

# Impact of national park management strategies and programmes on sustainable livelihood of rural communities in Cross River State, Nigeria



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**Abstract** This study examines the impact of national park management strategies and programs on the sustainable livelihoods of rural support zone communities surrounding the Cross River National Park. The research employs a Cross-sectional research design, combining qualitative interviews with key stakeholders, including park officials, community leaders, and local residents, alongside quantitative surveys distributed among households in selected rural communities. It was hypothesized that there is a positive correlation between the national park management strategies and the incentives offered by the park management to foster sustainable rural community livelihoods within the park area. The result returned from the inferential analysis revealed that the correlation coefficient is very high, with a value of .990, and the p-value is highly significant at .000, indicating a strong positive correlation. Consequently, the null hypothesis is refuted in favor of the alternative hypothesis. Further findings indicate that the implementation of conservation-oriented management strategies has had a dual impact on local livelihoods. On one hand, strict conservation policies have led to the restriction of access to natural resources, traditionally relied upon by the members of the support zone communities for sustenance, thereby exacerbating economic hardships. On the other hand, the introduction of alternative livelihood programs, such as eco-tourism initiatives and skill acquisition workshops, has provided new opportunities for income generation, though these have not been uniformly successful across all communities. Communities that are actively engaged in the management and conservation efforts of the park tend to experience more positive outcomes in terms of livelihood sustainability. The study concludes with recommendations for enhancing community-based management approaches, improving the effectiveness of livelihood programs, and promoting greater collaboration between park authorities and rural communities to ensure that conservation efforts do not come at the expense of local economic well-being.

**Keywords:** eco-tourism initiatives, conservation strategies, household, stakeholders, sustainable livelihoods, rural communities

## 1. Introduction

A national park is a specially set apart and protected region of land or water, usually overseen by the government or other appropriate authority, with the main objective being the preservation of the natural environment and the flora and animals that are connected with it (Gordon et al., 2021). In order to protect a region's distinctive and representative characteristics such as its landscapes, ecosystems, biodiversity, geological formations, cultural legacy, and historical significance national parks are created (Štrba et al., 2020). While offering a refuge for wildlife and native plants, these sites are meant to stay in a natural or nearly natural form, enabling people to sustainably take in and enjoy the natural beauty and ecological richness (Akani, 2023).

A government or governing body sets aside a national park as a designated area to preserve and protect its natural, cultural, scenic, and recreational resources (Cheng, 2023). The importance of national parks in conservation efforts and



sustaining natural ecosystems cannot be overstated. In West Africa, the influence of national park management strategies and programs on the livelihoods of rural communities has garnered significant research attention. The establishment of national parks often involves restrictions on traditional resource use, which directly impacts the livelihoods of local communities, leading to conflicts and challenges for those reliant on these resources for their sustenance (Yeshey et al., 2023).

In order to mitigate the exaggerated detrimental effects of national park operations on rural lives, a number of management measures and initiatives have been introduced. Emphasizing local communities' involvement in the management and decision-making processes related to the environment is the goal for community-based natural resource management (CBNRM) (Rampheri & Dube, 2021; Gyan et al., 2023). By empowering communities and enhancing their ability to manage resources sustainably, this inclusive strategy seeks to improve their standard of living. The intricacy of the problem, with important ramifications for the growth of communities and conservation, was shown by a study conducted in Europe on the effects of national park management practices on the sustainable lives of rural communities (Quintas-Soriano et al., 2022). In order to support local economies and livelihoods, sustainable tourism is frequently given priority in European national park management programs (Senarathna, 2023).

These conservation endeavours play a critical role in preserving the natural resources crucial to rural communities, directly influencing sustainable agricultural practices and traditional land uses (Ige et al., 2024). Additionally, concerted efforts are made to encourage sustainable entrepreneurship and community-based enterprises within or near national parks (Zainol & Yasin, 2023). In Nigeria, the impact of national park management strategies on sustainable livelihoods within nearby rural communities is significant. Community-based conservation initiatives play a central role in this context, empowering local communities through involvement in decision-making processes and the provision of livelihood incentives (Mawa et al., 2021; Islam et al., 2024). These programs are vital for promoting sustainable coexistence between natural habitats and human populations, emphasizing community involvement and conservation-driven livelihood initiatives tailored to the socio-economic and environmental dynamics of the region (Plieninger et al., 2023).

