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EXTENT AND IMPACT OF COMMUNITY PARTICIPATION IN FOREST POLICY GOVERNANCE IN CENTRAL CROSS RIVER STATE, NIGERIA

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ABSTRACT

The study evaluated the extent and impact of community participation in forest policy governance in Central Cross River State, Nigeria. Four (4) research objectives targeted at identifying major communities actively conserving/preserving their forest, assessing the reasons for rapid deforestation, examining the level of participation of local stakeholders in forestry policy formulation and implementation, likewise the extent at which the forest cover is threatened in Central Cross River State. The study used a combination of geospatial technique in mapping forest hotspot and analysis of land use land cover change detection, questionnaires and focus group discussion in obtaining information from households in the forest-dependent communities. As part of the study's finding, the Land Use/Land Cover (LULC) analysis confirms that the Central Cross River Senatorial District retains a significant, yet highly threatened, forest estate, covering 442,487 hectares or 57.22% of the mapped territory. It was revealed that the primary threat to the forest is intense anthropogenic pressure, driven overwhelmingly by Farm/Fallow Land, which alone consumes 33.35% of the area. The detailed mapping of 13 Forest Communities demonstrates that most settlements are directly adjacent to this main forest block, confirming that resource-dependent activities—including agricultural expansion and the harvesting of high-value timber like Apa (Afzelia Africana)—are the main cause of ongoing deforestation. The study confirmed that the effectiveness of forest policy is severely hindered by low community involvement and this lack of inclusion fuels conflict largely because they failed to consider community concerns, resulting in a perceived negative economic impact on livelihoods. It was recommended that policy reform targeted at increasing community participation and a structured community awareness programs that clearly communicate policy rationales, benefits, and responsibilities should be strengthened.

KEYWORDS: Extent, Impact, Community Participation, Forest Policy Governance, Central Cross River State, Nigeria

1. INTRODUCTION

Global forests are indispensable to planetary ecological stability, functioning as critical carbon sinks, essential regulators of the global climate system and unparalleled reservoirs of biodiversity. Ensuring their protracted viability is paramount to achieving global sustainability and safeguarding the welfare of forest-dependent populations, necessitating a commitment to sustainable forest management (SFM) (FAO, 2020). Consequently, governmental and multilateral institutions worldwide have operationalized diverse regulatory and policy frameworks aimed at forest resource conservation. A central feature of contemporary forest governance is the adoption of mechanisms to mitigate rampant deforestation, establish systematic control over timber extraction, and strengthen in-situ biodiversity protection. Critically, these policies increasingly recognize the vital necessity of involving local and Indigenous communities in resource control and decision-making processes, thereby integrating local knowledge and ensuring equity as a foundational pillar of modern forest governance (Cashore et al., 2004). This global policy shift towards participatory governance models is central to overcoming historical challenges of top-down management and securing long-term conservation success.

African forests are indispensable to global ecology, contributing approximately 16% of the world's 4.06 billion hectares of forest cover, equivalent to 31% of Africa's total land area (FAO, 2020). These critical ecosystems are cornerstones of the continent's biodiversity, serving as vital habitats for diverse indigenous flora and fauna. Beyond supporting ecological processes, African forests deliver essential global and local ecosystem services, including large-scale climate regulation through carbon sequestration and the maintenance of crucial water catchment areas and soil fertility. Crucially, they underpin socioeconomic stability for millions, providing essential resources for livelihoods (food, fuelwood, and timber) and sustaining local economies

through non-timber forest products (UNDP, 2012). Therefore, the sustainable governance and conservation of Africa's forest estate are paramount for both continental development and international environmental commitments.

Global forest degradation is a critical concern, with approximately 25% of the world's forest area currently degraded, a crisis projected to impact over 3.2 billion people globally due to factors including forest fragmentation, overexploitation of biodiversity, encroachment, overgrazing, and improper agricultural practices (Arshad et al., 2022). Amidst this depletion, local communities have been increasingly recognized as essential stewards of forest management, owing to their proximity to natural resources and inherent respect for established institutional structures (Haji, 2020). This recognition has driven the establishment of various participatory mechanisms, such as the formation of local forest management committees by rural communities to integrate local participation in the sustainable use and maintenance of nearby forest reserves (Haji, 2020). The scale of this devolution could be significant, as exemplified by the Chinese context, where more than 60% of rural forest resources were reportedly placed under the control of village economic co-operatives (Yang et al., 2024), underscoring the shift toward decentralized, community-inclusive governance models to combat ecological decline.

Contemporary scholarship posits that effective global forest governance is fundamentally predicated on the robust inclusion of local communities, moving beyond simple consultation toward genuine participatory resource management (Deep, 2023). This devolution of authority is crucial, as active community involvement fosters a sense of ownership over forest resources, significantly enhancing the legitimacy and long-term effectiveness of conservation and sustainable practices. Across Africa, governments, including Nigeria, have formally adopted a suite of policies, such as those promoting community-based forest management and integrating global frameworks like the UN-REDD+ strategy, to combat severe deforestation and degradation. These government initiatives, while structurally sound in design, face a critical challenge in practice: their efficacy is critically constrained by weak institutional enforcement and a persistent shortfall in the depth of community participation during both the formulation and implementation stages (NEPAD, 2010). Consequently, a fundamental research gap remains in understanding how to bridge the divide between top-down regulatory intent and the on-the-ground reality of genuine, empowered local involvement necessary to achieve ecologically and socially sustainable outcomes.

Community participation is increasingly recognized as essential for the sustainable management of forest resources in Africa and engaging local communities in decision-making processes empowers them to contribute to conservation efforts, promotes the adoption of sustainable practices, and enhances the resilience of forest ecosystems to environmental and socioeconomic challenges (Sunderland et al., 2013). Furthermore, community-based approaches to forest management often lead to more equitable outcomes and contribute to poverty reduction and social development (Somanje and Tieguhong, 2016).

Understanding community perceptions of government policies in forest management is crucial for effective policy formulation, implementation, and evaluation (Larson and Ribot, 2007). Community attitudes, beliefs, and experiences influence their interactions with forest resources, compliance with regulations, and support for conservation initiatives. Incorporating community perspectives, policymakers can develop more inclusive and responsive strategies that address local needs and concerns (Onyekuru and Emelue, 2020).

In some countries, institutional reform has affected the local participation of people in forest use and management. For instance, in Sri Lanka, (Lindström *et al*., 2012) reports that the National Forest Policy and the forestry sector master plan in 1995 adopted and recognized the role of local resource users in forestry management. While the master plan for forestry sector in Nepal in 1988 empowers local users to manage forests and to provide total benefits from such management as well as extension agents rather than a policing force (Joshi, 2012). The forest policy statement of Pakistan in 1991 stresses the participatory approach and integrated management of natural resources. In India, the national forest policy of 1988 linked conservation to meeting the basic needs of the people, and maintaining the intrinsic relationship between forest and tribal forest dependent people through customary rights.

