

Petroleum Extraction, Agriculture and the Local Communities in the Niger Delta

A Case of Ilaje Community.

Adedayo Ladelokun

Howard University

## *Abstract*

Petroleum resource exploration is a crucial economic activity that possesses the potential of contributing substantially to economic development through the material and financial resources generated from them. On the other hand, petroleum exploration and extraction often induce adverse impacts on other economic activities, especially agriculture and threaten biodiversity and environmental safety. Any asymmetry in the distribution of benefits and costs will deepen inequality and generate a social crisis. This study aims to assess and evaluate the impacts of petroleum resource exploration and extraction on agricultural productivity in the Niger Delta area. The study will be conducted in Ondo State and focuses on the Ilaje community (Ilaje Local Government Area). In order to isolate the exploration effects from the impact of other factors that may generally impede agricultural productivity in the state, some Local Government Areas which lie clearly outside of the oil exploration zone will be chosen as the control or comparison area for the study. The Ilaje community and the control community have similar characteristics in terms of their traditional occupations which are large scale farming of cocoa, yam, cassava, maize, vegetables, palm produce, etc. The study will use comparative and descriptive data analysis techniques as a toolkit. The findings of this study will: enhance discussions regarding relief systems for the affected communities; provide mechanisms to improve agricultural productivity in Ilaje and the affected communities in the Niger Delta Area and ensure efficient channeling of the Niger Delta Development Commission resources.

## *Chapter I*

### *Introduction*

The Niger Delta region is in the coastal southern area of Nigeria. The member states of the Niger Delta region are Abia, Akwa Ibom; Bayelsa; Cross River; Delta, Edo, Imo, Ondo, and River state. The Niger Delta is very densely populated According to Andrew Burger (2011) the Niger Delta has a growing population recently estimated at some 30 million which the United Nations Development Program (UNDP) projects will increase to 46 million by 2020 The history of the Niger Delta can be dated back to the 11<sup>th</sup> century when the Oyo and Benin Kingdoms wedge enormous power in the control of the economic and political activities The rapid growth of the two Kingdoms made the two kingdoms to be independent trading power thereby controlling the coastal ports along what is now known as the Niger Delta (Stakeholder Development Network (SDN). The ‘Oba’(King) has political and religious power. The growth in the size of the population brought with its diverse vocational activities Thus, in the Benin Kingdom we have vocations that focused on human capital development in the areas of artistic, commercial, and cultural training such as ivory sculpture, metal casting, and terracotta. The Niger Delta was made of many regions of many different tribes. According to (SDN) some of these tribes are Urhobo; Delta Igbos; Isoko; Itsekiri; Oron and Ijaw; the tribes have their kings. There were trading relationships among the members of these communities before the arrival of the Europeans in the late 15<sup>th</sup> Century.

The arrival of the Europeans symbolized a new era in the Niger Delta region as it marked the commencement of new trade deals among the Europeans, and the Obas and the communities. The Portuguese navigators met the local people in 1471 They were enthusiastic to have a cordial

trade relationship with the Obas and the local communities. The mutually beneficial trade agreement led to the exchange of goods and slaves. “The relationship was formed over mutually beneficial trade exchanges which saw the Oba offer peppers, ivory and slaves in exchange for coral beads, textiles and other products from more developed European markets” (SDN).

The Niger Delta region was formerly very rich in palm oil production. The quest for industrial machine lubricants during the industrial revolution in Europe necessitated an increased demand for palm oil. There was a shift in attention from the slave trade to a new trade deal in palm oil which was more lucrative. Towards the end of the 19<sup>th</sup> century, the British started to explore the Niger Delta region including river Niger and river Benue. George Goldie (1846—1925) formed the United African Company. The purpose of the company was to control, own, and make a profit with little regard for the native communities. (SDN) George Goldie with his agent signed treaties with the tribal leaders and took control of the Niger and Benue river. The verbal agreement to restrict the company’s activities to the coastal part of the Niger Delta was violated. The company changed its name to ‘The National Africa Company “and later to “The Royal Niger Company “after the royal charter was granted to the company. The creation of three regional administrative division through the three major ethnic groups: Hausa/Fulani in the North; Igbo in the East and Yoruba in the west put the central south at disadvantage “as the people of the Niger Delta were not able to participate with the major groups which lead to a significantly reduced economic, political and social opportunity which in turn lead to inequality and resentment”(SDN).

Shell Petroleum Development Company discovered oil in commercial quantities in Nigeria in 1956 at Oloibiri in the Niger Delta (NNPC) {nd}. There were further discoveries at

Afam and Bornu which confirmed Nigeria as a major oil-producing nation. In the Niger Delta region, petroleum resource exploration became an important economic activity that has the potential of contributing significantly to Nigerian economic development through the material and financial resources generated from them. On the other hand, the exploration of petroleum resources often induces adverse effects on other economic activities in the Niger Delta region, especially agriculture and threatens biodiversity and environmental safety.

The Niger Delta covers an area of over 70,000 square kilometers (i.e. 27000 square miles). The Niger Delta has more than 40 ethnic groups which include Igbo, Yoruba, Ibibio, Bini Ijaw, Efik; Ogoni; Okrika; Kalahari; Urhobo; Ukwuani; Esan; Obolo Ikwere; Annand; Abua/Odua. The inhabitants of the Niger Delta region speak about 250 different dialects.

The states that are members of the Niger Delta region are Abia state; Akwa Ibom State; Bayelsa State; Cross River State; Delta State. Ondo State, Imo State, Edo *Stature I*



**picture 1:** [Map of the Niger Delta region ...](#)

[researchgate.net](http://researchgate.net)

*Images of the Niger Delta.*



*Picture II*

Source: [Ken Saro-Wiwa 20 years on Niger Delta ...](#)

[cnn.com](#)

*Picture III*



Source: [pollution and harassment ...](#)

[ejatlas.org](#)

The incessant agitations in the Niger Delta region resulted from the negative impacts of petroleum exploration and extraction on the lives of the inhabitants. It is predicated on the

unresolved question; why are the people in the Niger Delta region living in abject poverty even though the region produces the petroleum resources that the country majorly relied upon for her revenue? Unfortunately, the discovery of petroleum and the extraction of crude oil resources disrupted the occupational activities of the inhabitants, especially agriculture. Crude oil exploration and extraction led to:

*(a) Ecological degradation:* One major agricultural problem of the inhabitants of the Niger Delta region was ecological degradation. This happens in the process of oil exploration and extraction whereby the activities of oil exploration and extraction caused environmental degradation. This leads to the destruction of the ecosystems, depletion of resources, and destruction of habitats all of which are of economic value to the inhabitants of the Niger Delta region. When plants and crops are debased and crouched to death, this is inimical to agricultural productivity growth in two ways: First, the act of deforestation tends to deny the land of getting the fertility necessary for future crop growth. Second, deforestation tends to expose the land to erosion. According to Erheben et al (2013), oil exploration and exploitation have not been of many benefits to the local communities, it has been rather a source of agony and anguish for them. According to them farmlands, which were hitherto fertile and encouraged enough food production for the populace, have become highly infertile due to oil spills and gas flares. They went further to say that ‘‘their creeks and rivers that used to serve as their main source of protein in their diet in the form of fish, have all become covered with oil films causing accelerated fish kills’’. Supporting this assertion, the Central Bank of Nigeria (CBN) 1981 annual report stated as follows: ‘‘There is no doubt that the Nigerian Oil industry has affected the country in a variety of ways at the same time. On one hand, it has fashioned a remarkable economic landscape for the country, however,

on the negative side, petroleum exploration and production have adverse effects on fishing and farming which are the traditional means of livelihood of the people of the oil-producing communities. Salami and Balogun, (2006) in ( Joseph and Sheu 2015) noted that according to the 2006 National Population Census, the population of the Niger Delta is estimated at 31 million inhabitants (Nigeria Bureau of Statistics, 2006) and predominantly depend on the environment--principally agriculture and fisheries for their source of livelihood.

*(b) Loss of Acres of Land:* The process of oil exploration and extraction implies that certain acres of land are lost to the oil company to operate. Consequently, oil extraction activities claimed large acres of land which would have been used for agricultural purposes by the inhabitants of the Niger Delta region.

*(c) Loss of Habitats:* Oil extraction activities damage the land and through deforestation leads to the loss of habitats of several millions of species the removal of trees usually releases carbon dioxide into the atmosphere. The few trees that were alive are inadequate to absorb the carbon dioxide released into the atmosphere This caused global warming and climate change. Excessive exposure of land to heat can cause the land to become dry and invariably become a barren desert.

*(d) Oil Spillage:* Oil spills have rendered farmlands that were fertile and encourage enough production useless. In the same vein, the inhabitant's source of protein (Fishes) is being killed by oil spills. The creeks and rivers in the environment are being polluted by oil films which caused deaths to fish. Consequently, this will not only increase the price of fish but also increase the price of meat and reduce their consumption.

The natural resources and human capital potential in the Niger Delta region for economic growth and development have not been harnessed. The multifarious challenges facing the

inhabitants of the Niger Delta region were not resolved. The Nigerian Oil industry has been controlled by the Federal government. The federal government established laws which it uses to govern all matters concerning the petroleum industry in Nigeria. The laws that were established did not address how to economically and educationally empower and develop the inhabitants of the community. (Nina, 1998) in (ribbon, et al, 2013) hinted that the Nigerian oil industry is governed by laws that are instruments of disempowerment. For example, the water in the Ilaje community, Ondo State was polluted, there are oil spillage and gas flares all over the land quite inimical to agricultural productivity. The roads are death traps and left unconstructed. There are no hospitals to take care of inhabitants that were affected by the polluted environment. No wonder, there was a serious outcry of the inhabitants of the Niger Delta region in the Ogoni land that has lasted for several decades! These people were living in pathetic conditions. Several kilometers of their land was being overrun by oil spillage and gas flare had dealt a heavy blow on the entire environment. Any attempt by the inhabitants of the Ogoni to demonstrate peacefully always met with massive military resistance and has often resulted in retaliatory action by the inhabitants of Ogoni land. Hence there is pipeline vandalization and kidnapping of people in anticipation of ransom money to be paid for their release.

While oil production contributed significantly to the Nigerian economy, the activities of petroleum extraction negatively affected the inhabitants of the community where the petroleum extractions were being carried out. In the Ondo State of Nigeria, the Ilaje community was in the Niger Delta region of the state. The activities of petroleum exploration and extraction negatively affect agricultural productivity in the Ilaje community of the Niger Delta area of Nigeria. Hence the Ilaje community was used as a case study. How much damage has the oil extraction caused to

agriculture and the local people in the region? This question shall be examined in the course of this research work.

Chapter two will be devoted to the review of related literature on the topic. Chapter three will be devoted to research methodology and the method of gathering data. Chapter four shall be devoted to the discussion while in chapter five, the researcher concludes.

### *The Ilaje Community*

The Ilaje community is from the Yoruba extraction. They are classified under four geopolitical entities namely; Ugbo, Mahin, Aheri, and Etikan. Historically, they are the descendants of Oduduwa. They left Ile-Ife their original ancestral home in the 10th century. They occupy the Atlantic coastline of Ondo State of Nigeria. Also, a large population of the Ilaje community settles in the hinterland. Essentially, they occupy the Ondo State outlet to the sea. The Ilaje community shared boundaries with the Itsekiri in the East. They are bounded by the Ijebus to the west and Ikale to the North. They have a boundary with the Atlantic ocean in the south. The Ilaje inhabitants are highly enterprising and endowed with great aquatic skills. They developed adaptational abilities that enable them to live comfortably in the geographical environment which was believed by many people to be unfavorable to live in. They knew that there are several advantages. It was in recognition of these that they built large communities such as Aiyetoro, Orioke, Zion Pepe, and Ugbonla.

The Ilaje community is endowed with many mineral raw materials apart from petroleum. The Ilaje community is endowed with Glass Sand, Salt, Tar Sand, Quartz, and Clay. The community also has Agro raw materials such as fish, maize, palm produce, Timber, Rafia Poultry Cocoyam, Cassava, Banana.

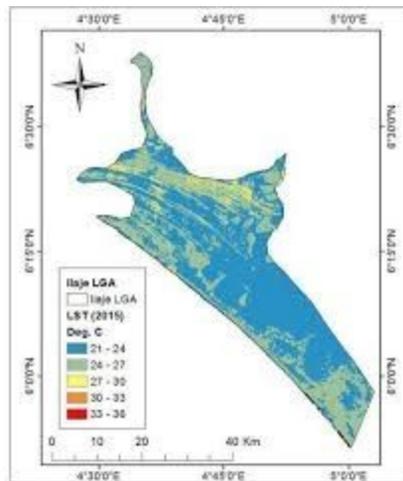
The occupation of Ilaje inhabitants includes Farming, Fishing, Trading canoe making, Lumbering, net making, and mat making. The land in Ilaje is suitable for large scale Rice plantation. The natural environment is also suitable for the establishment of the salt industry. Igbokoda, the headquarter of Ilaje Local government is a beehive of business activities as its famous market attracts traders from within and outside Nigeria - Countries such as Cameroon, Togo Benin Ghana, Gabon, etc visit Igbokoda for business transactions. The fact that Ondo State is an oil-producing state, coupled with trading activities in Igbokoda made Ilaje the economic powerhouse of Ondo State.

Picture:4: Map of Ondo State Showing the 18 Local Government Areas

4a



4b



Map Ilaje

Local Government

### *The objective of the Study*

The aim of this study is to assess, analyze, and evaluate how the activities of petroleum extractions hindered agricultural productivity in the Ilaje community of the Niger Delta Area of Nigeria. The objectives of this study are classified thus;

- Review trends in Nigerian agricultural policies and output from 1960 to date.
- Examine the major factors affecting agricultural productivity in Nigeria.
- Pinpoints potentials that can facilitate growth in the agriculture sector.
- Critically examine, analyze and evaluate how the activities of petroleum extractions hindered agricultural productivity in the Ilaje community and also examine the effect on the social lives of the Niger Deltans including the Ilaje community of the Niger Delta Area of Nigeria.

### *Significance of the Study*

This research work is important because it would examine, analyze, and evaluate how the activities of petroleum extractions hindered agricultural productivity in Nigeria. It would enable us to identify how the activities of petroleum extractions negatively affect the social lives of the local communities in the Niger Delta Area of Nigeria.

This research is crucial because it would make passionate appeals to various stakeholders in the petroleum industry and government functionaries to aid the affected communities in Ilaje and other communities in the Niger Delta Area and to implement an effective, long term solution that will guarantee agricultural development in the Niger Delta Area.

This research is of great importance because it would benefit various stakeholders in the Nigerian economy as it will expose the problems facing agricultural development warranted by petroleum production. Consequently, it would serve as a guiding light towards preferring lasting

solutions to the problems. In addition, this research work is crucial because it would redirect the government to explore the humane approach rather than military action in dealing with environmental problems caused by pollution.

*Research Questions.*

1. Should agricultural products decrease in Nigeria?
2. Should Nigeria rely entirely on petroleum production to sustain her economy?
3. Should part of income realized from the sales of petroleum be used to develop the agriculture sector in Ilaje and other communities in the Niger Delta Areas?

*Statement of the problem*

An assessment of how the activities of petroleum extractions hindered agricultural productivity and the local community in the Niger Delta Area of Nigeria.

*Scope of the Study*

This research will cover the Ilaje community. Ilaje community, Ondo State, is situated in the petroleum producing communities of the Niger Delta area. The Ilaje community formed the scope of this research because the community was mainly into agricultural production and are affected by the activities of petroleum products in the Niger Delta.

## *Chapter II.*

### *Literature Review*

#### *Agriculture in Economic Development of Nigeria*

Agriculture will continue to occupy a prominent position in the global economy judging from its primary role as the machinery for life sustenance and the supportive role of raw materials provision for industrial development. In the words of Todaro M P (2000), “the roles of agriculture in economic development have been viewed as passive and supportive”. The historical antecedent of western countries has shown that a precondition to their economic development was a rapid structural transformation of the agriculture sector which was considered as germane for rapid industrial development. This assertion was shared by W. Arthur Lewis (1954) in his famous two-sector model as explained in his article entitled “Economics Development with Unlimited supply of Labor” in which the payment of wages to labor from the agriculture sector was a little above the subsistence low wage but less than the capitalist sector wage warranted profit generation and the reinvestment of profits which increased industrial growth in the capitalist sector. Todaro M.P. (2000) noted that Lewis in his famous two-sector model indicated that heavy emphasis was placed on rapid industrial growth with an agricultural sector fueling this industrial expansion by means of its cheap food and surplus labor. In his intuitive contributions on the role of agriculture viewed through its contributions to the process of economic development, Jhingan M.L(1985) opined that “the contribution of agriculture to economic development lies in providing food surplus to the rapidly expanding population; increasing the demand for industrial products and thus necessitating the expansion of the secondary and tertiary sectors. He noted that agriculture provides additional foreign exchange

earnings for the import of capital goods for development through increased agricultural exports. According to him, agriculture increases rural incomes to be mobilized by the state. He opined that improvement in the welfare of the rural people was another contribution of the agriculture sector.

Onokerhoraye A.G (1986) briefed that “the population /resources relationship which was uppermost in the mind of Malthus about 180 years ago still gives controversy and concern today”. He noted that food which is the basic needs of mankind is still inadequate in many countries of the world. In light of the above, frantic efforts must be directed towards increased agricultural production. Apart from its food production function, agriculture provides fibers for clothing and wood for the construction of houses. Its role is critical as a veritable source of foreign exchange earnings. Viewed in multi-dimensional perspectives, agriculture is fundamental to employment creation. It is crystal clear that a lot of manufacturing companies purchased their raw materials from the agriculture sector. Profit maximization through efficient management creates an avenue for a company’s expansion which necessitates employment generation. Thus, growth dynamics in the industrial sector are a function of agricultural raw material input to the manufacturing companies in the industrial sector.

Food is an indispensable life sustainer. It is fundamental in guaranteeing healthy living. It is critical for a soldier It is essential for a pilot. It is crucial for our kids, youths, and people who are facing aging challenges. Every living person depends on food for survival. Agriculture connotes the production and preparation of plants and animals’ products for men utilization. Agriculture provides the body with nutritional requirements such as protein; carbohydrates; minerals; fat; and

various forms of vitamins. It also includes the distribution of agricultural products through marketing. The term covers fishing in the sea and rivers. It entails animal husbandry.

