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Local citizen group dynamics in the implementation of community forest concessions in the Democratic Republic of Congo

Prince Baraka Lucungu^{a,b,c}, Narayan Dhital^{a,*}, Hugo Asselin^d, Jean-Paul Kibambe^b, Jean Semeki Ngabinzeke^b, Damase P. Khasa^a

^a Centre for Forest Research and Department of Wood and Forest Sciences, Faculty of Forestry, Geography and Geomatics, Université Laval, 2455 Terrace Street, Quebec G1VA06, Canada

^b Department of Natural Resource Management, Faculty of Agricultural Sciences, University of Kinshasa, Democratic Republic of Congo

^c World Resource Institute, Kinshasa-Gombe, Democratic Republic of Congo

^d School of Indigenous Studies, Université du Québec en Abitibi-Témiscamingue, 445 boulevard de l'Université, Rouyn-Noranda, QC J9X 5E4, Canada

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ABSTRACT

Local organizations are key to the implementation of new regulations regarding governance of community forests in the Democratic Republic of Congo (DRC). However, it remains uncertain how the dynamics and power relations within these local organizations affect the governance of community forests. We tackled this uncertainty by investigating how local groups favour citizen participation in the establishment and management of two local community forest concessions (LCFCs). Data from household surveys (N = 101), focus group discussions (N = 11) and semi-structured interviews (N = 49) were used to document citizen dynamics and to compare the types of groups, their compositions, and the activities that were conducted by their members. Our results show diverse local citizen groups, each composed of individuals with common interests, are involved in LCFC governance. These groups provide platforms for local people to share their knowledge and experiences, interests and concerns. Citizen groups further provide learning opportunities for local people and provide a foundation for effective LCFC governance. Traditionally marginalized groups such as youth, women and Indigenous people are still not represented fairly in LCFC decision-making bodies. Indeed, main income-generating activities such as logging are controlled by men and outsiders from urban areas. Regulatory reforms are needed to ensure equitable benefit sharing and participation of all stakeholders in decision-making, while reducing conflicts and increasing the sense of ownership.

1. Introduction

Sustainable forest management requires the participation and support of local communities (Djogbenou et al., 2011; Nyange, 2014). Indeed, the success of forest management policies depends upon how they fit into the local socio-ecological landscape (Angelstam et al., 2019; Fapa Nanfack et al., 2020a). To that end, some authors have suggested that forest management should be decentralized and based upon local values and practices (Bullock and Hanna, 2012; Nyange, 2014). Decentralization refers to the transfer to local communities of ownership, rights and responsibilities over forest management (Ribot, 2002; Bullock and Hanna, 2012; Angelstam et al., 2019), such as in the case of community forests. By clarifying resource access rights, according to rules that are accepted by all stakeholders, community forestry can mitigate land conflicts and reduce anthropogenic pressures on forest resources (Bullock and Hanna, 2012; Fapa Nanfack et al., 2020b). Community forestry is successful when household participation is high, and where local citizen groups interact frequently with governmental institutions (Okumu and Muchapondwa, 2020).

Decentralization of forest management faces various challenges and, consequently, does not always yield the expected outcomes (Mbairamadji, 2009; Magessa et al., 2020). Power devolution sometimes gives rise to new actors and institutional arrangements that can distort the rules of forest management (Sasu, 2005; Ribot et al., 2006; Mbairamadji, 2009; Etongo et al., 2018; Rossi et al., 2019). For example, in a study conducted in India, Bhattacharya et al. (2010) concluded that decentralization was used by elites to satisfy their own desires. The implementation of decentralized forest management policies, particularly

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^{*} Corresponding author. E-mail address: narayan.dhital@gmail.com (N. Dhital).

Table 1

Management bodies of local community forest concessions (LCFCs) in the Democratic Republic of Congo (DRC) as per Ministerial Order No.025/CAB/MIN/ECN-EDD/CJ/00/RBM//2016 of 9 February 2016.

