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Evaluating the Current Level of Development and Utilization of Ecotourism Resources in Cross River State, Nigeria

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Abstract

This study evaluated the current level of development and utilization of major ecotourism resources in Cross River State, Nigeria. The study adopted a cross-sectional research design, while data were collected from 400 respondents selected through a multi-stage sampling procedure across six ecotourism zones in the state. Data were analyzed using descriptive statistics. Findings revealed that Cross River State possesses abundant ecotourism resources such as mountains, waterfalls, forests, biodiversity hotspots, wildlife sanctuaries, monoliths, and local festivals. However, most of these resources were found to be poorly developed and underutilized due to inadequate infrastructure, weak management, poor accessibility, insufficient funding, and low promotional activities. The study further revealed low levels of utilization of major ecotourism attractions including mountains, waterfalls, wildlife sanctuaries, and monoliths. Despite these challenges, ecotourism resources possess enormous potential for revenue generation, employment creation, and sustainable rural development. The study concluded that improved development and effective utilization of ecotourism resources are essential for enhancing tourism growth and socio-economic development in Cross River State.

INTRODUCTION

Globally, ecotourism is a nature-based tourism activity that ensures the sustainability of natural resources and promotes the economic development of local populations. It also preserves sociocultural values and protects the ecological system for future generations. However, if ecotourism is well-controlled, it can positively affect nature, natural life, local people and the local and national economy (Baydeniz, Cilginoglu & Sandikci 2024). And it is seen as a sustainable

approach to tourism development that promotes environmental conservation, cultural preservation, and socio-economic advancement of host communities. The International Ecotourism Society defines ecotourism as responsible travel to natural areas that conserves the environment and improves the well-being of local people (TIES, 2023). Unlike conventional tourism, ecotourism emphasizes sustainability, community participation, biodiversity conservation, and the responsible utilization of natural resources. In many developing countries, ecotourism has become an important strategy for rural development, revenue generation, employment creation, and environmental protection (Hussain, 2022).

Nigeria is endowed with abundant ecotourism resources ranging from forests, mountains, waterfalls, wildlife sanctuaries, rivers, and cultural heritage sites. Cross River State is widely recognized as one of the most ecologically diverse states in Nigeria due to its rich tropical rainforest, unique biodiversity, scenic landscapes, and cultural attractions. The state possesses notable ecotourism assets such as Obudu Mountain Resort, Agbokim Waterfalls, Kwa Falls, Afi Mountain Wildlife Sanctuary, Oban Hills, and the Ikom Monoliths. These resources have the potential to attract tourists, stimulate economic activities, and enhance sustainable rural development (Ofem, Okpa, & Joshua, 2021).

Despite the abundance of these ecotourism resources, many of them remain poorly developed and underutilized. Several ecotourism sites in Cross River State are characterized by inadequate infrastructure, poor accessibility, insufficient funding, weak policy implementation, and low levels of promotion and management. Poor road networks, limited accommodation facilities, irregular power supply, and lack of effective marketing strategies have continued to hinder the optimal utilization of ecotourism resources in the state (Usang et al., 2023). In addition, inadequate documentation and limited data on tourism contributions to local economic development further weaken effective planning and investment decisions.

The underdevelopment and poor utilization of major ecotourism resources have limited the ability of the tourism sector to contribute significantly to economic growth and community development in the study area. Although Cross River State is often described as Nigeria's tourism hub, many ecotourism destinations have not achieved their expected level of development and patronage. This situation raises concerns regarding the current state of ecotourism resource development and the extent to which these resources are being effectively utilized for sustainable tourism development. Therefore, there is a need to evaluate the present level of development and utilization of major ecotourism resources in the study area in order to identify existing gaps and provide recommendations for improved management and sustainable utilization.

OBJECTIVES OF THE STUDY

1. identify the major ecotourism resources available in the study area;
2. assess the current level of development of ecotourism resources in the study area;
3. examine the extent of utilization of major ecotourism resources in the study area.