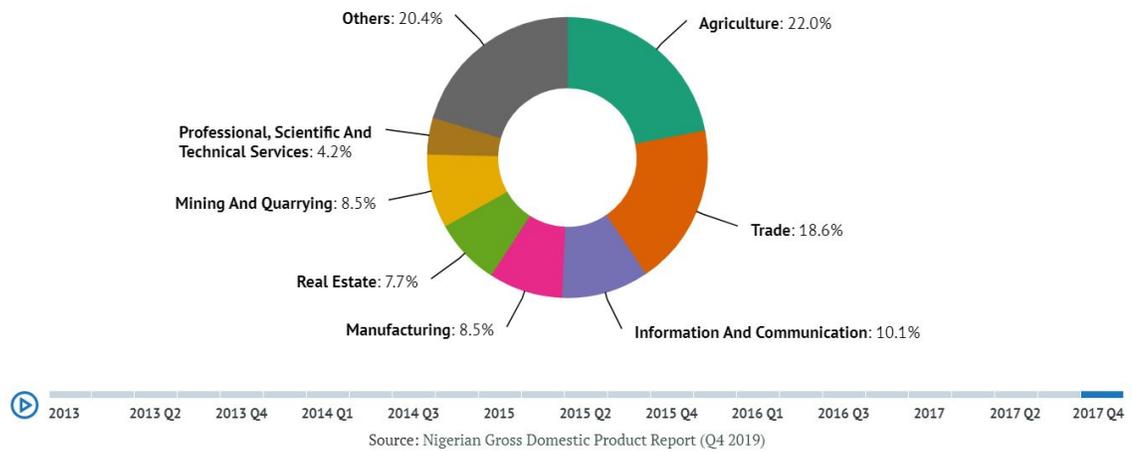
Oxford Advanced Dictionary defined agriculture as the science or practice of cultivating the land and keeping or breeding animals for food. Agriculture plays a dominant role in food supply to the teeming population of Nigeria. Komolafe W.F et al (1981) opined that food serves three main purposes: firstly, the basic substances necessary for the growth and repair of the body. They stressed that these substances are called protein. Protein is derived from meat and certain plant foods. Secondly, they hinted that food provides energy which is obtained from carbohydrates and fats. Thirdly, they noted that food provided substances called minerals and vitamins. These are necessary for the healthy functioning of the body. Agriculture was noted as the main driver of the Nigeria's economy in the mid 1960s and early 1970s According to Aigbokhan(1988)in Iguda P.O(2017) up until the middle of the 1960s,agriculture was the engine of growth of the Nigeria's economy contributing over 60% of the GDP. The farmers produced about 70% of Nigeria's exports and 95% of its food needs.(Lawal,2011,1997,Nwokeoma(2008). Conversely, the agriculture sector has not been able to guarantee food security for the country's population.

Food production per capita has been declining. Anyanwu et al (1997). The decline in food production has led to a substantial rise in food importation. This has an adverse effect on the Nigerian economy.

# Gross Domestic Product by Activity Sector

% of GDP

**Gross Domestic Product by Activity Sector**  
% of GDP



From the above, we can see that agricultural productivity has shrunk to 22%. Trade 18.6%; Information and communication was 10.1%; Manufacturing was 8.5%; Real Estate 7.7%; Mining and Quarrying was 8.5%; Professional Scientific and Technical Services 4.2%; others were 20.4% The role of agriculture as a catalyst in employment creation is a critical factor not only for a teeming Nigerian population who are daily desirous for jobs as a means of survival, but also crucial for the Nigerian government to accomplish her developmental transformational

agenda. The quest for a nation's industrial revolution requires a viable agriculture sector as fundamental for industrial growth.

Thus, this calls for a re-appraisal of how the agriculture sector is being funded. In order to achieve the laudable objectives of the agriculture sector, the Nigerian government must have a mission to achieve; a desirable agriculture output master plan and a well-coordinated human resource for managerial functions. The agriculture sector must be well funded to yield desirable results. Agriculture provides employment to over 75% of the total labor force in most underdeveloped countries (including Nigeria). Akinsanmi, O. (1975). Agriculture also provides job opportunities to the scientists who carry out investigations on agricultural problems and workers in industries who use agricultural raw materials to produce their products. Agriculture also provides jobs to distributors of agro-allied industrial output. Such people are traders, middlemen, transporters retailers who engage in the marketing of agricultural products.

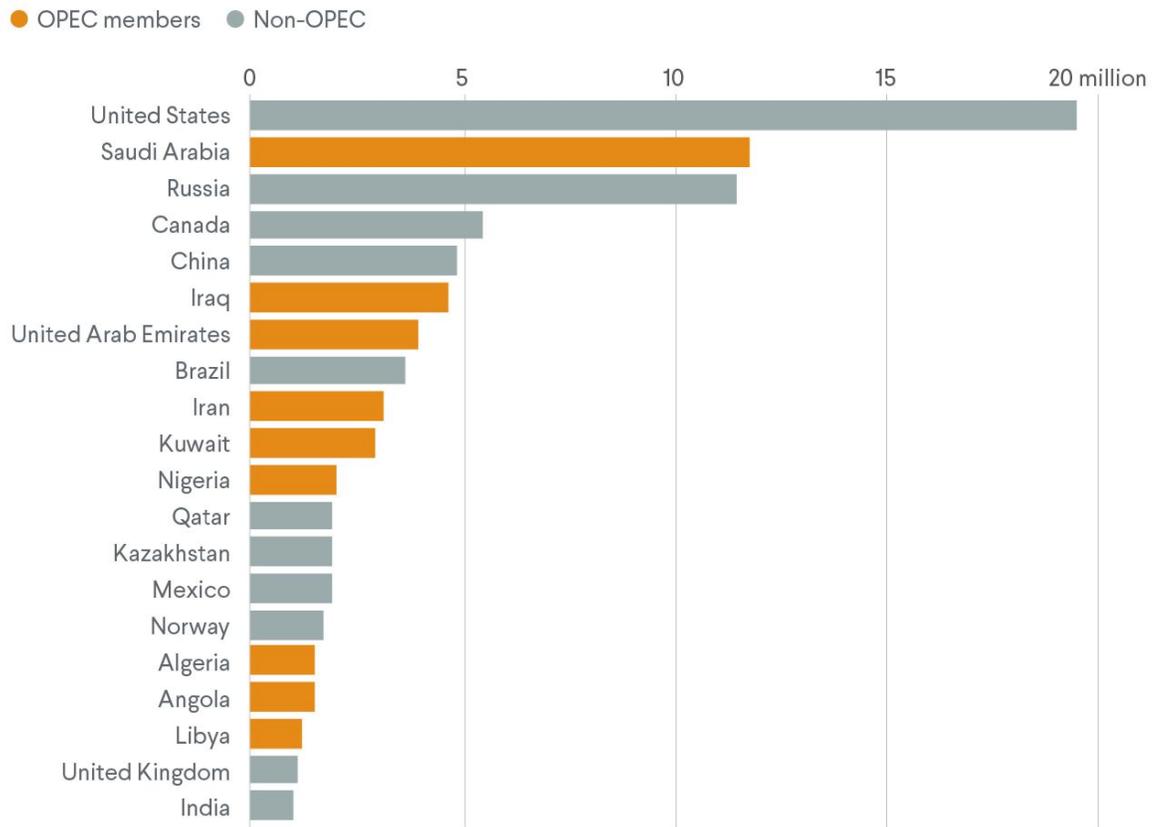
Before the discovery of oil, agriculture was the mainstay of Nigeria n economy. However, with the discovery of oil in the 1960s agriculture was given less attention. Hence there has been a sharp decline in agricultural products. From available statistics, the contribution of agriculture has reduced significantly. Considering all its roles in the economic development of Nigeria, agricultural productivity should not decrease in Nigeria.

#### *The Discovery of Petroleum in Nigeria*

The impact of crude oil on world civilization and modernization is enormous. Oil has become a veritable resource in defining world politics. It determines to a large extent how the

economy of a country would be. In one way or the other, oil affects the lives of people all over the world.

### Largest Producers of Petroleum and Other Liquids, 2019 (barrels per day)



Note: "Other liquids" includes biodiesel, ethanol, and additional liquids produced from coal, gas, and oil shale. "OPEC members" refers to 2020 member states.

Source: U.S. Energy Information Administration.

COUNCIL *on*  
FOREIGN  
RELATIONS

The graph above shows the largest producers of petroleum and other liquids in the year 2019 in barrels per day. The United States has the largest petroleum production as she produced 20 million barrels of petroleum followed by Saudi Arabia. Russia and Canada are in the 3rd and 4th position respectively. Nigeria was in 11th position. In his contributions on this issue, Legbors; saro pyagbara (August 2007), expressed the assertion of former secretary of the Organization of the Petroleum Exporting Countries (OPEC) late chief M.O. Feyide who, in a public lecture titled: “Oil in World Politics” noted that “all over the world, the lives of people are affected and the destiny of nations is determined by the result of oil explorations”. Industrialized countries that import oil use revenue generated to execute national and economic development plans.

Nigeria joined the league of the oil-producing nation on August 3rd, 1956 when oil was discovered in commercial quantities and today ranks as the leading oil and gas producer in Africa and the 6th largest oil exporter in the world (Legborsi Saro Pyagbara (August 2007)). The discovery of oil defines Nigeria’s economic policy options for long-run growth stability and poverty reduction. However, policy implementation often comes to a halt midway either by a change of government which leads to the cancellation of such economic policy or by shoddy implementation by policy handlers.

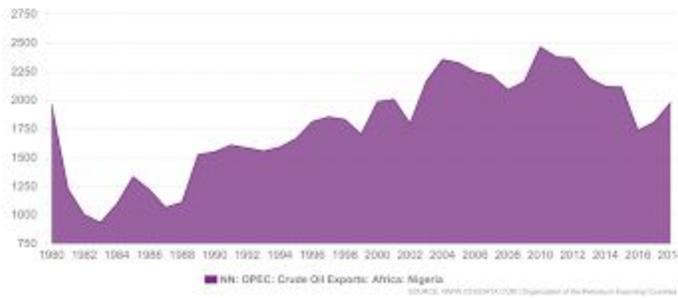
Before shell BP discovered oil in commercial quantities at Oloibiri now in Bayelsa State, Nigeria, the search for oil had started as far back as 1908 at Araromi area of Ondo State by

Bitumen Corporation company. According to (AFE 2008: 28-32) in (Paul I. Akanmidu, 2015), the search for Petroleum in Nigeria started in 1908 at the Araromi area in the present Ondo state by a German company known as Bitumen corporation. This made Araromi the first camp of oil exploration outfit in Nigeria. The outbreak of the first world war 1914-1918 put an end to oil exploration by Nigeria.Bitumen corporation.

#### *Civil Unrest in the Niger Delta Region*

The inhabitants of the Niger Delta region are the people who are directly and indirectly feeling the effects and problems created by oil exploration and extraction in the region. The inhabitants of the Niger Delta region are majorly farmers who engage in crops and fish production. They are also artisans There are many cases of civil unrest in the Niger Delta region. The reasons for the upheavals in the Niger Delta region can be classified into two folds the first reason is as a result of environmental pollution of the region which not only negatively affects their agricultural productivity, but also cause a health hazard, increased health cares costs and high cost of living to the inhabitants in the region. The second reason is that the inhabitants acknowledged that God's giving natural resource, petroleum, found in their region generates a substantial amount of income to Nigeria of which they are denied of being a beneficiary. The inhabitants are extremely poor. They knew that they shouldn't be poor judging from the huge revenue the region was generating yearly for the Nigerian economy.

Figure 3: Nigeria Crude Oil Exports;1980-2020



Source Watch noted that “the oil industry is central to the ongoing civil unrest in the country. The equitable sharing of the country’s multi-billion annual oil revenues amongst its population is at stake. The Nigeria population is particularly poor and does not understand why they are so deprived of the benefits of a natural resource, which they often see as a gift of God. Oil companies are faced with increasing protests directed at oil activities and the lack of development in the Niger Delta. These have included incidents of hostage-taking, closures of flow-stations, sabotage, and intimidation of staff

### *Review of Public Investment on Agriculture*

It is crucial to identify the involvement of the government in terms of its investments in the agriculture sector. Past efforts concerning public investment in agriculture-focused majorly on the determinants of public sector investment and its effects on agriculture; the size of public sector expenditure on agriculture in comparison with the accrued net income from agriculture. Public expenditure on agriculture can be viewed through its various policies on agriculture through its various agents. Both the military and civilian regimes have expended a substantial amount on agricultural development since 1970. Government investment in the agriculture sector could be viewed through its expenditure on (a)the investigation of various pests and diseases of

plants and identification of control mechanisms for such pests and diseases. (b)Provision of funds for weed control. (c)Provision of funds for the purchase of farm modern equipment.

Some of the programs embarked upon by the various government are Rural Banking Community Banking, the establishment of the Directorate of Food, Roads and Rural Infrastructure(DFRRI), Operation Feed the Nation (OFN), The Green Revolution Program, Better Life for Rural Women, The Rural Basin Development Authority(RBDA), the World Bank Assisted Agricultural Development Project; the Family Support Program (FSP)the Nigeria Agricultural Insurance Company(NAIC); The introduction of the Agricultural Development Projects(ADPs); the National Accelerated Food Production Project (NAFPP) and the Niger Delta Development Commission (NDDC). Some of these programs are discussed below thus:

*(a) The National Accelerated Food Production Project. (NAFPP)*

This project was launched in1973 by General Yakubu Gowon’s regime. The main objective of the project was to accelerate the production of six main food crops which are maize, cassava, wheat millet, rice, and sorghum. This initiative was designed to make Nigeria self-sufficient in food production. The project was composed of research, extension, and agro-services. The national coordinator of the project was the institute of Tropical Agriculture (ITA) Ibadan.

The achievement of the scheme was bedeviled by inadequate funding and inadequate commitment by some states. Other hindrances of the scheme are poor infrastructural facilities and inadequacy of field extension staff.

*(b) The River Basin Development Authorities (RBDAS)*

The River Basin Development Authorities was established in 1973. During that year, Sokoto Rima and the Chad Basin Development Authorities were established. Eleven others were established in 1976 and 1977. The main objective of the scheme was to cater for the development of the land and water resources potentials in Nigeria for agricultural purposes and rural development. The scheme succeeded in the area of exploiting groundwater resources and assist farmers in farm cultivation for agricultural purposes

*(c) Operation Feed the Nation (OFN)*

The Operation Feed the Nation (OFN) program was launched in 1978 by the General Olusegun Obasanjo regime. The main objective of the program was to increase food production and to guarantee self-sufficiency in food production. The government provided the needed material assistance and encouragement such as technical advice and the supply of the necessary farm input e.g.improved seeds, fertilizer, farm implements, etc. The initiative anticipated increases in agricultural output, however, the successes of the scheme were hindered by food importation, land use decree, and lack of commitment of government officials.etc.

*(d) The Green Revolution Program.*

The Green Revolution Program came into effect in 1980 by the Shehu Shagari's regime. The main objective of the program was to ensure self-reliance in food production and to ensure the diversification of the country's sources of foreign exchange. The achievement of the program was hindered by a shortage of funds, mismanagement, and fraud, etc.

*(e) The National Agricultural Land Development Authority(NALDA).*

The National Agricultural Land Development Authority (NALDA) was launched in 1991. The objective of the program was to ensure the implementation of national agricultural and development programs to control the problem of low use of the vast areas of land in Nigeria. The main objective of the program was to develop 30,000--5,0000 hectares of land in each state during the 1992-1994 national rolling plan period. The Federal Government provides an average of 300 million naira to the National Agricultural Land Development Authority (NALDA) annually in 1991 and 1992. The National Agricultural Land Development Authority (NALDA) developed 16,000 hectares of land before the end of 1992. The NALDA also cultivated 81.1% of these hectares with different crops. The performances of the National Agricultural Land Development Authority (NALDA) were hindered by corruption; inadequate funding, frauds, and inadequate farm equipment.

*(f) Niger Delta Development Commission (NDDC)*

The establishment of the Niger Delta Development Commission (NDDC) came into effect in the year 2000 by the former president Olusegun Obasanjo. The mission of the commission was to facilitate the rapid, even, and sustainable development of the Niger Delta region. The commission was created by Act No 6 of the Laws of the Federation of Nigeria. In order to ensure the effectiveness of the commission, the commission has a re-organized management and administrative structure that would identify and keep detailed records of the sums received from the allocation of Federation Account to deal with ecological problems that were caused by oil exploration and extraction in the Niger Delta region.

*Niger Delta Development Commission (NDDC) Programs of Development in the Niger Delta.*

In a communique signed by the Director of Corporate Affairs. Charles Obi Odili, the communique highlighted some recent achievements of the Niger Delta Development Commission in the Niger Delta region. The recent project program by the NDDC was designed to combat the ravaging CoronaVirus pandemic and its attendant hunger in the Niger Delta region by the distribution of medical equipment and food palliative to 25 Local Government Areas of Delta State. During the distribution period, which started at Iwhrekeka Community, Ughelli South Council Area, the Acting Managing Director of NDDC, Pondei.D(2020) noted that the COVID-19 Pandemic created health emergency and pangs of hunger the world over, particularly, in the Niger Delta region. The Delta State Governor Okowa I(2020)gave assurances that the food palliative and medical supplies will get to the indigene and vulnerable persons in the state.

Laudable as the NDDC initiative seemed to be, it signals the fact that a lot more needs to be done to improve the agriculture sector in the Niger Delta region. The food distribution was to serve a temporal and immediate food requirement of the people. This is not a long term solution to the food crisis rocking the region. Recently, the Niger Delta Development Commission( NDDC) donated two Toyota ambulances Modular Cold Chain and 4 Waste Disposal Trucks to Edo State. The Modular Cold Chain would be used to store vaccines and the Waste Disposal Trucks would be used to dispose of wastes in the state.

Concerning the medical supplies, Pondei(June 2020) noted that the medical supplies included special diagnostic and critical care equipment such as ventilators. He hinted that the equipment would be distributed to the Central Hospital Ward, Central Hospital, Ughelli, and the Teaching Hospital, Oghara.

*Problems Confronting the Niger Delta Development Commission (NDDC)*

Despite the huge amount of money that the Federal spent to ensure the socio-economic development of the Niger Delta Region, there are some hindrances that limit the performances of the Niger Delta Development Commission(NDDC). The first hindrance to the development efforts of the Niger Delta Development Commission was the pipeline vandalization which emanated from conflicts, civil unrest, and militancy in the region. The cost of replacement of the vandalized pipeline was enormous. According to a report by Vidal J.(Nov., 10, 2015), Niger Delta oil pipeline vandalism was estimated to cost \$14bn a year.

The second hindrance to the development efforts of the Niger Delta Development Commission was corruption. Corruption is evil. It has denied the Nigerian government from executing and achieving the necessary national transformational agenda as laid down in the national development plan. The goals of the national development plan include but not limited to creating jobs for millions of unemployed graduates; sectoral growth financing: road construction and rural development financing; the building of institutions for human capital development; allocation of funds for healthcare and healthcare services. Unfortunately, all efforts directed towards curbing corruption can be likened to taking one step forward and taking several steps backward. Thus, to many Nigerians, to say that corruption in Nigeria defies a solution is not a disputable fact. Many culprits of corruption were treated with kids' gloves and celebrated in the face of a terrible economic and financial crime! The complexity of corruption in Nigeria has consequential implications for domestic and international trade. At the national level, several contractors usually give compensation to contract awardee either before or after the award of the contract. The compensation which is in the form of money or money worth is a kind of bait that will enable the contractor to perform a shoddy job and made away with a great percentage of the

money specifically allocated to perform a good job. Whenever contractors fail to execute their jobs correctly as expected, it attracts several implications with great multiplier effects on the socio-economic lives of the society and the economy as a whole. For instance, poor road construction can cause a road accident that can claim several lives and the destruction of several properties of great economic value. On the international scene, Multinational companies usually consider the index of corruption (among other factors) in a country before the flow of investments decision is made. International trade suffers setback in an atmosphere bedeviled by corruption. In 2016, it was reported that \$16 billion was missing. According to Nshira Turkson (2016). Government audit said \$16 billion was missing. Nshira Turkson (2016) noted that the Nigeria National Petroleum Corporation (NNPC) failed to pay about \$16 billion in revenue owed to the state's treasury, according to an audit.