Structures	Composition	Role
Community Assembly (See Articles 6-7)	 Community leader, other customary representatives of the community, and members of the Council of the Wise; Adults united by clan or parental solidarity and established in the local community; Representatives of any group of people who, linked to the local community in any capacity, are traditionally established on the lands of the local community. 	Deliberation and decision-making. Validation of management decisions, implementation of management structures, and definition of practical rules for managing and controlling the concession.
Local Management Committee (See Articles 9-11) Monitoring and Evaluation Committee (See Article 12–14)	 Up to nine members appointed by the Community Assembly, considering the representation of all components of the local community. Representatives of different components^a of the local community, at the rate of one person per component, and contact persons selected based on their expertise. 	Executive and technical body responsible for the day-to-day management of the forest concession, in accordance with the resolutions and guidelines of the Community Assembly to which it reports on its actions. Monitoring and evaluation of forest concession management activities.
Council of the Wise (See Article 15-17)	 Notables or social actors of the local community, as well as any other person who is designated according to their knowledge and in accordance with customs. The composition of the Council of Wise People is representative of all components of the community. 	Consultation, prevention and resolution of disputes related to the management, use and operation of the concession and the sharing of the resulting profits. Provides opinions on the management of the concession, its operation, the implementation of the management plan, and the sharing of the resulting profits.

^a Order 025 defines components as each of the socio-ethnic groups that make up the elements of a local community: clans, lineages, families, gender, Indigenous people, professional groups, among others.

those affecting community forestry, occurs in complex and varied institutional, technical and legal contexts (Bullock and Hanna, 2012; Faggin and Behagel, 2018). An institution refers to a set of agreed-upon formal or informal rules and principles that guide actors to move forward together (Brown and Lassoie, 2010; Ostrom and Baechler, 2010; Faggin and Behagel, 2018). Achieving the objectives of community forestry programs depends largely upon the influence of institutions on forest governance at the local level (Agrawal and Gibson, 1999; Fapa Nanfack et al., 2020b; Magessa et al., 2020). The technical and legal contexts also matter. The former refers to the support and guidance needed by communities to take charge of forest management (Gilmour, 2016; Fapa Nanfack et al., 2020a), while the latter may vary from country to country and is a key factor, given that the success of community forestry requires a supportive legal framework (Pokharel et al., 2005; Gilmour, 2016; Sapkota et al., 2020).

In the Democratic Republic of Congo (DRC), local community forest concessions¹ (LCFCs) correspond to "community forests" (Baynes et al., 2015; Vermeulen and Karsenty, 2015; Gilmour, 2016). In adopting the LCFCs, the Congolese legislator wanted to recognize the customary ownership of local communities over forests (Lescuyer et al., 2019). The legal and regulatory framework for community forestry in the DRC explicitly recognizes the duality between a de facto customary reality, i. e., local communities' ownership over the forests, and a legal entity, the LCFC (Vermeulen and Karsenty, 2015). In this context, different local citizen groups may play specific roles, depending upon the issues (Baynes et al., 2015; Gilmour, 2016; Fapa Nanfack et al., 2020a; Fapa Nanfack et al., 2020b).

Local citizen group dynamics involve a wide range of actors who interact within a complex governance system (Hiwasaki, 2007; Crona et al., 2011; Brown and Sonwa, 2015). This results in various forms of visible and invisible power relations, with significant influence on community motivation and engagement (Rossi et al., 2019; Ramcilovic-Suominen and Kotilainen, 2020). Power relations are partly due to regulations that cede more control to some actors over resource management (Lemieux, 2001; Cassidy, 2021), and may discourage those

with less power to engage in collective action (Pandolfelli et al., 2008). Formal and informal institutions are necessary to reconcile the interests and concerns of the various actors and, therefore, to facilitate LCFC functioning (Ostrom, 1986). Management of LCFCs by local people can be facilitated by local institutions and actors, particularly through their experience and ability to cope with challenges (Uphoff and Buck, 2006; Washington-Ottombre and Pijanowski, 2013). Thus, community cohesion is a key factor in ensuring effective local management of forest resources (Aymoz et al., 2013; KC et al., 2014; Baynes et al., 2015; Dhital et al., 2015). Yet, heterogeneity within communities implies diverse interests, and can reduce the effectiveness of community management outcomes (Chand et al., 2015). In such a context, a small group of actors - often the elites - may benefit from coverage by state services to conduct illegal logging activities, frequently at the expense of the poorest and most disenfranchised members of the community (Wells et al., 2007; Hayes and Persha, 2010).

