



POVERTY AND CLIMATE CHANGE IN THE NIGER DELTA 2013-2018

DENGIYEFA ANGALAPU & DITON BILA

Abstract

This paper set out to examine the nexus between poverty and climate change in the Niger Delta. Based on the theory of Social Production and Time-Series research design, it found out that, the Niger Delta is bedridden by endemic poverty and that has entrenched certain practices that cause environmental degradation. The foregoing has made the attainment of sustainable development appear vague thereby worsening the impact of climate change in the region. Thus, the paper recommended that government should make concerted efforts toward the implementation of poverty reduction programmes in the region as there is a strong nexus between poverty reduction, environmental sustainability and climate change.

KEYWORDS: Poverty, Climate Change, Sustainable Development, Environmental Degradation

Introduction

The environment sustains human existence on planet earth. As such, if man must survive, nature must also survive. However, the strange paradox of human existential struggle for development couched on industrialization and enhanced economic activism has led to the phenomenon of climate change (Adewusi, 2011). It is trite to note that apart from terrorism, there is hardly anything that has threatened the survival of man on earth in the twenty-first century more than the effects of climate change. In 2004, the chief scientist of the British government, Sir David King, argued that climate change is a far greater threat to the world's stability than transnational terrorism (Brown, Hammaill&McIeman, 2007; Dando, 2014). Terrorism itself, in many instances, is traceable to the effects of climate change which results in scarcity, limited availability or restricted access to resources thereby leading to poverty which is a major rallying point for the recruitment of terrorists (Adelaja, Labo&Penar, 2018; Jager, 2018; Lee, 2011; Ibaba, 2014).

It is a factual truism that climate change is a “global phenomenon, but its effects are localized, impacting on communities, without regard to who contributed to it” (Ibaba, 2012, p.3). Nevertheless, it is also true that it is not just the effects of climate change that are localized but the causes of it. Therefore, what is often seen as a global phenomenon is usually caused by different locals in their different enclaves. As such, the Niger Delta cannot also be exonerated from its negative contribution to the variation in earth's climate. Alfred (2015) has argued that “it would be seriously complicating to bring in the climate change debate to directly or remotely





blur and aggravate the Niger Delta question”(p.82). However, it is more fundamental that ignoring the climate change debate is tantamount to ignoring the very existence of the Niger Delta and all it is worth.

A great deal of studies has been conducted in respect to climate change and sustainable development in the region. Nevertheless, the bulk of the works done; blame the impact of climate change for the socio-economic, cultural, demographic and geographic deterioration of the Niger Delta while largely neglecting the contribution of the Niger Delta in worsening climate change. The few works available that pin points those activities that worsen climate change in the Niger Delta are often quick to blame the absence of sustainable development on the activities of multinational oil companies (MNOCs) operating in the area. It is an undisputable fact that most of the multinational oil companies have failed to apply good work ethics in the course of their operations in the region. However, this study contends that the activities of MNOCs do not stand alone in worsening the impacts of climate change in the region.

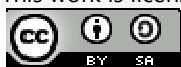
The task of this study therefore, is to prove with empirical evidence that activities of the inhabitant such as the operation of artisan or illegal refineries, use of noxious chemicals for fishing, deforestation occasioned by indiscriminate logging are equally yoked with that of the multinational oil companies (MNOCs) in the pollution of the environment thereby exacerbating the impacts of climate change in the Niger Delta. Similarly, this paper seeks to prove that the prevalence of the foregoing activities cannot be disassociated with the level of poverty in the region. Thus, the study revolves around the question: Is poverty positively associated with the involvement of inhabitants of the Niger Delta in activities that worsen the impact of climate change?

From What is Already Known to the Unknown

This study is not ignorant of the existing knowledge on the subject matter. An attempt therefore, has been made here to give a representative synopsis of what the literature already hold on poverty and climate change in the Niger Delta.

The subject of poverty and climate change has elicited different responses by scholars and policy makers. It has been argued that climate change causes scarcity, limited availability or restricted access to natural resources which leads to poverty (Ibaba, 2012 & 2015; Odoh&Chilaka, 2012; Olaniyi, Ojunkunle&Amujo, 2013). Similarly, it has been argued that the effects of climate change have worsened livelihood activities and exacerbated poverty in the Niger Delta region (Ibaba, 2012 & 2015; Etekpe, 2015; Akigbe&Ikporukpo, 2010; Sibiri, 2015; Akinola &Odulu, 2015; Okoye, 2015; Zibima, 2015; Onwumele, 2015; Ebele &Emodi, 2016).

The literature seem to be preoccupied with what climate change have contributed to worsen poverty in the Niger Delta while largely neglecting what poverty itself has contributed to deepen climate change and its impact in the Niger Delta. As such, the concern of this study is to explore the poverty-climate change nexus by providing empirical evidence of poverty induced activities by the inhabitants of the Niger Delta that negatively impact on earth's climate.





Theoretical Framework

As an explanatory device, this study adopts Ogban-Iyam's theory of Social Production and Reproduction. This theory posits that, the fundamental concern of human beings and perhaps other living things is survival and security. Similarly, for the human being to survive and have security he/she must produce and reproduce human needs/means of subsistence, including the production and reproduction of human kind (Ogban-Iyam, 2015, 2018^a & 2018^b).

The theory of Social Production and Reproduction holds that, what can be produced and reproduced at each point in time depends on a combination of the quality of labour power (physical strength, knowledge, and skills), non-human physical resources for production (tools and objects for applying the tools) and interpersonal relations of production (who decides what is to be produced, exchange, distributed and consumed as who does what and gets what is produced) (Ogban-Iyam, 2015 & 2018^b). The foregoing makes up the productive forces which determine the kind of socio-economic, political, cultural and geographical phenomena in society.

Application of the Theoretical Framework to Poverty and Climate Change

The above theoretical framework aptly captures the nexus between poverty and climate change in the Niger Delta. Drawing from the theory of Social Production and Reproduction, we can conveniently state that climate change itself is borne out of man's effort to produce and reproduce his human needs (Ibrahim, 2014; Adjugo, 2010; Amobi&Oyinshi, 2015). It is through man's effort to produce and reproduce his means of subsistence and his kind that he manipulates nature in such a manner that leads to variations in the climate system which alters the atmospheric composition of the earth and ultimately leads to global warming.

