Volume 20 Issue 12
Originally issued as B3

Global Journal of Management and Business Research: B
Economics and Commerce
Volume 20 Issue 3 Version 1.0 Year 2020
Type: Double Blind Peer Reviewed International Research Journal
Publisher: Global Journals
Online ISSN: 2249-4588 & Print ISSN: 0975-5853

An Aerial View of a Black Man Suffering from the Menace of Crude Oil (The Black Gold) Soot

By Past. Dr. Abomaye-Nimenibo, Williams Aminadokiari Samuel
Obong University

Abstract- Petroleum oil is the black gold of the continent regarded as black Africa which has numerous mineral resources which have been of tremendous benefit to the black continent and it has since the last three decades, played a critical role in the Nigerian economy. On the average, it has accounted for not less than 70% of the Federal government revenue, haven given 90% of the nation's foreign exchange earnings, and with a 12% real gross domestic product (GPD). Oil is one of the sources of energy in Nigeria, particularly and the world in general. The economic and political fortune of our great nation Nigeria is being shaped by Petroleum Oil which plays the dominant role in Nigeria after the end of the Nigeria-Biafran civil war of 1967 to 1970.

Keywords: *petroleum oil, crude oil, soot, niger delta region, GDP, environmental degradation, economic poverty, nigerian economy.*

GJMBR-B Classification: *JEL Code: D00*



Strictly as per the compliance and regulations of:

© 2020. Past. Dr. Abomaye-Nimenibo, Williams Aminadokiari Samuel. This is a research/review paper, distributed under the terms of the Creative Commons Attribution-Noncommercial 3.0 Unported License http://creativecommons.org/licenses/by-nc/3.0/), permitting all non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

An Aerial View of a Black Man Suffering from the Menace of Crude Oil (The Black Gold) Soot

Past. Dr. Abomaye-Nimenibo, Williams Aminadokiari Samuel

Abstract- Petroleum oil is the black gold of the continent regarded as black Africa which has numerous mineral resources which have been of tremendous benefit to the black continent and it has since the last three decades, played a critical role in the Nigerian economy. On the average, it has accounted for not less than 70% of the Federal government revenue, haven given 90% of the nation's foreign exchange earnings, and with a 12% real gross domestic product (GPD). Oil is one of the sources of energy in Nigeria, particularly and the world in general. The economic and political fortune of our great nation Nigeria is being shaped by Petroleum Oil which plays the dominant role in Nigeria after the end of the Nigeria-Biafran civil war of 1967 to 1970. The black gold that is a hot cake in the whole world is the crude oil that is explored from the Niger Delta Region of Nigeria and is refined both lawfully and unlawfully to give the petroleum oil that turns the fortune of a nation which has it either positively or negatively. The Niger Delta Region is the first focus and then Nigeria as the secondary focus. Primary and secondary data obtained for this study revealed that there are positive and negative effects of this black gold to the nation of Nigeria but the Niger Delta Region suffers tremendously from the black gold emission in terms of environmental degradation, economic poverty and impoverishment, health challenges resulting in deaths which toll increases daily with the Federal Government of Nigeria doing little or nothing to the alleviation of the problems of the catchment area but adding pepper to the injury; thereby causing agitations, youth restiveness, etc. The findings of the study corroborated those of Ikien (1990), Orubu (1999), Okowa (2005), etc. Some of the recommendations postulated are: The Federal Government of Nigeria should take urgent steps to set up the thirty (30) modular refineries in the Niger Delta Region to forestall the emission of soot's into the atmosphere to prevent death toll; zero tolerance of gas flaring to save Nigerians of health challenges and repackage the intended emission gases to earn revenue to the nation etc.

Keywords: petroleum oil, crude oil, soot, niger delta region, GDP, environmental degradation, economic poverty, nigerian economy.

I. Introduction

Petroleum oil is the black gold of the continent regarded as the black Africa which has numerous mineral resources which have been of tremendous benefit to black continent and it has since the last three decades, played a critical role in the Nigerian economy. Ordinarily, it has accounted for not less than 70% of the Federal government revenue, haven given 90% of the nation's foreign exchange earnings, and with a 12% real gross domestic product (GPD).

Oil is one of the sources of energy in Nigeria and the world in general. The economic and political fortune of our great nation Nigeria is being shaped by Petroleum Oil which plays a dominant role in Nigeria after the end of the Nigeria- Biafran civil war of 1967 to 1970. The black gold that is a hot cake in the whole world is the crude oil that is being refined to give the petroleum oil that turns the fortune of a nation that has it either positively or negatively.

Nigeria had an abundance of petroleum oil or crude oil and even proven reserve. The crude oil is the raw petroleum oil that has not been refined or cracked down into many components and has over 2000 (Two Thousand) uses. The primary or the major use of it is in combustion through the machines that ease transportation or in lighting and other uses. Nigeria uses it in her propelling motors by cracking it into different fuels through her four oil refineries namely, the Old Port Harcourt Refinery with a capacity of thirty-five thousand barrels (60,000) barrels per day and it was named "the boiling kettle", which never fails. It was built and completed in 1965. The second refinery being the Warri Refinery and Petrochemical Plant which processes 125,000 barrels (19,900 m3) of crude per day was built in 1978, the third being the Kaduna Refinery with an installed capacity of one hundred thousand (110,000) barrels per day or 17.600 m3 per day was built in 1980, while the fourth refinery is the New Port Harcourt Refinery which produces 150,000 barrels (24,000 m3) per stream day was commissioned in March 1992. This black gold which is of tremendous benefit to Nigeria is explored from the Niger Delta Region of the black race that is predominant in Nigeria and our focus is on Bayelsa and Rivers States which have become a place of menace as oil-producing areas that are so much affected negatively and in serious adverse ways that ought to be ameliorated.

The Nigerian state has been known to be the most populous Black Country in the African continent and indeed the world. The country is blessed with abundant resources (human and natural). It is the fifth-largest exporter of crude oil to The United States of America, and the sixth-largest producer of crude oil among the OPEC countries. About 95 percent of

Author: PhD, M.Sc, B.Sc Economics, MBA Management and UD, Personnel Management and Industrial Relations, Director of Post Graduate Studies, School of Post Graduate Studies, Obong University, Obong Ntak, Etim Ekpo Local Government Area, Akwa Ibom State, Nigeria. e-mail: wasanim2006@yahoo.com

© 2020 Global Journals

Nigeria's economy is dependent on oil exports. Despite this enormous wealth nature has endowed in the country, poverty is still endemic, and the majority of the population still live on less than one dollar per day according to the World Bank report. The woes of Nigeria started with the Military rule for over three decades, before the attainment of democracy in the country in 1999.

Some of the uses of this black gold are being outlined below:

Table 1: The Uses of Refined Petroleum Products

PRODUCT	USES
Liquefied Petroleum gas-LPG	Cooking Gas & Heating
Gasoline-PMS	Motor Cars etc.
Kerosene-DPK &ATK	Cooking, Lighting & Aviation jet fuels
Diesel Fuels-AGO	Automotive Gas Oil & Heating
Fuel Oil-LPFO	Industries, Marines, Power plants Boilers
Lubricating Oils	Machinery, measuring, generators & Motor Engines which mixtures were according to the products.
Paraffin Wax	Lighting, Cosmetics, Medicines
Asphalt-TAR	Road surfacing & Insulation
Petroleum Coke	Fuel, Fin Manufacturing, Liquid detergent for washing.
Petrochemicals	Liquid detergents, Transformer oils, Greases and special oils, plastics, synthetic fibres, synthetic rubbers, paints, and insecticides, etc.

The demand and consumption of petroleum products in Nigeria grows each year and is estimated at a rate of not less than 12.8% annually. This product is scarce even in Nigeria, although she is a major exporter of this product. At periods of scarcity, the cost always escalated to about one thousand Naira per liter. Petroleum crude oil extracted in Nigeria is preferred in most cases to be exported out with a little quantity left to be refined in Nigeria and could not meet the demands of the Nigerian populace. The multinational oil companies who are the head of the JVs are prone to send crude oil to their home countries for refining and recycled back to Nigeria as imported fuel. Sometimes, the refined product is shipped out, and when the vessel sails outside the oases of Nigeria, is brought back into the nation as imported fuel to attract subsidy, thereby racketing in the oil business while siphoning or milking the Nigerian economy. The oil magnates, moguls, and barons are the kingpins in the racketing.

The largest oil producer in Africa is Nigeria, and has been a member of the Organization of Petroleum Exporting Countries ever since 1971. The economy of Nigeria is deeply dependent on the oil sector, that accounts for over 95 percent of total export earnings of the country, and whereas, 40 percent accounts for government revenues, according to the International Monetary Fund (IMF). The International Energy Agency stated that, about 2.53 million barrels (402,000 m3) of crude oil is produced per day. This figure is far below oil production capacity of the nation which is 3 million barrels (480,000 m3) produced per day in 2011.

Shell BP being the dominant multinational oil company has been in the forefront of oil and gas exploration in Nigeria since 1936, and operates mostly in the Niger Delta Region, having most of Nigeria's hydrocarbon assets.

The Department of Petroleum Resources (DPR) report has it that Nigeria has a total of 159 oil fields and 1481 wells are in operation. The Niger Delta Region is the most productive region of the country, which contains more than half of the whole 159 oil fields. More than half of these oil fields are trivial and scattered as of 1990 and about 16 of them being the largest fields produce 37.9% of oil in Nigeria.

There are numerous small oil fields all over the Niger Delta culminating into an extensive and well-developed pipeline network that transports the crude oil across boundaries. Some of these fields are not highly productive and as such, money from the jointly operated companies are continually directed towards petroleum exploration and production.

In the world market, the crude oil from Nigeria is classified basically as "light" and "sweet," for being free of heavy sulphur and is light. Nigeria's petroleum crude is the sweetest and lightest than any other OPEC nation akin is the composition to petroleum from the North Sea and is called "Bonny light crude." Other Nigerian crudes are given several new names depending on the export terminal as Qua Ibo, Escravos blend, Forcados, Brass River, and Pennington Anfan.

