

**PUBLIC PERCEPTION OF THE EFFECT OF DEFORESTATION IN APA LOCAL
GOVERNMENT AREA, BENUE STATE, NIGERIA**

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Abstract:

The study was conducted to evaluate the public perception of the effect of deforestation in Apa Local Government Area of Benue State, Nigeria. The objective of the study was to assess the public perception on the risk of deforestation in the area. Structured questionnaire and Key Informants Interview (KII) were used to collect primary data for the study. Six council wards were purposively selected for the study; 146 household were selected using systematic sampling technique to administer the questionnaire. The data were analyzed and presented using descriptive statistics. The results show that majority of the respondents perceived that extinction of indigenous trees are the most noticeable effects of deforestation. The results further indicate that logging is predominantly the causes of deforestation in the area. The study further discovered that awareness on environmental education should be the appropriate strategies to curb deforestation practices; massive awareness campaign leading to forest life support, preservation of flora and fauna diversities and sustainable use of biological resources ecosystem. Based on the findings, the study recommended that since logging and agricultural activities were identified as the primary cause of deforestation, Government and NGOs through extension agents should educate farmers to adopt system that bolster sustainable conservation leading to forest and environmental protection.

Keywords: Deforestation; Effect; Environment and Perception.

Introduction

Deforestation can be defined comprehensively to incorporate the change or the conversion of a natural forest to a non-forest for purposes of agricultural services and developments (Gimah and Bodo, 2019). Deforestation results from the removal of trees without sufficient replacement, which leads to reduction in habitat, biodiversity as well as wood and quality life (Mfon et al, 2014). Forest is known as habitats and shelters to millions of species. However, the tress on our planet is being depleted at every fast rate. According to some estimates, more than 50 percent of the cover has disappeared due to human activity. This removal of forest or tree from a land and converting it for non-forest use is called deforestation (Barraclough and Ghimire, 2010). Deforestation occurs because of many reasons. Trees or derived charcoal are used as fuel or sold as commodity. Forest provide a wide variety of highly valuable ecological, economic and social benefits such as carbon storage, soil and water conservation, provision of employment, enrichment of systems and improvement of urban and rural living condition. Clearly, these services differ broadly in nature and therefore need to be valued in different manners by different social groups (FAO, 1999).

The Amazon is widely known natural rainforest in the world. It has been in existence for the past 10 million years. New species continue to be discovered daily. It is home of over 390 billion trees. Since 1970s, the government led a massive advertisement for cheap land, and migrants from Italy plus some members of the local community descended on the forest in droves to established settlements. Infrastructural development also contributed to the growth of deforestation in the region (Wolosin et al., 2018).

According to the United Nations Framework Convention on Climate Change (UNFCCC), (2010), the overwhelming direct cause of deforestation is agriculture; with subsistence farming responsible for 32%, Logging 14% and firewood removal making up to 5%. Over the last three decades, deforestation has reached record levels globally (Hansen et al., 2013). During the 1990s the world annually lost millions of hectares natural forest. “Estimates by the Food and Agricultural Organization (FAO, 2011) are that the tropics lose more than 10 million hectares of forest cover annually. Although human have practiced deforestation since ages, it was in the mid 1800s that the forest began to be destroyed at an unprecedented rate (FAO, 2010). The higher rate of deforestation is found in tropical rainforest, trees cover 31% of the planet surface. One-third of the forest cover that existed before agriculture was developed has been lost, with the previous century accounting for half of that loss (Betts et al, 2022).

In Africa almost all countries rely on forest to meet basic needs, the share of wood fuels in African primary energy consumption represents on average 86% of total African energy consumption (Amous, 2010). The forest cover in Africa was destroyed through the problems of deforestation which is hugely contributed to the encroachment of the Sub Saharan Desert in the region. In Africa, deforestation is both an environmental problem, human right and social problem. The act of deforestation deprives the rural African communities of their important sources of livelihood. Poor rural communities depend on the forests for their medicinal value, shelter and food. The 10% of the economies of Ghana and Cameroon are reliant on forest. Logging operations in the African continent particularly in the Central African Republic have been mentioned as the largest contributor to the deforestation. Trees are indiscriminately cut to provide raw materials for furniture and other uses. The companies that are engaging in logging activities in the continent and the country do so through efficient machines and labor intensive operation that only remove the trees but they also remove any vegetation that was originally in the earth surface. Mining activities especially in the Central African Region and the Congo Basin have largely contributed to the problems of deforestation (FAO, 2010).

