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Oil And Gas Exploration in the Niger Delta: Assessment of Its Impact on Rural Development in Bayelsa State

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Abstract
This study was conducted in Bayelsa State South-South oil and gas rich region of Nigeria and one the thirty-six States. The study assessed the impact of oil and gas exploration on the development of rural communities'. The paper made use of variables identified in the received literature as it relates to the empowerment and rural development in Bayelsa State. Data employed for this study were obtained from primary. The primary data were collected through a well-structured questionnaire that was administered to 2000 randomly selected respondents from the three senatorial district of Bayelsa State. The primary data obtained from the questionnaire was analyzed, thirteen variables was identified and group into two test two hypotheses using ordinary least square (OLS) econometric technique. The results from the regression were robust, as it reveals that skill acquisition (SAT), building of schools (SCH), provision of buses and boats (PBB), granting of loans (GOL), building of healthcare centres (BHC), building of markets (BMS), building of schools (BSS) and construction of roads (CRS). In the light of the forgoing, we recommend that all tiers of government in Nigeria should create conducive environment for oil and gas exploration to strive. Rural community's empowerment programmes and development projects by oil gas exploratory firms do not operate in ambiance but in a macroeconomic environment (government empowerment and development agenda). It is therefore necessary that the environment should be one that is amenable to contemporary living standard. We therefore recommend that in order to improve rural empowerment and development in Niger Delta, efforts must be geared towards gathering rural empowerment and development data and variables at a more precise level that would be used as a data base for future use. Also, oil and gas exploration firms must execute programmes and projects that would be beneficial to the host community rather that those that impact minimally on the life of the people and their environment. This is so because these exploration activities have devastated their aquatic life and farm lands which the people depend upon on their livelihood. Therefore, committed effort must be made by both government as well as oil and gas exploration firms with the sole aim of revamping their only source of livelihood in Bayelsa State in particularly and Niger Delta in general.
Keywords: Oil, Gas, Exploration, Rural community, Niger Delta, Rural empowerment, Rural development, Bayelsa State
***JEL Code**: C2, D6, D7, O19, O34, R1*

Introduction

Oil was first discovered in Nigeria's Niger Delta Region in 1956 at Oloibiri in the present Bayelsa State. After half century of oil and gas exploration, it has triggered a chain of events which has led to both political and economic marginalization of the people of the region. Hence, it can be argued that oil and gas exploration in the region has become a curse rather than a blessing to the people who have been at the receiving end of horrendous government oppression and brutality that have led that to fatalities. Almost about sixty years of oil and gas production in the region which have resulted in hundreds of billions of dollars of oil and gas revenue, the people in the area have remain in abject poverty without basic amenities such as good roads, water, electricity, and employment opportunities in oil firms, etc.

Even though, the Niger Delta has a long history of violence, the situation has gone from bad to worse to disastrous recently to the emergence of armed militant groups willing to kill as part of their campaign for a greater share of the regions oil and gas wealth. The campaign for fair deal and control of the oil wells by the people did not start today. It started in 1966 when Isaac Adaka Boro led a rebellion with his Delta Volunteer Service (DVS) against the Federal Government and formed the Niger Delta Republic.

However, the rebellion was crushed, but it has brought consciousness into the minds of the people. The spirit and consciousness of this struggle has been brought to the international level. The suffering and deprivation of the people of the Niger Delta was latter championed by late Ken Saro-Wiwa in the 90s. He applied a peaceful and non-violent means that is reminiscent of the strategy and tactics of Mahatma Ghandi of India. He aimed to redress the political and socio-economic wrongs imposed on the Niger Delta people. But he was crunched by late General Sani Abacha, the then Miltary Head of State. Various militant groups have sprung up of recent to undermine the activities of the oil and gas activities of multinational oil companies using different methods and

tactics, thereby daring the Nigerian state.
Prominent among such groups includes: the Movement for the Emancipation of the Niger Delta (MEND), the Niger Delta Peoples Volunteer Force (NDPVF), the Joint Revolutionary Council (JRC), and Movement for the Survival of the Ijaw Ethnic Nationality (MOSIEN). Seeing the eminent danger the militant activities poses to the Nigerian State, the late President Umaru Musa Yar'Adua granted the militants amnesty in order to bring peace to the region in particular and the Nigerian State in general. Be that as it may, the fact remains that, the adverse effect of oil and gas exploration activities are felt by the people (rural communities and their environment) of Bayelsa State who are host to these facilities. The people of Bayelsa State depend solely on their immediate environment for survival. Therefore, anything that alters their environment threatens the people's only source of livelihood. Hence, oil and gas exploration activity in the area has either negative or positively affected the economic, political and social development of the people. This is so because, the activity of multinational oil and gas companies result to pollution of environment and reduction of land for the traditional occupation (i.e. farming and fishing) of the people. The fact remains that the people of Bayelsa State (communities) is still rural and underdeveloped despite the huge and immense financial benefit the federal and multinational firms (i.e. Agip, Shell, Mobil, etc.) enjoy from their activities in the region.
As a result of oil and gas exploration activities, most of the land in the region now yield little or no harvest; plants shrinks and fade away because of gas flaring. A medical and environmental expert explains that gas flaring toxins leads to respiratory problems among other dangers to humans, environment and animal life. Unfortunately, the oil exploration activity is carried out in Bayelsa State on a daily basis. This constitutes serious health hazards in the area.
Considering the impact of oil and gas exploration activities on rural development in the Niger Delta, it is apt to ask to what extent oil has and gas exploration activities impacted on rural community's development in Niger Delta, especially Bayelsa State. What effort has the government put in place to reduce the effect of oil and gas exploration on the area? What extent has the oil and gas exploration companies (multinationals corporations) done in order to reduce the impact of their exploration activities as well as pay adequate compensation to their host rural communities? Why are host communities' having incessant clashes with the multinational companies in their area? Providing answers to these questions that can used for decision making and policy formulation are the focus of this paper.

