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PERCEPTION OF FOREST COMMUNITY DWELLERS TOWARDS CURBING ILLEGAL FELLING IN AKURE FOREST RESERVE (APONMU)

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ABSTRACT

Illegal logging poses a significant threat to forest sustainability, biodiversity, and local livelihoods. This study investigates the perception of forest community dwellers toward curbing illegal felling in Akure Forest Reserve (Aponmu), Ondo State, Nigeria. Using a semi-structured questionnaire, data were collected from 100 respondents across four communities (Obada, Obadore, Kolawole, and Ipogun-Ayo) through convenience sampling. The findings reveal that 33% of respondents believe reducing corruption among forestry personnel would curb illegal logging, 29% support involving community members in forest patrols, and 25% attribute the persistence of illegal felling to political interference. A Chi-square test indicated no significant relationship ($p > 0.05$) between respondents' educational level and their perception of illegal logging. Additionally, economic class was found to be independent of their stance on the issue ($p = 0.60$). The study underscores the need for community participation, stricter enforcement, and policy reforms to combat illegal felling effectively. It recommends fostering collaboration between government agencies and local communities to enhance conservation efforts and ensure sustainable forest management.

Keywords: Illegal logging, Forest community dwellers, Akure forest reserve, Social-economic factors, Sustainable Forest management, Community perception and Environmental conservation

1. INTRODUCTION

1.1 General background of the study

Forests play a crucial role in maintaining global environmental stability, supporting biodiversity, and providing essential ecosystem services such as carbon sequestration, water regulation, and soil conservation (1). However, deforestation and forest degradation pose significant threats to tropical

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forests (2), leading to the reduction in the quality, function and value of the remaining forest (3). In Nigeria, illegal felling has been identified as a major contributor to deforestation and forest degradation, with severe implications for both the environment and local communities (4).

The Akure Forest Reserve (Aponmu) in Ondo State, Nigeria, is one of the country's significant biodiversity hotspots. Despite being designated for conservation, it has suffered extensive degradation due to illegal logging, weak enforcement of forest policies, and socio-economic pressures (5). The reserve is home to diverse flora and fauna, and its destruction has far-reaching ecological and socio-economic consequences. Studies have shown that the removal of trees disrupts habitat quality, alters the structure of forest ecosystems, and threatens the livelihoods of communities dependent on forest resources (6).

Illegal felling exacerbates soil erosion and negatively impacts water quality. The removal of vegetation exposes the soil to erosion, reduces its organic matter content, and disrupts the hydrological cycle, leading to increased runoff and sedimentation of water bodies (7). In regions where forests regulate water infiltration and groundwater recharge, deforestation has been linked to increased drought conditions and reduced agricultural productivity (8). Moreover, the loss of tree cover reduces the ability of forests to act as carbon sinks, thereby accelerating climate change (9).

Weak governance and corruption in forest management have further contributed to the rise of illegal logging activities. Studies indicate that poor law enforcement, lack of transparency, and political interference have made it difficult to implement effective conservation strategies (10). In Nigeria, the failure to involve local communities in forest management has led to resentment and non-cooperation with conservation authorities (11). Community-based conservation approaches, where local dwellers actively participate in monitoring and protecting forests, have been proposed as a viable solution to mitigating illegal felling (12).

Socio-economic factors such as poverty and limited alternative livelihoods drive many forest-dependent communities to engage in illegal logging (13). The lack of access to sustainable income sources compels individuals to exploit forest resources for immediate financial gain (14). Agroforestry has been identified as a sustainable alternative to illegal logging, as it integrates tree cultivation with agricultural practices, providing both economic and environmental benefits (5). Additionally, promoting ecotourism and non-timber forest product harvesting can offer viable income-generating activities while preserving the forest ecosystem (15).

To curb illegal logging effectively, several strategies must be implemented, including stricter law enforcement, increased community participation, and enhanced environmental education. Studies have shown that conservation initiatives are more successful when local communities are educated about the ecological importance of forests and their long-term benefits (16). Public awareness

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campaigns, along with government policies that support sustainable forest management, are essential in addressing this issue (17).

