



ASSESSMENT ON FOREST OFFENCES IN NORTH-CENTRAL ZONE OF BENUE STATE, NIGERIA

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ABSTRACT

This study was carried out to assess forest offences in North-central zone of Benue State. Purposive sampling and complete enumeration were applied in data collection. Descriptive statistics, Likert scale and analysis of variance (ANOVA) were used to analyze the results. The result revealed that illegal felling (88.9%), poaching (70.4%), bush burning (85.2%), farm encroachment (81.5%), cattle grazing (81.5%) were identified as the major types of forest offences. Poverty (70.4%) had the highest proportion of causal factors responsible for forest offences. This was followed by unemployment (85.2%), ignorance (66.7%), while the least was high cost of permit (22.6%). The result also showed that extinction of flora and fauna (77.8%), land degradation loss of revenue (77.8%), loss of revenue (74.1%) and decline of timber species (74.1%) were the major impacts of forest offences in the North-central Zone of Benue State. Impact of forest offences on the conservation of biodiversity in the study was high with mean values between 3.78 to 4.00. while the analysis of variance showed no significant difference between the variables considered. The challenges faced by respondents on forest offences were: fines with highest value of 81% followed by conservation education (77.8%), high cost of permit (74.1%), low awareness (74.1%), prosecution of offenders (70.4%), government policies (51.9%) and inadequate personnel (66.7%). The study concludes that forest offences are prevalent with high impact in the study area. Also, poverty and unemployment were identified as the major causative factors. Hence, the study recommends enforcement of forest legislations and effective governance of forest of forest resources. It also recommends that deliberate efforts should be made by government and private organisations toward awareness, poverty reduction and job creation to reduce negative impacts on forest resources in the study area.

Keywords: Forest offences, Conservation, Sustainable forest management

INTRODUCTION

The contributions of forest to rural livelihood and economic development cannot be over emphasized. Forests in Nigeria are recognized as a formidable base sustaining the economy of the country and the livelihood of the rural populace (Anderson, 2006). The forests provide the raw materials for both primary and secondary industries while generating employment for a sizeable number of the people; they are a repository of the genetic diversity which is crucial to improvements in agriculture and medicine, as well as the sustained supply of products and raw materials to industries. It is estimated that 90% of

the world's poor depend on forests for at least a portion of their income, and in Africa, 600 million is estimated to rely on forest and wood lands for their livelihoods (Anderson, 2006).

However, the increasing incidence of forest offences is serious threat to forest resources management (Adedayo and Oyun, 2010). Incidences of forest offences have put a varying degree of threat to forest conservation and tree planting in Benue State. It has been observed by Akachukwu (2005) and Oso *et al.* (2017) that forest offences such as illegal logging, poaching, bush burning, encroachment of forest reserves

through farming and construction are some of the forest offences that impact negatively on forest areas, leading to the destruction of valuable flora and fauna. They also noted that these crimes have significant adverse effect on the ecosystem, livelihood and country's economy. Their degradation, unsustainable and illegal exploitation, total or partial conversion to non-forest uses is leading to changes in land cover and land-use, negative environmental changes such as desertification, drought, insufficient food and fuel wood supply, wind and water erosion, decreasing soil fertility, reduced yield and loss of biodiversity (World Bank, 1991; Butler et al., 2007; Agera, 2009). According to Benue State Gazette (2010) on regulation forest resources, forest offences constitutes illegal taking and/or possession of forest produce, destruction of forest, farming, fishing, hunting, use of fire at unauthorized times and places or without adequate steps to prevent it from spreading, and unauthorized residence in forest reserves, which are at variance with the aims of sustained yield management of forest acts. This is due to ignorance, lack of alternative sources of livelihood, the seemingly lucrative nature of illegal acts as a result of the profits made on illegally obtained forest produce without adverse consequences, unethical standards in the society, and inadequate penalties on offenders (Adeyolu, 1975; 1986; Udo, 1997; Ozo-Eson, 2001, Enefiok *et al.*, 2009). According to Hummel (1984), forest laws are made primarily to prevent the misuse of the forest and protect the rights of individuals and the general public in matters of access. They also serve as an agent for development and as an incentive for good forest management. Thus, forest resources must be protected from illegal activities that are not compatible with forest sustainability (Halley, 1998).