Literature review
The impact of oil and gas exploration on the rural development in Bayelsa State is at an alarming rate. The operations of the petroleum industry which includes, exploration, production, refining, transportation and marketing of oil and gas products which is based mostly in the Niger delta region Bayelsa State inclusive, has been the giant spider spinning the web of environment degradation in the region. The exploration and exploitation activities in Bayelsa State have not only altered the people's livelihoods, but continue to disrupt the natural balance of the regions earth crust. (George 2000). During seismic surveys and exploration drilling, harmful materials like dynamites and explorative are used. The method involves into the earth's crust to measure the depth of the earth's make up. The implication of this is that the more oil is explored in the region using this method, the more the regions natural environment witness shocks and rifts in its crust.
Gas flaring and venting, which represents a significant source of global warming is one of the biggest environment problems associated with oil exploration and exploitation in Bayelsa State (South-South region). The World Bank Global Gas Flaring Production (GGFP) partnership estimated that globally, 150 billion cubic meters of associated natural gas are being flared annually. This, global gas flaring releases about 400 million tons of CO_2 per year into atmosphere (Amanze–Nwachukwu, 2007). According to DPR, (2007) report more than 70 percent of gas produced in Niger Delta region are flared [that is, 177 out of 139 of the oil field in the Niger Delta are still flaring their gas] (Ugwuaren, 2008)
From the foregoing, it has now become worrisome that most host communities' to oil and gas producing facilities in Bayelsa State, lives with gas stacks that flare gas twenty-four hours' daily. This scenario exposes the people of the area to a lot of environmental and health risks or hazard. This causes major devastating environmental effects that are associated with oil and gas exploration and exploitation activity such as oil spillage. This takes place in different ways as such; it can be classified into various types. This includes: minor, medium, major and disaster. Oil spill occur both onshore and offshore. It happens as a result of any uncontrolled well blowout, pipeline rupture or storage tank failure. Such occurance possess an imminent threat to the public health or welfare (Ibaba, 2005; Okonta et al, 2001; Ntukepo, 1996). One percent of oil spills is due to engineering drills, inability to effectively control oil wells, failure of machines and inadequate care in loading and unloading oil vessels (Nwilo and Badejo, 2001, Naanen, 1995).
One of the most visible impacts of the numerous oil spills has been loss of mangrove trees. The mangrove was once a source of both fuel woods for the indigenous people and a habitat for the area's biodiversity. Now the

area is unable to survive the oil toxicity of its habitat. Oil spills also poses serious health risks to people when they consume sea foods contaminated by oil spillage (Onuogha, 2007). More so, oil and gas exploration and exploitation activity in the Niger Delta regions has adversely destroys its original forest. Indeed, the oil and gas industry is an important factor of mangrove forest destruction in the Niger Delta region. In 1999, it was estimated that Nigeria has lost between 70 to 80 percent of its original forest (Ibaba, 2005, Azaiki, 2003, Okonta et al , 2001).

The extraction of oil and gas as well as increased investment in the gas sector has accentuated the rate of deforestation and the constructions of pipelines for the transportation of oil and gas products within and beyond the Niger Delta region has led to the clearing of forests to construct pipelines and other oil and gas facilities. This further devastates the already delicate ecosystem of the area. The destruction of forest and coral relief in the regions contributed to the vulnerability of the region to natural disaster and global climates change. As these forest ecosystems are being depleted, the rate at which CO_2 is withdrawn is further reduced. Every human society depends to a large extend on their immediate environment for survival. Indeed, the oil and gas exploration and exploitation activities in the Niger Delta region has on one hand led to the degradation of the immediate natural environment of the region, and on the other hand, contributed significantly to the release of many Green House Gas which are the major causes of climate change. Thus, the consumption and development patterns have reached unsustainable levels manifested by widespread land degradation, erosion, deforestation, and air, water and soil pollution.

