

Impact of Environmental Degradation on Agricultural Production and Poverty in Rural Nigeria

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Abstract

The dual problems of environmental degradation and poverty have over the years being a topic of great influence in International discussion because of the challenges they pose to sustainable development in world countries today. To combat the effects of these two problems, international community, world organizations, and scholars have tried to establish links between the two problems. One of the links between the two concepts is found to exist in rural areas where poverty due to poor access to societal resources and other forms of inequality compel rural people to over exploit immediate environmental resources which are readily available for subsistence or mini commercial agriculture. In most rural areas, agriculture is the main source of livelihood and environmental resources form the basic source. Some scholars are of the view that this dependence on the environment easily depletes resources when people are faced with poverty and high population density. When these resources become depleted the people are once again pushed into more poverty. In Nigeria, few attentions have been given to the impact of unsustainable agriculture on the environment; and many ways poverty, which is rampant in these rural areas, encourage rural agriculturalists to abandon traditional resource management methods for immediate benefits. This paper highlights the impact of unsustainable agricultural practices on the environment and emphasizes the importance of addressing the challenges of rural poverty in achieving effective sustainable development and management of environmental resources depended on for agriculture in the rural areas in Nigeria.

Keywords: Sustainable Development in Nigeria, Rural Poverty, Resource Management, Agricultural Production, Environmental Degradation and Poverty.

Introduction

Environmental degradation and poverty have become important global issues since the 1970s, when the world countries and international community became aware of the negative consequences of over-exploitation of the human environment. This had led to the calling of several international summits such as the United Nations Conference on Environment and Development at Stockholm, which was held in 1972, and the Conference on Environment and Sustainable development at Rio de Janeiro, which was organized by the United Nations in 1992. During the World Summit on Environment and Sustainable Development in Rio de Janeiro, the world leaders agreed that equitable use of the natural resources and ecosystem ensures sustainable development and poverty reduction in the world, which is critical to human survival. The combined issue of environmental degradation and poverty was promptly addressed in the report presented by the World Commission on Environment and Development 1987 which was termed “Our Common Future”. In this report, the commission clearly stated that poverty is the bane of environmental degradation in most countries of the third world, especially in the rural areas, and that before any effective policy on environmental management and sustainable development can be achieved, policy makers and government should first address the issues of poverty.

Since this declaration, there have been growing scholarship on the field of environment and sustainable development, which aimed at finding the possible linkage between poverty and environmental degradation. These efforts led to the discovery of the cyclical relationship between environment and poverty. This cyclical relationship between poverty and environmental degradation makes it difficult for viable policies for achieving sustainable development to be possible. However, one of the possible ways of addressing this intricate problem is by evaluating the inimical factors that perpetuate their co-existence in human societies. To evaluate this cyclical link, several factors have been pointed out by Leach and Mearns (1991), Dasgupta and Maler (1994), Pearce and Warford (1993), and Mink (1993) to bring about a cause-effect relationship between the two problems. The major factors pointed out were income poverty, low-level resource conservation and management, and high population density.

Reardon and Voshti (1995) argued that inequality can foster unsustainability because the poor who rely on their environment more than the rich will definitely deplete natural resources more than them, especially as they have no means of gaining access to other important societal resources. Leach and Mearns (1991) observed that, in this way, poverty could be said to hinder the pathway of sustainable development because, it will not allow programmes drawn for sustainable environmental conservations to be achieved. On the other hand, degraded environment encourages impoverishment, because the poor, who depend on the environmental resources for survival, will be pushed into more poverty when these resources become depleted. Poor communities tend to engage in short-term resource exploitation in the expense of long-term environmental problems. They often destroy their immediate environment for survival by cutting down forests and trees, allowing their livestock to overgraze in marginal lands; using harmful chemicals in their agricultural practices such as in harvesting fishes and cultivation; and farming in marginal lands. It is argued that present unchecked exploitations of the environment will inversely affect the future generation who are not yet born but awaits degraded and deteriorated environment. They too will need these environmental resources for survival and when they are not sufficient, natural disorders such as hunger and unhealthy competition over limited resources can set in.

