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Our forest, our livelihood: Natural resources' use controversies and community livelihood sustainability in the Mole National Park, Ghana.

Highlights

1. The study found that respondents perceived forest resources as a gift from God, their ancestors and forefathers and must benefit from it to the fullest without compromising the quality of life of generations to come.
2. Forest resources served as the main livelihood source of many households around the Mole National Park
3. Protected areas as a policy intervention for forest resource conservation is a double-edged sword, which mainly supports rural development or constrain rural development efforts
4. Resource use restriction on adjacent communities in the Mole National Park has resulted in resource use conflict between residents and Management of the park.
5. Fringe communities' lack of participation in forest resource management is a determinant of resource use conflict.

Abstract

'Protecting' natural resources as a policy intervention for biodiversity conservation is a double-edged sword. Often touted as sources of revenue and a tool for poverty reduction in fringe communities, they are also largely a source of natural resource-use conflict. The Mole National Park in Northern Ghana has over the years provided both cost and benefits to fringe communities and the local government. While studies have investigated the benefits of the Mole National Park to local resource users, conflicts that have characterized the park in recent years in terms of

resource use, ownership and livelihood sustainability have been the least investigated. Using a qualitative approach, the study examines community perception of natural resource use and livelihood sustainability in fringe communities of the Mole National Park, Ghana. Thematic analysis from 13 Focus Group Discussions (FGDs) and fourteen (14) in-depth interviews revealed that respondents' major sources of sustenance hinge on Natural Resources (NRs) through farming and hunting with minimal alternative sources of livelihoods. As a consequence, denial of respondents' access to the natural resources in the park has been a major source of contention between the local resource dependents and management of the park as residents believed that the resources from the forest are a gift from God, their ancestors and forefathers and no man can prevent access and utilization. This implies that a community-led management team involving other stakeholders is important in the management of the Mole National Park. Also, equal distribution of benefits that accrue from the forest with the forest fringe communities at heart will assist minimize the yearly conflicts that have been a characteristic of the park and ensure sustainable forest resource management.

Key words: Community livelihood; protected area; community perception; natural resource governance; resource management

1.0 Introduction

Globally, half a billion people with the greatest concentration in rural areas depend on forest and other forms of natural resources for their subsistence (United Nations, 2018; Gerten et al., 2020; Fedele, et al., 2021; Shyamsunder et al., 2021). For many of these people living in severe poverty, natural resources are the daily lifeline and assets for their survival, especially the rural poor (Fedele et al., 2021; Shyamsunder et al., 2021). The Conservation on Biological Diversity [CBD] report observed that a sixth of the global population depends on the forest for ecosystem services

(provisioning, supporting, cultural and regulatory) for enhanced livelihood (Mavah et al., 2018; Estifanos et al., 2019; Resende et al., 2021). The report further observed that 56% of the essential services from the conservation priority areas provide direct and indirect benefits including food products to the poor and the vulnerable (Estifanos et al., 2019; Mavah et al., 2018). Mapping human direct use of nature for basic needs across the tropics, Fedele et al. (2021) found that 30% of the 1.2 billion people in the tropic highly depended on nature for their basic needs. A study by Zhang et al. (2020) on the socio-economic impacts of protected areas from the perspectives of rural communities in the Qianjiangyuan National Park Pilot in China observed that natural resources have supported the livelihood of many fringe communities of the area in many ways including improved income.

No doubt, sustainable natural resources use contributes to poverty reduction in Africa and other developing economies (United Nations, 2018). Therefore, balancing community livelihoods and conservation of biodiversity is critical for sustainable management of protected areas and livelihood sustainability (Wei et al., 2018). Protected areas over the years have served as the foundation upon which biodiversity is conserved. However, over the years, the conservation of biodiversity has become an issue of contention between park management and local communities due to the potential impact it has on the livelihood of the local people, because of the restrictions on agricultural land use and the extraction of natural resources in these areas (Estifanos et al., 2019). Studies have reported that local communities have perceived that protected areas have denied them the opportunities to access and use their natural resources to the fullest to sustain their primary livelihood (Wei et al., 2018; Thondhlana & Cundill, 2015; Armah et al., 2014). As a result, literature on local people's perceptions towards protected areas has been growing exponentially as

a basis for understanding and evaluating the impacts of conservation interventions on the livelihood sustainability of local communities (Thondhlana & Cundill, 2015).

According to the Africa Development Report (2007), rural poverty in the midst of plenty is partly due to failure to implement the right growth promotion policies and to ensure that strong institutions are in place to manage the natural resources for the benefit of all. As a consequence conservation initiatives in Africa that will help sustain protected areas while ensuring rural communities or adjacent communities' sustenance are always contested issues (Zhang et al., 2020; Shyamsunder et al., 2021; Resende et al., 2021). As observed in the literature, protected areas in developing countries have caused havoc in local communities through social displacement, restricted access to natural resources and increased conflicts among groups who have stakes in the natural resource use and management (Bonye et al., 2021; Estifanos et al., 2019; Wei et al., 2018; Thondhlana & Cundill, 2017). Garcia's (2020) study on exploring the layeredness of recurring natural resource conflicts in the Naimina Enkiyio Forest in Kenya observed that, natural resource conflicts are characterized by competing interests especially among those whose livelihoods are strongly linked to these resources. According to Mbanze et al (2020), effective conservation requires that conservation policies and management practices should first target local authors who are dependent on natural resources use in protected areas in developing countries to minimize possible resource use conflict. As observed by Mbanze et al (2020), in rural areas, for instance, these actors are mainly farmers who rely on off-farm activities such as harvest of non-timber products to complement their livelihoods.