One of the most adopted forest policies for management of forest reserves in developing countries is through Participatory Forest Management (PFM) as stressed in many African countries' framework like Gambia, Ethiopia, South Africa, Zambia, Uganda and Kenya, among others (Wily, 2002). Cameroon, Tanzania, Guinea and South Africa forest policies have all considered local communities' inclusion (Mekou *et al*., 2022).

In Nigeria, principal activities of colonial forestry "were the selection, demarcation and constitution of suitable sites as forest reserves, and the preparation of working plans" for commercial logging activities (Okali and Eyog-Matig, 2004). Proof of the commercial agenda of British colonial forestry (contrary to their conservation agenda) is offered by Geary (1927) cited in Okali and Eyog-Matig (2004), who reports on colonial export earnings from timber exploitation in Nigeria.

The first Nigeria Forest Policy, which was approved in 1988 as part of an Agricultural Policy for Nigeria was aimed at achieving self-sufficiency in wood products through the employment of sound forest principles and techniques, as well as the mobilization

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of human and material resources (FMEnv, 2002). These views were translated into policies expecting the policies to address specifically some issues like promoting more rural participation in forestry development, increasing production per unit area, improving the per capita income and technical skill, particularly in wood processing industries, encouraging a maximization of value added tax of forest produce and fostering of private investments not only in the processing, but also in the regeneration of the resource (Kalu and Izekor, 2006).

In Cross River State, some traditional institutions in rainforest communities make rules and regulation based on their knowledge systems to regulate the collection of forest products and ensure sustainability (Ajake and Anyandike, 2012). In 2006, government authorities took over control of forest planning and policy implementation which in some cases cause the locals to show disrespect towards those rules (Yurdi *et al*, 2006). The aftermath of this scenario is the proliferation of illegal logging and loss of valuable forested landscapes.

2. REVIEW OF RELATED LITERATURE

This comprehensive review synthesizes eight distinct studies, delving into their objectives, methodologies, findings, and recommendations concerning community attitudes, perceptions, and participation in forest conservation and management. These works span diverse geographical contexts Kenya, Nepal, Ghana, Ethiopia, Madagascar, India, and Tanzania and collectively reveal the critical interplay of local livelihoods, governance structures, awareness levels, and socio-economic factors in shaping the success of conservation initiatives. By comparing and contrasting these studies, we gain a nuanced understanding of the challenges and opportunities in fostering genuine, equitable, and effective community involvement in forest stewardship.

The objectives of the reviewed studies highlight a consistent emphasis on understanding local communities' relationships with forests, ranging from broad attitudes to specific factors influencing participation and the perceived benefits or drawbacks of conservation initiatives. Nyangweso (2020) aimed to assess community attitudes and perceptions towards the conservation of the Mau Forest in Kenya, specifically relating these to alternatives for forest resource use. It also sought to determine if proximity influenced attitudes and human-wildlife conflicts. This objective focused on the psychological and behavioral aspects of conservation. Gurung (2022) in Nepal focused on evaluating the governance status within Community Forests (CFs) in semi-urban areas. Its specific aim was to assess practices related to transparency, accountability, and participation, and to measure users' satisfaction levels with these good governance principles.

Kisiwa et al. (2017) investigated forest ecosystem services in Kenya's Mau, Cherangany, and Mt. Elgon Forest ecosystems. Their objective was to understand the importance of these services to local communities, identify threats, and assess current and future flow, emphasizing local values in management. Woldie and Tadesse (2019) in Ethiopia aimed to assess local people's views and attitudes towards community versus state forest governance. This objective sought to understand preferences for different management regimes and the factors influencing these preferences. Vuola and Pyhälä (2016) examined local community institutions, perceptions, and involvement concerning the management of Ranomafana National Park in South-Eastern Madagascar. Their objective was to understand the social dimensions of protected area management, including impacts and conflicts. Silori (2006) in India focused on the perception of the Bhotiya tribal community regarding natural resource use and conservation in the Nanda Devi Biosphere Reserve. Its objective was to identify bottlenecks in sustainable forest management through people's participation.

Kaganga and Ndumbaro (2009) in Tanzania aimed at examining local communities' perceptions of forest management in two villages, specifically those where participatory forest management had been implemented early. Amani et al. (2022) in Tanzania focused on understanding community perceptions on forest management and conservation under the REDD+ initiative, specifically differentiating perceptions across wealth groups (poor, medium, better-off). Sobeng et al. (2023) assessed community perception of forest reserve regulations enforcement in Ghana, examining the factors associated with these perceptions. Finally, Afriyie et al. (2022) analyzed knowledge and perceptions of rural and urban communities towards small protected areas in Ghana, with an emphasis on understanding factors influencing attitudes toward PAs. And Linum and Tang'are (2018) aimed to understand Community Perceptions towards Participatory Forest Management in Kazimzumbwi Forest Reserve, Tanzania, particularly focusing on the rejection of top-down management.

The methodologies employed across these studies are diverse, ranging from comprehensive surveys and statistical analysis to in-depth qualitative investigations, often blending approaches to capture both broad trends and nuanced local perspectives. Nyangweso (2020) utilized a case study survey in Kenya. They collected data from 200 residents (86% male, 14% female) using semi-structured and structured questionnaires for local residents and Community Forest Association (CFA) officials, respectively. Data cleaning, coding, summary tables, and cross-tabulations were performed. Chi-square tests determined differences between sites, and Multinomial Logistic Regression (using SPSS) identified predictors (e.g., region, distance, sex,

education, forest dependence, human-wildlife conflict experience, satisfaction with government ownership) influencing attitudes. Gurung (2022) conducted a household survey of 60 households in Nepal using a pre-determined interview schedule for quantitative data on governance status (transparency, accountability, participation) and user satisfaction. In-depth interviews with three CF executive committee representatives and two forest officials, using semi-structured questionnaires, gathered qualitative insights into governance challenges. Secondary data included Forest Operational Plans, CFUG constitutions, and audit reports. Analysis combined qualitative and quantitative methods (Microsoft Excel), with Likert scale for satisfaction levels.

Kisiwa et al. (2017) employed Participatory Rural Appraisal (PRA) methods in Kenya. Data collection involved Focus Group Discussions (FGDs) with community leaders (elders, CFA/WRUA officials, religious leaders, men, women, youth) and key stakeholder meetings (government agencies, county governments, private organizations, CSOs). They used a prepared checklist to obtain specific data and the Weighted Ranking Method-Pebble Distribution Method (PDM) in FGDs to rank identified goods and services, achieving consensus through group discussion.

