

Stakeholder Roles and Relations in Forest Management around the Boumba-Bek National Park, South East Cameroon

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Abstract

This study, which took place around the Boumba-Bek National Park (BBNP) in Cameroon, was based on identifying and characterizing stakeholders in forest resources management, as well as determining the relationships between them, with the goal of encouraging collaborative forest resources management. Purposive sampling was adopted, in which focus group discussions, key informant interviews, semi-structured interviews, and snowball sampling were used for data collection. Focus group discussions were conducted with a total of 20 local associations involved in forest and wildlife management, Bantu traditional councils and the Baka community. Key informant interviews were conducted with local and international NGOs, forest exploitation and Sport hunting (Safari) enterprises and local public administrations that had working rapports with village communities around the BBNP. Information was generally sought on the role of stakeholders in forest management, in terms of use, protection, policy enforcement, challenges encountered in their activities and their relationships with other stakeholders. Actor linkage matrix was used to establish the relationships between different stakeholders. The identified stakeholder groups included the local community, State, international and local NGOs, economic operators (forest exploitation and sport hunting enterprises), and also the rules guiding their activities. Conflicts were rife between the community and the other stakeholders with regard to resource accessibility and use, whereas intra-community conflicts mostly resulted from cases of corruption and embezzlement linked to benefits sharing. Cases of collaboration among all the stakeholders were mostly related to anti-poaching patrols and setting of forest concession limits. There is a need to bring all stakeholders on

the same platform, such as in a consultation workshop, to get their perceptions on building trust, conflict resolution and genuine collaboration in resources management.

Keywords

Stakeholder Participation, Conflict, Collaboration, Stakeholder Interaction, Sustainable Forest Resources Management

1. Introduction

Millions of people in Africa live within or on the fringes of tropical forests. They are usually highly dependent on forest products which consist of useful goods and services of subsistence and commercial values called non-timber forest products (NTFPs). These include fruits, roots, seeds, nuts, barks, mushrooms, resins, feathers, bush meat, fibers and leaves among others (Nkwatoh et al., 2010; Shanley et al., 2015). However, many such communities are currently experiencing difficulty in accessing the forests and their products. This is a result of government regulations creating protected areas in these forests which are naturally rich in biodiversity (Messe, 2009). IUCN (1994) defines protected areas as zones exclusively set aside to protect and maintain biological diversity and associated cultural resources, and managed through legal or other effective means. Nevertheless, creating protected areas does not often result in the anticipated positive conservation outcomes, because they are purely ecologically focused and have little or no consideration for the needs and knowledge of local people inhabiting them (Kumar, 2000; Mukul & Quazi, 2009). In Cameroon, protected areas have long been created with little or no regard to the customary rights of indigenous peoples and local communities to their lands and natural resources (Hattori, 2014; Clarke, 2019). The poor recognition of customary forest use and practices results in a lack of support by local communities for many protected area endeavors (Mukul et al., 2008). However, it has been proven that local participation is crucial for the sustainability of protected areas in developing countries (Wells & McSchane, 2004).

In Cameroon, Law 94/01 of 20 January 1994, otherwise known as the 1994 Forestry, Wildlife and Fisheries Law relating to the regulation of forests and wildlife governs the application of national forest policies (Messe, 2009). The national forest estate is classified into the permanent and non-permanent forest domains. Protected areas, among which is the BBNP fall within the permanent forest domain. The 1994 Forestry Law forbids access to and use of resources within protected areas (RoC, 1994). The Ministry of Forestry and Wildlife (MINFOF) is responsible for the implementation of the law on the field. Apart from adjacent communities which consist of two ethnic groups which differ in their relationships with the forest (Mai et al., 2011), other forest users with different interests are found in the study area. There is therefore conflict over the application of the law in general, and in the day-to-day management of forest resources in particular

(Ndameu, 2001). Knight (1992) defines conflict as the clash of interests in a particular process, such as decision making, control and use of environmental goods and services, information sharing involving at least two actors with different interests and concrete goals. On the other hand, Gray (1958) defines collaboration as a “pooling of appreciations and/or tangible resources by two or more stakeholders to solve a set of problems that neither can solve individually.” The term is commonly used in parallel with, or in place of several others, such as co-management and participation.

Stakeholders in forest resources management refer to a group of persons and institutions who have a constitutional, customary or moral right to use or benefit from the forest or the power to control or regulate behavior which affects the forest. They also consist of those whose acts or omissions impact the forest, or whose livelihood or well-being is affected by the forest (Kotey et al., 1998; Alhassan, 2010). According to Reed et al. (2009), stakeholder analysis is a process that describes aspects of a social and natural phenomenon affected by a decision or action and identifies individuals, groups and organizations who are affected by or can affect those parts of the phenomenon and prioritizes these individuals and groups for involvement in the decision-making process. The main purpose of a stakeholder analysis is to examine current and possible collaborative relationships between stakeholders and the hindrances and drivers of these relationships (Reed et al., 2009). It is also used to understand the different types of potentially conflicting stakeholder interests (Prell et al., 2008). The relationships between natural resources and people are mediated through institutions. Institutional arrangements shape resource access and control, and are fundamental to understanding patterns of stakeholder interests (Barrow et al., 2002). The identification and involvement of all stakeholders in forest resources management take into account the interests of all and can lead to sustainable conservation, combining ecological, economic and social aspects (Nkongmeneck et al., 2013). Natural resources management typically deals with conflicting interests of various stakeholders since they use the same resources for different purposes (Reed et al., 2009). It is thus important to understand the different perceptions of the actors involved.

The aim of this research was therefore to identify and characterize actors in forest resources management around BBNP, and the interactions in their activities, such as existing collaborations and conflicts, with the goal of exploring possible ways to promote collaborative forest resources management.

