

Environmental Degradation and The Effect of Oil Spillage in the Niger Delta Region of Nigeria

Achi Celestine.N, and Essien Okon

Federal Ministry of Environment

FCT, Abuja

ABSTRACT

The question of development in the peripheral countries has generated very strong debate over the last years amongst development economists. Various theorists and schools of thought have posited theories on development in the peripheral countries. These analysts have used various models to explain the problem and the link between poverty and environmental degradation in the less industrialised countries. They include The Bretton Wood institutions such as the International Monetary Fund (IMF) and the World Bank, the modernisation paradigm/ the neo-classical economists, the Neo-Marxist school of thought, ecologists and liberal economists.

Each of these Schools of thought has proposed various options for development in the periphery. The Modernisation paradigm made up of mostly Neo-classical economists, have posited very strongly that the basis of economic development in the south will be enhanced if they remain as peripheral countries with a strong development of export drive of primary resource materials through international free trade. Some ecologists and analyst like Odum, Bunker and Hornborg have used the energy theory to explain the unequal trade and international exchange that have led to the creation of the core and periphery. Yet the Neo-Marxists have argued that international trade is a basis to appropriate the labour and natural capital of the developing countries. Some economists particularly from the third world countries have argued that the issue is not the question of primary development of export in the periphery, but rather equity in international exchange that has placed the periphery in a precarious situation as extractive economies.

Statement of Problem

The basis of this paper is to analyse the position of various development economists on the issue of the development of the periphery through the intensification of the export of primary resource materials with a case study of the Niger Delta communities in Nigeria. The problem of poverty as a consequence of severe environmental degradation in these regions and the question of inequitable exchange of commodities will be analysed in the context of oil extraction and export in the Niger Delta. Suffice it to note that the government of Nigeria intensified the extraction of natural oil and gas reserve for export in the Niger Delta since the early 1960's as a basis to earn foreign exchange revenue for development. The fundamental question is to what extent the benefits out weight the costs in this initiative.

Aim and Objectives of the Paper

The aim of this paper is to analyse and evaluate natural oil resource extraction, its impact on the environment and its effect on development in the Niger Delta communities in Nigeria. This paper will review the above in the context of world system analysis and theories.

The objectives of this paper are as follows :

Analyse the impact of intensive resource exploitation on the environment of the oil producing communities in the Niger Delta.

Discuss the impact of environmental degradation as a function of intensive resource extraction in the Niger Delta and its effect on peasant agriculture and poverty in the area.

OIL RESOURCE EXPLOITATION IN THE NIGER DELTA

The effect of oil resource extraction on the environment of the Niger Delta has been very glaring in terms of its negative effect on the region. Eteng 1997, p 4 stated that "Oil exploration and exploitation has over the last four decades impacted disastrously on the socio-physical environment of the Niger Delta oil-bearing communities, massively threatening the subsistent peasant economy and the environment and hence the entire livelihood and basic survival of the people."

Suffice it to note that, while oil extraction has caused negative socio-economic and environmental problems in the Niger Delta, the Nigerian State has benefited immensely from petroleum since it was discovered in commercial quantities in 1956. The Central Bank of Nigeria (C.B.N) 1981 annual report stated as follows, "Oil which was first discovered in 1956 and first exported in 1958 accounted for more than 90% of Nigerian exports by value and about 80% of government revenue as at December 31, 1981.... The overall contribution of the oil sector to the national economy also grew from an insignificant 0.1% in 1959 to 87% in 1976."

There is no doubt that the Nigerian oil industry has affected the country in a variety of ways at the same time. On one hand, it has fashioned a remarkable economic landscape for the country, however on the negative side, petroleum exploration and production also have adverse effects on fishing and farming which are the traditional means of livelihood of the people of the oil producing communities in the Niger Delta, Nigeria. If the oil industry is considered in view of its enormous contribution to foreign exchange earning, it has achieved a remarkable success. On the other scale, When considered in respect of its negative impact on the socio-economic life and the environment of the immediate oil bearing local communities and its inhabitants, it has left a balance sheet of ecological and socio-physical disaster. This rightly provides a framework to evaluate the work of neo-

classical economists whom argue that the development of primary resource materials for export in the periphery is the basis for development in the peripheral countries.

