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The Impact of Oil Exploration and Environmental Degradation in the Niger Delta Region of Nigeria: A Study of Oil Producing Communities in Akwa Ibom State

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Keywords: oil exploration, environmental degradation, niger delta, oil spillage, gas flaring.

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The Impact of Oil Exploration and Environmental Degradation in the Niger Delta Region of Nigeria: A Study of Oil Producing Communities in Akwa Ibom State

Chijioke, Basil Onuoha [α], Ebong, Itoro Bassey [σ] & Henry Ufomba [ρ]

Abstract- This study was designed to investigate the impact of crude oil exploration in the Niger Delta region of Nigeria with particular reference to its environmental effect on the six oil producing communities in Akwa Ibom State. This research became necessary because oil exploration and production have gravely injured agricultural produce (aquatic and farm), in the region. Activities such as farming, fishing and hunting have drastically reduced in the region which in the past was the major sources of income and livelihood of the local population. With the increasing soil infertility, health hazard and underdevelopment of the region, the inhabitants of the host communities have been forced to abandon their land and seek for nonexistent alternative means of livelihood. The population of the study consisted of residents in the six oil producing communities in Akwa Ibom State. Data for the study was collected through secondary sources. The result of the data analysis indicated a significant relationship between oil exploration and environmental degradation in Akwa Ibom State. On the basis of this, the following conclusion were drawn: that oil exploration activities in Akwa Ibom State has affected the people and their agricultural production as the people are no longer engaged in their normal farming activities due to soil infertility caused by frequent oil spillage and gas flaring in the region; oil exploration and production affected the people health status and their live span as they directly inhale the poisonous chemicals released into the environment by oil companies through gas flaring and oil spillages; that most environmental laws initiated by the past and present Government has not achieved its set goals and objectives of protecting the Niger Delta environment from pollution and degradation due to corruption, lack of political will and political intrigues due to the fact that most political elite in the country have a stake in the oil industry. Based on the findings of the study and the conclusions drawn, it was recommended among other things that: oil companies operating in the region should step up monitoring, repair and replacement of pipeline through both human and machine aided system, strict modification and implementation in the current regulatory framework of oil spillage and gas flaring, and a holistic approach to the environment in terms of planning, development and management of land resources.

Keywords: oil exploration, environmental degradation, niger delta, oil spillage, gas flaring.

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I. Introduction

The environment is the life support system given by the Creator to mankind. Sometimes in the past, the three components of the environment – air, soil and water were pure, virgin, undisturbed, uncontaminated and basically most hospitable. But today, the reverse is the case due to progress in human activities which evidently led to environmental degradation and serious ecological imbalance which in the long run may prove disastrous for mankind (Sharma, 2002).

Crude oil exploration in the Niger Delta Region has been on the increase since 1958 when it was discovered in commercial quantity in Olobiri in today Bayelsa State. These replaced earnings from agriculture which was the main stay of the Nation's economy. The Niger Delta Region of Nigeria which is richly endowed with natural resources, oil and gas deposit and abundance of human and material resources including good agricultural lands, extensive forests, excellent fisheries, as well as with a well-developed industrial base are subjected to severe environmental degradation due to largely ecologically unfriendly exploration of oil and state policies that expropriate the indigenous peoples of the Niger Delta of their rights to these natural resources (Alagoa, 2004; Watt, 2008; Chinda & Braid, 2000; Etuk, 2004).

The region which consists of diverse ecosystems of mangrove swamps, fresh water swamps, rain forest is now characterized by complete contamination of streams and river and forest - destruction of biodiversity to oil pollution in the area. According to Adati (2012), this has affected the livelihood of the indigenous people who depend on the ecosystem services for survival. Studies have shown that the quantity of oil spilled over 50 years is at least 9-13 million barrels, which is equivalent to 50 Exxon Valdez spills (FOS 2012). Throughout the more than 50 years of crude oil exploration and production in Niger Delta region, oil drilling and refining has caused unquantifiable and inhuman devastation to the people of the region as the people are no longer engaged in their

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fishing, farming, and hunting activities which was the mainstay of their economy. This ecologically productive region has suffered extensive soil degradations, forest clearing, toxic discharges, habitat degradations, dredging fillings and significant alteration by extensive road and pipeline construction from the petroleum industry of particular concern in the Niger Delta, and frequent and extensive oil spill that have occurred (Zabbey, 2014; Anukam, 2000; Owugah, 2006; Owugah, 2002; Egwu 2012).

The ecological devastation in the Niger Delta region occasioned by oil exploration and production has degraded most agricultural lands in the area and has turned the hitherto productive areas into wastelands. With increasing soil infertility due to the destruction of soil micro- organisms and dwindling agricultural productivity, farmers have been forced to abandon their lands, to seek nonexistent alternative means of livelihood. Aquatic life has also been destroyed with the pollution of traditional fishing grounds, exacerbating hunger and poverty (Gbadegesin, 2000; Amadi & Tamuno, 2001; Aaron, 2005;Duru, 2010).

Ibaba (2001:12) wrote:

> Olibiri is a shadow of its former self. Farming which used to be the mainstay of the community's economy has been paralyzed as farmlands has been destroyed, fishing activities grounded and aquatic life virtually castrated by many years of oil prospecting and exploration.

The above observation connotes that oil spillages and gas flaring has destroyed the very basis of the economies upon which many Niger Delta Communities depend. Drinking water is polluted, fishing and farming activities are significantly impacted and ecosystem is degraded. Oil spills has significantly affect the health and food security of rural people living near oil facilities. Today, Niger Delta is characterized by several environmental problems ranging from soil erosion, water pollution, global warming, absence of socio economic and infrastructure development and abject poverty (Ibaba, 2010; Akpan 2005; Douglas & Binuomoyo, 2008; Atairet, 2005).