Nigeria has six petroleum exportation terminals which are owned by the Multinational Oil Companies; Shell owns the Forcados Terminal, which is capable of storing 13 million barrels (2,100,000 m3) of crude oil per day and that of the Bonny Terminal., while Mobil, Chevron, Texaco, and Agip own one each. Mobil

© 2020 Global Journals

operates primarily that of Qua Iboe Terminal in Akwa Ibom State, while Chevron owns the Escravos Terminal located in Delta State, which has a storage capacity of 3.6 million barrels (570,000 m3). The Agip operates the Brass Terminal in Brass which is 113 kilometres (70 miles) southwest of Port Harcourt having 3,558,000 barrels (565,700 m3) storage capacity, while the Texaco operates the Pennington terminal.

a) The Energy Infrastructure

The energy infrastructure means the supply of electricity, coal, and petroleum as the real energy demand. As at independence, the generating capacity of the nation in terms of electricity generation was under 400 MW, but at the end of the first development plan period, the generated power increased to 800 MW and 755MW in 1975 while in 1980, the country generated a total capacity of 1,645 MW to the national grid. More so, in the fourth development plan period, an estimated 1,000 MW was generated, which added to the capacity. The main generating plant was the hydro-electric power from the Kainji dam. It is prima facia to say that most if not all major towns in the country are linked to the national grid; with a good number of rural areas benefitting from State Rural Electrification Programmes.

Next to electricity as a source of was that of Coal being the main source of energy supply to the Nigerian Railway Corporation (NRC) to drive the locomotive engines before the use of diesel engines in its fleet of trains. Also, the Oji River Power Station, which was built specifically to utilize the abundant coal in the nation but, and unfortunately, the station became inoperative and was left fallow for so many years. At this time also, there was no tangible export market for coal. Thus, the coal industry became the most undesirable source of energy in the international market. Irrespective of the glut in the coal market, there is a demand for coal to be used as tar.

Petroleum energy is said to be predominant sources of energy in the world and Nigeria is blessed with four refineries to make available petroleum energy in its refined state, with NNPC being the parent body. Petroleum energy is both a blessing and a curse as a result of its production and refining processes as a black gold from the black man's backyard that is also harmful to his health maiming and killing dozens of them in a split second.

b) Objectives of the Study

The researcher desires to find out the good and evil effects that petroleum oil has done to this nation, especially the catchment area is the Niger Delta Region and to proffer solutions. The bulk of this petroleum oil is extracted in the Niger Delta Region in Nigeria. What should be the uses of this oil, and whether it is profitable in its raw state or being refined makes it more useful to our nation? These and other pertinent questions cloud the mind of the researchers, especially the agitations that follow it and the emission of thick black gas known as soot that is deleterious to human health.

It is also the desire of this research to establish the causes of agitations and youth restiveness in the Niger Delta and what will make them more productive, socially responsible, and relevant to the Nigeria nation as a whole and the Niger Delta in particular. This paper also aims at establishing remote causes of the crisis in the Niger Delta.

c) Research Questions

The following research questions guided this research:

i. What are the in-adverse or positive and adverse or negative effects of petroleum Oil?
ii. What are the challenges in the oil industry?
iii. What contribution does Oil revenue to GDP from 1981-2017?
iv. What effect on human life has its emission?

II. Literature Review

a) The Formation of Crude Oil

Crude oil is believed to have been formed from the buried remains of marine organisms that lived in seas millions of years ago in the process of decomposition. These sea organisms as they sank to the bottom of the sea to become trapped in layers of mud. Over millions of years, these sedimentary layers turned into rock, often overplayed in what geological was called impervious or non-porous rock layers.

Petroleum is a buried blessing from God, and He only knows how it was formed. In Genesis 6:14, God Himself commanded Noah to use Tar being a product of Crude Oil thus:-

> "Make thee an ark of gopher wood;
> Rooms shall thou make in the ark, and
> shalt pitch it within and without with pitch."

Noah, therefore, used the pitch to seal the Ark to prevent water from entering into it. Moses' mother also used it for his little ark in Egypt. Pitch is concrete petroleum commonly called Tar. Only a hot sunny day, surface tar melts and flows on streams. Petroleum, which means rock oil, was never put into commercial use until the eighteenth century. Every community or country that has this mineral resource today is considered blessed. Yes, God blessed the earth with abundant riches before the creation of man.

Exploration of Hydrocarbon (that is oil and gas) is the search for hydrocarbon deposits in the depth of the earth by geologists and geophysicists.

OPEC (2012) stated that oil had been discovered and used by man for thousands of years. The first oil well was dug in Shush, Southern Iran in about 500 BC and the Chinese were said to have drilled for oil and gas with bamboo tubes and bronze drill bits as early as the Third Century BC. Crude Oil was said to

© 2020 Global Journals

have been found and collected from natural surface seepages and shallow pits. Oil was known to have been used hundreds of years mainly for medicinal purposes, which are still in vogue, used in waterproofing of surface water, and occasionally as a lubricant, and for lighting and of recent in automobiles. It was known to have been used by ancient Babylon as asphalt or tar in their buildings, in the form of decoration and paintings with designs.

Crude Oil is a complex mixture containing thousands of different organic hydrocarbon molecules in the combination of:

Gas is often found with oil and has been formed in the same process, though it is said to have been formed from decayed vegetable matter in former marshy areas. Natural gas is hydrocarbons in gaseous form found in natural gas reservoirs. Hydrocarbons are also in more solid forms such as tar sands, shale oil and coal (Abomaye-Nimenibo, 2013),

b) Early Discovery Of Oil In Nigeria

Discovery of Oil started in Nigeria when oil leaks were seen on the surface in Araromi, Ondo State in the 19th Century which discovery sparked off an interest in Oil exploration activities commenced by the Nigerian Bitumen Corporation, a Germany owned Company in that area in 1908. Oil exploration activities were paused by the First World War in 1914. The Nigerian Bitumen Company accordingly started drilling of several oil wells but without success.

In 1937 the Anglo-Dutch Consortium, Shell D'Arcy, a for-runner Company of Shell Petroleum Development Company of Nigeria rejuvenated the oil exploration activities and was issued with sole concession rights covering the whole of Nigeria, i.e., 357,000 square miles of the entire mainland of Nigeria by the British government. However, the company's efforts were retarded following the outbreak of World War II, and after the World War in 1947, it recuperated with a further search for oil. Within this period, the Suez Canal crisis erupted which successfully shifted the British government interest in oil exploration to Nigeria as a result of the general insecurity among oil explorers in that region averting transportation of oil through the Suez Canal. As of 1946, exploration activities commenced unperturbed, but full exploration resumed in 1947. By 1951, Shell D'Arcy had stabilised and acquired seismic information about the geological features of the concession territory of Nigeria. Through seismic surveys, it was established that the southern protectorate (Niger Delta) was geologically found to be oil-bearing. Based on this discovery, Shell BP narrowed its original area of operation to 58,000 square miles, mainly in the southern coastal region stretching from the extreme south-western border of Nigeria to British Cameroon. Shell BP drilled its first hole (not well), which turned out to be dry in 1951 and another at Akata-I oil well in 1953, which produced negligible quantity of oil, and was abandoned for lack of oil in commercial quantity. The concession area was further reduced in 1957 to an area covering 16,000 square miles comprising of 20 Oil Prospecting Licences (OPLs). On 1st January 1961 and 1st January 1962 respectively, OPLs were successfully converted into a total of 46 Oil Mining Leases (OMLs), which covered an area of 15,000 square miles. Hence, Shell BP enjoyed a monopoly of the oil exploration business for a considerable length of time from 1938 to 1955 before other explorers came scrambling for oil.

Mobil Exploration Nig. Ltd. a subsidiary of American Socony-Mobil Oil Company came in 1955 and was granted licence to explore oil in areas relinquished by Shell BP covering 281,782 square miles of the North-Western, North Central, and North-Eastern Regions of Nigeria.

The first Nigerian crude oil well having commercial quantities was discovered at Oloibiri in the Niger Delta region in 1956, while actual production started in 1958. It was Shell-BP that discovered this oil well. In the 1970s and onward, Shell-BP (Shell British Petroleum) dominated the resources of Nigeria. The on-shore oil exploration activities accounted for about 65% of total production carried out in the Niger Delta Region, while the remaining 35% represents offshore production of oil in the deep waters of the continental shelf. Nigeria is said to have a reserves of about 32 billion barrels of low sulphur light crude speculated to last for the next 40 years or more. The country is about to expand its reserves to 40 billion barrels with a production capacity of not less than 4 million barrels per day (mbd).

The Niger Delta Region lies South-South of Nigeria covering some 70,000 square kilometres. It has the third-largest mangrove forest in the world, and a third of this mangrove forest is wetland (Onosode, 1997). Geographically, the bounds of the Niger Delta are found in Bayelsa, Delta, Rivers, and Akwa-Ibom states with patches in Abia. Cross River and Edo State (Orubu 1999). The area is blessed with oil and gas, among other natural resources. The Niger Delta plays a significant role as the nation's treasure base and sustainer of the Nigerian economy and currently accounts for more than 90 percent of Nigeria's total output of petroleum and natural gas. The petroleum sector of the Nigeria economy generates over 90 per cent of the country's foreign exchange earnings (Duke, 1997).

Nigeria joined the ranks of oil producers in 1958 when its first oil field came on stream producing five thousand, one hundred barrels per stream day (5,100 bpd). From 1960, an exploration right in onshore and offshore areas adjoining the Niger Delta was extended to other foreign countries. In 1965, the EA field was also discovered by Shell in shallow water southeast of Warri.

© 2020 Global Journals

Resulting from the discovery of crude oil by Shell D'Arcy Petroleum, production and exportation of commencing in 1958 from the Oloibiri oil field in the Niger Delta Region of the then Rivers State but in the present-day Bayelsa State. In the sixties and early seventies, Nigeria's production was over 2 million barrels of crude oil per stream day. However, this production figure dropped in the eighties as a result of the economic slump, and by 2004 a total transformation of the oil sector brought production to 2.5 million barrels per day; and ever since there has been a continues increase in production which brought about 4 million barrels per day by the year 2010 (Abomaye-Nimenibo, 2015).