Although, poverty and unemployment are considered as the underlying causes of forest offences, it is argued that poor people living adjacent to forest areas fall back on forest resources for their livelihood (Ahmed, 2008). Timber thefts are mostly committed to satisfy the demands local people for fuel wood and are often driven by poverty and the drive to sustain livelihood (FAO, 2010). According to World Bank (2006) forest crimes are directly linked to poverty and weak forest governance which is inextricably tied to poor governance in society.

For instance, public servants may approve illegal contracts with private enterprises and private commercial corporations on the other hand may harvest trees of species protected by law. Individuals and communities may enter public forests and illegally take products that are public properties (Oso *et al.*, 2017). Ignorance is also said to be a cause of forest offences because lack of sufficient education leads people to wanton destruction of forests due to lack of awareness on the environmental benefits of these resources. Also, when unemployed people cannot find alternative means of livelihood other than extracting resources from the forests it results to unsustainable use. Although, ignorance of the law is not an excuse for breaking the law, knowledge of the law enlightens people, thus, helping to check offences. This therefore puts pressure on the forest resources, which is ultimately causing degradation of forests.

Unauthorized activities within constituted forest reserves, unauthorized timber harvests that exceed harvesting limits, use of corrupt means to gain access to forests, violations of applicable laws, and large-scale fraudulent practices do a lot of havoc to sustainability of the forest estates. These unauthorized activities in the forest sector are often due to failures in forest governance, weak institutions, or lack of law enforcement (Contreras-Hermosilla, 2002; Irland, 2008; WWF, 2002; Oso *et al.*, 2018).

It therefore follows from the forgoing that because the forest and its resources are of extreme importance to man, it must be well protected from destruction and its use must be properly regulated to prevent abuse and miss use. This will go a long way in helping to ensure continuous availability of forest resources for the use of the people. This study sought to identify the type of forest offences, causes of forest offences, examine impact of forest offences on forest conservation, and identify the challenges faced in checkmating forest offences in the Northcentral zone of Benue State.

MATERIALS AND METHODS

Study Area

The study area is located within Benue North Central comprising seven Local Government Areas (LGAs) of Benue State, with a sub-humid tropical region with mean annual temperature

ranging from 23°C to 34°C, and is characterised by two distinct seasons: the dry season and rainy season which lies within seven (7) months between May/June and September/October, (Olagunorisa and Tersoo, 2006). The relative humidity is high all the year and generally above 80% during the wet season and ranges between 60% and 80% during the dry season. The average maximum daily temperature varies from 28 °C in the rainy season to 32 °C in the dry season (Nyagba, 1995). The Northcentral zone of Benue State is inhabited with people of diverse occupational demography such as Agriculture, Trading, Pottery, Hunting, Fishing, Driving, Teaching and Civil Services among others.

Population and Sampling Procedure

The study was carried out in Benue North Central which constitutes seven selected LGAs such as Buruku, Gboko, Guma, Gwer, Gwer-west, Makurdi and Tarka in Benue State. The target population comprised Forest Officers, Rangers, Range officers, and Technical and Administrative staff. Both purposive sampling and complete enumeration were used to obtain data. In each of the seven LGAs all the staffs in the Forestry Department were sampled.

Data Collection

Data was collected from two sources: the primary and the secondary sources. The primary sources included questionnaire, personal observation enquiries. The primary data was collected with the use of well-structured questionnaire with interview. In Gboko LGA three questionnaires were administered to three staff (1 forest officer 2 technical staff), eleven in Makurdi (5 forest officers, 3 range officers, 2 technical staff and 1 ranger) two in Buruku (1forest officer and 1 ranger), two in Tarkaa (1 forest officer and 1 ranger), three in Gwer west(1 forest officer and 3 rangers), four in Gwer (1 forest officer, 1 technical staff, and 2 rangers) and two in Guma (1 forest officer and 1 ranger) respectively which made it a total of thirty-one copies of questionnaire.