Forest in Nigeria occupied about 110,890 km² of the country total mass of about 910,770 km² this indicated that, forest is about 12.18% of vegetation cover of the country (Mfon et al., 2014). Environmental degradation such as desert encroachment, erosion, flooding and drought to mention few all have strong link with deforestation. In Abaji Area council escalated soil erosion, flooding, drought and increase in aridity, all which have strong relationship with deforestation has affected the agricultural productivity in the area (Oghenero et al., 2022). According to FAO

(2005), Nigeria had the highest rate of deforestation in the world between the years of 2000 to 2005. The country lost 55.7% of primary forest and an annual loss rate of 3.5%. Between 1990 and 2005; Nigeria lost 35.7% of forest land due anthropogenic activities without any concern about the outcomes (FAO, 2005).

Regional breakdown of deforestation from 1979 to 1995 shows that total forest declined by 48% in the North Central 7% in the North East, 60% in the North West, 53% in the South East, 13% in the South South and 12% in the South West (FORMECU 1996). Despite of its importance, the natural tropical high forest has continue to diminished rapidly in the African continents, thus dwindling sustainable forest management (Amadi et al,2021). 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 serious measures are taken, most humid tropical forest land area in Africa could be transformed into unproductive land and deterioration of the savanna into desert will be accelerated (Hunter et al, 2005). It is very crucial to understand the significant important of forest as a natural resources in order to save the nature from anthropogenic activities so as to sustain our vegetation cover and rural development effort. This study therefore, sought to assess the public perception on the effect of deforestation in the study area. The objectives of the study are to: examine the causes of deforestation in the study area, identify the level of public perception on the effect of deforestation and lastly to determine the possible strategies to curb the deforestation activities in the study area.

Study Area

APA LGA is in North-Western part of Benue State. The LGA is located on Latitude 7°20' North to 7° 50' North of the Equator and Longitude 7° 40' East to 8° 10' East of the Greenwich Meridian. It is bounded to the North by Agatu LGA, Otukpo LGA to the south, Gwer-West L. G. A. to the East and Olamaboro L. G. A. of Kogi State to the West (Jande and Amonjenu, 2018). The L. G. A. has its headquarters at Ugbokepo and it consists of 11 council wards. The L. G. A. has a population of about 146,138 people (projected to 2023) and a land area of about 995 Km² (National Population Commission, 2009).

Climatically, the State belongs to the Koppen's Aw climate group and experiences seasonal wet and dry seasons. The rain falls for seven months from April to October with total annual amount ranging between 12,000-20,000mm while dry season sets in November and ends in March (Ikpe et al. 2013). Temperatures are constantly high averaging between 28-32°C and sometimes rising to 37°C. The vegetation still possesses relics of the guinea savanna with coarse grasses and numerous species of scattered trees. Dense forests are very few and far apart in the State and exist either as gallery forest, village forest or forest reserves (Terwase and Terese, 2013). Agriculture forms the backbone of the LGA economy, engaging more than 70% of the population. The LGA has an advantage of being located across both the forest zone where tree crops are grown and the savanna where mainly grains are cultivated (Ikpe et al.2024).

Apa LGA is called “the green land” of Benue State because of its huge agricultural potential. The area is endowed with rich fertile lands, which encourage variety of arable crops such as yam, rice, cassava, guinea corn, maize, groundnuts, beniseed, pepper, cowpea, e.tc. Crops such as vegetables are produced on smaller scale during the dry season (Jande and Amenjadu,2018).