PRODUCING FOR EXPORT

Nigeria like most other less developed countries in the early part of the 70's, were engaged in intensive natural resource exploitation as a way of stimulating economic growth. It was projected by several multilateral funding organisations such as the International Monetary Fund (IMF) and the World Bank that export drive of primary resource materials will eventually lead to economic growth and subsequently a significant reduction in the level of poverty. The projection was that the long-term gain of such a process would set the stage for a sustained economic development.

As at 1976, about 10 years from the start of the oil export drive. Figures available from the Federal Office of Statistics stated that oil has come to account for about 14% of the nation's gross domestic product (GNP) of Nigeria. 95% of the total export and over 80% of government annual revenue. Total export peaked at two million barrels of crude oil per day with price range of \$18-\$22 per barrel. This created more opportunity for the development of new oil fields, increase granting of mining licenses and the intensive exploitation of oil mineral resources in the Niger Delta.

The multinational oil companies made huge investments in the oil sector, which was quite technological and capital intensive. New laws were made which includes the petroleum act of 1969 and the land use Decree/Act of 1978. This legislation regulated community access to communal or open access land and they were primarily promulgated to restrict access to such land, while at the same time making it possible for the Multinational investors to have unrestricted access to explore for oil unchallenged even on sacred land.

These changes have led to a series of social conflict between the community people and the State/Oil companies as will be discussed later.

PEASANT AGRICULTURE IN THE NIGER DELTA AREAS

Agriculture forms the most dominant economic activity in the Niger Delta. Federal Office of Statistics (F.O.S) in 1985 stated that Crop farming and fishing activities account for about 90% of all forms of activities in the area. They also estimated that about 50%-68% of the active labour force are engaged in one form of agricultural activity or the other including fishing and farming. Agricultural technology has remained relatively unchanged over the years and over 90% of the farmers are subsistent farmers operating on traditional methods using basic tools. Azibolomari 1998, p 67 stated that "Farming technique in the Niger Delta has still remained the use of land rotation or bush fallow system characterised by land and labour being the principal inputs of production."

The organic farming technique widely used in the Niger Delta is highly susceptible to environmental changes affecting the soil, water and or deforestation because it is not technologically inspired, but rather land and labour intensive. Oil extraction and production has led to adverse environmental impact on the soil, forest and water of the Niger Delta communities. This has ultimately affected peasant agriculture in a variety of ways, which ultimately have caused problems of environmental refugees. Some of the landless farmers migrate to other more fertile lands in other rural communities, putting pressure on scarce fertile lands. While some of the displaced farmers out-migrate to the urban areas in search of other means of livelihood.

Various harmful and toxic organic compounds when introduced into the natural environment during oil extraction such as during seismic work, oil spill, gas flares and several other forms of pollution, changes the geo-chemical composition of the soil, river and other components of the environment. This in turn affects agriculture and lead to a drastic decline in output in both fishing and farming activities. Staney 1990, pp 67-79 noted that

"7.7% of the 797 people interviewed on the socio-economic impact of oil in Nigeria identified farm land pollution as a major problem". The peasants are very reactive to these changes because of the unavailability of modern farming and fishing techniques to meet the challenges of a declining soil and Marine resources. The drastic fall in output of the agricultural product, lead to intensive exploitation of other fertile land. The long run effect of this is land degradation and immigration to other rural and urban areas, where pressure is exerted on the often inadequate and dilapidated infrastructure, leading to increase poverty.

In addition, Ikporukpo 1981, pp 23-26 stated that "Most farmers are concerned with problems of displacement without resettlement during oil spills". Gbadegehin 1997, p 9 further noted that "Apart from loss of farms, oil spills have led to extensive deforestation with no adequate replanting practices...this in effect has shortened fallow periods, compounded land use degradation and led to a loss of soil fertility and consequently erosion of the top soil".