As noted by Aaron (2006), the poverty incidence and unemployment have been on a visible upward trajectory in the Niger Delta region over 50 years of oil exploration and exploitation. Official statistical sources place about 72 percent of households in endemic poverty in the region thereby reducing the inhabitants to below the World Bank benchmark definition of poverty (the World Bank benchmark for poverty is 2 dollar per day). These however, have become sources of agony, pain and disillusionment for the people of the region. The people of the region where the nation derives greater percentage of her natural resources has persistently complained that adequate attention has not been given to them as regards to development, employment, social amenities etc. despite the environmental devastation resulting from oil, which has resulted in loss of lives, personnel and abject poverty (Ekpo, 2004; Ekongson, 2006; UNEP, 2011; Briggs 2005).

Afinotan & Ojakorotu (2009), rightly assert that "obtuse neglect by successive governments and massive degradation in the region, occasioned by oil production and export activities contributes to the bane of the Niger Delta". The Niger Delta case is the one of injustice and neglect by multinationals which repatriates natural resources of the region with their allies to the detriment of the environment and its people. This development has produced significant and far-reaching consequences in which industrial establishments and their staffs have been the target of restive youth (Duru, 2008).

Essien (2005), opine that the Niger Delta has largely become a cynosure because of widespread social unrest generated by neglect, environmental degradation and mindless spoliation among others. Moller (2005) also agreed that social unrest and pervasive youth restiveness in the area is the result of soil degradation, environmental pollution, water contamination, inequality in resource allocation and deliberates under development spanning over three decades. The grim picture of injustice has been aggravated by the role of multinational companies whose primary aim is to exploit resources of host communities at the detriment of the people's health and their environment (Ikelegbe, 2010; Worgu, 2000; Etuk 2004; Mbata 2004; Moffot & Olof, 2000). Opukri & Ibaba (2008:30), have this to contribute:

> Activities of multinational companies have impaired and attenuated the value of aquatic resources for recreation, fishing and transportation. The continuous discharge of domestic sewage, industrial affluent, petroleum hydrocarbons, dredge materials and Garbage has aggravated problems of the Niger Delta. The indigene have reacted to neglect in various way ranging from disruption of industrial activities, violent demonstrations, hostage taking, vandalism of assets and communal clashes.

To further analyze the plight of the Niger Delta people, Ndubusi & Asia (2007) assert "inter alias, land left for the people has also been polluted by activities of multinational companies and marine ecology has been degraded. Pollution of the rivers, streams and creek has severally debased the fishing occupation, which is the economic life wire of more than 70% of rural dweller in the Niger Delta". A sad example as illustrated by Nnaa (2008) where more than one million assorted fishes were seen dead in the swamp near the flow station of Elf Petroleum (NIG) Limited. Ikelegbe (2010:9) describe the situation in the Niger Delta region thus:

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The contradictions are several; first while being the bread basket of the nation in a federal state, it has Receive only a trickle of oil based revenues particularly since 1981. Second, while providing the revenues for the development of other parts of the nation, it has not experienced much of these developments and the region is reputed to be one of the least developed and poorest in the country. Third, while being home to the oil and gas resources and oil infrastructure, it participates little in their control and management. These conditions create numerous crises. In addition, poverty and misery has produced mass discontent, resentment alienation, hostility and a generation of angry citizen.

Following the above, Ikelegbe (2010) further asserts that in consequences, the region has been immersed by agitation, protest and struggle against perceived in justice, inequality, disinheritance, marginalization and neglect. The protest has been so broad, intense and militant that between 1998 and 2009, the region slipped into insurrection and insurgency.

In order to halt the continuous environmental degradation and devastation in Niger Delta region, Governments at both the Federal and State level had enacted several environmental laws with the primary aim of ensuring for all Nigerians a quality environment adequate for their health and well-being; conserve and use the natural environment and resources for the benefit of present and future generations, maintain and enhance ecosystems and ecological processes essential for the functioning of the biosphere and for the preservation of biological diversity (Owabukereyele, 2000). Regrettably, the reverse is the case; most environmental laws enacted by the government at both national and state levels are not strictly adhered to by the oil and gas operators in the region which evidently lead to environmental pollution thus making the problems of environmental pollution unabated. Nigeria's environmental laws have been marred by political intrigues since most political leaders have stake in the oil business. Regrettably, rather than handling the problem of environmental pollution as a fundamental moral issue, the problem which caused over sixty percent of deteriorating health and death of the inhabitants of the area is politicized. This is in contrast to the global best practice (Mbata, 2004).

The study however intend to identify and examine the various environmental problems associated with oil exploration and production in Niger Delta region sing Akwa Ibom state as reference point. The thrust of our opinion in this paper is informed by the theory of relative deprivation. American sociologist, Robert K. Merton was among the first to use the concept of relative deprivation in order to understand "social deviance" adopting, Emile Durkheim's concept of "anomie" as a starting point.

Relative deprivation according to Lain & Heather (2001), is the experience of being deprived of something to which one believes oneself to be entitled. It refers to the discontent a people feel when they have less of what they compare their positions to others and realize that they have less of what they believe themselves to be entitled than those around them. Schaefer (2008a) define it as the conscious experience of as negative discrepancy between legitimate expectations and present actualities. Coleman (1966) argues that the unequal socio economic development of the various ethnic groups in Nigeria led to inter-ethic and intra-ethnic conflicts. Once there is an uneven development in all or some facets of human existence within a given society, the different group will definitely become immersed in the competition for goods of modernity which invariably leads to a conflict situation.

Thus in the light of the above theory, the Niger Delta people consider themselves as being deprived of their agriculture production which was the main stay of the people livelihood due to the incident of high rate of oil exploration. At the emergent of crude oil in 1958 at the commercial quantity, Nigerian government shifted her focus from agriculture production, to oil and gives less attention to agriculture which was the main stay of the nation's economy. In some oil producing communities where agricultural production is in place, much yield are not recorded due to the damages of farmlands and produced occasioned by the activities of oil Multinational Corporation (oil spillage). The oil industry has enormous physical presence in the environmentally sensitive highly populated Niger Delta Region of Nigeria throughout the over 50 years of oil production. This ecologically productive region has suffered extensive habitat degradation, forest clearing, land degradation, water population, toxic discharges and significant alteration by extensive road pipeline construction from the petroleum industry of a particular concern in Niger Delta which in turn affects the agricultural productivity in the region negatively.

