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# Evaluation of community participation in wildlife conservation and management in in Cross River State, Nigeria

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**Abstract**
The primary aim of the research was to assess community involvement in wildlife conservation and management within Cross River State, Nigeria. A multistage sampling technique was utilized to select 360 respondents. Data collection was conducted through a questionnaire distributed by trained assistants and enumerators, followed by analysis using both descriptive and inferential statistics. The findings indicated that local communities engage in wildlife monitoring activities, participate in wildlife conservation planning, take part in conservation decision-making, are involved in anti-poaching initiatives, contribute to environmental awareness programs, engage in habitat restoration efforts, are active in the implementation of conservation policies, and participate in the evaluation of conservation programs. Additionally, it was revealed that socioeconomic factors significantly influence community participation in wildlife conservation and management in Cross River, Nigeria. The socioeconomic factors identified included educational level, household income, occupation, household size, and length of residence. Furthermore, key institutional and governance factors affecting community participation in wildlife conservation and management in Cross River, Nigeria, included access to credit, contact with extension agents, government incentives, the establishment of social amenities, and the influence of wildlife conservation laws. All null hypotheses were rejected due to the presence of strong positive correlations among the parameters, with $r > 0.50$ and p-value $< 0.005$. It is therefore recommended that government agencies enhance community participation by involving local communities in conservation planning, implementation, monitoring, and evaluation. There should be equitable benefit-sharing mechanisms should be developed to ensure that host communities receive tangible economic and social benefits from wildlife conservation programmes.

**Keywords:** Community, conservation, participation, management, Cross River State

## Introduction

Wildlife refers to all undomesticated animals, birds, reptiles, amphibians, insects, fish, microorganisms, and plant species that exist naturally within terrestrial, freshwater, and marine ecosystems without direct human domestication. Wildlife includes both flora and fauna that inhabit forests, wetlands, grasslands, mountains, deserts, rivers, coastal environments, and protected areas. According to the International Union for Conservation of Nature (IUCN, 2021) [10], wildlife constitutes an essential component of biodiversity and contributes significantly to ecosystem functioning, ecological resilience, and environmental sustainability. From an ecological perspective, wildlife maintains ecosystem balance through predator–prey relationships, herbivory, pollination, seed dispersal, and decomposition processes. The disappearance of key wildlife species can trigger cascading ecological effects that alter ecosystem structure and functioning. Keystone species such as elephants modify vegetation structure, while pollinators such as bees facilitate plant reproduction and agricultural productivity. Consequently, wildlife conservation is essential for maintaining ecosystem stability and biodiversity (Wilkie, & Mascia, 2021) [10]. In Nigeria, wildlife is distributed across diverse ecological zones, including tropical rainforests, mangrove forests, freshwater swamps, Guinea and Sudan savannahs, montane forests, and inland wetlands. These ecosystems support numerous endemic and endangered species. However, increasing anthropogenic pressures have significantly reduced wildlife populations through habitat loss, illegal hunting, pollution, climate change, and land-use conversion (Oladeji & Fatukasi, 2017) [11]. Wildlife conservation refers to the planned protection, restoration, sustainable utilization, and management of wildlife species and their habitats to ensure their long-term survival while maintaining ecosystem integrity and supporting human well-being. It encompasses scientific, legal, institutional, economic, and community-based measures designed to prevent species extinction, conserve biodiversity, restore degraded habitats, and promote sustainable use of natural resources (Convention on Biological Diversity [CBD], 2022). Modern wildlife conservation adopts a broader and more inclusive approach that integrates ecological sustainability with socioeconomic development. Contemporary conservation recognizes that biodiversity protection cannot be achieved solely through law enforcement but requires meaningful participation of local communities, indigenous peoples, government agencies, researchers, non-governmental organizations, and the private sector. This participatory approach emphasizes collaborative governance, equitable benefit-sharing, environmental education, and sustainable livelihood development (Agboola *et al*, 2022) [1]. Globally, wildlife conservation is guided by international agreements such as the Convention on Biological Diversity (CBD), the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), the Ramsar Convention on Wetlands, the Kunming–Montreal Global Biodiversity Framework, and the United Nations Sustainable Development Goals (SDGs). These agreements encourage countries to adopt integrated conservation strategies that