This study explores the perception of forest community dwellers towards curbing illegal felling in Akure Forest Reserve (Aponmu). Understanding their perspectives is critical to formulating inclusive conservation strategies that not only address deforestation but also promote sustainable livelihoods. By actively engaging local communities in forest management and governance, policymakers can develop effective conservation measures that ensure the long-term preservation of Nigeria's forest reserves.

1.2 Statement of the problem

Deforestation and forest encroachment remain critical challenges in Nigeria's forestry sector. Between 2000 and 2005, Nigeria recorded the highest rate of deforestation and degradation in Africa (18). The Akure Forest Reserve, situated within a lowland tropical rainforest, is home to rich biodiversity but has suffered significant degradation due to illegal logging and encroachment.

Despite government interventions, forest degradation continues to escalate, highlighting the inefficacy of existing management strategies. A major contributing factor to this failure is the exclusion of local community dwellers from forest conservation efforts. These communities possess invaluable knowledge about the forest's daily activities and those responsible for illegal logging. However, their lack of involvement has made it increasingly difficult to curb illegal felling and other illicit activities within the reserve.

Illegal logging has now reached an alarming and intolerable level. Without immediate and effective intervention—particularly through the integration of forest community dwellers into conservation strategies—the continued degradation of Akure Forest Reserve will have severe ecological, economic, and social consequences. Addressing this issue requires an inclusive and participatory approach to forest management to enhance enforcement and promote sustainable conservation practices.

1.3 Research objectives

1.3.1 General objective

The general objective of this study is to assess the perception of forest community dwellers regarding the prevention of illegal felling in the Akure Forest Reserve (Aponmu) and to evaluate the factors influencing these perceptions. The study aims to explore how community involvement, governance, and socio-economic factors impact forest conservation efforts, with a view to recommending inclusive strategies for sustainable forest management and effective policy implementation.

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1.3.2 Specific objectives

The specific objectives of the study are to;

1. Analyse the perception of forest community dwellers towards illegal felling and their willingness to participate in forest conservation efforts.
2. Identify key factors influencing illegal felling in the Akure Forest Reserve (Aponmu), including socio-economic, governance, and institutional factors.
3. Evaluate the relationship between the educational level of community dwellers and their perception of forest conservation strategies.
4. Assess the impact of economic class on community dwellers' perception of illegal logging and their level of involvement in curbing it.
5. Examine potential solutions that could enhance community involvement and policy effectiveness in reducing illegal felling.

1.3.3 Hypothesis to be tested

1. H_0 (Null Hypothesis): There is no significant relationship between the educational level of forest community dwellers and their perception of illegal felling.

   H_1 (Alternative Hypothesis): There is a significant relationship between the educational level of forest community dwellers and their perception of illegal felling.

2. H_0 (Null Hypothesis): The economic class of forest community dwellers does not significantly influence their perception of illegal felling.

   H_1 (Alternative Hypothesis): The economic class of forest community dwellers significantly influences their perception of illegal felling.

1.4 Justification of the study

The increasing rate of illegal felling by rural households in Nigeria has significantly contributed to deforestation and forest degradation. Akure Forest Reserve, a crucial ecological asset, is under severe threat due to unsustainable logging practices. If effective measures are not implemented, illegal felling will continue unchecked, leading to the depletion of valuable forest resources, loss of biodiversity, and environmental degradation.

Forest reserves, including Akure Forest Reserve, are intended to serve as tools for reducing deforestation and promoting sustainable forest management. However, the failure to involve local community dwellers in conservation efforts has weakened forest governance, making it difficult to curb illegal logging. Local communities possess valuable knowledge of forest activities and the

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individuals responsible for illegal felling, yet their exclusion from decision-making processes limits the effectiveness of conservation strategies.

This study seeks to evaluate the perception of forest community dwellers towards curbing illegal felling in Akure Forest Reserve (Aponmu). By assessing their views and level of involvement, this research aims to determine whether community perceptions align with conservation objectives and to identify areas where reorientation is necessary. The findings will provide insights into how local participation can be integrated into forest management policies to strengthen enforcement, reduce illegal felling, and promote sustainable forest conservation.

1.5 Scope of the study

This study focuses on the Akure Forest Reserve (Aponmu) in Ondo State, Nigeria, examining the perception of forest community dwellers towards curbing illegal felling. The research specifically investigates how local communities view illegal logging, their role in forest conservation, and the factors influencing their perceptions.