The literature on the Niger Delta highlights poverty, unemployment, underdevelopment, and rural urban migration as the consequences. Many inhabitants of the region have migrated to other regions, seeking for the necessary ways of survival and dumped agricultural activities which were their main activity before the advent of crude oil in the region. Hence, the total or almost entire dependence of the economy on oil has led to the relegation of agricultural production to the background. Both government and the oil operators seem to pay no or less attention to the harm caused by oil production on agriculture, hence resort to restiveness and other forms of violent reaction in the region. Where there are oil spillages on farmlands and waters which destroy the flora and fauna, the oil multinational manages to pay compensation to the affected people. This is due to the fact that, they are interested in their profit and the gains

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which the powerful elites expect from oil, at the detriment of the masses. The attention of the federal Government and oil multinational companies are here drawn to look into these issues (Ugbomeh, 2008; Udoh & Bassey, 2010; Eteng, 2010).

II. Literature Review

The world today recognizes the significance of environmental sustainability to the development of any nation. In fact, one of the cardinal objectives of the sustainable Development Goals (SDGS) is to ensure environmental sustainability. It then implies that there should be reduction in environmental degradation as well as pollution. Multinational and other industrial establishments are expected to play a significant role in the development of the society and host communities (Eregha & Irughe, 2009).

The literature on the Niger Delta highlights soil erosion, water pollution, oil spillage, soil erosion, and global warming as the consequences of oil exploration in the region. Lawal & Ese (2012) in their opinion observe that spills are under-reported, but independent estimate are that at least 115,000 barrels (15,000) tons of oil are spilled into the delta each year, making the Niger Delta one of the most oil impacted ecosystems in the world. According to UNDP Report (2006), environmental degradation issues are of topical concern to communities in the Niger Delta as it is a major cause of productivity losses. This is the main reason why oil and gas extraction impact on the Niger Delta has consequences for the declining productivity of the region which is predominantly based on fisheries and other agricultural activities as farming, and timber business.

Based on UNDP report, Opukri & Ibaba (2008) opine that oil production definitely worsened environment disaster and has affected Fishing and other agricultural activities in the region. Bisina (2004) observed that before the discovery of crude oil in 1958 at commercial quantity, agriculture was the dominant occupation of the people of the Niger Delta region. According to him, oil exploration has continued resulting into what he termed as environment destruction: due to neglect and negative attitude of the multinational companies in environmental management in the area. He further observed that Agricultural output has greatly been hampered by near constant incidences of oil exploration in the Niger Delta region of Nigeria (Bisina, 2001). This includes the production of major staple food crops such as cassava in the oil producing region of the country.

Bassey (2002) in his study observed that since the discovery of oil in Nigeria in 1956, the country has been suffering the negative environmental consequences of oil development. He further assert that in Nigeria, 32% of oil spillage is due to corrosion of pipeline lines and tanker accidents, 28% is due to sabotage and 21% are due to oil production operations while 19% of the oil spills is due to engineering drills, inability to effectively control wells, failure of machines and inadequate care in loading and offloading oil vessels.

In connection with Bassey's opinion, Akpabio et.al (2010) stated that oil industry has an enormous physical presence in the environmental sensitive highly populated Niger Delta region of Nigeria. He canvas that throughout the over 50 years of oil production, this ecologically productive region has suffered extensive habitat degradations, forest clearing, toxic discharges, dredging filling and significant alteration by extensive road and pipeline construction from the petroleum industry of particular concern in the Niger Delta Region and frequent extensive oil spill that have occurred. He further opined that Oil exploration has caused a lot of environmental problems in the Region by degrading most agricultural lands in the area and turned hitherto productive area into wastelands with increasing soil micro-organisms and dwindling agricultural productivity. According to him, farmers have been forced to abandon their land to seek non-existent alternative means of livelihood. Aquatic life has also been destroyed with the pollution of traditional fishing grounds, exacerbating hunger and poverty in the fishing communities.

Akpofure (2008) observed that the collapse of the local economies, induced by oil exploration, and other activities of the oil industry has disengaged many from their occupations, without providing viable alternatives. From his study, he observes that an estimated 5 to 10% of Nigeria mangrove ecosystems have been wipe-out either by settlement or oil. The rainforest which previously occupied some 7,400km/square of land is disappearing as well as flares and resulting to acid rain.

Collier (2000) noted that the consequences of environmental degradation and pollution on agricultural production, ecosystem and human health are enormous. Findings from previous studies particularly, Ukpatu (2001), Omoweh (2001), Omorogbe (2003) and Nwabuenyi (2012) have shown differently that, farm lands, fishing posts and shelters have been devastated in the affected oil producing communities through thermal pollution by oil spillage.

Gbadegesin (2000) in their study on socio-economic impact of oil pollution in Niger Delta environment stated that crude-oil exploitation has had adverse environmental effect on soils, forests and water bodies in host communities in the Niger Delta. Farmers have lost their lands and are consequently forced to emigrate to other communities in search of livelihood exerting additional pressures on natural resources in such area.

Eteng (2010) noted that it is noteworthy that the devastating consequences of oil exploration in Niger

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Delta Region with its eventual hazard on both aerial and terrestrial environs are tantamount to an irreversible chain effect on both the bio-diversity and safety. It is observed in his study that, crude oil exploration in populated area affect agricultural activities such as farming, hunting as well as fishing through contamination of the ground-water and soils which affects the economy and human health adversely.