Woldie and Tadesse (2019) in Ethiopia used a structured questionnaire with closed- and open-ended questions administered to 160 randomly selected households for quantitative data, covering a wide range of socio-economic variables. They also conducted key informant interviews with 25 individuals (elderly, religious leaders, opinion makers, development agents, kebele administrators, district agriculture experts) and three focus group discussions (FGDs) (male, female, youth groups, 10 members each), guided by a checklist and tape-recorded. Quantitative data was analyzed using descriptive statistics and multiple linear regression, while qualitative data was synthesized. Vuola and Pyhälä (2016) conducted fieldwork in Madagascar using primarily qualitative methods. They held village meetings (n=5), interviewed village-level key informants (n=5), and conducted semi-structured interviews with 44 randomly selected residents, ensuring balanced representation of gender and age groups where possible. They pilot-tested interviews and obtained Free Prior Informed Consent (FPIC). Three focus group discussions (n=3) were also held. Participant observation throughout the stay provided contextual understanding. All interviews and discussions were transcribed and analyzed using Qualitative Content Analysis (QCA), applying 181 specific codes grouped under 22 broader thematic codes.

Silori (2006) in India used a stratified random sampling method, selecting 45 households (20% from each of three villages) for detailed study on perceptions. Their methodology included participatory meetings to gather views on biodiversity conservation, informal discussions and participant observation for socio-economic and cultural history, and structured/semi-structured questionnaire interviews for individual respondent perceptions, focusing on gaining community confidence. Kaganga and Ndumbaro (2009) in Tanzania conducted field research in two purposively selected villages (Kidugala and Masaulwa) where PFM was initiated early. They interviewed individuals aged 18+ from sampled households, and purposively sampled 6 village natural resources committee members, 1 village chairperson, 1 ward executive officer, 1 ward forest extension officer, and 1 District Forest officer. They collected both primary data (interviews, questionnaires, FGDs, observation) and secondary data (documents, books, internet) using both qualitative and quantitative approaches. FGDs were used to identify community knowledge and implementation of community-based forest management.

Amani et al. (2022) employed a strictly quantitative approach in Tanzania for their REDD+ study. They used a multistage sampling procedure: purposive selection of four villages (two highland, two lowland) involved in the REDD+ project, followed by stratified sampling to classify households into poor, medium, and better-off wealth groups. Finally, simple random sampling selected 328 households proportionally from these strata for household interviews using a questionnaire. Data was analyzed using IBM SPSS version 24 to generate descriptive and inferential statistics, employing Chi-square ($\chi 2$) tests for independence across wealth groups ($p \leq 0.05$). Sobeng et al. (2023) used questionnaires to collect quantitative data from a total sample of 150 community members (50 from each of three purposely selected communities within 5 km of the Tano-Offin forest reserve, Ghana). The researchers, fluent in the local language, administered questionnaires with the aid of research assistants, ensuring informed consent.

Afriyie et al. (2022) conducted household surveys in communities surrounding four protected areas (three rural, one urban) in Ghana. They used a semi-structured interview questionnaire with close-ended (Likert scale) and open-ended questions. Sampling involved visually dividing communities into quadrants and opportunistically (conveniently) selecting household heads or adults. Questionnaires were translated, and informal discussions with village leaders provided additional qualitative data. Statistical analysis included the nonparametric Kruskal-Wallis (K-W) H test (followed by Bonferroni correction) to detect differences among PAs, and ordinal logistic regression (using SPSS 25) to identify sociodemographic predictors ($p \leq 0.05$). Linum and Tang'are (2018) conducted a cross-sectional study in Tanzania, employing a questionnaire survey with 100 households, focus group discussions, field visits, and documentary review. Data was analyzed using SPSS, Microsoft Excel, and Geographical Information System (GIS).

The findings across these studies present a rich, often complex, and sometimes contradictory picture of community-forest interactions and the efficacy of participatory approaches. A recurring theme is the importance of local attitudes and perceptions towards conservation. Nyangweso (2020) found predominantly positive attitudes (89%) towards the Mau Forest in Kenya, leading to conservation practices on farms (tree planting, soil/water conservation). However, a significant minority (60%) reported negative experiences, particularly due to human-wildlife conflicts, which contributed to negative attitudes. Similarly, Woldie and Tadesse (2019) in Ethiopia found a strong positive attitude (83%) towards community forestry, but a clear negative attitude (70% disagreed) towards state forest governance, indicating a preference for devolved management. Silori (2006) also noted that 85% of respondents supported forest conservation but developed a negative attitude towards NDBR management due to restricted access to resources. Linum and Tang'are (2018) further confirmed this sentiment, with 97.3% of respondents showing negative perceptions towards top-down forest management regimes due to conflicts, poor involvement, and strict regulations.

Community awareness plays a crucial, though sometimes inconsistent, role. Nura & Endris (2020) in Ethiopia found high community awareness of degradation, suggesting a foundation of knowledge for management. Yet, Mbunya et al. (2014) (from a previous set of studies) highlighted that poor information led to meaningless participation in Cameroon's community forests. Amani et al. (2022) found a significant difference in awareness across wealth groups in Tanzania's REDD+ areas, with medium and poor households showing higher awareness than better-off households (52-50% vs. 40% highly aware). This contradicts a common assumption about wealth correlating with information access. Participation levels and influencing factors were key findings. Enuameh-Agbolosoo (2016) reported low perceived participation by opinion leaders in Ghana's KNP, with only a small percentage involved as guides or anti-poaching team members. Their study identified education and belief in conservation as significant factors driving participation. Zande & Mzuza (2022) also confirmed that community awareness and economic benefits were the main factors influencing participation in Malawi, highlighting a pragmatic driver.

Benefits from participation were observed but often limited in scope. Sultana (2009) found that alternative income-generating activities supported FUG members' livelihoods and reduced forest extraction in Bangladesh, but the limited reach of these benefits (very few households actually received support) raised questions about their broader impact on forest conditions. Bisong et al. (2016), however, found tangible benefits from participation in Nigeria, including increased food production, income generation, and raw material availability, demonstrating the efficacy of local knowledge in conservation. Governance structures and their impact on equity and legitimacy were also critical. Gurung (2022) found inclusive committees in Nepalese CFUGs (50% female) but raised concerns about the potential exploitation of marginalized groups in the name of inclusion without prior capacity building. They also noted conflict between CFUGs and subdivision forest offices, emphasizing the need for better coordination. Vuola and Pyhälä (2016) revealed largely negative reactions to imposed protected area regulations in Madagascar's Ranomafana, stemming from a lack of communication and negotiation. Despite local pro-conservation interests, conservation authorities were reluctant to devolve responsibility, leading to the park being perceived as illegitimate by many villagers. Friedman et al. (2020) (from a previous set of studies) highlighted how existing socio-economic contexts influence local institutions, suggesting that failing to account for these can perpetuate social inequalities in community-based forest management outcomes.

