

Timber Theft: Environmental and Economic Threat to Nigeria: A Review Paper

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ABSTRACT: Nigeria has in abundance rich forest resources but as the years passes it has suffered from large scale deforestation due to over-population and higher demand for wood/ wood products. Harvesting of timber without the permission of the owner or not paying for timber that was harvested with the permission of the owner puts humans/animals at risk of having a quality life; we put at stake the stability of climate, and endanger the existence of other species. This paper review examined and evaluated the various causes of timber theft, adverse effect of timber theft on the environment and economic atmosphere of the forest, constraints to reducing timber theft and ascertained perceived ways forward to reduce timber theft. While corruption, poverty and poor agricultural practices are some of the causes of timber theft, government weakness in parts or in entirety (that is, conflicts and war), failure of institutional controls, and absence of accountability by public officials are some of the motives for timber theft. Failure to assign a proper value to forests predisposes it to being cleared especially when regarded as a public good. Insufficient manpower, absence of equipment/lack of capacity building, government preferences and much importance on revenue generation as against the conservation of biodiversity are some of the challenges faced by forest reserve protection bodies. This paper recommends that forestry department should embark on community based forest management system, necessary financial support should be provided for the forestry officials by government in other to allow them carry out their work at the appointed time and effectively.

Keywords: Timber theft, Threat, Environment, Economy

1. Introduction

Nigeria is endowed with rich forest resources which comprises of the Freshwater swamp forest, Mangrove forest, Lowland rain forest, Sudan, Sahel, Derived, Guinea savannah, and Montane. Each one of these forest resources is well-defined by its dominant plants and vegetation. Initially, according to NEST (1991)[1], the entire Southern part of Nigeria has approximately 39% land area covered with the tropical rainforest, But at present Nigeria's rainforest covers about 10% of the country's entire landmass Akinsanmi *et al.* (2002)[2], but as the years passes it has suffered from huge scale deforestation as a result of over-population and increased demand for wood and its products, agricultural practices not well sustained and infrastructural development.

According to Ogunwale (2015)[3], the activities of mankind on the environment in his bid for development have resulted in a incessant and serious ecosystem degradation, thus posing a lot of danger to both his present and future. By destroying the forests we put humans/animals at risk of having a quality life; we put at stake the stability of climate, and endanger the existence of other species. Destruction of the forest that poses these

threats comes in different ways one of such is Timber theft. Jon E Barry (2018)[4] defines timber theft as the harvesting of timber without the owner's permission or failing to pay for timber which was harvested with the owner's permission. These activities involve knowingly crossing a boundary and purposefully cutting and removing trees. It ranges from the stealing of one or a few high-valued trees to stealing all the timber in forest reserves. Meanwhile it has been established that most timber thefts falls into one of four categories like trespassing, overharvesting, underpaying, and fraud.

The purposeful cutting and stealing of timber is therefore subject to both criminal and civil law over the years. Forest crimes which include timber theft has negative social, environmental, economic, and social consequences not only on a national level but on a global level, this is because forests are global and public goods and their degradations impose global costs such as climate change and loss of species which largely results from weak governance and poor law enforcement in the forest sectors World Bank (2006)[5].

Forest exploitation over the years through theft remains a large business to a number of people with its associated forest destruction as well as deforestation from the colonial era. This has brought this paper review to study and evaluate the various causes of timber theft, adverse effect of timber theft on the environment and economic atmosphere of the forest, constraints to reducing timber theft and ascertained perceived ways forward to reduce timber theft.

2. Literature Review

2.1 Logging activities in Nigeria

Umeh [6] ascertains that the value of the Nigerian timber was well appreciated in the market internationally; this results in rapid expansion of logging activities starting from the 1930s to the 1950s mainly for export. These logging activities continued in the following decades that in 1966, Nigeria was ranked second among tropical wood exporters. Reforestation was virtually abandoned in the mid-1970s that wood production in Nigeria could hardly meet up the domestic demand as well as exportation. With this situation, in 1976, the Federal government of Nigeria imposed a ban on exportation of round wood, followed by a waiver in 1991 which allowed for the exportation of *Tectona grandis* and *Gmelina arborea* Roxb this in turn lead to great abuse in 1994 Bada et al. (2005)[7], a case of summersault in policy in order to satisfy political wood merchants.

