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Oil spills and the Niger Delta bloodlines: examining the human tragedy

***Binuomoyo[1], Olayinka. K. and Ogunsola[2], Oluseyi A'**

[1]Stanbic IBTC, No. 147 Ejigbo Road, Iwo, Osun State, Nigeria

[2]Department of Physiology, Ben Carson (SNR) School Snr. of Medicine, Babcock University, Ilisan-Remo, Ogun State, Nigeria.

*Corresponding author:<ykbinuomoyo@gmail.com>

Abstract

This is an exploratory study that utilizes the sustainable development framework as the basis of its argument. From the deterioration of health which the Niger Delta region has experienced over the years, to the socio-economic consequences of oil spills and degradation of its environment, we find from literature review that in the face of policy failure and the non-adoption of the sustainability strategy[1], the Niger Delta may be eternally submerged in poverty and under-development. With the negative impacts on the health and livelihood of the residents, a human tragedy is created. Our study also includes how oil exploration activities generally impact humans. Thus, this paper explains the socio-economic and health implications of continued oil exploration (and exploitation) with its attendant degradation effect in the absence of policies that could entrench sustainable development. We examined published data and literature extracted from journals and databases. The paper concluded that sustainable development is imperative in solving the Niger Delta development crisis with oil multinational companies at the centre.

Keywords: Niger Delta; Development; Nigeria; Oil Spill; Health

Introduction

1. Background to the study

Over fifty years ago, Nigeria's fiscal policy path as an oil economy was defined with the discovery of crude oil in large deposits at Oloibiri (in today's Bayelsa state), which heralded a new phase of life for the Niger Delta region and Nigeria, with the re-definition of the country's economic structure, while the people's lifestyle was naturally altered. Subsequently, agriculture which was formerly the country's traditional and chief economic sector was soon relegated to the background as oil was later discovered in other parts of the region which include states of Akwa Ibom, Cross Rivers, Delta, Edo, Imo, Ondo and Rivers, and more recently, Lagos and Borno states.

Oil is Nigeria's economic blood, bled by the Niger Delta. The region is but shedding much more blood to keep the crude money flowing for the country. Nigeria has until recent been the largest oil producer in Africa, and its oil is vital to the economies of large energy consumers like India and China which are the country's major trading partners. The centrality of oil in Nigeria's economy underlines the importance of the Niger Delta region as the country's economic main stay. The economics of the Niger Delta region is unquantifiable in the political-economy of Nigeria since when oil was first discovered in large deposits till date. But the region itself has been neglected in

the scheme of development over those years, with the scale unfairly left unbalanced against the region.

The Niger Delta region is one of the world's largest wetlands, containing more than 28,000 square kilometres of land area with meandering waterways, salt water swamp and fresh water which has inland, with diverse agricultural possibilities though mainly aquatic farming. The name Niger Delta, was derived from the River Niger, the mouth of which it was situated. The region's livelihood which centred on fishing and land farming has been negatively impacted by the advent of oil in the country's economy.

With crude oil constituting Nigeria's economic sector and being in large quantities, renowned foreign oil multinational companies (MNCs) soon flooded the country with French Total Oil, Mobil, ENI Italy, Texaco, Chevron and Shell Oil principal among them, bringing with it much foreign exchange earnings and an unprecedented oil boom, leading to an enhanced economic growth. As at 2013, Nigeria's oil output was 1.75 million barrels per day with marketed natural gas put at 38.41 billion cubic metres (OPEC – Organization of Petroleum Exporting Countries, 2014). The effects of the exploration activities in the Niger Delta has been seen more as worse-off for the region as have been for the Nigerian nation. This is evident in the socio-economic characteristics of the host oil communities, as poverty, unemployment and lack of access to social and infrastructural amenities are predominant in the region.

