

.Research Article

## Impacts of Deforestation on Socio-Economic Development and Environment in Nigeria

John Wajim

Department Of Sociology  
Federal University, Wukari

200 Katsina-Ala Road, P.M.B 1020 Wukari, Nigeria

[wajim@fuwukari.edu.ng](mailto:wajim@fuwukari.edu.ng)

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**Abstract:** Deforestation enables the earth soil to run off into sources of water supply due to the absence of tree roots to absorb water thereby causing water pollution. Absence of tree roots further deprives the soil of important nutrients necessary for the growth of new vegetation. Through deforestation, more carbons are released into the atmosphere, climatic changes take place and soil is exposed to rainfalls thus promoting erosions. These are not without serious health implications. The trade of wood products is an obvious source of substantial income for national and local governments as well as traditional rulers and individuals. This often comes in the form of export earnings, taxes, royalties and personal income for those engaged either directly or indirectly in the exploitation of these forest products. Secondary sources of data collection were used for this paper. Amongst other recommendations, it is recommended that Corrupt government officials in charge of forestry laws and policies should be prosecuted together with illegal loggers, environmental education should be accorded to the general public on the dire consequences of deforestation on people and the society at large, skills acquisition program should be organized for rural women dwellers and the uneducated youths in order to curtail the rate of deforestation.

**Key Words :** Deforestation, Environment, Socio-Economic, Biodiversity And Nigeria.

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### Introduction:

Deforestation is primarily a concern for the developing countries because of its negative contributions which include the loss of biodiversity and the increase of greenhouse effect (Angelsen et al., 1999). Trees are the oldest, reliable, extremely useful and widely used raw materials that play a crucial role in oxygen supply and absorption of greenhouse gases (Effects of Deforestation, 2010). Thirty per cent of the earth's land area or about 3.9 billion hectares is covered by forests. It was estimated that the original forest cover was approximately six billion hectares (Bryant et al., 1997). Tropical forest trees cover only six percent of Earth's land surface. It is purported that trees contain between 70 and 90 percent of the world's entire species (Effects of Deforestation, 2010). Deforestation has caused the

loss of 50 to 100 animal and plant species each day. Many of these species are now at the verge of extinction even with their significant importance to humans, especially in the area of medicine (Effects of Deforestation, 2010). According to International Institute of Tropical Agriculture (IITA) (2011), Nigeria is ranked the worst country with the highest deforestation rate. Deforestation rate in Nigeria is put at 3.5% and 400,000 hectares every year. According to the Federal Ministry of Environments, 400 out of every 1,000 of forestland are deforested every year and only 26 hectares of these are reforested thus leaving 374 hectares deforested (Babalola, 2012). The exploitation of forests could improve the social asset base of dependent communities. It is realized that often because forests are located in remote areas where investments by national governments are low,

the people lack certain basic amenities and mostly characterized by poor development (Secretariat of Convention on Biological Diversity, 2009). However, through the exploitation and trade of forest resources, the social rapport established through partnership has formed the basis for development of social amenities such as good roads, schools, electricity and good water supply in forest fringe communities (Obiri and Damnyag, 2011).

### **Conceptual Clarifications:**

Deforestation is the conversion of forest to an alternative permanent non-forested land use such as agriculture, grazing or urban development (Van Kooten and Bulte, 2000). A forest is defined as a land which is covered with more than 10 percent of trees and an area of more than half a hectare (FAO, 2005). A forest includes natural forests and forest plantations and does not include stands of trees established primarily for agricultural production. Such trees include those planted for different types of fruits, oil palm fruit trees and agro-forestry trees. FAO also accepted a plantation of trees established primarily for timber production to be forest and therefore does not classify natural forest conversion to plantation as deforestation. However, FAO does not consider tree plantations that provide non-timber products to be forest although they do classify rubber plantations as forest. Forest degradation occurs when the ecosystem functions of the forest are degraded but where the area remains forested rather cleared (Anon., 2010).

