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CONTRIBUTIONS OF ECOTOURISM RESOURCES TO THE ECONOMICS DEVELOPMENT OF ADAMAWA STATE, NIGERIA

[1]HUSSAINI B. JEUKARI; & [2]MAMMAN SOLOMON ISA

[1]Department of Geography, Adamawa State College of Education, Hong. [2]Department of Geography, College of Education Zing, Taraba State

Corresponding Authors: lawarenceluka1@gmail.com

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Abstract

This study evaluates the ecotourism potentials of Adamawa State with a view to promoting sustainable tourism planning and development. The specific objectives were to identify, map, and characterize natural landscapes within ethnic communities; assess their recreational and tourism significance; and examine the perceived roles of intermediaries in tourism development. Data were collected using in-depth interviews, focus group discussions (FGDs), and structured interviews. Information on ethnic communities was obtained from the Ministry of Culture and Tourism, while population data were sourced from the Adamawa State Population Commission. Geographic coordinates of ecotourism sites were acquired using a GPS Model 76 CSX, and Geographic Information System (GIS) tools were applied to generate resource maps. Data analysis involved descriptive statistics and chi-square tests to determine significant differences. The study identified and categorized ecotourism resources such as rock formations, hills, rivers, springs, lakes, ponds, natural landscapes, and forest reserves. Key ecotourism sites include Kamale, Sukur, Zhegumi, Motochi Mountains, Ildam, Pella Basalt, Mutuku Dome, Njuwa Lake, the Mysterious Chain and Foot, and Kopre Forest—demonstrating the state's rich ecotourism potential. Findings revealed significant differences among communities in their perceptions of media, security, tour guides, attractions, transport, and accommodation, while no significant differences were found in their understanding

Keywords:
Ecotourism,
Sustainable Tourism,
Natural Landscapes,
Community
Perception, Tourism.

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of leisure time, frequency of visits to recreational areas, and general knowledge of ecotourism. Anticipated benefits of tourism development include physical infrastructure, economic opportunities, and social and political gains. The study recommends that both government and private investors actively explore and invest in these ecotourism resources. Additionally, appropriate intermediaries should be established at both state and local levels to ensure effective utilization and sustainable management of tourism resources in Adamawa State.

Introduction

Ecotourism and Sustainable Development: A Framework for Planning in Adamawa State

Ecotourism has emerged as a pivotal strategy for achieving sustainable development, particularly in regions rich in natural and cultural heritage. Its global recognition was solidified during the 1992 Earth Summit in Rio de Janeiro, where sustainable development was defined as environmentally responsible socio-economic activity. Since then, ecotourism has evolved into a multifaceted tool for conservation, community empowerment, and economic diversification (Xu *et al.,* 2023). Scholars such as Samal, & Dash (2023) emphasized its dual role in preserving biodiversity and promoting local livelihoods through education, participation, and capacity building. Countries like Costa Rica, Kenya, Nepal, and Madagascar exemplify how ecotourism contributes significantly to national income and GDP (Aniramu *et al.,* 2025).

Tourism, broadly considered one of the fastest-growing global industries, continues to reshape local economies and cultural landscapes. Its expansion is driven by rising disposable incomes, increased leisure demand, and intensified global competition (Xu *et al.,* 2023). Within this growth, ecotourism and cultural tourism have emerged as key subsectors, offering more sustainable alternatives to mass tourism. For developing nations, tourism serves as a catalyst for economic growth, employment, and foreign exchange earnings, while also fostering regional development and diversification (Aniramu *et al.,* 2025).

However, tourism's rapid expansion is not without challenges. Unregulated growth can lead to environmental degradation, loss of cultural identity, and social disruption (Ferreira *et al.,* 2020). Responsible tourism models are therefore essential to balance economic objectives with environmental integrity and cultural preservation. Ecotourism, when properly implemented, offers such a model. It emphasizes responsible travel to natural areas that conserves the environment and enhances the welfare of local communities (The Ecotourism Society, cited in Xu *et al.,* 2023). Activities such as rainforest walks or river rafting only qualify as ecotourism if they contribute to conservation efforts and benefit local populations.

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Intermediaries—tour operators, guides, transport providers, accommodation services, and media actors—play a critical role in shaping tourist experiences and perceptions. They act as gatekeepers of knowledge and expectations, influencing both access and sustainability outcomes (Marin-Pantelescu *et al.,* 2019; Roser *et al.,* 2023) . Their involvement is especially vital in regions like Adamawa State, Nigeria, where tourism infrastructure and community engagement are still developing.

Sustainable tourism, as defined by Mensah and Agyeman (2021) requires active local participation, environmental stewardship, equitable economic returns, and mutual respect among stakeholders. Njoroge *et al.* (2023) further argue that early and sustained community involvement in tourism planning determines the success and sustainability of tourism initiatives.

This study aims to assess the potential of ecotourism resources for sustainable tourism planning and development in Adamawa State. Specifically, it seeks to: (i) identify and characterize natural landscape attributes across ethnic communities and evaluate their recreational and tourism significance; (ii) examine the perceived role of intermediaries in tourism development; and (iii) discuss the anticipated benefits of ecotourism for local communities.

By integrating ecological conservation with socio-economic development, ecotourism offers a viable pathway for Adamawa State to harness its rich natural and cultural assets. The findings of this research will contribute to the broader discourse on sustainable tourism and provide actionable insights for policymakers, practitioners, and community stakeholders.

THE STUDY AREA

Location and Size

The study was conducted in Adamawa State, located in northeastern Nigeria (see Fig. 1). The state lies approximately between latitudes 7°00′ and 11°00′ North and longitudes 11°00′ and 14°00′ East. It shares borders with Borno State to the north, Gombe State to the west, and Taraba State to the south. It also shares an international boundary with the Republic of Cameroon to the east. Nine Local Government Areas (LGAs) were purposively selected for the study based on the concentration and representation of diverse ethnic groups. These LGAs provide a fair cross-section of the cultural and ecological diversity of the state. This diversity supports the presence of rich ecotourism assets including unique geological formations, forest reserves, water bodies, and culturally significant landscapes.