For Watt (2008), the degree of damage to soils depends on the level of contamination. If it is relatively low, the soil could be robbed of activities especially because of the paraffinic nature of Nigeria oil. However, where the pollution is more serious soil become infertile because nutrients essential to plant growth become scarce, while those that are toxic to plant become more available (Ijaiya, 2013). Base on Watts opinion, Worgu (2000), observe that oil spillage in populated areas often spread-out over a wide area, destroying crops through contamination of the underground water and soils. The consumption of dissolved oxygen by bacteria feeding on the spilled hydrocarbons contributes to the death of fish because of the careless nature of oil operations in the Delta, the environment is growing increasingly uninhabitable. Aaron (2006) also towing Worgu line, observes that the major impact of oil exploration is the drastic decrease in the fertility of the soil and land mass for cultivation, with consequent decrease in agricultural food materials.

In a study carried out to examine the impact of oil industries in Mkpanak, Iwo Ukpum and Ntaikan communities, Inoni et.al (2013) found out that due to oil exploration activities, the operation of oil industries in these communities has displaced a majority of the population from their traditional occupation which is fishing. He also observed that, it has led to prostitution and high rate of divorce.

Similarly Afinotan & Ojakorotu (2009) found out in his study that the activity of oil exploration has contributed to the decline of food crop production in Egbema. The study revealed that oil exploitation affect agricultural activities in the Niger Delta. Eregha & Irughu (2009) enumerated the effects of oil exploration and industrial wastages on the cultural, religious, economic and political live of the people. He then pointed out the serious negative implications these effects have had on the people on all the spheres of lives of the people in the affected communities in Nigeria.

Nwabuenyi (2012) maintains that the Oyaka and Ibaba oil spillage adversely affected food crop production and productivity. They found out that crop production yields have decreased in quantity and quality. In the same vein, the Bomu oil spill of July, 2001 devastated the environment. The soil of the affected areas have been polluted and could not be utilized in the future, other problems associated with the pollution in the area include, the degradation of vegetation including economic trees, like palm trees, loss of fish as a result of Rival pollution and lack of security for crop and other property. In addition to Nwabuenyi opinion, Amaize (2012) hold the view that gas flaring areas produce short cassava tuber which decreases in length and weight with increasing distance from the flare.

Anee (2004) in his study of the challenges of communities' development; observes that development starts only when a man is able to take control of his environment, to manipulate and manage progressively everything in that environment to increase his production and productivity of all those things he needs to live a qualitatively better life. to him, communities development is the physical transformation of backward habitats to sages represented by symbolic presence of such structure as modern building, town-halls, school building, hospitals, good roads, electricity, pipe borne water, and bridges etc, all these are artifacts of environment reports that it is an idea of positive approach to the handling of affairs, which aims at developing the initiative of individual and communities by obtaining the willing participation of the people in the scheme for promoting their own better men. This means that, a particular – programmme embarked upon most be the priority of the people. Development entails the whole activities in a district or village, whether these activities are undertaken by the government or unofficial bodies.

Schaefer (2008b) argued that the underdevelopment of the oil producing communities in the Niger Delta region is a direct consequence of oil exploration and environmental degradation in the region. To him, underdevelopment has largely been understood in the context of lack of social amenities such as pipe-born water, good roads, hospitals, schools and employment opportunities. Corroborating the above assertion by the Schaefer, Duru (2010) opined that "experience of the area has shown that even when shell provided these amenities, they only facilitate the exploitation of the communities as evidenced in the construction of its access roads that link up its various oil and gas fields and not necessarily to develop the host communities".

Amu (2006) in similar vein, recounted that the neglect and underdevelopment is the plight of every community in the Niger Delta region due to oil exploration which has resulted to adverse environmental degradation. In his own observation, Omorogbe (2003) identified ecological disaster such as flooding, environmental pollution caused by oil spillage and gas flaring (which lead to air and water pollution), desecration of the natural vegetation and wild life as some of the most serious factors retarding development in the Niger Delta region. According to him, all the aforementioned factors are direct consequences of oil exploration in the region.

Base on Amu opinion, Grigi (2007) further opine that Niger Delta region is underdeveloped in all its

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ramifications, despite the fact that it is the bread basket of Nigeria. He aptly described the economic dilemma of the region when he stated that "the oil region in Nigeria seems to be stuck in time warp, with little real change since oil was discovered 45 years ago. Away from the main towns, there is no real development, no roads, no electricity, no running water and no telephone." The underdevelopment is so severe; the youth of the region are the hardest hit by lack of development. This is why many of them have resorted to militancy in an effort to focus national and international attention to their plight. Despite all the claims by the oil companies to be involved in the development of the region, it is to the contrary.

The pervasive underdevelopment of the region made Gerith & Laban (2003:7) to note that,

> The government and oil companies have profited by hundreds of billions of dollars since oil was discovered, yet most Nigerians living in the oil producing region are living in dire poverty.

In analyzing the problem of underdevelopment in the Niger Delta, Ebong (2005) posed the following questions: why has the Niger Delta remained underdeveloped for decades despite the fact that it contributes about 90 percent of the nation's wealth? .Why is there stagnation in the mode of life and living standards of the people for decades?. Are there concrete signs that the communities and rural dwellers in the Niger Delta are moving further away from the zone of underdevelopment?.

In summarizing the answers to the above questions posed by Ebong, some scholars and environmental experts have linked the problem of underdevelopment, poverty in the Niger Delta region to oil exploration and environmental degradation in the region. Ibaba (2001), Owugah (2002) and Bassey (2002) have argued that the underdevelopment of the oil producing communities in the Niger Delta region is a direct consequence of oil exploration and environmental degradation in the region. To them, underdevelopment has largely been understood in the context of lack of social amenities such as pipe-home water, good roads, hospitals, schools and employment opportunities.

Corroborating the above assertion by the trio, Akpan (2005) stated that "experience of the area has shown that even when shell provided these amenities, they only facilitate the exploitation of the communities as evidenced in the construction of its access roads that link up its various oil and gas fields and not necessarily to develop the host communities" Ekpe (2009) in similar vein, recounted that the neglect and underdevelopment is the plight of every community in Niger Delta State due to oil exploration which has resulted to adverse environmental degradation.