An attempt to fight corruption in Nigeria created an awful dramatic scene at the National Assembly on July 21, 2020, when the Managing Director of the Niger Delta Development Commission (NDDC), fainted as a result of being incapacitated to answer questions that bordered on the probing of the finances of the Niger Delta Development Commission (NDDC) where several millions of Dollars was alleged to have been stolen. Other problems confronting the Niger Delta Development Commission (NDDC) are poor management and in many cases fraud. These evil deeds will persist because there is no consequences-no stiff penalty for offenders! Pius Utomie/ Ekpe/Reuters of the Economic and Financial Crime Commission (EFCC) noted that the Transparency International (TI) has issued its Corruption Perceptions Index and perceived Nigeria as one of the most corrupt countries in Africa. According to Transparency International (TI), Nigeria ranks 146 out of 180 countries surveyed worldwide.

Transparency International measures the perception of corruption in the public sector. Campbell, J(Jan,29,2020)noted that Nigerians commonly regarded the country as corrupt. He pointed out that the notoriously corrupt Sani Abacha, who was military chief of state from 1993 to 1998 looted the state to the tune of billions of dollars. Transparency International(TI) was founded in Berlin in 1993 to 1998 looted the state to the tune of billions of dollars. Transparency International (TI) was founded in Berlin in 1993 to combat global corruption. Two of its founders are Nigerian, former president Olusegun Obasanjo and Oby political power was seen and used as a means of oppression through large scale corruption using the instruments of government as a weapon to control and siphon the collective wealth of the people. The elites are quite united in milking the country dry. AIT news noted that more corruption has continued to rock the Buhari Administration. It involved the senior official of the administration and the Nigerian National petroleum corporation who was said to have illegally sold off 48 million barrels of stolen Nigeria's crude oil and shared the proceeds. The deal was left open by Mexico's registered oil and gas trading company, Samano.

### *B.The Nigerian Agriculture Sector Performances.*

Prior to the discovery of crude oil in Nigeria, the agriculture sector was the leading sector which contributed enormously to the Nigerian Gross Domestic Product (GDP) The sector guaranteed food security for the Nigerian populace. At that time, Nigerians placed more priorities on agriculture. "A greater percentage of the Nigerian population was engaged in agriculture. Agriculture's contribution to Nigeria's Gross Domestic Product was the largest. Agriculture contributed 62.9 percent and 61.0 percent in 1961 and1963 respectively.

Umamikugbo and Ewanehi (1998). There was a decline in 1970 as it only contributed 48.8percent to the Gross Domestic Product. In 1981, the share of agriculture further declined to 34.7 percent. As shown in Table 2 below, the share of agriculture in Gross Domestic Product increased to 40.3percent in 1985. It also increased to 42.7 percent in 1986. However, it declined to 41.5. Percent in 1987There seems to be contentment at that time and the pervasive worries about the limitless acquisition of money and worldly materials are less compared to the present-day monetized economy. Gone are those days when farmers will put harvested chunks of plantain near the road for people who might be hungry to eat free of charge! The urge to assist fellow human beings was certain. Our parents, most of whom are farmers, are really caring. Money from the sales of farm products is used to educate their children to the university level.

The usual agricultural practice was subsistence farming. Farmers engaged in shifting cultivation, crop rotation, monocropping, and mixed cropping types of farming. Farmers used crude implements such as cutlasses and hoes. Farmers produced staple food crops which include: Yams, Cassava, Corn, Plantain, Banana, Orange, Rice and Beans, Groundnuts, Cocoyam, Tomatoes, Onions, and varieties of vegetables.

Perhaps the Nigerian government does not acknowledge that the weak, uneducated, old population who took farming as a means of livelihood is dying. Apart from this, many adults who are rich or fall in the middle class took their parents into the cities to reap the benefits of parenthood. These certainly decrease agricultural productivity in rural areas.

Frankly, a lot of youths are not interested in taking agriculture as a means of livelihood. The reasons for this are:

Most youths saw agriculture as an energy-sapping and extremely difficult job especially in the underdeveloped countries of the world where human physical labor will have to be engaged in clearing land, planting, and engaged in several weeding before crops' maturity. Comparatively, in advanced countries such as the United States of America, Great Britain, machinery such as cultivators, plows, harvesters e.t.c. are used to facilitate agricultural production.

Another reason why many Nigerian youths do not want to take agriculture as a means of livelihood is that they want "quick money". They want jobs in which they can get the money quickly after executing the job. Most youths will not want to wait until crops are matured before they spend money. Observations have shown that most youth cannot wait for cocoa plantation to start bringing forth fruits before spending money. Thus, they prefer to go to the cities to look for white-collar jobs to enhance their living standard. A lot of graduates who cannot find white-collar jobs prefer to go into the transportation business by using Motorcycle, Tricycle, and cars to transport people from one location to another in order to earn a living. In this way, agricultural productivity in rural areas will suffer. Evidence from above contributed largely to the downturn in agricultural productivity in Nigeria.

Some youths who may wish to consider agriculture as a viable alternative are financially incapacitated to achieve their goal. Stringent requirements by commercial banks made credit facilities unattainable. The interest rate is high. There seemed to be a general mix-thrust that the youths may not return loanable funds but consider such loanable funds as their portion of the national income for which they are long due to receive.

### *C. Environmental Problems of the Oil-Rich Niger Delta.*

### *i. Contamination of soil and Natural Water*

Petroleum extraction activities lead to the pollution of soil and natural water. The efforts made to extract crude oil tend to contaminate the soil in such a way that it negatively affects the fertility of the soil and the growth of crops. The United States office of response and restoration expatiates the toxicity of oil thus: “oil is a mixture many different chemicals and no two oils are the same. Proportions of chemicals vary even within a single category of oil, like crude oil or diesel oil”. Oil also has the potential to kill organisms. The chemical components in oil can kill organisms during oil spillage According to The United States Office of Response and Restoration, “oil in high enough concentrations, can poison animals by internal and external routes of exposure. Smaller organisms can be smothered by a thick layer of oil washing ashore. Anything that is toxic has the potential to halt or harm. It depends on the level of exposure of the material and the composition of chemicals in the oil and the amount of oil. In an article produced by Esri caption “Ogoni People vs. Shell”, It was reported that in 1995 when the British were still present in Nigeria, Royal Dutch Shell identified an oil field on the Niger Delta and began an oil field on the Niger Delta and began oil extraction in 1958, supported by the British government. According to the report, this led to a 15 year period of oil spills that was estimated at 2.1 million barrels. Unfortunately, attempts to clean up oil spillage results in killing plants we attempt to protect. These plants and organisms are usually of economic values and greatly invaluable to human survival Aniefiok E. et al (2013) hinted that the inadvertent discharges of petroleum hydrocarbons into the environment often pose threats to human health, safety, and the environment, and have socio-economic consequence-They stressed further that evidence of acute and chronic toxicity demonstrates the potentially toxic and negative impacts of

petroleum-derived wastes on the tropical environment. Aniefiok E. (2013) briefed that some of the multinational oil companies operating in the Niger Delta region have failed to adopt best practice strategies for risks and mitigation and comply with environmental regulations. In line with the incalculable damage done to the people of the Niger Delta area, Andrew and Stephen (1996) lamented on the Ogoni struggle thus: “The Ogoni people continue to face terrible hardships. Since forcing the shell to withdraw most of its operations from their 404 square miles their communities have been subject to brutal repression. An independent report by the World Council of Churches estimates that at least 2,000 have been killed, approximately 30,000 have been displaced within Nigeria, and many Ogoni have fled into exile”. It was in the wake of the struggle for the movement of survival and Ogoni people that the leader of the group Ken Saro Wiwa and Ogoni eight were murdered by hanging on November 10, 1995, by the regime of the then head of state, General Sani Abacha. In his response to the military tribunal, Ken Saro Wiwa expressed his thoughts concerning the future of the Ogoni people and Shell company thus: “I and my colleagues are not the only ones on trial. Shell is here on trial.... The company has indeed ducked the particular trial, but its day will surely come for there is no doubt in my mind that the ecological war that the company has waged in the Delta will be called to question sooner than later, and the crime of that war will be duly punished. The crime of the company's dirty war against the Ogoni people will also be punished” Andrew and Stephen (1996) The lesson here is that the people in Ilaje are also facing similar difficult challenges caused by the extraction of oil in the community. In the Vanguard newspaper of September 12, 2017, under the caption: ‘oil exploration endangers 67 Delta, Ondo towns’, it was reported that “about 67 Ijaw, Itsekiri and Ilaje coastal communities in Delta and Ondo States are facing perilous times, following oil and

gas exploration and exploitation activities of oil firms which have severely affected the ecosystem.”Emma Amaize(2 017). It was further reported that while some of the communities are reportedly sinking, others are facing contamination of their sources of water supply and the destruction of their means of livelihood. In the light of the above, this is a clarion call for both the federal government of Nigeria and all the companies operating in the Niger Delta area to come up with long term solutions aimed at solving the problems caused by petroleum extractions in these communities. In 1979, the government passed a law transferring ownership of all subsoil resources to the federal government. The revenues were to be fairly distributed throughout the states. This approach is like putting the cart before the horse. The Federal Government should have used part of the proceeds from oil to meet the demands of the people of the communities in the Niger Delta region bearing in mind that the region is the financial base and economic life wire of the country. The creation of modern amenities, good roads, world-class hospitals, good insurance policies for those people residing in the communities of the Niger Delta region; payment of good financial compensation to those people whose daily means of livelihood have been jeopardized by oil extraction activities and building of institutions that will facilitate the development of human capital, particularly in the areas of science and technology, should have been the expected top priorities of government considered for immediate implementation.

It was alleged that the 13 percent oil derivation which was supposed to be paid in full was alleged to be short paid. According to Simion Utebor(05/29/2019), the governor of Bayelsa state Seriake Dickson claimed that the oil-producing state in the country is not getting the complete 13 percent derivation of revenue derived from oil production as provided for in the constitution. Seriake Dickson, the governor of Bayelsa state, briefed that “despite the express

provisions of the constitution for the disbursement of 13 percent to the producing state, those entrusted with the responsibility have not ensured effective implementation of the Derivation Act.”

### *The Problems of Gas Flaring*

What is gas flaring? In the process of extraction and pumping up of crude oil, there is some natural gas that is associated with crude oil as the crude oil is pumped up from the ground. The burning of natural gases that are associated with crude oil is referred to as gas flaring.

John Zink(nd) defines gas flaring as the burning of natural gas that is associated with crude oil when it is pumped from the ground. He noted that in petroleum-producing areas where insufficient investment was made infrastructure to utilize natural gas, flaring is employed to dispose of this associated gas.

Even though gas flaring can be commercialized as a veritable source of energy for industrial growth if well administered, it has caused a lot of problems for the people of the Ilaje community. In his contributions, Temi E. Ologunorisa (2000) explained that the Niger Delta region of Nigeria has suffered all forms of pollution and degradation arising from oil and natural gas exploration which include a decrease in agricultural yield, depression in flowering and fruiting in Okro and palm trees, deformities in children, liver damage and skin flaring increases concentrations of airborne pollutants, and cause acidification of soils and rainwater. Emphasized that gas flaring can cause corrosion of metal roofs and significant increases in the concentrations of sulfates, nitrates, and dissolved solid with associated socio-economic problems. Nigeria flares a great deal of gas yearly. Nigeria flares 17.2 billion m<sup>2</sup> of natural gas per year in conjunction with the exploration of crude oil in the Niger Delta. This high level of gas flaring is equal to

approximately one-quarter of the current power consumption of the African continent. Anselm o. Ajugwo (2013).

### *iii. Climate Change*

One of the problems caused by gas flaring is climate change. Climate change has serious effects not only in the Ilaje community, or entire Nigeria but also in the rest of the world. When fossil fuel is burnt, it has the potential of warming up the environment and the world. The effect of gas flaring is much more pronounced in developing countries and Africa where economic resources in those countries are inadequate for people to adapt to the effect of global warming. In his contributions, Anselm O. Ajugwo(July 2013) hinted that gas flaring has contributed to climate change which has serious implications for both Nigeria and the rest of the world. He noted that fossil fuel mainly coal, oil, and gas-greenhouse gases has kd to warm up the world and is projected to get much worse during the course of the 21st century according to the intergovernmental panel on climate change(IPCC). According to Anselm. Ajugwo(July 2013) this scientific body was set up in 1988 by the United Nations ( UN ) and the World Meteorological Organization to consider climate change.

### *The Effects of Gas Flaring on Agriculture.*

Gas flaring is inimical to crops and plant growth. The reason for this is that some gases such as sulfur dioxide, carbon dioxide, carbon monoxide, Nitrogen, hydrocarbons, and hydrogen sulfide (H<sub>2</sub>S) contaminate the atmosphere and acidify the soil thereby depleting soil nutrient and thus make crops and other plants to have stunted growth. In line with this assertion, Anselm O Ajugwo(July 2013) noted that“previous studies have shown that the nutritional value of crops within such a vicinity is reduced”. He remarked that in some cases, there is no vegetation in the

areas surrounding the flare due partly to the tremendous heat that is produced and the acidic nature of soil PH.

Crops and plants are also being affected negatively by gas flaring through climate change. Changes in temperature tend to lead to the stunted growth of crops and plants. Anslem c. Ajugwo( 2013) noted that Orimogunje et al(2010) emphasized that the soils of the study area are fast losing their fertility and capacity for sustainable agriculture due to the acidification of the soils by the various pollutants associated with gas flaring in the area.

Climate change also affects the environment during a period of heavy rainfall. Heavy rainfall causes the water level to rise. This can cause erosion and the depletion of the topsoil where plants' nutrients are located. The effect of climate change is more pronounced and worrisome when heavy rainfall damages farm seedlings, farm crops, comic values, vegetation, and trees of economic values.

### *Poverty in the Niger Delta*

Poverty remains an intractable problem in Sub-Saharan Africa including Nigeria. Poverty is not a new phenomenon in Sub-Saharan-Africa and its effects manifest everywhere as indicators by which underdeveloped countries are identified. In the underdeveloped countries, abundant economic resources of great economic potentials are lying idle unexploited. Economic resources that are exploited are grossly mismanaged with a high capital flight to advanced countries! A Lot of corrupt African leaders have their wealth in advanced countries. Those that can readily come to mind are the whooping General Sani Abacha loots. The amount of money stole by Sani Abacha was captured by(Nwabugwu. L(March/ 8/2020), According to Nwabugwu, L, Sani Abacha stole up to 5billion US Dollars. General Olusegun Obasanjo recovered 1.2

billion Dollars out of the above amount in 2002. On 7th August 2014, the United States Department of Justice announced the forfeiture of US\$480 million, to the Nigerian government. Libby George(nd) noted that the United State and the British dependency of Jersey have agreed with Nigeria to repatriate more than \$300million in funds stolen by former military ruler General Sani Abacha. This whooping amount was a part of the oil revenue that was corruptly stashed in foreign countries during his rulership. If the Sani Abacha loot is fully recovered and properly managed, it would create millions of jobs for the job seekers and build institutions that would guarantee staff training in Nigeria. It is by an investment of time and money in human capital through education that the government can illuminate the engine of growth. Taking sensible and right decisions at the appropriate time concerning sectoral growth is the product of investment in human capital. Part of the Abacha loots is capable of establishing good hospitals in the Niger Delta and in the entire country. The loot is capable of constructing good roads in the Niger Delta area and in other parts of the country.

Poverty is a threat to human survival. It is a condition in which living resources are nonexistent, grossly inadequate, or are in short supply such that inadequacy or short supply of these make living difficult, worthless, miserable, and unbearable. It is a condition in which income inequalities are high and corruption is pervasive. Whatever minimal growth dynamics has always been skewed to favor the few powerful rich thereby increasing the gap between the rich and the poor. Thus we have a few people who are very rich and masses of people who are perpetually poor. The middle class has been eliminated! However, there are certain pertinent questions that readily come to mind; has the government at various levels of government in African countries live up to expectation? Has the government really performed its roles

efficiently and effectively? Has government policies really impacted positively on the lives of the people? Has the government been able to nip corruption in the bud? Has productivity really improved? Has there been a fair share of the national income? Has unemployment reduced? Is the power sector functioning at full capacity utilization? Has the education sector improved output? All the above variables are distinctive parts of the body of economics that eventually translate into economic development.

It is a truism that Africa is richly endowed with several mineral deposits and many other natural resources. Africa is also endowed with talented and physically fit people. With these in mind, one can always wonder why the region is still at the lowest ebb of productivity and why the people in some African countries live on less than \$2US a day.

Quite frankly, there has been a wide range of academic literature on poverty and how it can be alleviated in the sub-Saharan Africa. For instance, Eyituoyo Liolio (2015) identified the complex structure left behind by the colonialists in the parts of Africa as the cause of conflicts. According to him, conflicts culminated in one big problem that caused poverty.

Remarkably, he pinpointed the war between Hutus and Tutsis of Rwanda which started in 1916 when Belgian colonists labeled the group as distinct entities by introducing ID cards according to their ethnicity. This caused the Rwanda genocide in 1994. According to the writer, a similar situation also happened in Nigeria which presently results in militancy in south-south Nigeria. In this condition of upheaval, hardly can the government successfully plan for developmental programs to achieve the poverty reduction goal. Poverty is a threat to human survival. It is a condition in which living resources are nonexistent, grossly inadequate, or are in

short supply such that the inadequacy or short-supply of these vital living resources pose threat to human survival.

Poverty is a relative term. The degree of poverty differs from nation to nation. Poverty is also a global phenomenon. Malibu UIHAQ conjectured that “poverty is no longer contained within boundaries, it has become globalized; it travels across borders...” The concern about poverty has taken a center stage in every nation of the world. In this regard, governments at various levels, particularly in Sub-Saharan Africa (SSA) are striving to reduce the ugly trend. In his intuitive contributions, Boutros Ghali noted that “At its core, development must be about improvement of human well being: removal of hunger, diseases, and ignorance, and productive employment for all.” Okojie CEE (2001) noted that “reducing poverty is now regarded by many as the most important goal of development” Poverty has the potential to kill if it is not checkmated. In actual fact, many deaths in underdeveloped countries can be traced to poverty. Poverty has the potential to lead to further unexpected problems. It can cause attitudinal change. Particularly from good behavior and worst behavior. For instance, a family where hunger reigns supreme can elicit unwarranted behavior capable of disuniting such family. Food makes a living soldier!