Sustainable livelihood solutions are context-specific, reflecting the distinct socio-economic and environmental characteristics of each location, as can be seen by looking at the impact of national park management policies globally and in Nigeria (Htay, 2020). Unlike other countries that stress responsible tourism and economic development, Nigeria places a special emphasis on community involvement and livelihood programs driven by conservation (Fluri et al., 2023). In addition, national parks in the state of Cross River employ community-based conservation and ecotourism strategies, emphasizing the value of education and skill development in improving the sustainable livelihoods of rural communities living near these parks (Schaafsma & Bartkowski, 2021; Digun-Aweto & Merwe, 2020). Nigeria's great biodiversity has been preserved in large part thanks to the creation of national parks, which offer vital habitats for a wide variety of plant and animal species, some of which are rare and endangered (Adetola, 2023).

Through visitor spending, job creation, and enhanced tourism-related infrastructure, national parks significantly contribute to the economic growth of surrounding rural areas (Emmy et al., 2023; Uboegbulam, 2024). Particularly for Cross River State, the creation of national parks has resulted in significant financial gains for the state's indigenous populations as well as local businesses. As a result of their popularity as nature-based tourism attractions, these parks have drawn a wide range of local and foreign tourists who want to experience the natural wonders of the area (Gonia & Jezierska-Thöle, 2022). In addition, the sustainable use of forest resources, which includes nontimber forest products and ecotourism-related activities, provides the local community with feasible alternate means of subsistence (Senarathna, 2023). Many studies have been conducted on the subject of national park creation and the effects that follow, both locally and globally, and they provide insightful information. Our comprehension of the intricate ramifications of these conservation zones has been greatly expanded by trailblazing researchers (Shepherd & Patzelt, 2017; Ferdinands et al., 2024; Chen & Ding, 2023). Nonetheless, other viewpoints have been taken into account, such as the possible effects of national park expansion on the loss of biodiversity and larger environmental effects in the local context (Purker et al., 2023; Michler & Aschenbrand, 2024).

Researchers have emphasized the benefits of national park development for host communities in the particular context of Cross River State (Okonkwo & Odey, 2018; Obeten et al., 2024; Darvishmotevali et al., 2024). Even in places where national parks are located within their borders, there are still impoverished populations that only receive their food from the region's rich natural ecosystem. Research has assessed how the Cross River National Park affects specific host communities on a socioeconomic level (Amalu et al., 2017; Digun-Aweto et al., 2022). Nonetheless, there is still a clear vacuum in the literature, and a thorough assessment of every enclave community affected by its creation is necessary.

Despite the well-intentioned strategies and programs adopted by the Cross River National Park Management to support the sustainable livelihoods of rural communities in Akamkpa LGA, the stark reality is that a vast majority of these residents continue to languish in abject poverty. Deprived of access to their ancestral forests, which once provided them with food, medicine, and shelter, they now face an unrelenting struggle to survive. The lack of basic amenities, such as clean water, healthcare, and education, exacerbates their daily hardships, while the cost of living has soared beyond their reach. The restrictive conservation policies, though aimed at protecting the environment, have inadvertently stripped these communities of their lifeline, plunging them into deeper despair. This tragic situation highlights a critical research problem: how can the

balance be struck between conserving natural resources and ensuring that the rural communities who once thrived within these forests are not left to suffer in destitution?

In order to close this disparity, this study will look at other populations that are located inside the borders of the Cross River National Park enclave and that also rely on the ecosystem for their means of subsistence. The research will focus on a number of important areas, including the main jobs that are held by members of the host communities, additional livelihood pursuits, necessary development projects, the effectiveness of current development programs, the real benefits that communities receive from the Cross River National Park, and challenges that arise when carrying out these development projects. Additionally, it will help decision-makers pinpoint certain populations that historically have not had access to the entire range of advantages offered by the national park ecosystem, which is a vital source of their livelihoods.

**2. Materials and Methods**

The study was conducted in the support zone communities that are within the boundaries of the Oban division of the Cross River National Park, which includes thirty communities in total. Using a random selection procedure, four communities were selected from this division for the study. These four communities that have been chosen are Oban, Ubung, Nsan, and Osomba. To guarantee that every community had an equal chance of being included in the study, a random sampling approach was used to choose these four communities (see Table 1).

