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**Forest Conservation and Human Security Outcomes: The Role of Local Communities in
Nigeria**

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Abstract

This study investigates the role of local communities in forest conservation and its impact on human security in Ondo State, Nigeria, using a cross-sectional survey design across selected six forest reserve communities in Ondo State. Employing a mixed-methods approach with a multi-stage sampling strategy, data were analyzed using descriptive statistics, principal component analysis, multiple linear regression, and Chi-Square tests. Findings reveal that corruption and lack of transparency, weak institutional capacity, restrictive government policies, lack of awareness and education, and poor communication are significant barriers to community participation, collectively accounting for 91.454% of variance and exacerbating human insecurity. Policy recommendations include enhancing transparency, strengthening institutions, reforming policies, increasing awareness, empowering communities, and improving government-community communication to foster effective forest conservation and enhance human security outcomes

Keywords: forest management, human security, local community participation, forest conservation

Forest Conservation and Human Security Outcomes: The Role of Local Communities in Nigeria

Before Nigeria's independence, the country was blessed with extensive forest cover that played a crucial role in providing essential ecosystem services and maintaining biodiversity (Ayeni, 2013). Since gaining independence in 1960, forests have been recognized as a vital component supporting the nation's economy and the livelihoods of rural populations. They supply raw materials for both primary and secondary industries and provide employment for a significant portion of the population (Amusa, 2024). As a result, forest resources have traditionally met both export and local consumption needs.

However, over the years, Nigeria's forests, including conservation areas, have continued to diminish due to unsustainable use and management. The country's forest cover, which was over 600,000 km² in 1897 (60% of the land area), had decreased by about half to 30% of the land area by 1960 (Musa, 2024). By 1990, Nigeria's forests covered an estimated 175,000 km². Between 1990 and 2010, Nigeria lost an average of 409,650 hectares annually, or 2.38% per year. In total, Nigeria lost 47.5% of its forest cover, equivalent to approximately 8,193,000 hectares, during this period (Musa, 2024). This decline is driven by the pressure on forest resources to generate income and meet the needs of a growing population (Saatchi, 2011).

Despite the critical role of Nigeria's forests, the country continues to experience annual forest loss. Approximately 70-80% of the original forests, including coastal and mangrove forests, have disappeared due to unsustainable logging and agricultural expansion (UN, 2022).

As of 2015, the Chatham House Illegal Logging Portal estimated that only 20,000 hectares of Nigeria's primary forests remained (Cadmus Group, 2020). The 2015 Food and Agriculture Organization (FAO) Global Forest Resources Assessment ranked Nigeria fourth globally for the highest annual net loss of forest area, with a deforestation rate of 5% annually (410,000 hectares/year) between 2010 and 2015 (FAO, 2016). The 2020 FAO Global Forest Assessment also reported a 5% annual deforestation rate, with Nigeria's forest area declining from 26,526,000 hectares in 1990 to 21,627,000 hectares in 2020 due to deforestation caused by agriculture,

industrial development, and overexploitation (UN, 2022).

The main drivers of deforestation and forest degradation in Nigeria include agricultural expansion and poor agricultural practices, unsustainable timber industry practices, illegal timber extraction, major infrastructure and energy development projects, charcoal and wood fuel production, land use changes from settlement expansion, and extractive industries such as mining, sand dredging, and oil production. The loss of mangroves is primarily due to extraction for charcoal production, construction, and firewood (Cadmus Group, 2020).

Additionally, many forest reserves that were once managed for timber production have become deforested and fragmented. Large-scale agriculture has consumed a significant portion of these areas, and unlawful logging continues in natural forests. Urbanization, accompanied by roads, buildings, and other infrastructure, is often undertaken without proper planning (Amusa, 2024). Deforestation, largely driven by human activities, is known to have more negative impacts than positive ones (International Tropical Timber Organization (ITTO), 2005).