Elliot 1998, p 82 stated that "The slash and burn agriculture traditionally practised by shifting cultivators-up to 10% of the world's population-is based on ecologically sound principles. It minimises threats to the forest by leaving land fallow over periods of time long enough for regeneration.... Landless peasants whom have been forced from their own lands, increases the number of people pursuing such a subsistence life style, this contributes to deforestation through further encroachment on forest lands and reductions in fallow times". The out-migration of the rural displaced farmers in the Niger Delta as a result of environmental degradation caused by oil extraction in the region has led a significant percentage of the local inhabitants to remain in cyclical poverty and penury. This has meant greater environmental degradation as a result of the intensive exploitation of the few remaining fertile land in the region by the residents. It has also led to increasing urban blight in the urban areas in the Niger Delta as more and more displaced rural inhabitant flood the urban areas in search of non-existent jobs.

ENVIRONMENTAL AND SOCIAL IMPLICATION OF INTENSIVE OIL RESOURCE EXPLOITATION IN THE NIGER DELTA

In this section, the paper will look more specifically at various environmental and socio-economic problems that have been identified as a result of the intensive extraction of natural oil resources in the Niger Delta communities in Nigeria.

ENVIRONMENTAL PROBLEMS

Nwankwo and Ifeadi 1988, pp 58-64 identified the following factors as some of the pollution problems associated with oil exploration and production in the Niger Delta.

Contamination of Streams and River.

In the course of oil exploration and production in the Niger Delta, various materials are released into the environment. For example during exploration, drill cuttings, drill muds and fluids are used for stimulating production.

The problem of Oil Spill.

Transportation and marketing, damage to oil pipelines and accidents involving road trucks and tankers generate oil spills and hydrocarbon emissions which according to Ikporukpo 1988, p 79 have a far more reaching effects, because the toxicity of the oil adversely affect the soil, plant, animal and water resources.

Forest Destruction and Bio-diversity loss.

The major constituents of drill cuttings such as barytes and bentonite clays when dumped on the ground prevent plant growth until natural processes develop new topsoil. In water according to Nwankwo and Ifeadi (1988), these materials disperse and sink, killing marine animals.

The Environmental Effect of Gas Flaring.

Flaring of natural gas has also been identified as having negative impact on surrounding vegetation. Isiche and Stanford 1976, pp 177-187.

Effluent Discharge and Disposal.

Refinery waste also contains very toxic chemicals, which constitutes potential land, water and air pollutants. Atmospheric contaminants from refinery operations include oxides of nitrogen, carbon and sulphur. Liquid refinery effluents usually contain oil and grease. These compounds contain organic chemicals such as phenol cyanide, sulphide-suspended solids, chromium and biological oxygen demanding organic matter, which on getting in contact with land and water pollute them.

THE SOCIAL IMPACT

GROSS SOCIO-ECONOMIC UNDERDEVELOPMENT.

The Niger Delta communities have remained grossly socio-economically underdeveloped and pauperised amidst the immense oil wealth owing to systematic dis-equilibrium in the production exchange relationship between the state, the Trans-national companies and the people. Enormous money had been derived from oil export but the area has been subjected to severe land degradation, socio-economic disorganisation, increasing poverty, misery, military occupation and bloody violence. Pegg 1999, p 14.

Oil extraction has impacted most disastrously on the socio-physical environment of the Niger Delta oil bearing communities massively threatening the fragile subsistent peasant economy and bio-diversity and hence their entire social livelihood and very survival. The oil producing communities have basically remained dependent and underdeveloped, persistently dis-empowered, socio-culturally marginalised and psychologically alienated. The wealth derived from oil resource exploitation and exports benefit directly only the operators of the oil industry and the bureaucrats in government.

CONFLICT BETWEEN OIL COMPANIES AND HOST COMMUNITIES.

Of the two most appropriating external systems, that is the government and the Trans-national oil companies, the TNC's are in more direct and physical contact with the communities and their expropriated inhabitants. The deprived peasants currently make demand for social services from the oil companies, than they can make from the often-inaccessible Nigerian State. This has often led to conflict as the oil companies are engaged in the process of collaborating with the Nigerian regime to use violence as a means of pacifying the protesting communities. Pegg 1999, p 14.