### **Theoretical Consideration:**

Buttel (2005), asserted that there are five basic epistemologies in environmental sociology. In practice, this means five different theories of what to blame for environmental degradation, i.e., what to research or consider as important. But one theory will be considered for this paper. It is analyzed below.

### **Eco-Marxism:**

In the middle of the HEP/NEP debate, the general trend of Neo-Marxism was occurring. There was cross pollination. Neo-Marxism was based on the collapse of the widespread believability of the Marxist social movement in the failed revolts of the 1960s and the rise of many New Social Movements that failed to fit in many Marxist analytic frameworks of conflict sociology. Sociologists entered the fray with empirical research on these novel social conflicts. Neo-Marxism's stress on the

relative autonomy of the state from capital control instead of it being only a reflection of economic determinism of class conflict yielded this novel theoretical viewpoint in the 1970s. Neo-Marxist ideas of conflict sociology were applied to capital/state/labor/ environmental conflicts instead of only labor/capital/state conflicts over production. Therefore, some sociologists wanted to stretch Marxist ideas of social conflict to analyze environmental social movements from this materialist framework instead of interpreting environmental movements as a more cultural "New Social Movement" separate than material concerns. So "Eco-Marxism" was based on using Neo-Marxist conflict sociology concepts of the relative autonomy of the state applied to environmental conflict. Two people following this school were James O'Connor (The Fiscal Crisis of the State, 1971) and later Allan Schnaiberg. Later, a different trend developed in eco-Marxism via the attention brought to the importance of metabolic analysis in Marx's thought by John Bellamy Foster. Contrary to previous assumptions that classical theorists in sociology all had fallen within a Human Exemptionalist Paradigm, Foster argued that Marx's materialism lead him to theorize labor as the metabolic process between humanity and the rest of nature (Buttel, Frederick, and Humphrey, 2002). There was an assumption his analysis was very similar to the anthropocentric views critiqued by early environmental sociologists. Instead, Foster argued Marx himself was concerned about the Metabolic Rift generated by capitalist society's social metabolism, particularly in industrial agriculture. Marx had identified an "irreparable rift in the interdependent process of social metabolism", created by capitalist agriculture that was destroying the productivity of the land and creating wastes in urban sites that failed to be reintegrated into the land and thus lead toward destruction of urban workers health simultaneously (Diamond and Jared, 2005). Reviewing the contribution of this thread of eco-marxism to current environmental sociology, Pellow and Brehm conclude "The metabolic rift is a productive development in the field because it connects current research to classical theory and links sociology with an interdisciplinary array of scientific literatures focused on ecosystem dynamic (Dunlap, Riley and William, 2002).

### **Causes Of Deforestation In Nigeria: Corruption:**

Corruption is a serious issue in Nigeria and contributes immensely to illegal logging by companies and forest officials (Global witness,2013). Activities of illegal logging lead to deforestation. According to Goncalves, Panjer, Greenberg & Magrath (2012), an area of forest about the size of a foot ball field is clear-cut by illegal loggers every two seconds. Illegal trading in timber and its products lead to massive economic losses and environmental damages (Transparency International, 2011). The rising demand for wood products has made the forestry lucrative and this invariably promotes illegal logging (Transparency international, 2011). Logging is said to be the first threat to existing tree population (Effects of Deforestation,2010). Corruption is also observed at the level of government institutions, wealth and power due to harvesting of forest riches. Pathetically, all these are done on the platform of short term economic benefits (Effects of Deforestation, 2010). Lack of integrity in the judiciary to check illegal logging further promotes deforestation (Transparency International, 2011).

