Abstract
Sustainable development is an ongoing process, which even though is global in context, is local in operation and has revealed to a large extent the nexus between environmental degradation and poverty reduction. This paper explores the massive destruction of the environment in Bayelsa state, masterminded by youths operating illegal refineries from crude oil siphoned from pipelines that run through their communities' lands. The massive oil spills resulting from the operations of illegal refineries scattered around the state have decimated the flora and fauna and thereby upsetting the ecological balance in the area, destroyed the livelihood of people and further entrenched poverty. The effect of the continuous degradation of the environment in four selected communities of Bayelsa state is the focus of this study. For the purpose of the study, Primary data were collected through personal interviews. 15 persons per community were randomly selected. 80 participants were interviewed. Secondary data came from text books, journal, etc. The result of the study showed that the illegal crude oil refining business in the area of study is a lucrative business structured at four layers of operation and interest. These are the union, the tap points, the camp owners and the distribution points. The study further showed that the business have thrived over the years through improvement in their processes, and the connivance of security forces. The study further confirmed that poverty is the motivating factor, due to high unemployment and destruction of farmlands. The paper recommends that urgent steps have to be taken to alleviate poverty in the region in general and the area of study in particular and also recommend both the stick and carrot approaches to stem the tide of environmental destruction, by provision of alternative sources of livelihood to youths, employment opportunities for the youths, educating the youths, and fight corruption in the Security Services in order to curb its impunity. The paper concludes that indeed poverty is a threat to sustainable development and the activities of illegal refineries will persist until and unless the organic context which precipitates poverty is addressed in these communities.

Keywords: Poverty, Degradation, Environment, Sustainable Development and Livelihood.

Background to the Study
Sustainable Development is an ongoing principle of human life which has dominated discourse in academic and political platforms in the developing countries. The concept has often been broken out into three constituent domains: environmental sustainability, economic sustainability and social sustainability. The aspiration of sustainable development is global, while the ongoing process is local.

While such universal aspirations may be helpful, they are insufficient at the local level, to identify local needs, choose meaningful targets and most importantly “harness the energies of local people and organizations in the development of the local society and economy to change in ways which are conducive...
to sustainability (Selman, 1996). This has prompted scholars and stakeholders to shift attention to the
correlation between poverty and the alarming rate of degradation of the environment. Poverty has been
seen as a causative agent of the alarming rate of environmental degradation that has defiled several solutions.

Consequently, a copious of literatures has been written to focus attention on the correlation between
environmental degradation and high rate of poverty. Various studies have been conducted to confirm that
indeed poverty is a causative agent of high rate of environmental degradation which has defiled solution and
that until the issue of poverty is addressed our environment will continue to be abused. That poverty pushed
people to undertake unwholesome activities that destroy the environment in the long-run and
consequently, has compounded development in the developing countries.

This paper focuses on Bayelsa state, a local Nigerian community, located in the Niger delta were poverty has
led the residents to engage in illegal refining activities, which has become a threat to the environmentally
sustainability of the region. Studies have shown that the rich Niger Delta vegetation has been recklessly and
gradually decimated through illegal refineries as a result of poverty. It is on record that Bayelsa state, one of
the major states in the Niger delta region, has one of the highest rates of incidents of poverty as released by
the National Bureau of Statistics (NBS, 2010). This high incidence of poverty has lured the people to engage
in illegal refineries that have continued to endanger the environment and have constituted a threat to their
continuous survivor as a people. These illegal refineries pollute land, creeks, ponds, rivers, lakes and have
further entrenched rural poverty.

Poverty and Sustainable Development

The Concept of Poverty

Poverty is an age long phenomenon that has ravaged all known societies before the beginning of modern
civilization. Societies have been sharply divided between the rich and the poor and it was a defining feature
of the earliest civilizations such as the ancient Egypt, the Indus Valley of the present day India, etc. Poverty
encompasses inadequate income and denial of the basic necessities of life, such as education, health services,
clean water and sanitation (World Bark, 2007) which are essential for human survival and dignity. Besides,
Gass and Adetumbi (2000) observe that poverty denies its victims the most basic needs for survival, such as
water, food, clothing, shelter, etc.