Data Analysis

Data analysis employed in this study involved non-parametric test using appropriate statistical tools. Frequency analysis, percentages, tables, and bar graph were used to analyze the data. To compute the impact of forest offences impact on conservation of forest offences. The 4-point rating scale was graded as High = 4; Moderate = 3; Lower = 2 and No impact = 1. The mean score of respondents based on the 4-point rating scales is given as:

Table 1: Rating scale of the impact of forest offences in the study area.

Nominal value	Scaling statement	Boundary line
4	High	3.50 – 4.49
3	Moderate (M)	2.50 – 3.49
2	Low (L)	1.50 – 2.49
1	No impact (VL)	0.50 – 1.49

RESULTS

Socio-economic Characteristics of respondents in the Northcentral Zone of Benue State

The result of the socio-economic characteristics of respondents is presented in Table 1. The socio-economic variables studied were: age, gender, educational status and occupation. The age of respondents indicated that 33.3% was between the age bracket of 41-50 years, 29.6% fall between 31-40 years, 22.2% between 18-30 years, while the lowest population of 14.8% was from 51 years and above. For gender, greater population (55.9%) of the respondents were male while 40.7% were

female. Based on marital status, higher proportion of respondents (85.2%) were married while 14.7% were single. In terms of educational status distribution of respondents, a higher proportion of 74.1% had tertiary education. This was followed by those with secondary education with 14.8%, primary education 7.4% while only 3.7% had non-formal education. Based on cadre of service, the result recorded that 37% of the respondents interviewed were technical staff, 25.9% were Forest Officers. 14.8% were administrative staff, while Technical and Forest Guards were 11.1%, respectively.

Table 2: Social-economic characteristics of respondents in the Northcentral zone of Benue State

Location	Frequency	Percentages
Age		
18-30	6	22.2
31-40	8	29.6
41-50	9	33.3
51 above	4	14.8
Total	27	100.0
Sex		
Male	16	59.3
Female	11	40.7
Total	27	100.0
Marital status		
Married	23	85.2
Single	4	14.8
Total	27	100.0
Educational status		
Primary	2	7.4
Secondary	4	14.8
Tertiary	20	74.1
Non formal	1	3.7
Total	27	100.0
Cadre of service		
Forest officers	7	25.9
Technical	10	37.0
Forest guard	3	11.1
Rangers	3	11.1
Administrative staff	4	14.8
Total	27	100.0

Types of Forest Offences Committed in the Northcentral zone of Benue State

Table 2 shows that illegal felling (88.9%) had the highest proportion, followed by bush burning

(85.2%), cattle trespass (81.5%), farming encroachment (85.5%) construction on forest land (74.1%), while poaching (70.4%) was the least.

Table 3: Types of Forest Offences Committed in the Northcentral zone of Benue State

Offences committed	Frequency	Percentages (%)
Bush burning	23	85.2
Cattle trespass	22	81.5
Farm encroachment	22	81.5
Illegal felling	11.1	88.9
Poaching	19	70.4
Construction	20	74.1

Causes of Forest Offences in the Northcentral zone of Benue State

The result on the causes of forest offences revealed that unemployment is major cause of forest offences in the study area as revealed by

(85.2%) of the respondents followed by poverty (70.4%). Others include ignorance (66.7%), while high cost of permit was the least cause of forest offences with 25.9%.