The study covers four selected communities within proximity to the forest reserve—Obada, Obadore, Kolawole, and Ipogun-Ayo. Data collection was conducted through semi-structured questionnaires administered to 100 respondents, with 25 participants from each community. The research also employs statistical analysis to determine whether socio-economic factors, such as education and income level, influence perceptions of illegal felling.

While this study provides valuable insights into community perceptions and their potential role in forest conservation, it is limited to the selected communities within Akure Forest Reserve. The findings, therefore, may not be generalisable to other forest reserves in Nigeria with different socio-economic and environmental conditions. However, the study offers critical recommendations that could inform broader forest management policies and contribute to sustainable conservation strategies.

2. METHODOLOGY

2.1 Description of the study area

The study was carried out in Akure Forest Reserve. Located at Aponmu village in Akure South Local Government Area of Ondo State, Nigeria. The forest reserve is located between the latitude 7I.300N and the longitude 5I.030E. It covers an area of 69.93 km², and the forest reserve consists of a permanent sampling plot of the natural forest and forest plantations, which consist of *Tectona grandis, Gmelina arborea,* and *Naucleadiderichii* tree species. The climate is humid tropical with seasonal variation. The mean annual rainfall is about 4000 mm with a double maximum in the months of July and September and a short, relatively dry period in August. Between December

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and February constitutes the major dry season, while January and February are the driest months, with each having less than 30 mm of rainfall. Temperatures range from about 20.6°C to 33.5°C; the monthly temperature is about 27°C, a condition that is conducive to the development of tropical rain forests.

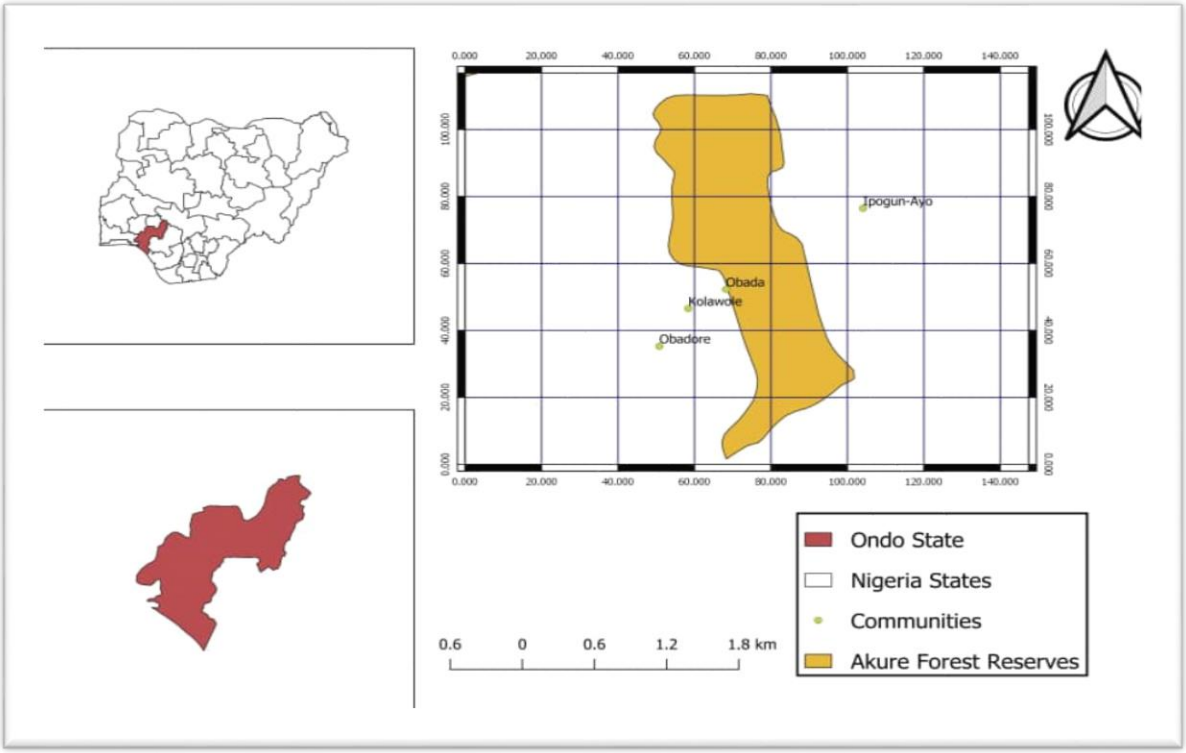

Figure 1: Map showing the forest reserve study area in Akure, Nigeria

2.2 Method of data collection

The data for this study was collected with the aid of a semi-structured questionnaire. The semi-structured questionnaire was used to derive information needed from the respondents. Four (4) communities closer to the Akure forest reserve were randomly selected, and a semi-structured questionnaire was administered to twenty-five (25) community household heads in each sampled community, making a total of 100 respondents.