Even when forest management authority is devolved to local communities, they might be left without the necessary power to counterbalance government agencies (Beckley, 1998; Mbairamadji, 2009). Rigid and restrictive regulatory frameworks that are out of step with local practices and realities are strategies that are often employed to limit community power (Ribot et al., 2006; Fapa Nanfack et al., 2020a). In Cameroon, for example, the persistence of complex administrative and bureaucratic procedures has been one of the main weaknesses of forest decentralization (Efoua, 2001). Social integrity is thus essential to forest management outcomes that are anchored in local citizen group dynamics. To this end, in the DRC context, Ministerial Order No. 025/ CAB/MIN/ECN-EDD/CJ/00/RBM//2016 that was issued on 9 February 2016 regarding the specific provisions for the management and operation of LCFCs has established four management bodies (Table 1).

While the four management bodies institutionalize local participation, they do not necessarily provide equal access to benefits for all citizens, especially those who are traditionally marginalized, such as youth (Robson et al., 2019) and women (Bigombe Logo, 2003). Gender dynamics, including beliefs in socio-historical norms, can undermine the success of participatory management approaches (Killian and Hyle, 2020; Nchanji et al., 2021). "Gender" is used here in a different perspective from sex in the biological sense, which refers to humans in their reproductive roles as males or females. Rather, gender stems from economic, political, and cultural attributes of the participating population. These attributes vary across countries and are underpinned by historical and sociocultural considerations (Baynes et al., 2015; Nchanji

¹ Decree No. 14/018 of August 2nd, 2014, which fixes the modalities for the allocation of forest concessions to local communities, provides the definition of LCFC. It defines a LCFC as "a forest allocated free of charge and perpetually to a local community by the State, on the basis of the forests that it owns regularly by virtue of custom, with a view to its use, in all forms for the satisfaction of its vital needs, with the obligation to apply sustainable rules and practices."

et al., 2021). Gender dynamics can lead to various forms of marginalization and social exclusion that limit the achievement of community forestry goals (Baynes et al., 2015). If left unaddressed, gender issues can be a barrier to the implementation of LCFCs in the DRC.

Indigenous people are another group that is often marginalized (Khadka et al., 2014; Uddin et al., 2019), even though their knowledge is critical to improving forest management practices (Asselin, 2015). Although an official definition of Indigenous people has yet to be adopted, the United Nations (UN) recognizes that Indigenous people inherit and practice unique cultures and ways of relating to the environment. The UN identifies Indigenous people based upon certain characteristics such as self-identification, distinct social, economic or political systems, and distinct language, culture and beliefs (United Nations, 2021).

To meet the future challenges of LCFC governance, it is necessary to better understand the roles of all actors who are involved and their power relationships within the community, with attention to the factors that promote collective action. However, few studies have been conducted so far on LCFC management. Moise (2019), for example, urged the recognition of clan boundary as the smallest spatial unit of LCFCs. Vermeulen and Karsenty (2015) limited themselves to presenting LCFCs as a potential advance form of social forestry, whereas Lescuyer et al. (2019) questioned their economic viability. Nevertheless, no studies so far have directly addressed gender dynamics and power relations within LCFCs in the DRC.

Building on the hypothesis that local citizen group participation and inclusion can positively contribute to LCFC management, the objectives of this study were (1) to establish a typology of LCFC management groups; (2) to document their composition and operation; and (3) to examine power relations and their effects within LCFCs.