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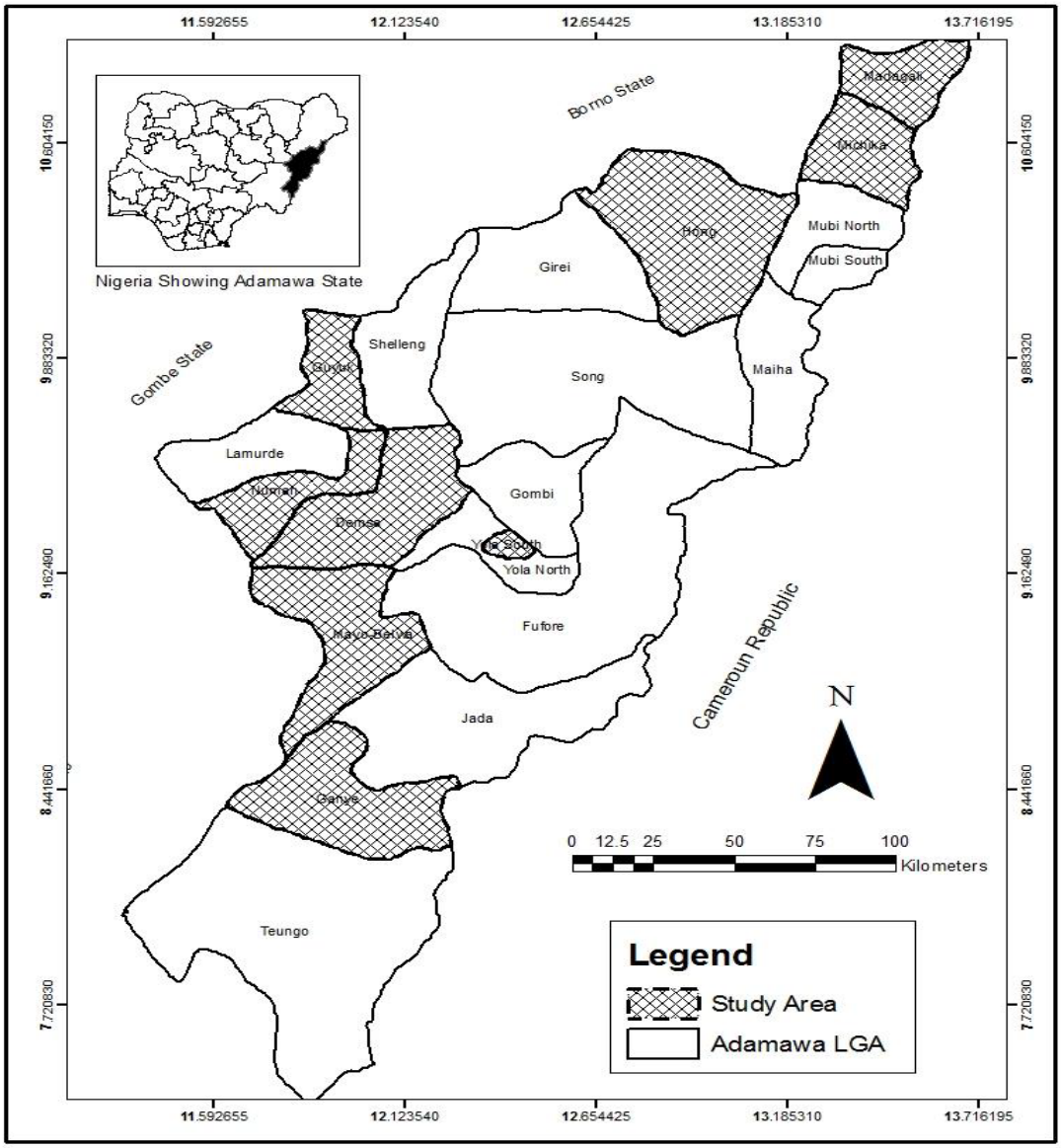

Figure 1: Map of Adamawa Showing the Study Area

MATERIALS AND METHODS

This section outlines the methodological approaches employed to achieve the research objectives, including the reconnaissance survey, data collection methods, sampling techniques, and data analysis procedures.

Reconnaissance Survey

A reconnaissance survey was conducted to identify specific areas for data collection. This involved engaging key informants and establishing collaboration with local leaders, cultural custodians, traditional priests, and government officials. Additional data on

forests and water resources were obtained from the Ministry of Agriculture, Forestry, and Wildlife. These efforts guided the selection of sample settlements and facilitated the mapping of ecotourism resources.

Types and Sources of Data

The study collected data on natural features such as mountains, rivers, and forest reserves with ecotourism potential. Primary data were gathered from ethnic communities across the sampled Local Government Areas (LGAs). Survey-based data predominated due to the anthropogenic nature of many variables. Secondary data were sourced from the Adamawa State Ministry of Culture and Tourism, which provided historical and cultural information. Population statistics were obtained from the National Population Commission.

Sampling Design and Techniques

A multi-stage sampling method was adopted for this study. First, nine Local Government Areas were purposively selected to reflect the ethnic and cultural diversity within the state. These LGAs represent approximately 43% of the total 21 Local Government Areas in Adamawa State.

Table 1 Distribution and size of ethnic communities

S/NO	LOCAL GOVT. AREAS	ETHNIC COMMUNITIES	DISTRICTS IDENTIFIED	SAMPLE SIZE
1	Madagali	Sukur	Duhu, Kirchinga	23
2	Michika	Michika	Futu, Bazza, Michika 1	71
3	Hong	Kilba	Gaya, Daksiri, Hong, Kulinyi	108
4	Yola South	Batta	Yola, Namtari	89
5	Mayo-Balwa	Yandang	Mayo-Farang, Bajama	70
6	Guyuk	Lunguda	Dumna, Guyuk, Kola, Banjiram	97
7	Ganye	Chamba	Garun, Yebbi, Anaga, Sugu	108
8	Demsa	Mbula	Demsa, Bellie, Mbula	82
9	Numan	Bachama	Numan, Bare	47
	9	**9**	**26**	**695**

Source Researcher's Fieldwork, 2025

Secondly, one ethnic community was purposively selected from each Local Government Area based on their larger population size and significant tourism potential. Thirdly, among the 49 districts within the nine selected Local Government Areas, twenty-six districts were included in the study due to the dominance of specific ethnic groups and their substantial tourism assets (see Table 3).

