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Challenges in the Application of Indigenous Knowledge (IK) in the Management of Ecotourism Around the Mount Cameroon National Park

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Abstract— The study sought to investigate the challenges faced in applying indigenous knowledge in ecotourism management in and around the Mount Cameroon National Park (MCNP), Fako Division of the South West Region of Cameroon. The study specifically intended to analyze challenges faced by the indigenous people of Fako in ecotourism management. Multi-method of quantitative and qualitative approaches with two research designs including observation and exploration were used. The multi-stage sampling procedure involved strategic sampling of 9 communities and purposive sampling to select 161 households from these communities. Purposive and criterion sampling techniques were used to select 12 key informants for the interview. The findings revealed that the area around Mount Cameroon National Park is rich in ecotourism attractions and Indigenous knowledge (15 categories). Indigenous knowledge is under-documented and therefore underutilized as far as ecotourism management is concerned. Knowledge holders get old and die without proper transfer of Indigenous knowledge to the younger generation. This study implies that a more comprehensive inventory of ecotourism potentials be carried out, an in-depth identification and description of Indigenous knowledge (IK) be done, community-based ecotourism businesses be developed, and the indigenous knowledge system for ecotourism management be protected so that the knowledge holders will be encouraged to preserve and share their knowledge, seeing the benefits accruing from their preservation.

Keywords— Ecotourism, Indigenous Knowledge (IK), Management, Mount Cameroon National Park.

I. INTRODUCTION

Indigenous knowledge refers to the knowledge, skills, and practices developed and passed down within a specific community or culture (Adam et al., 2022). The earliest known use of the term 'ecotour' was by Parks Canada in the 1960s (Stronza et al., 2019). Ceballos Lascurain defined ecotourism as 'traveling to relatively undisturbed or uncontaminated natural areas with the specific objective of studying, admiring, and enjoying the scenery and its wild plants and animals, as well as any existing cultural manifestations (both past and present) found in these areas (Ceballos-Lascura´in, 1987). This definition was adopted during the UN international year of Ecotourism in 2002 (Wang, 2010). Ecotourism is a type of tourism that focuses on nature and environmental conservation (Rana, 2021).

The application of Indigenous knowledge (IK) in ecotourism management is a complex process that poses several challenges. The challenges facing the application of IK in ecotourism management are diverse, complex, and

interconnected. To overcome these challenges, it is necessary to recognize and respect indigenous rights and perspectives, support traditional knowledge transmission, revive cultural practices, and promote effective communication. Sustainable ecotourism practice therefore requires the integration of IK as a fundamental element. Also, it is essential to involve indigenous communities in developing ecotourism management plans (Kurniawan et al., 2023). This can help to ensure that their knowledge and perspectives are taken into account and that they have a say in how tourism is managed in their territories. Engaging in programs supporting ecotourism's conservation goals and promoting sustainable practices is also important. By doing so, we can ensure that the benefits of ecotourism are realized while minimizing negative impacts on the environment and indigenous communities. Unfortunately, the challenges facing the application of indigenous knowledge in the management of ecotourism in communities around the Mount Cameroon National Park are yet to be fully understood. This makes it worthwhile to study these challenges to enable better management of the resources on which ecotourism depends. Therefore, there is a need to identify ecotourism attractions and indigenous knowledge practices, and then look at the challenges hindering the application of indigenous knowledge in ecotourism management.

One of the major challenges of incorporating IK in ecotourism management is the issue of ownership. Indigenous knowledge is often considered communal property, which makes it difficult to determine who has the final say in its application (Curkpatrick, 2023). Furthermore, there is a power imbalance between Indigenous communities and other stakeholders, such as government agencies and tourism operators, which may result in IK being overlooked or undervalued. Another challenge is the issue of adaptation. An indigenous knowledge system (IKS) is often developed over a long period and may not be easily adaptable to changing circumstances (Reyes-García, 2023). Ecotourism on the other hand is constantly evolving and may be challenging to incorporate IK into a new and emerging tourism practice.

There is also the issue of balancing conservation and economic development. Ecotourism can generate income for Indigenous communities, which can improve their livelihoods and protect their culture and traditions (Zvikonyaukwa et al, 2023). However, there is a risk that increased tourism may lead to negative environmental impacts, which could ultimately undermine the goals of ecotourism and conservation.

Another challenge facing IK in ecotourism management is the loss of traditional ecological knowledge and practices. This is attributed to several factors, including the influence of Western science, urbanization, and modernization which have contributed to the erosion of IKS (Reyes-García, 2023; Reniko, 2022). Indigenous communities often struggle to maintain and transfer their knowledge and skills across generations, leading to the loss of their cultural heritage.

Lack of recognition and respect for indigenous rights and perspectives is also a significant challenge. Indigenous communities are often excluded from decision-making processes and management structures, thus making it challenging to incorporate their knowledge into ecotourism initiatives (Murveit et al., 2023; Rusanti et al., 2021). Furthermore, access to natural and cultural resources is limited by external forces, hindering indigenous participation in ecotourism initiatives.