**Table 1** The distribution of the population in the study area.

S/N	Catchment Communities	Base population	Projected to 2020	Sample size population
1.	Oban	7,817	46,515.2	176
2.	Ubung	972	24,883.2	95
3.	Nsan	922	23,603.2	90
4.	Osomba	389	9,958	38
	Total	4,100	104,959	399

Two separate target groups made up the main focus of the investigation. The management of the Cross River National Park and the citizens of the four settlements located in the support zones comprised the first group. Due to their status as the official legal authority tasked with protecting national park lands from encroachment and intrusion, park authorities were included in this study. The individuals who are native to the four settlements that are part of the national park's support zone were the second target demographic for this study. With the population of the four support zone settlements inside the study region taken into account, the sample size was determined using Yamane's statistical technique. This approach ensures unbiased representation for the research endeavor. The Tayo Yamane formula is used extensively in sampling survey design and is given as follows:

$$n = \frac{N}{1+N(e)^2} \tag{1}$$

Where:

n= Sample size to be determined

N= Population sample

e= Acceptance sampling error (at 95% confidence level, e=0.005)

A formula adopted by Kathuri and Pals (1993) was used to determine the sample size for each Unit/Department as follows:

$$n_n = \left(\frac{Nn}{N}\right) \times n \tag{2}$$

Where,

n<sub>n</sub> = The sample size of each unit

N<sub>n</sub> = Population of the unit

N = Total population size

n = Total sample size

To ensure proportionate representation, structured questionnaires were delivered to chosen participants in each of the four villages. This functioned as the main technique for gathering data. Oral interviews with community members will also be done in order to learn more about the park management's redevelopment goals. The CRNP headquarters in Akamkpa is home to administrative records, and Park Rangers in particular are the primary sources of secondary data. There were two theories put forth. According to the first hypothesis, there is no discernible link between the national park management practices and the incentives offered in the research region for rural communities to lead sustainable lives. Secondly, it was hypothesized that there is no significant relationship between the socioeconomic benefits that rural communities receive from the creation of



Cross River National Park and their primary source of income. The Pearson Product Moment Correlation Coefficient was utilized to examine these two conjectures.

### 3. Results and Discussion

#### 3.1. National park management strategies to enhance sustainable rural community livelihood in Akamkpa LGA

The national park management strategies to enhance sustainable rural community livelihood in the study area as presented in Table 2 indicates that sampled stakeholders from the support zone communities had distinct perspectives, with 21.8%, 17.5%, and 12.8% from various communities expressing the importance of law enforcement, public awareness and education, and engagement and collaboration. Aiming to improve the sustainable livelihoods of rural residents in the study region, these measures are considered essential for the efficient management of National Parks. The fact that 11.78% and 11% of the communities, respectively, support capacity building and environmental restoration further highlights the importance of these initiatives. However, the data also shows that 5.3%, 7%, and 8.5% of respondents ranked community involvement, zoning and regulation, and climate change adaptation as essential developmental initiatives that are essential for the improvement of communities in Akamkpa LGA. The findings of this study align with the works of Bonye et al. (2023) on the title "Our forest, our livelihood: Natural resources' use controversies and community livelihood sustainability in the Mole National Park, Ghana". Similarly, the study result also affirms the findings from the study conducted by Zhao & Su (2023) on the research framework and key issues of sustainable livelihoods in the national park (see Table 2) (see Figure 1).

**Table 2** National Park management strategies to enhance sustainable rural community livelihood.

S/N	Most needed support	Oban Frequency	Osomba Frequency	Obung Frequency	Nsan Frequency	Total	Percentage
1.	Capacity building and training	16	3	6	19	44	11.0
2.	Public awareness and education	28	9	15	18	70	17.5
3.	Participation and collaboration	25	5	14	7	51	12.8
4.	Zoning and regulation	14	3	7	10	34	8.5
5.	Ecosystem restoration	24	5	13	5	47	11.8
6.	Climate change adaption	10	1	7	3	21	5.3
7.	Community engagement	13	3	6	6	28	7.0
8.	Law enforcement	37	7	23	20	87	21.8
9.	Others (Specify)	9	2	4	2	17	4.3
	Total	176	38	95	90	399	100



**Figure 1** National Park management strategies to enhance sustainable rural community livelihood.

This analysis in Table 3, involves the use of Pearson correlation coefficient tests to examine if there is no substantial relationship between national park development management strategies and the incentives for support zone communities. The analysis reveals that there is a positive correlation between the national park management strategies and the incentives offered by the park management to foster sustainable rural community livelihoods within the park area. The correlation



coefficient is very high, with a value of .990, and the p-value is highly significant at .000, indicating a strong positive correlation. This signifies that the strategies employed by the national park management and the incentives stemming from park development follow a coherent trajectory, showcasing a linear relationship between the two variables under scrutiny. Consequently, the null hypothesis is refuted in favor of the alternative hypothesis, leading to the deduction that a significant relationship does indeed exist between the management strategies originating from the national park management and the incentives associated with the park's establishment within the supporting communities.