Furthermore, what is termed poverty could simply be described as the inability or limited ability of man to produce and reproduce his means of subsistence. Man is either poor because he lacks the mental and physical capability, the tools for production or the objects to exert his labour power in order to produce (Ogban-Iyam, 2018^b). Another dimension is that poverty can also result from the alienation of man from his labour through unfavourable social or interpersonal relations in the production process. However, no matter how it is been described, poverty is deeply rooted in the production process just as climate change.

Philosophy teaches that man has an innate desire to better his life and that feeling begins from cradle and only ends in the grave. As such, poverty which is a state of lack would most likely propel man to resort to activities that would lead to environmental degradation as he struggles to survive by producing and reproducing his means of subsistence through crude means due to the underdevelopment of the productive forces. Accordingly, inhabitants of the Niger Delta who are poor would most likely involve in activities that would worsen environmental degradation and contribute to the negative impact of climate change as it is a more fundamental truth that "man cannot live without bread" (Ake, 1981, p.1). Similarly, man engages in production with whatever tool(s) at his disposal. As such, man would most likely only think of how those tools hurt nature if he discovers or can afford an alternative that enables him produce





and reproduce his needs and yet, cause minimal harm to the environment. In other words, if he discovers that those tools hurt nature and he is unable to afford or build for himself a more environmental friendly one, he will mostly likely not stop producing and reproducing his needs with the crude one less he starves to death.

On this note, to the extent that other factors outside the production process (such as laws, religion, education, etc) can shape the attitudes of the Niger Delta inhabitants towards the practice of the principles of sustainable development, the desire for survival by producing and reproducing their human needs tend to have a more significant influence on them. This seems to be the reason why despite political and environmental campaigns, religious teachings and laws against the negative practices of the operation of illegal refineries, use of noxious chemicals for fishing, indiscriminate logging, hunting of endangered species etc, the goal of sustainable development in the region is still unattainable. Drawing from the theory above, the tentative answer (hypothesis) that would direct the data collection process of this work reads thus: poverty is positively associated with the involvement of inhabitants of the Niger in activities that worsen the impact of climate change.

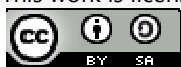
Methodology

In terms of methodology, this paper employed the Time-Series research design. This design is appropriate due to the presence of a periodic measurement process in the phenomenon been observed. Thus, this work examines the poverty-climate change nexus from 2013-2018. Therefore, the study examined the data on the threats and actual damages caused by climate change in the region within the time frame of this study. Similarly, the study examined the level of poverty in the Niger Delta to see whether or not there has been a decline. As such, data on the prevalence of poverty-induced activities which pose threats to sustainable development and worsen climate change has been examined in this study. Specifically, the study examined whether or not there is a prevalence of activities such as the proliferation of illegal refineries and high level of deforestation and their relationship with climate change in the region

Consequently, the study employed the methods of documentary observation, argumentation and personal reflections as a participant observer of some of the effects of climate change and poverty induced activities in the Niger Delta. Data was analyzed using Descriptive Statistical Method as tables were used to present the data and analysis was done using percentages

Climate Change and its Impact in the Niger Delta

Climate change refers to some discernible variations in the climate system that are attributable to human (anthropogenic) activities, particularly those that alter the atmospheric composition of the earth and ultimately lead to global warming. Global warming is the term used to describe the gradual increase in the average temperature of earth's atmosphere and its oceans (Tyokumbur, 2010). Although, other gases such as methane, chloroflucarbons, nitrous oxide, ozone, halocarbons and water vapour also





contribute, carbon-dioxide is largely blamed for the this warming (Arugu, 2014). It is estimated that CO₂, CFC, CH₂, H₂O contributes 55%, 24%, 15% and 6% respectively to global warming (Efe, 2008). Science has proved that every bit of carbon dioxide released into the atmosphere stays for hundreds of years, locking in heat (Klein, 2014).

Many people who think that climate change and its effect are futuristic, are either oblivious or being dismissive of the fact that it is already here with us (Allen, 2014). During the twentieth century, the earth’s global average surface temperature rose by approximately 1.08°F (0.6°C) and additional warming of more than 0.25°F (0.14°C) has been measured since 2000. This increase represents an extraordinary rapid rate of change compared to changes in the previous 10,000 years (USGCRP, 2009 in Amatari, 2015).

Climate change has had and still having weighty implications for man and the environment in the Niger Delta. The resultant effects of climate change includes increased coastal erosion, higher storm-surge flooding, inhibition of primary production processes, more extensive coastal inundation, changes in surface water quality and ground water characteristics, increased loss of property and coastal habitats, increased flood risk and potential loss of life, loss of non-monetary cultural resources and values, impacts on agriculture and aquaculture through decline in soil and water quality, and loss of tourism, recreation, and transportation functions (Abaje, Abashiya&Masuguri, 2017; Ibrahim, 2014; Olaniyi, Ojekunle&Amujo, 2013; Odjugo, 2010; Idowu, Ayoola, Opele&Ikenweiwe, 2011; Ibaba 2012 & 2015). Table 1 summarizes the impact of climate change in the Niger Delta.

Table 1: Environmental Problems linked to Climate Change in the Niger Delta

Climate Change Effect	Type of Environmental Problem	Impact on Environment
Sea Level Rise	(a) Coastal/river bank erosion	(i) Loss of coastal vegetation (ii) Destruction of settlements and economic infrastructure such as oil pipelines. (iii) Destroys farmlands, crops, and economic trees. (iv) removes top soil
	(b) Coastal Flooding	(a) enhances the intrusion into sea water into fresh water sources. (b) increases the salinity of surface and underground water. (c) worsens erosion. (d) removes top soil. (e) destroys settlements and infrastructure such as roads. (f) destroys farmlands and crops
Change in Rainfall Pattern	Makes the dry and rainy season unpredictable.	Disrupts agricultural activities and reduces crop yield

Source: Adapted from Uyigue and Agoh, (2007, p.8-12); Efe, (2010, p.2-3); Onuoha and Gerald, (2010, p.11-19) cited in Ibaba, (2012)





The table above paints a general picture of the devastating impact of climate change in the region. Table 2 is even more revealing on the potential loss to coastal erosion and its effect on the inhabitants in the region.