Lastly, two clusters comprising thirty households each were selected from the residential areas of every ethnic community, resulting in a total of 540 households from which

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respondents were chosen for structured interviews. The sample was drawn from the estimated population of the selected ethnic communities. The sample size was determined using a sample size calculator, applying a 5% margin of error and a 99% confidence level. Based on the software calculation, the required sample size for the study area (population: 762,379) was 662, with an additional 5% margin (33 respondents), bringing the total sample size to 695.

Methods of Data Collection

This study employed a combination of mapping, in-depth interviews, Focus Group Discussions (FGDs), and structured interviews to gather data.

Mapping

A map of Adamawa State was obtained from the Adamawa State Ministry of Lands and Survey at a scale of 1:500,000. This map was digitized using ArcView GIS and served as the base map for the research. A Garmin 76csx Global Positioning System (GPS) device was used to record the coordinates of prominent ecotourism resources, including mountains, rivers, lakes, ponds, springs, and forest reserves. These coordinates were compiled into an attribute database table within ArcView GIS, which facilitated the interpretation and production of a resource map for the study area.

Focus Group Discussions (FGDs)

FGDs were conducted with purposively selected youths and elders, chosen for their knowledge and experience regarding cultural tourism attributes and the natural environment of their communities. The discussions followed a predetermined checklist of open-ended questions, designed to unfold reflexively and allow exploration of both anticipated and emergent themes and issues.

A total of 27 FGDs were held across nine districts—three FGDs per ethnic community—with each group comprising 10 youths and 10 elders (see Table 3.2). The FGDs aimed to assess participants' perceptions of the role of intermediaries—such as media, security personnel, transport providers, site managers, and tour operators—in ecotourism development. They also explored community perspectives on the anticipated benefits of tourism development.

TABLE 2: THE ETHNIC COMMUNITIES AND NUMBER OF FOCUS GROUP DISCUSSIONS CONDUCTED

S/No	ETHNIC COMMUNITY	DISTRICTS	No. OF PARTICIPANTS		
			No. OF FGDs	YOUTHS	ELDRES
1.	SUKUR	SUKUR	3	10	10
2	MICHIKA	VIH	3	10	10

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S/No	ETHNIC COMMUNITY	DISTRICTS	No. OF PARTICIPANTS		
			No. OF FGDs	YOUTHS	ELDRES
3	KILBA	DAKSIRI	3	10	10
4	BATTA	NAMTARI	3	10	10
5	YANDANG	GANGLAMJA	3	10	10
6	LUNGUDA	KURNYI	3	10	10
7	CHAMBA	TINDARE	3	10	10
8	MBULA	MAYAH	3	10	10
9	BACHAMA	VULPI	3	10	10
	TOTAL	**9**	**27**	**90**	**90**

Methods of Data Analysis

Qualitative data were analyzed using content analysis to identify patterns, comparisons, and analogies within and across communities based on their natural features. Responses from the structured interviews conducted with 695 participants were coded and initially entered into Microsoft Excel (version 2007), then exported to the Statistical Package for the Social Sciences (SPSS) version 20 for further analysis.

Descriptive statistics including frequency distributions and graphical representations were employed to examine community perceptions regarding the role of intermediaries in tourism development. To determine the statistical significance of differences in perceptions among communities, chi-square tests were conducted at a 95% confidence level.

Qualitative data obtained from Focus Group Discussions were transcribed and subjected to narrative analysis, allowing for the interpretation of community insights and emergent themes. Additionally, GPS coordinates collected during fieldwork were processed and integrated into a Geographic Information System (GIS) environment using ArcGIS version 10.1. This facilitated the creation of a spatial database and the production of an ecotourism resource map for the study area.

Results and Discussion

Ecotourism is widely recognized as a form of sustainable tourism that integrates environmental conservation, cultural preservation, and socio-economic development. It is defined as responsible travel to natural areas that conserves the environment, sustains the well-being of local people, and involves interpretation and education (Cossengue *et al.,* 2025; Shapoval, 2023). As a market segment, ecotourism responds to growing global demand for nature-based experiences and green strategies that enhance destination attractiveness while minimizing ecological footprints (Hussain, 2022).

This chapter highlights the prominent ecotourism resources and their spatial distribution across Adamawa State, emphasizing their recreational and tourism significance. The

study identified eight ecotourism resources in Hong Local Government Area, one each in Michika, Madagali, and Ganye, and two each in Yola South and Guyuk.

The ecotourism resources documented in this study are categorized as follows:

i. Rocks and Hills: These include Gorobi Mountain, Sukur Hill (a UNESCO World Heritage Site), Kamale Volcanic Plug, Mutuku Dome, Uding Inselberg, Ldam Three Sisters Rock, Zhegumi Peak, Motochi Mountain, Pella Basalt, Jangani Mountain and Cave, and Dangir Sama. These geological formations offer scenic views, hiking opportunities, and cultural significance.
ii. Rivers, Springs, and Lakes: Key water bodies include River Benue at Jimeta and Numan, River Gongola, River Dono, Lake Garang, Lake Loh, Lake Njuwa, and the natural spring at Dzumah. These aquatic features support biodiversity, offer recreational activities such as fishing and boating, and serve as vital ecological assets.
iii. Forest Reserves: Kopre and Kinging Forest Reserves are rich in flora and fauna, providing opportunities for wildlife observation, conservation education, and eco-research.
iv. Natural and Cultural Landscapes: Unique cultural features such as the mysterious footmark, chain, and pot reflect the deep spiritual and historical narratives of the local communities, adding cultural depth to the ecotourism experience.