In his own observation, Ebong (2005: 105) identified ecological disaster such as flooding, environmental pollution caused by oil spillage and gas flaring (which lead to air and water pollution), desecration of the natural vegetation and wild life as some of the most serious factors retarding development in the Niger Delta region. He further asserts that unemployment is very high in the region as the oil companies do not hire their employees from the region that produce the oil, but from non-oil producing regions of Nigeria.

Chinda & Braid (2000) have described the effects of multi-national corporations on the rural areas as that of displacement and distortion of rural society. The multi-national corporations as they noted, stagnated agriculture and rural urban migration. On this note, Attah (2001) supports the view that multi-national corporation are instruments of underdevelopment in the rural areas. Confirming this, Collier (2000) note that oil boom failed to transmit prosperity to bulk of rural population. Thus, in this view, the tripartite relationship in oil exploration exist among the government, the oil companies and the host communities such that government oil policies continually increase the strength of the oil companies at the expense of the oil producing communities. Agriculture, which is the major source of income of the natives, is destroyed and the rural communities experience a serious decline.

Amadi & Tamuno (2001) posit that multi-national oil companies operating in the Niger Delta region carried out socio-economic development programmes in the region. Yet empirical evidence shows that most of the projects executed are based on the wrong perception of the needs of the people of the host communities. The study further asserts that, oil company exploration of crude oil resources has contributed in no small measure to ecological degradation and environmental pollution, which have adversely affected the people's quality of life. In approximating the poor living conditions to underdevelopment there appears to be a positive relationship between the level of oil exploration activities and the degree of underdevelopment in the area (Amadi & Tamuno 2001).

Base on Amadi & Tamuno views, Anee (2004) went on to assert that, the most painful of the activities of oil multinational corporations is that they have been implicated in the act of collusion with the federation government in the militarization of the Niger Delta region. They invariably divert the resources they should have used in the development of the Niger Delta region to security. Toughing with Amadi & Tamuno opinion, Duru (2010), rightly asserts that obtuse neglect by successive governments and massive degradation in the region, occasioned by oil production and export activities contributes to the bane of the Niger Delta. According to them, The Niger Delta case is the one of injustice and neglect by multinationals which repatriates

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natural resources of the region with their allies to the detriment of the environment and its people.

Today, Niger Delta is characterized by almost complete absence of socio economic and educational infrastructure, a physical environment rendered hostile by industrial activities, seismic genocide, environment, lack of communication network, absence of well-articulated development plans, and pervasive youth restiveness. Nnaa (2007:30), have this to contribute:

> Activities of multinational companies have impaired and attenuated the value of aquatic resources for recreation, fishing and transportation. The continuous discharge of domestic sewage, industrial affluent, petroleum hydrocarbons, dredge materials and garbage has aggravated problems of the Niger Delta. The indigenes have reacted to neglect in various way ranging from disruption of industrial activities, violent demonstrations, hostage taking, vandalism of assets and communal clashes.

To further analyze the plight of the Niger Delta people, World Bank (2000:18) assert that "land left for the people has also been polluted by activities of multinational companies and marine ecology has been degraded. Pollution of the rivers, streams and creek has severally debased the fishing occupation, which is the economic live wire of more than 70% of rural dweller in the Niger Delta". A sad example as illustrated by Idumu, (2008) is where more than one million assorted fishes were seen dead in the swamp near the flow station of Elf petroleum (NIG) Limited. Environmental degradation in the Niger Delta has reduced the economic viability of the region there by ridding many of its inhabitants of their livelihood, mainly fishing and agriculture.

Bisina, (2004:27) agreed with Idumu by asserting that the effects of oil on the Niger Delta community is very detrimental to human life as it has affected their main source of livelihood.

Ikelegbe (2010:14) describes the situation in the Niger Delta Region thus:

> The contradictions are several; first, while being the bread basket of the nation in a federal state, it has received only a trickle of oil based revenues particularly since 1981. Second, while providing the revenues for the development of other parts of the nation, it has not experienced much of these developments and the region is reputed to be one of the least developed and poorest in the country. Third, while being home to the oil and gas resources and oil infrastructure, it participate little their control and management. These conditions create numerous crises. In addition, poverty and misery has produced mass discontent, resentment alienation, hostility and a generation of angry citizen.

Following the above, Ikelegbe (2010), further asserts that in consequence, the region has been immersed by agitation, protest and struggle against perceived injustice, inequality, disinheritance, marginalization and neglect. The protests have been so broad, intense and militant that between 1998 and 2009, the region slipped into period insurrection and insurgency.

III. The Impact of oil Exploration and Production on the Environment and Wellbeing

Oil pollution has impacted negatively on the oil producing communities under study in several ways. The present situation of the Akwa Ibom State environment especially the oil producing areas is appalling. Though natural phenomena like erosion, flood and climate change are major factors which adversely affect the environment, consequences of human activities like gas flaring and oil spillage have threatened an imminent collapse of the ecosystem. Oil spillage that occurred in the host communities of Akwa Ibom State are the cost or the attendant problems the people are facing and suffering from since the advent of oil exploration in the area. In fact, it could be seen as the major cause of environmental degradation, oil conflict within the state. The situation is worsened by the lack of commitment in rectifying the anomaly. This laissez –fair attitude has continued unabated despite outcry by the victims as well as relevant environment protection laws. While the stakeholder especially the transnational oil companies, have exhibited zero concern for the wellbeing of their operational domain and its inhabitants, the victims of this acts of degradation are left to their fate. This has led to countless Litigation against the oil companies. The effects of the negative activities of the oil companies include air pollution, soil pollution, soil degradation, health risk among others.

In most of the oil producing Communities of Akwa Ibom State under study, despite being the highest crude oil producer in Niger Delta, they are perhaps the most underdeveloped place in the State. They play host to oil firms including Exxon Mobil, Shell Petroleum Development Company amongst others.