However, before the advent of the oil industry, the Niger Delta people are hardworking people contrary to what non-indigenes say about the people. One would be disillusioned at the rate of activities embarked upon by both male and female inhabitants of the region. Given the fact that most of the settlement is rural, agricultural activities such as fishing and farming dominates all other economic activity in the area. Almost, all the natives in the region have embarked on one form of fishing and farming, etc. It is however, worthy to note that the Niger Delta region alone, contributes to the national economy not only in petroleum and gas exploration but also in agricultural production (Ndiyo, 2008). The major food crops commonly found in the region are: water yam, cocoa yam, maize, rice, melon, groundnuts, potato, plantain, banana, pepper, etc. Also, economic trees like oil palm, raffia palm, coconut, rubber and cocoa as well as livestock such as goat, pigs, fish ponds farming, etc are abound (Ndiyo, 2008; Wikipedia 2006). The mangrove forest of the Niger Delta provides a lot of economic trees such as raffia palm used in the production of gin commonly called *Ogogoro*, harvesting of timber (lumbering) is another serious economic activity of the people of the region. Other rewarding business is region includes the gathering or picking of wild mango fruits popularly known as *ogbono*. It is a very lucrative business such that during its season, it offset over 85% of hunger and poverty of people of the region. In fact, many rural development projects like building projects and sponsoring children to school are attributed to this factor by the inhabitants of the natives of the region.

In the water, people go to pick periwinkles and water snails for both subsistence and commercial purposes. Scouting for snails is a very viable lucrative economic activity especially among people between the age bracket of 18 and 55 years. It is a lucrative business for those who were gifted in the art of scouting. Pottery, mat and rope makings are also economic activities of the people of the region. It is worthy to note that these and many other activities are source of rural development as well as viable source income for survival to the people of the region especially in the people of Bayelsa State.

These notwithstanding, it is regrettably to note that oil and gas exploration and exploitation activities in the region have displaced their local source of income and their only source of survival. Flora and fauna have been destroyed. The citizenry have been transformed from great fishermen to great consumers of frozen sea fish (Ogbodo, 1992). That before the advent of oil and gas exploration and exploitation, there were three predominant sources of water supply for the people. These are: rain water, river and open well water. Researchers has shown that pollution caused by acid rain from gas flaring does not end with sanitizing the water bodies but it is now known that health risk is not averted by abstinence from meat and fishes killed by this pollutants. Fishes and animals that escape instant death from pollution are known to have taken in some of these toxic substances, which in turn get into human beings that eat them (Olobaniyi et al, 2007, Alakpodia, 2000, Oden, 1976). This in turn causes infections such as bronchitis and gives married coupled other side effects in form of genetic mutations (Olusi, 1981).

Similarly, oil and gas exploration and exploitation in the region have impacted negatively on the people of the region with a trail of devastation such as poisoned air, acid rains, destroyed roofing sheets, odious gases and smells, poisoned water, destroyed fishing colonies, declining wild fisheries and wildlife, failing crops, infertile soils and dying forest. Worst hit, among other negative impact is the intervention of the multinational oil companies operation in the area into community policies. Before the advents of the oil and gas industry, the Niger Delta region has been a peaceful one. But today, the Niger Delta region especially Bayelsa State has been described as being at war against itself. Oil and gas exploration and exploitation has and is producing numerous

conflicts. The conflicts are pervasive, replete and recurring in the host communities. It is so pervasive that it is quite difficult to get any host community in the State that have been permanently peaceful and conflict free. Even if such communities are found, there still exist a low intensity conflict which did not rise to the level of violence and production disruption (Azaiki, 2003, Okonta et al, 2001).

Host communities have further witnessed a high level of inter communal and ethnic conflicts. The multinational oil companies', operating in the region uses different strategies to set confusion; some of which are silence, denial, defiance, co-optation and payment of money to selected community leaders. Involvement in community projects the concept of divide and rule, blaming the victim, promotion of false consciousness and violence, (Iyayi, 2000). In essence, the local people, their development interest, livelihoods, environments and needs are immaterial. Besides, oil and gas exploration and exploitation in the region has created a lazy and indolent class of youths who want to obtain and accumulate wealth without hard-work. It has further reduced the motivation for education and urban migration. It has also created false expectation of easy wealth which has increase a culture of greed and dependency among the people of the region (Ndiyo, 2008, Zowan, 2007, Kimidi, 2002).

Furthermore, the multinational oil and gas companies during the periods of conflicts, infiltrate community leadership particularly influential Chiefs, Elders, Opinion leaders and youth leaders. They care less about the legitimacy of traditional governance structures. Whether the emergent power is properly constituted according to traditions are immaterial to them. These in turn has given birth to illegal Chiefs and fierce struggles for dominance among community groups and members. Oil and gas exploration and exploitation in the region has brought about high level of poverty, lack of food, asset, and access to basic development economic stagnation, agricultural underdevelopment, soil infertility, unemployment, poor quality of life, isolation, unhealthy environment as well as spreading diseases and malnutrition (Azaiki, 2007, Ibaba, 2005, Oni, 1995).