According to the chairman of the Nigerian Environmental Study/Action Team (NEST), Nigerian leaders have failed to realize that the consequences of deforestation will not just stop with the deprived/poor Nigerians but everyone. The basic cause of deforestation is human activity which is not without direct effects on human life (Nayak, 2008). Until the issue of poverty and corruption are addressed in Nigeria, sad to say that an end might never come to activities that lead to deforestation. In order word, deforestation will continue to be a necessary reigning evil for the survival of the masses, until the government take a radical step by liberating the larger proportion of the people from the cocoon of their impecuniosities or penury.

#### **Poverty:**

Poverty is also a strong factor in the issue of deforestation. Poverty leads to the felling and burning of trees for fuel. Charcoal produced from the burnt trees is sold for money to make ends meet. At the other hand, the felled trees are also sold as timber; cleared land is used as pasture for livestock, plantations of communities and settlements (Terminski, 2012). Industrialization processes along side with oil extraction and mining lead to deforestation (Terminski, 2012). Paper products are made from trees (Effects of Deforestation, 2010). Deforestation was a protective measure and

deliberate activity during the war to open up closed up areas with trees which could have served as a hiding place for the enemies (Terminski, 2012). According to FOA, deforestation is common among populous nations like Nigeria. Increasing growth in population and demographic pressure contributes immensely to deforestation processes in Nigeria (Effects of Deforestation, 2010). The most populous country in Africa is Nigeria with the population rate of 162.5 million (World Bank, 2011). This becomes a serious problem when increasing population combines with the high level of poverty. About 70 percent (105million) of Nigerians are now living below the poverty line (Central Intelligence Agency (CIA) 2012, Sanusi, 2011). Overpopulation causes a corresponding increase in the construction of residential and public areas. This causes the soil to become loose and more susceptible to the possibility of running off and flooding (Effects of Deforestation, 2010). The outcome can be devastating. United Nations Environmental programme (UNEP) posited that Africans are suffering deforestation at the rate of two times of that of the world.

#### **Agricultural Practices:**

Poor agricultural practices such as slashing and burning also contribute to deforestation (Terminski, 2012). Study shows that about 60% of Nigerians use firewood for cooking because of the high cost of kerosene (Akinbami, 2003). Some persons ignorantly set fire on forests thereby contributing to deforestation. According to FAO, developing countries from the tropics suffer most from deforestation between 2000 and 2005. This suggests a relationship between poverty and deforestation. Poverty induced human activities are the major causes of deforestation in Nigeria (Terminski, 2012).

#### **Urbanization:**

Urbanisation process is another strong factor in the issue of deforestation. Lack of awareness on the adverse effects of deforestation has caused the destruction of over 8.5 million hectares of tropical forest permanently yearly for the construction of buildings and new urban areas. This leads to uncontrollable and continuous destruction of forest resources. In Nigeria, 81% of the original forest cover is removed (Effects of Deforestation, 2010). Other causes of deforestation in Nigeria include clearing of forest for logging, agricultural activities, felling of trees by rural dwellers for sales as a means of

sustenance due to poverty and using of trees as wood for fuel which causes serious damages with an end result of desertification.

### **Impacts of Deforestation On Socio-Economic Development:**

It is an undisputable truism that the dependence of millions of people on forests leads to degradation and deforestation, there are several benefits accruing from such loss (in the aspect of livelihoods, income and employment) for the sustenance of indigenous people. According to the World Bank (2004), it is estimated that approximately 60 million indigenous people are almost wholly dependent on forests while 350 million people depend on forests for a high degree for subsistence and income, and about 1.2 billion people rely on agro-forestry farming systems (Cited in Secretariat of the Convention on Biological Diversity, 2009, p.3). United Nations Environmental Protection (UNEP) (2006), sustainable livelihoods guarantee access and entitlement to a range of assets and opportunities which are essential in achieving human well-being. This is essential for most indigenous people especially in forest fringe communities who often lack the basic necessities to maintain a decent standard of living such as sufficient and nutritious food, adequate shelter, access to health services, energy sources, safe drinking-water, education and a healthy environment (Secretariat of the Convention on Biological Diversity, 2009). The trade of wood products is an obvious source of substantial income for national and local governments as well as traditional rulers and individuals. This often comes in the form of export earnings, taxes, royalties and personal income for those engaged either directly or indirectly in the exploitation of these forest products. According to the World Commission on Forests and Sustainable Development, (1998) export of tropical wood contributes approximately US \$ 100 billion annually, about 0.5% of global gross domestic product (Cited in Mahapatra and Kant, 2003, p.1). The sale and distribution of chainsaw lumber is argued to generate some un-estimated revenue in the form of market tolls, income tax, taxes from waybills and custom duties within national economies (Obiri and Damnyag, 2011). Research by the CIFOR Poverty Environment Network (PEN) found that income from forest activities makes up about one fifth of total household income for rural households living in or near forests (Manfre and Rubin, 2012).