In this section, the research work will look more specifically at various environmental and socio-economic problems that have been identified as a result of the intensive extraction of natural oil resources in the Niger Delta communities in Nigeria. These impacts are grouped into three interrelated impacts viz;

1. Socio-Economic Impacts
2. Physico-Health impacts
3. Socio-Culture Impacts

a) Socio-Economic Impacts

i. *Destruction of Traditional Means of Livelihood*

Another implication of oil exploration in Akwa Ibom State is that having destroyed biodiversity, it has also rendered the agricultural sector, which is the largest

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employer of labour in oil producing community, unprofitable. Hence, most of the youth and women have become jobless since their local economic support system of fishing and farming is no longer sustainable. An example is the case of the mangrove abundant in Mkpanak community in Ibeno Local Government where the livelihood of the local people have been sustained by living in the midst of a once healthy and productive mangrove forest by fishing and farming. They also gathered mangrove wood for building and for local energy and fuel. However, due to being subjected to incessant oil spill incidences, oil have coated the breathing roots of this plant killing off parts of the mangrove forest and animals and marine life that depend on it. This mangrove forest which serves as habitats for fish and mollusks as well as a source of raw materials for communities in Mkpanak have been lost to the ravages of oil pollution. The land, the sea and the environment can no longer support the subsistence life that this local community, which they have been dependent upon for thousands of years.

Oil extraction and production has led to adverse environmental impact on the soil, forest and water of the host communities in a variety of ways, which ultimately have caused problems of environmental refuges. Crop planted in the host communities are diseased because the land is poisoned by oil activities. Some of the landless farmers migrate to other more fertile lands in other rural communities, putting pressure on scare fertile land. While some of the displaced farmers out migrate to the urban areas in search of other means of livelihood. Various harmful and toxic organic compound introduced into the natural environment during oil extraction such as during seismic work, oil spill, gas flares and several other components of the environment. This in turn affects agriculture and led to a drastic decline in output in both fishing and farming-activities. Akpan (2005: 67-79) noted that:

> 7.7 % of the 797 people interviewed on the socio economic impact of oil exploration in Akwa Ibom State identified farm-land pollution as a major problem". The peasants are very reactive to these changes because of the unavailability of modern farming and fishing techniques to meet the challenges of a declining soil and marine resources. The drastic fall in output of the agricultural product, led to intensive exploitation of other fertile land. The long run effect of (this) degradation and immigration to other rural and urban areas…exerted (pressure) on the often inadequate and dilapidated infrastructure (in this new areas) leading to increase (in) poverty.

In addition, Essien (2005:23-26) stated that: "Most farmers are concerned with problem of displacement without resettlement during oil spill". Etekpe (2005: 25) further noted that: "A part from loss of farms, oil spills have led to extensive deforestation with no adequate replanting practices – this in effect has shortened fallow periods, compounded land use degradation and led to a loss of soil fertility and consequently erosion of the top soil.

The out migration of the rural displaced farmers in Akwa Ibom State as a result of environmental degradation caused by oil extraction in the region has led a significant percentage of the local inhabitants to remain a cyclical poverty and penury. This has meant greater environmental degradation as a result of the intensive exploitation of the few remaining fertile land in the region by the residents. It has also led to increasing urban blight in the urban areas in the State as more and more displaced rural inhabitant flood the urban areas in search of non-existent Jobs.

The above observation connotes that oil spillages have destroyed the very basis of the economies of the local communities which host the oil industry. Put differently, the blame concerning the crisis of development has been placed on the oil companies.

The picture below shows the impact of crude oil spillage on the farm land in Mkpanak community, Ibeno Local Government Area.

Source: UNEP Report (2011).

Figure 2.1: Impact of Crude Oil Spillage on a Farmland In Mkpanak Community, Ibeno Local Government Area, Akwa Ibom State.

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ii. *Destruction of the Ecosystem and Biodiversity*

Degradation of the environment has recorded a continued destruction of wild forests and the damage of natural ecosystems that has greatly contributed to the mass extinction of species. This is because of the human activities such as acidifying water systems, over exploitation of natural systems and deliberate and indirect destruction of natural systems necessary for the survival of different species. These anthropogenic activities simply alter the natural process combined, thus destroying the natural ecosystems supporting biodiversity.

The most profound and adverse impact of oil pollution in Akwa Ibom State with far-reaching implications on all other aspects of our traditional lifestyles and livelihoods, had been the total loss of biodiversity and destruction of the Ecosystem and its habitats largely due to soil degradation. The results of the unchecked oil pollution in Atabrikang Community in Ibeno Local Government have been the complete destruction of ecosystems.

The mangrove which was once a source of both fuels for the indigenous people and a habitat for the area's rich ecosystem is now unable to survive the oil toxicity of its habitat. Mangrove forests have fallen to the toxicity of oil spills and are being replaced by noxious nypa palms, the rainforest has fallen to the axe of oil companies, wild-life and game have been driven away and farmlands have been rendered infertile with gross implication on the right to adequate food.

Oil spills have had adverse effects on marine life, which has become heavily contaminated; in turn having negative consequences for human health from consuming contaminated seafood. During oil spills, the process of photosynthesis which enhances plant diversity is impaired since the process is reduced due to the fact that spilled crude have a high absorbance property so when the crude spreads on to the surface of leaves, the latter find it difficult to photosynthesize and thus die, leading to biodiversity loss. The toxic crude also affects underground herbs and shrubs, while microbial organisms which form important groups in the food web, are also destroyed.

This picture shows how Ecosystem is completely wipe off as a result of frequent oil spill in Atabrikang Community in Ibeno Local Government Area.

Source: Field Survey (2018)

Figure 2.2: Impact of Oil Spill on a Farm Land in Atabrikang Community in Ibeno Local Government Area, Akwa Ibom State.

iii. *Depletion of Fish Population*

The Niger River is an important ecosystem that need to be protected, for it is home to 36 families and nearly 250 species of fish of which 20 are endemic, meaning they are found nowhere else on earth (Wumi, 2002). One effect of oil pollution in oil producing area of Akwa Ibom State is the destruction of the traditional local economic support system of fishing. The combination of the effects of oil spill and acid rain resulting from gas flaring has been water pollution which affects aquatic life. Fish are driven away from in-shore or shallow waters into deep-sea as a result of flaring. The ultimate result of this is the poor fish catch, as most fish has been driven into deep waters.