2. Materials and Methods

2.1. Study Area

This research was conducted in twelve villages including Ngato ancien, Zolabout ancien, Malea ancien, Gounepoum, Song ancien, Gribé, Bintom, Zokadiba, Masea, Ngato nouveau, Malea nouveau and Zolabout nouveau due to their proximity to the BBNP. These villages are situated within the 30 km distance indicated by Toda (2014) as the range within which villagers collect forest resources around

the park. The BBNP was created by Decree N°2005/3284/PM of 6th October 2005 and is located between latitudes 2°08' and 2°58' N and longitudes 14°43' and 15°16' E in the Boumba and Ngoko Division of the East Region of Cameroon. It has an area of 238,255 ha and forms part of the Tri-national Dja-Odzala-Minkébé (TRIDOM) trans-boundary protected area between Cameroon, Congo and Gabon (NIT & KIT, 2011; Toda, 2014).

The BBNP is rich in both plant and animal diversity with 984 plant species grouped into 94 botanical families and 34 great mammals amongst which are 11 primate, 12 ungulate and 4 carnivorous species (Ekobo, 1998). Letouzey (1985) describes the vegetation as dense semi-deciduous forest. The area has a warm humid climate with two rainy and two dry seasons. The long rainy season spans from March to June whereas the short occurs between September and November. The long dry season occurs from December to February, while the short occurs from July to August. Annual rainfall varies from 1500 to 1700 mm with a mean annual temperature of 24°C and relative humidity ranging from 60 to 90% (Fongzossie et al., 2014).

According to NIT and KIT (2011), the human population living around the park is estimated at about 69,311 inhabitants, with the Baka indigenous people constituting about 21.51%. Two major ethnic groups exist in the area and consist of the Konabembe (Bantu) farmers and the Baka hunter-gatherers (Ichikawa, 2014). Toda (2014) presents a detailed description of the people and their social organizations.

2.2. Method

This research was carried out using purposive sampling, which included focus group discussions, key informant interviews, semi-structured interviews, and snowball sampling (Reed et al., 2009) for data collection. Focus group discussions were conducted with a total of 20 local associations involved in forest and wildlife management, traditional councils and the Baka community. Key informant interviews were conducted with local and international NGOs, logging and Sport hunting (Safari) enterprises and local public administrations that have working rapports with village communities around the BBNP. In order not to leave out any important stakeholders, snowball sampling was used in which individuals from previous stakeholder categories identified other stakeholders. Information was generally sought on the roles of stakeholders in forest management, in terms of use, protection, policy enforcement, challenges encountered in their activities and their relationships with other stakeholders.

An actor-linkage matrix (Das, 2020) was used to determine the relationships between different actors. Reed et al. (2009) point out that an actor-linkage matrix is a common way to decide whether the interactions between stakeholders are of conflict, complementary, or cooperation as well as the levels of such interactions. Stakeholders were listed on a two-dimensional matrix to portray the interactions between them using text and codes. Information flows from the stakeholders in

the rows to stakeholders in the columns, which are represented by the cells in the matrix (Das, 2020).

3. Results

3.1. Identification of Stakeholder Groups

Figure 1 presents different stakeholder groups as well as stakeholders involved in forest resources management around the BBNP, and the legal instruments in place which control their activities.