Ghana is endowed with numerous natural resources. As estimated, over 70% of Ghanaians depend on natural resources that include land, forestry, fishery and mining for their livelihood (Armah et

al., 2014). In rural areas, for instance, natural resources serve as a foundation upon which residents meet their sustenance (Bonye et al., 2021). Since the inception or creation of National Parks for biodiversity conservation, pressure has been consistently increasing over the management and use of protected areas, which were initially sources of livelihood and depended on by local communities. Undoubtedly, delineating and creating National parks is an effective way of natural resource conservation. This is because such institutional arrangements, usually with the backing of state machinery, help in managing biodiversity and providing income through community-based tourism (Armah et al., 2014; Abukari and Mwalyosi, 2018). However, population increase and the need to meet household food needs coupled with limited livelihood options have led to growing competition and disagreements over the access, control and ownership of these resources in Ghana (Luginaah & Armah, 2012; Armah et al., 2014). The Mole National park is located in the Savanna Region of Ghana. The park is considered the first and largest national reserve in Ghana, surrounded by four administrative districts of West Gonja, West Mamprusi, Sawla-Tuna-Kalba and the Wa districts. 93 The reserve is considered an important home for International Union of Conservation and Nature (IUCN) threatened and endangered species of animals and plants. The park hosts threatened and endangered species such as lions, elephants, hippopotamuses, and the black and white colobus monkey among other species of wildlife. Despite the significance of the park to national development, there has been mounting pressure on the park by the local communities over the access and use of the resource to sustain their livelihoods. The park is surrounded by poor and vulnerable households whose livelihoods are dependent on natural resources. As a consequence, there have been conflicts between communities and managers of the park over the use of the resource. It is important to mention that studies have investigated the costs and benefits of the park to national, regional and local development (Acquah et al., 2016; Abukari & Mwalyosi, 2018).

Also, Soliku and Schraml (2018) have looked at conflict management in the Mole National park and the need for collaboration and co-management of the reserve. Despite the significance of these studies to the management of the resource, they however, overlooked the communities' perception of the natural resource access and use, livelihood sustainability and the conflicting issues thereof. Thus, this study seeks to provide answers to the following research questions; 1. What is the community perception of forest resource use in the Mole National Park? 2. What are the forest resource use conflicts and 3. How does resource use enhance residents' livelihood sustainability? This is so in the context of the fact that fringe communities feel a sense of entitlement. In their own words, they lay claim to the ownership of the park as a resource that was legitimately acquired through warfare and handed down to them by their ancestors. This notion is quite widespread and has informed their intransigence, resulting in conflict situations. The rest of the paper is organized as follows: The next section presents the theory underpinning the study. Section three describes the methodology employed in the study. This is followed by the results, discussion and conclusions.

2.0 The Theory of access and resource use in the Mole National Park

Access theory has existed in the academic literature for over a decade (Ribot & Peluso, 2009). Due to the versatility of the theory, it is widely applied to many fields of study including private property rights and ownership and entitlement relations (Ginger, Emery, Baumflek & Putnam, 2012). Generally, the theory is viewed as the ability to benefit from things to include material objects, persons, institutions and symbols (Ballet, Bazin & Komona, 2020). Naturally, the theory is more associated with individuals' or groups' access to natural resources for enhanced livelihood. The adoption of the access theory for the study is particularly relevant to help analyze the means, relations, and processes that enable or constrain the fringe communities from having access to the

natural resources in the Mole National Park for livelihood sustainability and its associated frequent conflicts. The theory conceptualizes the relationship between gaining, controlling and maintaining access to a natural resource. According to Ribot and Paluso (2003), access, from the natural resource perspective, is defined as the ability to derive benefits and utility from things like natural resources through legal or illegal rights based mechanisms. Hence, access in this context can be viewed as more akin to a bundle of powers rather than from property perspective of a bundle of rights.

The theory of access argues that structural and relational access mechanisms such as knowledge, market, capital, technology, labor, authority, social relation, in addition to rights-based access mechanisms, mediate the pathways for communities to benefit from natural resources (Addison et al., 2019). As argued by Ribot and Peluso (2003), the aim of the concept is to facilitate grounded analyses of who actually benefits from things and through what processes they are able to do so. That is, the access theory retains an empirical focus on the issues of who does (and who does not) get to use what, in what ways, and when (that is, in what circumstances) (Neale, 1998). The theory postulates that community or individual access to resources, especially those commonly owned, determines its peaceful accessibility and utilization. In Garrett and Piccinni's (2012) view, most natural resource conflicts arise from competition over access, control and ownership to natural resources, usage and management of the resources for livelihood opportunities. When these competitions meet delineated natural resources systems, they can and often provoke and sustain internal conflicts as different groups fight for control or use of the natural resources (NRC, 1986). For the theory of access, competition over opportunities to access, control and management of natural resource by multiple stakeholders at all levels has been the bane of natural resource

management due to the inherent conflicts generated from the complexity of the management structures (UNEP, 2015; Garrett & Piccinni, 2012; Namangaya, 2011; Agrawal, 2007).