Thus, it can be safely assert that poverty manifests not only in economic deprivation but also in terms of an
individual’s inability to access basic social amenities (World Bank, 1999) and constraints individual’s ability
to actualize his/her potentials. However, there are others who poverty as a consequence of the uneven
distribution of resources around the world on an international, national and even regional scales as in the
case of Bayelsa State which aptly typifies the plight of the area.

There appears to be a consensus that in spite of the evident and abundant resources of the Federal Republic
of Nigeria (FGN) (including crude oil and gas, which generate over 90% of foreign exchanging and 85% of
government earnings) of which Bayelsa State contribute a substantial amount, the state paradoxically
represents one of the extreme situations of poverty and under-development, lacking virtually all the indices
of development (Ibaba, 2005). Therefore, the prevailing perception in the region is that the people are being
deprived of the benefits of oil and gas exploitation and this has consequently generated the widespread
poverty in the state (Ikporukpo, 2001). This has in turn pushed the people to undertake unwholesome
activities inimical to the environment (illegal bunkering).
It has been clearly established that Bayelsa State has been enmeshed in a vicious poverty traps which has been confirmed by empirical studies (NBS, 2010) and which have been described as a “bewildering paradox in view of the enormous revenue generated from the state. For instance in 2011, Bayelsa State has absolute poverty rate of 47.0%, relative poverty rate of 55.4% and general poverty rate of 47.0%.

Furthermore, the report of the Political Bureau set up by the then Federal military government of Gen. Ibrahim Babangida gave credence to this stark reality;

"Attention has been drawn to the very deplorable conditions of all the oil producing communities throughout the country. In the Cross River, for example, whole communities have been reduced to penury following the combined activities of oil prospecting and extracting companies” (FGM, 1987)

A school of thought which seemly represents the views of the Niger Delta people argues that the pervasive poverty in the state is a logical outcome of the peculiar nature of the Nigerian Federalism which has been shaped by ethnic based political domination. Thus, for instance, Naanen (1995) attributed the abysmal high rate of abject poverty in the oil producing communities to an array of factors which include:

"Ethnic based political domination which is used to expropriate the resources of oil producing communities for the dominant groups, and the alliance between the dominant oil companies and the state enterprises, which restricts the minority’s access to the modern and more rewarding sectors of the economy”.

Closely related to the above is the view also shared by Okoko and Nna (1997) who contended that: “The plight of the oil producing area is a reflection of political domination and economic marginalization by the major ethnic groups” which have inexorably led to the current high rate of poverty in Bayelsa State and which has invariably driven the people to engage in illegal activities, thereby destroying the environment further than the oil companies, and has constituted a threat to the continued existence of the people. The above analysis confirmed that the poverty trap in Bayelsa State is real and is choking the region. It is also the view that this all-pervading poverty which has driven the youths, who have no job, no livelihood, to engage in illegal bunkering (local refining of crude oil). Their activities have totally destroyed the ecosystem, laying bare the land with no agricultural activities taking place, all aquatic life destroyed, thereby further entrenching the poverty trap in the state.

The Concept of Sustainable Development

Man and his environment are inseparable. The resources which promote human existence are derived from the environment. Therefore as man affects the quality of the environment so does environment affects the quality of man’s life (Salau, 1993). Consequently, human development is inextricably linked to the continued availability of natural means of support and this implies that any threat to the security of these resources constitutes a direct threat to human survival and development.

Thus, according to the United Nations’ Stockholm Conference on Human Environment (Aja and Emeribe, 2000) “…..Man’s environment is that which gives him physical substance and affords him the opportunity for intellectual, spiritual and social growth…. Both aspects of the man’s environment, the natural and the man-made are essential for his wellbeing and enjoyment”.