Oil spill as a form of pollution is the Niger Delta region's bone of contention in their development aspiration. The region has low human capital development and the degradation of its environment not only constrains economic development, but also limits opportunities to the people. Osuji&Onojake, (2007) defines pollution as the direct and indirect introduction of oil and non-oil substances into the environment culminating in undesired effects with attendant dangers to human health and the larger ecosystems. The concern today is the negative effects of oil spills on the health and general human development of the region.

Human and oil-related exploration activities raise a number of concerns around resource depletion and pollution which constitute environmental damages to both the health and general livelihood of the people (Kadafa, *et al.,* 2012). The focus of this paper was therefore to examine how oil spills have affected humans and their livelihood in Nigeria's Niger Delta region.

2. Oil spill and the Niger Delta situation

Since the advent of oil and its exploration in the Niger Delta, the region has been neglected in Nigeria's schemes of development compared to its economic contribution. Or put more clearly, the Nigerian government has over the years focussed on oil (exploration) without much consideration for the (development of the) Niger Delta, which is the source of the oil. The region's once green vegetation and adoring blue waters were turned black from the oil exploration activities of the black gold leaving the people unemployed as a result of the destruction of the economic activities in farming and fishing, as well as reduced means of food production and with increased health risk.

From an historical perspective, the United Nations Development Programme (UNDP; 2010) says that, before the Second World War, '…a delicate balance existed between the human populations of the Niger Delta and its fragile ecosystem. The exploitation of natural resources did not go beyond the search for medicinal herbs, fuel, game, fish, and construction materials.' The situation is different today as ambitious economic aspiration has destroyed the region's heritage and pillar of livelihood.

The Niger Delta region stretches over an approximate 70,000 square kilometres with more than 50 ethnic groupings. The oil companies' operations extend beyond 60% of the land mass so close to the communities with variable impacts on the homes, farmlands and water sources of these people. The socio-economic livelihoods of the inhabitants are disrupted by the pollutants from the operations of these oil companies with their main economic sources of fishing and agriculture negatively impacted.

Oil spillage is a common occurrence in the Niger Delta and is caused by poor infrastructure maintenance, human error, and intentional vandalism or theft of oil resulting in spills or leaks during processing and transportation (Amnesty International, 2009). Over the years from 1976 to 1996, spill incidents in total of 4,835 were recorded with 1.897 million barrels of oil lost as pollution to the environment (Orimoogunje &Ajibola-James, 2013). UNDP (2006) estimates that between 1976 and 2001, an approximate 6,800 spills totalling 3 million barrels of oil were recorded in the Niger Delta region. From Table 1 (below), oil spill cases appear to be increasing over the years. This can be attributed to

increased oil production and the lack of enforced regulatory control regarding environmental relations.

The estimated barrels of crude oil spilled annually in the Niger Delta over surface and ground waters as well as vegetation and air is 240,000 (Ordinioha&Brisibe, 2013). The health effects of these pollution activities include contamination and poisoning of water, food and the environment resulting in ill health and death (World Health Organization [WHO], 2003). Oteh and Okpo (2012) gave account of oil spills in the Niger Delta in the past fifty years at an average 1.5 million tons, fifty times more than the volume of oil recorded in 1989 in Exxon Valdez oil spill in Alaska, with corrosion accounting for 50% of the spills, 28% due to sabotage, and 22% to oil production drills and operations.

The severity of these frequent and collectively massive spills is only amplified by other environmental problems in the region like seasonal floods and a limited land space which does not allow for human resettlement thus constraining development (UNDP, 2006). This is also more critical in the case of a serious spill as people are not able to relocate to another nearby place for development due to the shortage of land.

While economic gains exist in the exploration of oil in the Niger Delta, the losses due to hazards appear to exceed the benefits for the residents of the region and oil workers who are both at risk due to exposure and are directly affected from the negative impact of oil spills in the region, which are evident in the damages done to the region's ecosystem. These impacts include soil contamination, affecting terrestrial lives (Akpofure*et al*., 2000). The oil spills kill plants, organisms and animals and in the process, the food chains are disrupted while aquatic productivity is also decreased. Otaigbe and Adesina (2005)'s medical case report aptly emphasized the risk of oil exposure to human health.