In this study, fringe communities' access to the Mole National Park for enhanced livelihood is presumed to be affected by possible existing rules and regulations designed for the management of the park. The control of the legal access to natural resources of the fringe communities against biodiversity conservation by external or internal rules **is** the central pillar of the theory of access. Such control of access to the natural resources perceived to be community property by the fringe communities may result in conflict between the fringe communities and the management of the national park (Forestry Commission of Ghana [FC], 2000).

3.0 Method and Materials

3.1 Study Area

The Mole Park is located about 23km North-west of Damongo in the West Gonja Municipality, Savannah Region, Ghana. It is the largest Protected Area in the country and one of the best managed game and wildlife parks in Africa, south of the Sahara desert. The park covers an estimated area of about 4577sq km and is a major tourist attraction. The park contains a variety of flora and fauna of both economic and medicinal value. Access to these resources in the park by the fringe communities is limited due to its protected area status. Larabanga is the largest community among the thirty-three fringe communities that were annexed to create the Mole National Park. The community is often referred to as the gateway to the Mole Park since it straddles the route to the main entrance of the park. The community's close proximity to the park makes it vulnerable to crop and livestock raiding whilst posing the temptation of encroaching into the park for poaching activities, which are prohibited by the Legislative Instrument (LI 710) that established

the park. The Municipality is situated in an old geological area. The extreme western part of the Municipality is composed of granite material of low fertility. As a result of this soil structure, the farmlands are very fragile and prone to erosion and loss of fertility if good farming methods are not practiced. These features are not supportive of labour intensive agriculture that has characterised the area. The major tree species are sheanut, dawadawa, baobab, acacia, neem and a few ebony.

To effectively manage the park, the concept of the collaborative Forest Management was developed and instituted. The aim of the approach was to ensure that conservation initiatives and decisions were consistent with the norms and traditions of the fringe communities. Again, the approach was to ensure that benefits or damages that accrue from the park were shared accordingly (Forestry Commission, 1994). This is perceived to help maintain environmental quality and perpetual flow of optimum benefits to all adjacent communities around the park. The collaborative Forest Management consists of both the park management and the local communities. In each fringe community, the chief is made an automatic member of the management team. The Forest Management team meets and takes local decisions that will help sustain the park. However, in recent years, there has been mounting pressure on the management of the park due to local communities' demand to have access to the resources in the protected areas for their sustenance. As a consequence, this constrains the management team in the successful implementation of some of their decisions.

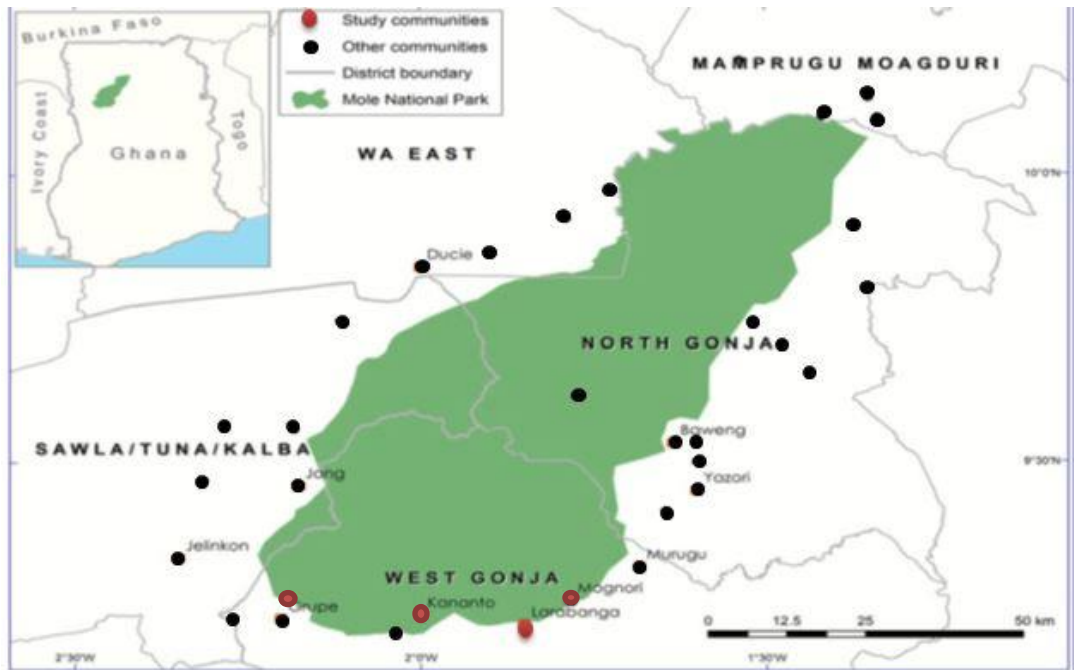


Figure. 1 Mole Park indicating Larabanga and the other Fringe Communities

Source: Adapted from Soliku and Schraml (2018)

3.2 Study Design

The qualitative case study research design was adopted for this study. The case study is particularly useful for studies on community related problems like natural resource use contention between stakeholders. The case study design grants the researcher the opportunity of two sources of evidence not usually included in the historian's repertoire: direct observation and systematic interviewing (Yin, 2009). Therefore, the adoption of the qualitative research gives in-depth meanings and descriptions to the perceived diversity in opinion in natural resource use and livelihood sustainability in an area reserved purposely for nature and tourism (Denzin & Lincoln, 2003). Again, the qualitative research helps capture multiple voices and perspectives from participants' view of reality better than mere numbers and objectivity (Kroeze, 2012; Marcon & Gopal, 2005). As such, systematic interviewing offers the study a first-hand opportunity to

examine the underlying circumstances that have resulted in problematic trends in a population; as in the incidence of resource use conflict in Mole Park, Larabanga. This will provide opportunities to assess the communities' perception of natural resource use and livelihood sustainability in the Mole National Park.