Table 2: Potential Land Loss to Coastal Erosion and Estimated Number of Persons that could be displaced

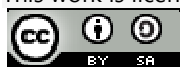
Estimated land loss to coastal erosion (km ²)		Estimated Number of Persons likely to be displaced (millions)	
Low Estimates			
Sea level rise (metre)	Land Loss	Sea level rise	Number of displaced persons
0.2	2,846	0.2	0.10
0.5	7,453	0.5	0.25
1.0	15,125	1.0	0.47
2.0	18,398	2.0	0.21
High Estimates			
0.2	2,865		
0.5	7,500		
1.0	15,332		
2.0	18,803		

Source: Adapted from Awosika, et al, cited in Uyigüe and Agho, (2007 p.9) cited in Ibaba (2012)

The statistics displayed above shows that the impact of climate change in the Niger Delta is far reaching. As such, there is hardly a community in the Niger Delta that is free from the scourge of climate change. Table 3 paints a general picture of the Niger Delta situation.

Table 3: Projected Effects of Climate Change on Selected Communities in the Niger Delta 1990-2013

Characteristics						
S/No	Community (Table 1)	Livelihood (Local Economy)	Health Hazard	Security	Exacerbated poverty levels	Remarks
1.	Famgbe, Yenagoa, Bayelsa State	-Entire village relocated as old village was submerged by River Nun (Oceanification) -Undue Stress on available land. -Acid rain -28,540 internally	-Epidemics in water borne disease-malaria, typhoid, etc. -physically challenged babies (PCB) -High death rate. -Respiratory	-Inter/Intra communal crises. -Increased conflicts with community leaders, MNOCs and governments.	-Destroyed farm lands and fishing activities and other local economic activities. -Increased poverty level by 45 percent	No shore protection or concrete measures by the state government in place to control erosion/ mood slide





		displaced persons IDPs.	problem			
2.	Otuokpoti; Ogbia Bayelsa State	-Shore has been submerged by River Nun (river erosion)	-High incidences of water borne diseases causing high death rate -outbreak of skin disease -Respiratory problem	-Inter communal war with Agbura community over land in 1990. -Perennial conflicts with MNOCs	-Destruction of logging, fishing, hunting etc. -Exacerbated poverty level by 39%	-shore protection by MelfordOkilo government in 1982. But needs reinforcement
3.	Sagbagreia, Kolokuma/ Opokuma, Bayelsa State.	-Greater part of the village relocated being submerged by River Nun (river erosion) -Undue stress on available land for farming, building and other economic uses. 8450 IDPs -Unusual heavy acid rains	-Increased death rate from acid rain water that caused cancer, skin disease, lung cancer and water borne ailments.	-Communal crises over land and fishing rites. -perennial conflicts with MNOCs.	-ditto- Exacerbated poverty level by 35%.	No shore protection or concrete measures by the state government in place to control erosion/ oceanification
4.	Agbere, Sagbama, Bayelsa State.	-Greater part of the shore has been submerged due to erosion. (River Nun) -Undue stress on available land. -10,540 IDPs -Undue flooding	-ditto- 11	-ditto-	-ditto- -Exacerbated poverty level by 54%	-ditto-
5.	Patani, Pantani, Delta State.	-ditto-	-ditto- 40,410 IDPs	-ditto-	-ditto- Increased poverty level by 58%	Shore protection by OMPADE in 1995
6.	Ibeno, Ibeno, AkwaIbom	The shore has been eroded/submerged by Atlantic ocean (oceanification) -Undue flooding and stress on	-ditto-	-ditto- -Increased poverty level by 48%.		No shore protection.





		available land, fishing rites, etc. -20,160 IDPs				
7.	Abonnema, Akuku-Toru, Rivers State.	Greater part of the shore has been eroded, causing undue stress on available land -Occasional acid rain. -12,850 IDPs.	-High incidences of water borne diseases. -outbreak of epidemic diseases. -respiratory problem/	-dotto- -Exacerbated poverty level by 26%	Intra-Inter communal clashes over land and fishing rites. -with Degema Community. -Increased poverty level by 41%	Shore protection by OMPADEC in 2004

Source: Etekpe, (2015)

The table above have highlighted some of the impacts of climate change on the socio-economic and health of communities in the Niger Delta. Indeed, climate change has disarticulated the local economy of the region making the traditional occupation of fishing and farming unprofitable. Table 4 substantiates this point.

Table 4: Damage to Agricultural Crops in Niger Delta (Orashi Province) Linked to Climate change Effects

Agro Crops	Area Damaged (000ha)	Yield Loss (tons/ha)	Projected Production Loss (hundred tons)	Projected Loss in Monetary Terms (USD)
Cassava	3.7	25.1	4.1	105,000.00
Yam	2.0	12.4	2.5	74,217.00
Plantain	1.5	19.1	3.7	102,000.00
Banana	1.1	14.9	1.4	53,000.00
Cocoyam	0.5	X	0.7	5,000.00
Potatoes	1.5	5.7	0.9	7,000.00

Source: Adapted from Mmom&Aifesehi, (2013:223) cited in Ibaba (2012)

Another negative dimension of the effect of climate change is that it results in serious infrastructural decay in the Niger Delta. The manifestation of climate change such as flooding, erosion, acid rain, etc, have cost the region the loss of huge capital projects and revenue. Table 5 highlights the damage of the 2012 flood to infrastructural facilities in Bayelsa State





Table 5: List of Infrastructure Impacted During the 2012 Flood in Bayelsa State

Names of Town	Facilities	Remark
Amassoma	Amassoma – Tombia Road, Schools, Health Institutions, etc.	A section of Amassoma – Tombia road was cut off, schools and health institutions were submerged.
Okolobiri	Telecommunication base stations	Submerged and no communication during the period of the flood.
Biseni	Roads, Health Institutions, Schools.	All the roads were washed off, health institutions and schools were submerged.
Kolo/Imiringi	Roads, Bridges, Culverts, Schools, Health Institutions	All the roads, culverts and bridges along Yenagoa – Kolo/Imiringi road were washed off, schools and health institutions were submerged.
Olugboboro	Health Center, internal road	Health centre, internal roads were submerged.
Azikoro	Transformer and telecommunication base station	They were all submerged
Peremabiri	Health institutions, community generator, schools.	All were submerged
Ekowe	Schools, Health centre.	Were all submerged
Elebele	Roads	AIT – Elebele road was destroyed.
Ayamasa	Schools, Health Centre	Submerged
Odi	School, Health institutions, internal roads	Destroyed, schools and health centre were submerged.
Kaiama	Roads, Schools, Health Institutions.	Part of the East – West road along Kaiama was washed away, schools, health centres were submerged