Currently, Nigeria's forestlands have become hotspots for criminal activities, such as oil pipeline vandalism, mercantile kidnapping, and ritualistic killings (Ladan, 2014; Odutan et al., 2013). The forests are inadequately regulated, primarily managed by a poorly equipped and inadequately trained forest-guard system (Okoli, 2015). This system struggles against criminals who use advanced weapons and tactics. Forest management is dominated by state forestry departments that use a top-down approach, excluding community input and failing to address the impact on local livelihoods (Okoli & Agada, 2014). This lack of local involvement has led to diminished community control over the forests, allowing criminal actors to exploit these areas with minimal resistance (Okoli & Ochim, 2016). This case offers an interesting background for studying local participation in forest conservation. It is clear that local participation in forest conservation is essential not only for ecological reasons but also for improving human security. By involving communities, it is possible to align human well-being with environmental preservation, promoting a more resilient and prosperous coexistence between people and forests. This paper, therefore, aims to investigate the challenges and opportunities of local participation in forest conservation in Nigeria. It explores how community-based forestry management can contribute

not only to the sustainability of forest ecosystems but also to improving human security in forest-adjacent areas. The paper specifically focuses on the role of local participation in mitigating the environmental and security risks associated with forest loss, and it aims to provide a framework for how local communities can be meaningfully involved in forest management in a way that enhances both ecological and social outcomes.

This paper addresses the research questions below:

- i. What are the key challenges or barriers hindering effective local community participation in forest conservation in Nigeria?
- ii. How do these challenges or barriers impact local livelihoods and human security in Nigeria?
- iii. To what extent are local communities participating in forest conservation in Nigeria?
- iv. How do local communities perceive the relationship between forest conservation and human security?

The notion of participation has been defined variously by different scholars and organizations. Participation is a multifaceted, dynamic process that empowers communities to influence and control decisions, resources, and development initiatives that impact their lives (World Bank, 1994). Sherry Arnstein's seminal work (1969) equates participation with power, emphasizing the redistribution of decision-making authority to marginalized groups excluded from political and economic processes. This view aligns with Brett's (2003) definition of participation as an educational and empowering process where communities, in partnership with supportive actors, identify problems, mobilize resources, and assume responsibility for planning, managing, and evaluating collective actions. The International Institute for Environment (1994) further frames participation as mobilizing local capacities, enabling people to act as social actors rather than passive subjects, managing resources and controlling activities that shape their futures.

Participation operates across various forms and scales, from face-to-face mechanisms like citizen forums, juries, or participatory budgeting to online platforms that facilitate broader engagement (Nabatchi & Amsler, 2014). It is grounded in principles of accountability, transparency, inclusivity, voluntary engagement, and diversity, ensuring stakeholders generate

their own solutions (Asian Development Bank, 2012). Participation can be both a means to achieve project goals (e.g., by leveraging local commitment) and an end, fostering empowerment and self-reliance (Cornwall, 2008; Jaitli & Brown, 1999). For instance, participatory rural appraisal (PRA) enables communities to lead agenda-setting, data collection, and planning, enhancing ownership and sustainability (Mubita et al., 2017). At the institutional level, local governments play a critical role in creating environments for collaborative decision-making, with research highlighting the importance of institutional design and embeddedness in facilitating citizen engagement (Torfing et al., 2019; Edelenbos et al., 2010).

In the context of forest conservation, participation empowers communities to sustainably manage forests complex ecosystems that cover extensive land areas with trees and serve as the Earth's lungs (Kaur, 2023). Forests are vital for sequestering carbon, preserving biodiversity (supporting over 80% of terrestrial species), regulating global temperatures, preventing soil erosion, and providing resources like food, medicine, timber, and fuelwood (BYJU, 2019; Nowak et al., 2005). Conservation, as defined by Bassey (2003), involves managing human use of forests to maximize sustainable benefits for current generations while preserving their capacity to meet future needs. This includes protecting ecosystems, reversing deforestation (driven by agriculture, logging, and urbanization), and addressing environmental pollution (Bailey, 2022). Forests are central to global frameworks like the United Nations' Sustainable Development Goals (SDGs) and multilateral environmental agreements, which emphasize their role in combating climate change, alleviating poverty, and creating jobs (Kaur, 2023).