Other matters arising includes: poor environmental quality and high level of pollution, conflict, and of security, threats to health and well-being including HIV/AIDS and unsustainable livelihoods (Natziger 2006a, 2006b). The reviewed literature suggests that oil and gas exploration and exploitation activities in the Niger Delta region have impacted negatively on the people of the area. The oil and gas companies operation in the region have become a threat to the livelihoods of the people because of the huge adverse effects (Okonta et al, 2001). It has left a trial of devastation indication by poisoned waters, destroyed fishing colonies, checking wild fisheries and wide life, failing crops, destroyed roofing sheets, odious gases and dying forests. These devastations have further resulted to destroyed livelihood source and traditional occupations, disrupted and unstable communal governance systems, poverty, unemployment and underemployment, malnutrition, food storages, declining productions, distorted social values, heightened crime, youth restiveness, state repression and violence, disarticulated and divided communities, deaths, prostitution, heightened hazards and illness and destroyed communal, tradition and social fabric and cohesiveness. On the whole, oil and gas exploration and exploitation in the Niger Delta have been destructive, destabilizing and repressive forces. The multinational oil companies have been merely contented with business and profits.

Oil and gas production and externalities

Externalities can be defined as uncompensated costs or benefits of resource utilization that are borne by the individual other than the user (Perrings et al, 1992). Adewuyi (2001) sees it as either a negative or positive effect as a result of activities on an entity or individual or group on the physical environment or human life without compensation. It is difficult to engage in oil and gas business without one form of environmental pollution or the other. Thus, externalities are in form of oil pollution, gas flaring and other forms of environmental modification. The evidence that oil-related negative externalities abound are hardly contentious. It is quite instructive that the UNDP's report on Niger Delta rated these communities very low in indices of development such as human development index (HDI) and human poverty Index (HPI) (UNDP, 2006). This is an indication that the local economy of these communities is stagnant and underdeveloped.

Consequently, poverty in the midst of vast oil wealth has spawned discontent and disillusion, frustrated expectations, fostered widespread indignation, entrenched deep-rooted and destructive mistrust and incited unprecedented restiveness in most of the oil producing areas of the Niger Delta region. In recent time, the Niger Delta is on the boil and the increased restiveness in the oil producing areas in the form of kidnapping is traceable to the neglect of the areas in terms of human development, provision of infrastructural amenities and the desecration of traditional and cultural values of the people. The crux of the age long agitation has been the issue of poverty and degrading standard of living of the people (Babatunde, 2010). From the early 1990s, many of the Niger Delta States have assumed the character of a conflict-ridden region. There has been a cycle of protests and conflicts in the Niger Delta, notably in Bayelsa, Delta, and Rivers States. These conflicts have not only given rise to human displacement and loss of lives and property on a massive scale, but they also pose a serious challenge to national security and economic prosperity in Nigeria. Youth restiveness was for the most part the major factor in these protests. The presence of oil and gas companies in the Niger Delta exacerbates communal tension in the oil producing areas. The Niger Delta peculiarities as the cradle of Nigeria's oil and gas industry

and its associated externalities, the realities of a constricted land area, a fragile environment compounding difficult geographical terrain, the heterogeneity of cultures, extreme economic deprivations and competition by individuals and communities for a greater share of the natural wealth of the region have combined to create a theatre of almost permanent violence.

Government Efforts to Address Problems in the Niger Delta

In the past decades, the Nigerian government has established a range of institutions and initiatives to address the poverty, conflict and under-development of the Niger Delta region. As early as 1961, the post-independence government set up the Niger Delta Development Board. Subsequent bodies included the Niger Delta Basin Development Authority (NDBDA) in 1976, the Oil Mineral Producing Areas Development Commission (OMPADEC) in 1992. While with the return to civilian rule, President Obasanjo established the Niger Delta Development Commission (NDDC) to replace OMPADEC in 1999. But the NDDC has suffered from many problems as its predecessors, including lack of capacity and accountability. President Yar'Adua, in 2007, came to the helm of Nigeria and inherited a multiple and serious problems facing the Niger Delta. In a bid to resolve the insecurity problem in the region, he granted *Amnesty to the militants* (Ohwofasa, Anuya, & Aiyedogbon, 2012). This has brought peace to the region which has improved the volume of oil and gas production, provision of some basic amenities as well as its foreign exchange earnings.

Methodology

Research area and sampling techniques

The research area is Bayelsa State, one of the thirty–six States in Nigeria with eight Local Government Areas (LGAs) was created from old Rivers State in 1996. It covers an area of 9415.8 square kilometers. The State lies between latitude $04^0$15' North, $05^0$23' South and longitude $05^0$22' West and $06^0$45' East. The State shares boundary with Delta State on the east, Rivers State on the west and the Atlantic Ocean on the south. Alagoa (199) observed that five ethnic groups form indigenous population. These are the Nembe, the Ogbia, Epie, Atissa and Eastern Ijaw (i.e. the Bomo, Ekpetiama, Gbarain, Apoi, Ikibiri, Ogboin, Opokuma, Kolokuma, Okordia, Kabo, Tungbo, Oyakiri, Kumbo, Mein, Iduwini, Zarama and Tarakiri among others). According to NPC(1991), the area had an estimated population of 1,121,693 people, made up of 584,117 (52.1%) male and 537,576 (47.9%) females. The State is mainly rural. Even the State capital, Yenagoa can best be described as a sub–urban town. For despite the availability of some basic amenities in the town, it is yet to transform into a modern city. It has an approximated population of two million people. The typography is essentially that of a typical rain forest zone with creeks and rivers of significance including River Nun. The people are predominantly fishermen, petty traders, farmers and women. However, a few are civil servants. There is no industry in the State despite its oil and gas production status.