In 1970, when the Nigerian-Biafran war ended, there was a rise in the price of world oil, and Nigeria was able to make money from the windfall fall and which period also marked the Gulf Crises. Nigeria initially was reluctant but later joined the Organization of Petroleum Exporting Countries (OPEC) in 1971 which made her establish the Nigerian National Petroleum Company (NNPC) like other OPEC nations like Iraq and Iran in 1977. NNPC is a state-owned and controlled company which is a key player in both the upstream and downstream sectors (Blair 1976, pp. 98-120 and Abomaye-Nimenibo, 2015).

Nigeria's petroleum production and exportation account for about 90% of her gross earnings, thereby pushing aside agricultural sector which was the mainstay of the economy in the early 1950s.

Oil was also found in the eastern and mid-western regions of the Niger Delta regions, which places high hope in Nigerians after independence hence, the First and Second Development Plans were launched. Amidst economic development, which signalled a danger of grave consequence due largely to the awash or wealth from the oil revenues, fuelling already existing ethnic and political tension that ultimately "burned" the country. The Nigeria/Biafran civil war of 1967-1970 was the climax of tension. Throughout the civil war, there was a real crisis as businesses and economic life ceases her breath momentarily the fate of the Nigerian nation or empire rejuvenated with oil production bring counterbalanced blessing from God through the oil industry. So, Nigeria survived the war, and was able to recover mainly colossal revenues from oil in the 1970s; and for some three years an oil boom followed, and the country was inundated with money insomuch that Nigeria does not know what to do – bringing the national slogan which says – "Money is not our problem but how to spend it." Of a truth, there was enough money to execute the 2nd developmental plan. However, the main problem with the Nigerian oil industry has been the lack of an efficient framework and efficiency in policy implementation to diversify revenues from crude oil exports. The downstream sector is a case in point, where a value- added programme through domestic refining operations was carried out in the Third Nigerian National Development Plan for the period 1975-80 with no realistic harvesting from the laid down plans but rather an allusion of problems.

c) The Performance of the Oil Sector in Nigeria

The Nigerian oil sector was benchmarked into three major sub-sectors, namely, upstream, middle and downstream which were vested in the Nigerian National Oil Corporation (NNOC) in 1971 to ensure government's full participation in oil exploration and production; which metamorphosed into Nigerian National Petroleum Company (NNPC) in April 1977 after the merger trial with Ministry of Petroleum Resources through an Act CAP 320 (Federal Government Law) of 1st April 1977. The initial merging of NNOC with the Ministry of Petroleum Resources was to prevent duplication of functions. However, the Act empowered NNPC to function as

i. Exploring and prospecting for working, winning or otherwise acquiring, possessing and disposing of petroleum;
ii. Refining, treating, prospecting and generally engaging in the handling of petroleum for the manufacture and production of petroleum products and its derivatives;
iii. Purchasing and marketing petroleum, its products and by-products.

NNPC is a state-owned and controlled company playing a chief role in both the upstream and downstream sectors through the operations of Joint Ventures (JVs), PSCs and SC activities. In the year 2000, NNPC holds 60 percent equity interest in all the seven JVs except the JV between Shell, ELF, and Agip in which JV it controls a 55 percent equity interest. In 2006, 16 new PSCs were created and added to the existing nine (9) which number keeps on increasing as exploration and production activities continue to rise. In the same period, only one (1) SC existed, and it was between NNPC and Agip Energy at the Agbara field. The most problematic sector over the years has been the downstream sector, which is the distribution arm and which connects the final consumer of refined petroleum products in the domestic economy. The incessant crunch in the epileptic supply of products culminated in the decision by Government in 2003 to deregulate the downstream sub-sector, which manner of implementation has been in controversy as it regularly ignores the economic realities in Nigeria (NNPC and Abomaye- Nimenibo, 2015).

Ninety-five percent (95%) of Nigeria's crude oil production comes from the joint venture (JV) companies. Shell, is the chief operator of the largest joint venture in Nigeria, with 55% Government interest. The Nigerian National Petroleum Corporation, (NNPC) on behalf of the government operates the Joint Ventures (JVs). Shell and NNPC JV produces about 50% of Nigeria's crude oil. Exxon Mobil, Chevron (Texaco),

© 2020 Global Journals

ENI/Agip and Total fina Elf operates the other JV's, in which the NNPC has a 60 % stake in interest. It is disheartening to note that whatever figures of barrels of crude oil mined in Nigeria that is given by these foreign Oil Company becomes the real and official figure of what was extracted irrespective of the actual production figure. Nigerian government or NNPC does not have a full grasp of the quantity of crude oil produced in Nigeria but as was announced by these foreign business partners who have 100% grasp of the crude oil production. Oh, what a pity.

Nonetheless, Nigeria has four refining companies operating in the confines of NNPC having a cumulative total refining volume of 445,000 barrels per day (bpd). The four operating refineries are as stated below:

i. The Port Harcourt Refining Company Ltd (PHRC) having an installed capacity of 35,000 (bpd) came into operation in 1965. The initial capacity was later expanded to 60,000 bpd.
ii. The second refinery in Nigeria was the Warri Refinery and Petrochemical Company Ltd. (WRPC) that was commissioned in 1978 with an installed refining capacity of 100,000 bpd, and was upgraded to 125,000 bpd in 1986.
iii. The third refinery was sited in Kaduna, and named Kaduna Refinery and Petrochemical Company Ltd (KRPC) which was commissioned in 1980. This refinery has an initial installed capacity of 100,000 bpd, and in 1986 it was upgraded to 110,000 bpd.
iv. The fourth Refinery Nigeria has was built at the Port Harcourt Refining Company complex which was commissioned in 1989 with a 150,000 BPD processing capacity, planned to play the dual role of bringing the domestic and foreign markets.

Table 1: Plant Capacity of the Nigerian Refineries

S/N	PLANT	CAPACITY
1	OLD PH REFINERY	60,000 BPSD
2	WRPC	125,000 BPSD
3	KRPC	110,000 BPSD
4	NEW PH REFINERY	150,000 BPSD
5	TOTAL	445,000BPSD

The initially combined capacities of these four refineries exceeded the domestic consumption of refined products. Out of these refined products, Premium Motor Spirit (gasoline or petrol) is the most consumed product whose demand was estimated at 33 million litres per day. However, the four refineries were operating below their installed capacities, which made importation of petroleum products from other countries of the world possible and inevitable. Irrespective of the fact that petroleum product importation was going on to compliment the local demand, yet, there have been persistent product shortages giving room to deregulation of the downstream oil subsector in Nigeria. The features in terms of refined products of each of these refineries are tabulated below:

Table 2: Features of NNPC Refineries

Old PH Refinery	New PH Refinery	Wari Refinery (WRPC)	Kaduna Refinery (KRPC)
Hydro- skimming type - Platformer	Deep Conversion type - CCR - FCCU - Dimersol - Bulmer - HF Alkylation	Deep Conversion Type - CRU - HF Alkylation - FCCU - Carbon Black - Polypropylene	Deep Conversion Type - CRU - FCCU - SRU - LUBES PLANT - LAB PLANT - STEEL DRUMS AND TINS - MANUFACTURING PLANT - Sulfur Flaking or Cracking Unit

The yields or litres of each refined product of the four refineries are as tabulated below in Table 3.

© 2020 Global Journals

Table 3: The NNPC Refinery Products Yields (litres/day)

PRODUCT	KRPC	WRPC	PHRC	TOTAL
LPG	207,000	886,424	1,335,000	2,428,425
PMS	5,075,000	6,199,012	11,519,000	22,793,012
DPK	2,056,000	2,088,862	5,008,000	9,152,862
AGO	3,529,000	6,016,162	9,014,000	18,559,162
FUEL OIL	2,116,000	3,879,600	4,674,000	10,669,600

d) Challenges in the oil sector

There are a lot of problems that plagued the oil sector in Nigeria inhibiting the optimal development over the years. These problems have their root causes in the 1990s and have not left the sector even now. The following problems are summarized below:

i. Public control and bureaucracy, especially in the Oil industry, is a common phenomenon, and is being displayed in Nigerian National Petroleum Corporation (NNPC) which is in total control of the Federal Ministry of Petroleum Resources; thereby lacking the autonomy it deserves, and as such key decisions are unnecessarily bureaucratically delayed. Hence, NNPC is categorized among the inefficient companies in Nigeria as a result of its subsidiary companies being ineffective in petroleum products refining operations, distribution and marketing.
ii. Poor investment funding JVC operations is evident in the oil industry resulting in frequent delays in the payment of cash calls thereby culminating inadequate equipment maintenance and delays in Turn- Around-Maintenance in its subsidiary companies. There has been days in the payment of cash calls by the Federal Government for its upstream sub- sector JV operations impeding growth in the industry are often realized.
iii. There had been an insinuation of communal disturbances/clashes between the government law enforcement agents and the youth of various host communities which often disrupts crude oil production.
iv. There has been a consecutive low level of investments in the oil sector in comparison to its proven potentials.
v. High technical cost of production is low as a result of domestic technological development and shortage of qualified manpower, resulting in labour mismatch as is commonly found in NNPC.
vi. Due to never-ending crises and hostilities in the Niger Delta, there had been regular breakdown and crackdown in economic activities due to military restrictions in the movement of people and goods in the Niger Delta.
vii. Environmental degradation is a common sight due to the constant flaring of associated gas in the Niger Delta Region.
viii. Pipelines vandalism leading to fire outbreak leading to the high death toll in the Niger Delta is a common sight.
ix. Oil spillage paralysing the economic life and destruction of the ecosystem is too common in the Niger Delta.
x. Smuggling and diversion of petroleum products are retributory measures taken by the Niger Deltans, as are commonly reported. Smuggling petroleum products out of the country are underwritten by the elites and politicians in power and wig.
xi. Scarcity of the petroleum products in the Niger Delta Region where it is produced, but available in their numbers in other regions often leads to some kind of hoarding of these products when available to sell in the black market at higher prices at a later day when the scarcity hits the topmost.
xii. Products adulteration as a result of poor local refining in the hideouts and slums is a common sight in the Niger Delta. These contaminations are as a result of price differentials and get-rich syndrome.
xiii. The proliferation of illegal refineries and sales outlets seem uncontrol able in the Niger Delta, etc.

e) Contribution To Gross Domestic Product

Contribution of any industry in the course of economic activities to the gross domestic product of a nation at factor cost in an accounting period is measured by its gross domestic output at market prices less the cost of inputs (materials, equipment, services, etc.) purchased from other industries for purposes of economic activities, and taxes net of subsidies paid. Similarly, the gross output of the petroleum sector consists of all the proceeds from oil exports, local crude oil sales for local refining, as local sales of natural gas fewer factor payments made or sent abroad such as payments of profits on factors from abroad, dividends, interest, fees, and wages and salaries paid to foreigners. Surely, the petroleum industry made a definite contribution to the Nigerian economy. The value-added tax from industries were a good source of

© 2020 Global Journals

revenue to the nation's economy through various payments to the government in the form of royalties, profit taxes, rents, harbour dues, salaries and wages of local employees in the sector who also paid income and VAT taxes; and having net retained earnings as stocks in the vaults of Banks who made a profit from such retained earnings.