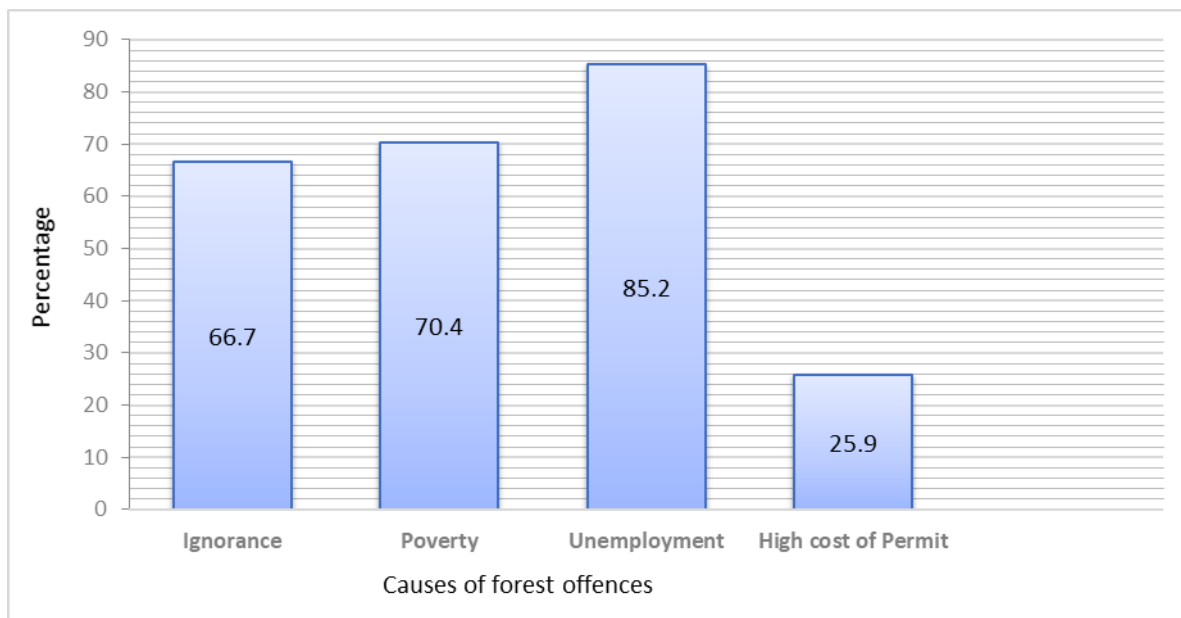


Figure 1: Causes of forest offences in the Northcentral zone of Benue State

Impacts of Forest Offences in Northcentral zone of Benue State

Figure 2 shows the result of the impact in forest offences on the Northcentral zone of Benue State.

Thus, 77.8% of the respondents indicated that extinction of flora and fauna and land degradation are the major impacts. This is followed by loss of revenue 74.1% and decline of timber species.