Community participation in forest conservation, as exemplified by Nigeria's Ekuri community, leverages local knowledge and stewardship to protect forests from illegal logging and promote sustainable practices like agroforestry and non-timber forest product (NTFP) harvesting. Effective conservation requires governance structures that grant communities clear tenure rights and decision-making authority, ensuring sustainable resource use and equitable benefit distribution. However, deforestation remains a critical challenge in Nigeria, with annual forest loss rates of 3.3–5% driven by agricultural expansion, fuelwood collection, and weak governance

(FAO, 2020). Community-led models, supported by NGOs and government policies, are essential for reversing these trends and aligning conservation with local needs.

This participatory approach to forest conservation directly contributes to human security, a concept that shifts the focus from state-centric security to the well-being of individuals and communities, encompassing freedom from fear, want, and indignity (UNDP, 1994; Morrow et al., 2022). Introduced in the 1994 UNDP Human Development Report, human security integrates seven dimensions: economic, food, health, environmental, personal, community, and political security. Environmental security, particularly relevant to forests, emphasizes protecting biodiversity and ecosystems to ensure rights to life, health, food, and an acceptable standard of living (Okumu, 2017). Forests support human security by providing livelihoods (e.g., through NTFPs), ensuring food security via ecosystem services, mitigating climate change, and fostering community cohesion through shared governance (Worldacademy, 2024).

Human security reframes traditional security notions, prioritizing protection against diverse threats such as poverty, environmental degradation, conflict, and social exclusion—while promoting sustainable development and multilateral cooperation (Meerts, 2018). In Nigeria, where forests face pressures from oil exploration, urbanization, and banditry, participatory forest management enhances economic security (e.g., income from sustainable forestry), food security (e.g., through agroforestry), and environmental security (e.g., by preserving carbon sinks and biodiversity). It also reduces resource conflicts, strengthening community and personal security by fostering inclusive decision-making and clarifying tenure rights.

Theoretical Review

This paper is grounded in Ecological Systems Theory, developed by Urie Bronfenbrenner (1988), to analyze the intersection of forest conservation strategies and human security. The theory outlines five nested environmental systems such as microsystem, mesosystem, exosystem, macrosystem, and chronosystem which interact dynamically to influence both human development and environmental conditions (Bronfenbrenner, 1988; Bronfenbrenner & Ceci, 1994).

In applying this theory to forest ecosystems, the microsystem represents direct environmental conditions such as soil quality, climate, and biodiversity. These elements are analogous to the immediate influences on an individual's development. For instance, empirical studies like Ihenyen et al. (2009) and Akinsoji (2013) highlight the importance of protecting local biodiversity and tree species to sustain forest health, much like nurturing environments are essential for child development.

The mesosystem, which focuses on interactions between various microsystems, parallels the interplay among ecological factors and land-use dynamics. Ati et al. (2010) illustrate this through GIS-based analysis showing the loss of forest cover due to agricultural expansion and urban development, a consequence of poor integration of environmental and developmental policies. At the exosystem level, broader societal influences such as policy, remote actors, and economic drivers indirectly affect forests and communities. Studies by Okpiliya (2013) and Oduntan et al. (2013) reveal how logging, grazing, and inadequate regulation significantly contribute to forest degradation. This supports Bronfenbrenner's assertion that exogenous systems like mass media or political decisions can shape outcomes even without direct contact.

The macrosystem, encompassing cultural norms, governance structures, and societal values, plays a pivotal role in shaping environmental outcomes. Jimoh et al. (2018) and Ojo and Asinwa (2022) emphasize how governance quality, enforcement of forestry laws, and socio-political stability impact forest sustainability. Cultural attitudes toward forest use and ownership also influence conservation behavior, aligning with the theory's proposition that overarching systems influence the behavior of sub-systems.