Sobenget al. (2023) found that proximity to the forest, gender, education, community membership status (migrants vs. indigenes), livelihood impacts of regulations, receiving assistance, and occupation type were all associated with community perception about forest reserve regulations enforcement in Ghana. This comprehensive list highlights the multifaceted nature of perception. Afriyie et al. (2022) found that men were more satisfied with PA policies and governance than women, likely due to greater participation in outdoor activities. Crucially, positive attitudes toward PAs persisted despite conflicts, indicating a fundamental understanding of healthy ecosystems and a common ground for conservationists and local communities.

Finally, Banana et al. (2017)'s comparative analysis showed that livelihood outcomes were limited under government-led forest management but positive under Community-Based Forest Management (CBFM). While some forests improved, others continued to degrade, showing that policy reforms alone are insufficient, and the implementation model (CBFM) significantly influences outcomes, particularly when external stakeholders support income enhancement. Recommendations: Empowering Communities, Tailoring Programs, and Strengthening Governance The recommendations from these studies converge on several key themes: the necessity of genuinely involving local communities, tailoring interventions to local contexts, building capacity, and ensuring equitable and transparent governance.

Nyangweso (2020) recommended training residents on environmental issues, encouraging alternatives to forest resources, fostering local decision-making and participation, and crucially, compensating for losses due to human-wildlife conflicts to foster positive attitudes and behavior towards conservation in Kenya. Woldie and Tadesse (2019) strongly advocated for

collaboration among all concerned bodies (governmental and non-governmental organizations, researchers, extension workers, administrators, and local people) for sustainable forest management in Ethiopia. Vuola and Pyhälä (2016) emphasized the enormous untapped potential for successful conservation if authorities in Madagascar would improve communication and negotiation with local villagers and devolve trust and responsibility, rather than blaming "ignorance." Linum and Tang'are (2018) explicitly recommended active involvement of local people in forest management and the establishment of clear buffer zones to halt deforestation, ensuring forest sustainability.

Gurung (2022) recommended building the capacity of marginalized groups before asking them to represent in CFUG executive committees to ensure genuine good governance in Nepal. They also stressed the need for regular coordination and joint participatory monitoring between CFUGs and subdivision forest offices to resolve conflicts and maintain governance. Hoang et al. (2017) called for more studies and research into the planning and decision-making stages of forest governance in Vietnam, as well as deeper analysis of gender and corruption issues, and evaluations of FLEGT VPA compliance, to bridge the gap in good governance principles. Amani et al. (2022) advised that policies, plans, and strategies related to REDD+ should consider the nuanced variations and similarities in community perceptions across wealth groups to inform future actions in Tanzania, emphasizing a more equitable approach. Friedman et al. (2020) (from previous review) further reinforced this, recommending that program design and implementation should explicitly account for existing socio-economic contexts to address social inequalities, thereby achieving joint social and ecological objectives.

Nura & Endris (2020) suggested modifying educational/training programs for local communities to consider and build upon their existing knowledge and practices in Ethiopia, making interventions more effective. Mbunya et al. (2014) (from previous review) recommended that policy interventions commit CF managers and stakeholders to ensure full awareness among all intended beneficiaries for truly inclusive participation in Cameroon. They also advocated for public debates and research on sustainable awareness and participation. Zande & Mzuza (2022) recommended the deliberate involvement of youth in forest management in Malawi, recognizing their potential and addressing the current age imbalance in participation. Bisong et al. (2016) advised that the government should design forest conservation programs that are participatory, democratic, and "bottom-up," actively integrating local people in all stages of conservation activities, leveraging their indigenous knowledge for better outcomes in Nigeria. Suharti (2018) implicitly recommended that social forestry programs should not just be established, but must focus on ensuring meaningful participation and tangible benefits that genuinely empower local people. Banana et al. (2017) highlighted the success of Community-Based Forest Management (CBFM) for positive livelihood outcomes, implicitly recommending its expansion over purely government-led models. They also suggested the importance of sustained multi-stakeholder support for community income enhancement schemes to boost participation. Sobenget al. (2023) highlighted the need for policy implications to address the factors influencing community perception of forest reserve regulations enforcement, suggesting targeted approaches based on proximity, gender, education, and livelihood impacts.

In summary, the collective wisdom from these studies underscores that successful forest conservation hinges not merely on policy directives but on a deep understanding of local communities' realities. This requires genuinely involving them, addressing their concerns (especially human-wildlife conflicts and livelihood needs), building their capacity, ensuring transparent and equitable governance, and recognizing that context-specific approaches are paramount for fostering sustainable and mutually beneficial relationships between people and forests.

2.1 THEORETICAL EXPLANATION

2.1.1 CONCEPT OF CO-MANAGEMENT

The effective governance of complex natural resources like forests, fisheries, and watersheds necessitates moving beyond the traditional model of single-agency, top-down management. This paradigm shift has been significantly influenced by two intertwined concepts: the Tragedy of the Commons and the subsequent development of Co-management and broader Governance theories.

In the Tragedy of the Commons, the concept was popularized by ecologist Garrett Hardin in his influential 1968 article published in Science magazine, titled "The Tragedy of the Commons" (Hardin, 1968). Hardin's work built upon an earlier essay by a Victorian economist that discussed the effects of unregulated grazing on common land. Hardin's central argument posits that individuals, acting independently and rationally in their own self-interest, will inevitably deplete a shared, unregulated resource, even when it is contrary to the long-term best interests of the entire group. This occurs because each individual gains directly from exploiting the common resource, while the costs of that exploitation are distributed among all users. Over time, the cumulative effect of individual rational actions leads to the degradation or collapse of the common resource. Hardin's initial,

rather pessimistic, conclusion was that the only viable solutions to this "tragedy" were either private ownership of common lands or resources, or strict government regulation (Hardin, 1968). The term "commons" in this context broadened beyond agricultural lands to include any shared, unregulated resource, such as oceans, atmosphere, or fish stocks.

The Tragedy of the Commons has been a dominant framework in assessing natural resource issues for decades (Bromley & Cernea, 1989). For this study, the concept serves as a crucial point of departure. By highlighting the potential for degradation under open-access conditions, it underscores the inherent challenges in managing common-pool forest resources. The study's focus on co-management theory directly addresses the limitations of Hardin's original solutions. If the "tragedy" model assumes degradation in the absence of private or state control, then this study, by employing co-management theory, implicitly challenges that deterministic view, suggesting that collective action can indeed lead to sustainable outcomes. It provides the theoretical background against which the efficacy of collaborative forest resource management is examined, specifically recognizing the need for structured joint sharing of common-pool resources.

In the case of Co-management and Resource Governance Concept, Co-management, and the broader concept of Governance that encompasses it, is the brainchild of multiple influential scholars and practitioners. While Garrett Hardin's work on the Tragedy of the Commons served as a critical impetus by highlighting the failures of open-access, it was the subsequent work of scholars like Elinor Ostrom and Pierre and Peters (2000), alongside Kooiman (2003), and numerous other authors who expanded the scope of these ideas. Elinor Ostrom, in particular, famously challenged Hardin's assertion, demonstrating through extensive empirical research that communities often develop complex, self-governing institutions to manage common-pool resources sustainably, without resorting to full privatization or state control (Ostrom, 1990).