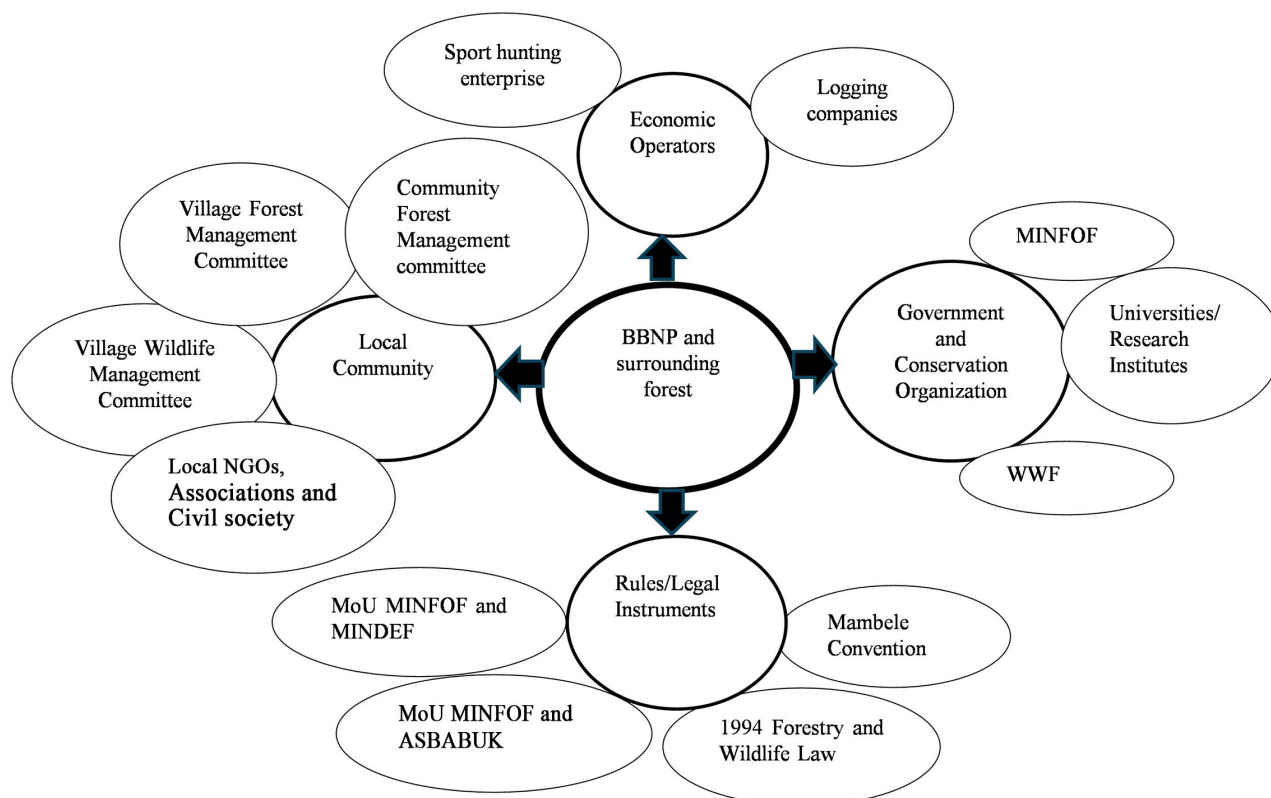


Figure 1. Major stakeholder groups and legal instruments guiding their activities.

The roles of each stakeholder are detailed in **Table 1** below, whereas the purpose of each legal instrument is presented in **Table 2**.

The interactions between different stakeholders are presented in **Table 3**.

3.2. Interactions between Stakeholders in Forest Resources Management around BBNP

The community in the context of this study refers to people living in villages around the BBNP, and constituted local associations created within these villages, including Village Forest Management Committee, Village Wildlife Management Committee, Community Forest Management Committee, for resource management as well as others created for personal interests such as the association “*Union faire la force*” in Gribe village.

Table 1. Stakeholders and their roles in forest resources management around BBNP.

Stakeholder	Nature of Stake	Role
Local associations/ communities	Livelihood, cultural and spiritual values	<p>-Communities are completely dependent on the forest for their livelihood. They collect NTFPs from the forest for home use and for income generation. Members of most local associations collect and process NTFPs individually, however, the local association '<i>Union Faire la Force</i>' or 'Unity is strength' uses 'njangsa' (kernels of <i>Ricinodendron heudelotii</i>) as an item for contribution in their weekly meetings, with the aim of encouraging women to gather and process more of the NTFP which is abundant in the area and is a great source of income for the Bantu women. Locals are however allowed to hunt unprotected wildlife species only for home consumption (user's right in the context of the 1994 forestry law), as a way to deter them from poaching.</p> <p>-The Baka in particular also use the forest for cultural and spiritual purposes.</p> <p>-Communities formally participate in forest resources management within the framework of community forestry. A community forest is a forest (5000 ha maximum) of the non-permanent forest domain with a management agreement between the village community and the service in charge of forestry (MINFOF, 2009). The management of the forest is the responsibility of the village community concerned, through the Community Forest Management Committee, with technical assistance from the service in charge of forestry and wildlife (MINFOF). The aim is to enhance local participation in forest resources management in order to improve communities' standards of living.</p> <p>-Communities, through the village Forest Management Committee, participate in setting limits of forest concessions, monitor the activities of logging enterprises and reports irregularities to MINFOF. This committee also acts as mediator between the village community and logging enterprises, especially in conflict situations and also for social donations to the village or recruitment of unskilled labour for the logging enterprises.</p> <p>-Communities through the local Wildlife Management Committee participate in wildlife protection and the creation and follow-up of wildlife monitoring (vigilance) committees in all villages with the assistance of the service in charge of forests and wildlife. They also provide sport hunting enterprises with personnel for temporary labour and feed MINFOF with information concerning poaching in the hunting zones. They also participate in anti-poaching patrols organized by MINFOF and WWF.</p>
Ministry of Forest and Wildlife (MINFOF)	Administrative/Regulatory/Conservation	<p>The role of MINFOF is total protection of the forest heritage, biodiversity, wildlife, air and sub soil. Its major activities include fight against poaching, sensitization of the local population and other forest users on the sustainable management of forest and wildlife resources, as well as the valorization of NTFPs. MINFOF also provides technical assistance to forest exploitation enterprises in the identification and implementation of actions that enhance wildlife management such as location of migration corridors and ecologically fragile areas.</p> <p>It also ensures the implementation and respect of the forestry, wildlife and fisheries law by all stakeholders.</p> <p>MINFOF technically assists the local communities in the process of creation and management of Community Forests.</p>