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Language barriers and communication gaps present another major challenge. The lack of a common language between indigenous communities and ecotourism practitioners can lead to misunderstandings, misinterpretations, and a failure to appreciate indigenous perspectives (Cordon et al., 2023; Toomey, 2020). Adequate interpretation and translation services can help facilitate communication and promote collaboration.

II. RESEARCH METHODS

The Study Area

This study was done in communities around Mount Cameroon National Park of the South West Region of Cameroon.

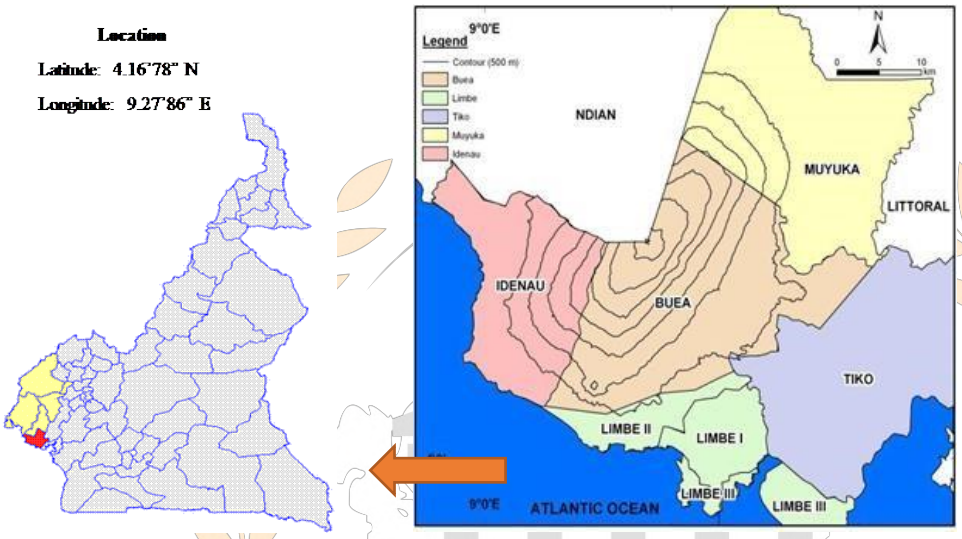

Figure 1: Fako Division, Cameroon Source: https://www.researchgate.net/figure/Map-of-Fako-division-in-Cameroon-depicting-the-location-of-study-sites-Orock Lambi_fig5_333867433/download.

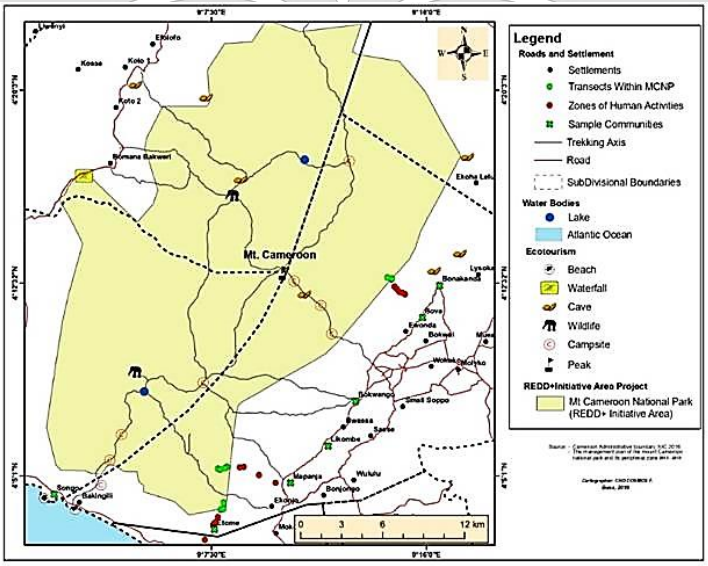

Fig. 02: Communities around Mount Cameroon National Park; - Source: - Cameroon Administrative boundary, NIC 2016 - The Mount Cameroon National Park management plan and its peripheral zone 2015 – 2019.

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The Mount Cameroon National Park is an area that boasts a diverse range of flora and fauna, making it a prime location for ecotourism. As one of the most biodiverse areas in the country, it is home to several biodiversity hotspots worth exploring (Thompson et al., 2021). Mount Cameroon is about 13,435 feet (4,095 meters) tall and is the tallest peak in West and Central Africa (Britannica, 2020). It is also the second tallest in Africa, after Mount Kilimanjaro. There are two climatic seasons; a wet season (March to November) and a short dry season (December to February). The vegetation consists of montane and sub-montane forests which host a variety of endemic wildlife species. The Mt Cameroon area also experiences– rainforest, savanna, semi-arid, arid, and freshwater ecosystems with their associated biodiversity. It also has marine and brackish water ecosystems with their associated biodiversity.