Oil spill accounts for the major source of pollution in the Niger Delta with threats to human and the ecosystem, with the damages evident on streams and farmlands greatly affecting the livelihood of the people. As Osuji (2004) explains, environmental pollution as a continuous act in the region creates the impact over the long-term, having not been tracked and assessed as the incident occurs.

Thus today, the Niger Delta region is devoid of its pre-oil era with the telling negative impacts of oil operations evident in its life expectancy which used to be close to 70 years but now below 40 years; once a net food exporter but now imports about 80% of its food, with dilapidated infrastructure and visible signs of being sickly on its populace (Ecumenical Council for Corporate Responsibility [ECCR], 2010). According to Osuji, (2004), an oil spill as a form of pollution is a product of human activities which occur in the form of a release of a liquid petroleum hydrocarbon into the environment, occurring over both land and marine.

3. Explaining the health and socio-economic dimensions of oil spill

The high poverty level in the Niger Delta when compared with other regions is a disturbing incidence. Table 2 shows that despite crude oil is mined from the Niger Delta region (depicted as South-South region in Table 2)[1]which funds 75% of Nigeria's budget, the region yet accounts for a large proportion of the nation's poor even though it has continued to receive the largest allocation from the federation account (Binuomoyo, 2016). It is thus noteworthy that it is not the funds allocated to the region that define their livelihood but the (sustainable) exploration of the region's resources.

3.1 Health effects of oil spill

The adverse effects of oil exploration on human health result from the direct exposure of the inhabitants to hazardous pollutants which are burned during the oil production process and this can be in the form of incomplete combustion of gas flares, and the ingestion of heavy metals from oil spills through drinking water, and indirectly from animals and plants grown in the area. These pollutants have been established to have resulted in a variety of adverse health issues like cancer, skin problems, lung damage, as well as neurological, reproductive and developmental effects (Kindzierski, 2000, and Ovuakporaye *et al*, 2012).

Heavy metals have also been reported to be constituents of oil spills leaving the oil spill-contaminated areas at the risk of the health effects from exposures to these metals and other contaminants, with varying effects that include skin ulcers from skin contact with chromium compounds, as well as causing stomach upset and ulcers, kidney and liver damages and death when the chromium compounds are ingested (Egbe& Thompson, 2010). Other health effects of exposure to these compounds in the contaminants includebreathing difficulties,

[1]The South South region are the principal oil-rich region comprising the states of AkwaIbom, Bayelsa, Cross River, Delta, Edo and Rivers, while the three remaining oil-rich states are from South West (Ondo) and South East (Abia and Imo) – all can lightly be referred to as the Niger Delta region, even though the core Niger Delta states are Bayelsa, Delta and Rivers.