Continued

Forest Exploitation Enterprises	Economic, profit making	<p>The main activities of the logging enterprises are timber exploitation, processing and commercialization. They also provide material and financial support towards organizing anti-poaching activities in the area. The internal rules and regulations of logging companies contain articles repressing poaching; thus, enterprises facilitate anti-poaching awareness campaigns as well as identify and implement actions that contribute to the sustainable management of wildlife resources in the Forest Management Units (FMUs); such as protection of ecologically fragile areas and migration corridors of large mammals. Forest exploitation enterprises are party to the Mambele anti-poaching convention.</p> <p>10 % of annual forest royalties from forest exploitation enterprises go to local communities for the financing of community infrastructural projects.</p>
Sport hunting (Safari) Enterprise	Economic, profit making	<p>The major role of the Safari enterprise is hunting wildlife for sport or recreation. It also provides material and financial support for anti-poaching activities in collaboration with MINFOF;</p> <p>It allocates financial compensation to local populations in their respective sectors of activity through the financing of community infrastructural projects, amounting to 10% of the animal slaughter and leasing taxes collected by the State; and is also party to the Mambele anti-poaching convention.</p>
International NGOs (WWF)	Biodiversity conservation	<p>The objective of WWF is to protect all the national parks in South East Cameroon and promote sustainable management of forest and wildlife resources for the well-being of mankind. WWF also provides technical and financial assistance to enable the government to carry out responsible management of forest and wildlife resources. WWF together with MINFOF participated in the creation of the BBNP. It conducts biodiversity and faunal inventory in particular, and assists the Conservator of the BBNP to ensure the respect of the management plan in all park activities. WWF also provides logistical support to MINFOF through park activities; identifies and implements anti-poaching financing mechanisms as well as provide technical and material support in the organization of anti-poaching awareness activities and patrols; It carries out research with students who come to the institution on internship.</p> <p>WWF advises Forest exploitation enterprises to adhere to forest certification schemes, especially with the Forest Stewardship Council (FSC), enhance their capacities with respect to high conservation values and encourage them to preserve forest clearings in logging concessions where wildlife goes to rest or reproduce. It also conducts annual monitoring of good practices in FMUs, and assists in the putting in place of the Village Forest Management Committee which facilitates dialogue between communities and forest exploitation companies, as well as capacity building for members.</p> <p>WWF provides assistance to communities in drawing up Simple Management Plans for Community Forests, in collaboration with MINFOF, as well as in the creation of Village Wildlife Management Committees. It also initiates conventions with local NGOs to execute particular activities within communities such as community forest management and valorization of NTFPs. A convention was recently signed, allowing the Baka indigenous people through their association (ASBABUK) to access the national park to collect some forest products and carry out rituals but not to engage in poaching.</p> <p>WWF provides wildlife inventory data to sport hunting enterprises. It is a party to the Mambele anti-poaching convention and also provides the Sport hunting enterprises with tools for sustainable wildlife management.</p>

Continued

Local NGOs	Non-profit making (social)	<p>The NGO (<i>Appui A L'Auto Promotion des Femmes de la Boumba et Ngoko</i>) (Support for the self-promotion of the women of Boumba and Ngoko) with French acronym AAFEBEN works with local associations involved in the collection and processing of NTFPs in villages around protected areas specifically, the Boumba Bek and Lobeke National Parks. It aims to empower rural women through the valorization of NTFPs on which they depend, as well as deter the rural population from poaching.</p> <p>AAFEBEN sensitizes the local associations to the importance of NTFPs as a source of livelihood and provides technical training and advice on the collection and processing of different NTFPs.</p> <p>AAFEBEN also facilitates access to the market as it identifies NTFP buyers, links them with the local association, and organizes group sales for their products.</p> <p>AAFEBEN has also linked local associations such as '<i>Union Faire la Force</i>' in Gribé village with Cooperatives such as '<i>Or Nature</i>' based in towns like Yokadouma, where the association has become a member and can sell NTFPs.</p>
Councils	Non-profit Municipal and community Development	The municipal council receives and manages the financial contributions made by economic operators (logging companies and Sport hunting enterprises) and oversees development projects in communities and municipalities.
Universities/ Research Institutions	Knowledge generation	Research institutions conduct research in various domains, and valorize research results for livelihood enhancement of local communities and policy amendments.

Table 2. Legal instruments governing the management of forest resources around BBNP.

Policy document	Function
The 1994 Forestry, wildlife and fisheries law and decrees of application.	Sets rules for the sustainable management of forest, wildlife and fisheries resources.
The Mambele Convention	Fight against poaching
The LAB (Protocole Lutte Anti-Braconnage) convention.	Trans-boundary collaboration in the fight against poaching in the TRIDOM landscape.
MoU between Ministry of Forest and Wildlife (MINFOF) and ASBABUK (Baka association)	To permit the Baka to have controlled access into the national park to collect NTFPs and perform cultural rites.
MoU between MINFOF and the Ministry of Defense (MINDEF)	For MINDEF to accompany MINFOF to the field during their anti-poaching patrols.

*MINDEF = Ministry of Defense, ASBABUK = Association of Baka Pygmies, TRIDOM = The Trinational Dja-Odzala-Minkebe transboundary Protected Area involving Cameroon, Congo and Gabon.

Table 3. Relationships between stakeholders according to Reed et al. (2009).

Actors	Communities/ Local associations	Ministry of Forestry and Wildlife (MINFOF)	Forest Exploitation Enterprises	Sport hunting Enterprise (Safari)	International NGOs (WWF)	Local NGOs	Local councils
Communities/ Local associations	/	Collaboration (++)	Conflict (+++) Collaboration (+)	Conflict (+++)	Collaboration (++)	Collaboration (+++)	Conflict (++) Collaboration (++)

Continued

Ministry of Forestry And Wildlife (MINFOF)	-Conflict (+++) -Collaboration (++)	/	Collaboration (+++) Conflict (++)	Collaboration (+++) Conflict (++)	Collaboration (+++)	Collaboration ()	Collaboration (++)
Forest Exploitation Enterprises	-Conflict (+++) -Collaboration (+)	Collaboration (+++)	/	Collaboration (+++)	Collaboration (+++)	None	Collaboration (+++)
Sport hunting Enterprise (Safari)	-Conflict (+++) -Collaboration (++)	Collaboration (+++)	Collaboration (+++)	/	Collaboration (+++)	None	Collaboration (+++)
International NGOs (WWF)	-Conflict (++) Collaboration (++)	Collaboration (+++)	Collaboration (+++)	Collaboration (+++)	/	Collaboration (+++)	()
Local NGOs (AAFEBEN)	Collaboration (+++)	None	None	None	Collaboration (+++)	/	()
Local councils	Collaboration (++)	Collaboration (+++)	Collaboration (+++)	Collaboration (+++)	()	None	/

Note: High (+++), moderate (++), low (+), or insignificant ().

3.2.1. Community and Safari (Sport Hunting) Enterprise

Sport hunting is practiced in Cameroon over large contiguous areas that provide an adequate habitat for wildlife populations (Lescuyer et al., 2016). It was observed in this study that there were both cases of conflict and collaboration between the community and other stakeholders (Table 3) involved in forest resources management around the BBNP.