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Table 1: Coordinates of the Sampled communities in the Study Area

S/N	Communities	Latitude	Longitude
1.	Obada	7.276525^0	5.026333^0
2.	Obadore	7.252138^0	5.00127^0
3.	Kolawole	7.268322^0	5.01216^0
4.	Ipogun-Ayo	7.311412^0	5.077978^0

2.3 Method of data analysis

SPSS Statistical Software was used for the data analysis. The data was analysed with the use of descriptive statistics such as frequencies, tables, percentages, charts, etc. The questionnaire was coded to get quantitative values for statistical analysis. Chi-square was used to test the stated hypotheses.

3. RESULT AND DISCUSSION

3.1 Result

3.1.1 Demographic Characteristics of the Respondents

The results of the study showed that 15% of the respondents are less than 30 years of age, 33% of them are between 31-40 years old, 25% are 41-50 years old, 15% are 51-60 years old and 12% of them are above 60 years old (fig. 2).

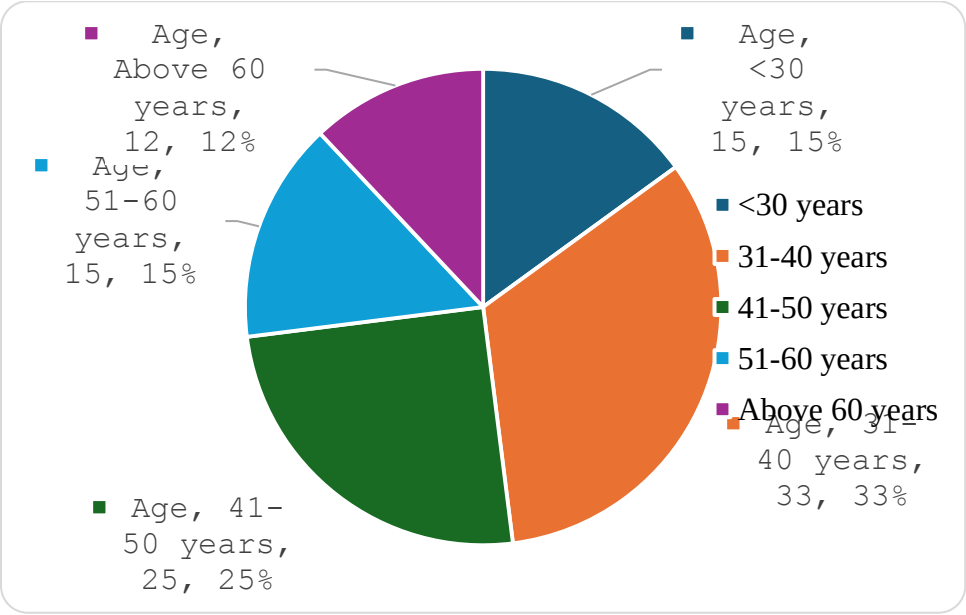

Figure 2: Pie chart showing the percentage age distribution of respondents

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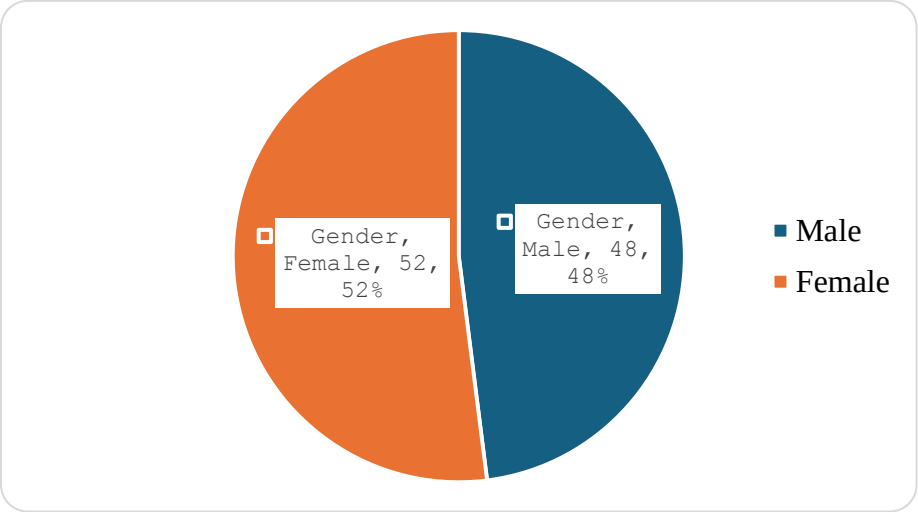
3.1.2 Gender Distribution of the Community Dwellers

The gender of the respondents is presented in Figure 3. 52% of the respondents are Female and 48% are male.



Pie chart showing the percentage gender distribution of respondents

Figure 3: Gender Distribution of the Respondents in the Study Area

3.1.3 The Education Level of the Respondents

The education level of the respondents is presented in Figure 4. It shows that 54% of the correspondents have secondary education, 24% have primary education, 13% have tertiary education, and 9% have no formal education.

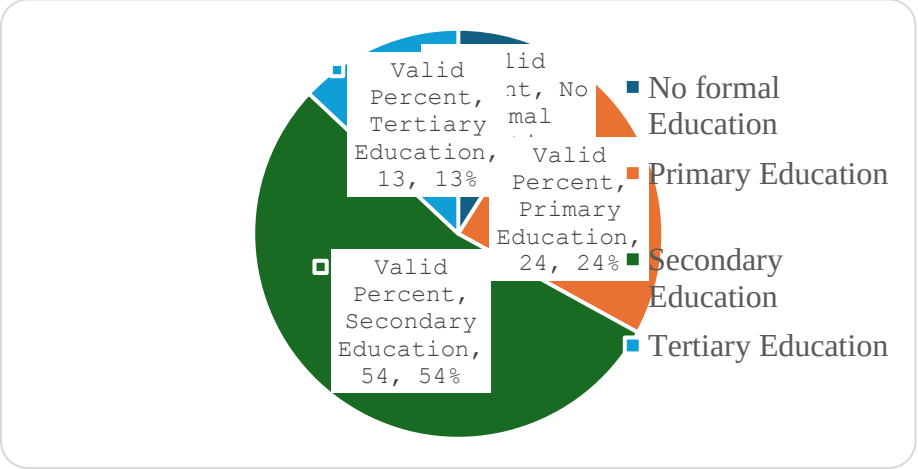