Table 1: Historical oil spills and related data in the Niger Delta

Years	No. of Spills	Vol. of Spills (in Barrels)	Quantity recovered (in Barrels)	Net Volume Lost to the Environment (in Barrels)	Life Expectancy (Niger Delta)	Life Expectancy (Nigeria)
1976	128	26157.00	7135.00	19021.50	-	43.86
1977	104	32879.25	1703.01	31176.75	-	44.32
1978	154	489294.75	391445.00	97849.75	-	44.76
1979	157	694117.13	63481.20	630635.93	42.00	45.18
1980	241	600511.02	42416.83	558094.20	46.10	45.55
1981	238	42722.50	5470.20	37252.30	46.10	45.85
1982	257	42841.00	2171.40	40669.60	46.10	46.08
1983	173	48351.30	6355.90	41995.40	46.10	46.24
1984	151	40209.00	1644.80	12358.00	46.10	46.32
1985	187	11876.60	1719.30	10157.00	46.10	46.35
1986	155	12905.00	552.00	12358.00	46.10	46.32
1987	129	31866.00	25757.00	25757.00	46.10	46.26
1988	208	9172.00	1955.00	7207.00	46.10	46.20
1989	195	7628.00	2153.00	3803.00	46.10	46.15
1990	160	14940.82	2785.96	12057.80	50.20	46.11
1991	201	106827.98	2785.96	105912.05	50.20	46.09
1992	367	51131.91	1476.70	49711.20	50.20	46.07
1993	428	9752.22	2937.08	6632.11	50.20	46.07
1994	515	30282.67	2335.93	32787.78	50.20	46.09
1995	417	63677.17	3110.02	60568.15	50.20	46.11
1996	130	46353.12	1183807	38716.87	50.20	46.16
1997	339	59272.30	-	-	50.20	46.22
1998	390	98345.00	-	-	50.20	46.32
1999	198	29337.00	-	-	50.20	46.44
2000	219	11542.00	-	-	50.50	46.62
2001	412	120976.16	-	-	50.50	46.88
2002	446	241617.55	-	-	50.50	47.22
2003	609	35284,43	-	-	50.50	47.64
2004	543	17104.00	-	-	50.50	48.13
2005	224	11921.00	-	-	51.50	48.67
2006	170	20000	-	-	51.50	49.24
2007	250	30000	-	-	51.50	49.81
2008	170	100000	-	-	51.50	50.36

Source: Eregha and Irughe (2009); Uyigue and Agho (2007); Amnesty International (2009); United Nations (2000), DPR (2007, 2014); '-'means not available.

increased blood pressure, changes in heart rhythm, stomach irritation, muscle weakness, changes in nerve reflexes, swelling of brains and liver cells, as well as kidney and heart damages. The prevalence of respiratory disorder cases reported in health centers in the Niger Delta region can as well be related to environmental pollution. Omofonmwan and Odia (2009) noted that respiratory problems, skin diseases, tumors, gastrointestinal problems, cancer, and malnutrition are the commonly reported health issues in many communities in the Niger Delta region, which have as well been linked to oil-induced environmental pollution in the region. (Ojeh, 2012) also reported that oil spill and pollution constitute significant threats to human life and existence, and as well as to the ecosystem leading to environmental degradation, with particular reference to the influence on soil pollution and poor crop yield which was reported to be responsible for poor soil and low cassava productivity in Ebedei, Ukwuani LGA, Delta State (see also Atuma&Ojeh, 2013).

Considering the long term consequences of oil spillage and gas flaring on human health, an in vitro study in two human cell lines (one from hepatoma liver cells and another from bronchial lung epithelium, treated with an *Erika* fuel extract) performed by Amat-Bronner*et al*. (2007) showed that DNA adducts were detected in hepatoma cells, indicating biotransformation through cytochrome P450 (CYP) 1A2 and 1B1. The authors found that exposure to the fuel extract also induced some metabolizing enzymes such as CYP 1A2, cyclooxygenase 2 and 5-lipooxygenase which are reported to be involved in carcinogenic processes, including a mediator of inflammation reported in epithelial bronchial cells when induced with leucotriene B4. The genotoxic risk for consumers of marine food contaminated with polycyclic aromatic hydrocarbons (PAH) from oil spills was also assessed by Lemiere*et al*. (2005) using Mussels (*Mytilus*spp.) contaminated with *Erika* oil, collected and provided daily to rats over periods of 2 to 4 weeks. DNA damage was measured on hepatic (liver), bone marrow and blood cells with significant increase in DNA damage observed in the liver and bone marrow of the rats.

3.2 Oil Spill and the socio-economic context

While the Niger Delta people wallow in poverty, environmental hazards compound the situation as pollution to their sources of livelihood like the streams and farmlands make them more vulnerable and increase the mortality rate, beside other catastrophes like fire explosions caused by spills and bursts in oil pipelines as shown in Table 3. Ite*et al*. (2013) demonstrates (in Table 3) that the total operations of oil companies in the Niger Delta have continued to pose serious threats to the residents of the region including the pollution of the water and land, with fishing and farming activities which are the economic mainstay of the people severely affected. The damages also extend to forests and fresh waters of the region, the air and even noises while a number of villages that are close to these oil operations have become unbearable for sane human residence.