3.3 Population and Sample

The study was conducted with communities in the West Gonja Municipality, which immediately share boundaries with the Mole National Park. Four communities were purposively selected from seven communities for the study. The four communities were selected based on their proximity to the park and whose livelihood activities might have been affected by the activities of the park. Based on the purposive sampling method, Larabanga, Grupe, Kananto, and Mognori were selected for the study. The unit of analysis for the study included stakeholders such as the Mole Park Manager, the park field supervisor from Forestry Commission, chiefs, Assembly members, farmer groups, hunter groups and herbalists. Discourses of qualitative research indicate that the sample size should always be determined by the principle of saturation, which matures based on systematic repetition of information from different respondents with no significant evolving issues (Saunders et al., 2017; Charmaz, 2014). Key informants such as Chiefs of the four communities, the field supervisor of Forestry Commission in West Gonja Municipal Assembly, two Assembly Members and the Mole Park manager were purposively selected to give in-depth information on the subject matter of resource use and management dynamics between the Mole Park and the fringe communities. FDGs were conducted with farmers and hunters groups in the four communities. Overall, 13 Focus Group Discussions (FDGs) were conducted with farmer and hunter groups in the four communities (Four FDGs in Larabanga, three each in Grupe, Kananto and Mognori) while fourteen (14) key informant interviews were conducted.

3. 4 Instruments for Data Collection

Focus group discussion (FGD) guides were used to obtain primary data from the respondents. FGDs involve groups between six and 12 people with focus and emphasis on a particular research issue (Al-hassan, 2015). This method was used to generate primary data from the hunter and farmer groups who are directly related to the natural resource use conflicts within the Mole Park enclave. Thirteen (13) FGDs were organized with farmers and hunters within the four purposively selected communities. Two FGDs each were organized for women and men farmer groups in Larabanga while one FGD each was organized for both men and women in Grupe, Kananto and Mognori. For the hunter group, one FGD each was organized in Grupe, Kananto and Mognori to garner information on resource use perception and livelihood sustainability. The separate FGDs for women and men farmer groups was possible due to the already existing gender based farmer groups within the selected communities.

In-depth interviews through key informants were also used to derive information for the study. Boyce and Neale (2006) described the in-depth interview as a qualitative research technique that involves conducting intensive individual interviews with a small number of respondents to explore their perspectives on a particular idea, programme, or situation. The in-depth interviews were conducted with key informants to capture responses on their thoughts on the themes under the study (see table 1). In reporting the information on the FGDs, pseudonyms (FGA1, FGA2, FGA3, FGA4, FGA5 etc.) were used in lieu of the actual identities of discussions. The use of the FGDs and IDIs to solicit information on resource use conflict and management dynamics offered an opportunity to garner greater in-depth knowledge on the subject matter than the larger population could provide. As such, the incidence of eluding sensitive contexts and credibility was lessened.

The principle of triangulation as a form of validity and credibility was used to check the inherent challenges in adhering to the qualitative approach to research (Yin, 2009).

Table 1: Profile of key informants

Interviewee	Sex	Pseudonym
Manager of the Park	Male	A1
Leader of hunters group	Male	A2
Chief of Grupe	Male	A3
Chief of Kananto	Male	A4
Chief of Mognori	Male	A5
Chief of Larabanga	Male	A6
Member of the tourism board	Male	A7
District coordinating director	Male	A8
Women's group leader, Grupe	Female	B1
Women's group leader, Kananto	Female	B2
Women group leader, Larabanga	Female	B3
Women's group leader, Mognori	Female	B4
Game and wildlife Field Supervisor	Male	C1
Forestry Commission's Field Supervisor	Male	C2

Source: authors' Author's construct, 2019

3.5 Data Analysis

Thematic analysis (Attride-Stirling, 2001) was used to analyze the data. Thematic analysis was chosen for the study as it enables a methodical systematization of textual data, aids the organization of an analysis and its presentation, and allows a sensitive, insightful and rich exploration of a text's overt structures and underlying patterns (Attride-Stirling, 2001). To do this, all audio information recorded during the field survey was transcribed verbatim by the second and third authors. After the transcription, the three authors read the transcript repeatedly for familiarization. The reading and re-reading of the transcript enabled the researchers to get familiarized with the transcript for

initial coding and themes identification (Braun and Clarke (2006). For the purpose of identifying consistency of responses from the respondents, initial coding and themes were reviewed and refined as indicated by figure 2 below. Initially, 57codes and 7 organizing themes were identified within the script.

Through reading and refinement of the themes, 37 codes and 3 organizing themes were finally used to interpret respondents' responses on natural resource use and perceived controversies surrounding the resource use in the Mole National Park. To ensure credibility, reliability, validity and accuracy of the study that reflects the responses given by respondents during the study, validation was done with the respondents in two communities (Grupe and Mognori). The purpose of the validation is to build trustworthiness between the researchers and the respondents on the controversies surrounding natural resources use in the forest and respondents' livelihood sustainability (Guba & Lincoln, 1989).