Okojie C.E.E (2001) traced the concern about poverty to 1944 when the international labor organization (ILO) in its historic Philadelphia Declaration drawn up after the Second World War, stated inter alias: “Poverty anywhere constitutes a threat to prosperity everywhere”. (Diejomaoh 1998). Poverty can be evident by squalor, lack of the basic necessities of life – food, shelter, and clothing. It is a condition in which a family lacks economic resources to provide the basic necessities of life and other essential means of livelihood. By its very nature, as it relates to

the human condition, poverty does not command a universally acceptable definition. However, the concept of poverty can also be categorized under four distinct headings as identified in the United Nations Development Program (UNDP). Human Development Report (1997) and the United Nations (UN) (1997):

- The income perspective
- The basic needs perspective
- The capability perspective
- The social deprivation model

- I. *Income perspective*: By viewing poverty through income perspective, it implies that a family is in poverty if its total earning cannot sustain the family. In this condition of low income earning, such a family will find it difficult to save. The investment will be halted, consumption will reduce and output will also reduce. The reduction in output will generate low income again. The continuous circular flow is what Todaro (2000) called the circular flow of poverty. Such a circular flow of poverty in a family or a nation can be broken when there are internal microeconomic or/and macroeconomics dynamics employed to revert the ugly trend.
- II. *The basic need approach*; this implies that poverty is seen as deprivation of essential resources required to make a minimum and decent living. Deprivation in this sense is not limited to lack of food but also its lack of access to qualitative education, health facilities power supply, lack of good drinkable water, and other facilities that are supportive to a decent living.

Okojie CEE (2001) briefed that in the Colombian studies of poverty in which poverty was based on the absence of basic needs, households which fulfilled at least one of the following specifications were considered “poor”:

- I. I. *Inadequate housing*: meaning housing with a dirt floor in urban areas or housing built with precarious materials and having dirt floors in the rural areas.
- II. *Lack of water or sanitation*: meaning more than three persons per room and overcrowding
- III. *Lack of schooling*: meaning the presence of at least one child aged 7-11 years who did not attend school.
- IV. *Lack of information*: The inability of a family or a person to gain access to information is also considered as an attribute of poverty. Knowledge is power! However, knowledge is a function of acquired information and the ability to apply the information positively to achieve the desired goal when all other essential resources are integrated.
- V. *Social Deprivation*: When poverty is identified through the social deprivation perspective, the trio of human development; social exclusion, and participatory approaches are emphasized. Okojie CEE (2002) succinctly explained that the UNDP Human Development Report in 1947 introduced the concept of human poverty. According to the human development perspective, poverty is too complex for a single dimension of human life (such as income or consumption-based poverty line.)

Quite unfortunately, there are lots of people who are very brilliant at their elementary schools who would have been a significant public figure in their chosen careers but because of poverty, could not advance their education or they are unable to make their desired career

choices. Professor Okojie CEE (2001) explicitly emphasized that poverty means more than a lack of what is necessary for material well being; it also means the denial of opportunities and choices basic to human development.

Poverty, like disease, has the potential to kill. In fact, there are cases where patients died in hospitals because of a lack of money for a deposit to commence treatment. In everything in life, time is very crucial. Delay in medication administration or medical treatment can cause undeserved death to a patient. In their intuitive contribution, David Craig et al (nd ) noted that in early August 2001, the World Bank and the International Monetary Fund (IMF) announced a comprehensive review of the poverty reduction strategies paper (PRSP). According to them, the aim was to assist poor countries and their development partners strengthen the impact of their common efforts on poverty reduction.

Goff Handley et al (2009) in their article titled: “Poverty and Poverty Reduction in sub-Saharan Africa: An overview of key issues” discussed the socio-economic drivers and maintainers of poverty in sub-Saharan Africa (SSA). In the paper, they argued that harvest failure conflicts, Health shocks, and low capabilities, etc are the causes of poverty in Africa. They highlighted that since 1990 poverty has been on the increase and that about 300 million people are living on less than a US dollar a day.

In their reaction to poverty reduction and growth, David Sahn et al (2004 ), in their paper titled: “Growth and Poverty Reduction in sub-Saharan Africa: Macroeconomic Adjustment and Beyond” emphasized that while the poor do not bear the disproportionate costs of adjustment policies, it is also the case that policy reforms have largely failed to contribute to the alleviation

of poverty. They identified macroeconomic structural and institutional constraints to growth and poverty reduction.

*Measurement of Poverty.* There are many ways to measure poverty. The poverty index ( $P\alpha$ ) proposed by Foster Greer and Thorbecke (1984) can be used to obtain the headcount ratio ( $\alpha = 0$ ), and the depth of poverty ( $\alpha = 1$ ), and the severity of poverty ( $\alpha = 2$ ). The simplest and most common measure of poverty is the headcount ratio or the “incidence of poverty” C. E.E. Okojie et al (2000). According to C.E.E Okojie et al (2000), the poverty headcount is the number of people in a population who are poor while the poverty headcount ratio (H) is the fraction who are poor. That is:

$$FGT_0 = \frac{1}{N} \sum_{i=1}^H \left( \frac{z - y_i}{z} \right)^\alpha$$

H = the number of persons who are poor.

C.E.E Okojie et al (2001) noted that the  $\alpha$  index proposed by Foster Greer and Thorbecke (1984) incorporates some degree of concern about poverty through poverty aversion parameter  $\alpha$ .

The  $\alpha$  can be written as  $\alpha \geq 0$

From the above equation:

z = Poverty line

H = number of person/household whose incomes are at or below the poverty line(z)

$y_i$  = Income of the person/household

$\alpha$  = the parameter that takes the values of 0, 1, 2 depending on the degree of concern about poverty.

= The proportionate shortfall below the poverty line.

n = Population size

H = headcount ratio. It measures the incidence of poverty. When  $\alpha=1$   $\alpha$  measures the depth of poverty. When  $\alpha=2$   $\alpha$  measures the severity of poverty.

*The impact of governance on poverty.*

Prior to the democratic governance in Nigeria, the country had been under the sledgehammer of military dictatorship for decades. Military dictatorship by its nature governs by Decree. Their collective action is not answerable to the people and no one is powerful enough to question their authority pertaining to governance. In most African countries military incursion is an aberration as it is their culture to unleash poverty on the people.

During the military dictatorship, Nigeria, and in most African countries, poverty reign supreme occasioned by pervasive corruption which contributed to the low level of economic sectoral growth. The reason for their shoddy performance can be attributed to the inability to govern, lack of vision, lack of planning, gross mismanagement and lack of accountability, and corruption tendency. The corruption tendency had led to several coups and counter-coup in Nigeria and in many other African Countries. Unfortunately, According to an adage: when two elephants fight, it is the ground that suffers. In this regard, it is the masses that always bear the brunt as the level of poverty continues to rise among the people.

In Nigeria like most African Countries, people fought to achieve democratic government. Unfortunately, some people lost their lives to achieve this laudable objective. In the wake of democratic governance in Nigeria and some African countries, it was a Jubilation galore! The

expectations of the people were very high. People's' anticipations for a better life were spectacularly emphasized in all the nooks and crannies of the countries.

Amazingly, the hopes and expectations of the masses were dashed. The mismanagement on the part of the government can be traced to bogus senator's salary and allowances of the President and the Vice President and the members of the House of Representative at the Federal level. At the state and local government levels the cost of governance is also very high. The reason for this is that the amount paid to the people in authority is very high.

At this juncture, when we speak about governance, it is desirable to classify the term into two VIZ;

- a. People-centered governance
- b. Self-centered governance

People-Centered governance: In this type of governance the government put the people at heart in the planning and execution of government laudable objectives. Here the people's desires are at the core of the government planning decisions. And using management by objectives, (MBO), the government accomplished its stated objectives through efficient and effective management. The attributes of this type of government are: (1) such government is accountable to the people. (2) Government performances and achievements are glaring enough for the people to see. (3) People can ask questions on government actions and the government will provide useful answers to such questions.

Self-Centered Governance: Conversely, self-centered governance is that type of governance in which the people in government want to satisfy themselves first before the masses

of the people. It is the type of governance in which in all matters of governance, they consider themselves first.

Omoyibo, Kingsley by Ufuoma (July 2013) in his paper titled: Leadership, Governance, and Poverty in Nigeria noted that using Michael Lipton's theory of urban bias shows that there is more poverty in the rural areas because of the existence of parasitic and corrupt urban elites. The writer noted that despite the fact that the Nigerian economy is growing, the proportion of Nigerians living in poverty is increasing every year". The reason for this high level of poverty was expressed by Yusuf 2010. In Omoyibo Kingsley Ufuoma(July 2013) According to him, Nigerians have seen a number of ineffective governments with various leaders betraying the trust of the people and people have no say over how they are governed and how accountable their government is to them."

#### *The State, Governance, and Economic Development.*

Prior to 1929, the classical economic theory had envisaged laissez-faire which excluded government from many economic activities. The classical economic thought gave birth to capitalism/ (SEN Okoh 2003). The classical economists believed that the sovereign had to protect and defend the society from violence and invasion of other independent states. Another duty of the sovereign is to protect every member of the society from the injustice or oppression of every member of that society. The third duty is to perform certain public works and certain public institutions which cannot be of interest to any individual to establish and maintain because of the high cost of establishment and maintenance.

After the world depression of 1929, there was a surge in the level of economic activities which led to greater involvement of the government in economic activities. According to SEN

Okoh (2003), the result of government involvement was the birth of a mixed economy. In this way, the government and the private sector promote economic growth and are involved and stabilize the natural economy. Government intervention in economic activities is to be able to create the necessary conditions in order to achieve economic efficiency which could not be achieved under the free enterprise economy because of market failure.

In most sub-Saharan African countries, Nigeria as an example, government participation in economic activities had been characterized by massive corruption on the part of the leaders, serious fiscal indiscipline, and poor economic planning.

**Agricultural productivity:** Agriculture will continue to occupy a prominent position in the global economy judging from its primary role as the machinery for life sustenance. Its critical role in laying a solid foundation for the industrial sector cannot be overemphasized. This is evident in the provision of the much needed raw materials for the industrial sector.

Agriculture also provides employment to a lot of people in Nigeria and in sub-Saharan Africa. However, the contributions of the agricultural sector to the Nigerian economy had been greatly reduced since the discovery of petroleum. In sub-Saharan -Africa, countries' agricultural productivity had been halted by several constraints such as poor technology, poor rural development, and poor irrigation system, lack of storage facilities, and low level of agricultural credit facilities. The less developed countries are under the sledgehammer of poverty occasioned by a low level of real income which leads to a low level of demand which in turn leads to a low rate of investment and low productivity. Jhingan M.C. (1985). Coupled with these is the fact that the financial market institutions in most African countries (Nigeria inclusive) are highly

unorganized, spatially fragmented, and externally dependent. Iyoha M.A (2002). All the above contributed to poverty in sub-Saharan Africa (Nigeria inclusive).

1. Indicators of Access to Health care 1980-1993
2. Poverty Headcount, Literacy and Labor Participation Rates, Sex and State of Household members

Table 1: Indicators of Access to Health Care 1980-1993

Year	Life Expectancy at birth	Population per Physician	Population per Nurse	Population per hospital bed	Infants Mortality Rate
1980	47.7	12550	8010	1510	135
1981	48.1	8356	-	1433	144
1982	50	9400	2690	1351	109
1982	50	9400	2690	1351	109
1983	48	7640	2355	-	112
1984	49.3	6410	1020	1089	110
1985	49.7	6484	2081	1073	109
1986	51	6134	1927	1083	-

1987	50.5	4987	1434	1400	105
1988	51	4857	702	800	103
1989	51	4500	687	1040	100
1990	52	4300	666	1140	98
1991	52	4023	645	1000	87
1992	52	3867	626	1130	85
1993	52	3717	618	1277	84

Source: Federal Office of Statistics 1997. Socio-Economic Profile of Nigeria 1996. Table 9 pg 117.

From table 1, we can see that the numbers of physicians in Nigeria are inadequate with the size of the population. For example, in 1980, the population per physician was 12550, in 1981 the population per physician was 8356 and in 1983, the population per physician was 9400. In 1990 the population per physician was 4300 and in 1993, the population per physician was 3717.

In the same vein, the numbers of nurses are relatively small to cope with the population. In 1980, one person coped with 8010 people. In 1984, one nurse was assigned to 1020 and in 1992, one nurse treated 626 persons. With this in mind, one can see the reason for the high mortality rate in the country. In 1980 there was 135 infant mortality.

Observation of population per hospital bed revealed that the number of patients that comes to each hospital was very high. For instance, in 1980, the population of patients per hospital bed 1510, in 1984 it was 1089. In 1987, it was 1400 patients per hospital bed. In 1988 the number dropped to 800. The reduction in the number of patients per bed must have to be the result of a development in the health sector in which case more hospitals were built.

A careful study of the mortality rate also revealed that in 1980, the numbers of infant mortality was 135. In 1984 it was 110; in 1985, it reduced to 109 while in 1987 it was 105. There seemed to be a continued decrease in child mortality. This must be a result of an improvement in child care during the period. This implies that more maternity centers, general hospitals, and health centers were built.

Table 2 Depicts Poverty headcounts adult Literacy and Labour force participation rates by sex and states in 1995/96

Table 2: Poverty Headcounts, Literacy, and Labor Force Participation Rates by Sex and State of Household Member.

State zone	Poverty Headcount by sex of household head.	Literacy rates all adult 15+ years			Labor force participation rates all adults 15 + years 1995/96		
		Male	Female	All	Male	Female	All
North-East							
Ademawi	67.4	48.2	25.9	37.1	79.4	44.1	69.6
Bauchi	83.5	31.1	17.6	24.2	87.8	16.3	48.5
Borno	52.4	22.0	11.9	17.0	90.3	47.5	68.4
Taraba	63.0	44.0	22.3	33.2	87.3	38.8	62.2

Yobe	86.8	18.4	8.2	13.5	92.9	12.2	51.5
<b>North West</b>							
Jigawa	82.5	9.0	2.0	5.5	95.3	2.1	46.9
Kano	57.8	27.8	13.3	20.6	85.9	6.3	44.3
Katsina	71.8	23.1	8.7	15.8	87.3	6.6	43.1
Ketbi	82.9	30.7	13.4	17.0	93.8	13.0	49.4
Sokoto	83.9	17.8	8.6	13.3	90.5	4.8	47.3
<b>North Central</b>							
Benue	64.2	65.0	33.3	49.4	85.9	92.3	81.5
FCT	53.0	61.3	40.5	47.5	89.6	34.9	62.9
Kaduna	56.0	60.8	42.4	52.0	81.5	26.5	52.4
Kogi	87.3	59.2	34.9	46.0	70.8	74.1	72.8
Kwara	67.5	63.5	44.3	53.8	76.4	69.3	46.3
Niger	52.1	36.7	16.7	26.6	87.9	10.0	46.3
Plateau	65.9	56.5	36.0	47.8	67.1	45.8	60.7
<b>South East</b>							
Abia	58.6	71.9	67.9	55.8	67.3	69.0	38.9
Anambra	41.8	86.9	78.2	82.0	71.1	63.9	68.4
Enugu	56.8	75.7	62.3	68.6	74.8	70.9	72.6
Imo	53.4	84.0	70.3	76.4	72.9	73.4	73.2
<b>South West</b>							

Lagos	53.0	89.0	76.8	82.8	82.3	72.9	77.6
Ogun	69.9	76.4	61.4	68.9	79.3	82.6	81.0
Ondo	71.6	76.3	64.0	69.9	70.2	74.1	72.3
Ogun	66.7	67.7	50.3	58.2	65.1	75.7	70.8
Oyo	49.0	72.3	56.7	64.6	77.4	82.0	79.8
<b>South-South</b>							
Akwa Ibom	72.3	77.0	74.2	50.6	73.7	74.0	31.0
Cross River	61.5	83.3	69.1	76.4	73.8	69.5	71.8
Delta	59.3	86.1	74.9	80.7	64.3	56.2	60.2
Edo	53.3	84.6	75.9	80.4	68.1	66.9	67.5
Rivers	44.3	82.1	61.7	21.9	56.5	62.5	67.1

Source: I FOS, 1997, General Household Survey 1995/96 National Report Computed

From the above Table, it can be seen that the participation of females is relatively low in the Northern parts of Nigeria. Thus, this has a correlation with poverty in that region. This is particularly true because of the low level of education which is inadequate to secure employment. However, the condition is different in the southern part of Nigeria. Because there wasn't a significant difference in the education of males and females, both males and females have an equal opportunity to education and they utilized the opportunity. This results in an increased number of male and female that are gainfully employed in the southern part of the country. This is the reason why the poverty level in southern Nigeria is not as high as it is in the Northern part of the country. Religious belief has also a significant factor that kept women in the

northern part of Nigeria out of school and out of employment. The government has not really done enough in terms of enlightenment to ensure that males and females particularly in northern Nigeria embrace education.

Table 3

Nigeria Indicators

GNI per Capital Atlas Method current US\$	Year: 2013	Year: 2014
	\$2,700	\$2,970
GDP Growth (annual %)	5.4%	6.3%

Source: Poverty \$ Equity Databank and Portal Net.

Table 4. Population Total in Millions

Year: 2012	2013	2014
168.2	172.8	177.5

Poverty headcount ratio at \$1.90 a day (2011 PPP)

Source: Poverty \$ Equity Databank and Portal Net

From the above table, we can see that the Gross National Income (GNI) per capita in 2013 was \$2,700. It was \$2,970 in 2014. The Gross Domestic Product (GDP) increased from 5.4% in 2013 to 6.3% in the years 2014. It is rather unfortunate that the poverty level continues to grow. For example, the number of poor people in 1990 is close to 60 million and this number rose to almost 80 million in 2010. There has never been a fair share of the National Income (NI). The share of the National Income always favors the people in the position of power.

In order to overcome poverty in sub-Saharan Africa, including Nigeria, political leaders must be decent and transparent. Elected leaders must be people who are of proven integrity. Dubious and corrupt leaders are anti-developers and should not be voted to power.

The government in Africa (including Nigeria) should ensure that the constitution is respected and strictly complied with. Any amendment to the constitution should follow due process of a constitutional amendment. Culprits should be severely dealt with. It is on this note that corruption can be reduced.

In most African countries the House of Senate (including Nigeria) is too expensive. Their salaries and various chains of allowances are too high. Leaders should learn how to make sacrifices. The led have tolerated a lot of sacrifices – the huge amount of money paid to the members of senate should be re-examined and reduced. Leaders should see themselves as agents of transformation and commit to the course of uplifting Africa to an enviable height rather than being parasites and economic saboteurs.

**Good planning:** Good Planning is the foundation upon which good governance and economic growth and development can be built. Planning is the exercise of establishing objectives and working out the best alternative modalities to achieve predetermined objectives. African leaders must have good plans to achieve desired objectives.

*Rural Development:* The rural areas are the cornerstones for economic growth and development in most African countries. This is evident in the agricultural sector output. If the agricultural sector must be improved then it becomes imperative that the rural areas must be well funded and constructed. People in rural areas must have access to good drinkable water. The provision of water will also serve as a source for irrigation in rural areas.

Restructuring of the financial markets: If poverty is to reduce in Africa, there is a need to develop the financial markets. Such development would guarantee increased domestic savings in the sub-Saharan Africa. Restructuring the financial market – would assist to remove financial distortions and pave the way for economic transformation and growth.