These resources collectively underscore Adamawa State's potential as a viable ecotourism destination, aligning with global trends that emphasize sustainability, community involvement, and environmental stewardship.

Gorrobi Mountain

The Gorrobi natural and cultural landscape is situated in Mayo-Belwa Local Government Area of Adamawa State, approximately 60 kilometers from Yola, the state capital. It shares boundaries with Zing Local Government Area of Taraba State to the south and Jada Local Government Area of Adamawa State to the west. Gorrobi Mountain is notable for hosting an ancient settlement that dates back to the 16th century A.D., reflecting the region's rich historical and cultural heritage.



Figure 2 *Gorobi Mountain*



Figure 3 *Wale Gong*

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Sukur Mountain

Sukur Mountain features a unique blend of cultural and natural landscapes. It is located in Madagali Local Government Area, nestled within the hilly terrain of the Mandara Mountains along the Nigeria Cameroon border. Approximately 290 kilometers from Yola, the capital of Adamawa State in northeastern Nigeria, Sukur sits at an elevation of 1,045 meters above sea level. The distance from the designated parking area to the Hidi's Palace a central cultural landmark is approximately 3.8 kilometers.



Figure 4 *Sukur Hill*

Kamale Peak (Volcanic Plug)

Kamale Peak is located in Michika Local Government Area of Adamawa State, in the northeastern region of Nigeria, near the eastern border with the Republic of Cameroon. Rising to an elevation of approximately 1,500 meters above sea level, the peak is situated about 22 kilometers from the eastern flank of Michika town—the Local Government headquarters—and roughly 180 kilometers from Yola, the state capital.

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The lower slopes of Kamale Peak are adorned with rock boulders and screes of captivating shapes and sizes, contributing to its dramatic landscape. The area boasts a distinctive assemblage of flora and fauna. Vegetation includes small trees, shrubs, and grasses, while the fauna comprises various species of reptiles, monkeys, squirrels, gazelles, and other wildlife commonly referred to as bush meat.

Kamale Peak offers excellent opportunities for recreational activities such as mountaineering, hiking, and picnicking. Its rugged terrain and diverse physiographic features make it an ideal destination for nature walks and a favorite spot for photography enthusiasts.



Figure 5 *Kamale Volcanic plug*

Mutuku dome, Cave and Inselbergs

Mutuku Dome is located in Hong Local Government Area of Adamawa State, rising to an elevation of over 750 meters above sea level. It is situated approximately 8 kilometers from Hong town the Local Government headquarters and about 150 kilometers from Yola, the state capital.

According to oral accounts from community elders, a cave beneath the dome is believed to have the capacity to shelter over 1,000 people. The cave is said to contain ancient

artifacts, including broken pots, iron tools, and wooden implements, thought to have been used by early inhabitants of the area. Despite its historical significance, local residents are generally reluctant to explore the cave's interior due to longstanding beliefs about a large snake said to have inhabited the site for centuries.

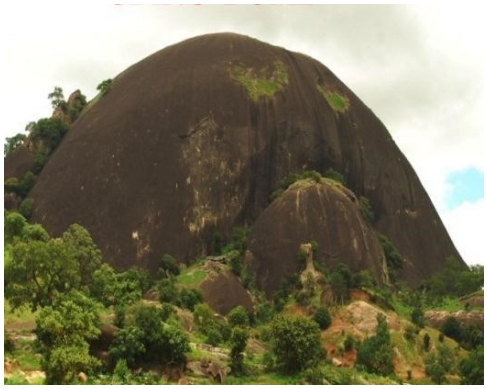

Figure 6 Mutuku dome and cave



Figure 7 Inselbergs

Ldam Three Sisters Rock

Ldam Three Sisters Rock is located in Song Local Government Area of Adamawa State, approximately 6 kilometers from Song town, the Local Government headquarters. The formation rises to an elevation of about 840 meters above sea level and features a stream flowing between the hills, enhancing its natural charm.

The site offers excellent potential for recreational activities such as scouting, mountaineering, birdwatching, hiking, and picnicking. With moderate vegetation cover and preserved natural surroundings, Ldam Three Sisters Rock presents a scenic and tranquil environment that appeals to nature enthusiasts and tourists alike.



Figure 8 *Ldam Three Sisters Rock*

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Motochi and Zhegumi Peaks

Motochi and Zhegumi are two prominent hills located in Hong Local Government Area of Adamawa State, Nigeria. They are believed to share similar geological and cultural characteristics. Zhegumi Peak rises to approximately 1,158 meters above sea level, while Motochi Peak stands at about 854 meters.

Local tradition holds that Zhegumi is symbolically regarded as the male counterpart and Motochi as the female. A distinctive black spot on Zhegumi Peak is believed by community elders to possess medicinal properties and has been revered for generations. At the base of Zhegumi Peak lies a perennial spring known as Tapacima, which has reportedly never dried up even during prolonged periods of drought making it a vital natural resource and a site of cultural significance.

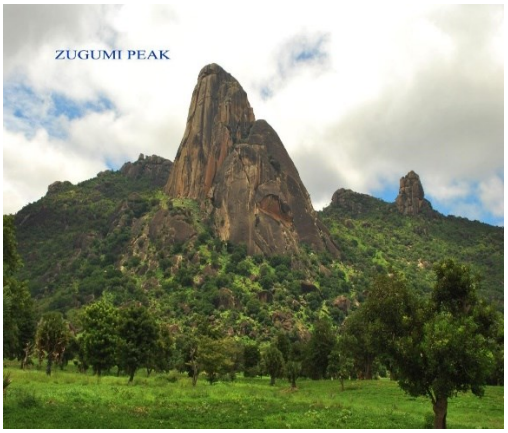

Figure 9: *Zhegumi Peak*

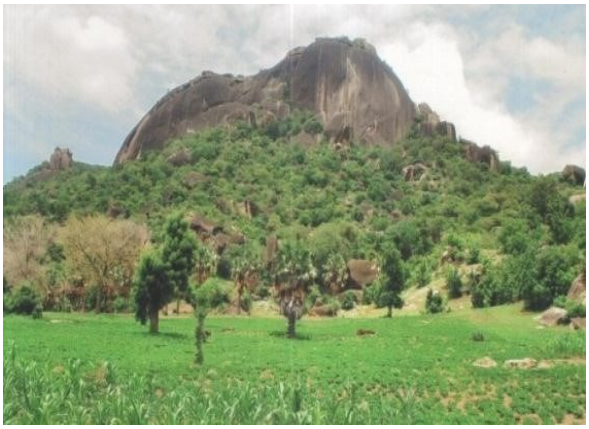

Figure 10: *Motochi mountain*

Pella rock formation (Basalt)