balance biodiversity protection with social and economic development. In wildlife conservation and natural resource management, no single theory sufficiently explains the complex interactions among ecological systems, local communities, institutions, governance structures, and conservation outcomes. Wildlife conservation is influenced not only by ecological factors but also by social, economic, cultural, political, and institutional dynamics. Consequently, researchers increasingly adopt multidisciplinary theoretical perspectives to explain how community participation contributes to sustainable wildlife conservation and biodiversity management (Berkes, 2018) [3]. Wildlife management refers to the systematic planning, regulation, monitoring, protection, and sustainable utilization of wildlife populations and their habitats to achieve ecological sustainability while meeting human social, economic, and environmental needs. It is a multidisciplinary field that integrates ecology, conservation biology, forestry, environmental economics, sociology, geography, public policy, and natural resource management to ensure that wildlife populations remain healthy, productive, and ecologically functional. According to Leopold's classical wildlife management philosophy, wildlife management involves the deliberate manipulation of wildlife populations and habitats to maintain ecological balance while ensuring sustainable utilization. Contemporary definitions expand this perspective by emphasizing adaptive management, ecosystem-based approaches, stakeholder participation, and evidence-based decision-making. Adaptive wildlife management has become increasingly important in response to climate change, habitat fragmentation, emerging diseases, and changing land-use patterns. Adaptive management recognizes ecological uncertainty and encourages continuous learning through monitoring, evaluation, and modification of management strategies based on scientific evidence and local knowledge. In Nigeria, wildlife management is undertaken by federal and state government agencies, research institutions, conservation organizations, traditional institutions, and local communities. Major wildlife management responsibilities include protected area administration, habitat restoration, anti-poaching enforcement, biodiversity monitoring, environmental education, ecotourism development, and community outreach programmes. However, challenges such as inadequate funding, insufficient technical capacity, illegal wildlife trade, weak governance, insecurity in some protected areas, and limited community participation continue to reduce management effectiveness. Community participation is a fundamental principle of sustainable natural resource management and has become a central component of contemporary wildlife conservation. It refers to the active and meaningful involvement of local people in identifying conservation problems, planning conservation programmes, making decisions, implementing projects, monitoring outcomes, evaluating performance, and sharing equitably in the benefits derived from natural resource conservation (Pretty, 1995) [9]. Unlike passive involvement, genuine community participation empowers local communities to influence decisions that directly affect their livelihoods, natural resources, and future development. Effective community participation requires inclusive governance, transparent leadership, equitable benefit-sharing, secure land and resource rights, access to information, environmental education, and capacity building. Where communities perceive tangible economic and social benefits from conservation, they are more likely to support biodiversity protection and participate actively in conservation programmes. Conversely, exclusion from decision-making, unequal distribution of benefits, weak institutions, and persistent poverty reduce community motivation and encourage unsustainable exploitation of natural resources (Isiugo & Obioha, 2015) [7]. In Nigeria, community participation has increasingly been incorporated into wildlife conservation through environmental education programmes, community forest management, ecotourism initiatives, joint patrols, conservation awareness campaigns, and stakeholder consultations. Nevertheless, meaningful participation remains constrained by inadequate institutional support, poverty, limited funding, weak governance structures, and insufficient integration of local communities into conservation decision-making (Madaki, 2022) [8].

**The specific objectives of the study are to**

1. assess the extent of community participation in wildlife conservation and management in selected communities in Cross River Nigeria;
2. examine the socioeconomic factors influencing community participation in wildlife conservation and management Cross River Nigeria
3. determine the institutional and governance factors affecting effective community participation in wildlife conservation and management Cross River Nigeria

**Research Hypotheses**

The following null hypotheses will be tested at the 0.05 level of significance:

**$H_{o1}$:** There is no significant relationship between the extent of community participation and wildlife conservation outcomes in Cross River Nigeria.