Adekunle et al 2012)[8] established that in terms of volume, the least exploited was in October, followed by March, the highest volume was exploited in June. In General, logging activities is usually high during the dry season (between September and April of the following year). This could be because of the good condition of roads and a favourable forest environment during the dry season. Forest roads are typically not motorable throughout the year in Nigeria. Akindele et al (1998)[9] ascertains that timber merchants are very selective of the species of trees species fall. This informs their preference for tree species like Obeche (*Triplochiton scleroxylon*), Afara (*Terminalia superba*), Apa (*Afzelia africana*), Ofun (*Mansonia altissima*), Iroko (*Melia excelsa*) and the mahoganies (*Khaya spp*). The tree species exploited in the area he studied was quite massive because of their high durability. They serve as good materials for construction, panel products, production of veneers etc. They are of high value for exportation.

These important species of hardwood are not only rare but are threatened with extinction because loggers go the extent of felling under girths found anywhere which are contrary to Nigeria logging policy.. This was the reason why felling was banned in some States of Nigeria FORMECU (1999)[10]. The relative abundance of these species of hardwood was reported to be less than 5/ha in tropical rainforest ecosystem of southwest Nigeria (Adekunle 2006,[11] Onyekwelu et al.2005)[12].

2.2 Causes of Timber Theft / Contributing Factors

Illegal logging which is a form of theft is expected to take place when motives, means and opportunities are present at the same time. A crime is likely to be committed by an offender when a motive is present, carry out

the crime with the acquired resources (means) and take advantage of (opportunity) available in certain circumstances, World Bank (2006)[5]. With this model researchers are able to grasp the contributing factors of illegal logging and standardize appropriate policy responses to address the factors. This can be attained by reducing the motives, eliminating means related to illegal logging and limiting opportunities World Bank (2006)[5].

In Nigeria, corruption is a serious subject that contributes greatly to illegal logging by companies and forest officials Global witness (2013)[13]. Illegal logging activities lead to the loss of timber value and because it is mostly done hurriedly it can result to damage to the soil and remaining trees which results in deforestation. Corruption has been observed at the level of government institutions, among the wealthy and powerful due to harvesting of forest resources. Pathetically, these are done mainly on the platform of short term economic benefits Effects of Deforestation (2010)[14]. Meanwhile lack of integrity in the judiciary to check illegal logging activities further promotes deforestation Transparency International (2011)[15].

Poverty is also a major factor in the issue of timber theft. The felling and burning of trees for fuel is as a result of this. Charcoal formed from the burning of trees is sold to make ends meet. In addition, cleared land is used as pasture for livestock, plantations of communities and settlements and the felled trees are also sold as timber Terminski (2012)[16]. The most populous country in Africa is Nigeria with the population rate of 206.1 million World Bank (2020)[17]. Sanusi (2011)[18] ascertains that about 70 percent (105million) of Nigerians are at the present living below the poverty line. A combination of increasing population and high level of poverty becomes a serious problem.

Poor agricultural practices as one of the causes of timber theft, Akinbami (2003)[19] shows that about 60% of Nigerians use firewood for cooking due of the high cost of kerosene .Ignorantly, some persons set fire on forests contributing to deforestation. Meanwhile FAO ascertains that between 2000 and 2005, developing countries from the tropics suffer most from deforestation. Slashing and burning also contribute to deforestation. Terminski (2012)[16].