The study covers all the eight Local Government Areas of Bayelsa State. In determining the sampling technique to use for this study we take into consideration the fact that the technical nature of the investigation requires the responses of the subject with good and related knowledge of the subject matter. To achieve this, stratified random sampling method is used for the study. The stratification is to ensure diversification of opinion. Communities in each Senatorial District were stratified according to size and a sample of 40% was randomly selected from each Senatorial District. It is hoped that the sample size will be statistically significant for inferential purposes. This method gives a more representative sample in this case than simple random sampling because in the latter, certain strata may by chance be over– or under– represented in the sample. Therefore, stratified random sampling technique guarantees representation of a defined group (e.g. communities) that is of particular interest in the sample size. A sample of 2400 was drawn, 30 per stratum (Senatorial District).

Instrumentation and data collection procedure

To collect the primary data, a carefully structured questionnaire was designed and administered by trained and experienced research assistants. The researcher distributed the questionnaire to as many Paramount Rulers, Chiefs, Community development committee (CDC) members, Youths, Elders, opinion leaders, women groups and cooperative societies as possible and collected the responses from the respondents through research assistants.

The measuring instrument used by the researcher for this investigation is a five–point Likert–type questionnaire. The questionnaire was divided into two sections. Section '**A**', focuses on the respondents' personal information while Section '**B**' is composed of fifteen (15) items five point–point Likert–type questionnaire to assess the performance of multinational oil and gas exploration and exploitation activities in eradicating/alleviating rural poverty, rural development and empowerment in Bayelsa State. The instrument was developed by firstly, making list of phrases and words that are possible indicators of each variables involved in the study. Each response was given a degree of score, which range between one and two as shown below.

Very great extent ***VGE*** *5*
Great extent ***GE*** *4*

Least extent	***LE***	*3*
Not at all	***NAA***	*2*
Undecided	***UD***	*1*

Method of data analysis

Data analysis will be undertaken using qualitative as well as quantitative techniques. It is expected that the major segment of the information to be collected during the field survey will be qualitative and may not be easily quantified. Quantitative techniques will be used to measure ethnographic tenets of the sample. Descriptive statistics such as frequency, percentage, mean, standard deviation, proportion, etc will be employed in most of the analysis in summarizing trends, change and comparisons across certain features. The data collected would be analyzed with relevant statistical tools such as the multiple regression method. The analysis of f-statistics is used to test the overall significance of a model for the purpose of making inferences that are used for policy and decision making. The t-statistics was used to evaluate policy issues in information diffusion as it relates to a particular variable employed for this analysis. Final presentations will take the form of descriptions, tabulations and illustrations. Essentially, a computer facility of SPSS 21 was employed for the processing and analyzing the regression data. The researcher would make use of tables and percentages for presentation as deemed necessary to analyze the questionnaire used for this study. Conclusively from the reviewed literature, thirteen variables were identified and grouped into two for the purpose of analysis under the following assumptions. We adopt the following assumptions as a guide, as show below.

1. The instrument used for data collection is valid and reliable.
2. The population from which the sample would be drawn is normally distributed.
3. That the Oil and gas exploration activity in Bayelsa State could lead to poverty eradication and alleviation as well as leads to empowerment needs of the people.
4. That the Oil and gas exploitation in Bayelsa State is relevant to rural community development of host communities.
5. That there is adequate provision and even spread of oil multinational projects and programmes across host communities in the State.
6. The financing of programmes and projects in Bayelsa State by oil and gas industries are adequate.
7. Those interviewed in the host communities are enlightened beneficiaries.

From the thirteen variables identified, two equations were deduced and the ordinary least square (OLS) econometric technique was employed to analyze the equations' using data in Tables 6 and 7 to test the hypotheses. The two models or equations are provided below:

Model 1 is for the evaluation of empowerment programmes

Equation (1) can be rewritten for in an econometric form thus:

Model 2 is measure rural development

Equation (4) was translated into an algebraic form as follows:

where EMPP = Empowerment programmes and RDT = Rural development are the dependent variables while SAT = Skill acquisition training, SCH = Scholarship, PBB = Provision of buses and boats for commercial purpose, PSE = Pensionable job in oil and gas industry, GOL = Granting of loans through cooperative society, WPS = Water projects, BHC = Construction of healthcare Centre, BMS = Building of markets, BSS = Construction of classroom block, CRS = Building of stores, BTHP = Building of town hall and playgrounds, stochastic term

PRESENTATION OF ANALYSIS

A summary of the data used for analysis is presented in a tabula form with rows and columns as shown in appendix 1. Table 1, shows the X-ray of questionnaire distribution of the sampled population

Table 1: Questionnaire distribution to respondents

Responses	Bayelsa Central Senatorial Zone	Bayelsa East Senatorial Zone	Bayelsa West Senatorial Zone	Total	%
Retrieved	*680*	*650*	*670*	*2000*	*83.33*
Not Retrieved	*120*	*150*	*130*	*400*	*16.67*
Total	**800**	**800**	**800**	**2400**	**100.00**

Source: Field Survey, 2013

From Table 1, reveals that 2400 questionnaires were distributed to the respondents in the three Senatorial Districts (Central, East and West) that make Bayelsa State. 2000 questionnaire representing 83.33% were retrieved while 400 questionnaire representing 16.67% was not retrieved. Therefore, the 2000 questionnaires retrieved from the field survey, would henceforth constitute the sample size for the study.