**$H_{o2}$:** Socioeconomic factors have no significant influence on community participation conservation and wildlife management in Cross River Nigeria.

**$H_{o3}$:** Institutional and governance factors have no significant influence on effective community participation in wildlife conservation and management in Cross River Nigeria.

**Significance of the Study**

This study is significant because it will contribute to the growing body of knowledge on community participation in wildlife conservation and management in Cross River Nigeria. As biodiversity continues to decline due to habitat loss, deforestation, illegal wildlife exploitation, climate change, and increasing human activities, there is an urgent need for evidence-based strategies that promote sustainable conservation while improving the livelihoods of local communities. The findings of this study are therefore expected to have theoretical, empirical, practical, and policy relevance. The findings of this study will be beneficial to policymakers at the federal, state, and local government levels. Specifically, the study will provide evidence that can guide the formulation, implementation, and evaluation of policies aimed at strengthening community participation in wildlife conservation and management. The recommendations of the study may support the development of more inclusive conservation policies that recognize local communities as active partners in biodiversity conservation rather than passive beneficiaries or resource users. Educational institutions and environmental educators will

find the study useful as a source of current information on participatory wildlife conservation. The findings may be incorporated into university curricula, professional training programmes, workshops, seminars, and environmental awareness campaigns aimed at strengthening conservation knowledge and promoting sustainable natural resource management among students, practitioners, and community members. From a socioeconomic perspective, the study will demonstrate how effective community participation can contribute to sustainable livelihoods through ecotourism, employment generation, sustainable harvesting of natural resources, and improved ecosystem services. The findings are expected to encourage greater collaboration among government agencies, conservation organizations, private sector stakeholders, traditional institutions, and local communities, thereby promoting inclusive environmental governance and sustainable rural development.

## Methodology

### Study Area

Cross River State is located in southeastern Nigeria between approximately latitudes 4°28′N and 6°55′N and longitudes 7°50′E and 9°28′E. The state covers about 20,156 km² and is bordered by Benue State to the north, Ebonyi State and Abia State to the west, Akwa Ibom State to the southwest, Cameroon to the east, and the Atlantic Ocean to the south. It contains extensive tropical rainforests, including the Cross River National Park (Oban and Okwangwo Divisions), making it one of Nigeria's most important biodiversity hotspots and a habitat for endangered species such as the Cross River gorilla, Nigeria–Cameroon chimpanzee, drill, and forest elephant.

### Population of the Study

In particular, the target population encompasses community members living in areas adjacent to the selected national parks and protected regions, officials from the National Park Service, personnel from state forestry and wildlife departments, employees of conservation-focused non-governmental organizations (NGOs), community leaders, members of Community-Based Organizations (CBOs), hunters' associations, farmers' associations, women's groups, youth organizations, and other stakeholders actively participating in wildlife conservation efforts. The sample size for this study included 360 respondents.

### Sampling Technique and Sample Size

This research adopted a multistage sampling strategy that includes purposive, stratified, proportionate, and simple random sampling methods. The first stage involved the purposive selection of protected areas that have active wildlife conservation programs and significant interactions with surrounding communities in Cross River State. The Cross River National Park was chosen as it offers a suitable environment for assessing community participation in wildlife conservation in the state. In the second stage, which focuses on the selection of host communities, five (5) communities adjacent to the park were purposively selected. The third stage involved the stratification of relevant stakeholder categories, including community members, traditional leaders, community-based organization (CBO) members, farmers, hunters, women's groups, youth groups, personnel from the National Park Service, state forestry officials, and conservation NGOs. Proportionate sampling was employed to distribute the sample size among each community and stakeholder category based on their population size, resulting in a total of 30 stakeholders. Finally, 12 respondents from each stratum were selected using simple random sampling techniques, amounting to a total of 360 respondents. The study's population consists of all pertinent stakeholders engaged in wildlife conservation and management within the designated protected areas and their neighboring host communities.