Finally, the chronosystem, which considers time-based changes such as environmental succession or policy evolution, reflects long-term trends in forestry management. For example, Neugarten et al. (2024) analyzed deforestation patterns in Madagascar and revealed how political crises impact conservation effectiveness over time. Similarly, Oluwole et al. (2017) demonstrate that continued forest depletion in Uganda correlates with declining environmental security over decades.

Empirical evidence overwhelmingly supports the theoretical claim that dynamic interactions within and across systems determine both environmental and human outcomes. Abubakar et al. (2014) show that forest regeneration contributes to climate change mitigation via carbon sequestration, enhancing environmental security. Likewise, studies by Adekunle et al. (2017), Ojo et al. (2019), and Akindele et al. (2020) confirm that community participation in forest management not only enhances conservation outcomes but also improves social equity, livelihood resilience, and conflict resolution.

However, there are limitations. Nkemnyi (2016) found that a lack of community awareness and elite capture in Cameroon undermined the effectiveness of participatory forestry. Similarly, Adjei et al. (2023) discovered that collaborative government-community partnerships were more effective than either top-down or exclusively community-led models in protecting forest commons in Ghana.

Despite the growing body of research, a critical gap remains. Most studies address either ecological preservation or community engagement in isolation, rarely linking them systematically to human security outcomes such as safety, livelihood stability, and social cohesion. This fragmented understanding limits the development of holistic forest management frameworks that recognize the interdependence between environmental sustainability and socio-economic resilience.

Method

The study conducted in Ondo State, located in southwestern Nigeria with a 2006 population of about 3.46 million. Geographically positioned in the tropics, the state experiences a tropical climate with distinct rainy and dry seasons and annual rainfall between 1,150mm and 2,000mm. Its vegetation ranges from mangrove swamps and coastal forests in the south to forest-savannah in the north. The population is predominantly Yoruba, consisting of dialectical subgroups like Akoko, Owo, Ondo, and Akure, with primary economic activities including farming, logging, fishing, trading, and public service.

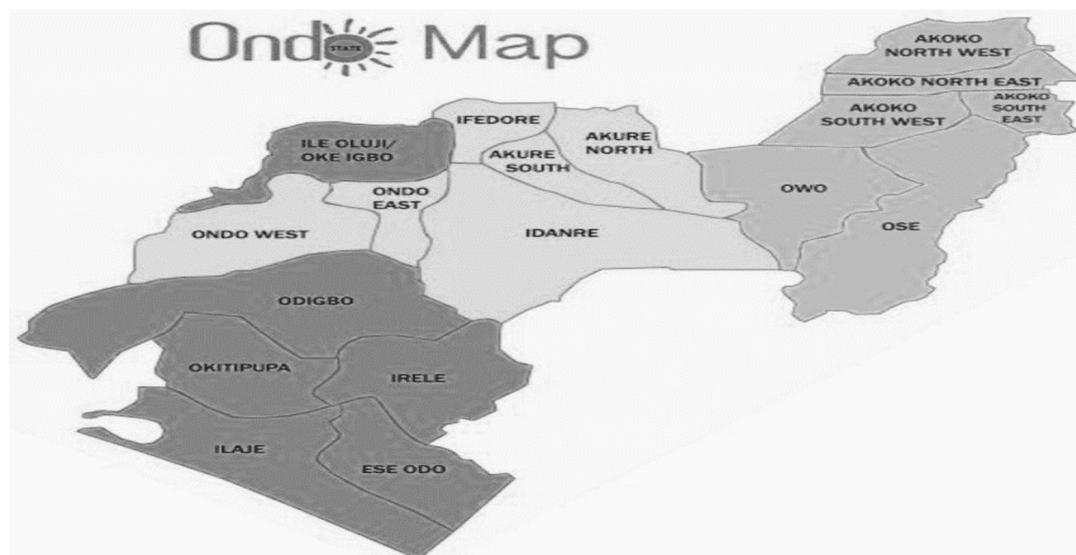


Figure 1: Map of the Ondo state

Research Methods

This study employed a cross-sectional survey design to evaluate community involvement in forest management in Ondo State, Nigeria. Drawing from a population of 54,617 residents across six communities near major forest reserves, the sample size of 1,436 was determined using the Krejcie and Morgan formula, ensuring a 95% confidence level and 5% margin of error. A multi-stage sampling approach was adopted: purposive sampling identified forest-based LGAs, random sampling selected six communities within a five-kilometer radius of the reserves, and proportional sampling ensured fair representation. This strategy ensured the inclusion of respondents with direct experience and relevance to forest conservation issues.