The Pella basalt rock formation is located approximately 7 kilometers from Hong, the Local Government headquarters, along the Maiha road in Adamawa State. Rising to an elevation of about 500 meters above sea level, the rock features a tortoise-shaped dome with a smooth, slippery surface that presents a challenging and physically demanding climb.

This natural wonder offers a breathtaking panoramic view and is considered a spectacular geological site. At its base lies a cave believed to extend over one kilometer in length, adding to its mystique and cultural significance.

The Pella rock formation holds considerable ecotourism potential. It is well-suited for activities such as picnicking, scouting, adventure training (e.g., man-o-war drills), and photography. Its unique physiographic features and scenic beauty make it an attractive destination for nature enthusiasts and tourists alike.



Figure 11: *Pella basalt*

Mysterious Chain

Interviews conducted in Guyuk Local Government Area revealed the presence of a mysterious chain believed to have descended from the sky and embedded itself into the earth. Local oral traditions hold that the chain must not be excavated, as disturbing it could invoke the wrath of the gods and bring calamity upon the land.

Adjacent to the chain is a sacred thatched hut, regarded as a shrine. It is believed to contain locusts and dry sand, both of which are considered spiritually significant. The hut remains untouched due to fears that opening it could release the locusts, which would devastate surrounding farmlands and trigger widespread famine. As a result, the site is preserved and respected, even by tourists who visit the area.

Mysterious Pot

Similar accounts from Guyuk describe a mysterious pot said to have existed since time immemorial. The pot is believed to possess protective powers, shielding the village of Walu from lightning, thunder, illnesses, and other calamities. To maintain its potency, ritual ceremonies are periodically conducted under the guidance of the village priest, who serves as the custodian of culture and tradition. These rituals typically involve the sacrifice of a bull or a fat goat. The pot is considered sacred and must not be touched by anyone except the priest.

Mysterious footmark (Dha'ahi-Dawi)

Located approximately 12 kilometers north of Hong town along the Yola–Mubi road, the mysterious footmark is part of the Adamawa Mountain range and features a flat summit. The site was once home to an ancient settlement of the Kilba people and served as the residence of their chief, known as Tol.

According to local narratives, Chief Dawi, who is believed to have ruled over eight centuries ago, was deeply revered by his people. However, during a journey downhill to attend to official matters, he reportedly lost the confidence of his subjects and fellow titleholders. Upon returning to his palace atop the mountain, he was informed that he had been deposed and was no longer recognized as the chief of the land.



Figure 12: *Mysterious footmark (Dha'ahi-Dawi)*

Coordinate location of potential ecotourism resources were located by the use of GPS (Table 3.

Table 3 : Coordinate Location of Potential Ecotourism Resources

S/N	RESOURCE TYPE	NAME	LATITUDE	LONGITUDE
A.	**ROCK/HILLS**			
1		Pella (basalt)	10.14959	12.93399
2		Mysterious foot	10.22724	12.93184
3		Dlam (3 Sisters rock)	10.184693	12.949001
4		Motochi	10.133469	12.942989
5		Mutuku	10.162175	12.917621
6		Uding (Inselberg)	10.141972	12.900226
7		Zhengumi (Peak)	10.163701	12.932698
8		Kamale (Plug)	10.57886	13.560637
9		Gorobi (Mountain)	9.116317	11.863786
10		Three sisters rocks	9.15542	11.826776
11		Sukur Hill	10.73797	13.571287
12		Dangir Sama	9.701021	11.906739
13		Jangani mountain and cave	8.451415	11.915618
B.	**RIVERS, LAKES AND SPRINGS**			
14		River Benue (Numan)	9.475576	12.035988
15		River Benue (Jimeta)	9.242516	12.508802
16		Kiri Dam (River Gongola)	9.67848	12.013356
17		River Dono	8.445814	11.942978
18		Mayo Inne	9.010318	11.977185
20		Demsa (Garang Lake)	9.478662	12.182531
21		Njuwa Lake	9.21675	12.511006
22		Dzumah hot water spring	10.162785	12.944196
C.	**FOREST RESERVE**			
23		Kopre Forest	10.406182	12.793551
D.	**NATURAL/CUTRUAL LANDSCAPE**			

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S/N	RESOURCE TYPE	NAME	LATITUDE	LONGITUDE
24		Guyuk (Mysterious Chain)	9.909812	11.924997