LITERATURE REVIEW

Development and Utilization of ecotourism resources

Rajasenan, Manaloor and Abraham (2012) in a study sought to examine the socio-economic aspects of sustainable ecotourism development in Kerala. Data for the study was obtained from a primary survey by dividing the ecotourism destinations in Kerala into three zones, 230 from south zone, 220 from central zone and 200 from north zone with a total sample size of 650 based on the notion of community-based ecotourism initiatives of the state. The result of the study confirms that ecotourism has helped to enhance the livelihood of the marginalized community. With well-knit policies it is possible to tag ecotourism of Kerala as an important tourism destination in the global tourism map.

Usang, Unimtiang, Ogban, Odey, Igwe, Sam & Oham, (2023) study examined ecotourism and the economic development of Calabar Municipal, Cross River State, Nigeria. To achieve the purpose of this study, a null hypothesis was formulated to guide the study. A review of related literature was carried out based on the variable of this study. The survey research design was considered useful for the study. The research adopted multiple sampling approaches. Simple random sampling technique was used to select 232 subjects used as sample in each ward in the Local Government Area. A twenty-item modified four (4) points Likert scale questionnaire titled Ecotourism and Economic Development of Calabar Municipal Questionnaire (EEDCMQ) was the instruments used for gathering data for the study. To test the hypotheses formulated for the study, Pearson's product moment correlation statistical tools was used for data analysis. The hypothesis formulated was tested at 0.05 alpha level. The results from data analysis and hypothesis testing indicated that there is a significant relationship between ecotourism and the economic development in the study area. Based on the findings of the study, it was recommended among others that the state government should ensure investment in basic infrastructure such as roads, better airports facilities and good transport system.

Ecotourism resource utilization varies significantly, often characterized by high, localized, and specialized demand for attractions like rainforests, wildlife, and, in some cases, cultural heritage, such as in the Yankari National Park, which achieved 49.3% capacity usage. While some sites experience intense activity (e.g., 93.3% for Cross River National Park rainforest experiences), many areas suffer from low utilization, high operational constraints, or unsustainable exploitation by local communities. Effective, sustainable usage relies on community involvement and infrastructure development.

A study carried out by Ngokah (2013) examined capacity and levels of utilization of tourism potentials of Yankari National Park (YNP) and Cross River National Park (CRNP). Mean visitor holding capacity (MVHC) of each park over the period 2002 – 2006 was determined. Further, mean visitation of the parks during the study period was obtained from records of tourism visitation of the parks. From these, capacity utilizations were determined. Cross sectional survey of levels of utilization of attractions in each park was conducted using questionnaire. YNP recorded 49.3% capacity utilization; while CRNP had 3.5%. Both parks witnessed varying levels of utilization of their existing potentials. In YNP, game viewing and warm spring bathing had high levels of utilization (91% and 64% respectively). Old iron smelting sites and Dukkey Wells recorded low levels of utilization (1.0% each). In CRNP, rainforest experience and cave adventure had high utilization levels (93.3% and 68.3% respectively). Neither park had optimum use of its potentials. Updating of parks' tourism infrastructure and creation of better awareness of the parks as tourist destinations were recommended for beefing up capacity and levels of utilization of the parks.

Ekowati & Nawarcono (2018) study on the utilization of resource potency owned by community-based tourism as effort to increase public income in Sleman Special Region of Yogyakarta. The research was conducted using qualitative method that is not based on the calculation but in the form of statement, which aims to get the picture and the whole data about the problem studied. The data obtained is then analyzed descriptively which aims to describe systematically and accurately. The results obtained that the implementation of resource utilization through community-based tourism in 3 (three) tourist villages Pentingsari, Kembangarum, and Brayut, has gone well. One of the things done by the village tourist manager is by managing the assets of the residents, where the assets are used as one of the resources utilized by the manager through the activities of village tourism. Many positive things that people get around the tourist village with the existence of community-based tourism. In addition to the behavioral changes and ways of organizing the community, where changes in community behavior towards a more positive and society view the organization as a means of self-development; As a form of community-based tourism, almost all citizens are involved in the event or activities of the village tour, starting from mothers (cooking), youth organization of youth (greeters, guides), and fathers (pengrawit, security). The community is increasingly skilled in the management of homestay, the management of the menu for guests, culinary as well as the arrangement of a cleaner and healthier environment. The existence of community-based tourism that involves almost all citizens, gives a positive thing for the community, that is the increase of people's income around 50-70%, where the increase of income is not only felt by the manager but also felt by all the people around the tourist village.