Therefore, the Pearson correlation analysis reveals a strong positive correlation ( $r = .990$ ) between national park development management strategies and the incentives for support zone communities the null hypothesis ( $H_0$ ) was rejected in support of the alternative hypothesis ( $H_1$ ). Thus, it was concluded that there is a higher national park development management strategies and the incentives for support zone communities (see Table 3).

**Table 3** Pearson Product Moment Results correlating national park management strategies and incentives provided for sustainable community rural livelihood.

		Correlations	
		National park management strategies	Incentives provided to support zone communities
National park management strategies	Pearson Correlation	1	.990.**
	Sig. (2-tailed)		.000
	N	100	100
Incentives provided to support zone communities	Pearson Correlation	.990.**	1
	Sig. (2-tailed)	.000	
	N	100	100

\*\* . Correlation is significant at the 0.01 level (2-tailed).

### 3.2. Incentive programs offered by national park management to support zone communities

Output from the analysis of Table 4, indicates the different incentive programs offered by national park management to improve the standard of living of the members of the support zone communities. Descriptive statistic revealed that the views of 21.8 percent, 17.5 percent, and 12.8 percent of sampled respondents from different communities, align on the importance of skill acquisition, infrastructural advancement, and rural transportation programs. Additionally, road construction and financial support, were considered essential by the communities, with corresponding proportions of 11.78 percent and 11 percent. Nonetheless, the data also points out that health facilities/services, employment opportunities, and educational provisions are recognized by 8.5 percent, 7 percent, and 5.3 percent of respondents as vital developmental programs necessary to uplift the communities in the study area. The findings from the study conducted by He, et al., (2021), which examining linkages among livelihood strategies, ecosystem services, and social well-being to improve national park management, also assonates with the result from this study which conclude that the Cross River National Park incentives has contributed significantly to the sustainable livelihood of members of the support zone communities in Akamkpa LGA (see Table 4).

**Table 4** Incentive programs offered by national park management to host communities in the study area.

S/N	Most needed support	Oban Frequency	Osomba Frequency	Obung Frequency	Nsan Frequency	Total	Percentage
1.	Financial assistance	16	3	6	19	44	11.0
2.	Infrastructural development	28	9	15	18	70	17.5
3.	Rural transformation programme	25	5	14	7	51	12.8
4.	Health facility/ service	14	3	7	10	34	8.5
5.	Road construction	24	5	13	5	47	11.8
6.	Education	10	1	7	3	21	5.3
7.	Employment	13	3	6	6	28	7.0
8.	Skill acquisition	37	7	23	20	87	21.8
9.	Others (Specify)	9	2	4	2	17	4.3
	Total	176	38	95	90	399	100