Studies on the impact of poverty on environmental resources such as Dasgupta and Maler (1994), Scherr (1999) and Thrupp (1998), observed that many local level environmental degradation are caused by low participation of the rural population in the process of protecting and managing their environmental resources which they depend on for livelihood. The same studies observed that in most rural areas, farmers tend to ignore natural conservative methods in their agricultural practices, thus inflicting more damages on already depleted environmental resources due to natural causes. This observation has since influenced the focus of most researchers in the evaluation of environmental problems in the rural areas. Vivian et al (1994) observed that the reason for this problem is the influence of poverty and high population density, which encourage rural people to over exploit their environmental resources for food, shelter and income generation. Moreover, challenges of poverty tend to facilitate deterrence from effective conservation of environmental resources such as land, sea water and trees; which form major supplies for food and agriculture for the rural population. Also, lack of good alternative livelihood and poor income generation compel rural agriculturalists to damn consequences and engage in harmful agricultural practices which deplete these resources.

In typical agro-based rural societies where agriculture is the major source of livelihood, poverty could increase the depletion of environmental resources because these rural agriculturalists cannot afford to practice efficient resource conservation methods in their agricultural activities due to low income generation. The unsustainable agricultural practices found in most rural areas in the developing countries at most illustrate a better picture of the relationship between environmental degradation and poverty. For instance, in Nigeria, the rural population depends on agriculture for sustenance and income generation. A report from IFAD (2010) noted that about 90% of the rural dwellers depend on agriculture for their livelihood. Major agricultural activities in these areas include: farming (planting and keeping of husbandries), hunting, nomadic cattle rearing, fishing and wine tapping all dependent on the built environment. In the rural areas, environment forms the major supply for food, raw materials, livelihood, and income generation. It is also noted that the rural areas inhabit majority of the poor and marginalized in the country. A 2010 report on IFAD's agricultural development and poverty reduction services in Nigeria, noted that out of 79.5 million people living in the rural area in Nigeria, about 50.7 million are living in abject poverty. Poverty is endemic in the rural parts of the country because the rural population is often neglected in most government's development agenda. They have little or no access to good nutritional food, good shelter, few noticeable infrastructural development, lack good drinking water, health facilities, and market for harvested agricultural products. Environmental degradation in most rural areas in Nigeria has increased over the years and

both human activities and natural disasters have contributed to this problem (Titola 1998; Girigiri 2000). Prominent environmental degradation found in most rural communities include - deforestation, loss of biodiversity, loss of soil fertility, leaching of the soil, land degradation, land and water pollution, desertification, flood, drought, and erosions. In Nigeria, the Niger-delta communities are mostly cited as examples of environmentally degraded rural areas. The oil companies have been blamed as the perpetrators of environmental degradation in this region due to overexploitation of the crude oil deposits and gas flaring. Be it as it may, complete evaluation of environmental degradation should consider the part other factors such as poverty and inefficient resource use in agriculture have played in limiting achievement of effective environmental protection and management in poverty prone communities. Unfortunately, these factors have not been given much attention in the evaluation of environmental degradation and poverty incidence in the country. Thus, this paper highlights the impact of unsustainable agricultural practice on the environment and emphasizes the importance of addressing the challenges of rural poverty in achieving effective sustainable development and management of environmental resources depended on for agricultural production in rural areas in Nigeria.

Environment and sustainable development

Global concerns about the state of the environment have come to be an important issue in international discourse since the 1970s. In the past, most environmental problems were attributed to the over exploitation of natural resources for economic development, which was mainly limited to the industrialized countries of the world. Hence, many developing countries considered environmental protection as a luxury to be tackled when the challenges of development was overcome. On this note Glasbergen and Corvers (1995) argues that most developing countries treated environmental protection issues as the concern of the advanced nations who they concluded can afford to protect their environment in the midst of plenty. However, recently, there has been global consensus on the negative impacts of unsustainable human activities on the built environment. Thus, environmental degradation due to human activities emerged to counteract the simple fear of environmental constraints as an inhibition to development. This new outlook viewed environmental protection as an inimical content of sustainable development (McCormick 1989). As a result of this new view, environmental concerns began to emerge in global, regional and local level development discourses. A major aspect of this new outlook is the recognition that environmental problems do not only result from unsustainable development initiatives and executions, but also from the rapid growth of population and poverty, which compel rural agriculturalists to abandon resource management practices in their occupation and over-exploit environmental resources accessible to them. This perception gave rise to the idea of the inextricable link between environmental degradation and broader aspects of social and economic development.