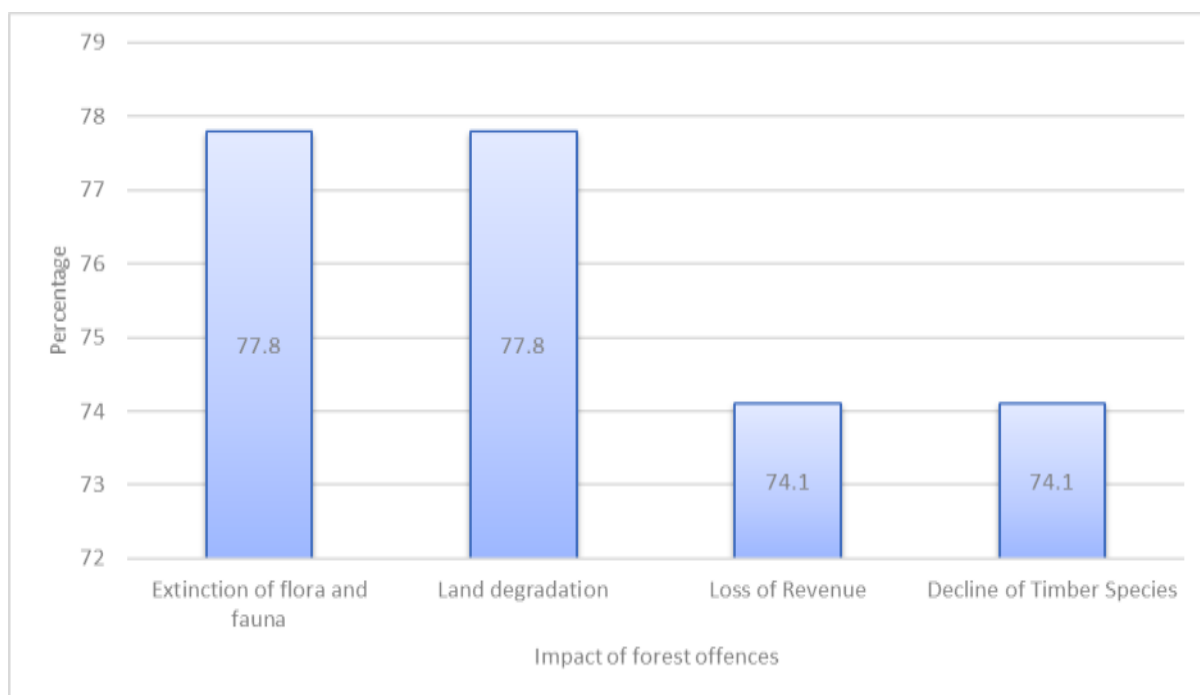


Figure 2: Impact of forest offences in the Northcentral Zone of Benue State

In Table 4, the respondents indicated that forest offences have impact on conservation of forest resources in the Northcentral zone of Benue State. This is also supported by the analysis of variance

which supports the hypothesis that is no significance difference in the responses of the respondent of impact of forest offences in the Northcentral zone of Benue State.

Table 4: The Impact of forest offences in the Northcentral zone of Benue State

Impact of forest offences on variables	Mean	SD	Remarks
Plant and wildlife conservation	4.00	0.000	High impact
Forest replanting and reclamation	3.81	0.483	High impact
Soil and water conservation	3.78	0.506	High impact
Management maintenance and utilization of natural forest timber and forest produce	3.93	0.267	High impact

Table 4: ANOVA testing the hypothesis that there is no significant difference in the responses of the respondents on the impact of forest offences in the Northcentral zone of Benue State.

Impact on conservation	Sum of squares	Df	Means square	F	Sig
Between group	3.527	6	588	1.277	0.132
Within group	9.42	20	461		
Total	12.741	26			

Challenges of Checking Forest Offences in the Northcentral zone of Benue State

The results of Table 4 show that fines paid by offenders of forest laws had the highest proportion

with 81%, while inadequate trained personnel (51.9%) had the least proportion as indicated by the respondents in the Northcentral zone of Benue State.

Table 4: Challenges associated with Forest Offences in

Challenges of forest offences	Frequency	Percentages (%)
Fines	22	81.00
Conservation education	21	77.8
High-cost permit	20	74.1
Awareness	20	74.1
Prosecution of offenders	19	70.4
Inadequate personnel	18	66.7
Inconsistent government policy	14	51.9
Inadequate trained personnel	14	51.9

DISCUSSION

The fact that majority of staff were within their active ages and are well educated implies that they are fit for the work and that they are adequately trained and are well-informed on forest governance and administration hence information provided by them could be accepted as genuine. The offences identified such as bush burning, cattle trespass, farm encroachment, illegal felling and poaching in the study are corroborated by Ozon-Eson (2001) and Bolaji-Olutunji and Adebayo (2020) who noted that illegal felling and encroachment are commonly committed forest offences in Plateau State, Nigeria. The reason for these commonly committed offences may not be connected with the high demand for wood products and quest for sustenance of livelihoods and as a result of the need to have access to fertile land farming. Oduntan *et al.* (2013) describes hunting as threats to forests because it destroys

forest canopy and opens up ways for other diverse forms of vegetation especially grasses. Adekunle and Faremi, (2006) also reported that majority of the farmers who encroached into forest lands in Ondo State always embark on deliberate removal of trees in order to pave way for the planting of their own agricultural crops.