Also, the exploitation of forests could improve the

social asset base of dependent communities. It is realized that often because forests are located in remote areas where investments by national governments are low, the people lack certain basic amenities and mostly characterized by poor development (Secretariat of Convention on Biological Diversity, 2009). However, through the exploitation and trade of forest resources, the social rapport established through partnership has formed the basis for development of social amenities such as good roads, schools, electricity and good water supply in forest fringe communities (Obiri and Damnyag, 2011), illegal logging causes economic sabotage to government and also expose nation to an unavoidable scarcity and low quality of planks (Tunde, 2017). Over the past number of decades, sustainable management of forest resources has been of primary concern due to its potential impact on biological diversity and importance in maintaining global ecological functions (Areola, 1987). In spite of its importance, the natural tropical high forest has continued to diminish rapidly in the African continent, thus dwindling sustainable forest management. Majority of the people residing in Africa use fuel wood as their main source of energy for cooking. In many areas, due to increasing population the existing wood resources are over exploited. It is claimed that there are now places in the Sahel region where fuel wood has become so expensive that it absorbs about half the monthly budget of some poor families in urban areas. Nigeria could face the possibility of timber and fuel wood scarcity towards the end of the century. It has been predicted that within the next fifty years, unless adequate measures are taken, most humid tropical forestland area in Africa could be transformed into unproductive land and the deterioration of the savannah into desert will be accelerated (Hunter et al, 2005; Kio, 1990; Medugu, 2010). The level of community nutrition is sometimes linked to fuel wood availability and cost, majority of the people residing on the African continent use fuel wood as their main source of energy for cooking. In many areas, due to increasing population the existing wood resources are over exploited. It is claimed that there are now places in the Sahel region where fuel wood has become so expensive that it absorbs about half the monthly budget of some poor families in urban areas. Some families could only afford one meal per day as a result of high cost of fuel wood and other alternative sources of energy for cooking (Enabor,

1981; Bowling, 2000; Mizra, 2003). With extensive deforestation, villagers are compelled to walk long distance to fetch fuel wood and eventually tempted to substitute dried animal dung and crop residues for fuel wood. This tends to have serious consequences for local agricultural production and productivity because; the rural communities also rely on this substituted resource for improving soil fertility. Apart from the deterioration in the quality of life associated with forest degradation, there are other more insidious effects that endanger the future of humans on this planet. Nearly 500 million people around the world depend on forest for their livelihood; among them are a high number of forest and wood workers (Munich, 2010; Bowling, 2000). Therefore, sustainable forestry management must include safe, stable jobs with adequate wages and working conditions (Krausmann and Mushtaq, 2008). In Nigeria, environmental problems that are termed degradation collectively, such as desert encroachment, erosion, flooding and drought etc all have a strong link with deforestation. Academia, scholars and researchers are of the opinion that deforestation risk reduction is a systematic approach of identifying, addressing, and reducing the risks of disaster to a community (Dong et al, 2009; Chowdhury 2003; Andrade and Scarpati, 2007). Generally, deforestation is caused by a variety of factors (Alexander 1993; Burton et al 1978; Jonkman and Kelman, 2005; Fendler 2008; Zhang et al 2008). However, (Ajibade, 2002; Wards, 1978), viewed deforestation as clearing of any area of its natural vegetation cover which is normally lead to decrease in plants population resulting in loss of plant biodiversity. Nonetheless, excessive deforestation over a long period has been the cause of many drought like features (Atta-ur-Rahman and Amir, 2011; Hunter et al 2005; Ali, 2007; Adebayo 2010; Osemeobo, 1993). Deforestation presents multiple environmental problems in our society today. The present and long term effects of human activities such as logging, bush burning and land acts of Deforestation on Socio-Economic Development clearance for construction are factors that contribute to deforestation which are almost certain to jeopardize our lives on earth. As a result of the exploding population the rate of deforestation is becoming quite alarming, fertile agricultural land is gradually being taken over by unfertile land due to increase in aridity caused by