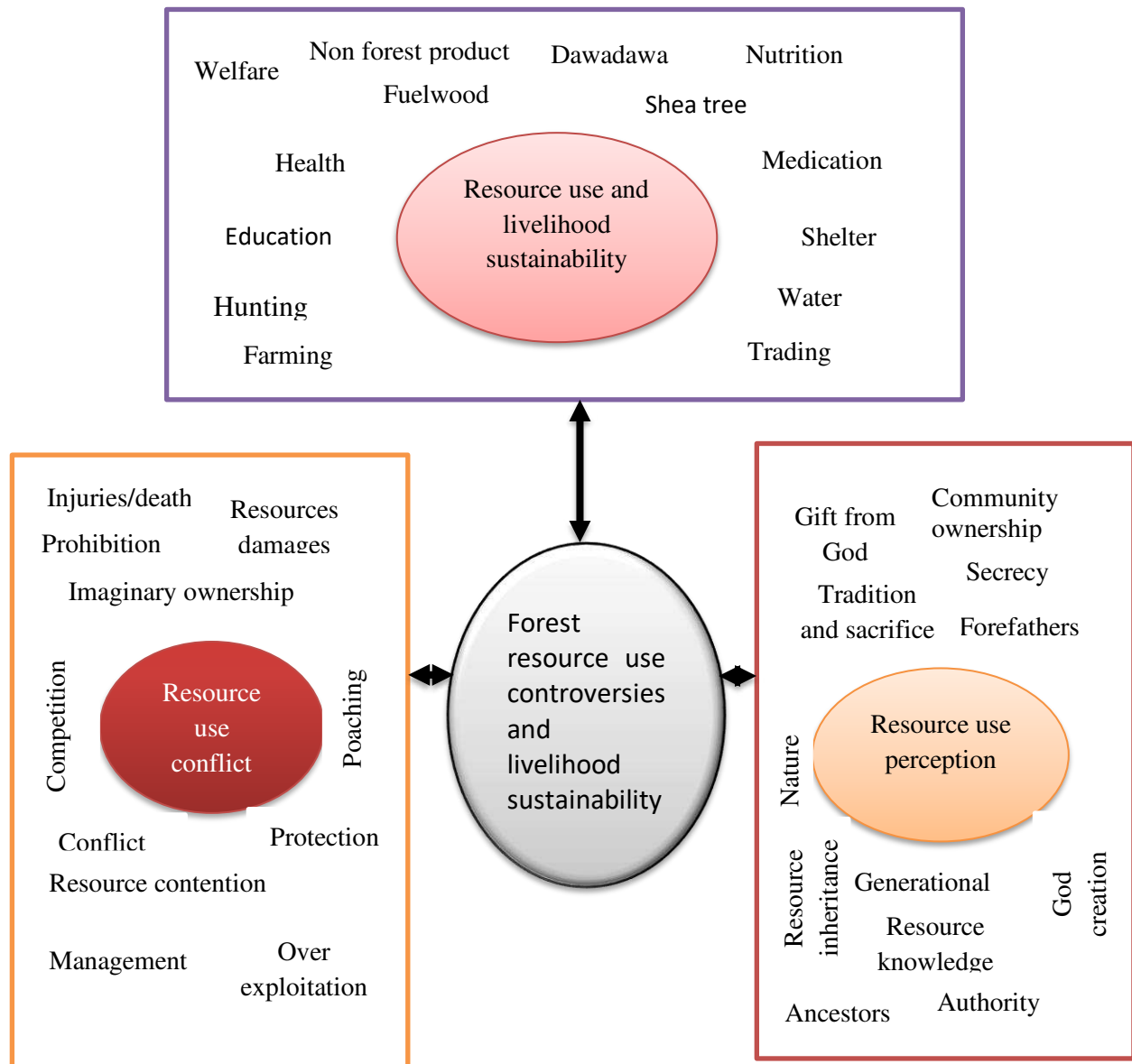


Figure 2: Thematic Network Diagram

Source: Authors' construct, 2019

4.0 Results

The thematic analysis yielded three themes of the forest resources use controversies and livelihood sustainability (resource use conflict, resource use perception and resource use and livelihood

sustainability. This section presents a detailed report on the three thematic areas identified from thematic analysis.

4.1. Forest resource use perception of respondents

The results of the study observed that respondents viewed resources in the forest as a gift from God to support their existence. Majority of the respondents also indicated that natural resources, irrespective of where they are located, are handed over to them by their ancestors and forefathers and must be utilized to the fullest without compromising the resource quality of the generations yet to come. Throughout the interviews, respondents claimed that they have the reserve powers to determine how forest resources are used and managed for sustainable development as captured by B4:

“My daughter, I tell you, if we the women don’t go into the forest for non-forest timber products and others, we won’t be able to meet the basic needs of our children. We need to feed them and send them to school. The need to prevent us from the use of our forest that is handed down to us by our forefathers and ancestors is not possible. I think we have the power to determine how resources in our community forest is used, managed and sustained” (February, 2019)

Respondents perceived that forest resources available within the Mole National Park served as the main source of livelihood activities including non-forest timber products, farming and hunting, and back-stock of cultural heritage and artefacts such as groves and stones that served as shrines for spiritual connection with the ancestral world.