The Niger Delta is a classic example of the paradox of plenty; poverty in the midst of plenty and wealth. It also explains the curse of the oil thesis (Mahler, 2010; Obeng-Odoom, 2010; Peterson, 2012; Tuokuu&Kuusaana, 2015). While though oil continues to serve the interest of a few political elites through corruption, as the chief revenue source, it has also funded the growth of many cities in the country, such as Abuja (the federal capital territory), and considerably developed the country. The critical role of the Niger Delta in the economy of Nigeria is also understood today as the country goes through a most difficult recession following the glut in the international price of oil coupled with fallen production. With fallen price of crude oil and drop in production, Nigeria is faced with economic difficulties, a situation which points to oil and the Niger Delta as crucial to the sustenance of the Nigerian nation. What is more disturbing is that oil prospecting companies and their workers co-live in the same area with the oil-producing communities but on an opposite fields of lifestyle. The contrast is seen in access to electricity, health care, good water, transportation and wellbeing. It is the paradox of plenty where the wealth owners pick the crumbles and live in penury while the beggars control the wealth. Table 4 documents a number of oil spills-related problems in the Niger Delta that contributed to the development dilemma of the region.

Akpomuvie (2011)'s analysis of the economic impact of oil exploration activities and oil spills on the livelihood of the Niger Delta residents with regards to poverty, farming and fishing sees oil spills as creating a cycle of poverty for the people. It destroys the means of livelihood, results in soil degradation, increases cost of living and aggravates poverty level, results in poor health and reduces life expectancy which is presently estimated at 32 years in 2016 down from 45 years in 2011 and 40 years in 2014, all are the results of oil spills in the Niger Delta and of the current situation in the region (see Onojake, 2004; The Tide, 2011; The Punch, 2016).[2]

Explaining the health consequence of oil spills in the Niger Delta, Bretschger and Vinogradova (2016) drew from an economic point of view, noted that the various pollution-induced health problem have many common characteristics as follows: (1) pollution-induced health problems arise from negative market externalities, as free markets do not provide optimal allocations to warrant environmental policies; (2) the impacts of negative pollution rise with economic growth, where external costs are not internalized; (3) the health effects of pollution are important and sizeable, affecting the macroeconomic performance of an economy, which notably indicates that the health status of the population constitutes an important aspect of green growth and sustainable development; and (4) the impacts of pollution on health are uncertain and random, both at the individuals and aggregate economy levels.

[2]See further Sustainability International, retrieved from www.sustainability-international.org/oil-pollution-and-lives-cut-short-health-in-the-niger-delta, on 6 September 2016.

Table 2: Trends of relative poverty rate by geo-political zone (1980 – 2010)

Year / Zone	South South	South East	South West	North Central	North East	North West	National
	South			North			
1980	13.2	12.9	13.4	32.0	35.6	37.7	27.2
1985	45.7	30.4	38.6	50.8	54.9	52.1	46.3
1992	40.8	41.0	43.1	46.0	54.0	36.5	42.7
1996	58.2	53.5	60.9	64.7	70.1	77.2	65.6
2004	35.1	26.7	43.0	67.0	72.2	71.2	54.4
2010	63.8	67.0	59.1	67.5	76.3	77.7	69.0

Source: National Bureau of Statistics (NBS, 2012)