Oil contamination affects the fish population and affects the farmer that relies on fishing to support their family. In Eastern Obolo Local Government Area, Shell Production Company and Exxon Mobil's operations have reportedly led to the loss of fish populations along the coast, fishing is a viable only to

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those who can afford large boat engine and trawlers to venture into the high sea. The rest of the population must buy "ice fish" (frozen fish) from commercial fishermen, a practice totally unknown a few year back – since prices are constantly on the rise, many villagers have to go without fish. Only a small section of the local population in Eastern Obolo Local Government gets employment in Shell and Mobil's facilities and thereby earns money to buy food (Essien, 2005).

By enforcing law and holding oil companies accountable for their actions the risk of contamination can be greatly reduced (Amaize, 2012). By limiting the devastation caused by disturbances to the marine environmental, such as pollution, over fishing and habitat loss; the productivity and biodiversity of the marine ecosystems would increase.

The picture below shows how oil spill kills fishes and other aquatic organisms in Udum Unenne fishing Community in Eastern Obolo Local Government Area.

Source: UNEP Rport (2011).

Figure 2.3: Impact of Oil Spillage on Aquatic Animals in Udum Unenne Fishing Community in Eastern Obolo Local Government Area, Akwa Ibom State.

b) Physio-Health Impact

i. *Health Risks*

Human health is heavily affected by environmental degradation. Reduction in water quality is responsible for more than two million deaths and billions of illness annually across the globe. The most worrisome aspect of oil pollution in Akwa Ibom State is the rise in occurrence of certain ailments that were previously unknown in the area. It has been reported that there is correlation between exposure to oil pollution and the development of health problems. In a recent research report released by a group of scientists from the Faculty of Pharmacy, University of Lagos, it was found that water samples collected from the sea, river, bore holes, lagoons, beach and so on from the Niger Delta region – especially in Akwa Ibom and River States, indicates that more than 70% of the water in the Niger Delta contains a chemical called Benzo-pyrene, with a high concentration of 0.54 to 4ug per litre, far above the World Health Organisation (WHO) recommendation of 0.7ug/1 for drinking water .

Residents of oil-producing areas 0f Akwa Ibom State at times have to cope with drinking water that contains residual oil even many years after clean-up. There is also the lasting health effects of chemical dispersants used during clean-up. For example, many residents of the of Iko town in Eastern Obolo local Government have complained of asthma, breathing difficulties and pain, headaches, nausea, and throat irritation as well as chronic bronchitis. Such health concerns can bring about substantive causes of action in toxic tort for exposure to dangerous substances and chemicals. It has also been held to be a violation of the fundamental right to health in the Nigerian case of *Jonah Gbemre v. Shell*, in which the Nigerian federal court held that gas flaring and oil spillage by Shell in the course of their oil exploration and production activities in the applicant's community were violations of the

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fundamental right to a healthy environment and dignity of human persons.

Again, the effect of gas flaring has constituted health hazard to the people. It is on record that oil multinational companies operating in Akwa Ibom State flare more gas than their counterpart which has contributed immensely to the local and global environmental warming, loss of soil fertility, coupled with strange growth of fauna and plants (Bassey 2002:174). Also, there are high degree of marine erosion menace due to the over dredging of shallow creeks in the area to allow for big oil vessels. This is threatening to the lives and properties of the host communities within Akwa Ibom State especially in the rainy season when the water overflows its banks. As a result, host communities within Ibeno, Eastern Obolo Local Government Area among others are being washed into the sea and Atlantic Ocean (Amaize, 2012).

In 2001, the people of Ibeno, and Eastern Obolo, among others called the attention of the Local Government council to the situation after the traditional method of embankment continued to fail. The level of environmental degradation faced by the people of the host communities in Akwa Ibom State is so much that they should be classified under endangered species. Since the commencement of oil exploration in the area, the people have been passing through strange experiences almost on a daily basis, such as, earth tumor as a result of constant explosion of dynamite and other explosive devices from oil multinational companies.

Source: UNEP, Report (2011)

Figure 2.4: Aerial View of Iwo -Ukpun Community in Ibeno Local Government Area, Akwa Ibom State Encircled by Oil Pollution and Gas Flaring.

ii. *Destruction of Zinc Roof*

One of the increasing socio-economic costs to most oil producing communities resulting from oil pollution is the rapidity of which zinc roofs are easily corroded. Houses with zinc roofs that are close to the location of the flare stacks do not last for two years before they become corroded. This is different from other areas where zinc roofs last for at least ten years. This is a common trend that is also observed in other parts of the Niger Delta where oil extraction is presently taking place

This zinc corrosion has added another dimension to the increasing socio-economic costs to the burden of the Akwa Ibom people. It is a common knowledge that acid rain oxidizes zinc through the process of oxidation to form zinc oxides. This oxidation process is responsible for the corrosion. This has led homeowners to resort to purchase of the expensive asbestos with its obvious potential health hazards.

The picture below shows how flaring gas corrode roofing Zinc in Atabrikang Community in Ibeno Local Government Area.

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Source: Field Survey (2018)

Fig. 2.5: Rusted Zinc Roofs In Atabrikang Community in Ibeno Local Government Area, Akwa Ibom State

iii. *Water Pollution*

According to Ekongson (2006), the main source of water pollution in Akwa Ibom State has to do with oil spillage, deforestation and improper soil tillage practices which increase the concentration of soil particles that make their way into water bodies. The discharge of industrial waste materials into bodies of water is another major source of pollution in Akwa Ibom State. Discharges from oil industries among others have increased the contents of sulfates and nitrates in water bodies and has altered properties such as color and odor (Etuk, 2004).These metals and other chemical substance increase the toxicity of water bodies as well as soils. A large percentage of the inhabitants from the host communities derive most of their domestic and drinking water from ponds, stream, and shallow wells. Hence, water pollution is a major health concern that places the health of the people at risk of diseases such as cholera, dysentery, diarrhea, and typhoid (Ekpo, 2004).