The monetization of oil revenue has been a key factor in liquidity management in Nigeria. The CBN measures liquidity in terms of the narrow and broad money definitions. The 1990s saw increases in liquidity but were inhibited in 1995 till 1999 when the civilian administration came to power. The civilian government conserved disciplined fiscal operations initially, and latter weirs. Thereafter, the CBN kept liquidity in check, and ensured that no adverse effect occurs on the key macroeconomic factors of exchange rate, interest rate, and inflation rate. When Nigeria reaps windfall of revenue from crude oil sales, which excesses are monetized, and this creates inflationary pressures and market distortions.

This same argument is true of fiscal deficits in comparison to the GDP. The increase in oil revenue has made the Government engage in unnecessary expenditure on projects that are unproductive. Deficit spending consistently makes Government to have recourse to borrowing from the Central Bank as short-term debt instruments that are expensive to service. Recently, The oil sector of the Nigerian economy has of recent faced some problems, such as low level of investments, delays in the payment of cash calls for its JV operations in the upstream sub-sector etc. The result of this is:

i. High technical cost of production, due to the low level of indigenous technological.
ii. High price of petroleum products in the local market.
iii. Communal crises and disruption of production by youths of host communities.
iv. Environmental degradation due to the constant flaring of associated gas in the Niger Delta Region.
v. Unending inequalities in inter-personal incomes of oil workers keep on widening between urban and rural incomes, especially since 1986, with a negative influence on the lives of Nigerians.
vi. Imbalance in the educational institutional and health structures. School enrolment figures were high being an indication of an improvement in secondary and tertiary education, but there are all indication that health-wise the people are down-trodden due to the soot's being constantly inhaled.
vii. There has been a vibrant financial system that has had cycles of stability/prosperity as well as distresses that was so noticeable in the early to mid-1990's.
viii. The improved regulation and increasing commitment to corporate governance by the operators of the economy have given assurances of the soundness of the financial system improvement.
ix. The relatively improved and attractiveness of the urban centres in Nigeria has made many able-bodied Nigerians to migrate from the rural areas thereby, abandoning their farmlands for the cities to take up white-collar jobs in the growing and prosperous oil companies cited in the urban areas which further exasperated social problems of pollution, congestion, pilfering, unemployment, and crimes.
x. The agricultural sector was adversely affected as a result of urban drift in population.
xi. How to share the money that comes from petroleum boom especially in the 1980s resulted in the looting of the national treasury made buoyant by the golden eggs laid in the Niger Delta Region.
xii. Petroleum oil destroys the economic life of Nigerians especially that of the Niger Delta Region, such as plant and fish destruction (the ecosystem); and low investment with the high technical cost of production due to oil spillages.
xiii. Inappropriate petroleum consumption.

In the last three decades, oil has played a critical role in the Nigerian economy; and has on the average, accounted for not less than 70% of Federal government revenue, invariably 90% of foreign exchange earnings, and 12% of the real gross domestic product (GPD) also. Petroleum oil serves as a very source of energy resources which affects all modes of transportation (air, rail, road, and sea) and, as such, has effects for the movement of goods and people both within and without Nigeria. Development in the oil sector also has grave inference on industrial production as oil, and its derivatives are used in the production of goods and services. The undependable electricity supply in the country has forced countless industrial business firms too who operate their generating plants using AGO or diesel and other fuel oil in their production of goods and services.

In the agricultural sector, farmers depend on petroleum oil using machines to move both personnel and inputs to the farms in the distances and their hinterlands as well as evacuate their products. Petroleum oil or gasoline (petrol) and AGO (diesel) is being heavily relied upon by the country for road haulage etc., assuming a high significance in transportation subsector dependence.

One of the sources of the oil industry's financial contribution to the Nigerian economy is from substantial revenues to the federal government of Nigeria. There has also been a significant increase in government receipts in recent years, is a reflection of increased crude oil production; a huge increase in revenue from crude oil sales and favourable fiscal arrangements as a result of an improved bargaining position of the nation

© 2020 Global Journals

over the years after the initial commencement oil production, when these companies of which the Shell-BP Petroleum Company of Nigeria has an upper hand in negotiations/bargaining powers and had relatively low concession rents, a 12.5 percent royalty rate, a 50/50 profit-sharing formula, and large capital allowances. Hence, in terms of calculating taxable profits, the country's oil revenues fell as oil prices fell in the 1960s. However, the country's oil prospects improved over the years and the government's bargaining power gradually increased; specifically in 1973 and 1974, and in subsequent years. The export in oil and gas sub-sector of the Petroleum Sector accounted for more than 95% earnings in foreign reserves and about 83% of federal government revenue, glowing into about 14% of the GDP; and provides about 65% of government's budgetary revenues as is stated below:

Table 4: Showing percentage contribution of Oil revenue to GDP (1981-2017)

YEARS	GDP (₦ Billion)	OREV (₦ Billion)	% contribution of Oil Rev. to GDP
1981	94.3300	8.560000	9.08
1982	101.0100	7.810000	7.73
1983	110.0600	7.250000	6.60
1984	116.2700	8.270000	7.10
1985	134.5900	10.92000	8.11
1986	134.6000	8.110000	6.03
1987	193.1300	19.03000	9.85
l988	263.2900	19.83000	7.53
1989	382.2600	39.13000	10.24
1990	472.6500	71.89000	15.21
1991	545.6700	82.6700	15.15
1992	875.3400	164.0800	18.75
1993	1089.680	162.1000	14.88
1994	1399.700	160.1900	11.45
1995	2907.360	324.5500	11.16
1996	4032.300	408.7800	10.14
1997	4189.250	416.8100	9.95
1998	3989.450	324.3100	8.13
1999	4679.210	724.4200	15.48
2000	6713.570	1591.680	23.70
2001	6895.200	1707.560	24.76
2002	7795.760	1230.850	15.79
2003	9913.520	2074.280	20.92
2004	11411.07	3354.800	29.40
2005	14610.88	4762.400	32.60
2006	18564.59	5287.570	28.48
2007	20657.32	4462.910	21.60
2008	24296.33	6530.630	26.88
2009	24794.24	3191.940	12.87
2010	54612.26	5396.090	9.88
2011	62980.40	8878.970	14.09
2012	71713.94	8025.970	11.19
2013	80092.56	6809.230	8.50
2014	89043.62	6793.720	7.63
2015	69023.93	82700.00	11.98
2016	67931.23	7586.89	11.17
2017	68490.98	8763.24	12.79
2018	69799.94	5765.85	8.26

Source: CBN Statistical Bulletin

© 2020 Global Journals

III. Method of Study

The author used primary and secondary data, especially responses to a structured questionnaire to investigate the objective of the study. A field survey was carried out in both rural and urban centres of Ogu/Bolo, Okrika, Port Harcourt, Khana, Eleme LGAs of Rivers State, Sagbama, Southern Ijaw, Nembe and Brass LGAs of Bayelsa State, and Ughelli, Effurun, Warri, Bomadi and Okerenkoko in Delta State. A total of One Thousand, Six hundred questionnaires were received and used. Stratified random sampling technique was used in the analysis.

IV. Gas Flared

The Gas flare rate in Nigeria stands at 12.00 percent as of August 2017 as was reported by the Nigerian National Petroleum Corporation (NNPC) Monthly Financial and Operations Report. The 12.00 percent gas flare rate translates to 919.73mmscfd as at August 2017 compared to 10.03 percent for the preceding month of July 2017.

Nigeria is the highest gas flaring country in the world, but having several Clean Development Mechanism (CDM) projects appropriating gas utilization have made the country to have improved in its standing in terms of gas flaring. The nation presently is on an average gas flare rate of 10.15 percent, which is 734.56mmscfd, for the period August 2016 to August 2017.

a) Nationwide Supply of Petroleum Gas

Nigeria flared 428 Bcf of its associated gas production i.e. 15 per cent of its gross production in 2013 alone. Hence, Nigeria loses about 18.2 million US dollars daily from the loss of the flared gas.

Gas flaring has made the country not be able to benefit optimally or maximally from the export of gas through the West African Gas Pipeline (WAGP) due also for the activities of vandals and miscreants.

Natural gas production in Nigeria according to the Department of Petroleum Resources (DPR) is constrained by lack of infrastructure to monetise natural gas that is currently flared.

In a country analysis study on Nigeria's oil and gas sector carried out by The United States Energy Information Administration, revealed that a significant proportion of Nigeria's gross natural gas is flared in the production process as a result of the fact that the nation's oil fields lack the infrastructure suitable to capture the natural gas produced with the oil, known as associated gas.

b) Proven capacity of gas reserve in Nigeria

Proven energy reserves are estimated in billions of quantities of energy. Geological and engineering data analysis has been proven to be reasonably certain in their results, and associated costs are recoverable as per prevailing economic and operating conditionalities of subsisting agreement(s). Agreement(s) are usually reached stating the location, quantity, and grade of the energy source that is in consideration in such reserves. "Measured reserves" were defined, which estimated figures are spelled out in the resource/reserve classifications contained in the U.S. Geological Survey Circular 831 of 1980.

According to CIA Facebook, 2017, the proven capacity of gas reserve in Nigeria was 187 trillion cubic feet; with 187 trillion standard cubic feet (SCF) of gas resources, whereby Nigeria retains the seventh position in the world and number one in Africa.

