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**Sustaining the Environment and Reducing Poverty in Nigeria: Which Comes First?**

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**Abstract**

Which of these two developmental strategies should a country adopt first in a bid to improve the material lives of its citizenry; utilizing the Renewable Natural Resources (RNRs) to the point of creating employment opportunities aimed at reducing poverty for the present generation or creating employment opportunities to sidetrack poverty with a view to deterring the over-utilization of Renewable Natural Resources (RNRs)? This paper appreciates the link between poverty reduction and environmental sustainability and concludes that development demands an effective integration of these two strategies with a possibility of merging both into a single institution.

**Keywords:** *development, environment, poverty, renewable natural resources (RNRs), sustainability.*

## Section 1 Introduction

Nigeria is as large as 924,768 square kilometers and produces over two (2) million barrels of crude oil per day. Its rivers produce nearly half of the electricity it consumes. Of its 98 million hectares of land, about 74 million hectares is arable but only 40% of this is cultivated. The population of the country is close 140.5 million people as at 2006 out of which about 2.1 million people have migrated to more advanced nations in their quest for better living conditions. (National Economic Empowerment and Development Strategy (NEEDS) 2004)

In spite of the dominance of the oil sector in government revenues and foreign exchange earnings, the agricultural sector otherwise the Renewable Natural Resources – based sector (comprising arable land, water and forest) constitute the largest single share of national output, income and employment. The Renewable Natural Resources based activities (including cropping, fishery and forestry) provide employment and income to more than 60% of the Nigerians residing in the rural areas where poverty incidence was as high as an average of 63.3% between 2001 and 2003 (FOS ; 2004), and even higher today.

According to Amakom and Nwabude (2006), Nigeria scored 45.4% with a rank of 72<sup>nd</sup> position among the Organization for Economic Co-Operation and Development (OECD) countries in the 2005 Environmental Sustainability Index (ESI). Presently, the Renewable Natural Resources account for not less than 35% of our Gross Domestic Product (GDP) and is the backbone of rural

livelihoods. Noticeable also, is the high incidence of environmental degradation going in the country. Although revenues from crude oil have been increasing over the past decades, Nigerians are going deeper into poverty; as at 2005, 70% of the population still subsists on less than one dollar a day. (World Bank, 2005) and the increasing population of about 140.5 million is still adding much pressure to the environment (NEEDS, 2004; MDG Report. 2005).

Around the world today, 900 million people live in absolute poverty in rural areas and depend on the consumption and sale of RNRs products for much of their livelihoods (Human Development Report, 2003). As a result of this, they deplete their environment with no plans of replenishing it. These depletion and degradation of RNRs undermine their livelihoods, makes them less healthy and poorer than ever. In rural areas of Nigeria, poverty and high population growth have close links with high rate of deforestation and environmental degradation. (Umaru, 2005)

Against this background, this paper is concerned with the link between poverty and environmental degradation: a hopeless situation in the midst of helpless people as it now seems. The paper, however suggests policy measures towards reducing these two menaces in Nigeria. In this attempt, the paper is organized into 4 sections. The first section introduces the paper, section two deals with the theoretical and empirical evidences, Section three discusses some evidences from Nigeria while section four concludes the paper.

## Section 2 Environment and Poverty – Theory and Evidences

Amongst the eight goals of the United Nations Millennium Declaration otherwise known as the Millennium Development Goals, eradicating extreme poverty/hunger and environmental sustainability are the first and the seventh goals respectively. Ensuring the sustainability of our environment demands putting in place, a sustainable development pattern and preserving the productive capacity of the natural eco-system for future generations. This demand poses two challenges: addressing natural resource scarcity for the world's poor people and reversing the environmental damage which has occurred owing to high consumption and over exploitation of natural endowments by the rich countries. (UNDP: 2003).

Our physical environment refers to all the living and non-living aspects of life including the atmosphere, soil, water, forest and other renewable and non-renewable natural resources while our socio-economic environment refers to all situations (circumstances) man finds himself in his quest for both material and spiritual welfares.

Poverty is all about human deprivation and refers to any form of lack in sustenance and comfort. It has many causes, all of which reinforce each other. For instance, a lack in good health is reinforced by a lack in empowerment, credit, good food etc. vice versa. People may move in and out of poverty due to natural disasters, health problems, access to credit, access to natural resources etc.