Table 2: Respondents by sex

Sex	Bayelsa Central Senatorial Zone	Bayelsa East Senatorial Zone	Bayelsa West Senatorial Zone	Total	%
Male	300	323	250	673	33.65
Female	380	327	420	1127	56.35
Total	**680**	**650**	**670**	**2000**	**100**

Source: Field Work, 2013

There was no intention to compare responses to each question of importance that relates to this study with the gender of our respondents. Even though Table 2 shows a marginal difference between the two sexes, it has no implication on the result of the study. More so, no attempt was made to draw equal number of respondents from both sexes.

Age composition

Table 3: Age composition of respondents

Age	Bayelsa Central Senatorial Zone	Bayelsa East Senatorial Zone	Bayelsa West Senatorial Zone	Total	%
15 – 25	72	80	90	242	12.1
26 – 36	112	70	100	282	14.1
37 – 47	133	110	140	383	19.2
48 – 58	210	190	160	560	28.0
Above 59	153	200	180	533	26.6
Total	**680**	**650**	**670**	**2000**	**100**

Source: Field Survey, 2013

The age responses as shown in Table 3 indicate that 242 (12.1%) respondents fall within the age range of 15–20 years of age. 282 respondents representing 14.1% are within the age bracket of 26–36 years. The result also reveals that 383 respondents' falls with 37 – 47 years of age representing 19.2% of the sample. 560 respondents representing 28% were between 48 – 58 years while the remaining 533 respondents or 26.6% fall within those whose age is above 59 years. We assumed that most of the people who have experienced oil exploitation and exploration that lives mostly in the rural communities' would be found among the three last age brackets. It is important to note that we did not intend to relate one's age with any question of importance in the research instrument. Therefore, no attempt was made to draw equal number of respondents from each age group that was used in this paper.

Marital status

Table 4: Marital composition of respondents

Age	Bayelsa Central Senatorial Zone	Bayelsa East Senatorial Zone	Bayelsa West Senatorial Zone	Total	%
Single	110	75	105	290	14.5
Married	130	105	135	370	18.5
Divorced	200	175	150	525	26.3
Widowed	145	180	175	500	25.0
Others	95	115	105	315	15.7
Total	**680**	**650**	**670**	**2000**	**100**

Source: Field Work, 2013

The marital status of the respondents as summarized in Table 4 suggest that 290 (14.5%) of the respondents were single, 370 (18.5%) were married. Also, 525 (26.3%) of the respondents were divorced, 500 people representing 25% were widowed while the remaining 315 or 15.7% of the respondents constitute those who are either single or married or divorced or widowed but rather classified as others. This distribution is assumed to be well spread across the three Senatorial zones. Also, the Table shows that the Central Senatorial zone seems to have the highest number of divorced people while the West Senatorial zone had the highest widows who live in rural communities.

Table 5, indicates that those without no certificate is 408 (20.4%), Holders of first school leaving certificate (FSLC) is composed of 263 0r 13.2%. West African School Certificate (WASC) and its equivalent is made up of 343 respondents representing 17.2%, 332 or 16.5% of the sample population were holders of National Certificate in Education (NCE), 355 (17.7%) were holders of first degree disciplines in both agriculture and non–agricultural related disciplines. Also, 245 or 12.3% of the sample hold Master's degree in agriculture or agricultural related discipline. Only 54 (2.7%) of the sample are holders of Ph.D degrees.

Table 6 reveals that 426 respondents representing 21.3% agreed that oil and gas exploration activity to a very great extent impacted on the under listed empowerment programmes in rural communities in Bayelsa State. 521

(26.5%) said it is great extent, 421 or 21.1 said it is least extent while 430 respondents representing 21.5% as well as 192 (9.6%) opined not at all and undecided respectively.

Qualification of respondents

Table 5: Composition of respondents by qualification

Qualification	Bayelsa Central Senatorial Zone	Bayelsa East Senatorial Zone	Bayelsa West Senatorial Zone	Total	%
NO CERTIFICATE	148	120	140	408	20.4
FSLC	87	98	78	263	13.2
NECO/WAS/SSCE	123	129	91	343	17.2
NCE/DIP/OND	100	95	137	332	16.5
B.Sc./B.Ed./HND	121	115	119	355	17.7
M.Sc./M.A./MBA/M.ED	80	75	90	245	12.3
Ph.D.	21	18	15	54	2.7
Total	**680**	**650**	**670**	**2000**	**100**

Source: Field Survey, 2013

Oil and gas company empowerment programme

Table 6: Composition of respondents by empowerment programme

	Skill acquisition training	Scholarship	Provision busses and boats	Employ-ment	Granting of loans to cooperatives	Total	%
VGE	155	85	130	11	45	426	21.3
GE	95	75	98	188	75	531	26.5
LE	73	80	81	89	98	421	21.1
NAA	75	50	66	112	127	430	21.5
UD	2	110	25	-	55	192	9.6
Total	**400**	**400**	**400**	**400**	**400**	**2000**	**100**

Note: Skill acquisition training includes motor mechanic, phone and computer repairs, tailoring, as well as fish, snail, bee and plantain farming, etc.