deforestation thereby resulting in the decline of the productivity of the land. Strong hazardous wind that destroy and damage building roofs and growing plants, which for long had been occasional, is gradually becoming a yearly phenomenon. Also, the problem of flooding which cannot be said to be a new problem has taken on a more dominating dimension due to the growth of urban population and the rapid increase in agricultural practices. Nigeria which is also known as the giant of Africa is well blessed with the abundance of natural resources. Unfortunately, about 45% population of Nigeria lives below the poverty line. This is why economists refer to the vast wealth in natural resources and extreme poverty in a country like Nigeria as the 'resource curse'. Nigeria is the most populous country in Africa and the seventh most populous country in the world with a population of 162.5 million (Library of Congress-Federal Research Division, 2008; World Bank, 2011). Nigeria has the worst deforestation rate in the world which can be attributed to her increasing population with high poverty level Agriculture (IITA, 2011). Inability of Nigerian leaders to provide for her citizenry leads to poverty induced activities which causes deforestation. The adverse effects of deforestation are alarming and impacts negatively on human health with serious threats to human existence. Deforestation has to do with continuous removal of plants without growing new ones to replace what has been removed for economic or social purposes (The Free Encyclopaedia, 2007). This in turn exposes the land, mountains, hills and even valleys to erosion. Subsequently, floods, landslides and mudslides, loss of wild life and increasing loss of deserts follow. At the long run human health and life become adversely affected. The annual rate of deforestation in Nigeria is 3.5% which is approximately 350,000-400,000 hectares per year (FAO, 2005). Fakoya, (2010) sees deforestation as a recurring problem in Nigeria. This might not be unconnected with the high poverty level in Nigeria in the midst of abundant natural resources. There seems to be a relationship between poverty and increase loss of forest. Debarati Guha Sapiro posited that vulnerability to natural disasters is almost a direct function of poverty through poverty induced unfavourable activities. These activities include felling of trees to be used as fire wood for cooking due to inability to afford kerosene and cooking gas as a result of cost and unavailability

most times. Seventy percent of Nigerians are still living below the poverty line (CIA, 2007). Continuous removal of vegetation in Nigeria increases its vulnerability to landslides with a high tendency to loss of lives and property. This is not without strong implications for present and future Nigerians. Nigeria has one of the highest rates of forest loss (3.3%) in the world, lost 6.1million hectares or 35.7% of its forest covers. Nigeria also lost 79% of its old growth forests between 1990 and 2005 with average loss of 11% per year (Fakoya, 2010). Study conducted in the year 1901-2005 revealed a temperature increase of 1.1°C against the global mean temperature of 0.74°C. This was associated with decrease in annual rainfall by 81mm. High deforestation rate led to increased temperature, reduced the rate of rainfall thus leading to increase desertification. Deforestation impacts socially, economically and agriculturally on the overall quality of life of any nation (Sahney; Benton; & Falconlang, 2010). However, the ultimate impact of deforestation is on human health. Social and economic implications are not left out. For instance, deforestation increases the vulnerability to landslides which are capable of causing loss of lives and property. Health is an inevitable requirement for optimal functioning. Without health nothing can be achieved. The enormous adverse effects of deforestation deserve a perpetual monitoring in Nigeria.