Moreover, from this perception, the contemporary issue became the need to re-evaluate the intricate issues of environment, development and social well-being and to formulate new ideas and realistic proposals to strengthen global cooperation on developmental issues affecting the environment. The important matter is to deal with the many ways human activities impact negatively on the environment, with the notion that the environment being a unique part of the earth has no other alternative to it. This is the idea of sustainable development. The concept of sustainable development highlights the importance of integrating environmental protection in continuous social and economic development strategies, with the purpose of evaluating the likely linkages between them. The term '*Sustainable Development*' was first introduced by the World Commission on Environment and Development (WCED) in its landmark report in 1987 termed *Our Common Future*. The main theme of the concept is meeting the needs of the present generation without compromising the needs of the future generation. The implication of this definition is that present attention should be directed towards the need to price the value of environmental resources and the required effort to preserve certain ecological resources for future generation. It is a clarion call to all human societies to reconsider excessive and careless usage of the environment, which has long term consequences on the future generation. A major part of this report is the impact of poverty on sustainable development related to environmental conservation, which is rampant in most developing countries, where extreme poverty and high dependence on environmental resources compel people to give up environmental protection for immediate benefits. In most developing countries, the issue of poverty related environmental problems are rarely built in decision making and all the short and long term impact not carefully explored (Leach and Mearns 1991). This unfortunately is the result of some local level environmental degradation found in these countries today. At the World Summit on Sustainable Development held in Johannesburg South-Africa in 2002, world leaders agreed that equitable and effective management of nature based resources and the ecosystem is

important in achieving sustained poverty reduction and attainment of the millennium development goals. However, it is observed that mainstreaming environmental concerns in development planning and investments remains a major challenge in most countries of the south. Thus, in response to this observation, the United Nations Development Programme (UNDP) and the United Nations Environmental Programme (UNEP) formed a global partnership which they termed Poverty and Environment Initiatives (PEI), which aimed at scaling up investments and capacity development support for mainstreaming environment in country-led processes, to achieve the Millennium Developmental Goals (with a focus on MDGs – based poverty reduction strategies).

Linking poverty and environmental degradation

There are a lot of studies that have been done on environment-poverty nexus, however, this paper will look at the theoretical linkage between poverty and environmental degradation which was developed by the World Commission on Environment and Development team in their landmark report termed 'Our common future'. This linkage could be explained in two premises.

Premise 1

Poor people are agents of environmental degradation

This premise connotes that the poor are the major agents of environmental problems which further impoverish them by reducing their livelihood means. The poor are compelled to over exploit marginal areas for farming and other agricultural purposes or derive resources from endangered areas. Due to excessive population in places occupied by the poor, they often lack incentives or access to economic resources for their production and are thus compelled to over exploit marginal and fragile lands. Continuous declining natural resource base in the rural area is largely caused by poor people deprived of access to other means of livelihood (Reardon and Vosti 1995). The degraded environment worsens conditions of the poor by limiting their already restricted access to production resources. This applies particularly in the rural water resources, soil and forestry, which comprise the resource base for agriculture. One of the major forces behind the vicious cycle between poverty and environmental degradation is the fact that poverty limits people's options and access to other basic resources and capitals, thereby compelling them to deplete resources faster than it is conducive for long-term sustainability. Pearce and Warford (1993) argued that harsh economic conditions resulting from policy formulations that do not favour the poor tend to widen the gap between the poor and the rich, and thus encourages poor individuals to opt for short-term measures to satisfy immediate survival needs (survival strategy) in the expense of a degraded environment. The poor according to them readily neglect more appropriate practices that are friendly to the environment in their agricultural activities and resort to faster options like the use of chemicals in fishing, which invariably pollutes the water and cause health hazards.