2. Methodology

2.1. Study areas

The study was conducted in two LCFCs, i.e., Penzele and Bisemulu, which were located respectively in the Provinces of Équateur and Maniema, in the north and east of the DRC (Fig. 1). The selection of these sites was based upon the fact that they had the legal title granting them an LCFC, together with their progress in the development of a management plan and in the implementation of local governance structures. With different geographical and socio-cultural contexts, these two LCFCs allowed for a comparison of local citizen group dynamics and the challenges of local community participation in forest management.

The first LCFC is in the Bokaka Tribal Chiefdom, Losanganya area, Bolomba territory, in the middle of the equatorial forest, more than 200 km from the city of Mbandaka. With an area of 42,299 ha, this forest concession was granted to the community of Penzele under Provincial Order No. 2010/016/CAB/PROGOU/EQ/NT/2018 on 11 February 2018. Three villages that are occupied by the historic holders of the land tenure are located in the area (Penzele, Embondo and Bongonda), together with five villages that are occupied mainly by migrants (Ilanga, Bongila, Ifuwa, Isulu and Bokaka-Domaine). The total population is estimated at 3707, in 534 households. In Penzele, most of the population belongs to the Mongo ethnic group, which is a Bantu-speaking population. Indigenous people are located partially in the Bondonga village and in riverside villages, although they engage in activities within the LCFC. In the DRC, Indigenous people are considered ethnically and culturally distinct from the majority Bantu population and are sometimes referred to as "Pygmies" (a pejorative term) by anthropologists. They traditionally lead a semi-nomadic lifestyle that is based upon hunting and



Fig. 1. Locations of the Penzele and Bisemulu LCFCs in the northwestern and east-central regions of the DRC, respectively.

gathering of forest products.

The main economic activities in the area of the Penzele LCFC are agriculture, forestry, hunting, gathering and fishing. The climate is humid tropical, with average annual rainfall of 976.8 mm and average annual temperature of 25.8 $^\circ$ C. The terrain is flat, with an average elevation of between 300 and 500 m a.s.l. The hydrological system is dense.

The second LCFC is in the Bisemulu Tribal Chiefdom, Ambwe sector, Kailo territory in eastern DRC (Fig. 1). With an area of 47,013 ha, this concession was officially granted to the community of Bisemulu under Provincial Order No. 01/062/CAB/GP-MMA/2018 on 6 December 2018. The population of the concession area is 11,506 and increasing in most villages. The most represented tribe is the Songola, followed by smaller groups of Boambo, Banganya, Lega and Komo. The Songola, who are considered to be Indigenous, are divided into eight of the ten groups in the Ambwe area. Kiswahili is the Bantu language that is mainly spoken, although each ethnic group has its own vernacular language or dialect, for example, Basongola, Bangengele, Balanga, Bakusu, Batetela, Mituku and Bazimba. Palm oil plantations, mining and logging in dense forests along the Congo river were once the main activities supporting the region's economy. Today, these different industries are mainly artisanal, requiring significant physical work for few economic benefits. The climate is humid tropical, with average annual rainfall of 1800 mm, and average annual temperature of 23 °C, with little seasonal variations.

2.2. Data collection

The data that were used are derived from a mixed approach combining quantitative and qualitative research techniques (Savoie-Zajc, 2010), as was previously performed in similar contexts (Djogbenou et al., 2011; Nyange, 2014). The methods included semi-structured interviews, focus group discussions and surveys, which were conducted in parallel to triangulate the information (Bryman, 2006; Denscombe, 2017). In qualitative research, triangulation provides credibility and validity to the data that are gathered, thereby making it possible to bring together the particularities of each method and maximize the information that is useful for understanding the phenomenon under study (Bryman, 2004). Some focus group participants took part in the individual interviews, given that they had not actively participated in the focus groups.

Participants were people from various forest user groups, including those who were engaged in voluntary activities of formal or informal organizations within the community, together with individuals who were familiar with the history of the community. The selection of participants was made in such a way as to give men, women, youth and other socio-economic groups the same opportunity to participate in the study (Dépelteau, 2010; Roy, 2010). As has been suggested by Reed et al. (2009) and Lienert et al. (2013), various stakeholders were identified who may influence or be affected by natural resource management policies.