Key Tenets of the Concepts suggests looking beyond traditional government structures to include public-private-civil society partnerships as a means of addressing the shortcomings of single-agency, top-down management (Pierre & Peters, 2000; Kooiman, 2003). It recognizes that many complex resources are too intricate for any single entity to manage effectively, necessitating the joint action of multiple parties. Co-management is a specific arrangement within this broader governance framework. It is defined as the sharing of power and responsibility between government authorities and local resource users (communities, user groups, etc.) for the management of natural resources. This ideology is built on the premise that local communities possess invaluable traditional ecological knowledge, a direct stake in resource sustainability, and the capacity for collective action. By formalizing partnerships, co-management seeks to overcome the limitations of purely state-centric or purely community-based approaches by blending the strengths of both, ideally leading to more equitable, effective, and sustainable resource management outcomes. It is seen as a way to create the necessary partnerships to deal with the shortcomings of top-down management.

This study explicitly employs co-management theory to thoroughly examine collective action in forest resource management in the study area. This is highly relevant because the local forest resources are likely to be common-pool resources that face the challenges described by Hardin. By adopting co-management theory, the study directly investigates an alternative to the "tragedy" scenario, exploring how joint sharing of common-pool resources can be effectively achieved. The theory is particularly essential for analyzing institutional reform and breaches in participatory management, as it provides a framework to understand how power and responsibilities are (or are not) genuinely shared between government and local users. It guides the investigation into whether the institutional arrangements facilitate or hinder collective action, ultimately contributing to the sustainable management of forest resources.

3.0 MATERIALS AND METHODS

MATERIALS

The study was carried out in Central Cross River State. The central part of Cross River State lies between latitudes 5°40′N and 6°35′N and longitudes 8°00′ E and 9°20′E. The area includes the Ikom-Mamfe embayment and Boki Geological environment. The Ikom-Mamfe embayment is the Northwest to Southeast segment of the Northeast to Southwest trending Benue Trough. It extends laterally into parts of Western Cameroon, where it covers an area of 2,016km2 (Eseme et al., 2002). It occupies the low-lying areas between the Oban Massif and the Obudu plateau. This area covers Abi, Yakurr, Obubra, Ikom and Etung and Boki Local Government Areas.

Central Cross River State experiences a tropical rainforest climate, characterized by high temperatures, high humidity, and significant rainfall throughout the year. However, there are slight variations due to the region's topography and elevation. The

region experiences relatively high temperatures year-round, with average daily temperatures ranging from 25°C to 30°C which is slightly cooler in areas with higher elevations, such as the Afi Mountain Range.

Central Cross River State receives heavy rainfall, with an annual average of 2,000 mm to 3,000 mm making it a bimodal pattern. This means there are two distinct rainy seasons: Long Rainy Season: March to July and Short Rainy Season: September to November (Ayoade, 1983). (1983).. The heaviest rainfall occurs between June and September. The dry season occurs between December and February. The late dry season is characterized by the Harmattan, a dry and dusty wind that blows from the Sahara Desert, reducing visibility and lowering temperatures slightly. Humidity levels are generally high throughout the year, often exceeding 80%. The high humidity is due to the region's proximity to the Atlantic Ocean and its dense rainforest vegetation.

Remote sensing techniques, Garmin GPS device and a well-structured questionnaire and stakeholder focused group discussion were used for collecting data from the respondents. This questionnaire was drafted based on the objectives of the study. Personal observation during the field survey were also be taken into consideration.

METHODS

This study employed a Survey design approach involving the collection of qualitative and quantitative data geared toward achieving the set objectives. It also adopted a Geographic Information Systems approach to the mapping of forest locations. Data required for the purpose of this research was obtained from both primary and secondary sources. The primary data was obtained from field measurements and observations as well as from experts and stakeholders via focused group discussion transcripts. While secondary data include: Topographic map, and remote sensing and GIS data. The nature of data shall be both quantitative and qualitative as the case may be and in line with the set objectives. Details of data requirements is as follows:

Identification and mapping of existing forests in Central Cross River State used the following datasets:

(a) **Administrative Boundaries:** This data has to do with the political or Local Government boundaries of the component local government areas that make up the central Cross River State. This data was sourced from the Cross River State GIS Agency. The data was collected in shapefile and JPEG format.
(b) **Forest Location Points:** This is the ground truthing data of the various forest location points of interest. It was collected using Garmin handheld GPS device and the format of this data is (GPX Latitudes/Longitudes).
(c) **Landsat 8 Imagery:** The Landsat 8 imageries of the Central Cross River State was downloaded from United States Geological Survey (USGS) website. The format of the dataset was tagged image file format (TIFF).
(d) **Road Data:** Road data of Central Cross River State was sourced (downloaded) from Open Street Map (OSM). The format of the file is Keyhole Markup Language (KML) format.

Evaluating the involvement of communities in the formulation and implementation of forest policies in Cross River State. Data was sourced from questionnaires and focused group discussion transcripts. The original formats of the file were in terms of hard copy and audio recordings.

In addition, the population of the study consisted of only local government areas in Central Cross River with at least a forest management team from either the government or community. Through a physical inspection count, five local government areas had such team, namely Etung, Obubra, Yakkur, Boki and Ikom Local Government Areas.

With a population of 199,460, a sample size determination was undertaken using the Bill Godden’s formula for sample size determination and a total of 245 respondents were used in questionnaire survey

To map the distribution of forested areas, land use/land cover analysis of the area using Erdas IMAGINE. Specifically, the ERDAS Imagine software 2015 was used in analyzing the imageries of the area with a view to generating the result of the resulting land use/cover types in hectares.

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4.0 RESULTS AND DISCUSSIONS

Table 4.1: Age of the Respondents

VILLAGE	18-30	31-45	46-60	60 +	MEAN	STD
Agoi Ibami	8	10	12	7	9.05	2.21
Agoi Ekpo	8	21	5	8	9.05	7.14
Iyamittate	7	23	24	21	16.87	7.93
Nsofang	2	6	4	3	3.46	1.70
Mkpot	1	5	5	1	2.23	2.30
Abankang	2	7	4	1	2.73	2.64
Alok	1	5	10	2	3.16	4.04
Nkarasi	2	9	5	3	4.05	3.09
Abinti	1	5	6	1	2.34	2.62
Eruwan	4	10	3	4	4.68	3.20
Okubishuyo	3	7	7	1	3.48	3.00
Boje	2	5	5	8	4.47	2.44
Esobendege	1	4	11	5	3.85	4.19
Total	**42**	**117**	**101**	**65**	**69.46**	**46.56**

Source: Field Data (2025)