The indigenous people around Mount Cameroon National Park use medicinal plants, sacred sites, and traditional ceremonies as natural remedies to treat ailments and illnesses, contributing to biodiversity conservation (Ntoko & Schmidt, 2021). These traditional healing practices are deeply rooted in the cultural beliefs and values of the people, who view illness as a manifestation of spiritual imbalance or disharmony with the natural world (Isiko, 2019). The study area is also home to various festivals that celebrate different aspects of their culture. Ancestor worship is a prominent cultural belief in communities around the Mount Cameroon National Park that involves honoring deceased family members and seeking their guidance in daily life (Bae, 2004). This belief is deeply ingrained in the community, with many families setting aside a specific area of their homes for offerings and prayers to their ancestors.

Methods

This study used both quantitative and qualitative methods. The population of the study were Bakwerians and people who have lived in communities around the Mount Cameroon National Park for about 20 years. To assess challenges in the application of Indigenous knowledge, indigenes were the target population whose livelihood practices were closely connected to ecotourism potentials and their management, such as tour guides, traditional healers, traditional leaders, museum curators, traditional dance members, hunters, farmers, and the technical ministries concerned. They represented the population and provided adequate information about the role of indigenous knowledge in ecotourism management.

Sampling Techniques

Three types of samples were involved. A systematic sample of 9 communities, a purposive sample of 161 respondents for the questionnaire (Table 1), and 12 key informants for semi-structured interviews were considered. The purposive sampling technique was used to identify and pick households within the sampled communities. The sample was based on the knowledgeability of the subject under investigation.

Table 1: Respondents Sampled per Community

COMMUNITY	Frequency	Percent
BAKINGILI	14	8.7
BOBENDE	36	22.4

BOKWANGO	21	13.0
BONAKANDA	12	7.5
BOVA I	12	7.5
ETOME	9	5.6
IDENAU	11	6.8
MAPANJA	14	8.7
BUEA TOWN	32	19.9
Total	161	100.0

One hundred and sixty-one (161) respondents were sampled from 9 communities within the study area.

Data Collection Procedure

The study employed two (2) data collection instruments: A questionnaire and a semi-structured interview guide. This used a questionnaire for 161 respondents to identify ecotourism attractions and indigenous practices around Mount Cameroon National Park. A Semi-structured interview guide for 12 key informants to assess the challenges in applying Indigenous knowledge was applied. To avoid recurrent information, only one person (about 20 years of age) per house was interviewed. The preference was given to elderly people who could relate indigenous knowledge from a wider experience. Snowball sampling was used to identify other participants. The questionnaire consisted of two sections: Section A: demographic information of the respondents; Section B: Respondent's knowledge of Indigenous knowledge practices and ecotourism attractions in his/her community.

Qualitative data were obtained using both primary and secondary sources. Semi-structured interviews were administered for the qualitative data. The interview guide was structured in two sections: section A: demographic information which guided the purposive selection of the twelve (12) information-rich key informants who provided in-depth information as experts. The selection ensured that each Indigenous community was represented in the sample; Section B; identification of the types of Indigenous knowledge used in the management of ecotourism potentials and Section C: The Challenges Faced in applying this knowledge in the Management of Ecotourism. Some basic information concerning indigenous knowledge and ecotourism was obtained from the regional delegation offices such as the types of ecotourism attractions and indigenous knowledge, and the number of ecotourism organizations within the study area. Friends and colleagues were engaged to help establish contact with local chiefs and key informants in the study area. Once contacts were established with participants, the study followed Moore et al., (2021) and Rubin's (2012) Responsive Interview Model for data collection and recorded using a digital recorder. The samples were validated using theoretical saturation (Thorne, 2020).

Data Analysis

Data from the questionnaire were analyzed using descriptive statistics. Statistical Package for Social Sciences (SPSS) version 23 was used for the analysis. Statistical tables were designed in Microsoft Office Word Version 10.0. Qualitative data were analyzed using the phenomenology approach (Pernecky & Jamal, 2010), and the results were presented in tables, pie charts, and explanatory text.

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Ethical Considerations

One aspect of indigenous qualitative research often encountered in discussions of ethical considerations is respect, which must be present during the research process (Cole, 2017). As such, research protocols for indigenous peoples were developed not only to protect indigenous peoples from ethical violations but also to 'decolonize research relationships' (Hodge and Lester, 2006). Also, authorizations were obtained from relevant stakeholders to ensure that the research went on without major challenges.

III. RESULTS

Gender of the respondents; 73% of the respondents were males while 27% were females.