Conflicts

The most frequent cause of conflict cited by the community was with the Safari enterprise, whose field activities take place mostly in the month of July, coinciding with the peak production period for bush mango (*Irvingia gabonensis*). Community members were prohibited from gathering this NTFP in areas of the forest where the sport hunting activities take place because noise from human presence was likely to cause the animals to escape from the area. Community members complained that the kernels of bush mango fruits do not only constitute a major portion in their diet, but is very important for income generation as the NTFP has a huge demand and high market value. Some community members testified to having undergone some kind of physical abuse and seizure of products by the Safari enterprise. The sport hunting enterprise however, pointed out that it is very risky to allow the population to come into his zone of activity as someone could be accidentally injured or killed in the forest. He further indicated that the 1994 Forestry law does not allow activities in hunting zones (HZ) and community managed hunting zones (CMHZ) during the hunting period, whereas the high rate of poaching in the area is reason enough to consider whoever is found in the hunting zones as a poacher.

According to the Village Wildlife Management Committee, the Safari sometimes delays the payment of 10 % of the leasing tax to the communities as required by the forestry law, as was the case in the 2020-2021 hunting season, where the payment was only made after a complaint had been written against the enterprise

to the Divisional Delegation of Forest and Wildlife, engendering conflict.

Collaboration

Some complementary activities, however, take place between the Safari enterprise and the community. The Safari enterprise provides short term employment to some community members who provide unskilled labour by opening up forest tracks to facilitate movement, as well as 4 motorists, 3 drivers and 4 domestic staff who work for a period of two to three months yearly. A majority of the workers here consisted of the Baka indigenous people. The Safari enterprise indicated that it obliged workers to have a project for which the salaries paid to them would be used to achieve. This was intended to avoid wasteful spending and some have constructed houses, and bought motorcycles whereas, others have legalized their marriages. This stakeholder pointed out that he intended to pay social insurance dues to his workers, but because they often did not own National Identity Cards, it was impossible to do so.

3.2.2. Community and Timber Exploitation Enterprises

There were three major timber exploitation enterprises in the study area. Industrial timber exploitation is carried out in logging concessions which is a forest management model based solely on industrial exploitation of timber resources, whereas, other ecosystem goods and services are considered secondary (Lescuyer et al., 2012).

Conflicts

The main source of contention between the communities and forest exploitation enterprises was said to be the non-respect of forest concession limits by the timber exploitation companies. It was pointed out by community members that the 4 km buffer zone which is supposed to separate forest concessions from the agroforestry zone does not exist in most cases.

Communities indicated that they used to carry out agricultural activities in the agroforestry zone before the forest exploitation companies came into the area. The limits of forest concessions which were initially set to be temporary have extended into the agroforestry zone and now become permanent. The case of a forest exploitation enterprise burning down a settlement of the Baka indigenous people was reported, provoking conflict. The communities pointed out that logging enterprises have no respect for the Village Forest Management Committee, which should act as a mediator in case of conflicts between communities and logging enterprises and through whom recruitment for provision of unskilled labour for forest enterprises is supposed to be done. Logging companies however recruit through village Chiefs with whom they cooperate, and not the Village Forest Management Committee as stipulated by the law. Forest exploitation companies were said to also fell important tree species like Sapelli (*Entandrophragma cylindricum*), which is host to edible caterpillars which constitute a major food component in the diets of local communities, as well as Moabi (*Baillonella toxisperma*), the seeds of which are used to extract edible oil, important resources for local livelihoods.

The forest exploitation enterprises were said to always avoid signing work contracts with locals who provide unskilled labour after 3 months as specified by the labour code, but preferred to lay them off after 3 to 4 months and recall them the following year. According to the Village Forest Management Committee, some logging enterprises use fast growing tree species to regenerate exploited “Annual Cutting Plots” from which more durable and slow growing species had been exploited, contrary to the regulation in place, implying they probably would want to go back and exploit the plot before the normal rotation period.

Logging enterprises on their parts pointed to the uncontrolled use of forest roads by motorbike riders in communities as a major source of conflict as it could lead to accidents with timber trucks or loss of lives. Some logging enterprises also indicated that the local population continues to gather large quantities of bush mango fruits and other NTFPs from Forest Management Units (FMUs), although this is allowed by the law only for self-consumption. It was also pointed out that gathering NTFPs from FMUs is dangerous as accidents may occur from falling trees.

Collaboration

Logging companies indicated that they contribute to the development of village communities through payment of forest royalties and development of the local road network (which they also use to transport timber out of the area). Forest exploitation enterprises also specified that they contributed to the wellbeing of local communities through provision of social amenities such as water points (wells) and health centers among others. However, a number of incomplete or non-functional water supply points were observed in study villages with for example, only one functional out of five existing bore holes.

The logging companies specified that they also provide employment to the local population who supplied unskilled labour and earned monthly wages ranging from XAF 65000 to XAF 75000, as well as non-cash benefits like free health care at the dispensary of the enterprise and some informal financial assistance when they had some misfortune. One of the forest exploitation enterprises indicated it had about 120 casual workers from surrounding communities, including 6 Bakas, out of a total labour force of 180, whereas another enterprise had 80 unskilled workers (including 4 Bakas) from the communities out of a total workforce of 130. There was a minimal effort to involve both Bantu and Baka communities in logging company activities, but the number of Bakas was yet too small compared to the Bantu. Other assistance from logging companies to local communities included provision of coffins in case of deaths of community members, payment of part time teachers’ salaries (XAF 30,000 per month) and provision of didactic materials in some primary schools; construction of health centers and provision of pharmaceutical products in such centers. It is worth noting that no functional community health center was observed in study villages. One of the forest exploitation enterprises also indicated that it protects NTFP tree species during timber felling since communities are highly dependent on them. Another forest exploitation

enterprise was said to provide monthly financial assistance (XAF 30,000) to the village Chiefs in its area of exploitation whereas the third enterprise was said to assist communities with XAF 30,000 when members died and XAF 450,000 every six months for different ceremonies in the villages.