This study utilized a mixed-methods approach, combining quantitative and qualitative tools to explore local community attitudes, participation, and perceptions regarding forest conservation. A structured survey questionnaire gathered quantitative data on attitudes, involvement, and perceived benefits and challenges. To deepen understanding, qualitative methods such as Focus Group Discussions (FGDs) and Key Informant Interviews (KIIs) were conducted, offering insights into community experiences and forest governance. Data triangulation was achieved through the integration of survey responses, FGDs, KIIs, field observations, and secondary sources, ensuring a comprehensive and valid analysis.

To ensure the effectiveness of the research instruments, both validity and reliability were rigorously addressed. Experts in forest management, global affairs, and sustainable development reviewed the draft questionnaire to establish face, content, and construct validity, with their feedback integrated into the final version. Reliability was tested through a pilot study using the test-retest method in three forest reserve communities in Ondo State. The responses, analyzed with Pearson's correlation, yielded a reliability coefficient of 0.85, indicating a high level of consistency and confirming the instrument's suitability for the main study.

The study employed multiple analytical techniques to interpret the data. Descriptive statistics, including means, frequencies, and standard deviations, were used to analyze responses to closed-ended questions. Principal Component Analysis (PCA) helped identify key variables influencing community participation. Multiple linear regression assessed how participation barriers affect human security, while the Chi-Square test examined community involvement in forest conservation and their perceptions of its link to human security in selected LGAs of Ondo State.

Analysis

Out of one thousand four hundred and thirty-six (1,436) copies of questionnaires were distributed, only one thousand, one hundred and ninety-eight (1,198) copies were found to be properly filled and returned. Therefore, the analysis of this study was based on this figure.

Table 1

Knowledge and Awareness

	Responses	Frequency	Percent (%)
To what extent are you informed about local forest conservation initiatives?	Highly informed	290	23.3
	Moderately informed	86	7.2
	Not informed at all	822	69.6
Have you participated in program Activities regarding forest Conservation?	Yes	76	6.34
	No	1.122	93.66

The analysis presented in Table 1 illustrates the respondents' awareness and knowledge regarding local forest conservation initiatives. Only 23.2% are well-informed through NGOs, while 76.8% lack any awareness. Furthermore, just 6.34% have participated in conservation activities like tree planting, indicating a major gap between conservation needs and community engagement. This highlights the challenges posed by poor inclusion in forest governance and the need for improved awareness and participation strategies.

Table 2

Key Challenges or Barriers

	Responses	Frequency	Percent (%)
What obstacles hinder your inclusion in forest management in your area?	Lack of Awareness and education	177	14.77
	Weak institutional capacity	256	21.37
	Restrictive Government policy and regulation	217	18.11
	Corruption and lack of transparency	380	31.72
	Poor communication between governments and communities	58	4.84
	Land ownership disputes	110	9.18

Table 2 identifies corruption and lack of transparency (31.72%, 380 responses) as the primary barrier to community participation in forest management, followed by weak institutional capacity (21.37%), restrictive government policies (18.11%), and lack of awareness and education (14.77%). Land ownership disputes (9.18%) and poor communication between government and communities (4.84%) are less frequently cited but still significant, highlighting systemic governance issues, limited community knowledge, and communication gaps as key obstacles to effective forest conservation.