Source: Field work, 2025

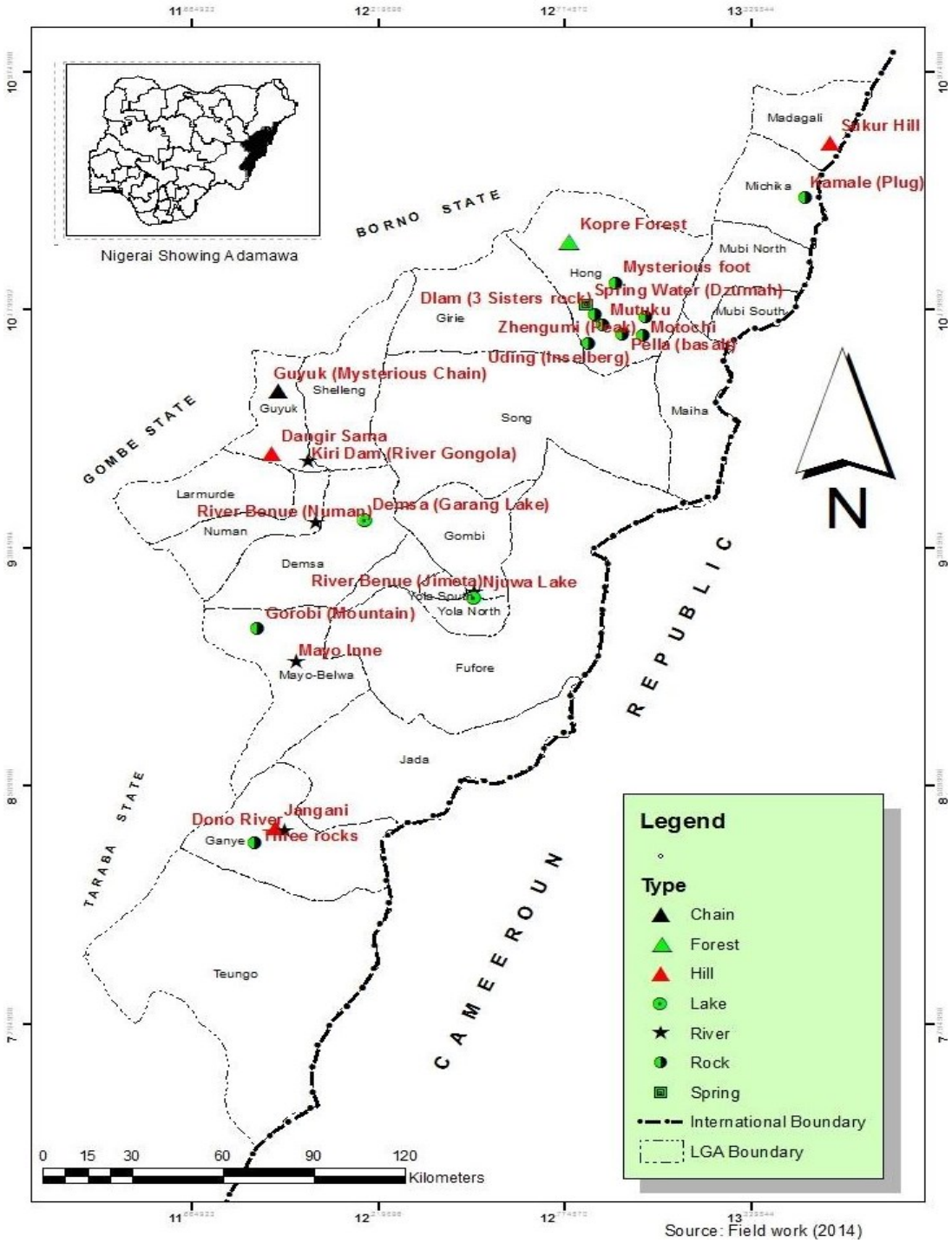

Fig. 13: Adamawa Showing Ecotourism Resources

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Table 4: Chi-Square Analysis of Community Participation and Perceived Role of Intermediaries in Tourism

Participation/Role of Intermediaries	chi-sq	P- value	chi-sq- crit
Knowledge on the term leisure and recreation	3.60	0.891	15.51
Number of hours to leisure and recreation	12.54	0.706	26.30
Frequency of visit to recreational areas	18.63	0.288	26.30
Peoples' knowledge of ecotourism variables	14.31	0.939	36.42
Role of Media	34.11	0.000	15.51
Level of Security in the Community	115.90	0.000	26.30
Satisfaction with tour guide	26.05	0.001	15.51
Attractions	36.49	0.000	15.51
Transport in Community	54.91	0.000	26.30
Adequacy of accommodation	146.41	0.000	15.51

All test were performed at alpha = 0.05

Source: Data Analysis (2025)