#### **Impacts Of Deforestation On Environment:**

Deforestation causes several societal and environmental problems capable of making human existence unbearable. Challenges associated with it include loss of biodiversity, destruction of forest-based societies and climatic disruption (Effects of Deforestation, 2010). Deforestation is a global problem which threatens environmental sustainability with more impact on Nigeria due to the high rate. Deforestation exerts adverse effects on the entire environment, the economy and the citizenry

#### **Forest And Climate Change:**

According to Gupta et al, (2005) it is essential to distinguish between microclimates, regional climate and global climate while assessing the effects of forest on climate especially the effect of tropical deforestation on climate. Deforestation can change the global change of energy not only through the micrometeorological processes but also by increasing the concentration of carbon dioxide in the

atmosphere because carbon dioxide absorbs thermal infrared radiation in the atmosphere (Gupta et al, 2005). Deforestation affects wind flows, water vapour flows and absorption of solar energy thus clearly influencing local and global climate (Chomitz et al, 2007). Deforestation on lowland plains moves cloud formation and rainfall to higher elevations (Lawton et al, 2001). Deforestation disrupts normal weather patterns creating hotter and drier weather thus increasing drought and desertification, crop failures, melting of the polar ice caps, coastal flooding and displacement of major vegetation regimes.

Global warming or global change includes anthropogenic produced climatic and ecological problems such as recent apparent climatic temperature shifts and precipitation regimes in some areas, sea level rise, stratospheric ozone depletion, atmospheric pollution and forest decline. Tropical forests are shrinking at a rate of about five per cent per decade as forests are logged and cleared to supply local, regional, national and global markets for wood products, cattle, agricultural produce and bio fuels (Anon., 2007; 2010). One of the most important ramifications of deforestation is its effect on the global atmosphere. Deforestation contributes to global warming which occurs from increased atmospheric concentrations of greenhouse gases (GHG) leading to net increase in the global mean temperature as the forests are primary terrestrial sink of carbon. Thus deforestation disrupts the global carbon cycle increasing the concentration of atmospheric carbon dioxide. Trees absorb CO<sub>2</sub> from the atmosphere and store the carbon as wood or in soils. The conversion and burning of forest for farming and the harvest of forest for timber and fuelwood cause a net release of CO<sub>2</sub> from the biota to the atmosphere. Tropical deforestation is responsible for the emission of roughly two billion tonnes of carbon (CO<sub>2</sub>) to the atmosphere per year (Houghton, 2005).

#### **Water And Soil Resources Loss And Flooding:**

Deforestation also disrupts the global water cycle (Bruijnzeel, 2004). With removal of part of the forest, the area cannot hold as much water creating a drier climate. Water resources affected by deforestation include drinking water, fisheries and aquatic habitats, flood/drought control, waterways and dams affected by siltation, less appealing water related recreation, and damage to crops and irrigation systems from erosion and turbidity