Figure 3: Pie chart showing the percentage of educational level distribution of respondents

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The results of the study showed that 49% of the respondents are farmers, 44% of them are doing business, 4% of them work in the private sector, and 3% of them are civil servants.

33% of the respondents in the study area earns between ₦ 20,000 – ₦ 40,000 per month, 26% earn less than ₦ 20,000 per month, 24% earn between ₦ 41,000-₦ 60,000 per month, 8% earn above ₦ 100,000 per month, 5% earns between ₦ 81,000- ₦ 100,000 per month, and 4% of them earns between ₦ 61,000-₦ 80,000 as monthly income.

Table 2: Occupation and Estimated Monthly Income of respondents in the Study Area.

		Percent (%)
Occupation	Farming	49
	Civil Servant	3
	Business	44
	Private Sector Employment	4
	Total	100
Monthly Income	Less than #20,000	26
	#20,000-#40,000	33
	#41,000-#60,000	24
	#61,000-#80,000	4
	#81,000-#100,000	5
	above #100,000	8
	Total	100

Source: Field Survey, 2023

3.1.4 Perception of Forest Community Dwellers to Curbing Illegal Felling in the Study Area

Table 4.3. shows the perception of the community dwellers about curbing illegal felling in the study area. The results revealed that 33% of the community dwellers agreed that illegal felling activities in the Forest Reserve can be curbed if corruption is reduced to the barest minimum among government forestry personnel, 29% agreed that if forest community dwellers are co-opted into forest patrol team, 25% agreed that if high government officials (politicians) stop interfering and interceding for the release of arrested illegal fellers, while 13% of the community dwellers agreed that illegal felling activities cannot be curbed in forest service.