Table 4.2: Gender of the Respondents

Village	Male	Female	Mean	STD
Agoi Ibami	13	24	17.66	7.77
Agoi Ekpo	11	31	18.46	14.14
Iyamittate	7	68	21.81	43.13
Nsofang	3	12	6.00	6.36
Mkpot	1	5	2.23	2.82
Abankang	4	10	6.32	4.24
Alok	4	14	7.48	7.07
Nkarasi	7	12	8.77	2.82
Abinti	1	12	3.46	7.77
Eruwan	8	13	10.19	3.53
Okubishuyo	3	15	6.70	8.48
Boje	5	15	8.66	7.07
Esobendege	6	15	9.48	6.36
Total	**73**	**245**	**127.28**	**121.62**

Source: Field Data (2025)

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Table 4.3: Educational Level of the Respondents

VILLAGE	No formal education	Primary	Secondary	Tertiary	MEAN	STD
Agoi Ibami	2	6	24	5	6.16	9.97
Agoi Ekpo	4	15	18	6	8.97	6.80
Iyamittate	10	12	40	13	15.80	14.22
Nsofang	3	2	5	5	3.49	1.50
Mkpot	1	4	6	1	2.21	2.44
Abankang	4	2	7	1	2.73	2.64
Alok	2	9	5	2	3.66	3.31
Nkarasi	3	11	2	3	3.75	4.19
Abinti	1	9	1	2	2.05	3.86
Eruwan	2	3	12	4	4.11	4.57
Okubishuyo	3	2	10	3	3.66	3.69
Boje	2	1	15	2	2.78	6.68
Esobendege	6	9	3	3	4.69	2.87
Total	**43**	**85**	**148**	**50**	**64.12**	**66.79**

Source: Field Data (2025)

Table 4.4: Occupation of the Respondents

VILLAGE	Farming	Logging	Hunting	Trading	Others	MEAN	STD
Agoi Ibami	24	5	1	5	2	4.12	9.44
Agoi Ekpo	27	3	2	5	5	5.26	10.47
Iyamittate	52	9	1	13	0	8.83	22.72
Nsofang	9	1	0	4	1	2.44	3.77
Mkpot	6	0	0	5	1	3.10	2.64
Abankang	6	2	0	1	5	2.78	2.38
Alok	10	1	0	6	1	2.78	4.35
Nkarasi	11	1	2	5	0	3.23	4.50
Abinti	8	1	0	2	2	2.37	3.20
Eruwan	12	3	0	4	2	4.11	4.57
Okubishuyo	9	1	1	6	1	2.22	3.71
Boje	11	1	0	7	1	2.96	4.89
Esobendege	7	2	0	8	4	4.60	2.75
Total	**192**	**30**	**7**	**71**	**25**	**48.86**	**79.45**

Source: Field Data (2025)

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Table 4.5: Duration of Residence

Village	Less than 5 years	5-10 years	10-20 years	More than 20 years	Mean	Std. Dev.
Agoi Ibami	1	1	12	23	4.07	10.53
Agoi Ekpo		3	6	33	8.40	16.52
Iyamittate	2	2	15	56	7.61	25.57
Nsofang	0	2	2	11	3.53	5.19
Mkpot	0	0	3	9	5.19	4.24
Abankang	0	0	4	10	6.32	4.24
Alok	0	1	5	12	3.91	5.56
Nkarasi	0	1	7	11	4.25	5.03
Abinti	0	0	2	11	4.69	6.36
Eruwan	0	0	0	21	4.03	8.66
Okubishuyo	0	0	1	17	4.12	11.31
Boje	0	1	0	19	4.35	12.72
Esobendege	0	2	2	17	4.08	8.66
Total	**3**	**13**	**59**	**250**	**81.56**	**84.23**

Source: Field Data (2025)

Table 4.6: Mapped Communities and their Co-ordinates

S/N	Communities	LGAs	Longitude	Latitude
1	Agoi Ibami	Yakurr	8°10'11.406"E	5°43'11.834"N
2	Agoi Ekpo	Yakurr	8°15'51.863"E	5°50'0.942"N
3	Iyamittate	Obubra	8°20'50.154"E	5°51'57.196"N
4	Nsofang	Etung	8°41'59.779"E	5°47'55.678"N
5	Mkpot	Etung	8°44'16.701"E	5°43'35.09"N
6	Abankang	Ikom	8°38'47.242"E	6°17'29.134"N
7	Alok	Ikom	8°39'35.913"E	6°19'55.553"N
8	Nkarasi	Ikom	8°38'59.523"E	6°15'14.955"N
9	Abinti	Ikom	8°39'42.296"E	6°12'30.297"N
10	Eruwan	Boki	8°57'25.565"E	6°13'33.153"N
11	Okubishuyo	Boki	8°47'9.846"E	6°26'38.658"N
12	Boje	Boki	8°55'21.995"E	6°15'36.78"N
13	Esobendege	Boki	8°48'51.334"E	6°13'2.967"N

Source: Research Compilations 2025

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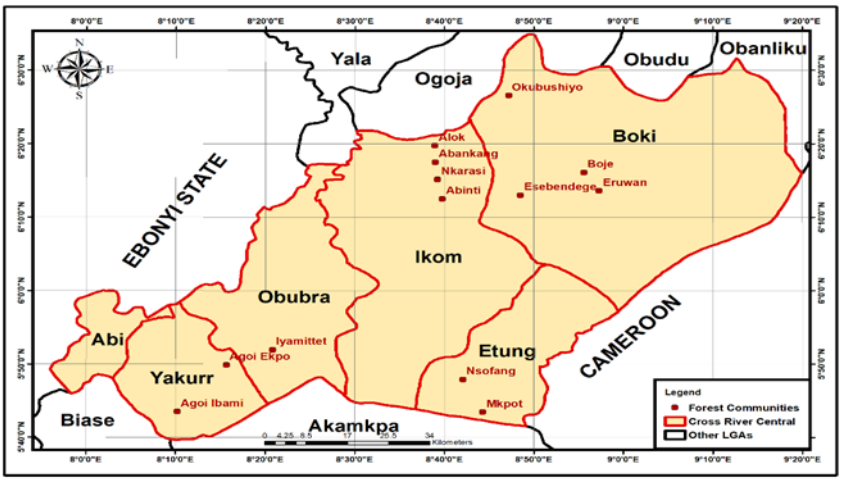

Figure 4.1: Central Cross River State Showing the Study Communities
Source: Compiled by Author at GIS Lab University of Uyo.