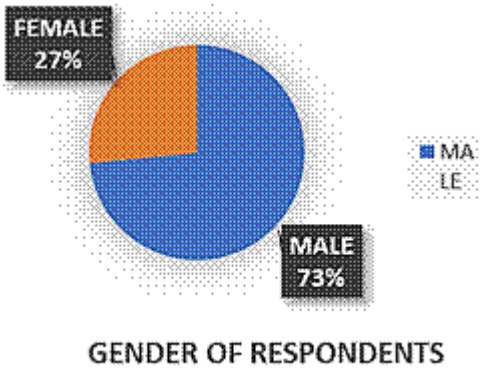

Figure 03. Gender of Respondents

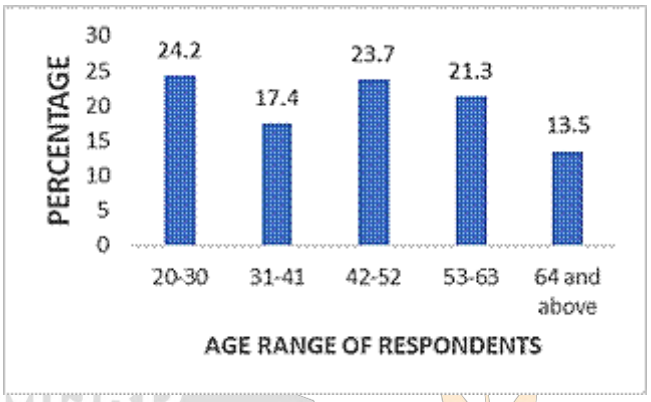

Figure 04. The Age range of respondents include

There were more men (73%) than women (27%). This is because ecotourism activities in the study area such as tour guiding and hiking are popular among males. Females featured mainly in areas such as gastronomy, cultural dances, and timidly in folktales. The age range 20-30 years (24.2%) was the highest. This is because, the age range is made up of a vibrant population that can be involved in many activities within the community such as hunting, fishing, cultural activities, tour guides, and porters, while the lowest was above 63 years (13.5%) which is mainly limited to cultural activities and indigenous medicine

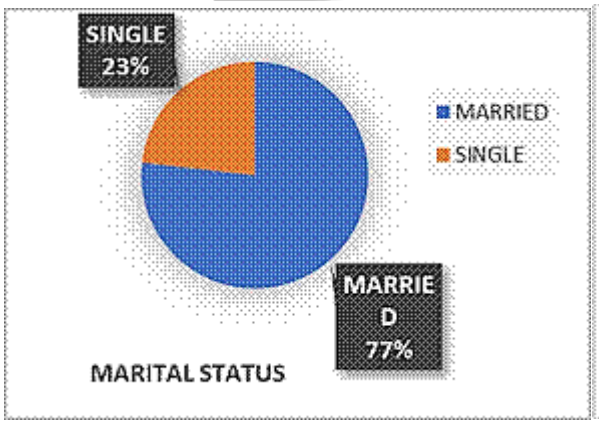

Figure 05. Marital Status of Respondents

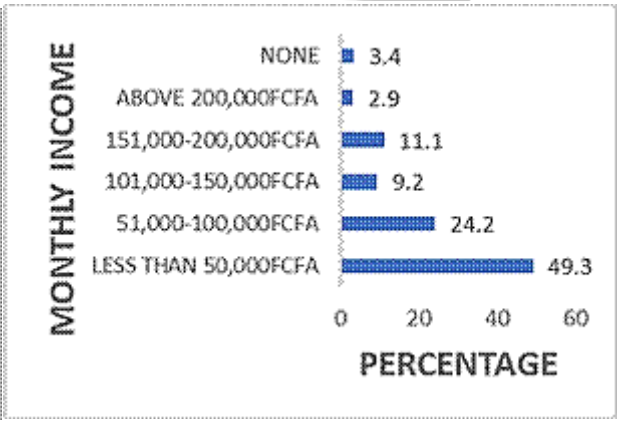

Figure 06. Monthly income of respondents

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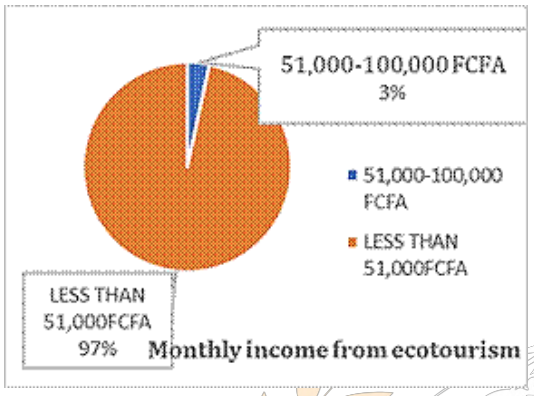
. Those targeted saw 77% married, and 23% singles. The targeted respondents were within households and parents were the preferred targets due to their permanent establishment within the community. They have also lived longer within the community than the children. The monthly income had 49.3% with less than 50,000frs while 3.4% of the respondents had no stable income. This is peculiar to an Indigenous community where most of their living is subsistence.