3.2.3. Communities and Ministry of Forestry and Wildlife (MINFOF)/WWF (Worldwide Fund for Nature)

MINFOF and WWF are here considered together because they always work together within the communities. They have the mandate to conserve biodiversity and ensure sustainable management of the forest resources.

Conflict

The relationship between local communities and MINFOF/WWF is mostly characterized by conflict. MINFOF is represented in the study area by the Chief of Forestry and Wildlife Post and Ecoguards who for the population, are a source of repression as the latter is always suspected for poaching. Ecoguards stay at control posts to guard against illegally exploited forest and wildlife resources (especially from poachers), as well as timber and some NTFPs which represent special forestry products and whose exploitation is regulated by the forestry law. Communities also complained of confiscation and auctioning by ecoguards of small portions of bush meat and *Gnetum* leaves which were meant for household consumption. On the other hand, ecoguards indicated that seizure of products only occurred when usage right (MINEF, 1994) was not respected, that is when an individual is found at a time with more bush meat than is allowed for subsistence use. Conflict also sets in when ecoguards control and seize unauthorized hunting gears. Some community members complained of having been physically abused especially when ecoguards assist other actors in the forest such as WWF, Sport hunting enterprise and logging companies during anti-poaching patrols.

Collaboration

However, there was some collaboration between these stakeholders and the local communities, as they are often accompanied into the forest by the latter (two Bantus and three Bakas) at a time during anti-poaching patrols.

Some Baka indigenous people reported that their livelihoods and lifestyles which are very closely linked to the forest resources have been greatly disrupted due to the changes in their environment and limited access to certain forest areas despite their ancestral ties to them. To this, MINFOF/WWF indicated that a Memorandum of Understanding (MoU) was signed between the state and Baka association ASBABUK to allow for controlled access into the national park for collection of some NTFPs and to perform cultural rites.

MINFOF/WWF provides capacity building to the Village Wildlife and Forest Management Committees, as well as the Community Forest Management Committee members on issues related to forest and wildlife resources conservation and community forest management. Communities were also sensitized on the provisions of the 1994 Forestry, Wildlife and Fisheries Law and its decree of application, drawing up of simple management plans for Community Forests, valorization of

NTFPs and acquisition of trade permit (Certificate of Origin) to enable community members to get involved in formal commercialization of NTFPs outside their communities. WWF was said to have assisted the communities in the process of the creation of Community Forests (five in the area). Community members (Village Forest Management Committee) work as a team with MINFOF and representatives of forest exploitation enterprises in setting up the limits of FMUs.

3.2.4. Forest Exploitation Enterprises and the Safari Enterprise Collaboration

The Hunting Zones are superimposed on Forest Management Units, but there are no conflicts between the logging enterprises and sport hunting enterprise, as they do not work in the same area at the same time. Further collaboration between these stakeholders is shown by the fact that the sport hunting enterprises use roads created by logging companies and there is systematic dismissal of logging truck drivers caught in the act of poaching and transportation of poachers and their products. These stakeholders jointly finance anti-poaching activities within the framework of the Mambele Convention which is aimed at fighting against poaching. This is done in collaboration with other actors such as the MINFOF, WWF, and local communities. Logging companies also protect ecologically fragile areas and migration corridors of large mammals, thus contributing to the sustainable management of wildlife resources. Awareness campaigns on sustainable wildlife management is carried out in logging sites, with visual aids such as posters of different classes of protected wildlife species not to be hunted and penalties that befall defaulters.

3.2.5. Intra-Community Conflicts

It was also observed in this study that there are conflicts within communities mostly because of a lack of transparency in the management of funds destined for community micro-projects and benefit sharing with respect to exploitation of timber resources from community forests.

Other sources of conflicts within communities were power tussles during elections for particular posts in the local committees, and also during identification and implementation of micro-projects within all villages covered by the Wildlife Management Committee.

3.2.6. Ministry of Forestry and Wildlife/Worldwide Fund for Nature and Other Actors

WWF participated with MINFOF in the creation of the BBNP. It carries out biodiversity and faunal inventory in particular. It has assigned an assistant to the Conservator of the Park to ensure that the management plan is respected in all activities in the park. WWF also provides material and financial support to MINFOF through park activities. It carries out research with students who come to the institution for internships.

WWF collaborates with forest exploitation companies by encouraging them to adhere to forest certification schemes, especially with the Forest Stewardship Council

(FSC), build their capacity in the respect of high conservation values and encourages them to preserve forest clearings in logging concessions where wildlife goes to rest or reproduce. It also conducts annual monitoring of good practices in Forest Management Units, and assists in the putting in place of Village Forest Management Committee which facilitates dialogue between communities and forest exploitation companies, as well as capacity building for committee members.

WWF provides assistance to communities in drawing up Simple Management Plans for Community Forests, as well as in the creation of Village Forest Wildlife Management Committee. It also signs conventions with local NGOs to execute particular activities within communities such as community forest management and valorization of NTFPs. A convention was recently signed, allowing the Baka to access the protected areas to collect forest products and perform traditional rites.

WWF provides faunal inventory data to sport hunting enterprises. They have signed conventions on the fight against poaching and have also provided them with tools for sustainable wildlife management.