PERSISITENT INTRA AND INTER-COMMUNITY CONFLICT.

Oil exploration and exploitation over the last four decades have also instigated and intensified bitter and bloody conflicts between emerging interest groups within and between communities. This conflicts now range between elite groups and between youth organisations on one hand, between the urban resident elite and the village community resident on the other scale. This could be seen within the concept of what Phillips 1997, p

173 wrote in respect of his analysis of the Honduran development of shrimp farm industry for export. He stated thus

"The preservation and advancement of basic human rights, the equitable use of land and resources, and the preservation and sustainable use of the countries natural environment are three inextricably connected aspects of a single historical process".

The conflict that has emerged in the Niger Delta as a result of the extraction of oil has its roots in the violation of the rights of local community people as a result of the promulgation of obnoxious legislation's. This has inevitably led to greater poverty and landless groups of people whose basic sustenance as peasant farmers have been negatively affected as a result of oil extraction for export. As a cumulative effect, this has led to more environmental problem in the region.

OIL RESOURCE EXPLOITATION, INTERNATIONAL EXCHANGE AND RELATIONS

GENERAL ANALYSIS

The debate as to the making of the periphery has been ongoing amongst development economist for decades now, what is vital at this point is to critically examine the position of the extractive resource economy in the regional and local context while also evaluating it from the international perspective. For the case of the Niger Delta communities in Nigeria, the fact remains that natural oil resource extraction for export since the beginning of 1960's has led to more poverty and environmental degradation. Gbadegesin 1997 p 76 stated thus "Oil exploration and production in south-eastern Nigeria, has adversely affected peasant agriculture, the basis of sustenance of millions of rural inhabitants through a complex web of interaction of several negative environmental factors." Eteng 1997 p 4 further stated that "While oil production is easily the nation's most crucial economic life-line and has been the major contributor to the nations overall economic developmen t over the decades, the oil bearing Niger Delta communities have basically remained persistently deprived of the benefits of oil resources"

Suffice it to note that the environmental consequences and resultant poverty in the Niger Delta communities as a result of natural resource extraction can be explained within the context of internal and external production exchange relationship with the core.

In explaining the making of the periphery from the perspective of internal and external exchange relationship, Bunker 1985 p 20 stated thus "Recent theoretical literature on national development has compounded the distortions inherent in this bias to production models. Its primary focus has been a fruitless debate about whether the causes of underdevelopment occur in a global system of exchange dominated by industrial nations or within specific regional systems of production" Eteng 1997 p 21 stated that "What currently prevails in the Nigerian Southern oil enclave is a specific variant of internal colonialism.... The specific, highly exploitative and grossly inequitable endowment/ownership -exchange entitlements relations between the Nigerian state and the oil-bearing communities in particular, which explains why the enormous oil wealth

generated is scarcely reflected in the living standard and life chances of the peasant inhabitants of the oil-bearing enclave. " From the foregoing therefore, it is glaring that the underdevelopment and peripheralization of the Niger Delta region can be analysed within the following context: -

The unequal exchange in value of the oil resources of the peripheral Niger Delta communities in the international market.

The contradictions and attendant conflicts inherent in the production-exchange relations between the Nigerian State/ Trans-national oil companies (TNC's) on the one hand and the host oil bearing Niger Delta communities on the other hand.

The following sub-paragraphs will analyse the above two contests to explain the problem of environmental degradation, poverty and the peripheralization of the oil producing Niger Delta communities.

UNEQUAL EXCHANGE AND THE MAKING OF THE PERIPHERY.

Several development economists have tried to use theories to explain the relationship between the countries of the core and the peripheries at the international level. Most of these theories have been based on the exchange value relationship between the centre and the periphery. In most instance like in the work of Hornborg 1997 and Bunker 1985 this unequal exchange and peripheralization of resource extractive areas can even be seen both within the context of an international exchange and the mode of production and exchange within a local economy.