### Methods of Data Collection

Data for this study was collected primarily through the administration of the questionnaire to the selected respondents.

### Methods of Data Analysis

Both descriptive and inferential statistical methods, specifically the Pearson Product-Moment Correlation, were utilized in the analysis of the data. Responses were assessed using a four-point Likert rating scale, which is defined as follows: Strongly Agree (SA) = 4, Agree (A) = 3, Disagree (D) = 2, and Strongly Disagree (SD) = 1. The use of the Likert scale is deemed suitable as it enables respondents to express the extent of their agreement or disagreement with each statement, thereby facilitating a quantitative analysis of attitudes, perceptions, and opinions. The decision rule for items measured on a five-point Likert scale is based on a criterion mean of 2.50, which is considered an Agreed response, while any score below 2.50 is classified as a Disagreed response.

## Results and Discussion

The extent of community participation in wildlife conservation and management in Cross River Nigeria

**Table 1:** Mean and Standard Deviation on the Extent of Community Participation in Wildlife Conservation and Management

| S/n | Parameter | Mean | SD | Decision |
|---|---|---|---|---|
| 1 | Local communities participate in wildlife monitoring activities. | 2.78 | 0.82 | Agreed |
| 2 | Community members participate in wildlife conservation planning. | 2.87 | 0.77 | Agreed |
| 3 | Community members participate in conservation decision-making. | 2.62 | 0.84 | Agreed |
| 4 | Community members are involved in anti-poaching activities. | 2.90 | 0.76 | Agreed |
| 5 | Community members participate in environmental awareness programmes. | 2.67 | 0.79 | Agreed |
| 6 | Community members participate in habitat restoration programmes. | 2.77 | 0.90 | Agreed |
| 7 | Local communities are involved in conservation policy implementation. | 2.81 | 0.84 | Agreed |
| 8 | Community members participate in evaluating conservation programmes. | 2.56 | 0.82 | Agreed |
| Grand Mean | | 2.74 | 0.82 | Agreed |

The Table 1 exposed the extent of community participation in wildlife conservation and management in Cross River Nigeria. The extent of community participation in wildlife conservation and management in Cross River Nigeria were on the local communities participate in wildlife monitoring activities with a mean of 2.78 and SD of 0.82, community members participate in wildlife conservation planning with a mean of 2.87 and SD of 0.77, community members participate in conservation decision-making with a mean of 2.62 and SD of 0.84, community members are involved in anti-poaching activities with a mean of 2.90 and SD of 0.76, community members participate in environmental awareness programmes with a mean of 2.67 and SD of 0.79, community members participate in habitat restoration programmes with a mean of2.77 and SD of 0.90, local communities are involved in conservation policy implementation with a mean of 2.81 and SD of 0.84, and community members participate in evaluating conservation programmes. with a mean of 2.56 and SD of 0.82. The overall grand mean of 2.74 further confirm agreement of respondents. This collaborated Gambo *et al*, (2025) [5] that community participation is key in wildlife conservation and management

Socioeconomic factors influence community participation in wildlife conservation and management in Cross River Nigeria

**Table 2:** Mean and Standard Deviation on Socioeconomic Factors

| S/n | Parameter | Mean | SD | Decision |
|---|---|---|---|---|
| 1 | Educational level influences participation. | 3.21 | 0.76 | Agreed |
| 2 | Household income influences participation. | 2.99 | 0.73 | Agreed |
| 3 | Occupation influences participation. | 2.87 | 0.81 | Agreed |
| 4 | Household size influences participation. | 2.68 | 0.75 | Agreed |
| 5 | Length of residence influences participation. | 2.88 | 0.83 | Agreed |
| Grand Mean | | 2.92 | 0.77 | Agreed |

