseAkahaan	Ugee	2000	2 times	Vandalism/ Physical	6 persons were killed on 10/12/2000 by security men.	Many people were arrested and their properties destroyed.	Soil, Water Crops and forest were damaged

Table 5: Record of oil Spill incidents from 2000 – 2005 in Masev communities affected by the NNPC oil pipeline project and the amount of crops destroyed and Land area affected

S/N	Villages	Council Ward	Year	Crops Lost in 50 Kg Bags	Land affected in Km ²
1.	Anchiha, TseAlaka and, TseAkulegaMbakyan	Ugee	2005	200	1
2.	TseBerTuran	Mbalom	2004	98	0.5
3.	TseUwuaShawa		2000 & 2001	220	2
4.	TseOkabi and TseAgulaMbamar	Mbasombo	2000, 2001 & 2003	250	4.5
5.	TseNyaku and TseAkujiMbamar	Mbasombo	2000, 2001 & 2005	105	3
6.	TseAkuPaka	Mbalom	2004, 2005	105	1.6
7.	OrwuatsagaMbagbaa	Mbasombo	2002, 2003, 2004, & 2005	175	3.5
8.	TseTsaikpaMbagbaa	Mbasombo	2003 & 2004	205	2
9.	Tse Kula AyarUbuluku	Mbalom	2005	150	0.8
10.	AnshuaMbatsada	Mbalom	2005	170	0.75
11.	TseUgesaMbatanyan, Anzukuna and TseAkahaan	Ugee	2000	100	0.5

4.0 CONCLUSIONS

The results of socio-economic effect assessment carried out in this study showed that:

a. More than 85% of the respondents believed that the NNPC oil pipeline project had strong negative effect on the following seven socio-economic variables in the affected areas; education, economy of farmers, damage to agricultural land and crops, loss of property, damage to surface water, damage to aquatic life and damage to wildlife habitat.

b. More than 55% of the respondents believed that the project had negative effect on six other socio-economic variables: local employment, local trading, damage to cultural, archaeological and religious sites, health of the people, Loss of life, and environmental pollution.

c. The respondents from the oil spill affected areas in this study gave the following reasons for their belief stated in a and b above: their crop yields had decreased, a lot of their soil, vegetation, and crops were damaged, their surface and ground water were polluted, their fishing activities had declined, their wild life habitat had been devastated, money to support their children in schools had declined, buying and selling activities had halted, a lot of their land and properties were destroyed, unemployment had increased, their cultural, archaeological and religious sites had been damaged, many people had suffered from environmental pollution and water born diseases and some lives had been lost (Tables 4 and 5).

d. That 27% of the respondents from the affected areas believed that the project had a positive effect on local employment because some of their District Heads and relations were engaged as pipeline surveillance contractors by NNPC. Similarly, 5% of the respondents believed that the project had a positive effect on the economy of farmers because NNPC paid some compensation to some of their relations for land and property involved at the inception of the project.

e. The findings of this research also shows that the respondents stated that from the year 2000 – 2005, 34 cases of oil spill took place in 17 villages within the Masev communities in the Ugee, Mbalom and Mbasombo council wards of Gwer L.G.A., Benue State. Out of these 11 cases took place in 7 villages in the Ugee council ward, 11 cases in 4 villages in Mbalom council ward and 12 cases in Mbasombo council ward. The consequences include loss of 19 lives, health problems, harassment and arrest of individuals and destruction of houses and properties of some individuals. Others include pollution of soil and water, devastation of vegetation, destruction of food crops and plants including rice, soybeans, guinea corn, maize, yams, cassava, millet, sorghum, beans and bambara nuts. Out of the 19 people reported dead, the respondents were of the opinion that security operatives killed 12 of them possibly as a result of pipeline vandalisation, while 7 others died out of water-born diseases.

However, 27% of the respondents from the neighboring communities unaffected by the project stated that the project had a positive effect on local employment in their communities because their District Heads and some of their relations served as oil pipeline surveillance contractors to NNPC. Other respondents from the neighboring communities stated that the project had no effect on them, except, 25% of them who believed that it had a negative effect on association with neighboring communities because some people from the affected communities came over to them to share their land resources when those communities were affected by the oil pipeline project.

The NNPC needs to improve efforts to prevent oil spills, strengthen emergency response and better remediate the environment in line with international best practices. Nigerian Government should review spill response procedure, ensure independent monitoring, amend laws, improve enforcement initiatives and better clarify institutional roles and responsibilities. The Nigerian Government should also review spill compensation, create insurance fund for spills and initiate a comprehensive audit of the spilled environment.

Finally, a committee for monitoring the socio-economic impact of spills should be set up, avenue for public complaints provided and recommendations from the committee should be implemented.

REFERENCES

- Abii, T. A and Nwosu P. C. (2009). The Effect of Oil-Spillage on the Soil of Eleme in Rivers State of the Niger-Delta Area of Nigeria. *Research Journal of Environmental Sciences* 3(3) 316-320.
- Agbogidi, O.M. and Egbuchua, C.O. (2010). Heavy metals concentration of soil contaminate with spent engine oil in Asaba, Delta State. *ActaAgronomicaNigeriana* 10(1): 65-69
- Anifowose, B. (2008). Assessing the Impacts of Oil and Gas Transport on Nigeria's Niger – Delta Environment. U 21 Postgraduate Research Conference 1 on Water – how need drivers research and research underpins solutions to world-wide problems, 20th – 25th July 2008, University of Birmingham, Birmingham, UK.
- Atubi, A.O. and Onokala,P.C. (2006). The socio-economic effects of oil spillage on agriculture in the Niger-Delta. *J. Environ. Stud.*, 2: 50-56
- Babatunde, A. (2010). Environmental Conflict and the Politic of Oil in the Oil-Bearing Area of Nigeria's Niger Delta. *Peace & Conflict Review* Volume 5, Issue 1 ISSN: 1659-3995

Gwer Local Government Council Aliade. (2004). Situation Report on an Assessment Visit by the Interim Administrator on the Oil Spillage at Mbatanyan –Mbalim in Gwer Local Government on 22nd March,2004.

Idoga, S., Abagyeh, S. O. and Agber, P.I. (2005). Characteristics, Classification and Crop Production Potentials of soils of the Aliade Plain, Benue State of Nigeria. Nigerian Journal of Soil science. Vol. 15 (2). Pp 101-110.

International Oil Spill Conference. Miami, Florida, US.

Masev Development Association Aliade (2011). A report on the effects of oil spill in the Masev communities from 2000 to 2005.

Neba, N.E. and Ngeh, B.P. (2009).Environmental assessment of the Chad-Cameroon oil and pipeline project in the Kribi region of Cameroon. International NGO Journal Vol. 4 (5), pp. 225-235

NNPC Deport Makurdi (2010). Maintenance Department

Nwilo, P.C.and Banjo, O.T. (2005). Oil Spill Problems and Management in Niger Delta.

Okonkwo, E. C. (2014). The Law School, Faculty of Humanities and Social Sciences, University of Strathclyde, Glasgow, UK Email: eloamaka.okonkwo@strath.ac.uk

Osuji L.C. and Onojake, C. M. (2004). Trace Heavy Metals Associated with Crude Oils: A Case Study of Ebocha-8 Oil Spill-Polluted Site in Niger Delta, Nigeria. Chemistry & Biodiversity, 1: 1707-1715. dio: 10.1002/cbdv.200490129

The Directorate of Environment, Ministry of Water Resources and Environment, Benue State, (2011).