Source: Field Work, 2013

Impact of oil and gas industry on rural development

Table 7: Composition of oil and gas firm rural development projects

	Water project	Building of health centers	Building of markets/ stores	Building of schools	Construc-tion of roads	Building of town halls /playground	Total	%
VGE	99	85	100	40	59	74	457	22.85
GE	87	104	83	150	60	86	570	28.50
LE	100	54	71	55	70	60	410	20.50
NAA	42	48	76	87	100	104	457	22.85
UD	15	9	20	6	44	12	106	5.30
Total	**343**	**300**	**350**	**338**	**333**	**336**	**2000**	**100**

Source: Field Survey, 2013

Table 7 X-rays the impact of oil and gas industry in Bayelsa State on rural development. The result from the questionnaire is robust. 457 or (22.85%) of the respondents held that oil and gas exploration in Bayelsa State have impacted to a very great extent as well as not at all respectively on the development of rural communities in the State. Also, 570 respondents, representing 28.50% said its impact is great extent, 410 (20.50%) observed that it is least extent while 106 or 5.3 of the sample said it is undecided. Given the closeness of the percentages, it means that despite the fact that oil and gas exploration has taken place in the region for decades, its impact on the host communities' is very abysmal when compared to the huge amount of money they make from it.

Having completed the analysis of the questionnaire, the stage is now set to test the two hypotheses adopted in the study: They are:

a). There is no positive significant relationship between oil and gas industries empowerment programmes and actual empowerment activities in host community.

b). Oil and gas firm's rural development projects do not impact significantly on the development of their host communities.

From the foregoing hypotheses, Tables 8 and 9 respectively would provide answers for the purposes of making

inferences for the study.

Table 8: Regression of the impact oil and gas exploration on empowerment programmes
Dependent Variable: Empowerment Programmes (EMPP)

Model 1	**Unstandardized Coefficients**		**Standardized Coefficients**	**t**	**Sig.**
	B	**Std. Error**	**Beta**		
(Constant)	1.674	.066		25.377	.000
SAT	.229	.035	.598	6.526	.000
SCH	-.341	.028	-1.163	-12.078	.000
PBB	.025	.032	.071	.770	.441
PSE	-.290	.343	.988	-0.855	.647
GOL	-.298	.025	-.820	-11.895	.000

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson	F	Sig.
	.873	.762	.759	.21700	2.123	252.116	.000

Source: Author's computation using SPSS 21

The result in Table 8 is robust. The adjusted R^2 of the model suggests about 75.9% of the variation in EMPP is explained by the combined effects of all the selected determinants while the F–statistics value of 252.1 reveals that the overall model is statistically significant at both 1% and 5% levels. Also, the equation's standard error of the estimate of 0.217 signifies that in about two–third of the time the predicted value of EMPP would be within 21.7% of the actual value while the D.W. value of 2.123 shows the total absence of serial correlation are presented in Table 8. The result reveals that SAT and PBB conforms to the apriori expected and impacts positively on empowerment programme in the Niger Delta region. The former is statistically significant while the latter is not significant. Conversely, SCH, PSE and GOL did not conform to our theoretical expectation and negatively influenced on EMPP in Bayelsa State. Be that as it may, SCH and GOL were statistically significant but PSE was not.

Table 9: Regression of oil and gas firm influence on Rural Development (RDT)
Dependent Variable: Rural development

Model 2	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	2.668	.088		30.351	.000
WPS	-.068	.060	-.131	-1.140	.255
BHC	.137	.045	.325	3.051	.002
BMS	-.298	.050	-.665	-5.991	.000
BSS	.293	.039	.574	7.526	.000
CRS	-.328	.035	-.822	-9.308	.000
BTHP	-.039	.033	-.093	-1.204	.229

Model Summary

Model	*R*	*R Square*	*Adjusted R Square*	*Std. Error of the Estimate*	*Durbin-Watson*	*F-Statistics*	*Sig.*
	.901	.812	.808	.20970	2.152	210.955	.000

Source: Author's computation using SPSS 21

The result in Table 9 evaluates the influence of oil and gas industries development project on rural host communities. The result in the Table 9 indicates that the adjusted R^2 of the model explains about 81% of the variation in RDT using the identified variables. The F–statistics value of 211 shows that the entire model is statistically significant at both 1% and 5% levels. In addition, given the equation's standard error of the estimate as 0.2097 means that in about two–third of the time the predicted value of RDT would be exactly 21% of the actual value. The D.W. value of 2.152 reveals the total absence of serial correlation. The result also shows that BHC and BSSS have the expected apriori sign and positively impacts on rural development (RDT) in the Niger Delta region and both variables are statistically significant. Conversely, WPS, BMS, CRS and BTHP did not have the expected theoretical expectation sign. In the light of the foregoing, it means that BMS and CRS negatively influenced RDT in Bayelsa State and are statistically significant while WPS and BTHP negatively impacted on RDT but they were not statistically significant.