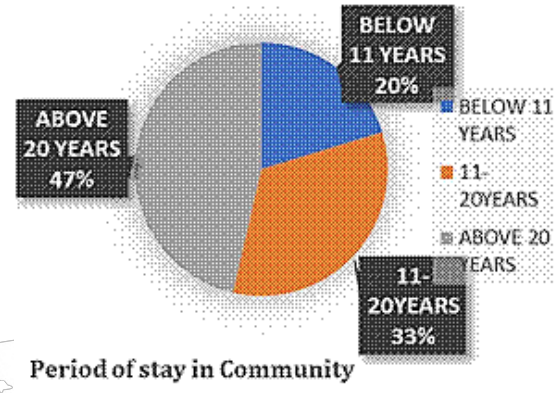


Figure 08. Length of Stay in the Community **Figure 07. Monthly Income from Tourism**

The highest number of respondents (47%) had lived in the community for at least 20 years while the lowest was less than 11 years. Living longer in the community correlates with Indigenous knowledge and ecotourism attraction awareness. A large population of respondents (97%) indicated a monthly income of less than 51,000frs from ecotourism while a small population (3%) indicated an income of 51,000-100,000frs. This may be due to a lack of adequate development in the sector.

Table 2: Participants Characteristics

Participants	Gender	Years in the community	Indigenous Knowledge Category	Years Married	Indigenous Knowledge Type
P1	Male	68	Culture	32	Traditional Dance
P2	Male	52	Culture	18	Traditional Dance
P3	Male	43	Culture	6	Traditional Dance
P4	Male	32	Nature	17	Wildlife
P5	Male	37	Nature	14	Wildlife
P6	Male	28	Nature	8	Wildlife
P7	Female	71	Culture	51	Gastronomy
P8	Female	49	Culture	2	Gastronomy
P9	Female	58	Culture	23	Gastronomy
P10	Male	33	Ecotourism	7	Tour guide
P11	Male	37	Ecotourism	4	Tour guide
P12	Male	29	Ecotourism	3	Tour guide
P13	Male	78	Indigenous Healing	42	Traditional Healing

P14	Female	60	Indigenous Healing	51	Traditional Healing
P15	Male	52	Indigenous Healing	28	Traditional Healing

Twelve participants (9 males and 3 females) were involved in this study. There were more men because many tourism activities such as tour guiding, hiking, and cultural dances were carried on by men. Females are mainly involved in activities such as gastronomy and cultural dances (which are few and less popular). Also, activities such as hunting make men interact more with nature than women. The number of years spent in the community by participants ranges from 28- 78 years, all of whom are married. Number of years married also range from 3-51 years. The number of years spent in the community and the number of years married are quite significant. These attributes could have allowed them to interact with culture and nature-related activities such as traditional dances, gastronomy, tour guiding, wildlife (such as hunting), and traditional healing. Indigenous healing is also more popular among men than women.

Has tourism brought any development to your community?

Answer; The Regional Delegate of Tourism does not even know this quarter. Upon the minister's arrival for a cultural festival, a young boy received and greeted him in the Bakweri language.; Elela gwamu, meaning good morning, the minister could not respond. The child later said; honourable minister of culture, good morning and the minister responded with 'bonjour'. It was a cultural festival and while the young boy was dressed in traditional attire, the minister of arts and culture was dressed in a suit. We were not expecting him to dress in a bakweri attire but in a conventional attire even from his village. How can a minister of culture of Cameroon go to a cultural festival dressed in a suit, lamented a participant? How can a gendarmerie officer in Cameroon disrupt a cultural manifestation to give way to the minister? 'We are sick, said the participant. Instead, the minister is supposed to bear with a cultural manifestation since it is nonviolent. It is not only the ministers, but also the divisional and sub-divisional delegates need to sit up for Indigenous tourism to be developed (P11).

How have you profited from sharing your indigenous knowledge?

Answer; I wrote a short song and sent it to one or two persons for review and a few weeks later, it was on the television without acknowledgement. This makes the indigenes unmotivated to take the tourists to attractions. There are potentials around my compound that I could expose, but for fear that one day it will be taken from me and fenced and I might even be sent away, said a participant.

In the past, we used to have big cats here such as tigers and leopards, but have disappeared from poaching, for each hunter used to set about 400, 600, or more traps. This led to the death of many animals which were not even used for food.

There were a lot of herbs around my compound but too much spraying has caused many to disappear, said a participant, said a participant. Do you show these herbs and spices to anyone who comes and wants to see them? No; Not all my children qualify to be shown these medicinal herbs (P15). As a child, while on the farm, my mother would tell me not to destroy certain tree species. For example, the mahogany but did not explain why I should not cut it down, (P2).