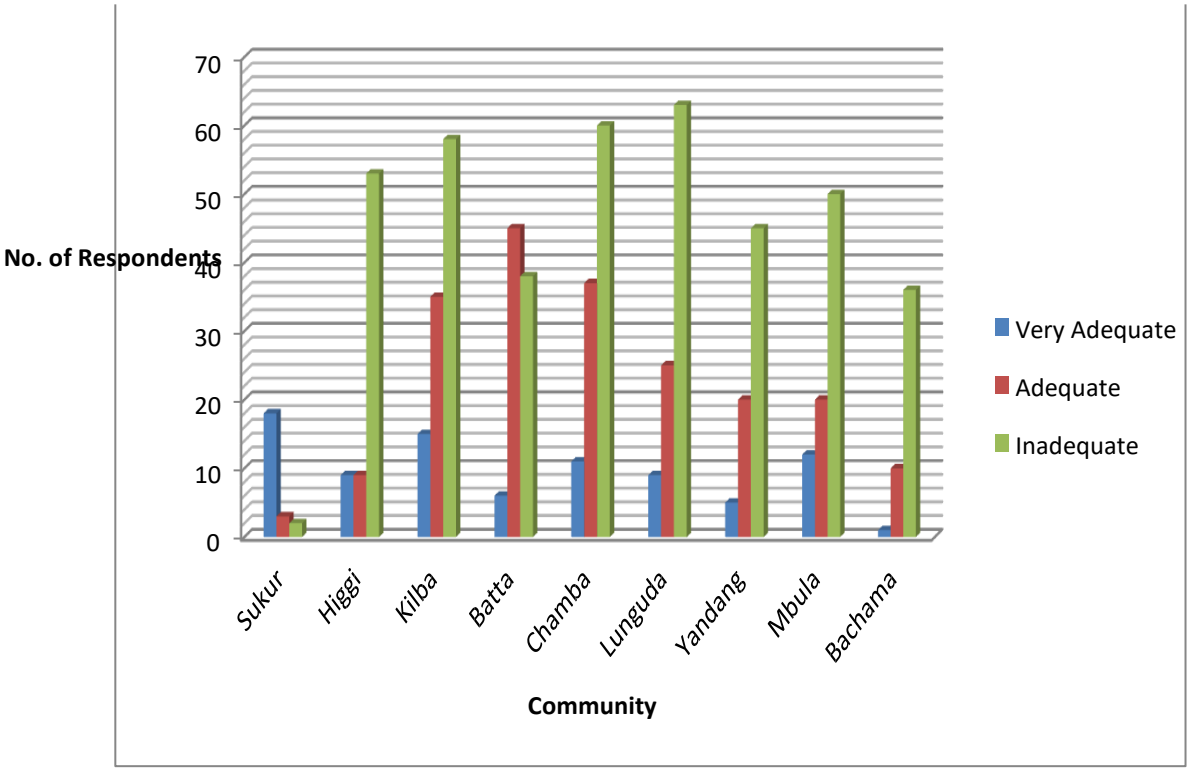
Perceived Roles of Intermediaries

Intermediaries serve as vital links between tourists and host communities, functioning as key components in the tourism supply chain. They transmit essential signals that influence the pace and nature of tourism development and are often referred to as mediating agents or variables. These actors play a crucial role in both domestic and international tourism by shaping access, experience, and perception. Intermediaries such as tour operators, media outlets, security personnel, transport providers, site managers, and attraction facilitators contribute significantly to the enhancement and growth of tourism across all levels (UNWTO, 2019).

People's Perception on the Role of Media in Tourism

Before individuals actively engage in travel, they often encounter the world and its cultures through the normative processes of socialization and education. From an early age, impressions of other societies are shaped by various forms of media, which play a foundational role in the development of cultural awareness and expectations (UNESCO, 2006).

These initial encounters occur through role-play, toys, children's books, and formal education, and later expand through exposure to television, literature, and newspapers. Media thus serves as a powerful tool in constructing cultural narratives and influencing tourism behavior. It not only informs potential travelers about destinations but also frames their perceptions, aspirations, and attitudes toward different cultures and environments (Govers *et al.,* 2023).

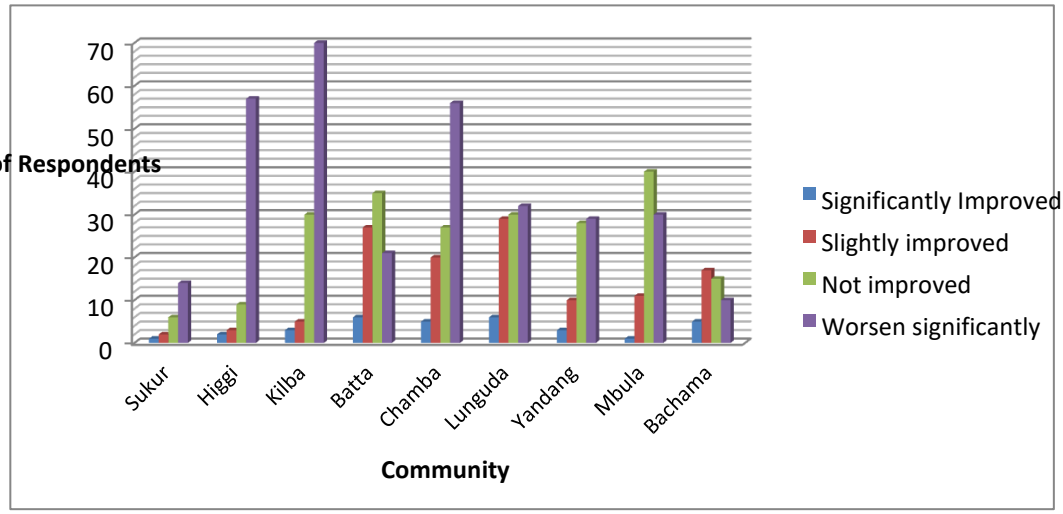


RESPONDENTS' PERCEPTION ON THE ROLE OF MEDIA AND SECURITY IN TOURISM

Media and tourism Respondents acknowledged the influential role of media in shaping perceptions and promoting tourism. Before individuals engage in travel, they often encounter representations of destinations and cultures through various media channels. From early childhood, impressions are formed through toys, books, and educational materials, and later reinforced by television, literature, and news outlets. These media sources play a critical role in constructing cultural narratives and influencing travel decisions, thereby acting as powerful tools in tourism development.

Security and Community Perception: Security was identified by respondents as a fundamental factor in tourism development. Historical patterns show that during periods of peace and prosperity, the mobility of tourists increases significantly. In the 21st century, regions characterized by political stability and low levels of terrorism tend to experience higher tourism inflows.

Security is essential not only for tourism but also for broader economic, social, ecological, and technological progress. It underpins the viability of tourism infrastructure and ensures the safety of both tourists and host communities. Consequently, security concerns are consistently prioritized across all sectors and are considered vital for societal stability and sustainable development (UNWTO, 2019).



Respondents' Perception on the Level of Security in the Community

Chi-square analysis revealed a statistically significant difference between community perceptions of security and tourism development at the 95% confidence level (Table 4). The majority of respondents attributed the deteriorating security situation to the activities of Boko Haram insurgents, particularly in Madagali, Michika, Mubi South, Mubi North, Hong, and Gombi Local Government Areas. These regions have faced persistent threats since 2009 and were eventually overtaken by insurgents in November 2014.