*Income Redistribution:* There is the need for redistribution of income in the sub-Saharan Africa (including Nigeria) in such a way that the masses will have a fair share of the National income. These are part of measures by which the level of poverty can be reduced.

#### *Environmental Justice*

When the people in a community begin to notice that their lives and health are being threatened by environmental pollution, groups urge to fight environmental pollution perpetrators become imminent. Unfortunately, while groups are protesting peacefully, the dictatorial government usually clamps down on protesters. Most often, they reprimanded maimed, killed protesters, and destroyed properties. Such was the case in Nigeria under the maximum ruler and merciless killer, General Sani Abacha who killed the world-renowned environmentalist and human rights activist Ken Saro Wiwa and eight others by hanging for seeking environmental pollution justice.

Inequality in the distribution of the impacts of environmental pollution has been traced to racism. According to Paul Mohai et al(2014), environmental racism burst onto the national political and academic radar in 1982, when civil rights activists organized to stop the state of Northern Carolina from dumping 120million pounds of soil contaminated with polychlorinated biphenyls(PCBs) in the county with the highest proportion of African American. According to them, Warren County became a symbol of the birth of a new social movement and of an issue that mainstream middle-class white environmentalists had failed to consider,i.e, that people of

color and poor communities were facing ecological risks far greater than they. In the United States, the Warren County protests in North Carolina gained national attention and prompted the United Church of Christ(UCC) investigation into racial injustice occasioned by environmental pollution injustice. The results were published in 1987 titled:” Toxic Waste and Race in the United States.”

In Nigeria, people are gaining more consciousness about environmental justice. A lot of people are not novices about environmental justice and they are fighting for their rights. The government’s unfulfillment of the legal framework is the critical issue of conflicts in the Niger Delta region. According to Rhuks, Ako(2012), the government has failed to address fundamental drivers of oil-related conflict, which is the regulatory framework. Under this democratic dispensation, the judiciary is expected to uphold the sanctity of the rule of law. In the light of the above, Rhuks, Ako (2012) opined that the Recent Developments-FREP and Legal Standing Preamble(3e) of the FREP rules provide that the court shall welcome public interest litigations in the human rights field and no human rights case may be dismissed or stuck out for want of locus standi. (*locus standi means the right to bring an action to be heard in court or to address the court on a matter before it.* ) (USLegal, Inc.)

Nowadays, environmental justice studies have come to the center stage in the academic sphere for the following reasons:

First, there was evidence of social inequalities concerning environmental pollution injustice which must be contended with, but which the early years’ mainstream environmental movement ignored. Second, there is a need for documentation of the existence of the disproportionate impact of environmental pollution on people of color or poor populations

remains a contentious issue. Third, is the inability to proffer immediate and lasting solutions to the problems of environmental pollution. It was noticed that the solutions to environmental injustice are complex and expensive. It could attract the participation of local, national, or global intervention to resolve.

### *Chapter III*

#### *Estimation*

- A. *Research Methodology*: In this research work, the researcher used a comparative and descriptive method of data analysis.
- B. *Sources of Data*: Data was collected from Library textbooks; United State Energy Information Administration; World Bank; the Statistical Portal; Internet; Magazines, Newspapers, Ondo State Ministry of Agriculture and Natural Resources and other materials that are relevant for the purpose of this research work.
- C. *Research Design*: This research is on petroleum extraction, agriculture, and the local communities in the Niger Delta. A case of Ilaje community, Ondo State, Nigeria. Comparatively, and for the purpose of clarity, available data of petroleum resources income has shown that Nigeria is largely dependent on petroleum resources revenue for the maintenance of her economy. Agriculture revenue to the Nigerian economy is far less comparatively and has ceased from being the mainstay of the Nigerian economy.

We must also acknowledge that while the oil booms, the activities of exploring and exploiting petroleum resources have seriously damaging effects on the agriculture sector and on the Socio-cultural lives of the inhabitants of the Niger Delta (including the Ilaje Community) region. These have consequential effects on the agricultural output as it lowers the agricultural output and the income of the farmer.

#### *Cash Crops Production.*

Table 5: Graded Cocoa (Output in tonnes) in Six Local Government Area in Ondo State 2007--2018

Year	Odigbo	Akure South	Idanre	Ondo West	Owo	Ilaje
2007	4324	3555	24341	8564	3746	0
2008	6067	4469	20185	11293	5078	0
2009	8945	5746	24821	13100	5967	0
2010	7103	5331	18396	11778	5531	0
2011	8152	7044	22671	17365	6094	0
2012	7333	6198	20185	14961	4713	0
2013	8736	7499	24821	15734	7343	0
2014	9298	5345	18021	15936	4946	0
2015	7246	6214	19354	16298	5384	0
2016	8599	7224	18021	19134	4243	0
2017	6763	4506	20880	19097	4058	0
2018	4441	4506	20069	19223	5051	0

*Source: Extracted from Ondo State Ministry of Agriculture and Natural*

*Resources Akure, Ondo State, Nigeria.*

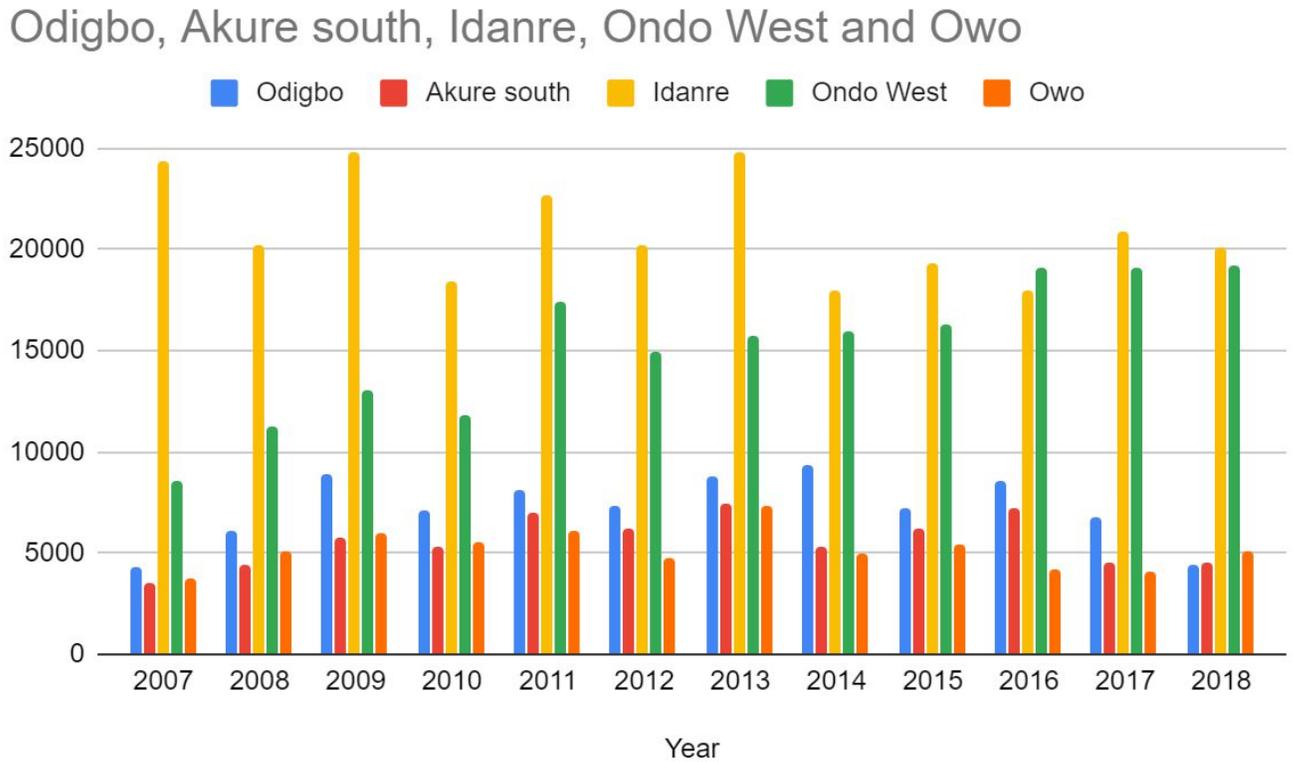
From the above table, we can deduce that in 2007, Idanre local government had the highest cocoa output as it was able to produce 24341 tonnes of cocoa followed by Ondo West, 8564 tonnes Ddigbo, Ondo; Akure South and Ilaje produced 4324 tonnes; 3746 tonnes; 3555 tonnes and 0 tonnes respectively. In 2009, Idanre local government produced 24821 tonnes of cocoa, which was the highest in that year. Ondo West local government 13100 tonnes. This placed the local government in the position. Odigbo, Owo, Akure south and Ilaje Local government-produced 6198 tonnes, 4713 tonnes, and 0 tonnes respectively. In 2016, Ondo West local government produced 19134 tonnes of graded cocoa followed by Idanre local government

with 18021 tonnes. Odigbo produced 8599 tonnes of graded cocoa. Akure South Owo and Ilaje government-produced 7224 tonnes, 4243 tonnes and tonnes of graded cocoa respectively.

In 2018, Idanre local government produced 20,069 graded cocoa tonnes. Ondo West Local government-produced 19223 graded cocoa, while Akure south, Odigbo, and Ilaje produced 4506 tonnes, 4441 tonnes, and 0 tonnes of graded cocoa respectively. Idanre local government produced the highest because the land is very fertile for the production of cocoa while Ilaje was at the zero production level.

The clear point here is that while the other five local governments were able to produce graded cocoa, Ilaje local government was unable to produce graded cocoa. The reason for this is that while all the other five local governments are located in an unpolluted land Ilaje local government was located in an oil-polluted land. The crude oil spillage has the potential to kill crops or render them unproductive.

Graph 1: Graph depicting graded cocoa output (in tonnes) in six Local Government Areas in Ondo State.



Source: Ondo State Ministry of Agriculture and Natural Resources, Akure, Ondo State, Nigeria.

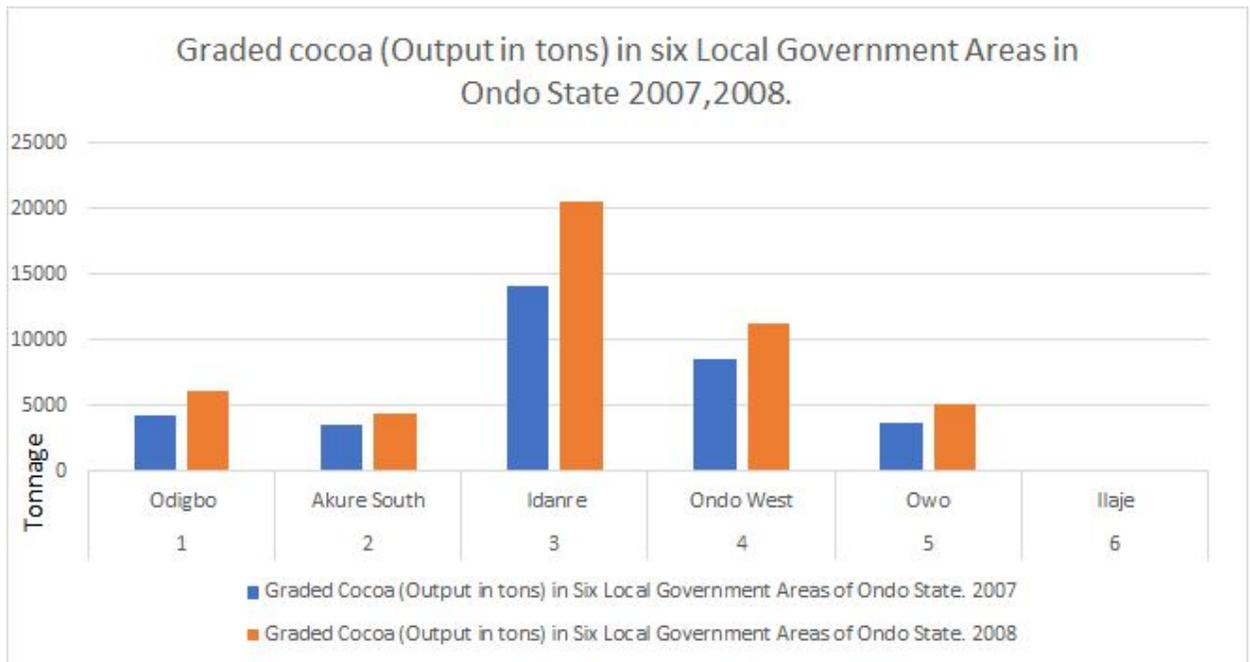
Graph I depicts graded cocoa in six randomly selected Local Governments in Ondo State, Nigeria. From the above graph, line 0 represents the Ilaje Local Government. This implies that during the year 2007 through 2018, Ilaje Local Government was unable to produce cocoa. The reasons for the lack of production of cocoa can majorly be attributed to land pollution with crude oil. Cocoa seeds and seedlings germinate and thrive under a conducive environment and congenial atmosphere. Being a tropical tree crop, Cocoa (*Theobroma cacao*) requires enough water for it to germinate and to grow. A condition in which the chemical composition of water is

being adulterated with harmful chemicals from crude oil is inimical to the germination of cocoa seeds and the growth of cocoa seedlings. Soil aeration is an essential ingredient for seeds' germination and plant growth. Chemicals from spilled oil on land have the potential to kill earth creatures such as earthworms which create holes and space for soil aeration. When the chemical constituent of crude oil is highly concentrated, it becomes toxic and poisonous to living things. The penetration of hydrocarbon molecules from crude oil into the cell membrane of plants can damage the plant cell membranes. In supporting this assertion, Baker, J(1970) noted that cell membranes are damaged by the penetration of hydrocarbon molecules leading to leakage of cell contents and oil may enter the cells.

A closer look at the above graph indicates that Idanre produced the highest graded cocoa in Ondo State, followed by Ondo West; Odigbo; Akure South; Owo, and Ilaje Local Government which was on the zero lines. The distinction between all the five Local Government that is able to produce graded cocoa and Ilaje Local Government that has no graded cocoa is hinged on the fact that while all the five Local Government (Idanre; Ondo West; Odigbo; Akure South and Owo) are located in the unpolluted area, Ilaje Local Government was located on a polluted area.

Further proof of the effects of oil pollution on plants/ crops' production in the Niger Delta Area can be shown thus: Cash Crops Output and Revenue in Some Selected Local Government Areas of Ondo State of Nigeria, 2007 and 2008.

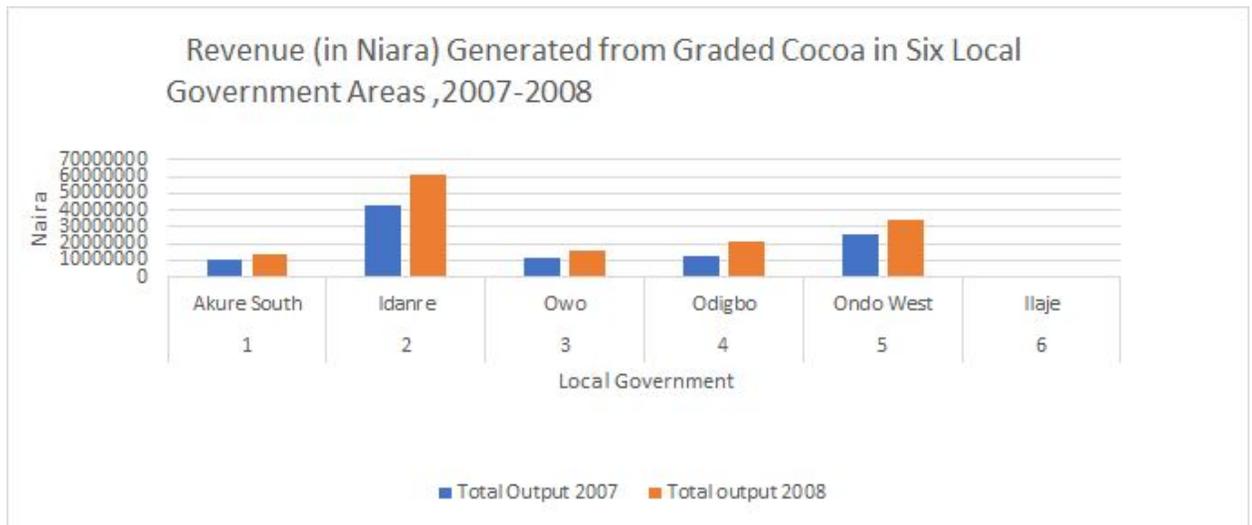
Graph 11



*Source: computed from the ministry of agriculture and natural resources, Akure, Ondo State, Nigeria.*

In graph II, all the Local Governments in serial numbers 1 - 5 have a good output of cocoa. For example, Odigbo Local Government produced 4,324 and 6,967 tons of Cocoa in 2007 and 2008 respectively. Akure South produced 3,565 and 4,469 tons in 2007 and 2008 respectively. Ondo West Local Government produced 8,564 and 11,293 tons in 2007 and 2008 respectively. All the above mentioned Local Governments are in the unpolluted area of Ondo State. From the above graph, we can see that while the Idanre Local Government has the highest cocoa output in 2007 and 2008. Unfortunately, Ilaje Local Government which is in a polluted area has a record of zero.

Graph III



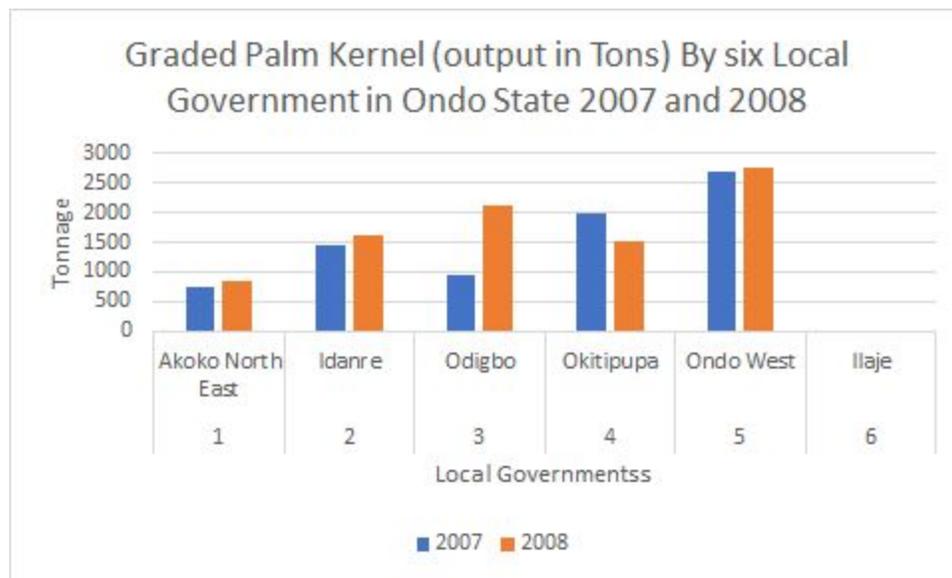
*Source: computed from the ministry of agriculture and natural resources, Akure, Ondo State, Nigeria.*

From graph III, we can see that in consideration of the output, the highest contributor to revenue

Generated from graded cocoa among the six Local Governments is Idanre Local Government. Idanre Local Government generated 42,571,500 and 61,665,000 Naira in 2007 and 2008 respectively. In total, Idanre generated 104,236,500 Naira in 2007 and 2008. Ondo West generated 25,690,500 and 33,876,000 Naira in 2007 and 2008 respectively. In total, Ondo West generated 59,566,500 Naira in 2007 and 2008. Odigbo Local Government generated 12,972,000

and 20,899,500 Naira in 2007 and 2008 respectively. In total, Odigbo Local government-generated 33,871,500 Naira as revenue to Ondo State Government in those years. While Owo Local Government generated 11,236,500 and 15,234,000 Naira in 2007 and 2008 respectively, which totalled 26.470,500 Naira, Akure South generated 10,695,000 and 13,405,500 Naira in 2007 and 2008 respectively. It has a total of 24,100,500 Naira as revenue to the Ondo State Government. All the Local Governments in serial numbers 1--5 are in an unpolluted area. Comparatively, Ilaje Local Government which is in a polluted area was incapacitated by Oil pollution to produce and generate revenue for the Ondo State Government.