(Bruijnzeel et al., 2005). Urban water protection is potentially one of the most important services that forest provides (Chomitz et al., 2007). Filtering and treating water is expensive. Forests can reduce the costs of doing so either actively by filtering runoff or passively by substituting for housing or farms that generate runoff (Dudley and Stolton, 2003). Deforestation can also result into watersheds that are no longer able to sustain and regulate water flows from rivers and streams. Once they are gone, too much water can result into downstream flooding, many of which have caused disasters in many parts of the world. This downstream flow causes soil erosion thus also silting of water courses, lakes and dams. Deforestation increases flooding mainly for two reasons. First, with a smaller 'tree fountain' effect, soils are more likely to be fully saturated with water. The 'sponge' fills up earlier in wet season, causing additional precipitation to run off and increasing flood risk. Second, deforestation often results in soil compaction unable to absorb rain. Locally, this causes a faster response of stream flows to rainfall and thus potential flash flooding (Chomitz et al., 2007). The long term effect of deforestation on the soil resource can be severe. Clearing the vegetative cover for slash and burn farming exposes the soil to the intensity of the tropical sun and torrential rains. Forest floors with their leaf litter and porous soils easily accommodate intense rainfall. The effects of deforestation on water availability, flash floods and dry season flows depend on what happens to these countervailing influences of infiltration and evapo-transpiration the sponge versus the fountain (Bruijnzeel, 2004). Deforestation and other land use changes have increased the proportion of the basin subject to erosion and so over the long run have contributed to siltation. Heavy siltation has raised the river bed increasing the risk of flooding especially in Yangtze river basin in China, the major river basins of humid tropics in East Asia and the Amazonian basin (Yin and Li, 2001; Bruijnzeel, 2004; Aylward, 2005, Bruijnzeel et al., 2005; van Noordwijk et al., 2006).

#### **Strategies For Curtailing Deforestation:**

For curtailing deforestation, the welfare of the forest frontier cultivators also need to be improved. The strategies are unleashed below:

#### **Curtailing Emissions From Deforestation And Forest Degradation:**

Many international organizations including the United Nations and the World Bank have begun to

develop programmes to curb deforestation mainly through Reducing Emissions from Deforestation and Forest Degradation (REDD) which use direct monetary or other incentives to encourage developing countries to limit and/or roll back deforestation. Significant work is underway on tools for use in monitoring developing country adherence to their agreed REDDS targets (Chomitz et al, 2007).

#### **Increasing The Management Standard Of Protected Areas:**

The allocation of protected areas is fundamental in any attempt to conserve biodiversity (Myers and Mittermeier, 2000; Nepstad et al., 2006). Protected areas alone, however, are not sufficient to conserve biodiversity. They should be considered alongside, and as part of, a wider strategy to conserve biodiversity. The minimum area of forest to be protected is generally considered to be 10 per cent of total forest area. It is reported that 12.4 per cent of the world's forest are located within protected areas. Tropical and temperate forests have the highest proportions of their forests in protected areas and boreal forests have the least. The Americas have the greatest proportion while Europe the least proportion of protected areas (Anon., 2010).

#### **Increasing Forest Permanent Reserved Area for Timber Production:**

The most serious impediment to sustainable forest management is the lack of dedicated forests specifically set aside for timber production. If the forest does not have a dedicated long-term tenure for timber production then there is no incentive to care for the long-term interests of the forest. FAO (2001) found that 89 per cent of forests in industrialized countries were under some form of management but only about six per cent were in developing countries. If 20 per cent could be set aside, not only could timber demand be sustainably met but buffer zones could be established to consolidate the protected areas. This would form a conservation estate that would be one of the largest and most important in the world (Anon., 2001a).

#### **Increasing And Maintaining Of Forest Value:**

There are several ways of increasing and maintaining the actual value of forests. Governments can impose realistic prices on stumpage and forest rent and can invest in

improving the sustainable productivity of the forest. National and international beneficiaries of the environmental services of forests have to pay for such services (Chomitz et al, 2007). There has been some success in devising schemes to collect payments for environmental services like carbon sequestration, biodiversity conservation, catchment protection and ecotourism. This success can further be more realized by integrating participatory mode of management with these collection schemes to ensure rights and tenure with equity in resource and benefit sharing for improving the livelihood of the rural poor who actually are the primary stakeholders of conservation and management.