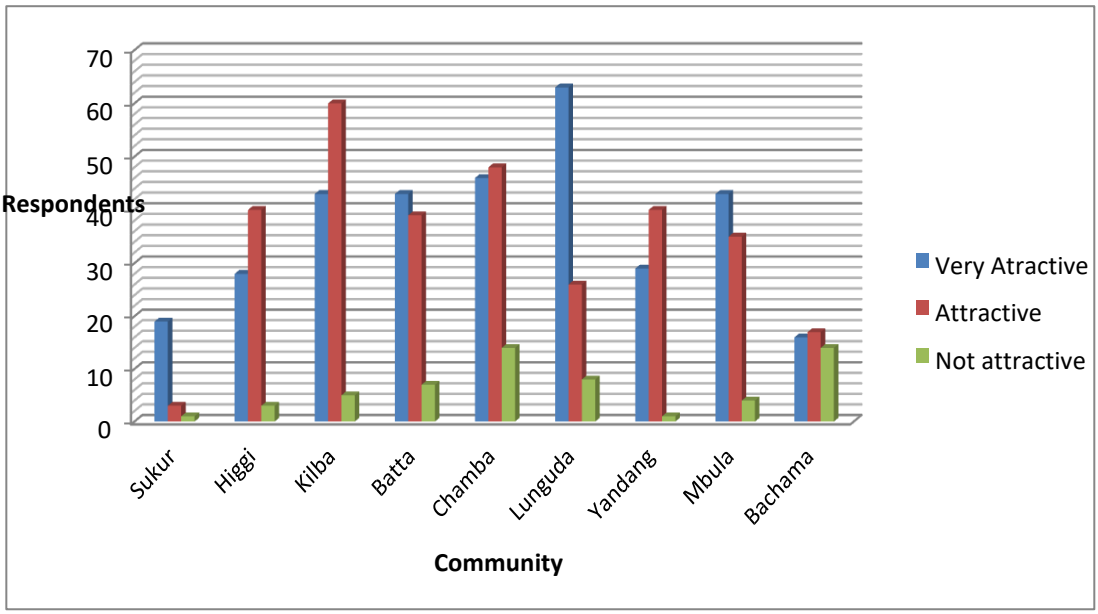
Ecotourism resources, including forest reserves, were reportedly converted into insurgent camps, serving as launch points for heinous acts such as kidnappings, killings, looting, and the destruction of property. The renowned Sukur World Heritage Site suffered extensive damage, with historical and archaeological materials destroyed. Tourists typically seek destinations that offer relaxation, safety, and cultural enrichment. Consequently, areas plagued by political, religious, or social unrest are often avoided, as insecurity poses a major barrier to tourism development (Abdullahi *et al.,* 2023; Ferreira *et al.,* 2020).

The overall security landscape in the state remains troubling, with incidents of suicide bombings in marketplaces and numerous foiled attacks by terrorist groups. These challenges significantly hinder the realization of the vast ecotourism and cultural tourism potential that Adamawa State possesses.

People's Perception of Tourist Attraction Sites (Spot)

Respondents emphasized that the sustainability of the tourism industry hinges on the availability of compelling visitor attractions. Attractions are the cornerstone of the

tourism system, serving as the primary motivation for travel and forming the core of the tourism product. Without attractions, there would be little demand for tourism services. Adamawa State is endowed with diverse natural geographical features and rich cultural heritage, which despite current challenges constitute major tourism assets. These attractions, if properly developed and secured, could serve as powerful drivers of tourism growth and community development.



Respondents' Perception of Tourist Attractions

Chi-square analysis revealed a statistically significant difference in community perceptions of attraction sites at the 95% confidence level (Table 4). A majority of respondents rated their local tourist sites as "very attractive," while a significant proportion also described them as "attractive." This aligns with the definition by Pearce, who noted that a visitor attraction is a named site featuring specific human or natural elements that serve as focal points for visitors (Lew & Cheer 2020).

The positive ratings are largely attributed to the presence of cultural and natural attractions within these communities, such as festivals, ceremonies, and distinctive geographical features. When these cultural activities are well-organized and publicized, they tend to draw significant numbers of tourists from within and outside the state. Notable sites such as Gorobi Mountain, Kamale Peak, Zhegumi and Motochi Peaks, Mutuku Dome, Pella Basalt, and the Three Sisters Rock at Dzumah are popular among local tourists and students from nearby universities and polytechnics for field studies and surveying exercises.

Natural beauty continues to be a universally important factor in defining destination attractiveness. Recent studies confirm that attributes such as landscape, accessibility, and cultural richness significantly influence tourists' destination choices (Teles *et al.,* 2024; Edsintei & Nkiru, 2023). In mountainous environments, the appeal of nature-based tourism is particularly strong. Earlier research by HLA and ARA (1995) emphasized that natural settings are critical in determining the quality of tourism products—a view still supported by contemporary scholarship.

This explains why ethnic communities such as Sukur, Higgi, Kilba, Chamba, and Lunguda consistently receive high ratings for the attractiveness of their tourism sites. Overall, the findings reveal that Adamawa State is richly endowed with tourist attractions that are either natural, cultural, or a combination of both, offering significant potential for ecotourism development.

Conclusion

This study has uncovered a rich array of untapped ecotourism resources distributed across various ethnic communities in Adamawa State. Despite the abundance of natural and cultural assets, many of these resources remain underdeveloped and underutilized. Public engagement in tourism and recreational activities has declined, primarily due to financial constraints and waning interest among community members.

Intermediaries such as media, security agencies, tour operators, transportation services, and accommodation providers play a pivotal role in shaping tourism experiences and influencing public perception. While community views on the roles of these intermediaries vary significantly, general awareness of leisure and ecotourism concepts appears relatively consistent across the study area.

The findings underscore the importance of strategic planning and active community participation in fostering sustainable tourism development. By leveraging local knowledge, enhancing infrastructure, and promoting cultural heritage, Adamawa State can unlock its ecotourism potential and position itself as a compelling destination for both domestic and international visitors.

Recommendations

Based on the findings of this study, several strategic actions are recommended to enhance ecotourism development in Adamawa State:

- Resource development should be prioritized, as many tourism sites remain either undeveloped or abandoned. Collaborative efforts between the state government and private investors are essential to revitalize these assets and prevent further degradation or loss.

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- Given that most ecotourism and cultural resources are located in rural areas, promoting rural-based tourism is crucial. This approach not only supports the preservation of indigenous heritage but also contributes to poverty alleviation and inclusive economic growth in underserved communities.
- A robust institutional and regulatory framework should be established to guide tourism planning, wildlife conservation, and human resource development. This includes the creation of a centralized and accessible database of tourism assets to support informed decision-making and strategic investment.
- Finally, enhancing security is fundamental to the revival and sustainability of tourism, especially in regions previously affected by insurgency. Restoring peace and ensuring the safety of both tourists and host communities will foster confidence and encourage tourism inflows.

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