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Table 3: Ecotourism Attractions, Indigenous Knowledge, and Challenges

Ecotourism Attractions	Indigenous Knowledge	Challenges of Maintaining IK
1. Trees (Ewoka Ejua)	Used to treat waste pain (there are myths about the tree)	Limited or no documentation
2. Trees (ngomba)	Community matters are handled here (indicators of past settlement).	Limited or no documentation
3. Spices and Vegetables (Manjueli, Mokonyi and Ngonyi)	Food security, nutrition, and wild plant management	Limited or no documentation/ Lack of intellectual property rights
4. Traditional Dances (Maley, Nganya and Obasinjom)	Cultural preservation, entertainment, and cultural attraction management	Education and urbanization separate youths from this practice
5. Folktales	Wisdom bank of the bakwerians	The younger generation is no longer interested in folklore
6. Gastronomy (Kwacoco and Banga Soup, and Ngonyawembe)	Used to express hospitality	Popular but lacking in Indigenous spicing
7. 7. Wildlife (The Elephant)	Totem, used for judgment	Visualizing is very difficult, and poor documentation of the IK
8. Birds	Indicator of life	Lack of awareness by the young
9. Names of the bakwerians	Come from nature/People live their names	Limited Documentation and lack of awareness/Lack of intellectual property rights
10. Primates (Monkeys and Chimpanzees)	Consider as brothers from the bush	Overhunting has sent many of them far from humans
11. Shrines	Handle the spiritual healing/well-being of the community	Christianity has labeled it as bad
12. Caves	Home of ancestors	Limited knowledge of its content
13. 13. Arts and Craft	Cultural heritage promotion	It is no longer popular in the bakweri land
14. 14. Water Bodies	Some are springs that harbour shrines	Except for water bodies that also stand as shrines
15. 15. Medicinal plants	Treatment of stomach-related sicknesses, snake bites, headaches, spiritual cases, etc.	Lack of intellectual property rights

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Overhunting has sent wildlife (elephants and primates far into the forest), making visualization very difficult as one needs to go deep into the forest to encounter wildlife. Also, Limited or lack of documentation of indigenous knowledge in the study area has left the IK unpopular in ecotourism management. Christianity has projected activities, especially around shrines as bad. The knowledge of spices and vegetables is huge but not popular within restaurants. This makes it underutilized in ecotourism management. A tree like the 'ngomba' indicates settlement. Also, a tree, like 'ewoka ejua', used in treating waste pain has little or no documentation.

There are myths about caves which make many people afraid to go close to them. Arts and crafts that promote cultural heritage are near extinction in the land. The younger generation is less interested in them because of the influence of urban and modern lifestyles. Traditional Dances (for example maley and the Nganya) are some of the few areas that make the culture of the Bakwerians alive. They promote cultural heritage by showcasing forest life among the villagers and tourists. Unfortunately, this attraction is not well monetized for economic gains. Gastronomy (Kwacoco and Banga Soup and Ngonyawembe) is a vehicle for hospitality. Unfortunately, few restaurants have these meals on their menu. Though some bakwerians do not eat primates (monkeys and chimpanzees) because they consider them brothers from the bush, poaching has sent many of these animals far from humans. This also makes visualization difficult as far as ecotourism management is concerned. It is generally believed that bakweri names come from nature and that these names impact the lifestyles of the bearers. Despite this, its use in ecotourism management is not popular and is limited in documentation. Birds as an indicator of life are being exploited by eco guides as the vocalization of some bird species like the 'koka' signals the time of the day. Still, there is a lack of awareness among the younger generation who are not part of this field. Except for water bodies embodying shrines such as some springs, the Bakwerians do not have much as far as indigenous knowledge of water bodies is concerned.

We know that when we have malaria, there is a plant in our compound to cure it. We also know that wax from our ears can destroy snake venom. Today, our knowledge has been used to produce drugs without attribution, said a participant (P13).

The themes and frequencies can be seen in Figure 4 below.

Table 4: Themes and Frequencies

THEMES	FREQUENCY	PERCENTAGE (%)
The younger generation is less interested in IK	12	19.5
Not well monetized for economic gains	11	17.7
Lack of awareness among the younger generation	10	16.1
loss of IK	7	11.3
Christianity has projected IK as bad	5	8.1
Myths have made people to resent IK	5	8.1
Limited or lack of documentation	4	6.5
Education and urban life	3	4.8
Lack of intellectual property rights	3	4.8

Few restaurants have these meals on their menu	2	3.2
TOTAL	62	100

'The younger generation is less interested in IK application (19.5%) in ecotourism management' is the highest challenge while the presence of traditional meals in restaurants is ranked the least (3.2 %). This is because as development progresses and more and more people are educated, fewer people will even be aware of their indigenous knowledge in many areas. In addition, elders who possess the knowledge get old and die. Also, with children taking to education and urban life, it becomes less likely that the knowledge of herbs, shrines, conservation, and birds will be retained and transferred. The knowledge of folktales and culture is at risk of being lost due to the shift towards urban life.