Table 3*Challenges or Barriers Impact Local Livelihoods and Human Security*

	Responses	Frequency	Percent (%)
In your opinion, how could community participation in forest conservation reduce threats to local security and wellbeing?	Reduce illegal logging	215.	17.75
	Prevent conflict over land and forest resources	365	30.48
	Protecting biodiversity and natural ecosystem.	142.	11.85
	Enhance food and medicinal plant availability.	476	39.73
Have restrictions over forest use affected your household access to basic resources?	Yes.	895	74.71
	No.	303	25.29
To what extent do you agree that lack of local participation in forest conservation has contributed to insecurity in your community?	Strongly agree.	786.	65.62
	Agree.	245	20.45
	Disagree	89	7.43
	Strongly disagree.	78	6.51
Which of the following human security threats have increased due to poor forest conservation practices?	Food insecurity.	423	35.31
	Loss of livelihood.	465	38.82
	Loss of life.	141	11.77
	Loss of biodiversity	62	5.17
	Environmental threat.	107	8.93

Table 3 highlights that community participation in forest conservation enhances access to food and medicinal plants (39.73%) and reduces land/resource conflicts (30.48%), with smaller groups noting its role in curbing illegal logging (17.75%) and protecting biodiversity (11.85%). However, 74.71% of respondents reported that forest use restrictions negatively impact access to essential resources like food, fuel, and medicine, revealing tensions between conservation and human security. A significant 86.07% agreed that exclusion from forest management fosters community insecurity, mistrust, and potential conflict. Key human security threats linked to poor forest conservation include loss of livelihood (38.82%) and food insecurity (35.31%), with loss of life (11.77%) and environmental threats (8.93%) less emphasized, while biodiversity loss (5.17%) is minimally prioritized, likely due to immediate survival concerns.

Table 4*Local Communities' Perceptions of the Relationship Between Forest Conservation And Human Security*

(%)	Responses	Frequency	Percent
Forest conservation helps protect local resource	Strongly agree	445	37.15
	Agree	433	36.14
	Disagree	143	11.94
	Strongly disagree	177	14.77
Forest conservation improves food security through protection of forest-based food sources	Strongly agree	563	47.0
	Agree	578	48.24
	Disagree	-	-
	Strongly disagree	57	4.92
Forest conservation support health and wellbeing by ensuring a clean environment as a result of local engagement?	Strongly agree.	561	46.83
	Agree	470	39.23
	Strongly disagree	90	7.51
	Disagree	74	6.18
Forest conservation provides livelihood opportunities	Strongly agree	611	51.0
	Agree	398	33.22
	Strongly disagree	86	7.18
	Disagree.	103	8.60

Table 4 shows that 73.29% of local communities believe forest conservation protects resources like water, timber, and non-timber products, though 26.71% express skepticism, possibly due to exclusion or unresolved land tenure issues. A near-unanimous 95.24% agree that conservation enhances food security by preserving forest-based food sources, with only 4.92% dissenting. Additionally, 86.06% see conservation as supporting health and well-being through cleaner air, water, and medicinal plants, while 13.69% remain unconvinced, potentially due to limited involvement. Lastly, 84.22% view conservation as a source of livelihood opportunities through activities like non-timber product harvesting and eco-tourism, though 15.78% disagree, possibly due to barriers like lack of capital or access.

Statistical Test

To identify and evaluate the key challenges or barriers hindering effective local community participation in forest conservation across selected LGAs of Ondo State, principal component analysis (PCA) was used. It helps identify patterns among the underlying latent variables or factors that influence effective local community participation in forest conservation.