Premise 2

Poor People are the Victims of a Depleted Environment

Reardon and Vosti (1995) used what they termed the *Victim hypothesis* to evaluate the way a group people can be pushed to poverty because of a given environmental condition. Poor people are commonly found to reside in areas with poor environmental quality. About 60% of the sampled population used for their study, resided in ecologically vulnerable areas, with low agricultural potentials and smaller settlements. Poor people lack financial resources to adopt preventive measures against over-exploitation of their immediate environment (ibid). They are compelled to cut down trees for firewood, use harmful chemicals to increase harvesting of fishes and forgo natural resources managements in their environmental reliant occupations. Moreover, lack of education and awareness of the impact of their harmful practices on the built environment increases their chances of forgoing environmental sustainable practices for short term benefits. Also, because of their limited access to land, poor people are compelled to settle in marginal lands and to cultivate degraded soils which further deplete the soil and increases more vulnerability to poverty for the people. Under this conceptual framework is also the discovery that poor people are more vulnerable to loss of bio-diversity.

Poor people are more dependent on environmental resources for food sustenance and income generation than rich people. Loss of biodiversity including both land and marine plants and wild animals, relatively affects the poorer segments of the society. He identified how rural populations depend on biological resources. This includes small scale farmers, who often derive income from the sale of immediate supplies from their farmland and wild fruits

and herbs from the forests; pastoralists and nomads whose herds graze on vegetation; artisan fishermen who derive income from coastal and marine resources like fishes and local traders and craft men who rely on forest resources for building materials, ornaments and production of artifacts for cash income. In a situation where access to local resources is limited to the poor, it is important to understand how rural people may be affected and what must be done to address their vulnerability to poverty. It is said that inequalities between income groups reinforce environmental pressure (Leach and Mearns 1991). For instance, small-scale farmers are compelled to use marginal land when the rich who own the best agricultural lands displace them. This is an important key factor in evaluating the relationship between poverty and environmental degradation. The presence of inequality in societies could encourage the breakdown of many local common property management schemes. This often affects the most vulnerable who are mostly women and children.

Rural Poverty in Nigeria

Poverty in the rural areas has been in existence since the colonial times. The negligence of this sector is the major cause. The rural population in Nigeria is often marginalized in economic resource distributions, because of their minority status, lack of education and political empowerment. IFAD report (2010) noted that about 80% of rural dwellers are poor and lack sustainable source of income generation. Unemployment is on the increase compelling able bodied men to migrate to the urban areas in search of greener pastures, thereby leaving their women to be sole providers for their households. The economic backwardness in the country caused by enormous debts owed in the international markets, have compounded the poverty situation in the country, which hits the rural sector the most. The backward economic condition in the country have caused underdevelopment in the rural areas such as, lack of portable water, health care system, quality educational system, inaccessible road networks, unemployment and poor rural infrastructure. Most importantly, poverty in the rural area could be said to be “Urban Bias” (Girigiri 2000:146). According to him, poverty situation in rural communities in Nigeria is rooted in the social relationship, which ensures the hegemonic control of the productive forces in the country by few elites who direct state apparatus to intervene on behalf of the urban areas where they reside and contract their businesses in the expense of the rural areas. FAD (2010) observed that government has long neglected development and provision of basic social services and rural infrastructure in these areas.

Governments have focused investments on health, education, water supply and industries on the cities, which are considered a production sector than the rural areas. As a result, the rural population has limited access to social services and viable means of income generation. The neglect of rural infrastructural development in the rural areas in the country, affects the profitability of the rural sector agricultural production. Successful marketing of agricultural products could be impeded because bad road networks, lack of transportation, storage and preservative facilities. The unavailability of social services like transportation and markets prevents farmers from selling their produce at good prices, and in most cases leads to product spoilage. Also, limited access to credit facilities such as loans and subsidies removes small-scale farmers from sources of inputs, equipment and new technology, and these affect productivity. Moreover, as the population increases in the rural areas, this tends to mount pressure on limited resources and escalating environmental problems which further threaten food production and supply. The impact of poverty on environment is observed incidences of land degradation as a result of extensive agriculture, deforestation and overgrazing, which are found in many rural areas in the country today. In addition, women are more vulnerable to poverty than the men in the rural communities in Nigeria (Girigiri, 2000). The vulnerability of women to poverty results from their lack of education and effective participation in decision making affecting them in communities. They are often relegated to the background and bear a second-class status when compared to their male counterparts in rural communities. Traditional societies create and sustain inequality in the distribution of rural resources such as land and forest resources. In typical traditional settings in Nigeria, women are prohibited from owning land.