Policy implications

The following policy implications emanate from the study.

- **i.** Skill acquisition training, granting of loans, construction of roads as well as building of: schools, primary healthcare centers, markets and stores respectively are identified as empowerment programmes and rural development in the Niger Delta region. As such, they play a very significant role in explaining empowerment programmes and rural development in Niger Delta. However, this may be due to the prolong period of their activity in the region as well as the failure of the study to take into consideration various government regime which are always accompanied with a policy shifts.
- **ii.** To curb the poor performance or impact of oil and gas exploration firm on terms of employment programmes and rural development in host community, there is the need for high transparency by industries on their programmes and projects.. Similarly, the government must also be made to regularly make sure that oil and gas firms align their programmes and activities in tandem with government policy.
- **iii.** The policy linkages between oil and gas exploration firms in the country are very weak.
- **iv.** The influence of oil and gas Company's empowerment programmes as well as rural development projects of host communities in the region are more inertia than the huge foreign exchange they earn.
- **v.** There is need to interpret the findings with cautions as some of the respondents might not be given rational responses. Also, different oil and gas industries operate in different communities with different developmental agenda.

V. Conclusion

Having carefully evaluated the impact of oil and gas exploration on rural development in Bayelsa State, we conclusion that all the selected or identified variables in the Niger Delta region are good explanatory variables in explaining rural empowerment and development in Bayelsa State as well as the Niger Delta region's economy. Empowerment and rural development in Niger Delta region are caused by these explanatory variables as well as other variables or factors that are not included in our models. Therefore, efforts that are geared towards improving rural empowerment and development should not just focus on the identified variables but equally on those variables or factors that are intertwined or linked with those employed in this study.

Rural community's empowerment programmes and development projects by oil gas exploratory firms do not operate in ambiance but in a macroeconomic environment (government empowerment and development agenda). It is therefore necessary that the environment should be one that is amenable to contemporary living standard. We therefore recommend that in order to improve rural empowerment and development in Niger Delta, efforts must be geared towards gathering rural empowerment and development data and variables at a more precise level that would be used as a data base for future use. Also, oil and gas exploration firms must execute programmes and projects that would be beneficial to the host community rather that those that impact minimally on the life of the people and their environment. This is so because these exploration activities have devastated their aquatic life and farm lands which the people depend upon on their livelihood. Therefore, committed effort must be made by both government as well as oil and gas exploration firms with the sole aim of revamping their only source of livelihood in Bayelsa State in particularly and Niger Delta in general.

Bibliography

Adewuyi, A. O. (2001). The implication of crude oil exploitation and export on the environment and level of economic growth and development in Nigeria. Preceding of the 2011 Nigerian Economic Society Conference held at National Conference Centre, Abuja.

ANEEJ, 2003). Report on Stakeholders' workshop on oil producing community in Bayelsa State, held at Creek Model, Yenagoa. November 3rd.

Amnnesty International (2009). Nigeria: Petroleum, pollution and poverty in the Niger Delta. Amnesty International Working Paper series 44/017/2009

Alagoa, E. J. (1999). *The Land and People of Bayelsa State: Central Niger Delta.* Port Harcourt: Onyoma Research Publications.

Audu, N. P. (2013). Agricultural Development Programme and Rural Poverty in Nigeria: The Bayelsa State Experience. *Journal of Economics and Sustainable Delopment, 4(6),*. 5 – 16. April

_____(2011). The dynamics of E-banking in the South-South region of Nigeria. *International Business Management 5(6).* 388–397. November.

Awosika, F. O. (2008). Oil, environment and the Nigeria's Niger Delta: Issues and Dilemmas. Geneva: Ecocity World Submit.

Azaiki, S. (2003). *Inequities in Nigerian Politics: The Niger Delta Resource Control, Underdevelopment and Youth Restiveness.* Yenagoa: Treasure Communications Resources Limited.

Babatunde, A. (2010). The impact of oil exploitation on the sio-economic life of the Ilaje-Ugbo people of Ondo

State, Nigeria. *Journal of Sustainable Development in Africa, 12(5).* 125-147

Ibaba, S. I. (2005). *Understanding the Niger Delta Crisis.* Port Harcourt: Amethyst & Colleagues Publishers.

Naanen, B. (1995). Oil Producing Minorities and the Restricting of Nigerian Federalism: The case of Ogoni People. *Journal of Commonwealth and Comparative Politics, Vol. 33(1).* 46-78. March

Ndiyo, N. A. (2008). *Poverty to Sustainable Development: A Communist-Based Approach.* Calabar: University of Calabar Printing Press.

Okonta, I. and Douglas, O. (2001). *Where Vultures Feast: 40 Years of Shell in the Niger Delta.* Ibadan: Kraft Books Limited.

Torulagha, P. S. (2007). The Niger Delta, oil and Western strategic interest: The need for Understanding. Retrieved on 1/9/13 from http//:www.unitedijawstates.com