Discussion

Projecting Indigenous knowledge (IK) by Christianity as bad has made it unpopular as those who profess the Christian faith (the dominant religion in the study area), abstain from its activities. Indigenous Knowledge of a tree like the 'ngomba' which indicates past settlement can help archaeologists to uncover hidden treasures and knowledge in such an area. As a result of myths attached to caves, indigenes do not benefit much from the IK of the caves since they are afraid to go close to them. Since the names of the bakwerians impact their lives, people who bear names like Njoku (elephant) are strong, Kulu (tortoise), are wise people, Endeley (grace), Enjema (generous), Ndolo (love), and Limunga (caring woman). Community members are not motivated since what belonged to them has been taken by The Mount Cameroon National Park (MCNP). There is low turnover in business as a result of low tourist presence. There is inadequate assistance from the Government for the effective management of tourism. This also results in a lack of willpower to provide restaurant services and innovative spirit. Many tour guides lack proper training and equipment. The coming of the National Park has negatively impacted the interaction with the environment. This poses a challenge because the indigenes can no longer access the mountain as before. Their access to resources such as honey, mushrooms, medicinal plants, and edible herbs is hindered. Interestingly, the park management does not consume these resources either. The indigenes are therefore restricted from surviving in their natural environment. This makes the hunters unwilling to show strangers (tourists) where the attractions are. This poses a challenge to the discovery of more attractions. The eco-guides who are brought in by the park, especially non-indigenes, have limited knowledge of the environment.

The elephant and the primates are the main ecotourism attractions that the Bakwerians are knowledgeable about. Primates became endangered with the huge appetite and proliferation of restaurants selling bush meat pepper soup and other delicacies.

The birds are some of the ecotourism attractions that the Bakwerians are less knowledgeable about. While it is true that birds are often considered ecotourism attractions and can contribute significantly to the tourism industry in a given area, it is important to consider that focusing solely on birds may not be enough to sustain a robust ecotourism sector. The Bakwerians having limited knowledge about birds necessitates its exploration for ecotourism development in their region.

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Artifacts, paintings, and antiquities are still in the caves but there is no courage to go there because of the myths and taboos which seal the caves. So, the benefits that come from this rich attraction type are minimal. Because of the myths and taboos attached to the caves, most tourist guides will only point to the caves at a distance and will not want to go close. This is in line with Fernández-Llamazares et al (2018) where local communities in Madagascar have limited recognition and adherence to sacred caves and taboos for bat conservation and legal protection of bats and caves through protected areas is more widely acknowledged than customary regulations. This practice is therefore not popular in managing ecotourism.

On the other hand, one could argue that the myths and taboos surrounding the caves are essential for preserving the natural integrity and cultural significance of the caves. This is in line with Liang et al (2020), who studied the cultural heritage of Dunhuang Mogao Caves in China, and the ecological management and enhancement of its site, which is the culmination of the cultural heritage. The study concluded that the cultural heritage resources of the Mogao Caves are nonrenewable and should be exploited with conservation in mind. These myths may have been ingrained in the local community for generations, serving as a form of environmental protection by deterring excessive human interference and ensuring the conservation of artifacts and antiquities. Respecting these local beliefs and practices can prevent exploitation and over-tourism which often follow popular ecotourism destinations. Additionally, maintaining a level of mystery and reverence around the caves can potentially attract a different kind of tourist interested in experiencing a more authentic and culturally rich encounter with the environment.

Hunting has sent wildlife (especially elephants and primates far into the forest), making visualization difficult as one needs to go deep into the forest to encounter wildlife. Hunting has been a long-standing practice in forests around the world. It has a significant impact on wildlife distribution and abundance. Hunting can also lead to changes in wildlife behaviour, causing them to avoid certain areas or become more nocturnal. This can further impact their distribution within the forest (Mella-Mendez et al., 2022).

The challenges faced in the management of ecotourism in Fako Division center around, but are not limited to the underdevelopment of ecotourism attractions, amenities, infrastructures, ownership of attractions, Christianity (especially in the area of indigenous spirituality), and urbanization and education that has led to the younger generation leaving their indigenous communities. As a result, elders who possess IK get old and die without passing it to the younger generation. This is similar to the work done by Diminyi et al., (2020) on Assessment of Ecotourism Challenges in Okwangwo Division of Cross River National Park, Nigeria. This work also found that inadequate infrastructure (such as transportation, communication, electricity, healthcare, and education) and amenities are major challenges to ecotourism development. The field observation also highlighted the dependence of host communities, especially enclave communities, on agricultural products, non-timber forest Products (NTFPs) harvesting, and hunting for income generation, which were no longer available due to the ecotourism project.