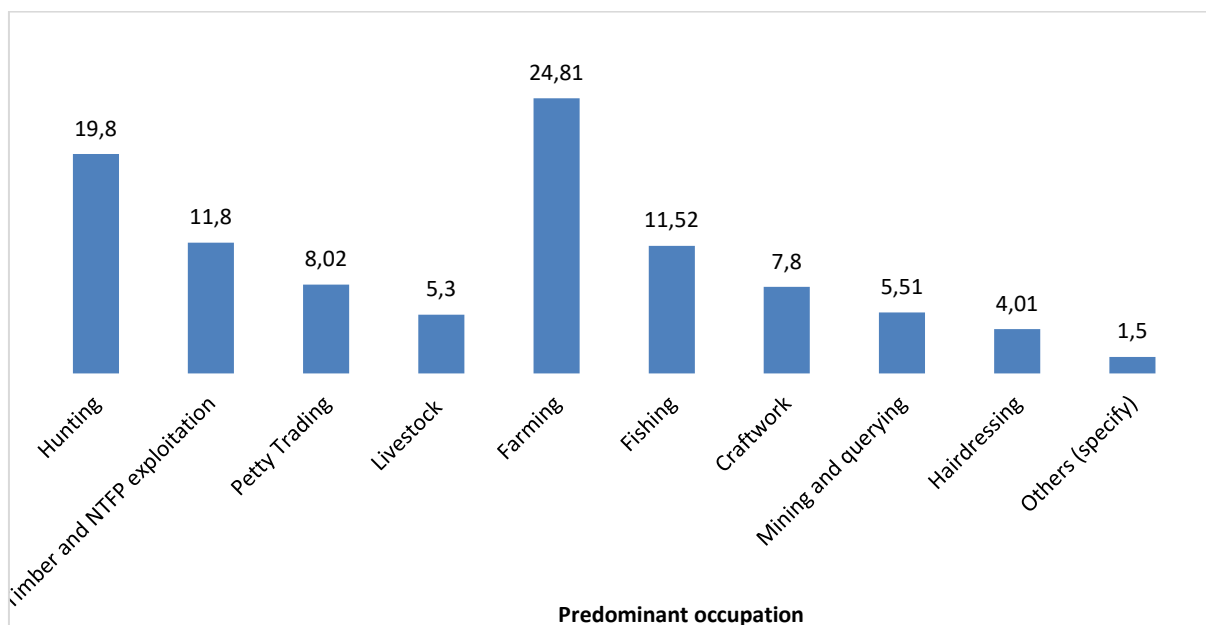


### 3.3. Predominant occupations of the Support Zone Communities

Similarly, as a result of the analysis of Table 5 and Figure 2, the most common occupations among the members of the Akamkpa LGA support zone communities are farming and hunting, which account for 24.81 percent and 19.80 percent of the respondents, respectively. These are followed closely by the exploitation of timber and non-timber forest products (NTFP), which employs 11.80 percent of the significant number of respondents; the data also demonstrates that fishing and petty trading are the most common sources of dietary intake for 11.52 percent and 8.02 percent of community members, respectively, within the communities. Additionally, respondents engaging in craftwork, mining, and quarrying as their primary occupations constitute 7.80 percent and 5.51 percent. Moreover, a smaller yet significant portion of the population, comprising 5.30 percent and 4.01 percent, are primarily involved in livestock rearing and hairdressing as their main sources of income within the study locale (see Table 5) (see Figure 2).

**Table 5** Predominant occupation of the host communities in the study area.

S/N	Predominant occupation	Oban Frequency	Osomba Frequency	Obung Frequency	Nsan Frequency	Total	Percentage
1.	Hunting	36	6	17	20	79	19.80
2.	Timber and NTFP exploitation	25	5	8	9	47	11.80
3.	Petty Trading	11	2	12	7	32	8.02
4.	Livestock	9	2	4	6	21	5.30
5.	Farming	37	6	27	29	99	24.81
6.	Fishing	20	5	11	10	46	11.52
7.	Craftwork	15	5	9	2	31	7.80
8.	Mining and quarrying	12	4	2	3	22	5.51
9.	Hairdressing	9	2	2	3	16	4.01
10.	Others (specify)	2	1	2	1	6	1.50
	Total	176	38	95	90	399	100



**Figure 2** predominant occupations of the host communities in the study area.

### 3.4. Alternative livelihood provided by national park management to host communities

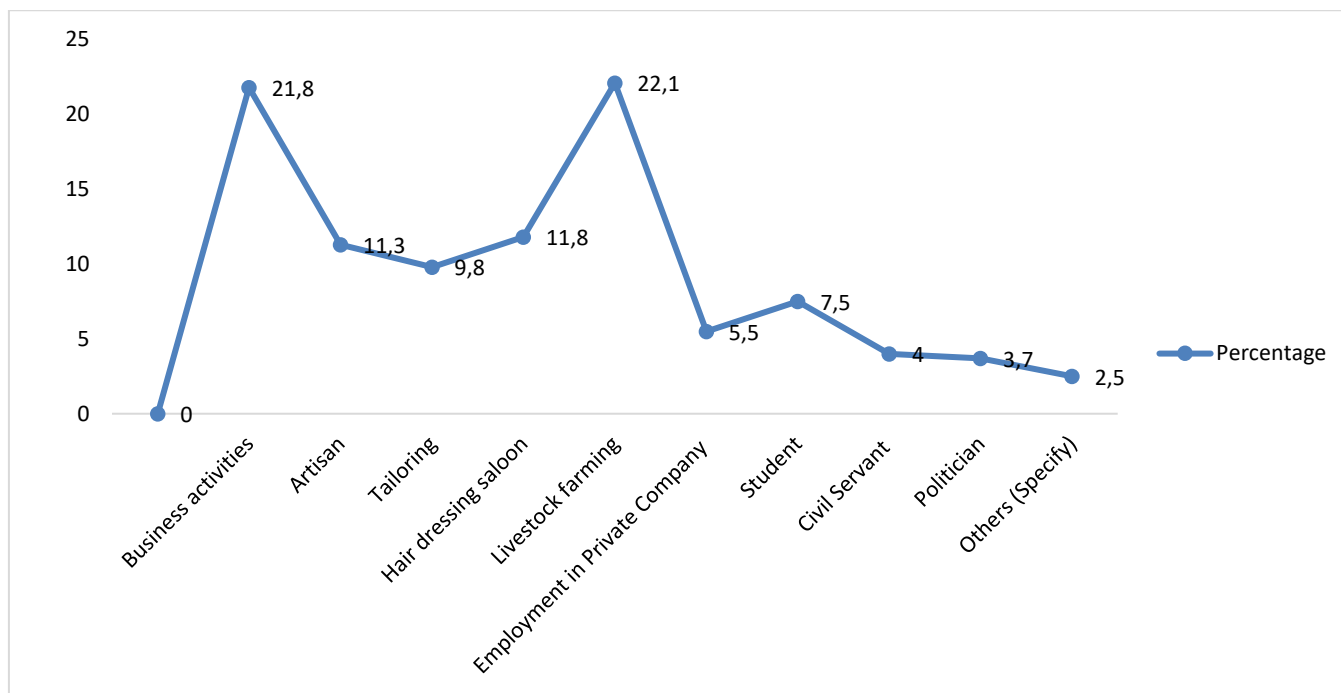
In a related study, Peng et al. (2022) noted that establishing Qilianshan National parks enhances the socio-economic livelihoods and coping strategies of residents of China, as shown in Table 6 and Figure 3. Their findings corroborate with this result from the analysis Table 3, highlights the alternative livelihood opportunities extended by the Cross River National Park management to the support zone communities. Predominantly, 11.8 percent, 11.3 percent, and 9.8 percent, respectively engaged in small-scale businesses such as; artisan crafts, tailoring, and hairdressing salons emerged as the primary forms of alternative sustenance facilitated by the national park management for the host communities. The result revealed that 40 percent and 22.1 percent of respondents within these communities identify themselves as service workers. Among those