4. Do government care?

The Nigerian government appears to have a negative disposition towards the Niger Delta region (Imobighe, 2011) but a number of programmes put in place suggest otherwise. The genesis of the Niger Delta development crisis started with the enactment of the Land Use Decree of 1978, which vested all lands (including the constituent resources) to the government and administered on behalf of the federal government by the government of the different states. In a related situation, the Niger Delta Development Commission (NDDC) was established in 1999, as well as the creation of a ministry of Niger Delta – all in a bid to address the region's development problem. Some other related regulations and laws that impact oil production and the Niger Delta include the Mineral Oil Safety Regulation 1963 & 1997, Oil in Navigable Waters Regulation and Act 1968, Petroleum Regulations 1967, Petroleum (Drilling and Production) Regulation and Decree 1969 & 1973 and Amendments 1990, 1996 & 1998, Petroleum Refining Regulation 1974 and Federal Environmental Protection Agency Act 1988 and its ministry in 1999 (see Ukoli, 2005). The country also signed a number of national and international agreements and policies that relate to endangered species, harmful waste and pollution and natural (resources) conservation. We briefly discuss three key acts and regulations as follow.

(i.) The oil pollution act 1990: This Act guides the government and industries on the prevention, mitigation, clean-up and liability of the oil-producing areas, and on oil spill clean-up and compensation. It also provides guidelines on management of oil pollution principally through FEPA (see Ukoli, 2005 and Abdul, 2009).

(ii.) National oil spill detection and response agency (NOSDRA): This agency which seeks to create zero tolerance and manage oil spill incidences was established in 2004 through the ministry of environment to administer the National Oil Spill Contingency Plan (NOSCP) in compliance with international agreements and conventions on oil pollution responses for restoration and preservation of the environment by ensuring good oil production practices with the aim of achieving sustainable development.[3]

(iii.) Niger delta development commission (NDDC): This commission with a later established supervisory Ministry of the Niger Delta was established in the year 2000 to facilitate the rapid and sustainable development of the Niger Delta region.[4]

[3]See www.nosdra.org.
[4]See www.nddc.gov.ng.

Table 3. Environmental impacts associated with upstream and downstream petroleum operations

Activities	**Potential associated risks**	**Environmental, health and safety issues**
Exploration operations: • Geological survey • Aerial survey • Seismic survey • Gravimetric and magnetic survey • Exploratory drilling • Appraisal	a. Noise pollution b. Habitat destruction and acoustic emission c. Drilling discharges e.g. drilling fluids (water based and oil based muds) and drill cuttings d. Atmospheric emission e. Accidental spills/ blowout f. Solid waste disposal	Ecosystem destruction and interference with land use to access onshore sites and marines resource areas; environmental pollution (air, soil and controlled water) and safety problems associated with the use of explosives; land pollution which affects plants and pose human health risks; groundwater contamination and adverse effects on ecological biodiversity.
Development and production: • Development drilling • Processing: separation and treatment • Initial storage	a. Discharges of effluents (solids, liquids and gases) b. Operation discharges c. Atmospheric emission d. Accidental oil spills e. Deck drainage f. Sanitary waste disposal g. Noise pollution h. Transportation problems i. Socio–economic/ cultural issues	Ecosystem destruction and interference; contamination of soils and sediments with petroleum–derived wastes; atmospheric emissions from fuel combustion and gas flaring/venting; environmental pollution (air, soil and sediments, controlled waters) and groundwater contamination; ecological problems in the host communities, adverse human health risks; safety related risks and interference with socio–cultural systems.
Decommissioning and rehabilitation: • Well plugging • Removal of installations and equipment • Site restoration	a. Physical closure/removal b. Petroleum-contaminated waste disposal c. Leave in situ (partial or total) d. Dumping at sea	Environmental pollution and human safety; pollution related to onshore and offshore operations; hazard to other human activities such as fishing and navigation; marine pollution, fishing and navigation hazards
Refining of petroleum products	a. Atmospheric emissions and air pollution b. Discharges of petroleum-derived wastes	Atmospheric emissions and air pollution; oil spillages; water effluents and production discharges
Transportation and distribution: • Pipelines • Barges, ships, tankers and FPSOs • Road tankers and trucks	a. Emissions and accidental discharges b. Discharges from transporting vessels e.g. ballast, bilge and cleaning waters	Air emissions (hydrocarbons from loading racks and oil spills); accidental discharges and operational failures; disposal of sanitary wastes; contamination of soils and sediments.
Marketing operations: • Product importation • Storage	a. Operational discharges b. Wastes disposal	Spillage; contamination of soils and sediments; emission of organic contaminants and environmental pollution.