A recent statistics on rural farming population in Nigeria show that women farmers are more in population than the men (IFAD 2010). Having limited access to rural resources necessary for their livelihood like land, pushes them further into poverty.

It is based on this observation that many international NGOs and donor communities have resorted to addressing the vulnerability of women in their poverty alleviation strategies in rural communities in the country.

Agricultural Production and the Environment in Rural Nigeria

Agriculture is the main stay of economy in the rural sector in Nigeria. According to IFAD (2010), agriculture provide livelihood for about 90% of the rural population in Nigeria. The environment provides rural farmers with the resources for their farming activities, such as marine or sea water, soil, forest, green vegetation and biodiversity. Rural societies are generally rich in environmental resource depended on for various local level income generation. Girigiri (2000) noted that apart from farming, which inform the major source of income for majority of the rural population, the rural population depends on other complimentary income generation activities that rely on the environment. A typical feature of rural economy in Nigeria include all forms of agricultural production such as farming (planting, animal husbandry keeping, cattle rearing), hunting, fishing, herbal medicine, craft and cottage industry. These economic activities heavily depend on the environment for supplies. Where poverty due to deprivations and low income generation affect majority of the people, they are often compelled to degrade their environment.

Land degradation, in particular, the deterioration of soils due to harmful agricultural practices such as bush burning, poor irrigation systems, lessened fallow period and use of marginal land for farming and grazing, pose serious challenge to agriculture-environmental conservation initiatives in the country (Titola 1998). Olden man (1994) noted that it takes about twenty to one thousand years for a centimeter of soil to form again after depletion. Hence, careful management of the soil is necessary for sustainable food production, which unfortunately has declined in the rural areas in Nigeria (Titola 1998). Degradation of environmental resources required for these economic activities in the rural areas is viewed in the negligence on the part of the rural agriculturalists, in the use of traditional conservative methods in their agricultural production (ibid). Some of the conservative agricultural practices as mentioned by Titola (1998) in agricultural production include;

- a. Planting of cover cropping – which prevent exposition of degraded land to erosion and marsh formations
- b. Practicing of crop rotation and shifting cultivation - which improves soil fertility and reduces acidification of the soil
- c. Reduced bush burning - which lessen the effects of fire and heat on soil fertility and texture
- d. Longer fallow period - which ensures the replenishing of micro-organisms and water table after longer period of fallow
- e. Soil management practices such as the use of compose manure instead of fertilizers and other chemicals - which improves soil fertility
- f. A forestation – which ensures that trees cut down are replaced accordingly
- g. Rotational grazing – which reduce chances of erosion due to desertification

The use of conservative methods in agricultural activities is the major theme in sustainable agriculture. Sustainable agriculture recognizes that natural resources are limited, and encourages sustainable practices in agricultural productions. It gives due consideration to long-term environmental interests, such as, preservation of the top soil, biodiversity, and marine resources; rather than only short-term benefits like profits accruable from sale of produce. Sustainable agriculture is a major issue in the context of sustainable development. It is therefore critical that local populations are sensitized of the importance of efficient management of their environmental resources, to avoid depletion which could lead to food insecurity. This means that those traditional methods of environmental resources conservation must both be initiated and strengthened in addressing environmental degradations related to economic activities in the rural areas. Titola(1998) described the various ways rural economic activities impact on the immediate environment in the rural areas in Nigeria. They are as follow:

a. Deforestation:

Deforestation found in the rural areas in Nigeria stem from the growing demand for new land for farming, building materials, firewood, timber harvesting and collection of forest products for herbal medicine. Unsustainable agricultural methods of '*slash and burn*' contribute to increased deforestation in the rural areas in Nigeria. With continuous tree cutting for logging and firewood, many wild animals and biodiversity lose their habitats and are threatened of extinction.

b. Over cultivation and Overgrazing in marginal lands:

Erosion is common in rural areas in Nigeria and often caused by over-cultivation of marginal land and soil, which reduces the quality of the top soil and exposes it to natural disasters such as wind or water erosion and leaching. Most often pastoral and nomadic cattle readers allow their animals to overgraze on marginal land, which exposes the top soil to easy damages by water and wind erosion. This problem is commonly found in the northern part of

the country. Also overgrazing and hunting reduce the biodiversity and which has adverse effects on the ecosystem cycle and balance. Land degradation or desertification result from overgrazing and over-cultivation related to intensive use of land for agricultural production. The decline in the practice of traditional methods of resource management in agricultural activities is the main reason for this problem. Environment friendly agricultural practices such as the use of shifting cultivation, cover cropping, crop rotation, prolonged bush fallowing and use of compost manure instead of fertilizers, tend to improve the soil fertility. Olden et al (1994) argued that ardent practicing of these methods in agricultural activities is the essence of resource management in agricultural production. However, because of poverty and the urgent need to increase farm yield for growing population demand and immediate income generation, these practices are not ardently practiced in some rural areas. This results to increased land degradation such as desertification, erosion and formations of marshes in exposed lands.

c. Use of chemicals and explosives in Fishing:

Titola (ibid) observed that majority of fisher men in some part of the country tend to use explosives and harmful chemicals like garmaline in fishing, which pollutes the water and destroys important marine lives. This leads to depletion of marine resources, bad water supply for drinking and other agricultural purposes, and a long term negative effect on the eco-system balance. Poverty and the urgent need to generate income from increased demands for marine resources in the local markets often compel fishermen to engage in unsustainable agricultural practices.

Policy implication on sustainable agricultural production in rural Nigeria

The policy implication on sustainable agriculture in rural Nigeria is treated under three major issues in poverty-environment discourse. They are as follows:

- a. Reduction of poverty in the rural areas (agric loans and subsidies)
- b. The role of government agricultural extension services in facilitating resource management in agriculture
- c. Participation of rural people in the management and protection of their environment

a. Reduction of poverty in rural areas

Sustainability in agriculture should recognize the harmful effect of poverty on the environment. This is visualized in the ways rural populations are compelled to forgo sustainable ways of managing their resources in order to deal with challenges of poverty affecting them. We have seen that poverty in the rural areas in Nigeria result from obvious negligence on the part of policy makers and state apparatus, of the development needs in the rural sector. Therefore, to reduce the impact of extensive utilization of environmental resources depended on for agriculture, it paramount to address the issues of deprivations related to rural poverty in Nigeria. Scherr (1999) acknowledged that poverty affecting rural population stem from what he termed absolute welfare deprivations. It takes cognizant of deprivations related to access to common property ownership, resources (land and capital) and state provided services as well as lack of personal assets and wealth. The environment-poverty nexus as we have seen highlights the various ways rural resources are depleted due to extensive agricultural productions for immediate income generation. Therefore, it is pertinent to address the various catalysts of poverty in the rural areas and how government could address this inimical problem.

Firstly, government should address the issue of land tenure system and ownership in Nigeria. The land tenure system is a land use decree passed in 1978, which gives government right over all land in the country (Girigiri 2000). One of the negative implications of land tenure system in Nigeria is the hegemonic hold or ownership of more arable land by the elite class (who are often favored by government policies) in expense of the majority poor in the rural sector. Equitable distribution of landed resources will enable the rural population gain easy access to land for agriculture, and reduce extensive usages of marginal land for agriculture and pasture land. Also, some traditional land ownership systems found mostly in the southern part of the country deprive women of ownership of land, which often makes women more vulnerable to poverty than their male counterparts. Hence, some of these traditional practices should be highlighted in addressing poverty affecting rural populations (especially women) in Nigeria.