To meet the first two objectives of the study, which aimed respectively at establishing a typology of LCFC management groups and documenting their composition and operation, a survey was conducted among the heads of 101 households (37 women and 64 men). These respondents were selected by purposive or selective sampling (Geoffrion, 2009): 54 in Penzele and 47 in Bisemulu. This survey was used to supplement the information that was obtained during the interviews (Nassar-McMillan and Borders, 2002; Bryman, 2006). The questions were related to (i) the types of local groups within the villages of the LCFC, (ii) the membership of the population within these groups, and (iii) the types of collective actions in which they participate. Participants were further asked to identify their reasons for choosing a particular group.

To fully understand the effect of power relations in sustainable forest management (objective 3), the factors that motivate community actors to collaborate were identified and documented (Agrawal and Gibson, 2001). Data were collected between April and November 2019. Using the snowball sampling technique (Browne, 2005), 49 semi-structured interviews were held with forest administration officials, national and international non-governmental organization (NGO) officials, and various forest user group officials (Table 2). The principle of data saturation (Davis and Wagner, 2003; Saunders et al., 2018) was used to determine when to stop the recruitment of new participants.

Eleven focus group discussions were organized at the two study sites, five in Penzele and six in Bisemulu, with 91 participants (26 women and 65 men) (Babbie, 2013). The groups consisted of tenure-rights holders, locals, migrants, and various groups of forest users, including hunters and artisanal forest operators. Almost half of the participants in the individual interviews also participated in the focus group discussions (Peek and Fothergill, 2009).

During focus group discussions and individual interviews, participants were asked to identify and describe the types of powers and actors in their villages, as well as the groups that hold the most power. Levels of involvement and engagement of women, youth and Indigenous groups in community life were also documented during the individual interviews and focus groups (Agrawal and Gupta, 2005).

2.3. Data analyses

2.3.1. Statistical analysis

The data that were collected during the survey were analyzed with descriptive statistics using SPSS (IBM, Armonk, NY, USA). Contingency tables and Chi-square tests were applied to make comparisons between the types of groups present in the two LCFCs, their compositions, and the types of activities carried out by their members. These comparisons were made to identify possible differences and the potential for collective action in LCFCs based upon the contexts in which LCFCs are being managed.

2.3.2. Thematic analysis

Thematic analysis was used to highlight the main elements of convergence and divergence within the participants' statements. The analysis was done manually on qualitative data that were collected during interviews and focus group discussions to organize them into themes that emerged in an inductive manner (Wanlin, 2007; Wolf and Klein, 2007). Preliminary results were presented to communities and stakeholders at multi-stakeholder roundtable meetings for validation. The participants in the validation exercises had all participated in individual interviews or focus groups. Two political-administrative authorities and three members of the Penzele community were invited to the roundtable, which was organized in Mbandaka, Equateur Province, while representatives of the four governance structures of the Bisemulu LCFC were invited to the validation session in the City of Kindu, Maniema Province.

All participants gave their free, prior, informed and continuous consent after being informed of the details of the study. This project was

Table 2

Distribution of interview participants among different categories of stakeholders in the Penzele and Bisemulu LCFCs.

Categories of stakeholders	Number of interviewees				Total
	Penzele		Bisemulu		
	Men	Women	Men	Women	
Territorial administration	5	1	2	0	8
National NGOs	3	1	1	2	7
International NGOs	3	0	0	2	5
Artisanal forestry operators	4	0	4	2	10
Coal miners	1	0	2	1	4
Fishermen	5	0	2	0	7
Hunters	5	0	3	0	8
Total	26	2	14	7	49

approved by the Ethics Review Board of Université Laval (Certificate no. 2017-223).

3. Results

3.1. Group membership

Community members belonged to ten types of groups at the two study sites (Table 3). Some participants indicated that they were part of a group, but could not describe the type.² Membership in groups varied according to gender. Most women were members of mutual aid groups, compared to only about one-third of men. In individual interviews and focus group discussions, most of the women claimed that they belonged to groups that cultivate annual crops, collect non-timber forest products (NTFP), or make a local beverage (*Agene*) that is popular in the Penzele region.