Graph IV

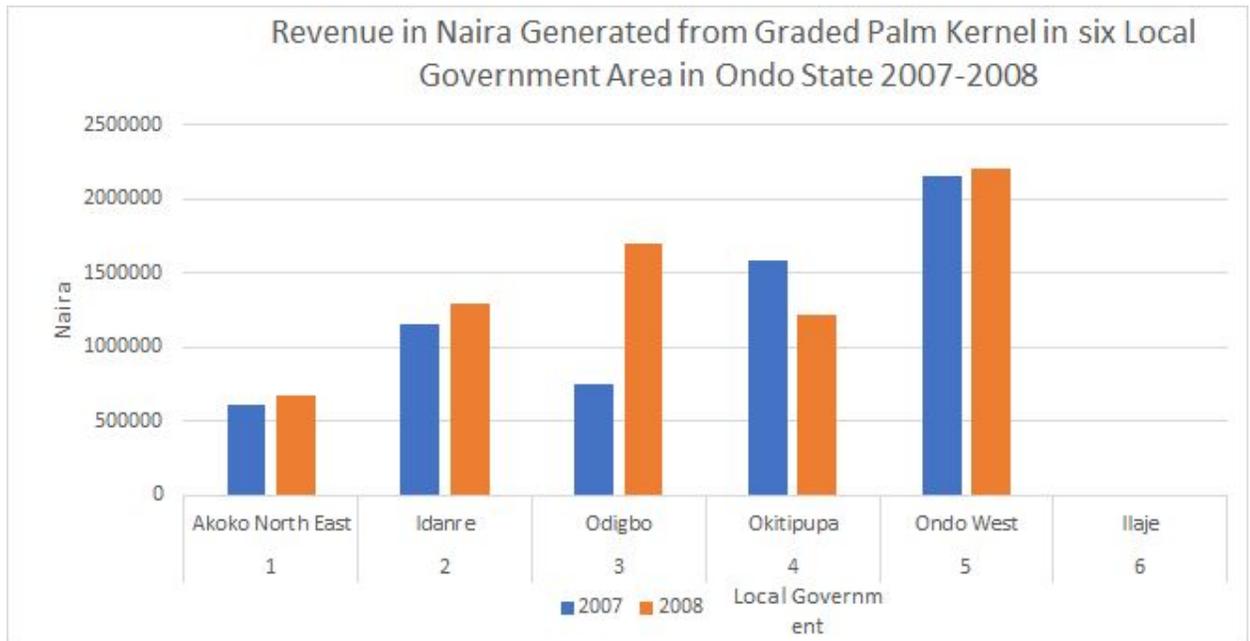


*Source: computed from the ministry of agriculture and natural resources, Akure, Ondo State, Nigeria.*

Note: S/N 1--5: Unpolluted Area 6:: Oil Polluted Area

From the above graph, we can see that in 2007 and 2008, Ondo West Local Government generated the highest( 2,687and 2,755 respectively) tons of palm kernel. In total, the Local Government produced 5,442 tons of palm kernel. Okitipupa Local Government produced1988 and 1518 tons in 2007 and 2008 respectively. Okitipupa Local Government conveniently occupies the second position as it produced a total of 3,506 tons of palm kernel in 2007 and 2008. Odigbo Local Government was able to generate 928 and 2,131tons in the year 2007 and 2008 respectively. Odigbo Local Government generated 3,059 and was the third-largest producer of palm kernel among the group. Idanre Local Government was the fourth-largest producer of palm kernel as it produced 1440 and 1611 tons in 2007 and 2008 respectively and has a total of 3051tons for the two years. Akoko North East was in the second position from the rear as it produced 754 and 833 tons in 2007and 2008 respectively, and has a total of 1587 tons.in the aforementioned Local Governments(i.e. Serial number 1to 5) are in the unpolluted area. The Ilaje Local Government was in a polluted area, hence it was unable to produce palm kernels.

Graph V



Source:: computed from the Ondo State of Nigeria. Digest of Agricultural Statistics

Note: S/N 1 - 5: Unpolluted Areas; 6: Oil Polluted Areas

Graph V above shows a yearly return on graded Palm Kernel (in tons) in six selected Local Government Areas out of eighteen Local Government Areas of the state for two years, 2007 and 2008. Serial number 1 to 5 (are in unpolluted areas; Serial number 6 was in a polluted area. From the above graph, we can see that Ondo West contributed significantly to the revenue of Ondo State as it was able to generate a whopping amount of 4,353,200 Naira (i.e.2,149,600 and 2,203,600 Naira in 2007 and 2008 respectively. Okitipupa Local Government generated a total amount of 2,804,800 Naira (i.e.1,590,400 and 1,214,400 Naira in 2007 and 2008 respectively.)

Odigbo Local Government generated 2,446,800 Naira (i.e. 742,400 and 1,704,400 Naira in 2007 and 2008 respectively.) The revenue generated by Idanre Local Government in 2007 and 2008 was 2,440,800 Naira. (i.e. 1,152,000 and 1,288,800 Naira in 2007 and 2008 respectively.) Akoko North East generated 1,269,600 Naira (603,200 and 666,400 Naira in 2007 and 2008 respectively.) We can see from the above graph that Ilaje Local Government which is in a polluted area didn't generate revenue from palm kernel because it didn't produce palm kernel.

*Determination of the economic Loss and/or economic Gains to the farmers.*

In an attempt to determine the economic loss and/or the economic gain to the farmers, it is imperative to agree on the following terms of references viz: the average exchange rate of Naira to the United State Dollar in 2007 was 1Naira=0.008129 Dollar; 1 ton of cocoa=16 bags of cocoa. Let us assume that the maximum production of cocoa a farmer was able to make per year was 2 tons.

The price of cocoa-like other commodities used to fluctuate. According to the International Cocoa Organization Annual Report 2007/2008 page 14, the average international price of cocoa per ton was US\$2,516. Thus, we must emphasize the impact of the middlemen who buy directly from the farmers. They are cocoa merchants with a huge financial capacity to purchase many tons of cocoa. They maximize their profit by buying at a price below the official market price. There are also Buyers' Unions, whose activities are designed to foster unity among buyers with the intention to cut prices and maximize profit. Besides, they are kin to study the price and buy more tons of cocoa when the price is low and sell when the price is high. Let us assume that the cocoa merchant decides to buy a ton of cocoa at a price of US \$2000 from the

farmer. This implies that a farmer who was able to produce 2 tons of cocoa per annum will get the US \$4000. In the Ondo State of Nigeria, US \$4000 is a ridiculously low amount for a farmer to earn as income per annum. At this juncture, it is imperative to consider the expenditure of a hypothetical farmer through all the challenges at his disposal. The hypothetical farmer has a cost function algebraically expressed as  $C=f(Q)$ , where  $C$ =cost of production of cocoa and  $Q$ = output. His factor inputs include all the resources he used in the process of production. His cost function is thus represented by  $C=f(L, k, I, FI, M)$  where:  $C$ =Total cost of production of cocoa beans;  $L$ =Costs of Labor employed;  $K$ = Capital, i.e. Cost of fixed assets e.g. Land.;  $I$ =Interest that the farmer has to pay on borrowed loan;  $FI$ =Cost of farm insurance;  $M$ =Miscellaneous expenses;  $f$ =Function. The cost function is thus represented by  $C=(L+K+I+FI+M)$ . It is habitual for the farmers in Ondo State like other cocoa farmers in the southwestern part of Nigeria to minimize costs and maximize profits. They are skillful and efficient in the use of available resources. In 2007, the farmer will weed the farm at least eight times a year in order to ensure a good yield for the farmer.

The farmer must also fumigate the cocoa pods and plants with fungicides and pesticides to ensure infectious disease control. He has to pay for the land, bank loans, and the interest on the loans. He has to earmark a certain amount for miscellaneous expenses. Let us assume that the amount expended are as follows: labour =#240,000; land=#100,000; farm loan=#100,000, Interest @ 4% interest rate= #4,000; miscellaneous expenses= #10000. Here, the total expenses=#604,000. The dollar equivalence of 604,000 nairas at the exchange rate of #1=\$.008129 is 4910 dollars. The total revenue from cocoa was \$4,000, but his expenses were \$4,910. The hypothetical farmer in the Ondo state made a loss of \$910. Most often, it appears as if the farmers

are really working for the cocoa merchants, who make huge profits from the cocoa deals. The farmers in the Ondo state are able to survive because they do not rely entirely on the income from the cocoa plantation. Most farmers have yam plantation, plantain plantation, cassava and maize plantation, etc. from where they generate income. The farmers in the polluted areas of the Niger Delta are seriously affected because of oil pollution which is inimical to crops' growth, which did not enable the Ilaje Local Government area to generate any revenue both from cocoa and palm kernel. According to Dayo Johnson(2015), Nigeria produces 240,000 metric tonnes of cocoa per annum out of which Ondo accounts for over 40 percent. The following are the trends in cocoa exports from Nigeria and the Ondo state estimates of Cocoa exports from the year 2000--2010;

Table 6: Trends in Cocoa Exports from Nigeria;2000--2010

Year	Total Export
2000	144,821
2001	184,122
2002	191,992
2003	241,847
2004	266,027
2005	281,820
2006	281,820
2007	300,000
2008	350,000
2009	362,000
2010	365,000

Source: Taiwo A Olaiya (June 15, 2016)

Table 7: Estimates of Ondo State Cocoa Exports 2000--2010

Year (a)	(b) Total Export	(c) Estimates of Ondo State Export. 40% of Total Export.	(d) Rate of Growth of Ondo State Export(%)
2000	144,821	57,928	---
2001	184,122	73,649	27.1
2002	191,992	76,797	4.27
2003	241,847	96,739	26
2004	266,027	106,411	10
2005	281,820	112,728	6
2006	281,820	112,728	0
2007	300,000	120,000	-6
2008	350,000	140,000	-16.6
2009	362,000	144,800	-3.4
2010	365,000	146,000	-0.8

Source: Computed from table 6

Table:8 Nigeria Crude Oil Production:2002--2014

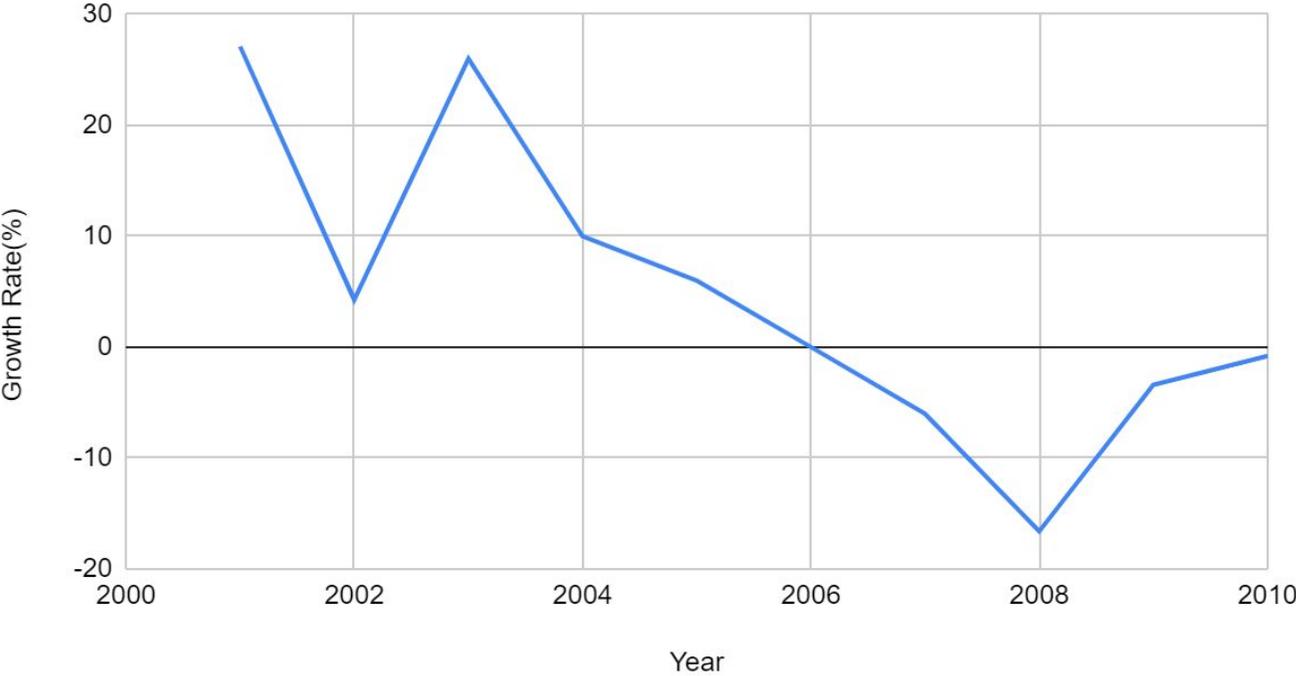
Year	Crude oil production	Growth Rates of crude oil production (%)
2002	2118.00	--
2003	2,275.00	7.4
2004	2,329.00	2.4
2005	2,627.00	12.8
2006	2,440.00	-7.1
2007	2,350.00	-3.6
2008	2,165.00	-7.8

2009	2,208.00	1.9
2010	2,455.00	11
2011	2,550.00	3.8
2012	2,520.00	-1.1
2013	2,367.00	-6.0
2014	2,423.20	2.3

Source; the United States Energy Information Administration

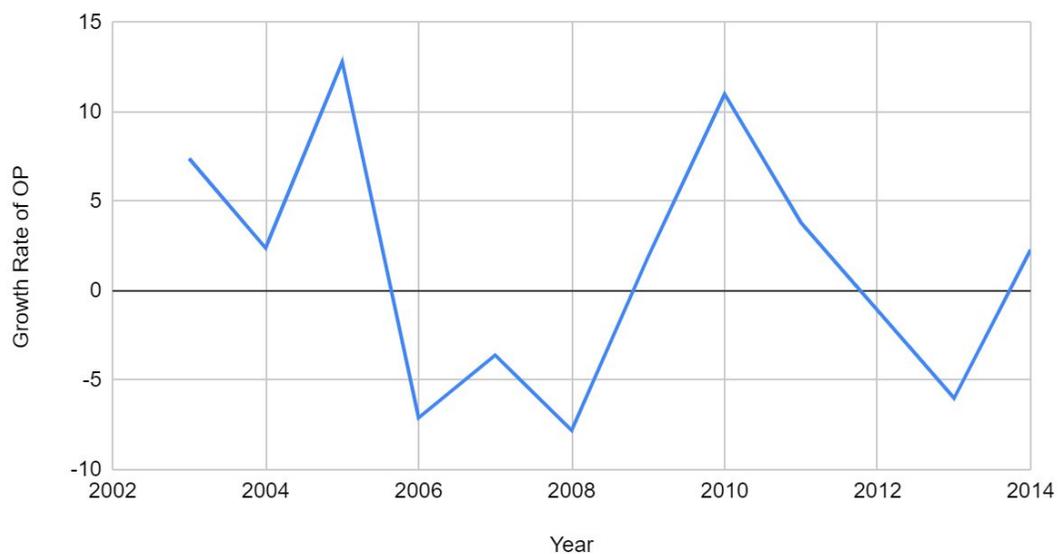
Graph III: Rate of Growth of Ondo State Cocoa Exports

Growth Rate(%) vs. Year



Graph VI: Rate of Growth of Nigeria Crude Oil. (%)

Growth Rate of OP vs. Year



Note: Oil Production (OP)

From table 6 we can see that there were increases in total exports of cocoa from 2000 to 2010. The reasons for this improvement could be a result of the effects of a new democratic government in 1999 which favored new international trade relationships. New improved varieties of cocoa seedlings could also be accountable for increased exports. There are hindrances that limit total exports: this could be a result of soil infertility which may occur by crude oil contamination of the soil. Chemical compounds inimical to plant growth in crude oil (e.g. hydrocarbon) infiltrate into the seed coats and cause unfavorable conditions for the seeds to

germinate. Aeration in the soil which is germinative to plant growth is also reduced by crude oil contamination. Other limitations are the high cost of input factors; government insensitivity to improve the agriculture sector. The international trade relationship of economies may be affected by countries' economic trade policy. Besides, lack of technical know-how on improved farming techniques and unfavorable prevailing weather conditions may account for a decline in cocoa production.

Table 7 shows the estimates of Ondo state cocoa exports. In Ondo state, all the above criteria are also relevant. The incidence of pests and diseases is high. Most farmers lack storage facilities and access to credit facilities. Farming and Fishing which are the occupation of the Ilaje community are being affected by oil pollution. Hydrocarbons in crude oil have the potentials to increase the carbon content in the soil. Increased carbon concentration in the soil is inimical to plants' growth. This renders the land infertile for the growth of cocoa and other food crops in the area. There are several studies that show that crude oil contamination of soil has the potentials capable of causing crops stunted growth. An example of such a study was carried out by Uquetan et al (2016) on the effects of oil pollution on soil properties and the growth of tree crops in the Cross River State, Nigeria. The author noted that there was reduced germination in the polluted soil due to the fact that there was a possible infiltration of oil into the seed coat which caused unfavorable conditions for the seed to germinate. Fishing is being affected by oil spills in the area. Oil films killed fishes and thus reduced fish output and the income of the local communities thereby increasing the level of poverty in the area.

A closer look at table 7 shows that the growth rate of cocoa production was at a decreasing rate with an occasional increase. This was depicted in table 7 column d. and graph V.

The graph shows that the growth rate of cocoa rose from 0 in 2000 to 27.1% in 2001. The growth rate thereafter declined to 4.27% in 2002 and increased to 26% in 2003. The growth rate declined to 10% and 6% in 2004 and 2005 respectively. In 2006, the growth rate was 0.1% it declined to negative 6%; 16.6%; 3.4% and 0.8% in 2007, 2008, 2009 and 2010 respectively.