Table 5

Challenges hindering effective local community participation in forest conservation/management

Factors	Eigen values	Percentage	
		(%) of variance	Cumulative (%) of variance
Corruption and lack of transparency	5.452	39.934	39.934
Weak institutional capacity	2.453	17.534	56.468
Restrictive government policy and regulation	1.961	14.006	70.474
Lack of Awareness and education	1.692	12.084	82.558
Land ownership disputes	1.245	8.896	91.454
Poor communication	0.344	2.456	93.910
Lack of resources	0.171	1.223	97.022
Limited access to alternative livelihood	0.121	0.865	97.887
Cultural & Social consideration	0.099	0.708	98.595
Information sharing	0.075	0.536	99.131
Leadership governance	0.053	0.376	99.507
Conflict resolution	0.037	0.268	99.774
Community engagement	0.032	0.226	100.000

Extraction Method: Principal Component Analysis

Source: Researcher' Computation using SPSS

Table 5 identifies five key barriers to community participation in forest conservation in Ondo State, Nigeria, which collectively account for 91.454% of the variance in participation challenges. These barriers include corruption and lack of transparency (39.934%), weak institutional capacity, restrictive government policies, lack of awareness and education, and poor communication—significantly hinder effective engagement. Factors with less than 1 eigenvalue, contributing only 8.546% of variance, were deemed insignificant for facilitating community participation in forest conservation.

Table 6

Summary of Multiple Regression Analysis On Challenges Impact Local Livelihoods And Human Security

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1.294	0.093	13.982	0.000
Corruption and lack of transparency (X ₁)	-0.728	0.039	18.616	0.000
Weak institutional capacity (X ₂)	-0.310	0.047	6.617	0.000
Restrictive government policy and regulation (X ₃)	-0.659	0.050	3.126	0.000
Lack of awareness and education (X ₄)	-0.389	0.076	-5.123	0.000
Poor communication (X ₅)	0.009	0.019	-0.474	0.635
R-squared	0.809			
Adjusted R-squared	0.804			
F-statistic	189.587			
Prob(F-statistic)	0.0000			

Regression analysis shows that corruption and lack of transparency, weak institutional capacity, restrictive government policies, and lack of awareness and education significantly hinder forest conservation ($p < 0.05$), increasing human insecurity by 72.8%, 31.0%, 65.9%, and 39.0%, respectively, with 80.4% of variation explained (adjusted $R^2 = 0.804$). Focus group discussions confirm that non community involvement in forest management heightens security risks, while experts, including the Director of Agriculture and Forest Resources, emphasize that enhancing awareness, leveraging local knowledge, and granting communities decision-making power can improve forest health and human security.

Table 7

Local Communities Participating in Forest Conservation

Alternatives	Observed	Expected
Yes	596	323.9
No	15	287.1
Degree of freedom		df = 2
Chi-Square	$X^2 = 995.259^a$	
p-value	p = 0.201	
Cramer's V	0.911	

Decision rule: reject assumption if p-value < 0.05 and accept if p-value > 0.05. Since p-value (0.201) is greater than 0.05, the assumption of no association was accepted. This implies that there is no local participation in forest conservation.

Table 8

Local communities' perceptions of the relationship between forest conservation and human security

Alternatives	Observed	Expected
Yes	366.3	119.7
No	292	194
Degree of freedom	df = 2	
Chi-Square	$X^2 = 570.011^a$	
p-value	p = 0.010	
Cramer's V	0.690	

The results found a strong, statistically significant association between local participation in forest conservation and human security, with a p-value of 0.010 (< 0.05) and Cramer's V of 0.690, rejecting the null hypothesis of no association. Qualitative data from focus group discussions and key informant interviews *highlight that forest conservation supports human security by ensuring ecosystem services, enhancing food security, and promoting economic stability and community well-being. Active community involvement fosters ownership and responsibility, ensuring long-term forest protection and improved human security outcomes.*

Conclusion and Policy Implications

This paper examines the role of local communities in forest conservation and its implications for human security. The paper's findings highlight key barriers to community participation in forest conservation in Ondo State, including corruption and lack of transparency, weak institutional capacity, restrictive government policies, lack of awareness and education, and poor communication are the primary barriers to effective community participation in forest conservation in Ondo State, Nigeria, significantly undermining local security. Policy recommendations include enforcing transparent governance to curb corruption, strengthening

institutions through training and resources, reforming policies to support community involvement, launching educational campaigns to boost awareness, empowering communities with decision-making roles, and improving communication between government and communities to enhance forest management and local security.

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