Inherent social norms influence gender roles, regardless of the level of difficulty of the task. For agricultural activities, for example, men work in groups to pool their strength when carrying out hard work, such as felling trees and removing stumps during field preparation. Women do the rest of the work such as ploughing, harvesting, and crop maintenance, among other tasks. Compared to women, men were more frequently represented in lumber dealers groups and artisanal farmers groups at both study sites (Table 3). Women, however, were more represented in religious groups and movements, as well as in community health mutuals. In the category of other wood users, women were more represented in Bisemulu, whereas men dominated this category in Penzele.

All participants in both LCFCs were members of at least one group and most belonged to two groups (Table 4). Most of the groups that were identified were informal insofar as they were not recognized and registered by the state services. Only groups of artisanal forest operators, mutual aid companies, community health groups, and groups of carpenters and wood users were formally organized. Most of the groups in the villages were established with the support from NGOs. This was the case for mutuals such as the assistance and credit mutual, with trades consisting of artisanal operators and carpenters, and wood sellers.

Table 3

Typology and	d diversity of loca	l citizen groups in	both study LCFCs
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Types of groups	Penzele ($N = 47$)		Bisemulu ($N = 54$)	
	Men (<i>N</i> = 28)	Women (<i>N</i> = 19)	Men (<i>N</i> = 36)	Women (<i>N</i> = 18)
Mutual for assistance and credit	15	17	7	17
Local liquor manufacturers and sellers	9	15	0	0
Group-based microfinance (micro-credit)	6	14	9	13
Timber dealers association	20	5	26	11
Artisanal forestry operators	21	0	29	4
Religious association	4	16	6	13
School parents' committee	16	8	12	5
Clan or family	25	19	25	18
Community health mutual	9	13	5	15
Wood products users	17	3	11	14
Other	0	8	8	12

Table 4

Breakdown of	participa	ants by the	number o	f groups o	f which they	are members.

Number of groups	Penzele (N = 47)	Bisemulu (N = 54)
1	11	12
2	27	32
3	3	2
>3	6	8
Pearson's Chi-square test for independence	$\chi^2 = 0.4700, P = 0$.925

Groups tend to include members of the same gender, with the same level of education, practicing similar trades, having the same age, coming from the same family, the same ethnic group or attending the same Church (Table 5). Associations according to membership in the same Church are more common in Penzele than in Bisemulu. Men are associated with groups that are involved in economic activities, such as timber dealers, carpenters or wood product producers. Moreover, men are involved in some strategic groups with respect to power relations, such as school parent committees and clan or family groups. Women are associated with groups that require more volunteer work, have limited power and generate few economic benefits, such as religious groups, community health mutuals and micro-finance groups.

3.2. Power relations

3.2.1. Gender dynamics

In both sites, women are represented in most village activities and groups, and play an important role in the livelihoods of village households. Yet, there is a natural distinction between men and women, with the most productive activities in terms of income generation conducted predominantly by men. Trades related to logging tend to be mendominated, while women are more active in family or ethnic groups, as well as in community health groups. Participants in interviews and focus group discussions indicated that despite women's involvement in different groups, and because they are engaged in various incomegenerating activities, the benefits that are derived from their activities are under the control of their husbands, who decide what to do with the money from the household's productive activities.

Men are selfish. They say that women should not do hard work like harvesting (...) the real reason is that men keep the most profitable activities for them. Even though I am a woman, and I do not have (as much) physical strength as we might think, I can pay people, young people who do not have a job, and they will do this work for me. (Woman, Focus Group 1, Kindu).

Things will not change today! For years, our women never take the axe to go and cut down the trees, that is the work of men. How do you want them to be timber dealers today? (Man, focus group 3, Kailo).

Participants in a focus group in Bisemulu have reported that most of those who were involved in profitable forestry activities reside in Kindu, a township and trade centre in Bisemulu. Members of village communities are only employed as labour and, therefore, the operations do not

Table 5

Number of respondents belonging to groups with various grouping criteria in the two LCFCs.