2.3 Motives for Timber Theft

Some of the motives behind timber theft vary from one person to another as well from one region to another; meanwhile various reasons are identified by World Bank(2006)[5], Foreign exchange generation need, Poverty and lack of alternate income, No affordable fuel alternatives, Lack of access by local people to resources they need for livelihoods, and Indiscriminate international demand for timber. In addition, Low cost of illegal, Overcapacity in the wood processing industry, Difficulty in compliance to legal regulations (especially by small-scale producers/concession holders, communities, and private forest owners), Weak governance in parts or all of the country (that is, conflicts and war), Breakdown of institutional controls and lack of accountability of public officials, Lack of or weak recognition of customary rights (of local and indigenous communities), Inadequate inappropriate prescriptions for forest management and use (regulations), Lack of reliable and up-to-date information on forest resources and their use, Weak, poorly managed, and/or corrupt forest administration, Ineffective and/or corrupt law enforcement, Ineffective and/or corrupt judiciary, Poorly managed forest administration, Weak control of illegal exports in producing and/or imports in purchasing countries. *Source:* Modified from Puustjarvi (2008)[20] by World Bank (2006)[5].

2.4 Tragedy of the Common

In Nigeria for instance, there is an increasing pressure on the land resources basically as a result of the spike in the population rate as well as the economic problem that arises when every individual tries to secure the greatest benefit from the resource at the expense of others; a concept known as the “Tragedy of the Common”. According to ecologist Hardin (1968)[21] “the “tragedy of the commons” occurs when individuals act independently and rationally according to their own self-interest, and as a result, act against the interests of the whole community by depleting a common resource”. For instance, the cutting down and burning of trees has many negative externalities such as environmental pollution, global warming and extinction of wild

plants and animals. Every time a particular individual cuts or burns down a tree, the higher the probability that the next individual as well as the millions of others will partake in each of these negative externalities.

2.5 Timber Theft and The Environment.

Adeofun (1991)[22] explains that the degradation of the forest ecosystem has obvious ecological effects on the immediate environment which may also affect distant areas. For example agricultural plains or valleys may suffer flooding or drought because of their dependence on forest highlands for their water. Genetic damages of some important species of plants and loss of animals and insects can also be serious and possibly have a permanent effect. Some of the environmental effects are;

2.5.1 Soil Erosion, Wind Erosion

Soil erosion is one of the most noticeable forms of environmental degradation all over Nigeria today which is directly connected to deforestation which may be caused by several illegal logging and timber theft. Soil erosion is mostly caused by the action of water or wind through removal of vegetation cover such that all the physical protection offered by the vegetation is removed. With the rate of the population increase in the country, forest exploitation and removal of vegetation cover for several purposes has increased in intensity to the extent that soil erosion has become so pronounced in many parts of the country.

The Southern part of Nigeria now experience a lot of coastal and gulley erosion. This is due to the fact that these parts of the country have a lengthy duration and of course high intensity of rainfall which makes water erosion more prominent. The northern part of the country suffers erosion by wind which has ripple effect on environmental degradation. On the increase in this part of the nation is desert encroachment, excessive deforestation through timber theft leading to exposure of dry sandy soils to strong winds during the long dry seasons.

2.5.2 Climate Change in Nigeria

Okonji (2001)[23] explains that the forest resources exploitation has cause a serious problem on the environment. When the vegetative cover of the soil is removed, forest is destroyed, the soil is open to environmental actions of wind and surface runoff, and the topsoil will experience erosion and reduction of fertility which ultimately become less productive.

Surface air temperature increase had been detected in Nigeria by The meteorological data reported by UNSN (2001)[24] that surface air temperature for Kano, Calabar and Lagos has been on the increase since 1920, from between 0.250C to 0.50C for Kano and an increase of 0.25 0C for Calabar. is an One of the indicators that surface temperature is on the rise in Nigeria is the greenhouse gas emission. The surface temperature has a good correlation with greenhouse gas emission which may cause rise in sea level and also flooding, intrusion of salt water, mangrove degradation, coastal erosion and other related socio-economic problems. Meanwhile, the estimated land loss due to this sea level rise by 0.2m at present is 3,400m² and future prediction; say the next 50 to 100 years stand at 18,400m² for sea level rise of 1m Egwumah (2009)[25]. There has been evidence of drought, especially in the Northern part of the country, which have reduced agricultural productivity.