surveyed, a significant number attribute their alternative livelihood to livestock farming. The subsequent prevalent alternative livelihood offered by the national park management is business activities, encompassing 21.8 percent of respondents. While 5.5 percent and 4 percent of respondents reported engagement with private companies and civil service positions, respectively, within the study area. In contrast, a smaller segment, comprising 3.7 percent, mentioned pursuing politics as an alternative livelihood in the study area, while miscellaneous occupations contributed 2.5 percent of the responses within the study area (see Table 6) (see Figure 3).

**Table 6** Alternative livelihood provided by national park management to host communities.

S/N	Alternative livelihood	Oban Frequency	Osomba Frequency	Obung Frequency	Nsan Frequency	Total	Percentage
1.	Business activities	37	5	28	17	87	21.8
2.	Artisan	22	5	11	7	45	11.3
3.	Tailoring	18	4	9	8	39	9.8
4.	Hair dressing saloon	20	5	12	10	47	11.8
5.	Livestock farming	29	6	18	35	88	22.1
6.	Employment in Private Company	12	3	4	3	22	5.5
7.	Student	15	5	6	4	30	7.5
8.	Civil Servant	11	2	2	1	16	4.0
9.	Politician	9	1	3	2	15	3.7
10.	Others (Specify)	3	2	2	3	10	2.5
	Total	176	38	95	90	399	100



**Figure 3** Alternative livelihood provided by national park management to host communities.

### 3.5. Socio-economic advantages from Cross River National Park

Accordingly, result from the analysis of Table 7, indicates the socio-economic advantages that the Cross River National Park has brought to the host communities. A prominent illustration of this is the provision of agricultural products/seedlings and the establishment of rural electrification, both significant contributions with corresponding values of 23.06 percent and 17.29 percent. While, 14.29 percent and 13.28 percent of respondents acknowledge the CRNP management role in providing boreholes installations and facilitating road construction, which are recognized as part of the government's responsibilities towards the communities within the study area. The benefits arising from the Cross River National Park also encompass financial aid, health facilities/services, and employment opportunities, as supported by 7.52 percent, 7.77 percent, and 6.77 percent of respondents from these communities. More so, education emerges as the least prevalent benefit, as delineated in Table 6, with a value of 5.51 percent (see Table 7).



**Table 7** Socio-economic benefits from Cross River National Park.

S/N	Socio-economic Benefits	Oban Frequency	Osombo Frequency	Obung Frequency	Nsan Frequency	Total	Percentage
1.	Financial support	15	2	7	6	30	7.52
2.	Rural electrification	29	7	16	17	69	17.29
3.	Borehole installation	24	5	15	13	57	14.29
4.	Health facility /services	14	3	6	8	31	7.77
5.	Road infrastructure	22	6	13	12	53	13.28
6.	Education opportunities	12	1	5	4	22	5.51
7.	Employment generation	15	4	5	3	27	6.77
8.	Agriculture products/seedlings	35	9	22	23	89	22.31
9.	Growth in visitors' arrivals	9	1	3	3	16	4.01
10.	Others (specify)	1	0	3	1	5	1.25
	<b>Total</b>	<b>176</b>	<b>38</b>	<b>95</b>	<b>90</b>	<b>399</b>	<b>100</b>