Source: Arugu (2014)

Poverty and the Emergent Livelihood Activities in the Niger Delta

The Niger Delta region which produces over 90 percent of Nigeria’s revenue is quintessence of poverty (Agboola and Amoo 2010; Etekpe, 2009). The daunting level of poverty in the region made Asuka (2010) liken poverty to “a blood brother and stranger that has come to settle with the people” (p.139). Asuka, (2010) further stated that, “poverty pervades the Ijaw environment” (p.139). At least, half of the residents in Niger Delta live on \$2 or less a day and spend over half of their total incomes on food (SDN 2013). The issue of poverty in the Niger Delta is an undisputable reality as many scholars and writers agree that the Niger Deltans are poor (Ejituwu 2004; Eppeh, 2001; Anemi, 2006; Ijaw National Congress, 2006; Ibaba, 2005; Amakiri, 2003; Alamieyeseigha, 2005 cited in Asuka, 2010). Table 6 highlights the level of poverty in states that make up the Niger Delta

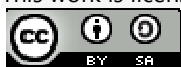




Table 6: Poverty Rates and Population Living in Poverty in the Niger Delta (2004 and 2010)

State	2004 Poverty Rate	Projected Populatoion 2005	Estimated Population Living in Poverty	2010 Poverty Rate	Projected Population 2010	Estimated Population living in Poverty
Akwa-Ibom	34.8	3,343,000	1,163,364	53.8	3,895,000	2,095,510
Bayelsa	20.0	1, 710,000	342,000	47.0	1,992,000	936,240
Cross River	41.6	2,736000	1,138,176	52.9	3,187,000	1,685,923
Delta	45.4	3,964000	1,677,076	63.6	4,186,000	2,662,296
Edo	33.1	3,018,000	1,019,811	66.0	3,516,000	2,320,560
Rivers	29.1	4,858000	1,413,678	50.6	5,659,000	2,863,454

Source: Ibaba and Etekpe, (2013) in Ogban-Iyam (2018).

According to the UNDP (2006), the region's human development index (HDI) figure of 0.453 rates below countries or regions with comparative oil resources such as Saudi Arabia (0.800 in year 2000), and in 2003, UAE (0.849), Kuwait (0.844), Libya (0.772) and Venezuela (0.697). Similarly, Amakiri (2003) cited in Asuka (2010) revealed that, “the poverty index in the Niger Delta is put at about 80% based on the survey carried out in the area. The female gender constitutes a greater portion of this percentage due to low education, lack of skills and lack of access to micro credit facilities” (p.378).

The Niger Delta’s public health profile is miserable: only half the population have access to safe drinking water, life expectancy is only 47 years, patients can travel an average of 52 miles to see a doctor, 1 in 5 children die before their fifth birthday and student-teacher ratios can be over 100:1 (SDN, 2013). Also, unemployment which is an indicator of poverty has been identified as one of the root causes of illegal bunkering and artisanal refining in the Niger Delta region. A very high number of youths within the Niger Delta region are unemployed. The National Bureau of Statistics, 2005 employment figures show that millions of Niger Delta youths, perhaps 4 out of 7, were unemployed and many had never worked before. The table 7 below measures some indicators of poverty in the region.

Table 7: Selected Development indicators in the Niger Delta

Indicators	Estimated Size
HDI ranking	0.564
Life expectancy	43 years
Poverty measured by income and food intake	71.22%
Access to pipe-borne water	6.40%
Access to electricity	34.3%

Source: NDTCT, (2008); Adeyemo, (2008) cited in Ibaba, (2012).





Poverty resulting from the dislocation of the local economy due to oil exploration has introduced a new socio-economic order in the Niger Delta. The poor in the region in their quest to survive, have devised new ways of interacting with the environment which now pose threats to sustainable development and exacerbate the effect of climate change. The new socio-economic order is a departure from the traditional practices of fishing, canoe carving, farming etc, which was the pride of the Niger Delta (Ijaw man). Among the various adaptation strategies of the poor are the operation of illegal refineries and deforestation occasioned by indiscriminate logging. The duo seems to pose greater threats to sustainable development and worsens the impact of climate change in the region.

The Operation of Illegal Refineries

In many communities located along the coastal line in the Niger Delta, there are illegal bunkering sites where sweaty young men and women labour underneath massive cauldrons set across fires of wood hewn from mangrove trees to eke out a living in a crude way. According to the Stakeholders Democratic Network (SDN) in their report, titled, “Communities Not Criminals”, an estimated 150,000 barrels of crude oil are stolen every day in Nigeria. The vast majority of this is sold internationally, but approximately 25% stays in the Niger Delta for refining and consumption. The above implies that an estimate of 37,500 barrels of crude oil is refined in the Niger Delta every day (SDN, 2013).

The above might appear fictitious, however, it was reported that the Nigerian Security and Civil Defense Corp (NSCDC) destroyed 250 illegal refineries in a single year (Haruna, 2016). Similarly, Brisibe (2018) reported on the discovery of 30 refineries illegal refineries with capacity to refine between 3 to 4 million litres of diesel daily. More so, Navy Captain Victor Choji, stated that the Navy destroyed 50 illegal refineries in three weeks between June and July, 2018 (Akasike, 2018).

Deforestation

Another glaring indicator of the lack of sustainable development in the Niger Delta is the increasing rate of deforestation. Despite its negative consequences on the environment, deforestation remains unabated as rural livelihood in this region largely depends on the mangrove forest and its resources (Prince & Samuel, 2010). There is a high rate of indiscriminate logging, uncontrolled timber harvesting, clearing and cultivation in forest reserves and unplanned urban expansion (Enaruvbe&Atofo, 2014). The increasing demand for food and fossil fuel resulting from population increase and the lack of alternative sources of income, coupled with an increase in the poverty level have exerted more pressure on the forest and its resources in the region (Enaruvbe&Atofo, 2014; Felix & Akintola, 2015). Table, 8 shows the intensity of the use of wood as fuel in the region.