According to NEEDS (2004) poverty has many dimensions which include joblessness, over-indebtedness, economic dependence; lack of access to freedom, basic needs, justice, land and credit as well as inability to manage one's assets, among others. As a result, poor people tend to live in dirty localities and have greater tendencies of putting significant pressure on their physical environment. In summary, lack of food is the most critical dimension of poverty, reflected in the popular saying that 'when hunger is excised from poverty, the burden of poverty becomes lighter'.

The link between environmental crises and poverty in Nigeria is summarized by Odey (2006), and he puts it this way.'..... *as bad as this is, even more serious complications have set in to compound the colonial and post-colonial havoc. This is by way of the inseparable nexus between environmental crises and the dialects of hunger and rural poverty in Nigeria.*' Citing the World Commission on Environment and Development, *sustainable development* is a framework of policy within which strong economic advancement necessary to overcome poverty can be achieved while adopting economic policies to take full account of environmental consideration. (Association of Commonwealth Universities, 1994)

The quest for environmental sustainability has its theoretical framework in Walt W. Rostow's 'Stages of Economic Growth' aptly represented by the Harold Domar Growth Model which underscores the thesis that a growth in the economy generates savings which is ploughed back to increase capital

stock which in turn leads to further expansion in the economy. Therefore total new investment depends on total new savings. The Harold Domar growth model implies that the rate at which an economy grows is jointly determined by the national savings ratio and the national capital output ratio.

Our environment is our natural capital and we depend on it for increased economic incentives. Part of these economic yields ought to go back to take care of negative externalities in the form of environmental *upgrading* (savings). In the words of Umaru (2005) *'the poor are being forced to dis-save by consuming their NRNs with minimal or no re-investment in maintaining the natural capital stock'*. They carry on with this in their reaction to the stimuli of economic incentives. This obviously leaves them poorer and gets them in a paradoxical situation where the exploitation of Non-Renewable Natural Resources (NRNRs) such as Crude oil and Gas in Nigeria do not add any significant welfare either to those who own these NRNRs or to their future generation. These activities, contrary to economic expectations, inflict very heavy material, psychological and physical costs on the poor.

The empirical literature in poverty/environmental linkages addresses the presumed causal links from two main perspectives. At the macroeconomic level, the argument begins from the conventional development arguments that emphasize a trade off between the quality of environment and economic growth. For instance in Nigeria

today, where about 90% of the foreign exchange is got from crude oil, gas flaring and oil spillage from the oil industry destroys our land, water and atmosphere. Our ecosystem and nervous systems are also disorganized. This degradation practice causes a nation to be poorer; it makes the people poorer as it destroys their sources of livelihoods - farmlands and fisheries; it destroys their health, denies them access to safe drinking water and denies them their fundamental right of freedom from servitude. As at 2003, only about 60% of the Nigerian population had access to safe drinking water. Table 1 below presents some available information on some socio-economic variables with regards to our environment and population growth in Nigeria.

**Table 1: Population and Environment**

Period	Arable Land % of Total Land Area	Population Growth Rate %	Annual rate of Deforestation	Access to Safe Water (% of total pop)	Access to Sanitation (% of total pop)
1980 – 1984	30.7	2.92 <sup>(1980)</sup>	1.6	-	-
1985 – 1989	31.8	2.76 <sup>(1985)</sup>	1.6	15.9	62.1
1990 – 1994	32.7	2.87 <sup>(1990)</sup>	0.9	40.0	63.3
1995	32.9	2.65	0.9	49.9	57.3
2000	30.5	2.37	2.55	57.0	63.0
2001	30.9	2.32	-	57.0	-
2002	30.9	2.27	-	-	-
2003	30.9	2.23	-	60.0	53.0
2004	-	2.20	-	-	-
2005	-	2.17	-	-	-

*Source: African Development Bank 2006a, 2006b*

At the microeconomic level, the discussion is on the role of a specific source of income from an environmental asset. For instance in the rural areas where poverty and high fertility rate strive simultaneously, hunters and farmers burn large areas of land in search of meat, food, fuel and cultivatable land. Fertilizers and pesticides (in preference to organic manures and natural pest controls) are applied to the soil and when these are washed off and emptied into rivers and streams (owing to absence of wind break and presence of erosion and desertification occasioned by deforestation), fishes are maimed and killed while waters become contaminated and undrinkable.