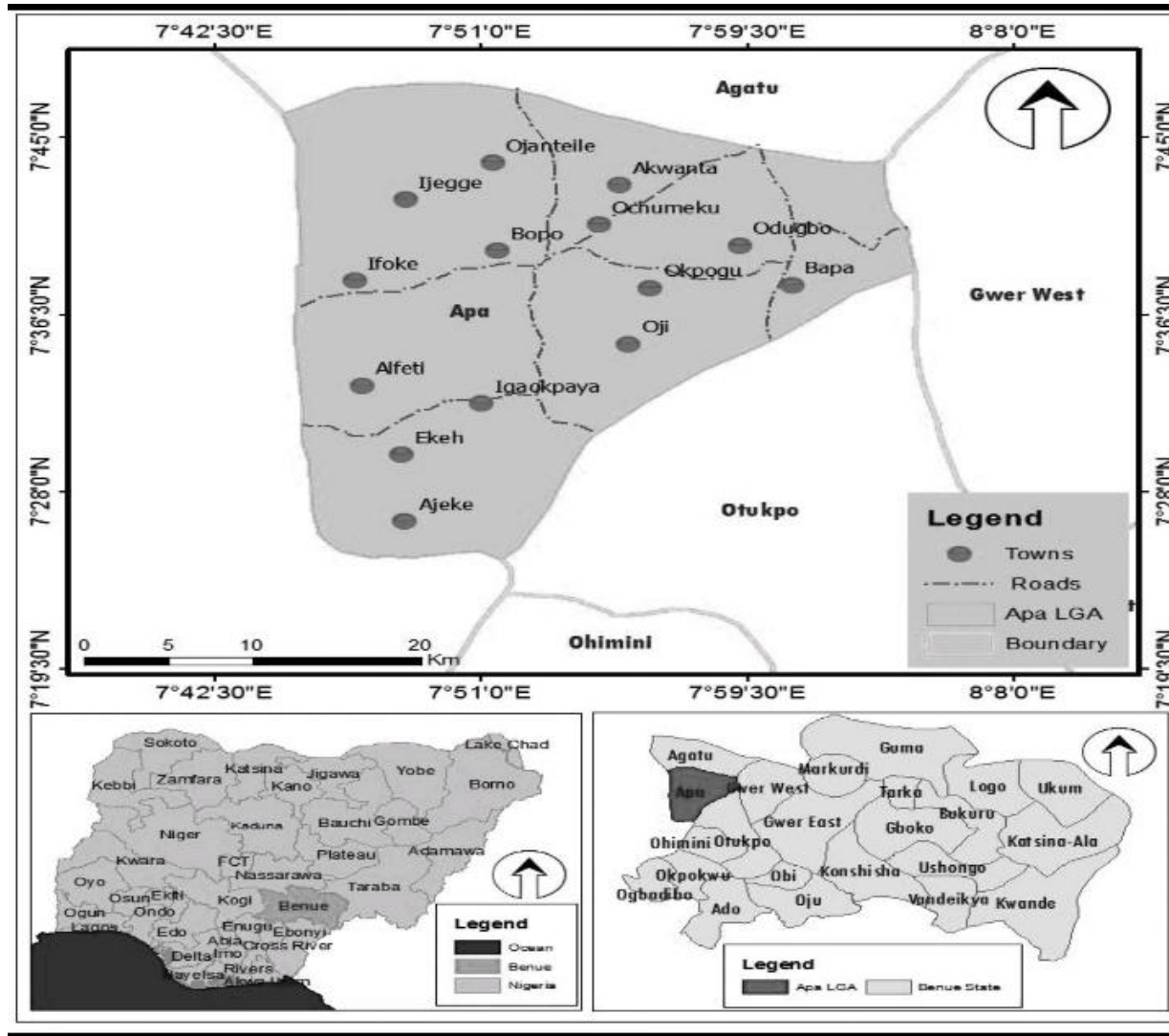


Fig 1: Map of the study Area in Benue State, Nigeria

Methodology

Primary and secondary data were sourced and used in this research. Six wards (councils) among eleven were purposively selected base on the proximity of the wards to the forest where deforestation activities are practices. Systematic sampling technique was used to select every 10th household in an area, representing 10% of the total number of the respondents in the neighborhood out of six purposively selected districts of APA LGA, hence represent the whole

study area. The data collected include: Causes of deforestation, level of awareness of the effect of deforestation, public sourced of information to the effect of deforestation, public perception to the effect of deforestation and mitigation measures to curb deforestation practices in the study area.

Table 1: Number of Household and sample taken

S/N	Wards	No of Houses in the Community	No of Sample taken 10%
1	OJANTALLE	378	38
2	IKOBI	207	21
3	EDIKWU II	152	15
4	AUKE	251	25
5	OBA	292	29
6	IGORO	182	18
TOTAL		1462	146

(Field Work, NPHC. Apa LGA, 2021).

The data for this study were sourced through questionnaire administration, one questionnaire was given each household and 146 copies of questionnaires were administered in APA LGA using systematic sampling technique (every 5th household were selected along a street in the area). Interviews were conducted with the Department of Agricultural and Natural Resources APA Local Government Area, out of the 146 copies of questionnaires administered, 142 were successfully retrieved, hence valid for the analysis. Descriptive statistics was applied in the analysis of the findings using simple percentage, tables, pie chart and histogram.

Results and Discussion

Table 2: level of public awareness on the effect of deforestation

Level of awareness	Respondents	Percentage
I am aware	109	77
I am not aware	33	23
Total	142	100

Sources: Field work

Table 2: indicate that 77% of the respondents are aware about the effect of deforestation to the environment this is due to the advancement in social media which bring easy circulation of information among the public. Also 33% of the respondents are not aware about effect of deforestation in the study area. This study disagreed with the findings of UNESCO - UNEP (1989) which stated that people lack knowledge of the happenings in their environment and the possible problems they might encounter in the process of interaction with their immediate surroundings.