The Table 2 revealed the socioeconomic factors influence community participation in wildlife conservation and management in Cross River, Nigeria. The socioeconomic factors influence community participation in wildlife conservation and management in Nigeria were educational level influences participation with a mean of 3.21and SD of 0.76, household income influences participation with a mean of 2.99 and SD of 0.73, occupation influences participation with a mean of 2.87 and SD of.0.81, household size influences participation with a mean of 2.68 and SD of 0.75 and length of residence influences participation. with a mean of 2.88 and SD of 0.83. The overall grand mean of 2.92 further confirm agreement of respondents. This collaborated Offiong *et al*, 2026 [12] that socioeconomic factors influence community participation in wildlife conservation and management in Cross River, Nigeria

Institutional and governance factors influence community participation in wildlife conservation and management in Cross River Nigeria

**Table 3:** Mean and Standard Deviation on Institutional and Governance Factors

| S/n | Parameter | Mean | SD | Decision |
|---|---|---|---|---|
| 1 | Access to credit influences participation. | 2.71 | 0.81 | Agreed |
| 2 | Extension agent contact influences participation. | 2.64 | 0.73 | Agreed |
| 3 | Government incentives influences participation. | 2.93 | 0.82 | Agreed |
| 4 | Establishment of social amenities influences participation. | 2.98 | 0.72 | Agreed |
| 5 | Wildlife conservational laws influences participation. | 2.55 | 0.74 | Agreed |
| Grand Mean | | 2.76 | 0.76 | Agreed |

Table 3 showed the institutional and governance factors influence community participation wildlife conservation and management in Cross River Nigeria. The key institutional and governance factors influence community participation wildlife conservation and management in Cross River Nigeria were on access to credit influences participation with a mean of 2.71 and SD of 0.81, extension agent contact influences participation with a mean of 2.64 and SD of 0.73, Government incentives influences participation with a mean of 2.93 and SD of 0.82, establishment of social amenities influences participation with a mean of 2.98 and SD of 0.72 and wildlife conservational laws influences participation with a mean of 2.55 and SD of 0.74. The overall grand mean of 2.76 further confirm agreement of respondents. This in line with Atuo *et al*, (2020) [2] that weak Government policies affect wildlife management and conservation

## Hypotheses Testing

**$H_{01}$:** There is no significant relationship between the extent of community participation and wildlife conservation outcomes in Cross River Nigeria.

**Table 5:** Bootstrapping and Bivariate Correlation between the Extent of Community Participation and Wildlife Conservation Outcomes in Cross River Nigeria

| | | | 5000 | Resample | Bootstrap | with BCa | Estimates |
|---|---|---|---|---|---|---|---|
| | | 95% CI | | | | | |
| S/N | Pathways | *r* | *p* | *Bias* | *SE* | LL | UL |
| 1. | CP → WLO | .874** | .000 | .001 | .042 | .671 | .583 |

*Note.* **. Correlation is significant at the 0.05 level (2-tailed), Unless otherwise noted, bootstrap results are based on 5000 bootstrap samples, $N = 360$, $p < 0.05$, CP = Community Participation, WLO = Wildlife Conservation Outcomes, CI = Confidence Interval.

Table 5 showed the correlation between Community Participation and Wildlife Conservation Outcomes in Cross River Nigeria. The Table 5 showed that the correlation between Community Participation and Biodiversity Conservation and Sustainable Wildlife Management in Cross River Nigeria. was positively high ($r = 874$, $p < 0.05$). Therefore, the null hypothesis was rejected that there is no significant relationship between the extent of community participation and wildlife conservation outcomes in Cross River Nigeria.

**$H_{02}$:** Socioeconomic factors have no significant influence on community participation conservation and wildlife management in Cross River Nigeria.