The identification of unemployment as a primary cause of forest offences stems from the fact that many people were jobless and lack the wherewithal to meet their basic needs (Adejumo *et al.*, 2018), hence resort to exploiting forest resources excessively which they see as 'God given gift'. They therefore, exploit these resources without obtaining permit and are even ready to attack any forest officer of guard that challenges them. Adedayo and Oyun (2010) identified poverty as a strong factor that is responsible for the increase of forest offences in Nigeria. They

noted that poverty has made the struggle for survival and the struggle to meet daily needs more intense and daring. This agrees with Jitsuchon (2014), that poverty is one of the primary causes of forest offences because economic recession induces many people to indulge in illegal acts to get money. The identification of ignorance as a cause of forest offences by majority of the respondents in Nigeria could be because most people are not aware of the role of forest in providing ecological benefits and so do not know the importance of conserving the forest. According to Adedayo (2010) and Ikuomola *et al.* (2016) many people indulge in illegal forest acts due to ignorance and lack of alternative sources of livelihood. Interview with respondents also revealed that high cost taxes imposed by the State government make people evade following due process of obtaining permits and therefore promotes illegal timber harvesting.

The reported effect of forest offences can be seen on the disappearance of flora and fauna species loss of revenues, degradation of forest lands extinction. The findings agree with Kalu *et al.* (2010) who observed that Nigeria's forests are increasingly at risk, mostly as a result of illegal logging, which destroys some 500,000 hectares in Edo State forests every year. Government officials admit that illegal exploitation is occurring almost all over the country, both in forest reserves and in unreserved forest areas, this has diverse effects in the conservation efforts of forest estates. This also results in loss in revenue generation, according to Derkyi and Diez (2014), this contributes to loss of timber revenue to the State since these trees were taken illegally, the culprits were arrested and fined for the State to generate revenue. Illegal logging thus creates a potential of losing high economic value timber species if access to these resources is not well regulated by the mandated institution which agrees with the work of Eruteye (2002) who opined that one of the benefits of the forest is its revenue potentials and the destruction of the resource means depriving the government of its revenue. According to (FAO, 2005), unless these problems of illegal exploitation are addressed, investments to promote sustainable forest management will remain ineffective. Olajide, (2008) reported that the effect of forest offences on forest management leads to forest land degradation while uncontrolled harvesting leads to

depletion of timber species and other adverse effects, such as pollution. Illegal logging is often associated with environmental degradation because of its uncontrolled working methods and the complications involved in its ineffective monitoring at the forest level. In this regard, the use of chainsaw in milling can be made incompatible with sustainable management of forests. Consequently, it has become quite controversial in a number of countries and is often cited as one of the leading causes of forest degradation. Of the many negative impacts associated with uncontrolled illegal logging, are issues which bother directly or otherwise on the maintenance of environmental quality of the forest and agro-ecosystems where trees are harvested (Adebagbo, 1992). According to Popoola (2010), these illegal activities engage wasteful practice that produces low quality timber, reduces the revenue accruable to the government, causes a great harm to the environment and loss biodiversity and sustainability of forest resources. This is supported by a study conducted by Agera *et al.* (2009), on "The Trend of Deforestation in Forest Estates of Vandeikya LGA of Benue State, Nigeria", which reported that forest offices were on a significant increase and had resulted to serious decline of forest estates.

The indication by the respondents that forest offences have impact on conservation of forest resources in the study area is also supported by the analysis of variance which agrees with the hypothesis that there was no significance difference in the responses of the respondent of impact of forest offences in the Northcentral zone of Benue State. This means that many of the planted species both flora and fauna species were threatened by extinction of flora and fauna and land degradation in the Northcentral zone of Benue State. The challenges in the study area are attributable to the that lack of staff strength and inconsistent government policies, with no strict laws that are binding on offenders or defaulters while the causes of challenges are responsible to the failure in checkmating the forest offences in the Northcentral zone of Benue State (Adetula, 2008).

CONCLUSION

This study has shown that all the forest offences identified such as bush burning, farm

encroachment, illegal felling and poaching were threat to forest resources and had a high negative impact on the sustainability in the study area. It shows that poverty and unemployment are the major causative factors of forest offences leading to unsustainable forest in the Northcentral zone of Benue State.

Recommendations

It is therefore recommended that:

- i. Awareness and sensitization campaign on the negative consequences of forest offences should be carried out. Also, conservation and tree planting activities should be embarked upon by the relevant stakeholders.
- ii. Poverty reduction programme should be provided to reduce dependence on forest

exploitation and provision of alternative sources for energy and construction material should be provided.