The reasons for the inconsistencies in the growth rate can be attributed to the inconsistencies in the cocoa output which resulted in the exports. Causative factors of the inconsistency growth rate of cocoa output are Climatic changes e.g excessive rainfall( which can cause the cocoa pod to rot. It is called black pod disease. It is a fungus disease.); extreme drought( which sometimes elicit fire outbreak which engulfs cocoa plantations); Labor input (which may be adequate or inadequate); age of cocoa plants; possibilities for the acquisition of credit facilities; soil fertility; land pollution status; land tenure system and the level of strategic management technique employed. All the above are critical determinants of cocoa output and its rate of growth.

Table 8 shows Nigeria's crude oil production from the year 2002 to 2014. The table showed increases/decreases in crude oil production from 2002 to 2014. Graph VI shows the growth rate of crude oil production. There was an increase in crude oil production in the year 2003. It decreased to 2.4% in the year 2004 and rose to 12.8% in the year 2005. In the year 2006; 2007; 2008 the growth rate decreased and increased in the year 2009 from 1.1% to 11% in the year 2010. The growth rate declined to 3.8% in the year 2011 and was negative in the year 2012 2013 and increased to 3.2% in the year 2014. The rise in crude oil production could be a result of efficient management; Government proactive measures to suppress vandalism and bunkering activities. The fall in crude oil production could be a result of pipeline vandalization;

oil bunkering; technical or management problems. These are the reasons why production figures are irregular.

In the Ilaje Local Government area, 0 quantity of cocoa was produced in 2007 and 2008. During 2007 and 2008, the barrels of crude oil produced are 2350.00 and 2165.00 respectively. It was evident that the land is infertile, and is unsuitable for the production of cocoa. The land is polluted by crude oil spillage which damaged the plants due to the presence of a harmful chemical compound in the crude oil that destroyed the plants. According to Adeyemo et al (2009), the oil spills in mangrove habitats permeate exposed tree trunks, accelerating the rate of decay of these precious plants, and as a consequence of their disappearance, will lead to shoreline erosion. They noted that leaked oil permeates the coastal waters and streams, coating the exposed, air-breathing roots of the mangroves. They stressed that it is difficult, if not impossible, for the plants' breathing lenticels to perform their essential functions when covered in oil thus, in effect, they are slowly suffocated.

Table 8 depicts graded cocoa in six selected local governments in Ondo State, Nigeria. The six selected Local Governments are Odigbo; Akure South; Idanre; Ondo West; Owo, and Ilaje Local Government. From the table, we can deduce that while all other Local Governments are able to produce graded cocoa, Ilaje Local Government cannot produce a single tonne of cocoa. Further proof of the effects of crude oil extraction on crops and plants are shown below thus:

Table 9: Number of Trees Felled in six selected Local Government Area of Ondo State, Nigeria (2007 & 2008)

S/N	Local Government Area	No of Trees Felled(2007)	No of Trees Felled(2008)
-----	-----------------------	--------------------------	--------------------------

1	Akure North	11736	8728
2	Ifedore	6748	5486
3	Ondo East	3155	6029
4	Ilaje	0	0
5	Idanre	5162	3551
6	Owo	19409	21393

Source: Extracted from Ondo State Agricultural Development Project (ODSADEP)

: [quarterly report] Ministry of Agriculture and Natural Resources, Akure, Ondo State, Nigeria.

Table 9 depicts the number of trees felled in six selected Local Government Areas (LGA) of Ondo State, Nigeria in the years 2007 and 2008. The Local Government Areas and their respective numbers of trees felled as shown in the table are: Akure North was 11736 and 8728 in 2007 and 2008 respectively. Ifedore felled 6748 and 5486 trees in 2007 and 2008 respectively. Ondo East felled 3155 trees and 6029 trees in 2007 and 2008 respectively. Ilaje Local Government Area has a record of 0 in 2007 and 2008. Idanre Local Government Area was able to produce 5162 and 3551 in 2007 and 2008 respectively. Owo Local Government felled 19409 trees and 21393 trees in 2007 and 2008 respectively. The reason for the shoddy performance of the Ilaje Local Government was as a result of land pollution by crude oil spillage and oil components which constitute impediments to plant growth.

### *Environmental Pollution and Food Security Challenges in the Niger Delta*

It is axiomatic that food security is basic to human survival. The question that readily comes to mind is whether food security is guaranteed in the Niger Delta region. Several researchers have decried the food security condition in the Niger Delta region as worrisome. For example, Kujenga, A (Feb,3,2017) posited that in the Niger Delta, environmental degradation has led to a substantial decline in local food production. He pinpointed that most local people lack access to sufficient safe and nutritious food for their dietary needs. Omadjohwoefe (2013) hinted that the land is so polluted that it can no longer support the growth of most of the crops like cassava, yam, plantain, potato, and cocoyam. He noted that; arable farmland has been so degraded that the hitherto productive areas are now turned into a wasteland. He stressed further that with increasing degradation of the soil, and the dwindling agricultural productivity, farmers have become occupationally disoriented and displaced thereby creating acute scarcities of farm produce and food insecurity.

Nnimmo.B (05/07/2017) succinctly noted that in the Niger Delta, as in the overall national situation, while we have spots where few citizens battle with mountains of food, the majority are drowning in the ocean of hunger. He stressed that over the years local food varieties have been lost or abandoned. Massive deforestation due to logging, land-use conversion, infrastructure development, and industrial activities threaten vital food sources.

Environmental experts and stakeholders also expressed their minds on food insecurity in the Niger Delta as a result of environmental pollution. In a Leadership newspaper report, Chinelo C.(August, 4,2017) posited that: “experts and stakeholders say demilitarization of the Niger

Delta, cultivation and investment in aquaculture and an emphasis on remediation rather than clean-up of Ogoni will check food insecurity in the region”.

It is unfortunate that the deplorable ecological condition in the Niger Delta majorly contributed to the poor lifestyle of fishermen, women, and other inhabitants in the Niger Delta. It threatens human survival and causes other social crises including the threat to health care safety. Nnimmo.B.(05/07/2017) hinted that the overall situation is so bad that fishermen and women depend on imported fish for sustenance. Food insecurity in the Niger Delta also led to a price increase in other economic activities such as the cost of transportation and health care costs. Babatunde A.O (nd ) posited that in the Niger Delta, environmental degradation has led to a substantial decline in local food production. She noted that this has contributed to scarcity and an astronomical increase in the price of food placing it beyond the reach of the vast majority of the local people. Crude oil contamination of soil has led to the poor harvest of food crops in the Niger Delta region. Most harvests of local food crops are small in size and are inadequate.

**Table 10:** Estimated yield and demand for some food crops in the coastal wetlands of the Niger Delta region in 2010.

Crops	Supply/MT	Demand/MT	Deficit/MT
Cassava	14897	24,413	-9,516
Maize	1774	4,602	-2,828
Yam	12,462	24,475	-12,013
IPlantain	3,385	8,473	-5,788
Vegetable	7,766	13,554	-5,788
Fruits	8,752	14,839	-6,087

Source: Adedipe et al 2010 (as reported by Ike and Ekanem, 2016)

Table 10 above shows an estimated supply and demand for some food crops in the coastal wetlands of the Niger Delta region in 2010. The crops listed in the table are Cassava; Maize; Yam; Plantain; Vegetables and Fruits.

While the total supply of cassava was 14,897, the quantity demanded was 24,413. There was a shortage in quantity supplied in the amount of 9516. The quantity demanded of maize was 4602, only 1774 were supplied. In this regard, there was a shortfall in supply in the amount of 2828. concerning the supply of yam, there was also a shortfall in its output. While the quantity demanded was 24,475, only 12,462 yams were supplied, thus indicating a deficit in supply in the amount of 8473.

As regards the supply of vegetables, the quantity demanded was 13554, the quantity supplied was 7766, thus, there was a shortfall of 5788. Fruits were also in short supply. While what was demanded was 14,839 only 8752 were supplied with a deficit of 6087. Generally, the yield of crops in the coastal wetlands of the Niger Delta( including the Ilaje community ) was not adequate to meet the demand for the crops.

Table 11: Estimates of the output of selected crops in metric tonnes in the south zone ( Niger Delta Area ) of Nigeria in the 2013/2014 production season.

Crops	2013 Output	2014 Output	% Change
Maize	872.0	925.2	6.09
Rice	509.3	557.6	11.45
Ginger	0.0	0.0	0.0
Yam	7512.8	8351.3	6.61

Groundnut	19.8	22.9	3.10
Millet	0.0	0.0	0.0
Cassava	12166.4	12167.3	0.008.
Cowpea	88.7	93.1	4.89
Cocoyam	709.3	710.5	0.17
Soybean	0.0	0.0	0.0
Okra	1229.3	1229.3	0.0
Tomato	43.7	44.0	0.3

Source: Agricultural Development Program, LK;/Rivers State, 2016 .ger Delta.

From table 11, we can deduce that there is no significant increase in crop output between 2013 and 2014. Little improvement in output can only be noticed in Rice, yam, maize, and cowpea. Percentage change in other crops' output between 2013 and 2014 was also insignificant. For example, Between the years 2013 and 2014 the percentage change in the output of. Groundnut, cocoyam, and tomato are 3.10%,0.17%, and 0.3% respectively. Ginger, Millet, Soybean, and Okra have a 0% change in output.

#### *Environmental Pollution and Health Care Challenges in the Niger Delta*

The environmental pollution in the Niger Delta warranted by the emission of life-threatening gas pollutants requires that residents of the region are given adequate healthcare coverage. Unfortunately,,the residents of the Niger Delta are in pathetic condition healthwise. The health care system was in a deplorable condition. The number of medical and health institutions are overstressed and inadequate to cope with the population in the Niger Delta region. Beneath are

tables depicting the population and number of medical and health institutions in the Ilaje Local Government Area of Ondo State.

Table 12: The population of Ilaje Local Government of Ondo State ( 2006)

Surface Area Square(Km )	Male	Female	Total	% of State	Population Density	Age Groups	
708.3	146,859	142,979	289,838	8.37	409.20	0-14yr	110,209
						15-64yrs	169,490
						65+yrs-	10,139
						Age Distribution -C-2006	
						0-9 years	75,094
						10-19years	68,410
						20-29years	51,945
						30-39years	35254
						40-49years	26,581
						50--59years	15,653
						60-69years	9,520
						70-79years	3,780
						80+years	3,601

*Table 13: Summary of Medical and Healthcare Establishments in Ilaje Local Government, 2008*

S/N	Name of Health Care Establishment	Ownership	Number
1	General Hospital	State Government	1
2	Comprehensive Health Center	Local Government	3
3	Basic Health Center	Local Government	20
4	Private(General) Hospital	Private	3
5	Family Support Program	Local Government	1
6	Clinic	Mission	1
	Total		29

Source: Planning, Research and Statistics, Ministry of Health, Akure.

Tables 12 and 13 above depict the population and Summary of Medical and Healthcare Establishments in Ilaje Local Government of Ondo State. Observations show that the Ilaje Local Government has a surface area of 708.3 square kilometers; the population of males and females in the Local Government in 2008 was 146859 and 142979 respectively. Ilaje Local Government's total population was 289,838 which accounts for 8.37 percent of the total population of Ondo State. The Population Density of Ilaje Local Government is 409.20 per square kilometer. (i.e. total population divided by land area in square kilometer). The Age Groups classification and their respective population are written below thus: age group 0-9year has a population of 75,094; 10-19year has a population of 68,410; 20-29year has a population of 51945 peoples; 30-39years has a population of 35,254 peoples; 40-49years has a population of

26,581 peoples; The age groups of 50-59 years; 60-69 years, 70-79 years, and 80+ years have the following population 15,653, 9,520, 3,780, 3,601 peoples respectively.

In order to juxtapose the population with the health conditions in the Ilaje community, it is desirable to analyze the number of medical and healthcare establishments in the Local Government. There is only 1 General Hospital owned by the state government; 3 Comprehensive Health Center owned by Ilaje Local Government; 20 Basic Health Center; 1 Family Support Program both owned by Ilaje Local Government; 3 Private (General) Hospitals owned by private individuals, and 1 Clinic owned by Mission. In sum, we have 29 medical and healthcare establishments in the Ilaje Local Government of the Niger Delta.

Analytically, we can see that the Ilaje community with a population of 289,838 people, has only 29 medical and health care establishments. On average, it implies that 9,994 persons will be using 1 medical and healthcare establishment. We can deduce from the above that the number of medical and healthcare establishments are inadequate to cope with the population in the Ilaje community. This condition accounts for one of the reasons for shoddy health care delivery in the community. The fact that environmental pollution affects the health of residents of the community is a signal for the stakeholders in the petroleum industry to identify that the community needs improvement in their healthcare.

## *Chapter IV: Findings and Discussion*

### *A. The Implications of Environmental Pollution on Cash Crops Production*

The outcome of this research revealed that environmental pollution has a negative influence on cash crop production. We can observe from tables 1—4 that while the Local Government from serial number 1—5 made remarkable achievements in terms of output and revenue generation, Ilaje Local Government has a record of zero. Environmental pollution implies the contamination of the environment with chemical compounds. The introduction of these chemical compounds into the natural environment has harmful effects on the lives of human beings, plants, and animals living in that environment. Soil contamination occurs when there is an introduction of chemical compounds that are toxic to the natural land. These chemical compounds dissolve when they come in contact with water, they sink inside the soil, and kill living organisms inside the soil, contaminate plants nutrients and render them useless for plants growth. According to Environmental Pollution Centers, chemical pollutants mostly result from various human activities like the manufacturing, handling, storing and disposing of chemicals.

### *B Reviewing. Food Security*

In this research work, it was established that food production in the Niger Delta region and in the entire country is inadequate. In Nigeria, farmers are unable to actualise mass food production as a result of many factors among which are: lack of farming mechanization, epileptic power supply unresolved hindrances in fertilizers' usage, the unresolved incursion of *Fulani* herdsmen on farmland that enables cows to graze on farm crops, the Niger Delta food shortage was compounded by oil spillage which rendered the land infertile for crops production and also pollute their waters. Also there was low investment by both public and private investors, Public

and private investment in agriculture is a sure way to boost agricultural production in the Niger Delta region and in Nigeria as a whole. The task of agricultural production is not an easy task, particularly in African countries where modern mechanized farming is at low ebb. Farmers still use cutlasses to cultivate the land and hoes to make ridges. Farmers also use manual labor to plant. This is a rigorous and energy-sapping exercise. In order to ensure sustainable agricultural production, huge investment in mechanization is germane. Dr. Bhattacharjee(nd) noted that “Mechanization of agriculture and farming process connotes application of machine power to work on the land, usually performed by bullocks, horses and other draught animals or by human labor.”

Dr. C.B.Memoria noted that “It(Mechanization) chiefly consists of either replacing or assisting or doing away with both the animal or human, labor in farming by mechanical power wherever possible” The quest for food security must also emphasize the food requirements of the people. The consumption of a particular food item is a matter of choice. People’s food sovereignty must be respected. By implication, food that is not culturally required will not serve a useful purpose locally, however, such food will increase the gross domestic product(GDP) of the country if such food is exported to meet the needs of other countries where they are highly valued. Food security is guaranteed when the required type of food is available in the required quantity at the required place and time at an affordable price. This can be achieved when the public and private local food producers intensify efforts in massive or large scale production of the required food items. The proactiveness in investment in mechanization by both public and private sectors is the magic-wand to achieving sustainable development in agricultural production. Mechanization is the application of machines to advance agricultural production. It is

the use of technology to enhance and advance agricultural production through the use of machines.

### *C. Agricultural Problems of the Local Communities:*

Apart from the aforementioned problems in the Niger Delta region, the local communities are faced with several agricultural challenges. One notable problem in the agriculture sector is the inability to guarantee food security. Food security does not only connote how the people are able to gain access to sufficient food now and in the future but also encompasses the quality and safety of the food.

In the Niger Delta region, most farmers are particularly worried about the quantity and quality of their output. Oil spillage in the Niger Delta had led to food insecurity in the region. For example, Cassava and yam tubers are relatively small, Other plants of economic value are thorny. Food insecurity induces other adverse economic challenges such as price increase of goods and services, income reduction, unemployment. E.t.c.

One of the challenges of the local communities is the lack of good management of the agriculture sector. The attributes of good management can be expressed through the functions of management. The functions of management are the functions expected of a manager to perform. According to Koontz, H. et al (1982), they include, planning, organizing, staffing, leading and controlling. Each of the above functions is critical determinants of an organization's goals accomplishment. However, all of the above functions of management are interrelated and each function cannot achieve preset goals single-handedly. Each of these elements of management must work cooperatively and harmoniously to complement the efforts of other elements.

The nonperformance of any or all the functions of management constitute an impediment in the wheel of management. The agriculture sector in Nigeria has witnessed diverse management problems for decades and these problems have multiple effects nationwide. Not only will such problems hinder the productive capacity of the sector, but it is also capable of creating inflationary trends and increasing the level of unemployment in the Country. Agro-allied industries whose main source of their input materials are majorly from the agriculture sector will experience a decline in production. This may cause such industries to downsize labor thereby increasing the level of unemployment in the country. In a situation where alternative sources of raw materials are costly, agro-allied infant industries are badly hit and maybe moribund.

Based on the findings of this research paper, it was evidenced that there were management problems concerning the agriculture sector. It was crystal clear that the government spent huge amounts of money to increase agricultural production, yet it appears as if the government has not spent on the agriculture sector because of the low return on investments. Part of these reasons can be traced largely to (a) lack of close monitoring of funds;(b) Misapplication of funds;(c) nonperformance of the functions of management (d)Corruption. (e)Faulty Selection of Leaders

- a) *Lack of close monitoring of funds:* The inability of government officials to closely monitor funds creates a loophole for funds to be diverted into personal accounts or used to satisfy immediate personal commitment. The essence of the Nigerian government funding the agriculture sector is to guarantee food security for her citizens by boosting agricultural output. Observations have revealed from this study that there was a decrease

in agricultural production in the country. This was evidenced in Figure(3 ) by the decrease in the agriculture sector in the years 2007 to 2017. The decrease in agricultural production in the years 2007 to 2017 forced or necessitated government food importation in those same years of 2007 to 2017 as shown in Figure(1). It can be argued that one of the reasons following agricultural production was the lack of close monitoring of funds which were specifically meant to boost agricultural production. This must-have being the case between 1985 to 1987 and 1995 to 1997. In spite of the government's huge investment in the agriculture sector to boost agricultural production, the sector experienced a slow growth rate.

- b) *Mis-application of Funds*:-This happens when funds meant specifically to achieve certain goals were diverted to achieve different goals. The decrease witnessed in the years 2007 to 2017 can also be a result of a lack of close monitoring of funds meant to improve agricultural output in which case such funds were corruptly diverted to pursue personal enrichment. This act is undesirable for the achievement of laudable desired present goals. Not only will such desirable preset goals not be achieved at the appropriate time frame, but the costs of achieving such goals may also escalate with diverse consequential implications for the organizations, the customers, the employees, the shareholders, and the community.