Table 5: Showing the Value of Proven Reserve

Date	Value In Trillion Cubic Ft	% Change
2006	185.0	
2007	182.0	-1.2%
2008	184.0	0.10%
2009	184.0	0.00%
2010	185.0	054%
2011	187.0	1.08%
2012	180.0	-3.74%
2013	182.0	1.11%
2014	181.0	-0.55%
2015	180.0	-0.55%
2016	180.0	0.00%
2017	187.0	3.89%

c) Employment Opportunities

Some few years ago, NNPC employed about 16,450 staff of which only about 4% came from the entire Niger Delta Region. NNPC is expected to maintain this vital role as a major source of employment in Nigeria of which a greater number of the employees from the catchment area has either been retired or terminated or dismissed with flimsy excuses that are not tenable with other staff from other regions. In term of employment, the Niger Deltans are always subjugated.

d) International Commitments

Nigeria has played some vital roles in the international arena as a result of increased revenue from petroleum oil which includes but not limited to the followings:

i. Independence of Zimbabwe (Rhodesia), South Africa, and Angola.
ii. Establishment of Cement and Sugar Companies in the Benin Republic.
iii. Construction of Lagos-Cotonou Highway.
iv. Electrification of Niger Republic.
v. ECOMOG peacekeeping forces in Liberia and the other West Africa States.

All these activities would not have been possible if the revenue from the oil sector was not forthcoming or not able to keep Nigeria and have a

© 2020 Global Journals

surplus to be spent. Yet, the Niger Delta Region was impoverished.

e) Positive uses of Petroleum Product

i. Liquified petroleum gas (LPG) is used for cooking just the same way DPK (Dual Purpose Kerosene) is used for cooking, while aviation jet fuels (with no sulphur is used for driving cars).
ii. Ago (Automated gas oil) is also used for cooking gas and for heavy-duty machines.
iii. LPFO (fuel oil) used in industries to PowerPoint plant (hybricaba).
iv. Lubricating oil from petroleum products is used in measuring, generators, vehicles and machine which mixture is according to the product and usage.
v. Paraffin wax from petroleum product is used for lighting and cosmetics.
vi. Asphalt is for road surfacing.
vii. Petroleum coke is used in manufacturing liquid detergent for washing.
viii. Special oil, plastics, syntonic rubbers, paints, insecticide, etc. are from the petroleum product
ix. Cash flow from oil and gas projects.
x. Cash flow from petroleum taxation.
xi. Cash flow from production sharing overflows etc.
xii. Depreciation amounts in each flow analysis.
xiii. Cash flow analysis and inflation differences.
xiv. Nominal and rent cash flows void of pitfalls.
xv. Project financing cash flows.
xvi. Contributing to the wellbeing of the economy of the nation. Experts in this field can work for government agencies, oil companies, and private companies who are interested in the economy in the area of oil production, transport, and refining.
xvii. The NNPC maintains a fleet of oil tankers with which it transports crude petroleum from the oil fields to the refineries and processed petroleum products from the refineries to the sales and distribution outlets.
xviii. The NNPC also creates and controls a network of oil pipelines for the same purpose, and all that are engaged in this sub-sector contributes immensely to the economy.
xix. Petroleum is one of the major sources of income for the economy and provides 95% of the country's export revenue.
xx. The petroleum industry oversees the exploration and production of crude oil in Nigeria, and also manages the refining, marketing, and services as well as the mining operations, diversification of mineral products, the organization and regulation of the development of mineral resource to optimize their
xxi. contribution to the overall national development effort, the conservation of the country's mineral resources, research into efficient extraction methods and wider application and use of minerals, staff development and training with the aim of transfer of technology, achievement of internal self–sufficient in the supply and effective distribution of petroleum product.
xxii. Export of petroleum industry products, commercialization of gas, in the control of the environmental problems of oil production (land, water, & air pollution).

V. Analysis of Results

a) Negative Impact of Petroleum Industry

i. How to share the money that comes from the petroleum boom resulted in looting and embezzlement by the Military and Civilians in government from 1966.
ii. Crude oil destroys the economic and aquatic lives of the people of the Niger Delta Region. In destroying the ecology of the Niger Delta region, by killing plants, animals and fishes in the sea, resulting in low investment, high technical cost of production resulting in oil spillage mop-up expenses.
iii. Inappropriate of petroleum consumption leading to animosity, hatred, and tribalism.
iv. Low level of investment in the petroleum sector by Nigeria, which gives room to foreign participation and investment.
v. Oil spillages that degraded our forests kills our fishers in the territorial waters of Nigeria,
vi. Petroleum oil kills our economic lives.
vii. It makes and weakens our labour force that was hitherto very enterprising, especially in the agricultural sector, to be lazy.
viii. The killing of the youths who agitate for development through hatred and animosity.
ix. Soots from petroleum oil brings in diseases and deaths to the inhabitants of Niger Delta in particular.
x. Impure rainwater full of lead content as a result of the emission of such fumes.
xi. Intertribal wars occur between cities claiming and counterclaiming oil wells which led to cities being destroyed with human lives.
xii. This leads to the looting of proceeds from petroleum oil both internally and internationally, thereby impoverishing the nation's economy.
xiii. Oil as an energy resource affects all modes of transportation (air, rail, road, and sea) and thus has implications for the movement of goods and people causing brain drain.
xiv. Developments in the oil sector also have major implications for industrial production as oil and its derivatives are used in the production of goods and services.
xv. The unreliable status of electricity in the country forces many industrial firms to operate their generating plants using diesel and other oil produce.

© 2020 Global Journals

xvi. In the agricultural sector, farmers depend on oil products to move their inputs to the farms as well as evacuate their products. Also, given the country's high dependence on road haulage, gasoline and diesel assume a high significance in the transportation subsector.

b) Reasons for Agitations and Protests

The people of the Niger Delta Region clamour for change resulting in agitations, youth restiveness and protests against oil-producing companies, as a result of the following reasons:

i. The protest of the rural communities in the Niger Delta Region was to mount pressure on oil-producing companies to improve their living conditions as a kind of compensation for the havoc wreaked on their land resources in the course of oil exploration activities.
ii. Due to the effects of environmental pollution and the destruction of the landscape of the oil-producing communities, the region is devastated and the economy is ruined. The people of the Niger Delta therefore have reasons for agitation for resource control and self-government.
iii. Developments in the international oil market directly translated into instability in the economy, resulting in a balance of payment deficits, unemployment, and declining quality of life. The people of Niger Delta Region therefore agitate and clamour for the employment of their people in the oil sector.

c) Negative Effect on Oil Producing Rural Areas

The Niger Delta has nearly 200 oil fields with over 400 oil production and storage facilities scattered within its swamps and creeks, which are operated by multi-national firms namely, Shell, Mobil, Chevron, Elf, Agip, and Texaco in a joint venture with the Nigerian National Petroleum Company (NNPC). Oil export contributes over 90 percent of Nigeria's foreign exchange earnings and over 70 percent of total federally collected revenue (Okoh and Egbon, 1999). Thus, the Niger Delta is the main source of Nigeria's wealth.

Despite the contribution of oil from the Niger Delta Region which produces the bulk of the oil, yet the region is in abject and unwarranted poverty and has been exposed to the dangers of water, land and air pollution as well as oil spillages which have endangered the aquatic life, the erratic ecosystem, topography, and surface vegetation. In 1979 alone, a storage facility operated by Shell at Forcadus terminal collapsed and spills an estimated 560.000 barrels of petroleum products.

Although exploration of oil in the Niger Delta has been on the increase since 1958, and that the Nigerian economy is propelled and driven by oil resources from the area, without improving the Niger Delta Region with no economic progress, as evidenced in the existence of abject poverty, unemployment, poor road networks, lack of infrastructure and environmental degradation. To alleviate the problems of under-development associated with the effects of oil exploration and exploitation, government at various times had put in place several measures including the establishment of the Niger Delta Development Board in 1962, the Niger Delta Development Commission in the 80s and Oil Mineral Producing Areas Development Commission (OMPADEC) in 1992 among others to alleviate the sufferings of the people of the Niger Delta region. In spite of these efforts, the crisis in the oil-rich Niger Delta resulting from mostly youths: restiveness and agitations still looms, showing undeniable evidence that all is not well in the Niger Delta Region which area had remained underdeveloped. In recent times, youth restiveness in the area has led in polarization, vandalization of oil pipelines, illegal scooping of fuel, and kidnapping of oil industry workers, killings, etc. All these actions and inactions have resulted in the loss of lives and huge financial resources to the people of the area, by the oil companies and the Federal Government.

A. Market Distortions and Inflationary Pressure as Outflows from Petroleum windfall became an issue.

B. Deficit Fiscal Operations in comparison to the GDP negatively affected the economy as revenue from the oil sector could not sustain the budget of the nation. In 2012 alone, N185.8 billion or 14.3% of the proposed total expenditure was in shortfall. The oil sector of the Nigerian economy faces the following problems:

   (a) Low level of investments in the oil sector irrespective of its potentials.
   (b) There has been delays on the part of the Federal Government in the payment of JV cash calls in the upstream sub-sector operations,
   (c) Focusing more on maintenance rather than growth.
   (d) High technical cost of production, due to the low level of technological development.
   (e) High cost of petroleum products in the domestic market.
   (f) Incessant disruption of petroleum production as a result of formatted crisis by youths of host communities.
   (g) Flaring of associated gas causes environmental degradation with accompanying problems.

C. How Economic policies Impacted on Petroleum Oil

There are some traces of economic impartation on Petroleum oil as follows:

i. Increasing inequalities in inter-personal incomes
ii. There has been a widening of the gap between urban and rural incomes, especially since 1986.
iii. Poor attendance at Schools and health centre were noticed. However, School enrolment figures show some improvement in capital expenditure in favour of secondary and tertiary institutions.