Group discussions with the respondents (especially with the hunters) revealed that forest resources are strongly linked to their tradition, culture and aesthetic activities, and they maintained that their interest in natural resources for their survival is as important as the interest in protecting the sacred

culture of hunting that has been passed on from generation to generation. Responses from the Chiefs across the four communities through the key informant interviews corroborate the views of the hunters which revealed that some wildlife by-products such as the Buffalo skin serves as a touch of authority in the Chief's palace as captured by A6:

“Natural resources are things that God created to assist human beings to survive on for food, medicine, shelter and worship. Every natural resource in the Mole from trees, animals, fruits to water bodies supports our lives in many ways. The buffalo skin hanging here was gotten from the park by some hunters before they restricted access there.”

(February, 2019).

This reinforces the historical and cultural significance of some animals and their skins, as far as traditional authority is concerned. Accordingly, as long as this age-old tradition of enskinment continues to exist, more wild-life of cultural significance will be sought after unless alternatives are found. With the buffalo skin as a symbol of authority however, it does not appear the people of Larabanga are ready to compromise on this time-tested practice, thereby leading to conflicts. Most often in conflict situations when goals are not met on either side of the divide (i.e. park authorities and fringe communities), frustration sets in and violence is often inevitable.

4.2 Natural Resources and Livelihood Sustainability

Natural resource use and livelihood sustainability has been found in this study to be a key determinant of the existence of the residents around the forest. Respondents claimed that their daily survival is predominantly hinged on the forest resources. Particularly, farming and hunting were observed to be critical sources of livelihood of residents around the forest. Aside from the farming and hunting, respondents claimed that a lot of the communities' shelter and physical

infrastructure including some modern structures (cemented buildings) had elements of wood and thatch that were acquired from the Mole Park until the legal restriction on exploitation of the park resources.

Further engagement with respondents revealed that they depended on the forest for herbal medication to treat some diseases. Respondents reported that, the practice of herbal medicine by herbalists has been an old indigenous method of responding to some diseases, which they observed to be still effective and complements the orthodox health system and services. Throughout the discussions, respondents maintained that, species of herbs, leaves, stems and roots are used to treat many ailments including bone injuries, cold, fever, infertility, antenatal support and stomach upset as captured by A4:

“My son, we have depended on the forest for herbal medications for long. The leaves, stems, roots and seeds from many trees and plants in the park are used to prepare concoctions to heal many common diseases like fever, asthma, stomach upset, cold, bone fracture, fertility challenges, labour pains etc. Today, we still rely on the forest to get the resources to support our health and development.” (February, 2019).

In addition, the study found that most of the residents in the communities depend on some industrial and commercial trees such as shea trees and dawadawa for sustenance. Women in particular were found to benefit from the commercial trees through processing, production and sale of shea nuts, shea butter and dawadawa. Majority of the women maintained that picking of shea nuts and harvesting of dawadawa have been with them for long and have been part of off-farm activities to meet their household feeding needs as captured by B1:

“Initially, our grandparents used to farm on the land, collect shea fruits to produce shea butter for household consumption and to generate income. Shea nuts and dawadawa collection has been significantly associated with our livelihood sustainability all these years. We finance our household food expenditure and children’s school fees through these off-farm activities. Today, it is a serious crime to get into the forest for shea fruits and dawadawa which we depended on for long (February, 2019).

As observed by the study, natural resources are directly essential to the daily living of local resource users and contribute immensely to community wellbeing in various ways. Respondents appreciate the role of the forest resources in financing their wards’ education, household health and nutrition and shelter needs. The study observed that, respondents, especially the farmers and hunters, relied profoundly on the forest for other commercial activities including bush meat selling and trading of agricultural products.

Based on the responses of the respondents a participatory diagram is provided below showing the interconnectedness between natural resources and livelihood sustainability of the respondents (see figure 3).