Similarly, the results pertaining to hypothesis 4, which postulates the absence of a noteworthy relationship between predominant occupations and the socio-economic advantages gained by the support zone communities through the development of the Cross River National Park, are explicated in Table 8. In testing hypothesis two the Pearson correlation analysis was employed. The analysis involves conducting a Pearson correlation analysis to determine if there is a significant relationship between Predominant occupation and Socio economic benefits provides the descriptive statistics for both variables. The Pearson correlation coefficient between the Predominant occupation and Socio economic benefits is .988, with a highly significant p-value of .000.

The correlation is significant at the 0.01 level (2-tailed), indicating a strong positive correlation between them. The Pearson correlation analysis reveals a strong positive correlation ( $r = .988$ ) between Predominant occupation and Socio-economic benefits from Cross River National Park community rural livelihood. Hence, based on the highly significant correlation coefficient and p-value obtained from the Pearson correlation analysis, the null hypothesis ( $H_0$ ) was rejected and the alternative hypothesis ( $H_1$ ) was accepted thus, concluding that there is indeed a significant positive association between Predominant occupation and Socio-economic benefits from Cross River National Park community rural livelihood (see Table 8).

**Table 8** Pearson Product Moment Result correlating Predominant occupation and socio-economic communities benefits from Cross River National Park community rural livelihood.

		Correlations	
		Predominant Occupation	Socio-economic benefits
Predominant Occupation	Pearson Correlation	1	.988**
	Sig. (2-tailed)		.000
	N	100	100
Socio-economic benefits.	Pearson Correlation	.988**	1
	Sig. (2-tailed)	.000	
	N	100	100

\*\* . Correlation is significant at the 0.01 level (2-tailed).

### 3.6. Challenges associated with effective implementing of national park management strategies

Furthermore, the challenges linked to the effective execution of national park management strategies, elucidated in Table 9, encompass a diverse spectrum of intricacies, including financial limitations, misallocation of funds, and insufficient cooperation from the host communities. Notably, Table 9 emphasizes that a noteworthy barrier to the successful implementation of development programs is the absence of incentives for the communities, coupled with instances of funds misallocation, constituting significant challenges with values of 22.1 percent and 21.3 percent, respectively. Additionally, improper coordination of programs emerges as a significant challenge, accounting for 13 percent of the responses within the study area. Furthermore, Table 9 underscores that 12.8 percent, 9.7 percent, and 7.7 percent of respondents recognize challenges like inadequate transportation infrastructure, a lack of cooperation from the host communities, and insufficient program coordination as supplementary obstacles that impact the effective execution of development initiatives within the study area.

Moreover, a smaller proportion of 5.3 percent and 4.8 percent of respondents concur that limited community commitment and inadequate funding also present challenges to the successful implementation of development programs within the study area (see Table 9).



**Table 9** Challenges associated with effective implementing of national park management strategies in the study área.

S/N	Challenges of implementing management strategies	Oban Frequency	Osombo Frequency	Obung Frequency	Nsan Frequency	Total	Percentage
1.	Inadequate funding	10	3	2	4	19	4.8
2.	Mismanagement of fund	39	8	20	18	85	21.3
3.	Hostility of communities	19	3	5	12	39	9.7
4.	Poor programme coordination	20	5	14	13	52	13.0
5.	Inadequate Insecurity	22	4	13	12	51	12.8
6.	Poor transportation	15	2	10	4	31	7.7
7.	Poor commitment by communities	11	3	5	2	21	5.3
8.	Lack of incentives to communities	33	9	24	22	88	22.1
9.	Others (specify)	7	1	2	3	13	3.3
	Total	176	38	95	90	399	100

**3.7. The socio-economic characteristics of the sampled respondentes**

The socioeconomic characteristics of the sampled respondents are shown in Table 10, which shows that 73.00 percent of the sample population was male and 27.10 percent was female. It was also observed that the majority of the sampled respondents were married and single, with 58.64 percent and 42.40 percent respectively. In addition, Table 10 also reveals that 2.80 percent of the respondents are widowers and 5.01 percent and 2.30 percent of the sampled population were also divorced or widowed. Moreover, Table 9 shows that 80.20 percent and 19.80 percent of the sampled population had only completed secondary and postsecondary education. Furthermore, it was noted that the bulk of sample respondents, 64.41 percent of them unemployed and 25.31 percent of them civil servants were followed by traders and students, with 7.57 percent and 3 percent, respectively. Additionally, it was noted that just 6.30 percent of the sampled population was between the ages of fifteen and twenty-five, but over 65.20 percent and 28.60 percent of the respondents used for the study were between the age bracket of thirty-five and above (see Table 10).