Secondly is the issue of poor access to credit facilities and loans which are necessary for improved agricultural production in a sustainable way. Provision of credit facilities such as, soft loans, agricultural subsidies, provision of improved agricultural equipment for farming and provision of viable market for agricultural produce, will enable rural framers improve their livelihood and engage effectively in resource managements in their agricultural production.

Finally, Lack of knowledge of environmental degradation on the part of the rural agriculturalist increases chances of indiscriminate use of immediate environmental resources. Hence, it should be the priority of government agencies to ensure that environmental education reaches to poor agriculturalists in the rural areas.

b. The role of government agricultural extension services in facilitating resource management in agriculture

It is important that agricultural extension programmed and education on the importance of resource management in agricultural production be undertaken especially of resource users. In this way, emphasis will be placed on the important role of agriculture to the welfare of the rural population and the essence of acquiring knowledge of sustainable agricultural practices in rural agricultural activities. This approach essentially recognizes the fact that rural population welfare can be improved through proper and rational management of environmental resources depended on for agriculture. Within the framework of the agricultural extension programme, environmental problems that arise due to specific agricultural practices, especially those related to soil depletion, deforestation/desertification, and marine resource depletion, should be emphasized. It is also important that rural agriculturalists are educated and provided with the knowledge of the limits of the carrying capacities of rural resources while using specific agricultural practice. To prevent further degradation of environmental resources, this education should be highlighted and initiated in agricultural extension programmes delivered in the rural areas.

c. The participation of rural population in the management of environmental resources

Efforts to promote environmental resources conservatism in the local levels have been hindered by lack of time devoted to resource management practices on the part of the rural agriculturalists; as well as material and financial deprivations (Munasinghe 1993). This could be said of Nigeria, where there are few infrastructural developments and more incidence of poverty affecting a great proportion of the rural population. Participation of rural people in the conservation of environmental resources is essential, because it is in the best interest of the people to manage the resources which they depend on for livelihood. It is necessary that rural people be empowered through environmental education on resource management, in order to revitalize important traditional resource management practices that have been forgone because of modernization and the harsh effects and realities of poverty. This is why Munasinghe(1993) argued that effective participation of local people in resource management could be achieved through what he termed 'Conservatism' and 'Primary Environmental Care'. These two concepts observe the ways rural people could initiate resources management practices of their own by revitalizing traditional methods of environmental resource management in their agricultural activities, bearing in mind, the consequences of unsustainable agricultural practices on food security. However, this can only be achieved if appropriate actions are put in place to tackle those factors inhibiting effective resource management in agricultural activities in the rural settings, such as poverty and lack of good incentives for improved agricultural production. It is argued that improvement of the livelihood of the poor will invariably limit wasteful usage of their immediate environmental resources.

Conclusion

The world has come to realize that rational use of natural resources is essential for sustainable environmental conservation. There has been growing concern over the way rural environmental resources are being depleted, which emanate from excessive rate at which rural population utilize their immediate environmental resources for agricultural production, without considering appropriate resource management practices. Moreover, the persistent rate of poverty in the rural areas, which often compel rural agriculturalists to forgo rational resource management practices for harmful practices, for short term benefit in expense of long-term consequences on the ecosystem balance. Continuous pressure on the environment can exceed the carrying capacities of the ecosystem, leading to environmental degradation. Hence, the international community advocated for increased awareness of the impact of unsustainable agriculture on the built environment and how poverty which is the major catalyst in most rural societies, could be reduced to the minimum level.

Also, the same international community has opted integrated resource management in agricultural practices as important aspect of sustainable development related to food production. They observed that the achievement of the objective of sustainable agricultural production will involve maximum efforts and reorientation, which is integrated in policy formulation and implementation. This paper was able to address the issues on rural poverty and unsustainable agricultural practices, which impact negatively on the immediate environment and hinder

effective management of rural environmental resources in Nigeria. Also, the paper highlighted policy implication on sustainable agricultural production in the rural areas in Nigeria, and how resources used for agriculture could be well managed and preserved for both present and future usages, which informs the major theme of sustainable development.

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