Table 8: Fuel Wood Usage in the Niger Delta

State	Population (based on 2006 census report)	Fuel Wood Usage (%) of Population
Akwa-Ibom	3,902,051	81.0 or 3,160, 661
Bayelsa	1, 704,515	57.6 or 981,00
Cross River	2,892,988	79.6 or 2,308,604
Delta	4,112,445	76.6 or 3,150,132
Edo	3,233,366	78.7 or 2,544,659
Rivers	5,198,716	65.2 or 3,389,562

Source: Audu, (2013)

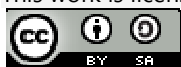
The data displayed above is quite worrisome as it has far reaching implications on sustainable development. There is no doubt that deforestation in the Niger Delta has resulted to a reduction in biodiversity and a high level of carbon emission (Mobolaji & Morenikeji, 2015; Felix & Akintola, 2015). This scenario is worrisome as the study conducted by Enaruvbe and Atafu, (2014) reveals that, the rate of deforestation in the area between 2002 and 2013 is higher than the average rates in other parts of Nigeria within the period of study.

The Poverty-Climate Change Nexus: Poverty as an Albatross to Sustainable Development

The preceding sections of this paper have established that the Niger Delta is plagued with the adverse effects of climate change and largely bedridden by poverty. Thus, the task here is to explore the poverty-climate change nexus by interrogating those poverty-induced activities that undermine sustainable development and invariably worsen climate change in the Niger Delta region. In exploring the interface between poverty-induced activities that negates the principles of sustainable development that worsen the impact of climate change in the region, interviews conducted by NGOs and media editorials were relied upon.

In a ground breaking study conducted by the Stakeholders Democratic Network (SDN) titled, “Communities Not Criminals” which involved the interview of 120 respondents, they reported that all respondents affirmed that poverty is the major cause of the operation of illegal refineries. One respondent who tried to justify his involvement in illegal refinery was quoted to have said, “Regarding our suffering, the government has done nothing, we have oil wells, but no benefits and no employment” (SDN, 2013, p.6). According to the report, this sentiment was expressed time and time again across the communities interviewed, providing strong local justification for illegal oil refining being a community right. Another interviewee was quoted to have said:

The government and oil companies are collecting our oil, and we don't have jobs, no money, so we have to collect the oil and refine our own. We have no fish in these creeks because of pollution; even the few farmers we have, their farm lands have been polluted with oil, so they all joined the practice of illegal oil refining” (SDN, 2013, p.6).



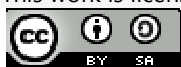


Similarly, participants in the focus group discussion conducted by the SDN (2013) described their participation in illegal oil refining as a necessary and a justified form of economic self-help. A participant thus said, “What leads to bunkering is joblessness. In order to survive you have to get involved. When you don’t make enough to live on, when government provisions don’t go around, people have to fight for themselves by involving in illegal oil refining” (SDN, 2013, p.39). Another participant added that they could not stop the business even as they knew it is inimical to their health and the environment because they “train their children with proceeds from the business, and feed their extended families with earnings from the business” (SDN, 2013, p.40)

Also, an interview reported Rose (2012) in a publication titled, “Nigeria’s Booming Illegal Oil Refineries” quoted a respondent who prefers only to be known as Andy to have said that, “the operation of illegal refineries is very dangerous, but there is nothing else we can do in order to make a living” (p.1). Another of their respondent, Edward aged 32 also stated that, “almost 400 people work here and every night we produce around 11,000 litres of diesel”. Similarly, Yakubu Dogara, the Speaker of House of Representatives stated that, “illegal refineries are spillovers of the militancy in the Niger Delta region allegedly due to joblessness, poverty and hunger.” (“Dogara: Why illegal refiners thrive in Nigeria”, 2017). More so, ex-artisanal refiners in Ogoni who were led by Mr. Elvis Ikoma and Domka Humphrey told the Minister, Alh. Jibrin who represented the federal government on a consultative meeting that they can only leave local refining when federal government shows commitment to the enhancement of their livelihood. Mr. Domka Humphrey was further quoted to have stated that;

Sir, I will tell you our minds, if you don’t empower us, we will not stop refining, because this is what we use to feed our families and relatives. We don’t have anything doing after government takes away the pipeline surveillance from us. So we need to be carried along, some of us are graduates, many people are still in the bush refining, if you empower us, we will talk to them and they will leave the bush. But where we are not seeing anything, it will be difficult for us to leave the illegal refining. (“We Can’t Stop Local Refining except you empower us – Ogoni Refiners tells” FG, 2017).

From the above, it has been clearly established that there exist a strong nexus between poverty and the operation of illegal oil refineries which in turn affects sustainable development and exacerbate climate change. Poverty and illegal oil refining are not just epiphenomenal concepts but the data above makes it clear that there is a causal relationship between the former and the latter. Crude oil theft and the illegal oil refining business creates jobs, feeds and supports families, support small businesses and social aspirations of many Niger Delta communities. Interviewees from the SDN study reportedly described illegal oil refining as an entrepreneurial, free market response to local economic dysfunction, socioeconomic pressures and government’s



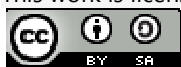


failure to provide basic services. However, the operation of illegal refineries exacerbates climate change and undermines sustainable development. Artisanal processing of crude oil leaves a large volume of unused and unprocessed crude deposited into the soil and water bodies. Community members interviewed expressed the following sentiments: “Bunkering has affected our environment negatively. For us who go into the camps to buy; we see the way they pour the waste in a very shallow pit. But we have also built houses with the money from this business (SDN, p.28). AsariDokubo who pioneered the ‘kpo-fire’ (illegal oil refining) in the region now loathes the illicit trade and regrettably said, “kpo-fire has surpassed shell and other oil companies 50 years plus of environmental degradation in the Niger Delta region” (“Kpo Fire! Crude, Oily Way of Eking out a Living, 2015”). Brig. Gen Kevin Aligbe stated that “30 per cent of the volume of crude stolen by illegal refiners is converted to products, adding that the remaining 70 per cent was wasted and dispersed in the surrounding environment near the camps” (Brisibe, July, 2018).