Another challenge facing IK in ecotourism management is the loss of traditional ecological knowledge and practices. This is attributed to several factors, including the influence of Western science, urbanization, and

modernization, which have impacted the erosion of IKS. This is in line with (Alfitri et al., 2022; Souther et al., 2023 & Sanga, 2021) who gave insight into how the erosion of Indigenous Knowledge Systems (IKS) in ecotourism management is influenced by Western science, urbanization, and modernization, posing challenges to traditional ecological knowledge preservation. The papers address the debate surrounding the compatibility of TEK and Scientific Ecological Knowledge (SEK), highlighting challenges in incorporating TEK into land management practices. They also suggest using Traditional Ecological Knowledge (TEK) as a unifying concept to facilitate collaborative efforts for sustainable ecological management, rather than relying solely on a single rigid definition. Wyndham (2017), on the other hand, highlights that the oversimplification and abbreviation of Traditional Ecological Knowledge (TEK) contribute to the loss of living relations and context, impacting the preservation of Indigenous Knowledge Systems (IKS) in ecotourism management. It concludes that using acronyms like TEK for Traditional Ecological Knowledge oversimplifies and objectifies complex ecological processes, disconnecting the understanding from the living relations.

Indigenous peoples have at times mismanaged resources. For example, two hunters used to set 600 and 400 traps respectively, within the now Mount Cameroon National Park, during their hunting. This was before the creation of Mount Cameroon National Park. This caused the death of many animals that were not even used for food, thus wasting natural resources. This is in line with Sen, (2005), who found out that nomadic hunters and gatherers not tied to any specific resource base may not have a conservation ethic.

The article dwelt on "Indigenous and Local Knowledge Contributions to Social-Ecological Systems' Management" and discusses the challenges of recognizing Indigenous and local knowledge systems in social-ecological systems management, including representation in policy processes and growing pressures and violence against Indigenous peoples and local communities. The paper emphasizes the importance of fully acknowledging Indigenous peoples and local communities as equal partners at different levels of environmental governance to enable a more comprehensive realization of their contributions to complex social-ecological system management.

The paper also demonstrates how Indigenous and local knowledge systems are used in restoration efforts, such as identifying species and sites for restoration, and how these efforts can lead to a change in the local political context, allowing for the reflection of Indigenous spiritual and cultural values. Indigenous communities often struggle to maintain and transfer their knowledge and skills across generations, leading to the loss of their cultural heritage.

Indigenous Knowledge is communicated orally, by specific examples, and through culture. This confirms the English proverb, "When a knowledgeable person dies, a whole library disappears". This is true for Indigenous knowledge around the Mount Cameroon National Park since most of it is not documented and relies on word-of-mouth transmission. Because IK is not well managed, its preservation is difficult. This also minimizes its use in development projects such as ecotourism.

The challenges faced in applying Indigenous knowledge in ecotourism management can be attributed to several factors. One of the main challenges is the lack of sustainable practices and policies in ecotourism development and implementation. Additionally, the rapid population growth in the area has led to deforestation, which threatens

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the natural attractions and biodiversity. Furthermore, the lack of local community participation and involvement in decision-making processes slows down the success and sustainability of ecotourism initiatives. These challenges highlight the importance of addressing environmental impacts, promoting community engagement, and implementing effective management strategies to ensure the long-term success of ecotourism in Fako Division.

VI. CONCLUSIONS AND RECOMMENDATIONS

The challenges faced in the application of IK in ecotourism management in communities around the Mount Cameroon National Park, Fako Division, South West Region of Cameroon, centered around, but are not limited to underdevelopment of ecotourism attractions, amenities, infrastructures, and ownership of attractions. The lack of documentation of indigenous knowledge is also a serious challenge.

This is because elders who possess indigenous knowledge get old and die without passing it on to the younger generation. Also, the absence of intellectual property rights makes the indigenes unwilling to share their knowledge.

The engagement of community-based tourism businesses is recommended so that the indigenes can be motivated to participate in tourism activities. Through this, they will fully enjoy the returns from tourism. This will encourage them to identify more attractions and indigenous knowledge.

This will also enable the community to consider intangible tourism attractions such as folklore and climate. The transfer of indigenous knowledge to the younger generation will be easy. This will also protect indigenous knowledge from extinction.

There should be an improvement in the presence of information online such that tourists can be better informed and make better decisions concerning the destination they are to visit. Improvement in tourism infrastructure and the participation of the indigenes in ecotourism management is recommended.

VII. SUGGESTIONS FOR FURTHER RESEARCH

- A comprehensive study of each indigenous knowledge category such as birds, folktales, and caves could be carried out to maximize their potential for ecotourism management. This investigation can uncover a wealth of treasure in these resources and enhance their potential as an ecotourism attraction.
- The impact of this knowledge on the well-being of the Bakwerians and ecotourism management can also be studied.
- The biological and chemical composition of the herbs/spices and their nutritional composition could be studied to ascertain their replaceability for artificial flavours. If yes, it will be welcomed by people with health challenges like diabetes. This can birth 'medical tourism' around the Mount Cameroon area.
- Indigenous knowledge could be investigated to assess their impact on handling: -good judgments, happy and sad moments, entertainment, stress relief, and peacebuilding. For example, the engagement 'elephants' and 'trees' can be investigated to know how they impact the Bakwerians and tourists.

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