The chi-square test ($p < 0.05$) shows that there is no significant association between the educational qualification of forest community dwellers and their perception towards curbing illegal felling in Akure forest reserves (hypothesis 1 and Table). In the same vein, the chi-square test ($p < 0.05$) shows that the economic class of forest community dwellers is independent of their perception towards curbing illegal felling in the study area (hypothesis 2 and Table).

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Table 3: Perception of Community Dwellers about Curbing Illegal felling in The reserve

		Percent (%)
Perception of the community dwelling on curbing illegal felling in the Reserve	Illegal Felling cannot be curbed	13
	If corruption is reduced to the barest minimum among government forestry personnel	33
	if high government officials stop interfering and interceding for the release of arrested illegal fellers	25
	If forest community dwellers are co-opted into the forest patrol team	29
	Total	**100**

Table 4: Respondents' Perception Towards Curbing Illegal felling in the Study Area

	OBADA		OBADORE		KOLAWOLE		IPOGUN-AYO	
	FREQ	%	FREQ	%	FREQ	%	FREQ	%
Illegal felling cannot be curbed	1	4	3	12	6	24	2	8
Illegal felling can be curbed if corruption is reduced to the barest minimum among government personnel	5	20	8	32	4	16	7	28
Illegal felling can be curbed if high government officials(politicians) stop interfering and interceding for the release of arrested illegal fellers	7	28	5	20	7	28	7	28
Illegal felling can be curbed if forest community dwellers are coopted into forest patrol team	12	48	4	16	3	12	5	20
Others(specify)	0	0	5	20	5	20	4	16
Total	**25**	**100**	**25**	**100**	**25**	**100**	**25**	**100**

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Table 5: Chi-square Result of Hypotheses tested

Variables	DF	P- value	Decision
Educational qualification v/s Perception towards curbing illegal felling	9	0.837	Not Significant
Economic class v/s Perception towards curbing illegal felling	15	0.060	Not Significant

P=0.05

3.2. Discussion

3.2.1 Perception of Forest Community Dwellers Towards Curbing Illegal Felling

The study reveals that community dwellers hold diverse perceptions regarding the curbing of illegal felling. A significant proportion (33%) believes that minimising corruption among government forestry personnel is key to addressing illegal logging. Additionally, 29% suggest that integrating community members into forest patrol teams would enhance enforcement, while 25% highlight political interference as a major obstacle to tackling the issue. The results also show that 13% of respondents perceive illegal felling as an inevitable occurrence that cannot be controlled. This pessimistic view may stem from past failures in enforcement and the perceived power of illegal loggers. However, studies have emphasised that local communities, when actively engaged in conservation, can play a crucial role in monitoring and reducing forest crimes (19)). Addressing these perceptions through awareness campaigns and participatory forest management may improve conservation efforts in Akure Forest Reserve.

3.2.2 Influence of Educational Level on Perception of Illegal Felling

The Chi-square test results indicate no significant relationship ($p > 0.05$) between the educational qualification of community dwellers and their perception of illegal logging. This suggests that formal education does not necessarily shape attitudes towards forest conservation. Many community members acquire forest-related knowledge through traditional experiences rather than formal education, which aligns with research highlighting the importance of indigenous knowledge in sustainable forest management (20).

While education is often expected to influence environmental awareness, this study suggests that lived experiences and cultural ties to the forest may play a more significant role in shaping perceptions. This finding underscores the need for conservation strategies that incorporate both formal education and community-driven initiatives to enhance environmental stewardship.

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3.2.3 Influence of Economic Class on Perception of Illegal Felling

The study finds that the economic class of respondents is independent of their perception of illegal logging, as indicated by a non-significant Chi-square result ($p = 0.60$). This suggests that financial status does not determine individuals' views on illegal felling, contradicting assumptions that wealthier individuals may be more conservation-oriented due to reduced economic reliance on forest resources. Previous research has shown that environmental attitudes are shaped by a combination of cultural, social, and political factors rather than economic status alone (20)

This finding highlights the complexity of conservation perceptions and suggests that policies aimed at curbing illegal felling should consider broader socio-political factors rather than focusing solely on economic class. Engaging all community members, regardless of their financial status, in participatory forest management may foster a more inclusive approach to conservation.