When funds meant to boost the agricultural output are diverted by government officials, the farmers who are the genuine agents to boost agricultural output could not lay claim to such funds, perhaps for the purchase of new varieties of fertilizers or modern

farming equipment will cause agricultural output to decline. To this end, accountability must be the watchword of top-level management. According to Obadan (2003) “government agencies should be accountable for the proper management of funds and programs for which funds are appropriated”. Obadan (2003) stressed further that “in a budget, there must be a clear statement of purposes of expenditure and a direct or indirect specification of the cost, time and nature of the expected result”. In addition, there must be a genuine means of evaluation to guarantee that the approved funds get to the genuine people who are deemed to be the catalyst for achieving organizational preset goals. Besides, there must be close monitoring of the application of funds to ensure that the productivity conforms with planned objectives. In essence, the management must strategize to ensure proper coordination of the activities of the policy implementers. In this connection, the farmers’ activities must be monitored and analyzed to ensure that funds received are not diverted into other things such as marriage or burial ceremony or for building an ultra-modern house.

- c) *Non-performance of the functions of management*: In a like manner, when any or all the functions of management are not effectively performed, it weakens the wheel of effective management. Management functions are elements of management. They are critical in achieving the preset goal of an organization. In this regard, management always shows greater concern about the functions of management. Ibukun (2003 pg 31) noted that one of the earliest fathers of scientific management Henri Fayol (1949) in equating elements

of management with its functions identified planning to organize, directing, coordinating, and controlling as the functions and consequently the elements of management.

In the agriculture sector money, meant to boost agricultural output is diverted for personal commitment or personal enrichment because management failed to perform its functions.

- d) *Corruption*: Corrupt practices in any private or governmental organization such as the agriculture sector usually limit or reduce the productive capacity of such an organization. Corruption denies an organization of realizing its preset goals. The inability of an organization to achieve its preset goals has multifaceted consequential implications for all the stakeholders of the organization. It also signals a bad tone and portends danger for the organization. Corruption in Nigeria is alarming and endemic. It is fundamental to many deaths that the society seemed not to identify. A lot of deaths on Nigerian roads are caused by poor road conditions in which money for the completion of the roads had been paid yet the roads were not completed. An attempt by the present government of Muhammadu Buhari to fight corruption is met with stiff opposition by some people of questionable character. The Nigeria human right lawyer, Falana F( January 3, 2019) said no state in Nigeria was fighting corruption, noticing that only Kano State has an anti-corruption commission. In his contribution, Uzochukwu M (Dec.15,2018) posited that corruption is Nigeria's biggest challenge. According to him, it's clear to every citizen that the country has an extremely high level of corruption. In the agriculture sector, when funds meant to purchase farming materials such as fungicide or fertilizer, are not given to

the farmers at the right time, the delay in the implementation of required farming operations will affect agricultural production negatively. In support of this assertion, the former Nigerian minister of agriculture Abdullah Sheikh (Oct.25,2010) lamented that amidst criticism by farmers over government failure to distribute fertilizer yearly, the delay was due to corruption along the fertilizer distribution chain in the ministry. He noted that efforts to regulate fertilizer have proven difficult because corruption and control go together, the more you try to control, you open the door for corruption

In another dimension, corruption occurs when government officials increase the prices of farm inputs (such as fertilizers, fumigants, etc.) more than the price announced by the government. Godson Ibeji et al (November 2016 ) briefed that the farm input such as fertilizer and seeds supply services had been in the hands of the federal government undermining the private sector and never delivered to genuine farmers, had hindered the sustainable production of crops, and has consistently led to a shortage of food in the country. The issue of corruption is so pervasive that a whole apartment at Ikoyi, Lagos, was loaded with millions of Dollars, Pound sterling, and Euro or how do we explain the menace of a miraculous snake that swallowed a whopping amount of thirty-six million Naira in the office of Joint Admissions and Matriculation Board (JAMB) in Makurdi Benue State, Nigeria! Ameh C Godwin (Feb.10,2018) reported that a mysterious snake was said to have sneaked into the accounting office of the Joint Admissions and Matriculation Board (JAMB) in Makurdi the Benue State capital and made away with #36 million cash. Certainly, this is a clear case of high-level corruption.

The Non-Governmental Organization(NGO) also lamented the high level of corruption in Nigeria. According to John Campbell(,2020), the anti-corruption fight of Buhari's administration has little effects. He noted that Buhari should do more tackling corruption and improving Nigerians' confidence in his government.

There are some other notable constraints that account for low agricultural production in Nigeria. Most farmers in Nigeria still use crude implements such as cutlasses, shovels, spades, hoes, diggers, etc. These primitive tools need a lot of human physical efforts for their use. Hence, only Small land is cultivated for subsistence production. However, if modern farming equipment such as tractors, plows, and harvesters are used, a single farmer can cultivate very large areas of land and this will assist such a farmer to harvest a very great output. Unfortunately, poverty placed a restraint on the Nigerian farmers such that they could not afford to purchase this vital equipment.

Unlike advanced countries such as the U.S and other European countries where farmers can easily get access to good storage facilities, Nigeria has not developed her technology to produce reliable storage facilities which can assist farmers to store their farm products for future use. Hence, there is an abundance of food supply during harvest after which there is a scarcity of such food.

Most farmers in Nigeria (including the Ilaje community) are very conservative that they still rely on outdated methods of farming such as shifting cultivation. Conscious efforts of enlightenment aimed at changing the view held by these farmers are most of the

time, met with stiff opposition as they usually claim to have in-depth and perfect knowledge of farming. agricultural yield will certainly remain at a low ebb.

In West African countries (including Nigeria) land tenure system serves as a constraint to farmers to embark on large-scale farming. Akinsanmi O. (1975). This is so because they are not given the opportunity to cultivate a large portion of land which would boast high agricultural yield, hence agricultural output remains low in West Africa (including Nigeria).

Most farmers in Africa including Nigeria are stark illiterates. This issue of illiteracy blind-folded many of them to imbibe instructions that can perfect the practice of modern methods of farming like the principles of crop rotation, measurement, and application of chemicals to agricultural products. The inability to understand instructions and apply them meaningfully keeps agricultural yield at a low level.

Most of the rural areas in the Niger Delta Areas (including the Ilaje community) are not developed. Many of the communities lack modern amenities such as electricity; pipe-borne water supply (etc.). The financial markets and institutions in these communities are unorganized, the roads are in a state of disrepair and online purchases are not effective because of a lack of successful internet connection and intermittent power supply. Iyoha M.A. (2002) opined that financial markets and institutions in most African countries are highly unorganized, spatially fragmented, highly segmented, and invariably externally dependent. The rural sector of the Niger Delta region (including Ilaje) is grossly un-monetized such that small-scale farmers are invariably starved of

funds. Since the income in this community is low, savings are low, and this accounts for investment in agriculture to be at its low ebb.

Other constraints of agricultural production in the Niger Delta (including Ilaje) are instability of agricultural products' prices and insufficiency of domestic resource mobilization by both the public and private sectors.

e) *Faulty Selection of Leaders:* Most poverty-stricken African nations (including Nigeria) are in this condition because of the faulty selection of leaders. This is a fundamental error. The earlier a nation is able to overcome the faulty selection of leaders, the better for such a nation. The fundamental error of leaders' selection will continue to spell doom for a nation as long as such leaders are in power. The accomplishment of a political party's manifesto is a function of the selected leaders by votes. The business of governance is a serious task. It entails dogged determination with massive efforts by the elected leaders, but without impunity to conduct the affairs of governance to achieve national development goals and objectives. Leadership occupies a central position in implementing and achieving government policies and programs. It plays a pivotal role in the decision-making process and in finalizing decisions. It is in leadership function that other functionalities /elements of management would be nurtured to harness their full potential for policy implementation and national development. Thus, the failure of leaders is the failure of a nation! It must also be noted that if a leader has proven integrity of one hundred percent full capacity, but lacks a good management tact, his integrity will be mesmerized and eroded by people of questionable character who

achieved political recognition and acquire political power through corrupt practices. In this connection, priority attention must be placed on the candidate's character, level of education; his/her former societal accomplishment; and also his/her physical and mental capability. In other words, his/her health condition.

## *Chapter V. Conclusion*

Available data indicated that oil extraction activities hindered agricultural productivity in the Niger Delta region including the Ilaje community in Ondo State Nigeria. The federal government should implement a good public policy initiative capable of guaranteeing economic transformation in the Niger Delta region and the entire country at large.

The federal government in collaboration with the oil companies operating in the Niger Delta region should compensate the inhabitants of the region by creating modern amenities in the region. In this connection, there is a need for the construction of good roads in the region. The provision of uninterrupted electricity would be a veritable tool in creating small-scale and medium-scale businesses. The building of world-class medical hospitals would facilitate health care delivery in the region. The federal government and the oil companies must increase the number of medical and health care establishments in order to cope with the large population in the Niger Delta region. The region needs more doctors, more nurses, and other health workers. Priority attention must be given to human capital development particularly in the areas of health care practitioners to meet the health care needs of the expanding population in the Niger Delta region. The federal government should provide good health insurance coverage for the inhabitants of the Niger Delta region. The creation of awareness and encouragement on how farmers can tap the benefits inherent in agriculture insurance policies and small-scale agricultural loans to advance agricultural production, should be the topmost priority of the federal government. Government officials should endeavor to closely monitor funds such that funds are channeled to the right people who will use the funds to facilitate agricultural production. In this direction, there is a need for occasional visits by government officials to

monitor progress against preset goals and give polite constructive criticisms directed towards goal accomplishment. The federal government and oil companies operating in the Niger Delta region must work out modalities to make payments to compensate those inhabitants whose daily means of livelihood have been jeopardized by oil extraction activities.

*The Pandemic COVID 19 and International Trade Overreliance*

Fear rules the world as the pandemic COVID 19 has its firm grip on human health which causes thousands of deaths worldwide and shrinks the world economy December 31st, 2019, people all over the world were filled with renewed high hopes and vision of successes in the new year ahead without the knowledge that the agents of iniquity- the agents of death are desperately busy, strategizing on how to cause massive deaths and confusion in the world. Indeed they struck and the effects of their nefarious Coronavirus will be difficult to erase from human memory in many years to come!

The economic implications of the Coronavirus are numerous and cut across all nations of the world. It has caused social discomfort, the lockdown of both the public and private sectors of the economy, social disengagement, marital disengagement, shutdown of flight, social distancing among others. The implications of the ban on the flight are that economic goods and services are banned from being imported from and exported to other countries. Invariably countries that over-rely on other countries would be badly affected. Restrictions on movement have caused petroleum prices to drop. The restriction on the movement of vehicles has caused the food supply chain to break in many communities including the Niger Delta region. This has elicited an astronomical increase in the prices of food items in Nigeria.

Out of the voice of adversity, it is crucial that Nigeria and indeed Africa began to have a paradigm shift from the adamant total dependence on the importation of some crucial goods. It is high time Nigeria and Africa began to have a mindset of mental revolution directed towards technological advancement which would be the solid foundation for increased productivity. One critical factor is the way we allow cross-fertilization of ideas to germinate and blossom in our national and international discourse. The urge to surge to the apex of technological development would be the time when corruption and tribalism would be totally denounced in our society. The use of talents, the genuine drive to advance technologically and the building of institutions for human capital development coupled with good leadership would undoubtedly spring a surprise in the technological advancement of Nigeria and the entire African nation. The Federal Government and the oil companies should engage the services of private organizations in the cleaning up of the polluted Niger Delta region.

Further researches must continue to seek the best viable alternative mechanisms to extract petroleum resources, without constituting health hazards to the inhabitants of the Niger Delta region (including the Ilaje community).

## REFERENCES

- Abdullah, S.** 2010. *There is Corruption in Agriculture*  
Sector-Minister-allAfrica.com  
AllAfrica .com. Stories.201010250546.
- Adeyemo, O.K., Ubiogoro, O.E., Adedeji, O.B.** 2009. *Oil exploitation, fisheries resources, and sustainable livelihood in the Niger Delta, Nigeria. Nature & Faune vol,24 Issue 1*
- Aditya .H. nd.** *Mechanization of Agriculture: Meaning, Benefits, and Progress.*
- Africa Check.** 2019. *Nigeria's economy: services drive GDP, but oil still dominates exports.* Retrieved from  
<https://africacheck.org/reports/nigerias-economy-services-drive-gdp-but-oil-still-dominates-exports/>.
- Ajugwo, A.** 2013. *Negative Effects of Gas Flaring: The Nigerian Experience.* Retrieved December 15, 2020, from <http://pubs.sciepub.com/jephh/1/1/2/>
- Akinsanmi, O** 1975. *Certificate of Agricultural Science.* London: Longman
- Amaze, E.** 2017. *Oil exploration endangers 67 Delta, Ondo towns.*  
Retrieved from  
<https://www.vanguardngr.com/2017/09/oil-exploration-endangers-67-delta-ondo-towns/>.
- Anselm O.Ajugwo.** 2013. *Negative Effects of Gas-Flaring.The Nigerian Experience. Science and Education Publishing.*
- Austin, T.G.** 2010. *Ogoni St-Ken Saro - Wiwa, The Oruggle and The*

*Aesthetics of Spectacle*. Journal of Environmental Pollution and Human Health. No 3 pg. 6--8.

**Baker J.M.** 1970. *The effects of oils on Plants*.

Oil Pollution Research Unit, Field Studies Council, Orierton Field Centre, Near Pembroke, S. Wales UK

**Carter, N.** (1986). *The Academy of Management Review*, 11(2), 454-456. Retrieved from [www.jstor.org/stable/258475](http://www.jstor.org/stable/258475)

**Chinelo, C.** 2017. *Experts Talk Food Insecurity In Niger Delta Arising From Environmental Pollution*. Leadership Newspaper: August, 4, 2017.

**Campbell, J.** 2020. *Perceptions of Corruption in Nigeria Remain High, According to NGO*. Council on Foreign Relations.

**David E, Sahn, Stephen D. Younger** 2004. *Growth and Poverty Reduction in Sub-Saharan Africa: Macroeconomic Adjustment and Beyond*. *Journal of African Economies* Volume 13.

**El Mallakh, R.** (1967). *The American Economic Review*, 57(5), 1336-1339. Retrieved from [www.jstor.org/stable/1814](http://www.jstor.org/stable/1814)

**Falana, F.** 2019. *A Legal Perspective on Minimum Wage, Corruption..*

**Arise News. Jan. 3 2019.**

**Geoff, H., Kate H., Bhavna S., Kate B., Diana C Jan.** (2009). *Poverty and Poverty Reduction in Sub-Saharan Africa: An Overview of the Issues*.

Overseas Development Institute, 111 Westminster Bridge Road, London SE17JD.

**Igudia P.O** 2017. *A Qualitative Analysis of the Agricultural Policy Dynamics and the*

- Nigerian Economy 1960-2015*. [European Scientific Journal](#) 13(34)
- Ismail A A** (n.d). *Nigeria Economy Monopolization*. Gamji Article 5000 NEWS5243.
- Iyoha, M. A** (2002). *Macroeconomics: Theory and Policy*  
Mareh Publishers, Benin City, Nigeria.
- Jhingan, M.L.** (1985). *The Economics of Development and Planning*. Vrinda Publications Ltd., B.5 Ashish Complex Delhi.
- John D 2020**:*COVID-19: NDDC Distributes Medical and Relief Materials in Delta State*. [info@nddc.gov.ng](mailto:info@nddc.gov.ng)
- Johnson, D.** 2015. Cocoa Revolution: ‘Ondo will soon be richer than Lagos.’  
*Vanguard November, 19, 2015*
- Joseph, G. G., and Sheu. M.** 2015. *2006 National Population Census*.  
Nigeria Bureau of Statistics, 2006
- Koontz, H.; O’Donnell, C; Weihrich, H.** 1982. *Essentials of Management*. The third Edition pages 27-30. Tata McGraw-Hill Publishing Company Ltd., New Delhi.110020
- Lewis, A.** 1954. Economic Development with Unlimited Supply of Labor.  
[Onlinelibrary.wiley.com/doi/abs/10.1111/j.1467...](http://onlinelibrary.wiley.com/doi/abs/10.1111/j.1467...)
- Mohai, Pl; Pillow, D, Robert, J. T.** 2014. *Environmental Justice*. Retrieved from <https://www.researchgate.net>
- Nwabugwu, L** 2020. *ABACHA LOOT:How Much Did the Late Head of State Steal?* [www.vanguardng.com](http://www.vanguardng.com) News.

**Odafe, I.** (n.d.). Implications of Oil Exploration on Agricultural Development in Delta State, Nigeria. *International Journal of Humanities and Social Science Invention*.

Retrieved from [http://www.ijhssi.org/papers/v2\(4\)/version-5/I245963.pdf](http://www.ijhssi.org/papers/v2(4)/version-5/I245963.pdf)

Ogoni people vs. Shell:

<https://www.arcgis.com/apps/Cascade/index.html?appid=a43f979996aa4da3bac7cae270a995e0>

**Okojie C.E.E. I.C.Anyanwu, F .O. Ogwumike and B. Alayande** (2001). *Poverty in Nigeria---An Analysis of Gender Issues, Access to Social Services and the Labor Market*. AERC Report.

**Onokerhoraye A.G.** 1986. *Population Studies*. Department of Ge: Niger Delta Development Commission(NDDC): COVID-19: NDDC Distributes Medical and Relieve Materials in Delta State. Info@nddc.gov.ng

**P. O. U. M.** 2019. Corruption in Nigeria: Review, Causes, Effects, and Solutions. Retrieved from <https://soapboxie.com/world-politics/Corruption-in-Nigeria>.

**Rhuks, A.** 2012. Environmental Justice in Nigeria's Oil Industry: Recognizing and Embracing Contemporary Legal Opportunities.

Rowell, A., & Katzman, S. (n.d.). ALL FOR SHELL. Retrieved from <https://ratical.org/corporations/OgoniStruggleTL.html>.

**Ronald, G.B; Michael J.L\Paul. S:** 2008. *Environmental Law, Crime, and Justice*.

http:<http://www.lfbschoarly.com>

SourceWatch: 2008. *Nigeria's Oil Industry*

**Taiwo, A, Olaiya** 2016. Examining the Political-Economy of Cocoa Exports

in Nigeria. *The International Journal of Applied Economics and Finance*, 10:1---13.

**Todaro M.P.** 2000. *Economic Development*. New York University.

Addison Wesley Longman Incorporated Massachusetts 7<sup>th</sup> edition.

**Turkson N.** 2016 *The Nigerian Oil Company's Missing Billions*.

*A government audit says \$ 16 billion is missing*. The Atlantic, March 18, 2016.

**Uquetar, I. U., Osang, E. J., Egor, o A., Essoka, A. P., Alozie, I. s, & Rawan, M. A.**

2016. A Case study of The Effects of oil pollution on soil Properties and Growth of Tree Crops in Cross River State, Nigeria. *International Research Journal of Pure and Applied Physics*. Retrieved from

<http://www.eajournals.org/wp-content/uploads/A-Case-Study-of-the-Effects-of-Oil-Pollution-on-Soil-Properties-and-Growth-of-Tree-Crops-in-Cross-River-State-Nigeria.pdf>

**Vidal J:** 2015. *Niger Delta Oil Pipeline Vandalism Estimated to Cost \$14bn a*

*Year*. Source: US Edition: The Guardian Nov,102015