In addition Ibaba (2005) asserted that the activities of man have indeed impacted negatively on the quality of the environment. He asserted that man through his activities either consciously or unconsciously
induced environmental challenges, which have created in-balance that has invariably reduced the quality of
the environment and apparently distorted development.

Evidence abound which show how illegal refining of crude oil has degraded the environment and has
rendered the environment in some parts of Bayelsa state a waste land, devoid of any flora and fauna for a long
time to come. In Bayelsa State the immediate environmental challenge facing the people is the direct result
of activities of youths engaged in local refining of crude oil in the area, which have devastating impact on the
eco-system. It is obvious that the protection of the environment is a veritable part of development and that
without environmental protection, development is hampered and therefore there won’t be any sustainable
development. Thus, declining quality of the environment and its resources base tend to create a crisis of
development, which in Bayelsa state is a result of the high rate of poverty that the people have been exposed
to and has consequently forced them to go into illegal refining of crude oil.

This explains the position of the World Commission on Environment and Development (WCED)
(Wikipedia, 2007) which asserted that:

"Environment and development are not separate challenges.

They are inexorably linked. Development cannot subsist upon
deteriorating environment of resources base. The environment cannot be
protected when growth leaves out of account the cost of environmental destruction”.

Sustainable development was espoused with its attendant strategies to ensure that human and physical
development will be in conformity with the demand for the protection of the environment.

In retrospect, the term was first brought to common use by the world commission on environment and
development otherwise known as the Brundtland Commission in its 1987 landmark proclamation-titled: “
Our Common Future”. The Brundtland Commission was formerly known as the World Commission on
Environment and Development (WCED) but later changed and named after the chairman
GloHorkenBruntland (Uchegbu, 1998). A definition of the commission explains sustainable development as;

“A process of change in which the exploitation of resources, the
direction of investments, the orientation of technological development
and institutional changes are inharmony and enhance both current and
future potential to meet human need and aspirations”

The above postulation confirmed the existence of a harmonious requirement for sustainable development.
The implication here is that where such harmonious relation is lacking, for instance in Bayelsa State,
pervasive poverty has pushed the youths to undertake activities that have despoiled the environment,
thereby hindering sustainable development.

In its report, WCED defined sustainable development as the “development that meets the need of the
present without compromising the ability of the future generations to meet their own needs.”

(Wikipedia, 2007). Similarly, Olaolu (2008) defined sustainable development “as the development that is
channeled towards the enhancement of the human environment, which meets the need of the present, but
yet makes allowances for the future generation to meet theirs too. Bearing in mind the present precarious
state of the environment in Bayelsa State, it is obvious that it is not the same as was the case five decades ago.
Apparently, the environment has been despoiled beyond redemption as a result of pervasive poverty, which
has compelled the youths to engage in local refining of crude oil in the area.
Corroborating further on this path of thought WCED stressed that if human needs are to be met on a sustainable basis, the earth natural resources base must be conserved and enhanced. Thus Ropetto (Pearce, 1990) stated that: “Sustainable development … rejects policies and practices that support current living standard by depleting the productive base including natural resources that leaves future generation with poorer prospects and greater risk”. Therefore, we can say what sustainable development is multidimensional, economic, political, social and cultural and seeks to maximize the benefits and contribution of the environment to development through the promotion of an enduring exploitation of natural resources. Consequently, if sustainable development is to be achieved, it requires the attainment of three basic objectives; the creation of wealth, environmental protection and enhancement of production.

In this study, sustainable development serves to draw attention to the need for compatibility between growth and the preservation of the Bayelsa State environment which has been despoiled by the youths, who are masterminding the local refining of crude oil as a consequence of the prevalent of high rate of poverty in the state.