A lot of empirical studies conducted in this area of research are based on how income levels and environmental degradation are related. Ruitenbeek (2002) argues that as a country gets richer and more developed, the quality of its environment decreases to a given level after which it begins to rise because of lower per capita influences on the environment. Other empirical evidences show that conditions differ considerably from one economy to another. Most studies in this area

agree with the hypothesis that very low levels of income correlates with high levels of environmental degradation yet other evidences emerge to counter this. For instance, Martnez-Alier (1995) and Duraiappah (1996) agreed that poverty itself may not be a legitimate cause of environmental degradation. Studies carried out by Broad (1994) suggests that the poor are friends of their environment.

According to World Bank (2003) and Ravallian (2005), poverty and environmental quality co-exist as inherent features of a complex system that relates microeconomic and macroeconomic determinants to a variety of political, cultural and institutional variables that either escalates or contains both of poverty and environmental degradation. Thus, a study of this kind begins with a simple causal linkage between poverty and the quality of the environment and extends the analysis to identify other factors likely to act as linkages. These factors may include income distribution, production level, population growth, education, conflict and security among others. UNDP (2003) sums up this linkage with its findings that the deteriorations of a country's basic natural resources as a result of over-

consumption and poor management of environmental capital is one of the prime causes of poverty. It cited an instance where depletion of soil and water resources dramatically reduced farmers' incomes causing a lowered nutritional status of the country and accentuated economic imbalances. On the other hand, poverty accompanied by high fertility rates encourages over-consumption, pressure on both RNR<sub>s</sub> and NRNR<sub>s</sub> and poor management of our environment.

### Section 3 Evidences from Nigeria

Citing Eboh *et al* (2005), regional variations in poverty can be linked to the degradation of the RNR base of the economy. For instance, between 1996 and 2004, although per capita GDP was flat, poverty increased in 10 states of the federation within this period. Table 2 below portrays the extent of environmental influences on poverty incidences across the nation.

**Table 2: Incidence of Poverty In Nigeria; Selected Years\***

	1980	1985	1992	1996	2004
National	28.1	46.3	42.7	65.6	54.4
<b>Geo-Political Zones</b>					
North East	36.6	54.9	54.0	70.1	72.2
North West	37.7	52.1	36.5	77.2	71.2
North Central	32.2	50.8	46.0	64.3	67
South East	12.9	30.4	41.0	53.5	26.7
South West	13.4	38.6	43.1	60.9	43
South South	13.2	45.7	40.8	58.2	35.1

\* % of Poor People in Total Population

**Source: NEEDS, 2004.**

Table 2 above supports the assertions of Eboh *et al* (2005) that, with one exception, the incidence of poverty in Nigeria is concentrated in the Northwest, Northeast and North-Central geo-political zones which in turn are characterized by lower rainfall, lower rangeland productivity and greater loss in vegetation cover than in the southern part of Nigeria. This is clearer evidence that the quality of the environment has a direct impact on the level of poverty. From the study, one concludes that the economic cost of poor crop land management has been highly deleterious. For example from the current estimate of 23 million hectares of cereal area harvested, the

cereal yield loss was put at 0.4 tonnes on the average from the early 1980s to 2003 while ₦350 to ₦415 billions of naira have been estimated as the loss in GDP i.e. \$2.6 to \$3.1 billion dollars annually. These annual losses resulting from poor cropland management is highly significant given that the total federal capital budget in 2004 was ₦350 billion, i.e. \$2.6 billion!! (Amakom & Nwabude, 2006). According to NEEDS 2004, Nigeria requires, on the average, an annual rate of growth of 7% in order to meet the MDG of halving poverty by 2015. This implies that sustainable management of RNR<sub>s</sub> is critical to agricultural growth and poverty reduction. The

importance of RNR<sub>s</sub> sector in promoting rapid economic growth is compounded by the fact that it has always had the highest incidence of poverty among all economic sectors except in

1980 and 1996 (FOS 1996, 2004). Table 3 below briefly highlights the average level of deprivation in Nigeria.