According to Ekpe (2009), the oil activities in the area has resulted to situations whereby complete polluted waters is been queathed to the children. The communities shoreline have been washed away or erode due to the high volume of deep – sea exploration and exploitation the incidence of oil spill has greatly increased. Available records show that a total of 6,817 oil spills occurred between 2000 and 2005 with less of approximately three million barrels of oil in the region. Approximately, twenty-five percent spilled in swamps and sixty-nine in off shore (UNDP Report, 2006; Ekongson, 2006). Beside as source of water pollution, canalization and wastes discharge into freshwater swamps and into the sea are other sources (Akpofure, 2008).

In an attempt to shorten travel time and improve access to oil fields and production facilities, oil companies have constructed canals that in some case have caused salt water to flow into fresh water zone destroying freshwater ecological systems. The toxic effect of oil on marine life depends on the duration of exposure and oil concentration in the environment. The presence of toxic components does not always cause mortality, but may induce temporary effect like narcosis and tainting of tissues, which usually subsided over time. Oil spill in the ocean destroy small sea organism, fish, seabirds, sea mammals, shoreline and may contaminate the ocean floor for many years after the event (Godon et.al, 2007).

IV. Conclusion

This research was undertaken to examine the effects of crude oil exploration in six oil producing communities in Akwa Ibom State. From the study, it is seen that oil spillage and gas flaring and indeed environmental degradation has grave effects in the environment especially in the area of study, which

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ranges from its effect on the land, water to its effect in the entire outdoor environment. Apart from affecting the chemical properties of the soil, it also resulted to poor soil fertility or nutrient, leading to poor crop productivity in the area as well as polluting of rivers and streams where fishing activities were carried out for subsistence up keep of the family.

The study reveal that the activities of oil multinational companies operating in the region has contribute immensely to environmental degradation of the host communities which in turn affect the crop yield, health of the dwellers, land productivity, health status and farm income. However in order to halt the continual environmental degradation of the Niger Delta region, the federal and the State Government over the year has embarked on several efforts towards resolving the incidents of environmental degradation in the region. Such efforts range from the several legal framework such as Oil Pollution Act (OPA) of 1990, Niger Delta Development Commission (NDDC), the Environmental Impact Assessment (EIA) Decree No. 86 of 1992, among others. Despite these entire institutional framework towards resolving the incident of environmental degradation, contingence sway in the region. The widespread poverty, general under development, unemployment, Environmental degradation and pollution, marine contamination, as well as the area which according to Eke, (2010:1), "has been environmentally desolated, economically strangulated and political raped," has for any other sources of livelihood for survival.

Therefore, in order to halt the continual degradation of the Niger Delta environment, the Federal Government and the State Government must play a leading role by not only enacting but also enforcing stringent environmental laws that guarantee the people a better livelihood. Deliberate intervention policies must be implemented speedily to embark on massive infrastructural development of the region, as well as address the crushing level of poverty among the people of the Akwa Ibom State especially the oil producing communities of the State.

V. Recommendations

Akwa Ibom State are confronted with several environmental problems, which ranges from deforestation, drought and desertification, soil and coastal erosion, water pollution, oil pollution, water hyacinth invasion, loss of biodiversity, flooding, urban decay, and industrial pollution caused by oil Multinational Company operating in the region. Based on the findings of the study and the conclusion drawn, the following recommendations were made to minimize the occurrence of environmental degradation in the oil producing communities of Akwa Ibom State.

1. There should be a constant environmental monitoring, assessment and evaluation to determine the level of damage that is done by gas flaring and other oil pollutions on the environment as a whole.
2. The companies and government should provide relief assistance to the bearing communities as regards to the provision of basic input such as fertilizers to the various farmers as to enable them to produce enough food crops as their only mainstay of livelihood and compensation should be paid to host communities. The Federal Government should ensure that all decisions relating to environmental quality integrate the need for sustainable development for future generation.
3. Promotion of environmental awareness and consciousness not only amongst the oil operators but in the general public through the organization of the Biennial Seminar on the Petroleum Industry and the Nigerian Environment should be encouraged.
4. Oil Operators in the region should adopt and promote the use of existing environmentally friendly technologies as recommended by World Environmental Safety Standard.
5. The Federal Government operative laws governing the MNCOS should be updated so that foreign and indigenous firms can plough back substantial investment in the region affected with what these multi-nationals practice in other part of the world, where they do business.
6. The Federal Government through the Federal Ministry of Environmental Protection Agency (FEPA), Niger Delta Affairs Ministry, NOSDRA and all Policy stakeholders in environment and oil and gas sector should revisit and review existing environmental and oil drilling laws in Nigeria with a view of updating them to international and environmental friendly standards.
7. The Government should adopt the Pollute and Pays Principle as an instrument of environmental protection policy and management; and e-Government agencies such as National Orientation Agency (NOA) should be made to organize interactive session with the oil communities, oil companies and NGOs operating in the area for a review of Government program/ Policies Concerning Oil Exploration and Production. This will help to breach communication by the Government, the people and the oil companies and also help to identify early warning violent conflict signals.
8. Oil companies operating in the Niger Delta region should review their policies on community development, technology transfer, employment, corporate social responsibility and compensation to host communities if they earnestly desire to achieve their organizational goals, stable and congenial working environment.

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9. There is a need for government not only to enact several environmental laws but to ensure effective implementation and enforcement of these laws to control the issue of environmental problems and this can be done by putting necessary environmental pollution enforcement structures in place to curb the spate of environmental pollution in Nigeria.
10. Furthermore, the TNCOS have to restore the sources of livelihood that have been destroyed by providing capital for farming and fishing. In other words, the TNCOS must contribute substantially to the restoration and regeneration of livelihoods and local economies of the region in order to restore peace and confidence on the side of the inhabitants.

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