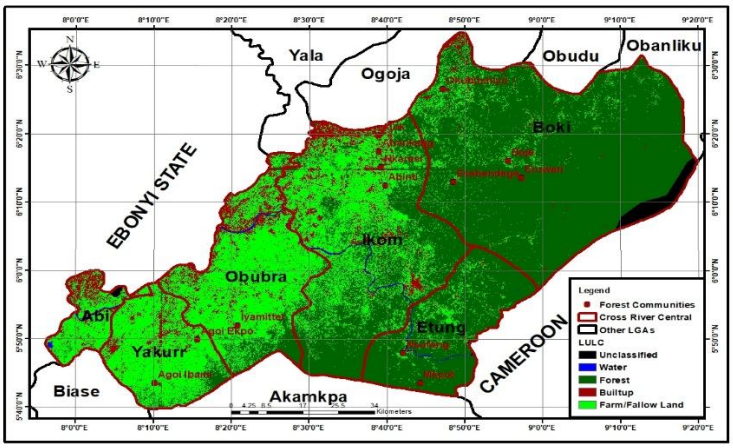

Figure 4.2: Land Use Land Cover Map of Central Cross River State Showing the Study Communities
Source: Compiled by Author at GIS Lab University of Uyo.

The Land Use/Land Cover (LULC) analysis, presented in Figure 4.2 and derived from 2024 Sentinel 2 satellite imagery, classified a total, complete area of 773,192.78 hectares across the Cross River Central Senatorial District. This total represents the fully categorized landscape (100% of the classified area). The thematic map distinctly categorizes the landscape, highlighting Forest as the overwhelming dominant land cover, encompassing 442,487 hectares, which constitutes a massive 57.22% of the classified area. Spatially, this forest block remains heavily concentrated in the eastern Local Government Areas, particularly Boki, adjacent to the international border with Cameroon.

However, a closer look at the data reveals intense anthropogenic pressure, driven primarily by timber logging and agricultural expansion. Farm/Fallow Land covers a substantial 257,887 hectares (33.35%), demonstrating widespread conversion of natural habitat for cultivation. In comparison, the Built-up areas are relatively limited, accounting for 63,711 hectares (8.23%). Water bodies remain the smallest classified feature, covering only 3,767.78 hectares (0.49%). Only a minimal portion of 5,340 hectares (0.69%) is designated as "Unclassified." This quantitative assessment underscores a region with a significant but fragile forest ecosystem, whose integrity is primarily threatened by extensive deforestation and agricultural expansion.

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Table 4.7: Land Use Land Cover Classes in Central Cross River as at 2024

Land Use / Land Cover Class	Area (units)	Percentage (%)
Unclassified	5,340	0.69%
Forest	442,487	57.22%
Built-up	63,711	8.23%
Farm/Fallow Land	257,887	33.35%
Water	3,767.78	0.49%
Total	**773,192.78**	100

Source: Field Data (2025)

Table 4.8: Involvement of Community Members in the Formulation of Forestry Policies

Village	Yes	No	Mean	Std. Dev.
Agoi Ibami	1	36	6.00	24.74
Agoi Ekpo	5	37	13.60	22.62
Iyamittate	13	62	28.39	34.64
Nsofang	1	14	3.74	9.19
Mkpot	2	10	4.47	5.65
Abankang	3	11	5.74	5.65
Alok	3	15	6.70	8.48
Nkarasi	2	17	5.83	10.60
Abinti	4	9	6.00	3.53
Eruwan	3	18	7.34	10.60
Okubishuyo	4	14	7.48	7.07
Boje	3	17	7.14	9.89
Esobendege	6	15	9.48	6.36
Total	50	275	111.94	159.09

Source: Field Data (2025)

Table 4.9: Rating the Level of Community Involvement in the Implementation of Forest Management Policies

Village	High	Moderate	Low	No Involvement	Mean	Std. Dev.
Agoi Ibami	5	5	17	13	8.62	6.00
Agoi Ekpo	3	6	27	7	7.63	10.96
Iyamittate	7	16	47	5	12.73	19.43
Nsofang	1	1	10	3	2.34	4.27
Mkpot	1	1	7	3	2.14	2.82
Abankang	2	2	8	2	2.82	3.00
Alok	1	1	12	4	2.63	5.19
Nkarasi	1	2	13	3	2.97	5.56
Abinti	1	2	7	3	2.54	2.62
Eruwan		1	16	4	4.00	7.93
Okubishuyo	1	2	12	4	3.13	4.99
Boje	1	2	11	6	3.38	4.54
Esobendege	2	3	9	7	4.40	3.30
Total	26	44	196	64	59.38	80.66

Source: Field Data (2025)

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Table 4.10: Participation in Forest Management

Village	Attend meetings	Provided information or advice	Participated in Conservation activities	None	Mean	Std. Dev.
Agoi Ibami	20	5	3	9	7.20	7.58
Agoi Ekpo	22	9	4	7	8.62	7.93
Iyamittate	33	6	15	21	15.80	11.32
Nsofang	8	2	2	3	3.13	2.87
Mkpot	7	0	0	5	5.91	1.41
Abankang	11	0	1	2	2.80	5.50
Alok	6	1	7	4	3.60	2.64
Nkarasi	8	2	5	4	4.22	2.5
Abinti	7	1	0	5	3.27	3.05
Eruwan	8	2	1	10	3.55	4.42
Okubishuyo	8	2	5	3	3.93	2.64
Boje	9	2	6	3	4.24	3.16
Esobendege	7	3	5	6	5.00	1.70
Total	154	35	54	82	71.33	56.78

Source: Field Data (2025)

Table 4.11: Frequency of Local Authorities Involving Community in Decision Making Regarding Forest Resources

Village	Always	Sometimes	Rarely	Never	Mean	Std. Dev.
Agoi Ibami	5	4	22	6	7.16	8.53
Agoi Ekpo	3	9	21	9	8.45	7.54
Iyamittate	6	6	21	40	13.18	16.13
Nsofang	1	2	2	7	2.30	2.70
Mkpot		2	5	5	3.68	1.73
Abankang	2		2	10	3.41	4.61
Alok				18	18.00	5.23
Nkarasi			5	14	8.36	6.36
Abinti	3	1		9	3.00	4.16
Eruwan	4	2	5	10	4.47	3.40
Okubishuyo	2	2	5	9	3.66	3.31
Boje	3	2	2	13	3.53	5.35
Esobendege		5	6	10	6.69	2.64
Total	29	35	96	160	85.94	76.27

Source: Field Data (2025)

4.2 DISCUSSION OF FINDINGS

The age profile of the respondents, as detailed in Table 4.1, provided critical context for the study's findings by highlighting the structure of the sampled population. A total of 325 individuals from the 13 villages participated, with the most significant concentration of respondents falling within the 31-45 age bracket, which accounted for 117 individuals. This distribution was profoundly significant as it indicated that the majority of the population sampled consisted of mature adults who held key roles as community members and decision-makers.

An analysis of the respondents' occupations, provided a crucial understanding of the local economy and lifestyle, which was highly significant to the study's overall findings. The data revealed that farming was the predominant occupation, with 192 of the 325 total participants identifying as farmers. Other occupations included 71 traders, 30 loggers, and just 7 hunters. The

"Others" category, which encompassed various non-traditional jobs, was represented by 25 respondents. This occupational distribution was vital because it contextualized the primary concerns and perspectives of the respondents.