Also, environmental degradation under focus in this paper is major fallout of the activities of youths who engage in unwholesome activities and has been cited as a major cause of loss in production and poor health in the state (Ibaba, 2005). Apparently, the major and pervasive impact of the activities of these youths on the environment of the state is the drastic decrease in the nutrient values of the soil, decrease in available land for cultivation, the destruction of food and cash crops, the destruction of economic trees and marine and aquatic life which ultimately leads to decline in agricultural output and has by extension constrained sustainable development.

In addition, of paramount concern is the total destruction of marine life by oil spillage as a result of local refining of crude oil by the youths of the areas in focus. This is due to the fact that fishing constitutes the major occupation in these communities in our study, and about 80% of the protein in take is these communities is sourced through fish. The significance of this is that oil spillage also has health implications. It’s a fact that the polluted water (which not only serves as fishing ground but drinking and other domestic uses) is now a source of disease in the affected communities. Consequently, it stands to reason that oil spillage caused by local refining of crude oil worsen the health challenges of the people, which in turn exacerbates poverty, given that poor health reduces productivity (Ibaba,2005).

Research Methodology

The area of study is Bayelsa state. The state is located in southern Nigeria in the core Niger Delta region, between Delta state and Rivers State. Its capital is Yenagoa. The four main languages spoken are Izon, Nembe, Epipe-Atissa and Ogbia. Like the rest of Nigeria, English is the official language. The state was formed in 1996 from part of Rivers State and is thus one of the newest states of the Nigerian federation.

Bayelsa State has one of the largest crude oil and natural gas deposits in Nigeria. As a result, petroleum production is extensive in the state. However, the majority of Bayelsans live in poverty. They are mainly rural dwellers due to its peculiar terrain and lack of adequate transportation, health, education or other infrastructure as a result of decades of neglect by the central governments, state governments, and petroleum prospecting companies. This has been a large problem in the state since its creation and successive state governments have not been able to address and repair the issue. The state, as a result, has an almost non-existent commerce. Successive state governments have, however, embarked on various industrial projects (even venturing into the oil and gas sector), and “poverty-alleviation” programs to reverse
this situation, however some argue that there is nothing on ground to show for huge sums of money spent for development by successive and present state governments. The local population engages in fishing on a subsistence and commercial level. The Bayelsa State government is otherwise the main employer of labour in the state.

Bayelsa has a riverine and estuarine setting. A lot of her communities are almost (and in some cases) completely surrounded by water, hence making these communities inaccessible by road. The state is home to the Edumanom Forest Reserve, in June 2008 the last known site for chimpanzees in the Niger Delta. Other important cities besides Yenagoa include Akassa, Amassoma (the home of the Niger Delta University), Twon-Brass, Kaiama, Nembe, Odi, Ogba, Okpoama Brass, Oporoma, Otuan, Sagbama and Olugbobiri.

The choice of Bayelsa state for this study is as a result of the fact that the state is a major oil producing state, with high incident of poverty, which has consequently thrown up environmental challenges through large scale illegal refining of crude oil, which has polluted the land, creeks, rivers, etc. For the purpose of the study, four towns in Southern Ijaw local government area were selected, because the bulk of the activities of illegal refining of crude oil take place in these towns. The towns are Opuama, Tebitaba, Igbomotoru and Diobu.

The key instruments for data collection were Focus Group Discussion (FGD), interviews and observations. We conducted one FGD, 15 persons in each of the four selected communities. We supplemented this by two unstructured key personality interview in each of the four communities. The survey comprised of 20 persons in each community, thus bringing the total number to 80 participants for the study.

In addition, key personality interview were conducted with the Amananawei, chairman and secretary of Community Development Committee (CDC), the youth’s president and secretary, and women leaders in the communities. This is informed by their possession of desired information for generation of accurate data. Our target group was people who were 20 years and above. To ensure gender balance in the survey, a total of 30 participants were female.