Source: Ite, *et al*. (2013)

Table 4. Oil spills-related socio-economic and health issues with causes

Problems requiring immediate attention	Immediate causes	Underlying causes	Root causes
Poverty and hunger	Environmental degradation (oil spillage, soil degradation, water pollution)	Poor environmental performance and lack of enforcement of standards and regulations	Oil industry activities
Unemployment	Loss of livelihood	Major arable land acquisition and lack of adequate compensation	Oil industry activities
Underdevelopment	Lack of social infrastructure, corruption and lack of rule of law	Ethnicity-based politics and lack of patriotism	Poor governance
Low life expectancy (high maternal and child mortality)	Widespread transfer of bacteria, viruses and parasites, contaminating water resources, soil and food. Water pollution from oil spills	Water and sanitation crisis Local air pollution Poor diet and poor health	Oil industry activities Poor governance
Environmental degradation	Depletion of flora and fauna Water contamination	Destruction of habitats Oil spillage	Oil industry activities

Source: ECCR (2010)

5.Conclusions:

Striking the basics in sustainability

Sustainability in a broad sense means 'a development that meets the needs of the present generation without compromising the ability of future generations to meet their own needs' (WCED, 1987). It is important to state that in natural resource-rich areas like the Niger Delta region where over three-fifth of the people rely on the natural environment for their livelihood, the concept of environmental quality and sustainability should be well established (UNDP, 2010). This is because most of the residents rely on environmental resources through agriculture and fishing as sources of food and economic activities, which oil pollution significantly threaten with risks to their various human rights, summed up in their rights to live.

Oil spills on land and water not only destroy their crops, destroy their farm lands thereby causing damages to the quality and productivity of the soil, but also deprive them of portable water and fishing which is their major source of employment and food, while negatively creating a contaminated environment, their lives are also cut short as all these take negative tolls on their health. This is manifested in the drop in their life expectancy over the years as shown in Table 1. This position was shared by Nwankwo and Ifeadi (1988) who noted that the pollution of rivers and other environmental assets endanger the livelihood of the people and affect development altogether. Thus, the region is characterised by unemployment, a less than healthy population, poor infrastructure and non-existent amenities.

There is need for productive stakeholders' engagement with the oil-producing communities by oil multinational companies (MNCs) and government. While it is admitted that oil exploration will not stop, as the Niger Delta will continue to bleed, its blood must nevertheless be replenished; there is need for the stake-holding parties to respect each other's rights – human, economic, social and political. The oil MNCs must uphold and ensure the rights of the communities to health, livelihoods and a habitable environment. The government on its part needs not only formulate policies and laws that promote the optimum welfare of the residents of the Niger Delta region but to also be the arbiter between economic operators and the host communities. The

oil MNCs should as well adopt the principle of corporate social responsibility (CSR) and due diligence[5]in their dealings in the Niger Delta, addressing the human rights aspects affected by their exploration and other related activities. It is essential that social amenities and infrastructure are created to address certain costs of oil pollution on the Niger Delta region.

In order to effectively address the problem of oil spills in the Niger Delta, it will therefore be appropriate if the triple bottom line principle of sustainability in social development, economic development and environmental protection are seriously considered, which will enhance a bearable, equitable and viable society.

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[5] As defined by Professor Ruggie (cited in ECCR, 2010), due diligence is 'a process whereby companies not only ensure compliance with national laws but also manage the risk of human rights harm with a view to avoiding it'.

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