**Table 3: Human Development in Nigeria**

Period	* Average HDI	+ % of Nigerians Below Poverty Line
1980 – 1984	0.376	28.0 <sup>(1980)</sup>
1985 – 1989	0.386	47.5 <sup>(1985)</sup>
1990 – 1994	0.406	42.0 <sup>(1992)</sup>
1995 – 1999	0.418	66.0 <sup>(1996)</sup>
2000 – 2004	0.461	56.0 <sup>(2004)</sup>
2005	0.453	70.0

*Source: \* Nigeria MDG Report (2005), + African Development Bank, 2006.*

The link between poverty in the RNR<sub>s</sub> sector (environmental degradation) and rural human poverty is underscored by the fact that RNR<sub>s</sub> based activities is the predominant economic sector in the rural areas of Nigeria. About 86% of households subsisting in agriculture reside in the rural areas while 62% of total poor households are farmers (FOS 2004, 2005). NEEDS 2004 asserts that the fact that 7

out of every 10 farmers are poor and the findings that 6 out of every 10 poor people are farmers underscores the potentially critical role of agriculture in the growth and poverty reduction agenda. This in turn underscores the importance of sustainability in land, water and forest management with a view to ensuring continued and improved agricultural performances.

**Table 4: Agricultural Growth and Poverty Incidence (1981-2005)**

Period	Average Agricultural Production Indices (US \$m)	Poverty Incidence %	Average per capita Agric GDP (US \$m)
1981 – 1985	39.5	43 <sup>(1985)</sup>	91.6
1986 – 1990	52.5	34 <sup>(1992)</sup>	112.6
1991 – 1995	78.8	42.7 <sup>(1992)</sup>	92.2
1996 – 2000	95.7	65.6 <sup>(1996)</sup>	96.9
2001 – 2005	102.6	54.4 <sup>(2004)</sup>	106.8

*Source: African Development Bank 2006a, CBN Annual Report and Statement of Account (various issues); FOS-NLSS (1996-2004)*

Further evidences suggest that the performance of the RNR<sub>s</sub>-based sector can in fact be associated with poverty trends. For

instance, table 4 above shows that though the average agricultural production indices grew through out the period under review, the



positive growth in average per capita Agric GDP from \$91.6m to \$112.6m was accompanied by a reduction in poverty incidence from 46.3% to 34% for the period 1981-1985 to 1986-1990 respectively. On the other hand, Nigeria recorded a lower average per capita Agric GDP of \$92.2m in 1991-1995 period while the poverty incidence increased to 42.7% by 1992. More so, an increase of the average per capita Agric GDP from \$96.9m to \$106.8m was accompanied by a reduction in the poverty incidence from 65.6% to 54%.

#### **Section 4: Policy Recommendations and Conclusion**

Bearing in mind that growth policies which improve the situations of the poor can directly reduce pressure on natural resources by putting a brake on exploitation of ecologically valuable resources and by lowering fertility rates, this study suggests the application of macroeconomic policies in reaching a compromise.

For instance, environmental damages are expected when the systems of macroeconomic incentives change while there are still distortions such as under-valuation of RNR prices. In this case, reducing macroeconomic distortions that hold back production of tradable RNRs can have damaging ecological effects if rents derived from using these factor inputs are abnormally determined. Fiscal policy measures can be applied in such a way that government agencies and factor owners increase their rents and royalty demands so as to curtail the abuse of Renewable Natural Resources.

On the other hand, repositioning macroeconomic policies sometimes lead to unacceptable environmental damages especially in situations of monopoly where producers can afford a number of fiscal conditionality. In such a case, it is ideal to adopt suitable government-monitored environmental protection measures.

When rationalizing public expenditures, it is also of importance to determine which spending is essential for environmental protection so that care will be taken to keep this sufficiently high. While its impact may be quite hard to quantify, social spending- especially that designed to alleviate poverty and indirectly put a brake to population growth- may also have beneficial effects on the environment. In this respect, it would be a good idea to conduct further researches into the ecological impact of the breakdown of public spending and the relative advantages of different budget allocations and also determine how to rationalize public spending so as to protect the environment while at the same time reduce poverty.

With the application of monetary policies, reduced discount rates and interest rates as well as increased access to credits especially for farmers will go a long way towards alleviating poverty as well as keeping the environment healthier; farmers will be encouraged to adopt environmental-friendly techniques including bush-fallowing, afforestation and crop-rotation among others.

Poverty and environmental degradation are two menaces among several others that developing countries, Nigeria inclusive suffer

from. As a result of the link between the two, efforts to control the former sometimes exacerbate the latter. To ascertain the cause and effect of poverty environmental

relationship, this study recommends case-by-case studies of this delicate relationship with respect to regional, community and project site bases.

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