Arowosafe, Wuleka & Emma (2019) carried out a study to assess the perceived benefits of ecotourism development in nearby communities to two West African national parks namely: Kainji Lake National Park (KLNP) in Nigeria and Mole National Park (MNP) in Ghana. Stratified random sampling was used in selecting 10 households each in both countries. A total of 582 respondents were contacted through semi-structured questionnaires while key informant interviews including focus group discussions were used to obtain data on the direct, indirect and service benefits. Data analysed suggests that at KLNP, the provision of boreholes (45.7%) was the most cited direct benefit whereas 58.8% of respondents to communities adjacent MNP cited provision of health services. The indirect benefits revealed at KLNP were that residents had the opportunity to provide transport services to tourists, while at MNP, residents had an opportunity to display culture at a fee and sell arts and craft to visiting tourists. Service benefits unveiled in the study relate more of employment generation through ecotourism in both parks. A “needs assessment” survey of “flanking” communities is recommended as an appropriate measure to bridging the gap between what benefits the residents need and why such benefits should give the needed impetus to support conservation efforts in both parks.

MATERIALS AND METHODS

Research design

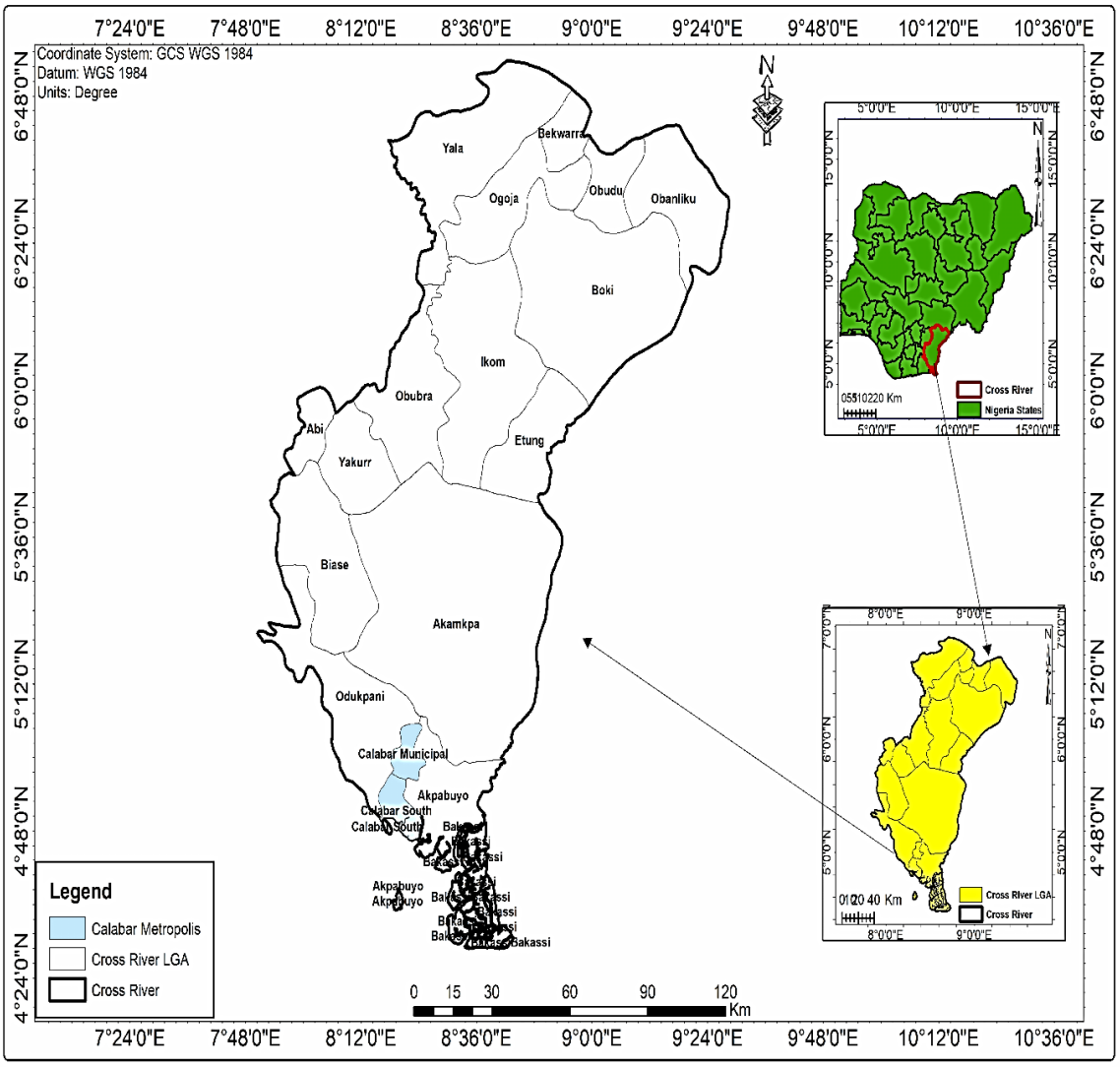
This study adopted a cross-sectional research design. A cross-sectional research design is an observational study that analyzes data from a population at a specific point in time. A cross-sectional study is a type of observational research design that collects data from a population or a representative subset at a single point in time. This design allows researchers to examine the