4. Discussions

The multiplicity of stakeholders in forest resources management in the study area is a reflection of the various interests and functions provided by the forest. How each stakeholder is determined to acquire the product or service of their interest, sometimes at the expense of other actors has resulted in conflicts at different levels.

4.1. Community/Safari Enterprise

Conflicts between the Safari and the communities were related to the use of space for hunting by the Safari and for collection of *Irvingia gabonensis* fruits by the local population, for whom this NTFP constitutes a major source of food and income. Vermeulen (1997) reveals that sometimes, the Permanent Forest Domain where this activity is carried out overlaps with areas where communities had been using for a long time thus, creating conflict. The conflict could however be resolved through dialogue between the concerned stakeholders, probably with MINFOF and WWF as mediators in which a timetable of activities could be set up indicating the periods when the community members could go into the forest to collect bush mango without harassment from the Safari. Caspa et al. (2015) observed that conflict between communities and the stakeholders in charge of conservation with respect to bush mango collection around the Lobeke National Park in Southeast Cameroon was linked to the fact that the resource is also a major source of food for different wildlife species, especially the gorilla and wild pig (Beaune et al., 2012).

Delay in the payment of the 10% of the leasing tax to the communities by the sport hunting enterprise, and warranting the intervention of the MINFOF authorities could be due to the fact that more powerful stakeholders have the tendency

to undermine the weaker ones, and even the regulation in place. [Lescuyer et al. \(2016\)](#) reported that Community Managed Hunting Zones are supposed to be co-managed with hunting guides chosen by the administration in charge of wildlife, and the Village Wildlife Management Committee is supposed to receive a portion of the tax paid by the hunting guide for community development.

Collaboration between Safari and communities through provision of unskilled labour is an opportunity for the local population to gain some income, since the prospect to earn regular income in the villages is very low. In line with our findings, the Department of Wildlife and Protected Areas ([DFAP \(2013\)](#)), reported that each Hunting Zone and Community Managed Hunting Zone recruits 15 people, 60% of whom are temporary and are paid only for 4 months (April to July) and 40% on permanent basis. According to [Lescuyer et al. \(2016\)](#), the wage paid to individual persons amounts to 76% of the total amount that communities receive from trophy hunting. However, the total redistributed amount of XAF 0.8 million to local population remains very small with regards to the number of inhabitants living around the hunting areas of Cameroon.

4.2. Community/Logging Enterprises

The main cause of conflict between logging companies and the communities was reported to be non-respect of concession limits by the logging companies, who sometimes exploit timber species of their interest even within the agroforestry area. In line with our findings, [Mayers and Bass \(2004\)](#) pointed out that the agreement for the establishment of a forest concession is carried out between the State and a private operator, thus, neglecting the interests of the local population who has used the forest from time immemorial. The logging concession model needs to be reformed to better integrate all forest goods and services as well as the aspirations of local stakeholders ([Nasi et al. 2006](#)). [Ichikawa \(2020\)](#) reported that village communities in the area are exposed to forest destruction through industrial logging, as well as exclusion from protected areas that used to constitute a source of sustenance for the people in the past. Additionally, the latter author pointed out that some parts of the logging area (Forest Management Units) have been allocated to sport hunting, which should promote sustainability and provide the government with revenue to be used for conservation purposes. Thus, these external stakeholders (logging and sport hunting enterprises) occupy about 90 % of the forested area whereas the local people are excluded from lands they had utilized for centuries ([Ichikawa, 2020](#)). The concept of Community Forestry was introduced in the area as government's measure to involve the local communities in forest management. However, the proper functioning of these community forests is plagued by administrative bottlenecks and mismanagement of funds destined for community projects.

Another source of contention between communities and the logging companies was the non-respect of the Village Forest Management Committees which serve as intermediaries between the population and logging companies by the latter

stakeholders who usually bypass these committees and work directly with local Chiefs, in defiance of the regulation in place. This is probably because the logging enterprises think these committees are not strong enough to implement any decisions. According to [Lescuyer et al. \(2012\)](#), many village committees face three important impediments, including the fact that they do not often last long, such that communities are unable to organize themselves over the medium or long term ([Oyono, 2004](#)). Such committees are frequently the subject of misappropriation by village elites, who turn them into tools for economic or political power ([Karsenty, 1999](#); [Mbairamadji, 2009](#)). Village committees are also highly dependent, both in financial and technical terms, on the logging companies or other supportive external actors ([Assembe Mvondo 2006](#); [Oyono et al. 2006](#)). Other sources of conflict between these stakeholders include reckless motorcycle riding by community members as well as the collection of huge quantities of bush mango (*Irvingia gabonensis*) fruits from forest concessions. Motorbikes are the most common means of transportation in villages, and sometimes, the riders are careless and pose obstacles and dangers to the timber trucks that use the village roads. Bush mango is a major source of income for communities, so they have the tendency to collect fruits wherever it is possible, being that the agroforestry zone which is reserved for community activities is small in extent. It is difficult for logging companies to fight against the collection of NTFPs and other forest products like small game from Forest Management Units because it is not easy to determine whether the products are actually taken for self-consumption as required by law, or for commercial purposes ([Lescuyer et al., 2012](#)).