3.2.4 Strategies for Curbing Illegal Felling in Akure Forest Reserve

The study suggests that strengthening governance structures and enhancing community involvement are essential strategies for reducing illegal felling. Corruption within forestry agencies must be addressed through stricter monitoring, transparent enforcement mechanisms, and reduced political interference. Studies have shown that community-based forest management when properly structured, can significantly reduce illegal logging and improve conservation outcomes (21)

Additionally, providing alternative livelihoods, such as agroforestry and sustainable non-timber forest product harvesting, could reduce local dependence on illegal logging. Awareness campaigns and capacity-building programmes should be implemented to equip community members with the necessary skills to engage in sustainable forest management. Strengthening law enforcement through collaborative efforts between government agencies and local communities will be key to ensuring the long-term protection of Akure Forest Reserve.

4. CONCLUSION AND RECOMMENDATION

4.1 Conclusion

This study highlights the perceptions of forest community dwellers regarding illegal felling in Akure Forest Reserve (Aponmu) and the factors influencing these views. The findings indicate that corruption among forestry personnel, political interference, and inadequate community involvement are key barriers to curbing illegal logging. While some respondents believe illegal felling cannot be controlled, a significant proportion suggests that improved governance and local engagement could mitigate the issue. The Chi-square analysis reveals no significant relationship between respondents' educational level and their perception of illegal felling, nor between

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economic class and their views on forest conservation. This suggests that lived experiences and social dynamics play a more crucial role than formal education or financial status in shaping conservation attitudes.

Illegal logging has far-reaching ecological, social, and economic consequences. Addressing this challenge requires a multi-faceted approach that strengthens law enforcement, enhances community participation, and promotes sustainable forest management practices. Engaging local dwellers in decision-making and conservation efforts will foster a sense of ownership and responsibility, ultimately contributing to the long-term preservation of Akure Forest Reserve. The study underscores the importance of adopting inclusive, community-driven policies to ensure effective forest protection and sustainable resource management.

4.2 Recommendation

To effectively curb illegal felling in Akure Forest Reserve, the following measures are recommended:

1. Strengthening Law Enforcement and Governance: The government should improve monitoring mechanisms by deploying well-trained and well-equipped forest guards. Anti-corruption policies must be enforced to prevent undue political interference and bribery within the forestry sector.
2. Community Participation in Forest Management: Local dwellers should be actively involved in forest conservation through structured community patrol teams. Their traditional knowledge and proximity to the reserve make them valuable allies in combating illegal logging.
3. Alternative Livelihood Programmes: Sustainable income-generating activities, such as agroforestry, ecotourism, and non-timber forest product harvesting, should be promoted to reduce dependence on illegal logging. Capacity-building programmes can equip locals with the necessary skills for these alternatives.
4. Public Awareness and Education: Environmental education campaigns should be conducted to enlighten communities about the dangers of illegal felling and the benefits of forest conservation. Schools and local institutions should integrate conservation topics into their curricula.
5. Policy Implementation and Forest Policing: The government should introduce forest policing units dedicated to enforcing conservation laws. Policies should be revised to ensure that penalties for illegal logging are stringent and effectively enforced. Collaboration between security agencies and forestry departments should be enhanced for better oversight.

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6. Private Sector and Stakeholder Engagement: Encouraging private investment in sustainable forestry projects can provide long-term solutions to deforestation. Partnerships between the government, NGOs, and private entities can facilitate the adoption of innovative conservation technologies.

4.3 Recommendation for further research

Future studies should explore the impact of government policies and enforcement strategies on community perceptions of forest conservation. While this study identified corruption, political interference, and inadequate community participation as barriers to curbing illegal felling, further research is needed to evaluate the effectiveness of existing forestry policies in shaping local attitudes. A comparative study across multiple forest reserves in Nigeria could provide broader insights into how policy interventions influence conservation efforts.

Additionally, research should investigate the long-term impact of alternative livelihood programmes on reducing illegal logging. Understanding whether economic incentives, such as agroforestry and ecotourism, effectively deter illegal felling will help refine conservation strategies. Future studies should also assess the role of technology-driven monitoring systems, such as satellite tracking and remote sensing, in enhancing forest protection.

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