2.6 Undervaluing the Forest

Failure to assign appropriate value to forests lead to forest ecosystems degradation and abandoning of forest management, results in a consequent under provision of the required service, with substantial economic and social losses to society. When forests resources are undervalued, it predisposes it to being cleared which gains value only when they are cleared for obtaining legal title through 'improvement' for other land uses such as road construction, farming and industries.

Meanwhile where forest worth is well valued and appreciated, the predominant elements reported are only monetary values of commercial timber sales. Monetary value estimates often exclude the real worth of forest functions in protection of biodiversity, water and soils preservation, in capturing carbon, in provision of livelihood opportunities outside the formal monetary economy. Value is added to the forest through the extraction of non-wood/timber forest products but it is not economical when compared to clearing options. If

the benefits from the environmental values could be paid for by deforestation agents, then the option to not clear or steal logs would become more competitive.

2.7 Macroeconomic Variables, Market Failure and Deforestation in Nigeria

Market failure according to Ume Chukwuma Otum (2017)[26] "For an invisible hand to guide private actions toward the social good, a number of conditions must be met. When those conditions are not met, economists say that there is a market failure – a situation in which the invisible hand pushes in such a way that individual decisions do not lead to socially desirable outcomes" Two sources of market failure that is of paramount importance in the issue of deforestation are: **externalities** and **public goods**.

Externalities are effect of a decision on a person or group besides the original person or persons taking the decision that is not taken into account by the decision maker. Deforestation is not all negative. There are possible positive and indeed negative externalities associated with deforestation. Every decision to deforest through timber theft is motivated by so many factors including the need to satisfy an economic want. When the negative externalities outweigh the social benefit, then deforestation becomes unnecessary. (In other words, the marginal private cost will be below the marginal social cost). However, assuming there are no externalities in deforestation (although there are always externalities from any act of deforestation), the marginal private costs and benefits, represents the marginal social costs and benefits. At that point, the society is as well off as possible for any deforestation. Therefore, the aim is to attain a situation where marginal social benefit of deforestation will be above or at least equal to the marginal private benefit.

The second is the issue of **public good**. The forest is often regarded as a public good. However, there is a problem of considering the forest as a public good (enjoyed by many people without diminishing its value to others); the forest can be totally depleted. Hence, the need for a sustainable use of the forest resources, since there is always an opportunity cost for deforestation.

Apart from population growth and poverty as part of the causes of timber theft as discussed earlier, two other macroeconomic variables are of particular important: the **unemployment rate** and **inflation rate**. The unemployment rate determines how the labour market and indeed the nation's economy will fare. The unemployment rate can be defined as the number of people who are willing to work given the dominant wage rate, but cannot be employed. A high unemployment rate reflects a weak economy. This is why concerned governments strive at keeping her employable citizens employed. Failure to do this will push her citizen to taking up livelihood strategies that put so much pressure on the natural resources (forest resources inclusive) through any means possible. International statistics reveal that rural and urban youths living in developing regions account for about two-thirds of the unemployed Patterson et al (2006)[27]. Its result on food production and deforestation is an issue to deal with. Martin et al (2011)[28] discovers that in areas that are rural or semi urban with abundant forest trees and produce (agricultural zones), the forest was readily available/accessible to be explored and exploited by locals and foreign organizations, Also Egbewole (2011)[29], Rademeyer (2012)[30] finds the activities of illegal traders of forest produce worrisome through the aid of foreigners who are in need of rare and hard species of woods for European and American markets, the resultant of it being the excessive destruction and felling of trees on communal and individual farmlands. The second macroeconomic variable is inflation. This is the general increase in the price of goods and services of a country. One of the most concerns of the government and policy makers is inflation because when there is a consistent rise in the price of goods and services in a country, it erodes the value of money. Individual citizens that depend on wages and salaries will not be able to cope with rising cost of living. When this pressure is maintained, it tends to have similar effect of high unemployment rate on a country. This will also move the citizens to fall back on the natural resources. For examples, an increase in the cost of gas (cooking) being bought by citizens could lead to such citizen falling back on alternative source (fuel wood etc.)