Some positive impacts of logging companies on local communities included the development of village communities through payment of forest royalties and development of the local road network. These roads are created because the timber companies themselves use the roads to transport timber out of the forest. These roads quickly get degraded when the loggers leave the area. Similarly, [Lescuyer et al. \(2012\)](#) reported that logging companies are supposed to participate in enhancing the living conditions of local populations through the payment to the communities of an amount equivalent to 10% of the annual forestry fee ([Assembe Mvondo, 2006](#); [Ayuk, 2023](#)). The latter authors further indicate that although this meager 10% is insignificant, compared to what timber exploitation companies extract from the forest and the revenue they pay into the public treasury, it is subject to mismanagement and embezzlement, such that the benefits scarcely ever reach the concerned local communities. This excludes many local communities from the benefit sharing process as they have little or no say on how this fund is spent, and therefore benefit very little from it, in the form of local development ([Ayuk, 2023](#)). The contribution of forest exploitation enterprises to the wellbeing of local communities through provision of social amenities, aligns with the report of [Bigombe Logo \(2004\)](#) who indicated that communities should also benefit through “social works” as indicated in the Forest Management Plans of logging enterprises, although this is not obligatory. A number of incomplete or non-functional water

supply points initiated by logging companies were observed in study villages with for example, only one functional out of five existing bore holes, whereas there was no functional health center, in line with [Lescuyer et al. \(2012\)](#) who stated that the direct contribution of the logging companies to village infrastructure is weak. [Ayuk \(2023\)](#) points out that in revising the provisions of the forestry legislation on benefit sharing mechanism, forest communities should be given the opportunity to outline their needs in terms of development and social amenities which will enhance and foster sustainable local development.

The employment of the local population by the logging companies to provide unskilled labour enabled locals to earn monthly incomes between XAF 60,000 to XAF 70,000, in agreement with [Lescuyer et al. \(2012\)](#) who specified that the direct advantage of logging in Central Africa is the provision of employment to local population, although proceeds from agriculture far outweigh income from forest activities. However, [Brown and Ekoko \(2001\)](#) observed that the most qualified jobs are reserved for external workers and only a few are offered to locals. However, the local population often lack the qualification for the top jobs which are more demanding technically. The payment of part time teachers' monthly salaries (XAF 30,000) and monthly allowances of XAF 30,000frs each to some village Chiefs by some logging companies is very negligible as these minute sums have very little or no impact on the economic status of the individuals concerned and development of the communities in general. Forest management does not directly contribute to local economic development but does not also constrain the way people use forest resources for their living ([Lescuyer et al., 2012](#)).

4.3. Ministry of Forestry and Wildlife and Worldwide Fund for Nature (MINFOF-WWF)/Communities.

Conflict between the MINFOF/WWF and the local population usually occurs when there is non-respect for the regulation in place concerning forest management. The increase in demand for forest products and bush meat in particular, as well as the opening up of forest roads have eased access into the forest for poachers who sometimes use the local population as accomplices in their activities. Although the use of such hunting gears as steel wire cables and fire arms is prohibited by the law, most community members and poachers still use them, as noted by [Egbe \(2001\)](#) who reported that the use of the home-made "Dane gun" and steel wire cable in hunting is almost universal, yet is prohibited by law. Seizure of bush meat and unauthorized hunting gear by ecoguards is often the immediate action taken against defaulters of the law. The legal prohibition on the sale of bush meat by community members is obviously unrealistic. Cameroon's present policy on traditional hunting gives rise to deep mistrust between communities on the one hand, and the services in charge of conservation ([Egbe, 2001](#)). Conflicts between these stakeholders could be as a result of the fact that communities were hardly consulted or involved in any major decision-making process concerning the creation or management of resources around the national park. The community also

has a very low level of awareness of the forestry law.

Regarding collaboration between these stakeholders, a few members of the local communities usually accompany MINFOF/WWF into the forest during antipoaching patrols because it is their natural environment and they know their way around the forest better than other stakeholders, thus, they serve mostly as guides. The signing of MoU between indigenous community associations such as ASBABUK (Baka association) aimed at allowing controlled access to forest resources and performance of traditional rites in protected areas, should be a first step to free access as communities fear physical abuse from ecoguards. [Clarke \(2019\)](#) points out that access and use are being treated as a privilege being granted by the government, which requires Baka communities to give something in return—rather than as a right which the government's creation of protected areas has violated, which must be remedied. Thus, this MoU does not solve the central ongoing violation of human rights, which is the non-recognition and non-respect of indigenous peoples' customary lands, territories and natural resources.

4.4. Intracommunity Conflicts

Intra-community conflicts often result from mismanagement of funds meant for community microprojects. For instance, the functions of the Village Wildlife Management Committee are free of charge, such that sometimes the members use money meant for community projects to run the committees, in line with [Bigombé \(2010\)](#) and [Assemble Mvondo \(2006\)](#) who point out that a significant portion of funds obtained from taxes paid by the Sport hunting enterprise is spent in operating local committees. The improved performance of these local committees would require a significant simplification of procedures, especially as they apply to small amounts of money ([Lescuyer et al., 2016](#)). Available funds are often not enough to carry out micro-projects in all villages at a time, resulting in conflict since each village wants to reap its own share of the benefits. The creation and respect of a calendar for microproject implementation in villages could attenuate related conflicts.

5. Conclusion and Recommendations

There are various stakeholders with different interests involved in managing forest resources around the BBNP. These include the state and major conservation NGO (WWF), whose interests are biodiversity conservation and sustainable management of forest and wildlife resources. Others include economic operators such as forest exploitation enterprises that are involved in timber extraction and sport hunting enterprises that are involved in game hunting. The local community, which depends to a great extent on the forest for its livelihood, is in some kind of conflict with all the other stakeholders as it now has limited access to the resources that were hitherto freely collected. The national park was created without the consent of the local community who seemingly is negatively impacted by the presence

of the protected area and external actors. A general lack of trust exists between stakeholders, and improved communication, exchanges and information sharing can enable the various stakeholders to strengthen their collaboration. It is also necessary to bring all stakeholders on the same platform, such as in a consultation workshop, to get their perceptions on possible ways to improve relationships and resolve the conflicts that are rife among them. An effort towards improved community involvement in decision-making and better awareness of the forestry law could also enhance collaboration between stakeholders.

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Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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