Considering the involvement of community members in the formulation of forest management policies, it was revealed that vast majority of respondents were not included in the policy-making process. Of the 325 individuals surveyed, an overwhelming 275 reported that they were not involved, while a mere 50 indicated some form of participation. This data was highly significant, as it highlighted a fundamental, top-down approach to policy formulation that disregarded local input. For instance, in villages like Agoi Ibami, only 1 respondent out of 37 was involved, and in Iyamittate, only 13 out of 75 participated. This profound lack of community inclusion provided a powerful explanation for the poor awareness and understanding of policies. Without a voice in creating the rules, the community had little reason to trust or comprehend them, thereby undermining the policies' legitimacy and effectiveness. The study also detailed the nature of respondents' participation in forest management, provided a crucial insight into the passive role of the community, which was highly significant to the study's findings. The data showed that while a large number of people were engaged in a minor capacity, active involvement was alarmingly low. For example, the most common form of participation was simply attending meetings, which was reported by 154 respondents. However, this level of engagement did not translate into meaningful action, as only 54 individuals participated in conservation activities and a mere 35 provided information or advice. A total of 82 respondents reported no participation at all, further underscoring the disengagement. This finding was pivotal because it confirmed that the failure of forest management policies was not due to a complete lack of contact with the community, but rather a lack of meaningful, hands-on participation. It demonstrated a top-down model where residents were passive observers rather than active partners in a collaborative process.

In addition, rating the consistency of respondents' participation in forest management, was highly significant as it revealed a severe and widespread lack of consistent engagement. The data showed that the vast majority of the 320 respondents reported either never participating (160) or rarely participating (96) in forest management activities. This meant that a total of 256 respondents, or 80% of the sample, demonstrated minimal to no involvement. In stark contrast, only a small minority of the population was engaged, with a combined 64 respondents indicating they participated "Always" (29) or "Sometimes" (35). This finding provided a critical explanation for the ineffectiveness of the policies under study. It indicated a fundamental disconnect between top-down policy formulation and the on-the-ground reality, where community members were not consistently or actively involved in the initiatives designed for them.

The Land Use/Land Cover (LULC) analysis successfully achieved the objective of identifying and mapping the existing forests in the Central Cross River State, providing a robust empirical foundation for conservation efforts. The quantitative data confirmed that the Forest remains the overwhelmingly dominant land cover, occupying a massive 442,487 hectares, which constitutes 57.22% of the classified landscape (Table 4.7). This figure is critical, re-emphasizing the ecological importance of the region as a significant portion of the remaining Nigerian tropical rainforest. Spatially, the analysis reveals that the most critical forest block is highly concentrated in the eastern Local Government Areas, specifically Etung, Ikom and Boki, which border Cameroon. This finding is consistent with long-standing ecological surveys that classify this geographical corridor as a core element of the wider Cross River/Cameroon biodiversity hotspot. For instance, the research detailing the conservation importance of the Oban Hills Region of the Cross River National Park (CRNP) underscores its critical role as a biodiversity hotspot and a contiguous protected ecological zone with Cameroon's Korup National Park (Agaldo et. al. 2017).

Crucially, the mapping of the 13 Forest Communities (Table 4.6) demonstrates a vital correlation: the highest density of surveyed settlements, including those from Ikom (Abankang, Alok) and Boki (Boje, Okubishuyo), are physically located adjacent to this dominant forest block. This spatial overlap confirms that the resource-dependent activities of these local communities are the direct engine of the intense anthropogenic pressure observed, driven primarily by deforestation because of timber products and extensive agricultural expansion (33.35% Farm/Fallow Land). This pressure, which also threatens high-value timber resources like Apa (Afzelia Africana), mandates a strategic shift toward hyper-localized conservation strategies centered on the identified settlements to ensure the long-term sustainability of the remaining 57% forest cover.

The regression analysis robustly demonstrates a critical, statistically significant link between community awareness and the effectiveness of government forest policies, a finding strongly supported by the extant literature on participatory forest management. The model's exceptional fit ($R=.993$, $R2=.985$) and the decisive rejection of the null hypothesis ($F=198.034$, $p<.001$) confirm that factors like the community's understanding of policies and their perceived effect on policy success are paramount in determining the overall impact of awareness. This aligns with the arguments by Adekunle and Olagoke (2021), who highlight the impact of forest policies on community participation, and Obioha and Onyekuru (2017), who studied community perception of government policies in Nigeria. When communities are aware, understand the policies, and feel their awareness contributes to success, the policies are measurably more effective. This outcome underscores the long-standing international consensus, reflected in works like Larson and Ribot (2007) on the poverty of forestry policy and Reed et al. (2009) on stakeholder analysis, that effective natural resource management is impossible without genuine engagement and local knowledge.

The strong statistical evidence for the impact of awareness validates the central premise of Community-Based Forest Management (CBFM) literature, which posits that local engagement is key to conservation success. Specifically, the findings resonate with studies from Cross River State, Nigeria, where the research is likely focused. Ekpo and Bassey (2012) and Emeh, Abang, and Nwafor (2021) both attested to the positive impact of community involvement and participatory management on forest conservation in the region. The analysis confirms that this involvement is fundamentally mediated by awareness and understanding—not just by the mere existence of a policy. Furthermore, the results echo broader African contexts, where studies like those by Somanje and Tieguhong (2016) in Cameroon and Enuameh-Agbolosoo (2016) in Ghana have explored the role of local communities and participation in sustainable forest management. Ultimately, the high predictive power of the awareness variables suggests that government programs, such as those discussed by the Cross River Basin Development Authority (1992) or the CRS Ministry of Environment (2015), can only bridge the gap between policy design and implementation by prioritizing community education and ensuring local comprehension.

5.0 CONCLUSION AND POLICY RECOMMENDATIONS

Government should establish co-management agreements that legally recognize the communities' role as primary custodians of the adjacent forest and should also provide sustained investment in sustainable alternative livelihood programs, specifically introducing high-yield, low-area agricultural techniques to reduce reliance on the extensive Farm/Fallow Land method; and government should create local financial incentives (e.g., carbon credits or benefit-sharing from ecotourism) that tie forest protection directly to household economic well-being, thereby making conservation a more profitable alternative than deforestation.

i. Forest policy implementation agencies should establish mandatory, formal mechanisms for continuous community consultation, dialogue, and feedback collection before and during implementation.
ii. Policy design must integrate viable, financially supported alternative livelihood programs to compensate for the necessary restrictions on forest access.
iii. Agency operational guidelines should be revised to emphasize flexibility, local context awareness, and mutual respect, thereby minimizing the agency actions that generate conflict.
iv. Fully fund and implement structured Community Awareness Programs that clearly communicate policy rationales, benefits, and responsibilities, while simultaneously serving as a platform for open information exchange.

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