**Table 10** Socio-economic characteristics of the sampled respondentes.

Sex	Frequency	Percentage
Male	291	73.00
Female	108	27.10
Total	399	100
Marital status	Frequency	Percentage
Single	234	58.64
Married	169	42.40
Divorce	20	5.01
Widows	9	2.30
Widowers	11	2.80
Total	399	100
Education	Frequency	Percentage
Primary school	0	0
Secondary school	320	80.20
Tertiary	79	19.80
Total	399	100
Occupation	Frequency	Percentage
Civil servant	101	25.31
Unemployed	257	64.41
Students	11	3.00
Trader/business	30	7.51
Total	399	100
Age (years)	Frequency	Percentage
1-15yrs	0	0
15-25yrs	25	6.30
25-35yrs	114	28.60
35 and above	260	65.20
Total	399	100

**4. Discussion**

The creation of Cross River State National Park has substantial socio-economic implications for the communities living within its boundaries, whose livelihoods are closely connected to the park's ecosystem. Research highlights that these



communities have traditionally engaged in occupations like hunting and fishing. This finding is consistent with empirical studies by scholars who have similarly observed that residents of protected areas often depend on farming, hunting, and logging as their primary means of livelihood (Bonye et al., 2023; Digun-Aweto et al., 2022; Htay, 2020). This idea is reinforced by analyses undertaken by researchers who investigated the occupational profiles of communities residing within national park areas (Li et al., 2022). Moreover, the study illustrates that the creation of the national park has introduced various alternative means of livelihood, such as skill development, artisanal activities, business ventures, and trade.

This notion aligns with the perspectives of scholars who advocate for diversifying livelihood options to reduce overdependence on the park's resources (Makwindi & Ndlovu, 2022; Michler & Aschenbrand, 2024). They recommend alternative activities such as education, livestock rearing, and handicraft production to reduce pressure on the national ecosystem. This perspective is further supported by advocates who believe that offering local incentives to rural communities within the park's boundaries can help mitigate conflicts (Ferdinands et al., 2023; Yeshey et al., 2023). Furthermore, the findings highlight the crucial role of essential infrastructure, including roads, electricity, healthcare facilities, and other services, in sustaining the national park. Researchers, such as those cited, affirm this perspective, stressing the importance of essential social amenities and initiatives to sustain the livelihoods of communities, particularly those situated within national park environments (Mosetlhi, 2012; Mudzengi et al., 2021; Cheng, 2023). Additionally, they highlight the potential to mitigate pressure on the park's ecosystem by introducing alternative livelihood options for local communities, which resonates with the empirical findings of this study (Thiault et al., 2021).

However, the establishment of the Cross River State National Park faces several hurdles. Challenges such as deficient transportation networks, resistance from local communities, and financial mismanagement have been identified (Zainol & Yasin, 2023; Yusuf & Jamal, 2023). These findings align with previous research indicating that issues often arise in the vicinity of national parks (Ramkissoo et al., 2013; Mbise, 2024). Moreover, the author's examination of the socio-economic impacts of national park development underscores the adverse effects, including financial mismanagement, community opposition, and limited access for local residents. Notably, these observations closely reflect the challenges discussed in this study concerning the development of Cross River State National Park.

## 5. Final Considerations

The study concludes that while national park management strategies and programs have the potential to support sustainable livelihoods for rural communities in Cross River State, their effectiveness is contingent upon the balance between conservation efforts and community needs. Strict conservation policies, while essential for preserving biodiversity, can inadvertently restrict access to vital resources, leading to economic challenges for local residents. However, when combined with well-designed alternative livelihood programs, such as eco-tourism and skill development initiatives, these strategies can foster economic resilience and improve the well-being of rural populations. Most importantly, community participation in park management choices is critical to the success of these programs because it fosters a sense of community ownership and relates conservation objectives to local socioeconomic interests. In order to guarantee that national park management not only meets its conservation goals but also improves the quality of life for the nearby rural people, a more integrated and participatory strategy is advised.

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## Ethical Considerations

This study involved human participants and adhered to all ethical standards and guidelines stipulated by the University of Calabar, Nigeria, in accordance with the ethical policies of the country and the international research community. The research protocol was reviewed and approved by the Ethical Review Board of the University of Calabar, and informed consent was obtained from all participants prior to their involvement in the study.

## Conflict of Interest

The authors declare that they have no conflicts of interest.

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