© 2020 Global Journals

iv. A vibrant financial system that has had cycles of stability/prosperity and distress, especially in the early to mid-1990.
v. There has been significantly improvement in the enforcement of regulations and increasing commitment to corporate governance principles by the operators to ensure the soundness of the financial system.
vi. The urban towns having white-collar jobs has made many able-bodied youths migrate from the hinterland, abandoning their farmlands in the rural areas for the cities and hoping to partake in the growing oil sector jobs. This drift has adversely affected the agriculture sector, and has also created some social vices such as pollution, unprecedented unemployment, city congestion, and rising crime rates in the urban cities.

d) Social Crises in the Niger Delta Region

The Niger Delta region is a death trap full of protests, agitations, and confrontation, by the disgruntled people of the area as a result of observed teething troubles coupled with aggravated reports of beeping of billions of naira of past military dictators and their regimes from the revenues derived from the soil of the Niger Delta Region hence, making the people to be sensitive to the ideology "get rich quickly" syndrome from the proceeds of crude oil sales, which creates the class of bourgeois who are flamboyant in their lifestyles. The worst vexation is the display of arrogant pomposity, oppressive nation, and bossily or domineering inclination of those whose land does not produce the oil and yet own these oil well, thereby creating wealth for themselves and their people at the expense of the real owners of this oil wealth. The Niger Deltans are the actual possessors of the oil wealth but were side- lined and became paupers. Even their children cannot and were not allowed to have a foretaste of this wealth. Who will be happy and be silent over the duplicitous and degradation? Any son of the soil who raises a voice over the indiscrimination is either slaughtered or maligned and brutalized. Oh, in what a nation does the Niger Deltans found themselves? Will God forgive the Britons and the Americans for this act in ingenuity? Will God, not one day, see to the inclinations of men and descend from heaven to save the Niger Deltans as He saved the Israelites from Egyptian bondage? In every office where the Northerners and Southerners co-inhabit, the evil genius always show case itself. This dehumanization (evil genius) was indeed Abdulistic Capitalism as opined by Okowa (2005), in his inaugural 40th lecture.

e) Social and Political Factors

With the presence of Joint Ventures of the petroleum industry in the Niger Delta, there flock in migrants of all characters to occupy most of the positions in the employment of Oil Industries to the detriment of the labour force of the host communities This side-lining in terms of employment in the oil companies was on the premise that there were no qualified indigenes, and more so, the recruitment has always been done in the headquarters and in secret. This act of suppression of the indigenes of the Niger Delta often calls for agitations in the area and stiff with stiff opposition and protests. These agitations and protects more often were matched by suppression from the military kept in the shores of the Niger Delta region to suppress any uprising, giving room to the acquisition of arms and ammunitions from several sources. The political structure of Nigeria made it worst where the nation's slogan is one Nigeria, but in reality and action, Nigeria is not one people and the nation is dominated by abdulistic capitalism having Abdul who wants to be rich but does not want to work but wants political headships at all times, and be at the hemp of affairs in the nation. The Babylonian Hammurabi's type of government is in practice in Nigeria, and it is only the grace of God that will see Nigeria through. Okowa, (2005) succinctly pointed out in his inaugural lecture that "as it was in Babylon where the laws for the nobles and freemen in ancient Babylon were different from those for the hoi polloi, and that punishment for crimes was milder for the nobles than the hoi polloi; so it is in Nigeria." In the case of Nigeria, the laws are the same in theory, but differ in practice; in that the rich and powerful can embezzle (not steal) millions with minimal consequences, whereas a poor starving man who steals a piece of yam to mitigate his hunger may pay dearly with the loss of an arm if lucky; or if unlucky he/she will be publicly roasted alive. Common thieves and villains are condemned to long years of imprisonment with hard labour, but privileged thieves and felons take over the governance of the nation named Nigeria. Here again, Babylon is seen in operation.

f) Environmental Problems

The environmental problems of the Niger Delta are found in the literature. Ikein (1990), Omgbu (1993), Orubu (1999), and Omotor (2000) are but a few documentaries. The natural resource of the people in the Niger Delta has declined tremendously as a result of oil exploration, which has impoverished the region and widespread poverty and underdevelopment. The region was self-sufficient economically especially in terms of sea protein and forestation with animal protein insufficiency before the advent of oil exploration, relative to the immense wealth derived from the region as observed by Onosode (1997). Oil exploration and production have today created a deep feeling of alienation, degradation, underdevelopment, and an increase in death toll due to oil protracted deceases and fumes inhaled from emitted gases into the atmosphere and soots by the people of the Niger Delta.

© 2020 Global Journals

g) Effects of Air Pollution

Various health surveys were carried out in the Niger Delta Regions to ascertain the health condition of the people following emissions causing several pollutions. One such study is carried out by Ana and Sridhar (2009). The summary of findings shown that those living and working in the Niger Delta Region where effluents were discharged into the air and aquatic revealed prevalent air pollution with related morbidities or sicknesses, which was confirmed by medical records of the hospital. The survey result from the questionnaires indicated that 39 responses showing 60.9% of residents in Eleme have been sick because of contaminated air while that of Ahoada East had only ten respondents showing 4.5%. There were also reported cases of skin outgrowths among Eleme residents as against those of Ahoada East. Hospital records showed that respiratory disorders among males are 85% and females were 39% of the residents in Eleme, while in Ahoada East, the male percentage was 68%, and the females' number was 18%. The overall result showed that reparative deceases in Eleme where caused by effluence emission from the Refinery and NAFCON which rate is higher than that of Ahoada East LGA were emission of gases is lower.

The World Health Organization reported that 2.4 million people die every year due to air pollution, and that 1.5 million of these deaths were as a result of indoor air pollution. Studies on Epidemiological revealed that more than 500,000 Americans die yearly of cardiopulmonary diseases linked to breathing fine particle air pollution (Molles, 2005). A study by the University of Birmingham has also shown a strong correlation between pneumonia-related deaths and air pollution from motor vehicles (Milton, 2005). There are more deaths Worldwide every year that is linked to air pollution than to automobile accidents. In 2005 reports have it that 310,000 Europeans die from air pollution annually. Chief among the causes of these deaths include aggravated asthma, emphysema, lung and heart disease and respiratory allergies. The US EPA estimates that a proposed set of changes in diesel engine technology (Tier 2) could result in 12,000 fewer premature mortalities, 15,000 fewer heart attacks, 6,000 fewer emergency room visits by children with asthma and 8,900 fewer respiratory-related hospital admissions each year in the United States 481 (John, 1985).

India suffered from air pollution in 1984 at Carbide factory which killed more than 25,000 people on the spot and injured so many people ranging from 150,000 to 600,00. Also, the United Kingdom suffered from the worst air pollution in her history in 1952 where 4000 people died in 6 days and over 8,000 within the following few months Tawari and Abowei (2012). The list is endless. In the case of the Niger Delta Region, the number of deaths is inestimable, and yet the governments of Nigeria turned deaf ears to the cries of the people of the Niger Delta Region for being a minority group.

The health effects caused by air pollution may include difficulty in breathing, coughing, wheezing, and the blocking of existing respiratory and cardiac organs. These effects can result in increasing medication, increased doctor or emergency room visits, with more hospital admissions in severe cases, and possible premature deaths. The poor intake of quality air principally affects the body's respiratory system and also the cardiovascular system. Individual reacts differently to air pollutants depending on the type of pollutant a person is exposed to, the degree of exposure, and the individual's health status and genetics (Janice, 2002).

Black Sooth over Niger Delta towns, including Port Harcourt, Yenagoa Warri major Towns is worst hit. The aquatic life is also severely affected, especially the mangrove creeks and waterways.

Huge flames puff in the air black soots over and above the housetops of the Niger Delta Region and these black clouds leap into the sky, causing discomfort and illness of the bronchioles. The gas flared by Agip-Nigeria hiccup out toxic fumes or gases that loom over houses, farmlands, and shops. There are strange smells from these gases and an audible jeer in the air, and residents of the Niger Delta region of The Rivers and The Bayelsa States are worst hit, and gas flaring is ruining lives and livelihoods. Scarcity of Petroleum products especially the non- availability of Household Domestic Kerosene in the producing area calls forth the divergent local refineries in the Niger Delta region without which one wonders what would happen. The product refined from the four refineries were taken to the Northern Regions of Nigeria by the orders of the ruling oligarchy having her vital players in the industries who do not care but continues to downtrodden the minority South-South (the Niger Delta Region).

The people of the Niger Region have been living death due to the sooth emission, even affecting their drinking waters, hot and foul-smelling air is always parading our environment. You cannot dry a cloth overnight and could not breathe in the fresh air. Sooth or black smoke is continually killing our crops and causing human sickness of the throat, lungs, boils and murrains. Medical staff in the Niger Region has often reported that treating patients with all sorts of illnesses that they believe are related to the fumes of flames inhaled have caused bronchial, chest, rheumatic and eye problems, internal heat, deafening of the ears due to excessive noise from the plant of gas flaring centres among others. The hospital's senior nursing officer, Anthonia Chioma Ike, is from another part of Nigeria, but after eight years of living and working in the vicinity of the gas flares, was furious about what's going on in the Niger Delta region.

© 2020 Global Journals

i. *Effects on cystic fibrosis*

The harmful effects of cystic fibrosis on human life were established by a study carried out between 1999 and 2000, by the University of Washington, which revealed that people suffering from air pollution are prone to suffer from pulmonary exacerbations and lung dysfunction. Patients marked out for the study were tested for amounts of specific pollutants like Pseudomonas aeruginosa or Burkholderia cenocepacia, as well as their socioeconomic standing. The sample population was drawn from The United States from a location close to an Environmental Protection Agency (Anderson, 2005). During the time of the study, about 117 deaths were recorded which death was associated with air pollution. Most of the patients sampled in the study actually lived in or near large metropolitan areas, and are close to medical help. These same patients had a higher level of pollutants found in their system because of more emissions in larger cities which, they inhaled. Many people were found to be sick of cystic fibrosis, and decreased lung function, as a result of inhaling pollutants such as tobacco smokes, carbon monoxide emissions from automobiles every day, and the improper use of indoor heating devices according to Baird (2010).

Brownwen (1999) stated that Chronic Obstructive Pulmonary Diseases (COPD) such as asthma, emphysema, chronic bronchitis, etc. was caused by fumes so inhaled from gaseous emissions.