#### **Promotion Of Sustainable Forest Management:**

In order to promote sustainable forest management, it must be sustainable ecologically, economically and socially. Achieving ecological sustainability means that the ecological values of the forest must not be degraded and if possible they should be improved. This means that silviculture and management should not reduce biodiversity, soil erosion should be controlled, soil fertility should not be lost, water quality on and off site should be maintained and that forest health and vitality should be safeguarded. However, management for environmental services alone is not economically and socially sustainable. It will not happen until or unless the developing nations have to reach a stage of development and affluence that they can accommodate the costs of doing so. Alternatively, the developed world must be prepared to meet all the costs (Chomitz et al, 2007; Anon., 2010; 2011). There are vast areas of unused land as discussed earlier some of which is degraded and of low fertility. Technological advances are being made to bring this land back into production. This should be a major priority since a significant proportion of cleared tropical forest will eventually end up as degraded land of low fertility.

#### **Reinforce Government And Non-Government Institutions And Policies:**

Strong and stable government is essential to slow down the rate of deforestation. FAO (2010) considered that half of the current tropical deforestation could be stopped if the governments of deforesting countries were determined to do so (Anon., 2010). Environmental NGO's contribution towards conservation management has been enormous. They have the advantage over

government organizations and large international organizations because they are not constrained by government to government bureaucracy and inertia. They are better equipped to bypass corruption and they are very effective at getting to the people at the frontier who are in most need. Participatory forest management and rights in frontier areas much of the forest is nominally owned by the state, but the reach of government and the rule of law are weak and property rights insecure. In order for forest management to succeed at the forest frontier, all parties with an interest in the fate of the forest should be communally involved in planning, management and profit sharing.

But forest ownership and management rights are almost always restricted and restrictions on ownership and use define alternative tenure systems. The balance of rights can be tilted strongly toward society in the form of publicly owned strictly protected areas. State ownership and management can be retained but with sustainable timber extraction allowed. As of now much of the world's tropical forest are state owned but community participation in forest ownership and management needs to be encouraged with restrictions on extraction and conversion (Chomitz et al., 2007). A means must be found to reconcile conservation and development by involving local/indigenous populations more closely in the decision-making process and by taking the interactions between 'societies' and forest resource more fully into account (Chakravarty et al, 2008).

#### **Conclusion:**

Deforestation which gives rise to global warming is instigated by natural and anthropogenic factors but human beings are the major contributory factor to the climate change which has become the new reality. Human activities are inimical to the environment in tandem with our daily work and behaviour domestically, industrially and even agriculturally are threatening to the stability of the environment as well as the balance of the ecosystem. Humans often burn bushes to farm, practice agriculture without due regard to the environment. Trees are logged by humans without knowing that they are altering the eco- system and nature. All these human activities are threatening the nature and at the end, we ourselves are to face the consequences and are to be blamed. In line with the above statement, Nigerian leaders are the major culprits in the issue of deforestation because they



have failed to provide for the citizenry through the abundance of God endowed natural resources. No wonder economists refer to Nigeria as being under what they call 'resource curse'. The poor citizenry resorts to poverty induced activities that lead to deforestation with all the adverse effects notwithstanding as a possible way out of their dilemma. It is estimated that each day at least 80,000 acres (32,300 hectares) of forests vanish from the earth (Butler, 2012). Rainforests produce 28% of the world's oxygen and has earned the name of 'jewels of the earth' and the 'world's largest pharmacy' for being a source of over one quarter of natural medicine (Rainforest at Animal Centre, 2004). This is processed through the taking in of carbon dioxide by plants and releasing of oxygen into the atmosphere for man.

### Recommendations:

- Corrupt government officials in charge of forestry laws and policies should be prosecuted together with illegal loggers
- Environmental education should be accorded to the general public on the dire consequences of deforestation on people and the society at large
- Government should embark on the program of tree planting by enlightening the public to fathom that We have only one earth
- Government, Non-governmental organizations and spirited individuals should organize an enlightenment program on the impacts of climate change
- Government should add more effort on poverty eradication program, and the educated unemployed youths should be accorded employment
- Skills acquisition program should be organized for rural women dwellers and the uneducated youths in order to curtail the rate of deforestation

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