- iii. The structures of enforcement, governance, and forest management should be strengthened.
- iv. There should be effective implementation of forest policy and domestic legislation should also be developed to support the implementation of current and future international commitments that affect the forest sector.
- v. Forest carbon pool of plantations and natural forests should be developed in compliance with the Clean Development Mechanism (CDM) of the Kyoto Protocol to be able to access the international market for forest-based carbon credits.

REFERENCES

- Adebagbo, C.A. (1992). Illegal Felling: An Environmental Degradation Activity. Case Study of Sapoba Forest Reserve. In F.A. Akinsanmi (ed). Proceeding of 1992 Annual Conference of Forest Association of Nigeria, pp. 70-77.
- Adejumo, A. A., Aderounmu, A.F., Olajiire-Ajayi, B.L. and Kolade, R.I. (2018). Prevalence Forest Offences and Combating Challenges in Ogun State Forestry Service, Nigeria. *Journal of Forestry Research and Management*, 15(1): 51-65.
- Adedayo, A.G and Oyun, M.B (2010). assessment of Impact of Democratic Rule on some Aspects of Forest Resources Management in Ondo State, Nigeria. *International Journal of Social Forestry*, 3(1): 1-11.
- Adeyoju, S.K. (1975). Forest and the Nigerian Economy, Ibadan University Press, Ibadan.
- Adeyoju, S.K. (1986). An appraisal of private sector participation in Nigerian Forestry Regulation. *Nigerian Journal of Forestry*, 16 (1&2): 6-10.
- Agera, S.I.N., Adegeye, A.O. and Jimoh S.O. (2009). Deforestation Trends in Forest Estates of Vandeikya Local Government, Benue State, Nigeria. *Journal of Research in Forestry, Wildlife and Environment*. 1(1): 44-56.
- Anderson, J. (2006). Forest, Poverty and Equity in Africa: New perspectives on policy and practice. *International Forest Review*, 8(1): 44-53.
- Akachukwu, A. E. (2005). Disappearing Forests, the Consequences and Challenges of Sustainable Development in Nigeria
- Adetula T. (2005). Encroachment and its Impacts on Forest Development. A case study of Ondo State. *Journal of Tropical Forest Resources*. 17(2): 12-21.
- Adekunle, V.A.J., and Faremi, S.D. (2006). Forest Encroachment and its Impact on Conservation of Oluwa and Idanre Forest Reserve, Ondo State, Nigeria
- Ahmed, A. I. Mahbub Uddin (2008). Underlying Causes of Deforestation and Forest Degradation in Bangladash. A Report submitted to the Global Forest Coalition (GFC), the Netherland. 76pp.
- Benue State Gazette (2010): Benue State No. 45 vol. 35. Published by the Director Benue Printing Services Makurdi.
- Bolaji-Olutunji, K.A., Adebayo, D.O. (2020). Perception of Forest Dwellers to Sustainable Forest management in South-Wester Nigeria. *Journal of Research in Forestry Wildlife and Environment*. 2(12): 1-10.
- Butler. S.J., Vickery, J.A., Norris, K. (2007). Farmland biodiversity and the footprint of Agriculture. *Science* 315, 381-384.
- Contreras-Harnosilla A (2002). Policy and Legal Options to improve law compliance in the forest sector, Draft issue paper, FAO. Rome. pp. 12.