relationships between various variables without manipulating them, making it particularly useful for assessing the prevalence of outcomes and characteristics within a defined population.

Area of the Study

The study area of which this report work is based is Cross River State in Nigeria. Cross River State is located on latitudes 40 271 N and 70 N and longitudes 70 E and 9.280 E. The state is located along the coastal area of the south eastern part of Nigeria. The state shares boundary with Benue state to the North, on the south by Akwa Ibom State and the Atlantic Ocean, to the west by Ebonyi, and Anambra and it shares an international boundary on the East with Cameroon Republic. (Udoidung, Braide, Opara & Adie, 2007). The state has 18 local government areas with six sampled for this study.

Population of the study



The population of this study comprised all the residents/individuals that constitute host communities in Cross River state who themselves may be stakeholders, direct beneficiaries of the outcome of ecotourism resources and may be involved in ecotourism activities. The study population was drawn from six ecotourism zones (Obanliku, Obudu, Boki, Etung, Akamkpa and Calabar Municipal local Government Areas) in Cross River State. According to the National Population Commission of Nigeria/National Bureau of statistics population projection (2006-2025), the total estimated population of the selected communities is 133,109.

Sample and sampling techniques

The sample size for this study consists of 400 respondents drawn from the population via multi-stage sampling procedure. Multi-stage sampling procedure was employed in this study. The first stage was a random selection of 2 Local government Areas from each of the 3 senatorial districts in Cross River State. This gave a total of 6 Local Government Areas. Stage two involve a simple random sampling of 1 ecotourism site in each of the 6 Local Government Areas. This gave a total of 6 ecotourism sites. Stage three involved a simple random sampling of 2 communities/ward in each of the 6 Local Government Areas of selected ecotourism sites. In stage four, the Taro Yamane (1967) formula ($n = \frac{N}{1+N\,(e)2}$) which provides the bases for determining a known population was used to obtain a sample size of 400 respondents. This study used both primary and secondary sources of data. Primary sources of data are data collected for the first time by a researcher. This study used only questionnaire for data collection.

Method of data analysis

Data were analysed through the use of SPSS version 27. Hypotheses one to four were analyzed using multiple regression analysis and tested at 0.05 level of significance.