More so, the actions by security agencies in their effort to rid the Niger Delta of illegal refineries also result in further pollution of the environment as they often resort to the unorthodox means of burning and depositing the stolen crude into the soil, creeks and other water bodies. No doubt, illegal oil refining poses enormous dangers to the Niger Delta environment as it affects the sustainability of the fauna and flora of the environment (Ibaba&Olumati, 2009). Thus, the Shell Petroleum Development Company Limited (SPDC) has stated that “Oil spills due to crude oil theft and sabotage of facilities, as well as illegal refining cause the most environmental damage from oil and gas operations in the Niger Delta (Akpan and Brisibe, 2018). It pollutes the air and emits dangerous gasses into the atmosphere resulting in ozone layer depletion which invariably exacerbates climate change.

Similarly, a good number of the poor who are not involved in illegal refining of oil are implicated in at least one of the following activities that hurt nature: deforestation, hunting of endangered species and the use of chemicals for fishing. Among the foregoing, proliferation of illegal refineries and deforestation whether through indiscriminate logging or farming activities are most detrimental to climate change. The forest not only serves as man’s source of daily bread but also a natural protective belt against the impacts of climate change such as; increased coastal erosion, higher storm-surge flooding, landslides and others. The importance of the forest cannot be overemphasized. As such, a good lecture on climate change can hardly be delivered without recommending afforestation.

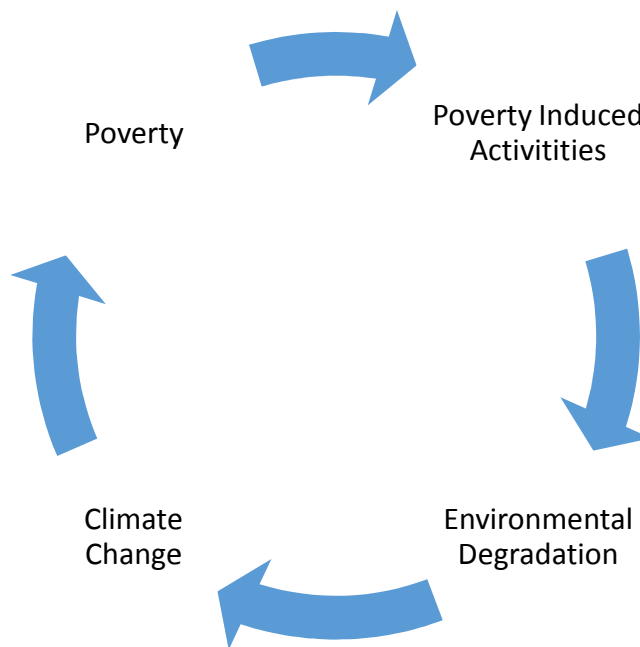
It is pertinent to note that, there is a serious depletion of the forest in the Niger Delta. However, the literature agrees that the region is grossly in lack of infrastructural amenities. This implies that it is not the infrastructural development activities of government that has depleted the forest so much. This logically means, poverty-induced activities such as indiscriminate and unsustainable logging have contributed much more to deforestation in the region. Asuka (2010) noted this point when he contended that:



The inability to conserve environmental resources such as cutting down of all available trees for energy needs, the killing of the smallest of fish in ponds and creeks, the use of harmful chemicals in fishing; and others is an example of degradation also caused by man. Poverty in the Niger Delta has caused the degradation of their environment by the people which in turn creates problems for sustainable development in the area. (p. 378-379)

It is therefore, the position of this study that as poverty worsens in the Niger Delta due to policy failure and the impact of climate change, poverty-induced activities that are inimical to the environment invariably intensifies. Furthermore, as poverty-induced activities intensify, the natural livelihood activities such as fishing and farming deteriorate as the land and water sources are contaminated. Due to the foregoing, only few other economic opportunities exist outside of illegal oil refining and forest harvesting as such, the vicious circle continuously intensifies. Figure 1 captures the argument of this study.

Fig. 1: The Poverty-Climate Change Circe



Source: Author

The above shows that there is a vicious continuous and infinite loop between poverty and climate change. Consequently, the poverty induced activities of the inhabitants of the Niger Delta cannot be disassociated from the variation in earth's climate and resultant devastating impacts in the Niger Delta region.



Concluding Summary

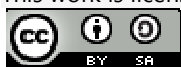
This work clearly established the poverty-climate change nexus. The literature has been preoccupied with the devastating impacts of climate change in worsening poverty (climate change-poverty nexus) in the Niger Delta while largely neglecting the devastating impacts of poverty on the climate. Thus, this study substantiated that there is a vicious continuous loop between poverty and climate change. Consequently, poverty induced activities of the inhabitants of the Niger Delta cannot be disassociated from the variation in earth's climate and resultant devastating impacts in the Niger Delta region.

It is the position of this study that the inverse relationship between poverty-induced activities and sustainable development in the Niger Delta has made state legislations on environmental protection, campaigns against environmental pollution carried out by government and non-governmental organizations ineffective and sustainable development appears elusive. This is because, the quest for survival, despite the harsh reality of poverty in the region, determines the response pattern of citizens to legislations, campaigns and military actions intended to protect the environment, strengthen sustainable development and ameliorate the impact of climate change in the region.

This paper recommends that, poverty reduction strategies should be made an integral part of climate change governance in Nigeria and Niger Delta in particular. Similarly, existing schemes on poverty reduction should be vigorously and sincerely pursued. This is as any stabilization, adaptation and mitigation strategy that neglects poverty reduction would likely fail as poverty is a major clog in the wheel of progress in the pursuit of a sustainable environmental development and a better world.