Several factors led to the debate on the exchange relationship between the core and the periphery. These factors are as follows: -The failure of the intensification of export drive of primary natural resource materials as the basis for the modernisation of the peripheral countries in Latin America, Africa and other under-developed economies. Secondly, the resultant negative effect of this export drive initiative's on the environment of local people and the increase in poverty in the extractive resource enclaves. The Niger Delta community's is one classical example that suffered greater environmental degradation as a result of the extraction of oil resources for export, this is seen from the previous analysis. Odum 1996 pp 209-219 used the concept of emergy to explain the relationship between the centre and the periphery. He stated thus "A country losses wealth if it sells environmental raw products because the emergy of natures work to make them is high, whereas the money received is only for some services to process them. Thus some developed countries tend to receive more EMERGY than they give in exchange" This shows an unequal distribution of wealth through international exchange. He argued that there is an unequal value of flow of energy in the form of emergy between the centre and the periphery. In his analysis, he stated that extractive resources do not exchange for their full emergy value. In order to remedy the in-balance in global exchange relationship between the periphery and the centre, then global trade should introduce "Emergy equity" He later argued that emergy is the memory of energy that flows in a product. Bunker 1985 p 25 argues that

"When natural resources are extracted from one regional ecosystem to be transformed and consumed in another, the resource-exporting region loses values that occur in its physical environment. These losses eventually decelerate the extractive region's economy, while the resource-consuming communities gain values and their economies accelerate"

Hornborg 1997 pp 130-133 was quite critical of Odums and Bunkers approach in analysing the exchange relationship between the centre and the periphery. In his argument he stated that it was quite incorrect for Odum to speak of all the energy consumed as remaining as it were embodied in the top predators or by extensions finished industrial products. He also observes that since Bunker argues that additional value is created when extracted materials are transformed by labour, it becomes confusing when he states that energy is a value. Hornborg illustrated his argument by building on the first law of thermodynamics and he stated thus "Strictly speaking, there is no consumption of energy anywhere, only of its quality and accessibility (that is exergy) exergy is closely related to the concept of negative entropy.... The more of the original exergy that is dissipated, the higher the price" He argues that a given resource material with high energy value will command more utility and price value as more and more of the original energy content is dissipated. This generates ecological destruction and the core/periphery relationship. What is profoundly very glaring in all this argument, irrespective of the variations in thought and opinion, is that energy transfers are very vital in understanding the unequal exchange value relationship between the core and the peripheries. The Niger Delta communities as an extractive resource economy have engaged in an unfair and inequitable transfer of primary oil resource materials in international export as a periphery region to the advantages of the centres of technological development. This could be explained within the context of Hornborg's 1997 analysis of exergy and unequal exchange relationship.

CONTRADICTIONS AND CONFLICTS

INHERENT IN THE PRODUCTION-EXCHANGE RELATIONS BETWEEN THE NIGERIAN STATE/TNC'S VS THE PEASANTS IN THE OIL BEARING NIGER DELTA COMMUNITIES

The peripheralization, deprivation, poverty and environmental degradation as a result of the extraction of natural oil resources over the years in the Niger Delta is not only a product of the unequal exchange in international trade and export. It can also be seen from the perspective of the inherent contradiction and conflicts in the production-exchange relations between the Nigerian state, multi-national oil companies on the one hand and the peasants in the oil bearing enclaves in the Niger Delta. Eteng 1997 p 4 stated that "The Fundamental contradiction is indeed most pronounced in the oil-bearing communities of the Niger Delta minority enclave from where the countries oil wealth is generated. This fact is well known and highly acknowledged by the appropriating Nigerian state in power, the expropriating multinational oil companies and the expropriated oil bearing communities.... The privilege groups who directly benefit from

the wealth include: the multinational oil companies, Nigerian managers of state power, and members of the countries ruling class for the majority ethnic groups and their cohorts from various social classes and communal groups". Stonich 1991 p113 in a study done in respect of Honduran shrimp farm industry stated thus. "Social justice issues include the problem of diminished access to common-property resources brought about by the government controlled concession process. Accompanying the expansion of the shrimp mariculture has been a deterioration of environmental quality and an escalation of social tension and conflict" Suffice it to note that in each of this export drive initiative, the local community people suffer greater problem of environmental degradation and increasing poverty. The beneficiaries have always remained the government in power, multinational corporations and multilateral funding agencies. Stonich 1991 aptly captures this when he stated that "As in the rest of Central America, the enlargement of shrimp farms was financed by transnational corporations, government and military leaders as well as consortiums of private investors"