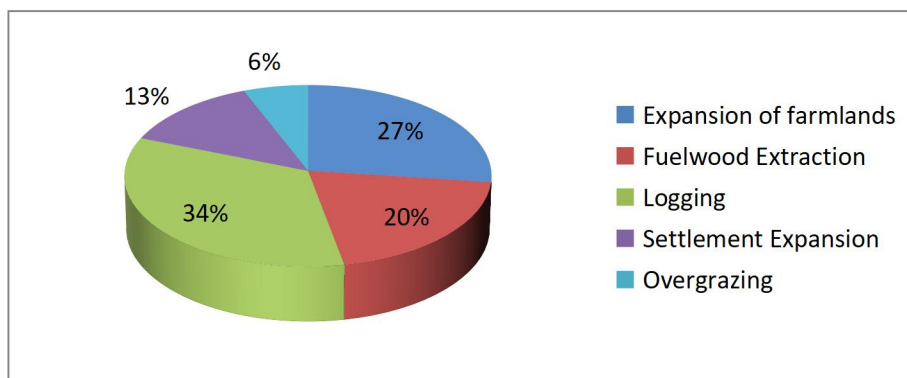
Table 3: Public source of information on the effect of deforestation

Sources of information	Respondents	Percentage
Radio	43	30
Television	14	10
Newspaper	9	6
Extension officers	18	13
Social Media	31	22
Other Sources	27	19
	142	100

Sources: Field work (2024).

Table 3: indicated that 30% of the respondents sourced their information of the deforestation effect through radio, this because radio is the easiest local means of receiving information especially in a local community. The finding also revealed that 22% of the respondents acquired their information through social media due to the modern used of smart phones which trigger speedy circulation of information among public members. The study furthered discovered that some of the respondents received effect of deforestation information through extension officers, television and newspapers having the percentage of 13%, 10% and 6% respectively. This indicate that there is poor representation of extension officers in delivering information related to deforestation and its effect in the study area, consequently about 27% of the respondents sourced their information through other means of information, this may be either in religious centers, schools and other business hubs.

Figure 2: Causes of deforestation



Sources: Field work (2024)

Figure 1 Reveled that cutting trees for logging activities is the highest cause of deforestation in the study area with 34%, this indicated that the respondents majorly engaged in timber production as sources of income, this study contradicts with the findings of Bzugu et al. (2019) which reported that fuel wood extraction is the major cause of deforestation in the study area. The study also shows that fuel wood extraction significantly contributed in deforestation practice

with 20% of the respondents, this implies that public in the study area used firewood and charcoal as their major sources of energy for domestic purposes. This is in line with the work of Mustapha et al. (2012) who discovered that lack of alternative to charcoal and fuel wood could promote the effect of deforestation in the area. The study furthered discovered that 27% of respondents believed that expansion of farmlands are among the leading factor that contribute deforestation practice in the study area, this due to the fact that majority of the residents are famers and with the increased in of population and high inflation rate the demand of farmlands is imminent leading to serious deforestation activities. This correlates with the findings of Wuyep et al. (2020) which stated that agricultural expansion are the leading cause of deforestation in Jos East, Plateau State. Furthermore, the respondents indicate that settlement expansion and overgrazing are least contributors in deforestation activities in the study area with 13% and 6% respectively.