2.8 Challenges of Forest Reserve Protection

Challenges of forest reserve protection ranges from lack of political will from the government and lack of effective supervision, coordination and enforcement of forest legislations, inadequate funding, dilapidated

office for officers, scarce manpower, lack of necessary equipment by officers to carry out their duties and capacity building, revenue generation emphasis by government as against biodiversity conservation, conspiracy of forestry officers, village heads and chiefs with merchant timber loggers. In addition, little or no public awareness of the existence of forest reserve, traditional rulers lack of cooperation, and lack of technical skills in the management of forest resource.

Adetula (2008)[31] highlighted some challenges that poses grave threat to sustainable forest management examples are out-dated forestry laws and regulations, illegal forest activities, decline in manpower, inadequate forest patrol, lack of returns from timber felling accruing to local people, and population pressure leading to increased clearing of forest land for cultivation of arable and tree crops.

According to Ikuomola et al (2016)[32], most illegal felling of trees is done at night, however forest guards complained that they are just like 'boys scout', that their guns are less sophisticated, 'patrol vehicles are not enough and the few ones they have are not in good state', which makes the work boring to pursue forest criminals in and out of the forest.

World Bank (2005)[33] established that firstly, forest management is non-existent and because of this the forests, even in the reserves, are degrading. Secondly, Nigerian forest sector current revenues are minimal because fees set are arbitrarily low and do not reflect the real market price of timber. Thirdly, low timber prices and low fees, coupled with protectionist policies, such as the import tax and the log export ban, this means that the wood industry is inefficient which results in more demand for wood that is met through illegal means. Fourthly, there is no relationship between forest planning, forest management, and the revenue system. Lastly, there is a gap of knowledge in the area of appropriate policies for Nigeria, particularly fiscal policies. Of course, lack of an appropriate forest fiscal policy and forest management system in place will inevitably be unsustainable, with low benefits to the communities, states and country at large.

In transforming the forestry sector, World Bank (2005)[33] highlighted critical issues:

- Creating and funding effective forest management systems ruthlessly in every state;
- Reformation of the forest revenue system on a state-by-state basis;
- Refining the legal and regulatory framework governing the management of forest land;
- Restructuring of the private sector wood industry to guarantee economic sustainability and viability;
- Developing alternative employment opportunities for the most threatened communities.

3. CONCLUSION

Forests resources remain undervalued which predisposes it to being cleared. Some of the causes of timber theft highlighted are poverty, corruption amongst others. Meanwhile, degradation of the forest ecosystem through timber theft has obvious ecological effects on the immediate environment ranging from soil erosion, wind erosion to climate change which also affects distant areas. With the forest often regarded as a public good, it is a great problem because it means that it can be enjoyed by many people without diminishing its value to others which can eventually lead to its total depletion. Hence, the need for a sustainable use of the forest resources, since there is always an opportunity cost for deforestation.

4. RECOMMENDATIONS

- a) Forestry Department should review some of the forest laws and embark on community based forest management system.
- b) The government should provide financial support for forest officials in order to meet communication and transportation needs of the officials in carrying out work effectively.
- c) Issues of enforcement of forestry law and legislation enforcement should look into by the government.
- d) Actual Value of Forests goods should be attached to the prices.

- e) Investment in Extension Training and education of stakeholders by forestry management should be emphasized this will in preventing and reducing environmental effects of timber theft.
- f) Increase Investment in Research activities and passing across information to the community about forests management.
- g) Proper documentation of offences committed by illegal loggers to aid further research by the forestry researchers.

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