- Derkyi M., Ros-Tonen M.A.F., Kyereh B.B. and Dietz T. (2013). Emerging Forest Regimes and Livelihoods in the Tano Offin Forest Reserve, Ghana: Implications for Social Safeguards. *Forest Policy and Economics*, 32:49-56.
- Enefiok S. U., Udofia S.I. and Olajide, O. (2009). Timber Dealers' Perception of their knowledge of their Forest Law in Oyu Senatorial District of Akwa Ibom State, Nigeria. *African Research Review. International Multi-Disciplinary Journal*, 3(1): 2070-0083
- Eruteya, D. D. (2002). Effect of Land Use on the plant Biodiversity of Eleyele Forest Reserve, Ibadan, Oyo State, Nigeria. B.Sc. Dissertation in the Department of Forestry Resources Management, University of Ibadan. 90pp.
- FAO. (2005). Adaptation to Climate Change in Agriculture, Forestry Paper: Perspective Framework and Priorities. FAO, United Nation.
- FAO. (2010). Global Forest Resources Assessment 2010. Main Report FAO Forestry Paper. 163. Pp. 378
- Halley, S. (1998). Issues in Sustainable Forest Management. Oxford Publishers, London, New York pp 34-36.
- Hummel, F.C. (1984). Forest Policy: A Contribution to Resource Development. Martins Night of and Dr. W. Juns Publishers, Boston pp 1-5, 104-227.
- Ikuomola, A.D., Okunola, R.A, Akindutire, A.F (2016). Criminality: Illegal Logging of Woods in Nigeria's South-West Forest Belt. *African Journal of Criminology and Justice Studies*. 9(1) 1-13.
- Irland L (2008). State failure, corruption, and warfare: challenges for forest policy. *Journal of Sustainable Forestry*, 27: 189–223.
- Jitsuchon, S., (2014). Income inequality, Poverty and Labour Migration in Thailand. *Singapore Economic Review*. 59(11) 8pp.
- Kalu, C and Chukwuedo, D.U and Aghimien, V. (2020). Forest Conservation Policy in Edo State: An Assessment of Roles of Forestry Taskforce in Realizing the set Objectives: *African Scientist* Vol. 11 No. 3, Klobex Academic Publishers. Pp. 207-216.
- Nyagba, J.L. (1995). Geography of Benue State. In D. J. Denga (ED). Benue State: "The Land of Great Potentials". A compendium Calabar, Nigeria. Rapid Educational Publisher Limited.
- Olajide, O.O (2008). Information needs for selected Rural communities in Ekiti, Nigeria. *JOUR*. 41(26): 55-67.
- Oduntan, O.O., Soaga, J.A.O., Akinyemi, A.F., and Ojo, S.O. (2013): Human Activities, Pressure and its Threat on Forest Reserves in Yewa Division of Ogun State, Nigeria. *Journal of Environmental Research and Management*. 4(5): 0260-0267.
- Ologunorisa, T.E. and Tersoo, T. (2006). The Changing Rainfall Pattern and its Implication for Flood Frequency in Makurdi, Northern Nigeria. *Journal of Applied Sciences and Environmental Management*, 10(3): 26
- Ozo-Eson, P.I. (2001). The Socio-Economic Effects of Forest Crime in Plateau State, Nigeria. In Forestry and National Development, Popoola, L., Abu. J.E. and Oni, P.I. (Eds), Forest Association of Nigeria, pp 267-274
- Oso, A.O., Agbeja, B.O., Faleyimu, O. (2017). Perceived forest offences among stakeholders and their impact on sustainable forest reserves management in South-western Nigeria. *Academia Journal of Agricultural Research*, 5(4): 075-086.
- Popoola L. (2010): Chainsaw Milling in Nigeria, ETFRN News 52: December 2010. 7pp.
- Udo, E.S. (1997). Forest Offences as Impediment to Forest Resources Conservation in Akwa Ibom State. In: Environment and Resource Development, Oduwaiye, E.A., Obiaga, P.C. and Abu, J.E. (eds), Forest Association of Nigeria. Pp 44-51.
- World Bank (1991) The Challenge of Development: World Development Report. Oxford University Press, Oxford.
- World Bank (2006). Strengthening Forest Law Enforcement and Governance: Strengthening a Systemic Constraint to Development. World Development Report. No. 36638-GLB. Washington. D.C: The World Bank.
- WWF [World Wildlife Fund] (2002). Illegal logging in the southern part of the Russian Far

East (pp. 18). Moscow World Wildlife Fund. In: Kuemmerle, *et al.* (2009): Forest cover change and illegal logging in the Ukrainian

Carpathians in the transition period from 1988 to 2007. *Remote Sensing of Environment*. 113(2009): 1194-1207.