RESULT

Demographic information of respondents

The distribution of respondents according to demographic variables is presented in Table 1. From the result, a larger proportion 219 (54.7%) of the respondents were female while 181 (45.3%) were males implying that the female respondents were more than the male. The distribution of respondents' according to age indicates that 34.3% of the respondents were 31-40 years of age, 27.7% were between the age bracket of 41 to 50, 24.7% were aged 51 and above and 13.3% were between the age bracket of 18-30, The result of this study showed that majority of the respondents were in their youthful ages. Results on marital status showed that majority (52.0%) of the respondents were single, 35.0% were married while 13.0% were divorce/separated. Results of educational status revealed that a large proportion (31.8%) of the respondents had secondary education, 27.5% had primary education, 26.5% had no formal education while 14.2% had tertiary education.

TABLE 1: Percentage distribution of respondents based on demographic variables

	Frequency	Percent (%)
SEX		
Male	181	45.3
Female	219	54.7
Total	400	100.0
AGE		
18-30	53	13.3
31-40	137	34.3
41-50	111	27.7
51 AND ABOVE	99	24.7
Total	400	100.0
Marital Status		
Single	208	52.0
Married	140	35.0
Divorce/Separated	52	13.0
Total	400	100.0
Education status		
No formal education	106	26.5
Primary education	110	27.5
Secondary education	127	31.8
Tertiary education (OND, HND, B.Sc, etc.)	57	14.2
Total	400	100.0

The major ecotourism resources in Cross River State

The distribution of respondents based on major ecotourism resources is presented in Table 2. From the results, a large proportion (97.3%) of the respondents identified mountains such as the Obudu and Afi mountains as a major ecotourism resource, this was followed by 91.3% who identified waterfalls such as Agbokim and kwa waterfalls to be a major ecotourism resource. Others were Biodiversity hotspot such as Afi and Okwangwo biodiversity (86.3%), Wildlife sanctuary/conservation such as the Afi sanctuary (82.0%), the Ikom Monoliths (78.0%), drill ranch (74.5%), Forest such as the Obudu, Agbokim and Oban forest (72.0%), Local festivals (65.3%), hills such as the Oban hill (63%) and dam such as Obudu dam (50.3%).

Table 2: Distribution of respondents based on major ecotourism resources

Ecotourism resources	Frequency	Percent (%)
Forest (eg Obudu, Agbokim, Oban forest)	288	72.0*
Hills (Oban hill)	252	63.0*
Biodiversity hotspot (plants, animals etc. Afi, Okwangwo biodiversity)	345	86.3*

Mountains (Obudu and Afi mountains)	389	97.3*
Wildlife sanctuary/conservation (Afi wildlife)	328	82.0*
Waterfalls (Agbokim and kwa waterfalls)	365	91.3*
Drill ranch (eg. Afi ranch)	298	74.5*
Dam (Obudu dam)	201	50.3*
Monoliths (Ikom)	312	78.0*
Indigenous Cultural practices	163	40.8
Traditional crafts	176	44.5
Local festivals	261	65.3*
Local guides	182	45.5

Multiple responses, 1-49% = minor resources, 50% and above =*major resources
Source: Field survey data, 2025

Current level of development and utilization of major ecotourism resources

Table 3 showed the distribution of respondents based on current level of development and utilization of ecotourism resources in the study area. The result showed that for the level of development, respondents identified that there was low level of development of mountains (78.7%) such as the Obudu mountain resort, Waterfalls (70.8 %), Forest (62.5%), Drill ranch (60.3%), Wildlife sanctuary/conservation (59.8%), Biodiversity hotspot (50.3%), and hills (50%). Also, 67.3% of the respondents identified that there was no development of the dam such as the Obudu dam, Monoliths (55%) and Local festivals (52.7%). For level of utilization, 81.5%, 80.0%, 78.3%, 74.5%, 68.54%, 59.0%, 53.3% of the respondents identified that there was low level of utilization of mountains such as the Afi and Obudu mountains, monoliths, wildlife sanctuary/conservation, biodiversity hotspot, drill ranch, local festivals and forest ecotourism resources respectively. However, respondents also identified that there was no utilization of Obudu dam (76.0%), and waterfalls (55.2%).