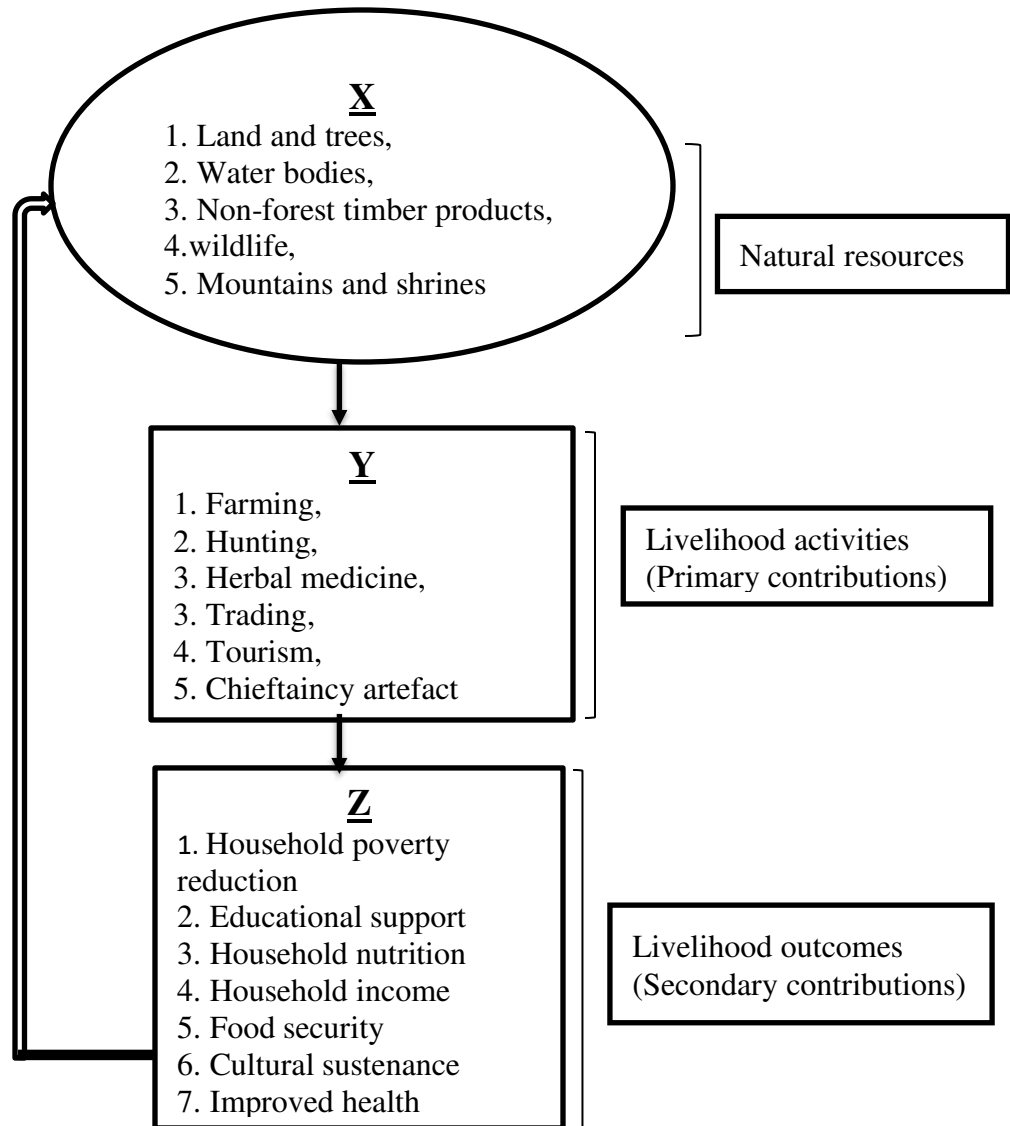


Figure. 3 Relationship between Natural Resources and Sustainable Livelihoods of Resource Users
 Source: Authors’ construct, 2019

The elements in (X) depict the natural resources within the vicinity. The immediate or primary livelihood activities directly connected to the natural resources are represented by (Y). The livelihoods of the respondents are connected to farming, hunting, herbal medication, tourism and sale of farm products all of which can be traced to the forest. The diagram shows that the livelihood outcomes of the respondents are the direct benefits connected to the availability, accessibility and usability of these forest resources.

The respondents, especially the farmers and hunters, disclosed that synthesizing X, Y and Z establishes a reciprocal relationship, which informs the conflicting or cordial relationship among them and other stakeholders of natural resources including the park staff. The diagram further shows that the various natural resources accessible to respondents inform the livelihood options or activities available to them and their households. In reciprocity, the farmers indicated that the returns from the livelihood activities determine the extent of natural resource sustainability, because sustainable yield supports household sustenance. The farmers in particular indicated that a bumper harvest determines the quality of supplementary investment in land towards the next farming season. The farmers and hunters also connected a similar exchange to the relationship between the livelihood activities (primary contributions) and livelihood outcomes (secondary contributions). That is, they revealed that the features of livelihood activities determine the quality or otherwise of their livelihood outcomes.

4.3 Community livelihoods and forest resource use conflict

On the forest resources use conflict, the study revealed that access to natural resources is a major source of contention between the local resource dependents and the Mole Park management. Unlike farmers, the hunters reported that they do not necessarily see ownership of natural resources as a major source of contention between them and the park since they do not need to own a forest before hunting as captured by A2:

“Hunting is one of our livelihood activities. We have been hunting since time immemorial in this forest to feed our households. And I do not see the need for an outsider to come and tell us to stop hunting in a forest that belongs to us [he chuckles]” (September, 2019)

Both farmers and the hunters disclosed that the first challenge of natural resource access and ownership is embedded in imaginary ownership of natural resources without access for use by the residents in the four communities whose livelihoods are sourced from the resources in the park. Imaginary ownership of natural resources without access captures areas that were formerly opened to the fringe communities of the park but later prohibited by wildlife regulations. The imaginary ownership claims that the residents around the park own the forest resource with management powers and resources benefits. However, the study observed that such a kind of ownership and management role is mere placation as residents are prohibited from access to the resources in Mole Park. According to the study, respondents claimed that part of the park where they initially occupied (for housing/dwelling and farming) still belongs to them and as a result such imaginary feeling of ownership of the resources in the park is problematic as reported by A5:

Initially, we were part of the management of the forest. We used to harvest some forest products to support our livelihood. In recent times, there has been a sudden change in the management of the forest. The surrounding communities are no more consulted in some of the management decisions. Now, even in the event that a community member gets missing, you have to seek the consent of the park management before you are assigned a delegation from the park to join you in your search within the park. That was not how it started. In the beginning, we were the owners and we could have access to everything in the forest including the herbs, fruits, fishes, water, crops and animals. There are still some shrines and remains of our forefathers, which are within the park that cannot be accessed”.