References

- Abaje, I. B., Abashiya, M., Onu, V., & Masuguri (2017). Climate Change Impact and Adaptation Framework for Rural Communities in Northern Nigeria. *JORIND*, 15(2), 142-150.
- Adelaja, O. A., Labo, A., & Penar, E. (2018). Public Opinion on the Root Causes of Terrorism and Objectives of Terrorists: A Boko Haram Case Study. *Terrorism Research Institute* 12 (3), 35-49
- Adewusi A.K.P (2011). *The Environment: Law and Management in Nigeria*, Lagos: Hybrid Consult
- Adjugo, (2010). General overview of Climate Change Impacts in Nigeria. *J Hum Ecol.* 29(1), 47-55
- Agboola F & Amoo E, (2010). *Poverty Situation amongst Women in the Niger Delta: A way forward*. Proceedings of the First International Conference of the Department of Political Science, Niger Delta University, Wilberforce Island, Bayelsa State in collaboration with Center for Applied Environmental Research, University of Missouri, Kansas City, United States of America. pp 278 – 285
- Akasike, C., (2018, July 21). Navy destroys over 50 illegal refining sites with swamp buggies. *Punch*. Available at <https://punchng.com/navy-destroys-over-50-illegal-refining-sites-with-swamp-buggies/> accessed 20th September, 2018



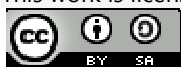


- Ake, C. (1981). *A Political Economy of Africa*. New York: Longman
- Akigbe, P.J &Ikporukpo, I (2015). Oil Pollution, Climate Change and the Feminization of Poverty in the Niger Delta Region, Nigeria.In Ibaba S.I (Eds) *Climate change, human security and development in the Niger Delta* (pp. 182-193). Proceedings of the First National Conference of the Centre for Niger Delta Studies, Niger Delta University, Wilberforce Island, Bayelsa State.
- Akpan, U. and Brisibe, P, (2018, June 5). Panic as oil theft, illegal refining increase in Niger Delta. *Vanguard*. Available at: <https://www.vanguardngr.com/2018/06/panic-oil-theft-illegal-refining-increase-niger-delta/> accessed 20th September, 2018
- Alfred, C (2015). Bracketing the Niger Delta Question from the Climate Change Debate. In Ibaba S.I (Eds) *Climate change, human security and development in the Niger Delta* (pp. 79-81). Proceedings of the First National Conference of the Centre for Niger Delta Studies, Niger Delta University, Wilberforce Island, Bayelsa State.
- Allen, F. (2015). Climate Capitalism and Failure of Policy: The Real Threat to Human Security, In Ibaba S.I (Eds) *Climate change, human security and development in the Niger Delta* (pp. 10-15). Proceedings of the First National Conference of the Centre for Niger Delta Studies, Niger Delta University, Wilberforce Island, Bayelsa State.
- Amatari, V. (2015). Integrating Climate Change Science into Formal and Non-Formal Education in the Niger Delta, Nigeria.In Ibaba S.I (Eds) *Climate change, human security and development in the Niger Delta* (pp. 90-95). Proceedings of the First National Conference of the Centre for Niger Delta Studies, Niger Delta University, Wilberforce Island, Bayelsa State.
- Amobi, D. &Onyishi, T. (2015). Governance and Climate Change in Nigeria: A Public Policy Perspective. *Journal of Policy and Development Studies*. 9(2), 199-210 DOI: 10.12816/0011217
- Arugu, L.O. (2015). *Climate Change and Infrastructural Decay in the Niger Delta*. In Ibaba S.I (Eds) *Climate change, human security and development in the Niger Delta* (pp. 124-130). Proceedings of the First National Conference of the Centre for Niger Delta Studies, Niger Delta University, Wilberforce Island, Bayelsa State.
- Asuka, T.T., (2010). *Ijaw World View and Struggle for Self Determination in the Niger Delta (In Robert Ebizimor's Song)*, Ibadan: Stirling-Horden Publishers Limited
- Audu, E (2015). Fuel Wood Consumption and Desertification in Nigeria. *International Journal of Science and Technology*, Vol. 1(1), 1-5
- Brisibe, P. (2018, July 4). Illegal refineries: Environmentalists fault JTF on safe measure. *Vanguard* Available at <https://www.vanguardngr.com/2018/07/illegal-refineries-environmentalists-fault-jtf-on-safe-measures/> accessed 20th September, 2018
- Brown, O., Hammill, A., &Mclemman, R. (2007). Climate change as the 'new' Security *International Affairs*. 83(6), 1141-1154
- Dando, V. W. (2014). *A comparison of the reporting of climate change and terrorism in the British press*. A thesis submitted to Cardiff University in fulfillment of the requirements for the Degree of Doctor of Philosophy. Available at: <https://orca.cf.ac.uk/73060/1/2015dandvphd.pdf>



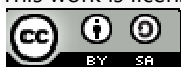


- Dogara: Why illegal refiners thrive in Nigeria (2017, February 3). *Daily Trust*. Retrieved from: <https://www.dailytrust.com.ng/news/business/dogara-why-illegal-refineries-thrive-in-nigeira/183735.html> accessed 20th September, 2018
- Ebele, E.E and Emodi, V.N. (2016). Climate Change and Its Impact in Nigerian Economy *Journal of Scientific Research & Reports*. 10(6), 1-13.
- Efe, S. I. (2008). *Climate Change and Flood Harzard in the Niger Delta*. A Paper presented at the First International Conference of the Department of Political Science, Niger Delta University, Wilberforce Island, Bayelsa State in collaboration with Center for Applied Environmental Research, University of Missouri, Kansas City, United States of America. pp 902 – 917
- Enaruvbe, G.O &Atafo, O.P (2014): Analysis of deforestation pattern in the Niger Delta region of Nigeria, *Journal of Land Use Science*. 11 (1), 113- 130 DOI: [10.1080/1747423X.2014.965279](https://doi.org/10.1080/1747423X.2014.965279)
- Etekte A. (2009). *Policy option and Adaptation: A Comparative Study of the Niger Delta and other Deltas of the World*. Talent World Publishing. Lagos, Nigeria.
- Etekte, A. (2015). The Challenges of Climate Change on Livelihood and Sustainable Development of Selected Coastal Communities in Nigeria's Niger Delta (1990-2013). In Ibaba S.I (Eds) *Climate change, human security and development in the Niger Delta* (pp. 216-228). Proceedings of the First National Conference of the Centre for Niger Delta Studies, Niger Delta University, Wilberforce Island, Bayelsa State
- Felix, T.A & Akintola, O (2015). Proceedings of the first National Conference on Climate Change Human Security and Development in the Niger Delta by the Centre for Niger Delta Studies, Niger Delta University: 194-203
- Haruna, A., (2016, July 17). 250 Illegal refineries Uncovered, Destroyed in Niger Delta. *Premium Times*. Retrieved from: <https://www.premiumtimesng.com/news/top-news/207057-250-illegal-refineries-uncovered-destroyed-niger-delta> on 20th September, 2018.
- Ibaba S. I. (2015). Post 2015 Development Agenda in the Niger Delta: The First Millenium Development Goal (MDG1) and adaptation to Climate Change, In Ibaba S.I (Eds) *Climate change, human security and development in the Niger Delta* (pp.43-61). Proceedings of the First National Conference of the Centre for Niger Delta Studies, Niger Delta University, Wilberforce Island, Bayelsa State.
- Ibaba S.I & Olumati J.C (2009). Sabotage Induced Oil Spillages and Human Rights Violation in Nigeria's Niger Delta. *Journal of Sustainable Development in Africa*. 11(4), 51-65
- Ibaba, S. I. (2012). *Climate Change and the Risk of Violent Conflict in Post-Amnesty Niger Delta*. Niger Delta University Publishers Limited
- Ibaba, S.I (2014). Poverty Trap and Violent Conflicts in the Niger Delta: Exploring the Implications for Post Amnesty Peace Building. *Journal of Behavioural Sciences and Development Studies*, 1(2), 1-28
- Ibrahim, Y.E. (2014). *Climate Change and Food Security in Nigeria*. Research Gate Conference Paper available at <https://www.researchgate.net/publication/263058742>
- Idowu, A.A., Ayoola, S.O., Opele, A.I. & Ikenweibe (2011). Impact of Climate Change in Nigeria. *Iranica Journal of Energy & Environment*. 2(2), 145-152.