Figure 3: Effect of Deforestation

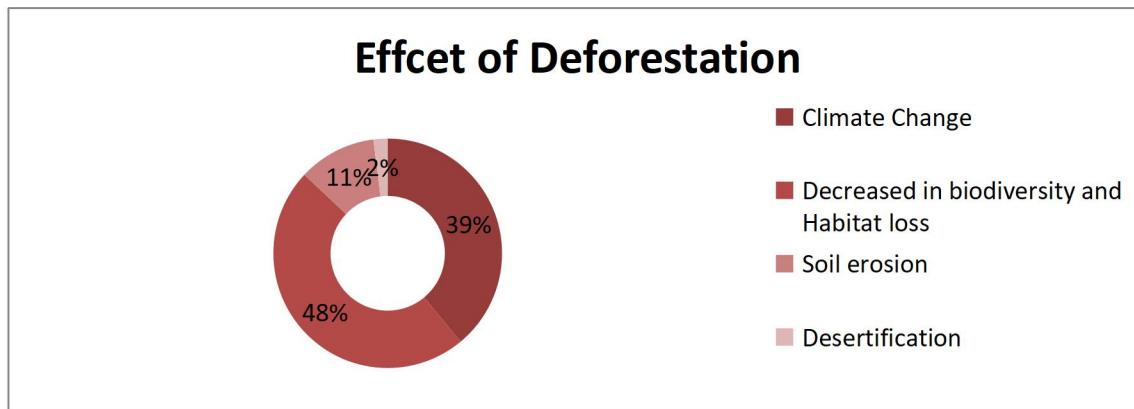


Figure 3: interaction of the respondents regarding to the effects of deforestation indicated that decreased in biodiversity and habitat loss account for 48%, this is due to the deforestation practice which lead the residents to clearly observe the consequences of deforestation practice in the study area. This finding is in alliances with the work of Mfon etal. (2014) which reported that several plants and animal species have been over exploited especially those with edible seeds, nuts and kernels and most primitive such as guenons, chimpanzee and gorillas are now endangered. Gimah and Bodo also reported that humans are currently destroying the natural habitats at a rate that exceed the level at which most species and communities can survive. The study also discovered that climate change rank as the second effect of deforestation with 39%, this shows that residents experience significant sign of change with low agricultural productivity yearly and continuous decreased in soil fertility. This finding is agreed with Federal Ministry of Environment (2010) which shows that Nigeria with current deforestation rate of 1.3% emission of green house gasses are expected to increase from 9.5 Mtc/year in 1990 to about 15.5 Mtc/year in 2030. The respondents furthered believed that soil erosion and desertification are also among the causes of deforestation in the area with the 11% and 2% respectively. The work of Hartemink

(2006) shows that soil erosion has an impact on agricultural production negatively by depleting nutrients needed for plants growths. Charkravarty et al. (2014) also reported that dry forest zones and land degradation has become an increasingly serious problem resulting in extreme cases of desertification.

Table 4: Mitigation measures to curb deforestation

Mitigation measures	Respondents	Percentage
Creating forest extension service	21	15
Improve level of awareness	35	25
Imposition of forest guard	13	9
Afforestation program	24	17
Provision of substitute to fuel wood consumption	49	34
Total	142	100

Sources: Fieldwork (2024).

Table 4: Shows community response regarding to mitigating measures to curb excessive deforestation in the study area, 30% of the respondents believed that provision of energy consumption that substitute fuel wood extraction are the most appropriate strategy to reduce deforestation practice, this is due to the poverty level of most the residents that normally used charcoal and fuel wood for energy consumption, this findings is disagreed with the work of Amadi et al. (2021) who discovered that educating community on effect of deforestation is the most proper measure to curb deforestation in Michika LGA of Adamawa State. The interaction of the respondents also revealed that improving the level of awareness account for 25% followed by introduction of afforestation program with 17%. The study furthered indicated that creating forest service extension and imposition of forest guard account for 15% and 9% respectively. Nzeh (2012) suggested that services offered by forest extension workers to rural households that are engaged in forestry should be strengthened through the frequent training as it would reduce the rate and impact of deforestation on the environment.

Conclusion

Deforestation is a problem that affects man and his immediate environment including the socioeconomic activities as well as overall community development, in conclusion, this study has revealed a significant gap between the public perception on deforestation effects and the actual severity of its causes. While majority of the respondents acknowledged the importance of forest and expressed concern about deforestation, many underestimated its consequences on biodiversity and habitat loss, climate change, soil erosion, desertification and human well-being. The findings highlighted the need for provision of alternative to fuel wood consumption and increased awareness or educating the public on devastating effects of deforestation as well as

importance of introducing the afforestation program in order to protect the environment and the community from serious danger by excessive deforestation.

Recommendations

Based on this study on effect of deforestation in APA Local Government Area of Benue State, the recommendations are as follows:

- Since logging and land expansion for agriculture has been identified as the major causes of deforestation in the study area, Governments through extension agents should educate farmers to adopt system that bolster sustainable conservation leading to forest and environmental protection.
- Efforts should be made in educating the community especially rural communities about their immediate environment and the challenge, this where the environmental education evolve by creating massive awareness about the total environment and its associated problems.
- Government policies should be focus towards advocating massive campaign on tree plantation by providing an atmosphere that will encourage afforestation leading to forest life support, preservation of flora and fauna and sustainable use of biological resources.
- Poverty encourage deforestation leading to environmental degradation, effort should be made to checkmate basic need to address deforestation practice by community members, this can be achieved through the poverty alleviation programs and intervention by governments and NGOs couple with providing basic and critical infrastructural facilities such as electricity, subsidize cooking gas and kerosene, road and portable water which will provide more jobs to the communities.

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