**Table 6:** Bootstrapping and Bivariate Correlation between the Socioeconomic Factors and Community Participation Conservation and Wildlife Management in Cross River Nigeria

| | | | 5000 | Resample | Bootstrap | with BCa | Estimates |
|---|---|---|---|---|---|---|---|
| | | 95% CI | | | | | |
| S/N | Pathways | *r* | *p* | *Bias* | *SE* | LL | UL |
| 1. | SEF → CPWM | .703** | .000 | .002 | .032 | .587 | .504 |

*Note.* **. Correlation is significant at the 0.05 level (2-tailed), Unless otherwise noted, bootstrap results are based on 5000 bootstrap samples, $N = 360$, $p < 0.05$, SEF = Socioeconomic Factors, CPWM = Community Participation and Wildlife Management, CI = Confidence Interval.

Table 6 showed the correlation between Socioeconomic Factors and Community Participation and Wildlife Conservation Outcomes in Cross River Nigeria. The Table 6 showed that the correlation between Community Participation and Wildlife Management in Cross River Nigeria. was positively high ($r = 703$, $p < 0.05$). Therefore, the null hypothesis was rejected that socioeconomic factors have no significant influence on community participation conservation and wildlife management in Cross River Nigeria.

**$H_{03}$:** Institutional and governance factors have no significant influence on effective community participation in wildlife conservation and management in Cross River Nigeria.

**Table 7:** Bootstrapping and Bivariate Correlation between the Institutional and governance factors and effective Community Participation in Wildlife Conservation and Management in Cross River Nigeria

| | | 95% CI | | | | | |
|---|---|---|---|---|---|---|---|
| S/N | Pathways | *r* | *p* | *Bias* | *SE* | LL | UL |
| 1. | IF → WCM | .798** | .000 | .002 | .011 | .621 | .521 |
| 2 | GF → WCM | .821 | .000 | .001 | .012 | .582 | .532 |

*Note.* **. Correlation is significant at the 0.05 level (2-tailed), Unless otherwise noted, bootstrap results are based on 5000 bootstrap samples, $N = 360$, $p < 0.05$, IF = Institutional factors, GF = governance factors, WCM = Wildlife Conservation and Management, CI = Confidence Interval.

Table 7 showed the correlation between institutional and governance factors and community participation in wildlife conservation and management in Cross River Nigeria. The Table 7 showed that the correlation between institutional and governance factors and community participation in wildlife conservation and management in Cross River Nigeria. was positively high ($r = 821$, $p < 0.05$). Therefore, the null hypothesis was rejected that institutional and governance factors have no significant influence on effective community participation in wildlife conservation and management in Cross River Nigeria.

## Conclusion and Recommendation

Based on the findings the extent of community participation in wildlife conservation and management in Nigeria were on the local communities participate in wildlife monitoring activities, community members participate in wildlife conservation planning, community members participate in conservation decision-making, community members are involved in anti-poaching activities, community members participate in environmental awareness programmes, community members participate in habitat restoration programmes, local communities are involved in conservation policy implementation, and community members participate in evaluating conservation programmes. Also revealed the socioeconomic factors influence community participation in wildlife conservation and management in Cross River Nigeria. The socioeconomic factors influence community participation in wildlife conservation and management in Cross River Nigeria were educational level influences participation, household income influences participation, occupation influences participation, household size influences participation and length of residence influences participation. Lastly the key institutional and governance factors that influenced community participation wildlife conservation and management in Cross River Nigeria were on access to credit influences participation, extension agent contact influences participation, Government incentives influences participation, establishment of social amenities influences participation and wildlife conservational laws influences participation. All the null hypotheses were rejected since there were strong positive relationship among the parameter with the r > 0.50p and-value < 0.005 It hereby recommended that Government agencies should strengthen community participation by involving local communities in conservation planning, implementation, monitoring, and evaluation. There should be equitable benefit-sharing mechanisms should be developed to ensure that host communities receive tangible economic and social benefits from wildlife conservation programmes.

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