The Nigerian State has applied and evolved over the years a strategy of systematic peasant deprivation to the great disadvantage of the Niger Delta community people. This strategy is glaring from the grossly inequitable revenue allocation formula, exploitative and conflictual oil company -community relations, frequent and intensive inter and intra communal conflicts, acute ecological degradation, and ineffective environmental regulations, violent repressive state intervention against reactive militancy of expropriated oil producing community inhabitants, the promulgation of very exploitative and repressive legislation to legitimate expropriatory access to the oil resources of the peasant Niger Delta community people.

CONCLUSION.

This paper has discussed the effect of intensive oil resource extraction on the environment of the oil bearing Niger Delta communities and the environmental problems of resource degradation, pollution, poverty and misery in the Niger Delta communities in Nigeria. The analysis has been on how these factors have been inextricable interwoven in a complex web of relationship with the intensification of the exploration, extraction and production of natural oil resources from the region for export purposes. The intensification of oil export since the early 1960's have led to deprivation, violence, socio-economic and socio-cultural neglect in all ramifications in the region as shown in this paper. The effect of oil extraction on peasant agriculture, the basis of sustenance of a significant number of the people in the Niger Delta communities has an over bearing influence on the environment and has been highlighted in this paper.

What is more profound at this point, is how the peripheralization of the Niger Delta communities and the unequal international exchange relationship that has placed the region in a disadvantaged position in exchanging its resources in the international market and also the inequitable production exchange relationship with the Nigerian State and multinational oil companies can be altered as a basis to promote development in the region. This issue poses a fundamental question which future research should endeavour to explore further.

BIBLIOGRAPHY.

Adeniyi Gbadegesin 1997 "The Impact of Oil Exploration and Production Activities on the Environment: Implications for Peasant Agriculture" Seminar Paper on Oil and The Environment organised by Friedrich Ebert Foundation's in Port Harcourt.

Alf Hornborg, 1997 "Towards and Ecological Theory of Unequal exchange: Articulating world System Theory and Ecological Economics" Lund University, Sweden.

Akinjide Osuntokun (Ed) 1997 "Dimensions of Environmental Problems in Nigeria" Davidson Press, University of Ibadan, Nigeria.

Bunker S.G, 1985 "Underdeveloping the Amazon: Extraction, Unequal Exchange and the Failure of the Modern State" University of Chicago Press, U.S.A.

Elliot, L. 1998 "The Global Politics of the Environment" New York University Press, U.S.A

Howard T. Odum, 1996 "Environmental Accounting-Energy and Environmental Decision Making" John Wiley and Sons Inc, U.S.A

Inya A. Eteng, 1997" The Nigerian State, Oil Exploration and Community Interest: Issues and Perspectives" University of Port Harcourt, Nigeria.

Isiche, A.O and Sanford, W.W 1976 "The Effect of Waste Gas Flares on the Surrounding Vegetation of South-eastern Nigeria" Journal of Applied Ecology Vol. 13.

Michael Common, 1996 "Environmental and Resource Economics-An Introduction" Addison Wesley Longman Limited, U.S.A

Nwankwo, N. and Ifeadi, C.N. 1988 "Case Studies on the Environmental Impact of Oil Production and Marketing in Nigeria" University of Lagos, Nigeria.

Phillips, J. 1997 "Resource Access, Environmental Struggles, and Human Rights in Honduras" Published in "Life and Death Matters" Barbara R.J (Ed) Altamira Press, U.S.A.

Scott Pegg, 1999 "The Cost of Doing Business: Transnational Corporations and Violence in Nigeria". Belkint

Staney, W.R 1990 "Socio-Economic Impact of Oil In Nigeria" Geography Journal, Vol. 22 No1. Nigeria.

Interspill 2004
Presentation no. 477