- Jager, M., (2018). *Does Poverty Cause Terrorism?* International Institute for Counter Terrorism Herzliya available at <https://www.ict.org.il/>
- Klein, N. (2014). *This Changes Everything: Capitalism vs the Climate*. Canada, Knopf
- Kpo Fire! Crude, Oily Way of Eking out a Living (2015, March 29). *Daily Times*. Retrieved from: <https://dailytimes.ng/kpo-fire-crude-oily-way-of-eking-out-a-living/on-September-2018>
- Kumar, M. S. (2009). Climate Change and Development: Will Growth End Poverty or the Planet? In McCann, G and McCloskey, *From Local to Global Key Issues in Development Studies* (pp. 119-134). New York: Pluto Press
- Lee, A. (2011). Who Becomes a Terrorist? Poverty, Education and the Origins of Political Violence. *World Politics*. 63(2), 203-245
- Mobolaji A. I & Morenikeji, A.O (2015). Wild Fauna Conservation in Nigeria. *Environment and Natural Resources Research*. 5(3), 97-108
- Odoh S. I. and Chilaka F. C. (2012). Climate Change and Conflict in Nigeria: A Theoretical and Empirical Examination of the Worsening Incidence of Conflict Between Fulani Herdsmen and Farmers in Northern Nigeria. *Arabian Journal of Business and Management Review (OMAN Chapter)*. 2(1), 110-124
- Ogban-Iyam, O. (2018^a). *Nigeria: The Challenges and Prospects of National Unity Revisited*. A Paper Delivered at the Faculty of Social Sciences Seminar Series, Niger Delta University.
- Ogban-Iyam, O. (2005). Social Production and Reproduction, Societal Conflicts and Challenge of Democracy in Nigeria, *University of Nigeria Journal of Political Economy*. 1 (1), 1-51
- Ogban-Iyam, O. (2018^b). Confronting the Challenge of Domestic Terrorism in Nigeria, in Ibaba, S. I., Ogban-Iyam, O. and Etekpe, A. *Nigeria and the Challenges of Domestic Terrorism* (pp. 293-304). Wilberforce Island: Department of Political Science, Niger Delta University.
- Okoye, A.C., (2015). *Climate Change and the Challenges of Millennium Development Goals*. In Ibaba S.I (Eds) *Climate change, human security and development in the Niger Delta* (pp.168-181). Proceedings of the First National Conference of the Centre for Niger Delta Studies, Niger Delta University, Wilberforce Island, Bayelsa State
- Olaniyi, O. A., Ojekunle Z.O. & Amujo B. T. (2013). Review of Climate Change and Its Effect on Nigerian Ecosystem. *International Journal of African and Asian Studies - An Open Access International Journal*. 1(1), 55-65
- Rose, W. (2012, July 26). Nigeria's booming illegal oil refineries. *BBC* Retrieved from <https://www.bbc.com/news/world-africa-18973637>. Accessed June 11, 2018.
- Sibiri, S.A (2015). *Convergent Effects: The Socio-Economic Impacts of Climate Change and Artisanal Refineries in Silver Creek*. In Ibaba S.I (Eds) *Climate change, human security and development in the Niger Delta* (pp.114-123). Proceedings of the First National Conference of the Centre for Niger Delta Studies, Niger Delta University, Wilberforce Island, Bayelsa State
- Stakeholders Democratic Network, (2013). *Communities not Criminals: Illegal oil refining in the Niger Delta, Trying to understand an informal economy*. Retrieved from www.stakeholderdemocracy.org accessed on 20th September 2018
- Tyokumbur E. (2010). *Environmental Practices for Human Well-Being*. Hope Publications Ltd. Ibadan, Nigeria.





We Can't Stop Local Refining except you empower us – Ogoni Refiners tells FG (2017, August 11). *Scan News*. Retrieved from; www.scannewsnigeria.com/featured-post/we-cant-stop-local-refining-except-you-empower-us-ogoni-refiners-tells-fg/ on 20th September, 2018

Zibima, T (2015). *Climatic and Environmental Challenges in the Niger Delta: Emergent Livelihood Activities as Coping Strategies*, In Ibaba S.I (Eds) *Climate change, human security and development in the Niger Delta* (pp.204-215). Proceedings of the First National Conference of the Centre for Niger Delta Studies, Niger Delta University, Wilberforce Island, Bayelsa State

Author's Profile

Diton Bila is a Political Scientist and a researcher that is interested in various aspects of development and its impact on women. Diton Bila is a feminist by ideology and consequently, she is a strong advocate for the removal of the socio-cultural constraints to effective participation of women in the development process. As a researcher, Diton Bila has concerned herself with studies that investigate the impacts of poverty on women, the role of women in poverty reduction, the impact of climate change on women, the contributions of women to sustainable development, women participation in politics, the differential impact of violent conflicts on women and children. More so, she is also interested in studies that concern Political Economy especially, the intricacies surrounding social production in Nigeria and the constructions and deconstructions that are thrown up from the process.