Similarly, there was a study conducted in 1960/61 as a result of the great smog that happened in 1952 by comparing male truck drivers of the age of 40 and 59 of 293 Londoner's resident in London with their counterparts who reside in Gloucester, Peterborough and Norwich (these towns have low reported cases of deaths as a result of chronic bronchitis) which revealed that those who resides in London exhibited more severe respiratory symptoms of cough, phlegm, and dyspnoea with increased sputum production and purulence than those who lived at the other towns that are less affected by fumes inhaled from gaseous emissions from air pollution (Anderson, 2005).

According to Baird (2010), which study revealed that urban area patients suffer mucus hyper secretion, lower levels of lung function and more self-diagnosis of chronic bronchitis and emphysema than rural dwellers because of fumes regularly inhaled by them.

ii. *Effects on children*

Air pollutants in cities around the world with high exposure have the possibility of children living within that vicinity to have asthma, pneumonia and other lower respiratory infections, as well as a low-slung birth rate. To protect the health of the youths and children's health in cities such as New Delhi, and India, steps were taken to forestall compressed natural gas in buses to help eliminate the "pea-soup" smog (Fuggle, 2004). Examples of these countries which suffer such pollutants effects were Sudan, Egypt, Mongolia, and Indonesia. In the United States, the Clean Air Act was passed into law in 1970. Marland et al., 2005) stated that about 146 million Americans were said to be living in regions air pollutants exceeded federal standards in 2002.

Pollutants include particulate matter, sulphur dioxide, nitrogen dioxide, carbon monoxide, ozone, and lead. Children are worst affected by pollutants because children are always found outside more than adults, and there is higher minute ventilation making them vulnerable to the hazards of air pollution.

iii. *Health effects in relatively "clean" areas*

Public health effects can be costly, if a large number of people still live within places that are some radius away from the air polluted areas and continue to breathe in such pollutants. 2005 scientific study for The British Columbia Lung Association carried out a survey in 2005 on health hazards, and the findings revealed that there was a small improvement of 1% reduction in air quality (i.e., 1% reduction of ambient PM 2.5 and ozone concentrations (Baird, 2010).

iv. *Greenhouse effects*

The greenhouse effect is a greenhouse gas that creates a condition in the upper atmosphere causing trapping of heat to generate an increased surface and lower tropospheric temperatures. With the emission of Carbon dioxide from the combustion of fossil fuels, a source of greenhouse gas emissions occurs. Such gasses include methane, hydrofluorocarbons, perfluoro carbons, chlorofluorocarbons, nitrogen oxides, and ozone.

The gravity of effect on the locality can only be imagined than told, and is well understood by scientists who are continually studying the role of changes in the composition of greenhouse gases.

Several studies have also investigated the potential for long-term rising levels of atmospheric carbon dioxide which causes an increase in the acidity of both rain and ocean waters, and the possible effects of this on marine ecosystems.

v. *Control measures*

Taiwo (2005) stated that air pollution studies are rarely carried out in Nigeria. He also stated that the government is not involved in systematic and consistent air quality assessment programmes to curb air pollution as is done in the advance world such as the United States. However, there is the problem of insecurity in the Niger Delta due to difficulty in terrain that militates against most community- based air sampling initiatives, and that of lack of requisite and adequate technical manpower to carry out the multifaceted and complex air quality studies in the expanse of the Niger Delta (Tawari, and Abowei, 2012).

© 2020 Global Journals

h) Pollution of Air Due to Gas Flaring

Gas flaring at flow-stations and oil installation in the Niger Delta at temperatures at about 1,600 c is a common practice as was confirmed by Ogbuigwe, (1998).

Gas flaring amounts to air contamination. Tawari and Abowei (2012) defined air pollution as "the introduction of chemicals, particulate matter, or biological materials that cause harm or discomfort to humans or other living organisms, or cause damage to the natural environment or built environment, into the atmosphere".

Odigure (1998) defined pollution as "the presence in the outdoor or indoor atmosphere of one or more gaseous or particulate contaminants in quantities, characteristics and of duration such as to be injurious to human, plant or animal life or to property, or which unreasonably interferes with the comfortable enjoyment of life and property". Air pollution control in developing countries like Nigeria, has been difficult to achieve. This is a result of these third world countries paying more attention to providing basic needs of food, shelter and employment for her populace.

Anderson (2005) stated that pollutants can be in the form of solid particles, liquid droplets, or gases which may be man-made or natural. The atmosphere is full of complex natural gaseous that are vital to human or plant life. Yet, in addition to these natural gases, man-made gases are equally emitted into the atmosphere that are hazardous to both human and plant life, which equally depletes the stratospheric ozone. Air pollution has long been a threat to human health and that of the Earth's ecosystems. Anderson (2005) stated that the findings of the 2008 Blacksmith Institute World's Worst Polluted Places report have it that indoor air pollution and urban air pollution are two of the world's worst poisonous pollution.

Grevy (1995) also gave an estimated flaring of gas in the Niger Delta region at a temperature between 300 - I.400°C, which emissions usually consist of nitrogen oxides, carbon dioxides, and sulphur dioxides. The gas flared produces oxides such as nitrogen and sulphur oxides emitted into the atmosphere and returned in acid rains have serious harmful effects on human and animal health, vegetation, and plant growth. A greater proportion of gas produced in combination with crude oil is being flared as waste while extracting the crude oil as is being done in Nigeria instead of its collection.

The average gas flared in Nigeria during the period 1970-1979 was estimated at Ninety-seven percent of the total gas extracted, and in the periods 1980-1989, and 1990-1993 stood at 79 and 76 percent respectively. The largest proportions of these flares are located in the Niger Delta. Alakpodia (1995) spoke of the adverse effects of such gases flared on the vegetational growth, animal life, and ecological equilibrium in the Niger Delta as being disastrous. Pictures of all emission of a typical gas-flaring site, of an oil well, burning of oil storage, and boats causing sooth in the Niger Delta are at the end as appendixes.

Orubu (1999b) opined that gas flaring has destructive effects on the immediate environment, particularly on plant growth and wildlife as well as on human health. Most recently, it is also being pointed out that some of the greenhouse gases (such as methane and carbon dioxide emitted at gas flares contribute to global warmings. Thus the continuous flaring of gas in the Niger Delta could contribute to climatic change with attending harsh living conditions on earth, and the interest of the World Bank and the Global Environmental Facility (GEF) is proposing a gas flare reduction project for the oil fields of the Niger Delta is necessary (Moffat and Linden. 1995).

The folks of the Niger Delta region have suffered so much from environmental degradation and severe pollutions and ought to have been paid some compensations to ameliorate their suffering but to no avail hence, the Niger Deltans have the option to either take laws into their hands and fight back through jungle justices or resort to applying the criminal aspects of the law by the victims of environmental and industrial pollutions which have lost their means of livelihood. Thus efforts should be made by the different tiers of governments to ensure that victims are adequately compensated because of the enormous profits and benefits the country through the Niger Delta Region would derive and have been deriving from a sensible and regulated industrial growth of the oil industry.

Although it is not possible to eradicate pollution, oil companies should anticipate and provide a preventive solution in their long term planning. The government should also take remedial steps as a matter of urgency to design a programme that will involve on-the-spot assessment of damages resulting from the activities of the oil companies in their areas of operation, especially in the Niger Delta Region. The communities on their part should intensify efforts in Community cooperative spirit in approaching oil companies to enable them to get the very best from them, to live in harmony with one another in a given social formation.

It is worthy to note that environmental degradation in the Niger Delta occasioned by oil industry activities has brought untold sufferings and constant increase in the death tolls and incidences of poverty in the Niger Delta region. Therefore, alleviation of mass poverty in the Niger Delta must be taken seriously by having a structure a systematic environmental planning and policy implementation with the overall process of planning for development. In spite of the individual efforts of oil companies, and the agencies of Government in the provision of some developmental facilities, yet the basic needs of the region which should be key socio- economic

© 2020 Global Journals

developmental projects are still lacking. The government should be more concern in sustainable development for the Niger Delta Region in particular by addressing numerous problems confronting the Niger Delta Region. There is no way to dry clothes outside as white clothes turned black because of sooth. Also, there is no more fresh air to breathe because of carbon black known as soot, and its gases are poisonous to human lives.

VI. Summary, Conclusion and Recommendations

a) Summary

The study examines the good and evil effects that petroleum oil has done to this nation, especially the catchment area being the Niger Delta Region and proffer solutions. The bulk of this petroleum oil is found in the Niger Delta Region in Nigeria, and yet there is no tangible development or project to show for it.

The uses of petroleum oil were expressly identified and quantity refined per stream day was itemized in the literature. Our findings of the positive and negative effects of petroleum oil and precisely the causes of agitations in the Niger Delta Region was lucidly pointed out such as the emission of thick black gas known as soot that is detrimental to human health.

The causes of agitations and youth restiveness in the Niger Delta and what will make them more productive, being socially responsible and relevant to the Nigeria nation as a whole and the Niger Delta, in particular, were succinctly elaborated.

We have offered some necessary recommendations which if vigorously pursued and implemented will bring some lasting and enduring peace in the Niger Delta Region and Nigeria.

This study is relevant as it succinctly brings to the fore the immediate and remote causes of agitations and youth restiveness in the Niger Delta Region of Nigeria.

b) Conclusion

Surely, NNPC has played vivacious roles in the economy of Nigeria in terms of revenue generation, petroleum products supply, development of petrochemicals and gas etc., through which the transformation of the economy was made possible. NNPC can play more roles as an oil and gas company to position itself more relevant both locally and internationally in the supply of world energy mix both now and in the future. As of now, NNPC has touched the lives of all Nigerians and other countries in so many ways.