The objective of the study is to find out the pervasive poverty that has driven the people to undertake illegal refining of crude oil, which has totally decimated the flora and fauna, thereby rendering the whole ecosystem bare, and has impacted negatively on the bio-diversity of the area.

Results and Discussion

Operation and Structure of Illegal Crude Oil Refining Camps

Crude oil refining has been described as the most dangerous workplace in the world (The Nation, October 17, 2013). Young men and women often work at night, pumping crude oil from barges and boats into tanks or open air pits, heat it to a boiling point with naked flames, and pass the liquid through water-cooled pipes where it condenses and evaporates. Black smoke billows across the land and swamps, the waste oil residues are tipped straight into the land, swamps, creeks, rivers, ponds, lakes, farm land, etc. The tanks could explode into big fire at any point and consume all the workers.

When illegal local refining of crude oil began six years ago in the Niger Delta, the mortality rate was very high, and it was in the light of this that it was described as the most dangerous work in the world, resulting in the loss of hundreds of thousands of lives. But gradually the youths improved on the methods and presently the mortality rate has reduced remarkably. This is another factor that has endeared and attracted many
youths to the business of illegal refining of crude oil in Bayelsa State. The “business” has become so lucrative that the high risks of sudden death, illness, pollution and the Nigerian armed forces smashing up the camps and in some instances arresting them all outweighed by the lure of jobs and money in impoverished communities.

The result of the study showed that illegal crude oil refining is a highly structured and sophisticated criminal network and has become a cartel with various layers of operations. The study revealed that there are four layers of interest and operation in the illegal crude oil refining business in the Niger Delta. These layers are: the union, the tap point, the camp owners and the distribution points. The first layer of interest is the union. Every town has a union which controls and regulates the activities of the camps. Therefore, in the four towns our team visited, before a camp is given the “operating license”, the owners of such camp must pay between N250,000 and N500,000. The money is used to bribe the security forces for a “conducive” operating environment. The Union liaises with the security forces. Thus the first conclusion of our study is that illegal oil refining is a sophisticated network, with high-level corruption led by the security forces in the Niger Delta, who by their negligence and connivance keep the “business” going. This is because without the active connivance of the security forces, the “business” cannot thrive as revealed by our investigation.

The second layer of operation is the owners of tap points. The tap points from where the crude oil is siphoned are usually owned and operated by land lords of the land where the pipe line is buried, youth’s leaders of the community and “big boys” of the communities. They also pay monthly rent to the union. Our study revealed that illegal refining business cannot thrive without the active connivance of pipeline operators who are paid by the Union to reduce the pressure in the pipes to allow in order enabling the point’s owners to break in and siphon off the oil. The third layer of operation is the camp owners; they also pay monthly rent to the union to settle the security forces. Each camp employs 12-20 peoples, with a manager in charge. The workers are paid per “round”. The camp operators hire boats or own their boats to convey the crude oil from the “tap points” to the camps and in some cases market the products with their boats. The products are usually kerosene and diesel. The last layer of operation is the buyers of kerosene and diesel who swarm the camps daily to buy the products and sell in Yenagoa, Port Harcourt, etc. They also make a huge fortune from this business.

Our study revealed that poverty is at the root of the business. According to a man in Opuama, “the government and the 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”. Another man in Diobusays “we have no fish in these creeks because of pollution. Even the farmers, their lands have been polluted with oil, so they all joined the practice of illegal oil refining.”

Pollution and Degradation of the Environment in the Study area.
Based on our field work, it was observed that in the specific study area, the vicious circle of pollution and destruction have been visited on these communities by operators of tap points and camps, which has completely destroyed the environment thereby undermining sustainable development in the communities. The study also showed that the greatest environmental challenge facing these communities is not from the operations of oil companies but from the operations of illegal refineries and tap points, and the oil spill, which have devastating impact on the ecosystem and has also disturbed the ecological balance in the communities with disastrous effects on fishing and farming. Pollution of the environment in the communities begins at tap points. Because of the high pressure, more than 50% of the crude oil siphoned is lost in the process and thrown into the environment. Secondly, because of the low level of technology use, the operators of camps can only recover about 30% of the crude oil refined and the waste oil residues are
pumped into the creeks, rivers, farms, pond, lakes, the forest, etc, because they don't have any means of recycling the waste residues, thereby degrading the environment further.