Table 3: Distribution of respondents based on current level of development and utilization of major ecotourism resources

Major ecotourism resources	High level of development		Low level of development		No development	
	Frequency	%	Frequency	%	Frequency	%
Forest (eg Obudu, Agbokim, Oban forest)	-	-	250	62.5	150	37.5
Hills (Oban hills)	110	27.5	200	50.0	90	22.5

Biodiversity hotspot (plants, animals etc eg Afi, Okwangwo biodiversity)	140	35.0	201	50.3	59	14.8
Mountains (eg Obudu mountain resort)	40	10.0	315	78.7	45	11.3
Wildlife sanctuary/conservation (eg Afi wildlife)	42	10.5	239	59.8	119	29.7
Waterfalls (eg Agbokim, Kwa falls)	50	12.5	283	70.8	67	16.8
Drill ranch (eg Afi ranch)	98	24.5	241	60.3	61	15.2
Dam (Obudu dam)	-	-	131	32.7	269	67.3
Monoliths (eg Ikom)	88	22.0	92	23.0	220	55.0
Local festivals	-	-	189	47.3	211	52.7
Major ecotourism resources	High level Utilization		Low level utilization		No utilization	
	Frequency	%	Frequency	%	Frequency	%
Forest (eg Obudu, Agbokim, Oban forest)	-	-	213	53.3	187	46.7
Hills	68	17.0	190	47.5	142	35.5
Biodiversity hotspot (plants, animals etc eg Afi, Okwangwo biodiversity)	-	-	298	74.5	102	25.5
Mountains (eg Obudu mountain resort)	29	7.3	326	81.5	45	11.2
Wildlife sanctuary/conservation (eg Afi wildlife)	-	-	313	78.3	87	21.7
Waterfalls (eg Agbokim, Kwa falls)	-	-	179	44.8	221	55.2
Drill ranch (eg Afi ranch)	54	13.5	274	68.5	72	18.0
Dam (Obudu dam)	-	-	96	24-0	304	76.0
Monoliths (eg Ikom)	-	-	320	80.0	80	20.0
Local festivals	115	28.7	236	59.0	49	12.3

Source: Field survey data, 2025

DISCUSSION

Findings shows that dams, monoliths and local festivals ecotourism resources were not developed, while there was a low level of development of waterfalls, forest, drill ranch, wildlife sanctuary/conservation, biodiversity hotspot, and hills resources. There was also low level of utilization of mountains such as the Obudu mountain resort, monoliths, wildlife

sanctuary/conservation, biodiversity hotspot, drill ranch, local festivals and forest ecotourism resources and no utilization of dams and waterfalls.

Findings also showed that there is a major effect of ecotourism resources development on revenue generation as the number of tourist visiting ecotourist sites will improve revenue and revenue generated can be used for infrastructural development in the community, the preservation of ecotourism resources will directly impacts revenue and attract significant investment to the state and enhance the distribution of the economic benefits of ecotourism among the community members, the state government's internally generated revenue (IGR) can increase due to ecotourism. and ecotourism will lead to an increase in household income in the community. The result of this finding is in line with the findings of Abdurakhmanova & Ahrorov (2025) whose study revealed that households involved in ecotourism activities experience a significant increase in income compared to those not engaged in ecotourism. Augustine, Bernard & Maximus, (2023) findings showed that ecotourism resources is major source of income to individuals through the creation of various employment opportunities as well as contributing to their individual welfare.

Conclusion

The study concluded that Cross River State is richly endowed with diverse ecotourism resources capable of promoting sustainable tourism and socio-economic development. However, many of these resources remain inadequately developed and poorly utilized due to infrastructural deficiencies, inadequate funding, weak policy implementation, and poor management practices. The low level of development and utilization has limited the contribution of ecotourism to economic growth, employment generation, and community development. Therefore, strategic investment and sustainable management of ecotourism resources are necessary to fully harness their economic and environmental benefits.

Recommendations

1. Government and private stakeholders should invest in the development of tourism infrastructure such as roads, electricity, accommodation facilities, and transportation systems to improve accessibility to ecotourism sites.
2. Effective promotion and marketing strategies should be introduced to increase awareness and patronage of ecotourism attractions within and outside Nigeria.
3. Local communities should be actively involved in ecotourism planning and management to ensure sustainable utilization, community participation, and improved socio-economic benefits.

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