We have been able also to establish that the Niger Deltans were living their normal lives before the advent of the oil industry, which brought in the obdurate menace to the region such as oil pollution and degradation, etc. Instead of the Oil found in the confines of the Niger Delta Region to be a source of blessing to the people, and Nigerians, it rather turned to disaster, calamity, sorrow, suffering, and death to the populace of the Niger Deltans. The Federal Government of Nigeria should take remedial steps in correcting all the abnormalities causing sorrow and endemic catastrophe to the Niger Delta, rather than keep the Federal Government of Nigeria keep aloof with closed eyes and ears to the life-threatening consequences.

c) Recommendations

The Federal Government must take urgent steps in reducing the sufferings of the people by taking the following steps:

i. Implementing the revenue derivation policy to the teeth and even increase it so that the various government of the oil-producing areas will use such funds to remedy most of the anomalies.
ii. Compensatory infrastructural development of the Niger Delta Region in terms of building Hospitals, Schools, bridges, provision of pipe-borne water, and electricity in every village of the Delta Region, especially in areas that it impacted most.
iii. The involvement of the communities in decision making concerning the development of the catchment area.
iv. The government should carry out an environmental impact assessment and give treatment to the land and people of Niger Delta, by placing emphasis on the human factors; and reduce conflicting functions of government agencies with action braids for the development of the Niger Delta Region.
v. Taking immediate steps in forestalling the emission of black sulphuric carbon dioxides known as soots which causes various ailments to the people of the Niger Delta. The Government knows the baron and the big wigs that are in the racketing business of illegal oil bunkering by their illegal modular refineries.
vi. The Federal Government of Nigeria should take urgent steps in making good her promises of setting up thirty (30) modular refineries in the Niger Delta Region to forestall the emission of soots into the atmosphere.
vii. The zero-tolerance of gas flaring be adopted forthright by the Federal Government of Nigeria, which will not only save Nigerians of health challenges by limiting the effluent emission of gases but also bring about judicious utilisation of the region's gas resources to generate revenue to the nation.
viii. The Military who connives with barons in the illegal oil bunkering be given some punitive penalty, and necessary punishment meted to erring officers as a deterrent to others to save the lives of Niger Deltans and the nation as a whole.
ix. The bad eggs in NNPC who siphons' the treasury be made to face the law.

© 2020 Global Journals

x. No president of Nigeria should be the Minister of Petroleum Resources as such a combination of office will lead to more looting, and stealing with more perpetration of corruption.
xi. The act of favouring unmerited Northerners both in qualification and experience by catapulting them to higher positions than the Southern counterparts be nib in the bud.
xii. The promotion of Northerners over and above their southern senior colleagues should be discouraged forthright.
xiii. The kicking out of Niger Deltans who lay the golden goose from higher positions in NNPC and other Federal establishments is a misnomer and should be discouraged or else in no distant time will create bad blood and revolution.
xiv. The British government through Lord Fredrick Lugard amalgamated the Southern and Northern Nigeria with the Lagos Colony as Nigerian. This action by the Britons was the greatest harm done the Niger Deltans, and to have caused their sufferings. By this act of amalgamation, the war that ensued between the Southern and Northern protectorates could not be contained by the perpetrators, and unless urgent steps are taken to forestall the fight by the same colonial masters who engineered it, only God knows what will become of Nigeria in the near future. The 1966 revolution and coup was the best period to have separated the fight between the Southern, the Western and the Northern Nigeria, but the very British and American still wade into the matter by discouraging the Northerners from secession or dividing the country. Is Nigeria truly one Nigeria? This question should be a portion of food for thought.
xv. The government should focus on air pollution control by applying air pollution laws on defaulters, carry-out real monitoring of pollutants and publish speciation pollutants offenders.
xvi. Compensation based on a sustainable livelihood criterion, as opposed to the current once-and-for-oil principle, should be effected.
xvii. Promoting agriculture and fishery to create employment and tackle the problem of poverty should be pursued vigorously.
xviii. Protection of fresh-water resources to ensure continuous and sustainable exploitation.
xix. Equitable appropriation of oil wealth, especially the principle of derivation, should be reviewed upward to avoid alienation of the people from the national economic development.
xx. There should be a vigorous pursuit of engagements in renewable energy, clean energy, and cleaner air initiatives.
xxi. There should be less emission of gases and control measures be taken by pollutants if there can be no zero tolerant in the meantime.
xxii. The government should enforce enabling laws against pollution.

References Références Referencias

1. Abomaye-Nimenibo, W.A.S (2013), Petroleum Economics, Port Harcourt, Nimehas Publishers
2. Adelman, M.A. (1976), "The World Oil Cartel", Quarterly Review of Economics and Business, 16 April, 3-11.
3. Ajakaiye Olu, (2001) Economic Development in Nigeria: A Review of Recent Experience, Proceedings of the First Annual Monetary Policy Conference (Central Bank of Nigeria; 2001), pp. 12-36.
4. Amachi A. L. (2004) Principle of Economics Nigeria Cheedal ABA
5. Ana, G.R. and E.E. Sridhar, (2009). Industrial Emissions and Health Hazards among selected factory workers at Eleme, Nigeria. J. Env. Heal. Res., 19(1): 43-51.
6. Anderson, I. (2005), Niger River Basin: A Vision for Sustainable Development. The World Bank, pp 131.
7. Anyanwu, J. C. (1997). Nigeria Public Finance. Onitsha, Joanne Education Publishers.
8. Baird, J., (2010). Oil's Shame in Africa. Newsweek, 27. (July 26, 2010).
9. Bronwen, M., (1999). The Price of Oil Human Rights Watch. Perception and Reality: Assessing Priorities for Sustainable Development in the Niger River Delta Retrieved October 3, 2011.
10. Central Bank of Nigeria, Changing Structure of the Nigerian Economy (2000).
11. CBN Annual Report & Statement of Accounts (2002).
12. Central Bank of Nigeria (2002). The Changing Structure of the Nigerian Economy and Implications for Development. (Abuja: CBN). CIA Factbook, 2017
13. Dickie, R.K., (1966) "Development of Crude Oil Production in Nigeria, and the Federal Government Control measures" (paper presented to the Institute of Petroleum, London
14. Duivedi D. N. (2002) Managerial Economics 6th Edition India: Vikas Publishing House Plc Ltd.
15. Falola, T (Westport, 1999), "The History of Nigeria", Nigeria in the Twentieth Century 133-156.
16. Fuggle, R.F., (2004). Africa Environment Outlook Lake Victoria: A Case Study of Complex Interrelationships United Nations Environment Programme, pp: 75-85.
17. Genova, A; Toyin Falola (2003) Oil in Nigeria: A Bibliographical Reconnaissance History in Africa, Vol. 30, pp. 133-156.
18. Gujarati, D.N. (1995). Basic Econometrics. (3rd Ed.) (New York: McGraw-Hill, Inc).
19. Iyoha, M.A and O.T. Ekanem (2002). Introduction to Econometrics. (Benin: Mareh Publishers).

© 2020 Global Journals

20. Jaidah, A.M. (1982), "Perspective on the Oil Market", OPEC Review (autumn) 254- 260.
21. Janice, L. (2002). Indigenous Plants to the Rescue Environmental Remediation in Nigerian Oil Regions. Science in Africa. Retrieved October 3, 2011.
22. Jhingan, M. L. (2009), Managerial Economics, Vrinda Publication (p) Ltd
23. John H. Adler. (Oct. 1956), The Economic Development of Nigeria. The Journal of Political Economy, Vol. 64, No. 5, pp. 425-434.
24. John, J.M., (1985). Encyclopedia of Chemical Processing and Design. Marcel Dekker. I SBN 0-8247-2491-7. pp: 144.
25. Koulsoyiannis, A. (1979), Modern Economics Macmillan Press Published.
26. Madujibeya, S. A. (July 1976), "Oil and Nigeria's Economic Development", African Affairs, Vol. 75, No. 300, pp. 284-316.
27. Marland, G., T.A. Bnousoden and R.J. Andres, (2005). Global, Regional and
28. National CO2 Emission. In Trends: A Compendium of Data on Global Change, Carbon Dioxide Information Analysis Center, Oak Ridge National Laboratory, U.S. Department of Energy, Oak Ridge, Tennessee.
29. Molles Jr, M.C., (2005). Ecology Concepts and Applications. 3rd Edn., McGraw-Hill Co. Inc, pp: 93-94.
30. NNPC, (April-June, 1981), Nector (House Journal), Vol.2, No.2 p. 18
31. Odell P.R. (Jul. 1968) The Significance of Oil Journal of Contemporary History, Vol. 3, No. 3, The Middle East. pp. 93-110.
32. Odigure, J.O. (1998). Safety, Loss and Pollution Control in Chemical Process Industries. Jodigs and Associates, Minna, Nigeria. Pp.89-93
33. Ogbuigwe, A, (1998), Judicial Activism in the Enforcement of Environmental Regulations in the Petroleum Industry: Past, Present and in the Future. Proceedings of 1998 International Conference on the Petroleum and the Nigerian Environment. Pp. 83-123.
34. Okowa, W.J. (2005), Oil, "Babylonian" "Matthewnomics" and Nigerian Development, University of Port Harcourt Inaugural Lecture Series No. 40, delivered on 10 February.
35. OPEC (1983): Statute of the OPEC (Vienna: Secretariat of OPEC.
36. Onyema J. I. (2004) Foundations of Microeconomics Amethyst and Collegus Publisher, Port Harcourt.
37. Orubu, C.O. (2012). Oil Industry activities, Environmental Quality and the Paradox of Poverty in the Niger Delta. In The Petroleum Industry, the Economy and the Niger-Delta Environment (Eds), C. O. Orubu, D.O. Ogisi and R.N. Okoh, pp.17-3.
38. Robinson, M. S. (1964), "Nigerian Oil: Prospects and Perspectives", Nigeria Journal of Economics and Social Studies 219-29.
39. Shapin E. S. (1978). Macroeconomics Analysis USA, Harcourt Brace Jovanovich Inc.
40. Taiwo, O., (2005). The Case of Lagos-Air Quality Improvement Project. LAMATA.
41. Tawari, C.C. and Abowei, J.F.N (2012), Air Pollution in the Niger Delta, International Journal of Fisheries and Aquatic Sciences 1(2): 94-117
42. U.S. Geological Survey Circular 831 of 1980
43. USEPA, (1993). Guide to Environmental Issues, Doc. No. 520/B-94-01. The United States Environmental Protection Agency, Washington, DC, USA.

ANNEXURE 1

PICTURES OF SOOTH EMISSION INTO THE AIR



Black Soot Emission from Crude Oil Boat/Local Tanks Set Ablaze By Security Forces

© 2020 Global Journals



Black Sooth Emission from Oil Well Explosion



Gas Flaring



Black Soot from Gas Line Explosion

© 2020 Global Journals