According to the Forest Commission Supervisor, the park has records of conflict between local resource users (hunters, herbalists and farmers) and the park management over poaching of game, collection of fruits (shea fruits and ‘dawadawa), fishing and farming activities as captured by C2:

“The local people poach the natural resources in the park for livelihood purposes. The off reserve area resources have been overexploited so the poachers from the community see the park as an island of natural resources, which must be exploited for livelihood. This must not be allowed”

According to the report, there have been persistent clashes between the resource user groups and the park management leading to bad blood between the park management and local resource users. The Forest Commission supervisor further asserted that the narrative of the history of the communities' livelihoods being attached to the natural resource use in the park is the reason for the series of countless conflicts between the management of the park and the fringe communities, especially Larabanga, which happens to have the highest incidence of poaching cases. The park manager corroborated reports of the field supervisor from the Forestry Commission, which indicates that, even with strategic management policies put in place to manage potential resource use conflict, the needed results have not been realized. The park manager further revealed that, even with the establishment of the Collaborative Wildlife Management Policy, which seeks to include multiple stakeholders in the management of natural resources within the same socio-ecological landscape, resource use conflicts still account for injuries, death and damage to tools and equipment of local resource users and the park management. According to the manager of the park, the creation of alternative sustainable livelihoods strategies and sensitization of the local resource users will stop the illegal access to the park for the extraction of the conserved resources. He acknowledged that most of the fringe communities had depended on the forest for a long period of time.

5.0 Discussion

Forest resources are life wires of most fringe communities globally. In this study, the results revealed that natural resources are of higher essence to the survival of the residents around the Mole National Park. Respondents reported that their major means of sustenance is from the natural resources which they perceived to be gifts from God, ancestors and forefathers. The results indicated that residents of the four communities over the years have depended on the forest for farming and hunting with minimal alternative sources of income, therefore denying them access to the forest resources has consequences on their sustenance. As indicated by the theory of access, lack of access to resources by individuals or a community has the potential to jeopardize their livelihood and wellbeing (Ballet et al., 2020). Studies have found that rural communities in developing countries mostly resort to available forest resources for their livelihood (Amoah & Wiafe, 2012; Robinson, 2016; Gerten et al., 2020; Fedele et al., 2021; Resende et al., 2021). As a result, any attempt to prevent them from exploiting and utilizing them may result to conflict as suggested by the theory of access. As observed in the study, respondents mentioned that their lack of access to the natural resources within the Mole National Park has led to unending conflicts between them and the management of the park. The study observed that there have been records of conflict between local resource users and the park management over poaching of games, collection of fruits such as shea fruits and dawadawa, fishing and farming activities. Accordingly, the persistent clash between the resource user groups and the park management has led to bad blood between the park and local resource users. The history of the livelihood of the people being attached to the natural resources in the park has been the reason for the series of conflicts that have recurred between Mole Park and the fringe communities. Earlier studies in Africa and other developing economies have shown that denial of local communities living within protected areas

access to their resource has over the years heightened conflicts in the sub-regions (Shyamsunder et al., 2021; Estifanos et al., 2019; Robinson, 2016; Nunan, 2016; Maranga et al., 2010). According to Ayivor et al. (2013), the perceived view of local people as destroyers of the forest, who must be excluded in order to conserve biodiversity has been the reason for conflict between fringe communities within protected areas and management of those areas. As reported by the study, such a perceived view of the management of the Mole National Park has persistently led to bad blood and clashes between the park and local resource users. According to the study, the denial of access to and ownership of forest resources in the park, which they formerly depended on for their livelihood has been the genesis of their agitations. This has been consistent with previous studies, which argued that most natural resource dependent households continue to face transition and long term challenges when conservation goals truncate access to natural resources that supported their survival (Gerten et al., 2020; Zhang et al., 2020; Robinson, 2014, Amoah & Wiafe, 2012; Watts & Watts, 2008). Gardner et al. (2013) suggest that conservation policies need to target at reducing the social effects or at least not increasing the poverty of people living close to forest reserves. This implies that conservation policies need to adopt and emphasise people-centred approaches to conservation. Thus, if local communities have secure access to forest resources and can benefit by participating in their management, they are more likely to support conservation efforts (Thoudhlana & Cundill, 2017; Thondhlana et al., 2016). According to Thoudhlana and Cundill (2017), the adoption of the people-centred approaches in the management of protected areas is premised on ensuring social equity in conservation as basis for minimising conflicts between local communities and management of protected areas. As noted in the study, respondents mentioned that their role in the management of the park is embedded in imaginary ownership.

Conclusion

The study observed that majority of the respondents depend on the forest resources to meet their household food needs. The dependence on the forest resources for their sustenance has been an old livelihood source for the forest fringe communities. After the establishment of the Mole National Park, their access to these resources, which they have depended on for long to support their households' survival has been severely affected. This accordingly has brought untold hardship to them and the households with respect to access to sustainable income to meet their basic (health, food, education and shelter) needs. The park management's denial of access to the forest resources, which the people believe are gifts from God, their ancestors and forefathers to support their existence, has resulted in conflicts between them and fringe forest communities over poaching and illegal harvesting of the forest resources. Resource availability is a double-edged sword and management and utilization are key for the resource sustainability. Going forward, there is the need to re-engage the forest fringe communities to develop a more participatory management model for effective management of the park. The participatory management model should be community-driven which will allow the communities to say exactly how they want their forest to be governed, managed and sustained.

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