Our field trip took us to farms, creeks, lakes, streams, rivers and ponds that have been ravaged by oil spills from illegal tap points and illegal refineries in these communities. Consequently, there is no fish because all the waterways have been massively polluted and therefore no fish can survive. Therefore people entirely depend on icefish from Yenagao. Also, the bush meat that was a common delicacy has disappeared from their meals. Our field trip to Opuma, Igbonotoru, Tebitaba and Diobu revealed an alarming rate of environmental degradation. A large stretch of denuded vegetation, all trees withered away and dead as far as the eyes can see lay bare and fallow, with aquatic life, animal, etc destroyed as a result of massive and continuous oil spillage, caused by illegal tap points and refineries scattered across the forest. Indeed for years to come no fauna and flora can survive and we can describe the area as a wasteland. Our respondents further revealed that oil spills caused by illegal oil bunkering are not only environmental disasters but also often cause considerable socio-economic damage to those who do not take part in this “business”.

In order to give an empirical case, our respondent in Igbonotoru community took us to his farms and pond. The whole farm and ponds have been polluted from nearby tap points and camps. We note that oil spill not only destroys the crops but also makes the soil infertile, because it kills nutrients essential to plants growth.

Based on the report of our field survey and structured interviews and using the three key pillars of sustainable development for our analysis namely: the creation of wealth, enhancement of productivity capabilities and environmental protection; the following facts can be asserted. It can be safely asserted that the activities of illegal oil bunkering in the four communities have aggravated rural poverty because we can draw the following inferences: they have deprived and limited the capability of the people to create wealth through environmental degradation which has destroyed the livelihood of the people of the four communities. Hence, as has been noted elsewhere, it has retarded production capability and aggravated environmental pollution, which has consequently undermined sustainable development. The research confirmed that poverty is responsible for the degradation of the environment in Bayelsa state, that the people are ensnared in vicious poverty trap, which has consigned its people to engage in risky activities and has furtherlighted the eco-system.

From the above analysis, we can safely conclude that the three basic objectives of sustainable development have been thwarted in Bayelsa State by the activities of youths who engaged in illegal local refining of crude oil that has polluted a vast swathe of land, which has in turn degraded the eco-system and denuded the land and rivers, creeks, lakes, etc. Therefore wealth cannot be created; there is no environmental protection and loss in productivity.

Conclusion
The paper concludes that the activities of illegal Refineries are at variance with the ethos of sustainable development, as these have led to the degradation of the eco-system, decimated the flora and fauna, and have crushed the people's livelihood, further hampering the prospect for sustainable development in the state. Therefore the noxious activities of illegal refineries operators can be attributed to the high rate of poverty in the state, which has forced the youths to engage in these hazardous and dangerous tasks.

Recommendations
Based on our findings, we recommend that the state and federal governments should address the issue of pervasive poverty in the rural communities. The government should provide alternative sources of
livelihood to the youths. Also certain amount of fund from crude oil proceeds should be reserved for the development of industries to employ the teeming youths. In addition, the government should encourage entrepreneurship development programmes for youths in the oil producing communities.

Furthermore, the oil producing companies should implement the federal policy which restricts employment of non-skilled labour or junior staff entirely to indigenes of oil producing communities and 70% of senior staff to indigenes. This will go a long way to reduce the high rate of youth unemployment in the area, which has driven them into illegal bunkering.

The federal government should also look at the issue of connivance of the security forces and the operators of camps.

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