Grouping criterion	Penzele (N = 47)	Bisemulu (N = 54)	Pearson's Chi-square (P- value)
Gender	29	25	2.3971 (0.122)
Educational level	3	6	0.6921 (0.405)
Occupation	27	21	3.4702 (0.062)
Age	3	7	1.2196 (0.269)
Family	33	31	1.7751 (0.183)
Ethnicity	29	39	1.2642 (0.261)
Church	31	19	9.5190 (0.002)

 $^{^2}$ The question was first asked whether the person was part of a group. Those who answered "yes" were then asked to specify the type of group or activities carried out by their groups. However, some participants, although they answered yes, did not respond to the follow-up question. They are represented by the "Other" category in Table 3.

benefit members of the local community that owns the LCFC. Profitable economic activities are controlled by a few men residing far from the LCFC area.

3.2.2. Community engagement and potential for local collective actions

Formal and informal organizations serve as channels for community members to participate in collective activities. Although participants reported not participating in community decision-making processes, they regularly received information about community life from their Church or other local group. Different types of groups play an important role in local development and provide communities with the opportunity to participate in collective actions. Participants indicated that they are involved in activities that were organized by their Church, in family gatherings, but rarely in initiatives of collective interest such as the maintenance of roads and certain public spaces. In light of the interviews and focus groups, participants felt that some community members rarely participate in public decision-making. This is particularly the case for women, young people and Indigenous people, who are either excluded or consider themselves unable to participate in community activities, because of considerations essentially inherent to social norms. One contact indicated that women were more comfortable speaking to men in particular social contexts such as extended family gatherings, but that they felt a certain reluctance, i.e., a sense of "shame" that discouraged them from speaking to large groups. According to a woman from Équateur Province:

Here, women cannot speak in front of men. Even our great-grandparents have been living like this for years! However, when there is a problem between a woman and her husband, the wife can speak to extended family members at a meeting organized to resolve the dispute.

Contrary to this observation made in Penzele, a woman member of the local management committee of the LCFC in Bisemulu indicated that more and more women are standing up and taking responsibility. These social advances were made possible by contacting teams and technicians from different civil society organizations, who were raising awareness and preparing LCFC application files. These contacts and the training that community members have received, have been mentioned by most participants in interviews and focus groups that were held in Bisemulu. They resulted in emotional experiences that were shared by community members. For example, some residents mentioned that they were initially used to operating on their own and based on their individual experiences. People are now being mobilized collectively because the training that they have received has enabled them to understand the importance of pooling efforts to improve their productivity in various sectors, such as agriculture, fishing or local alcohol production. All experiences, regardless of whether they were training sessions or collaborations with NGO technicians, were learning moments that had a positive influence on collective action. One participant mentioned:

It was an exceptional and rewarding experience, made possible through the human relationships and contacts that this process generated. (...) The first experiences of collaboration and the passion for working together. New doors opened after each meeting, and after various trainings we came back with new perspectives.

This work to raise awareness of gender issues has begun to have an effect. In Bisemulu, for example, women have been encouraged and facilitated to take on roles in LCFC governance structures, and they now lead meetings with men. These training sessions have given women confidence and improved the relations between women and men. Today, at least one woman sits on each governance structure of the LCFC in Bisemulu. In this regard, a female member of the local management committee said:

Here in our committee, it is like a small family, and I'm not shy. In our meetings, everyone has the right to speak, even women... I think it is because we are less in number (...) we have received training together with

men, everyone understands their role. We ensure mutual respect, and it is thanks to the training we have received.

Another woman argued that her experience with the local monitoring and evaluation committee allowed her to discover herself and to improve her self-confidence, as evidenced from the following excerpt:

It is very interesting to be a member of our committee. At first, I had accepted without conviction, but little by little, I got all the members of our team known, I was offered to always take notes of our meetings, which I accepted (...). Since then, I have been solicited everywhere, I sometimes do it even at community meetings.

Members of the four governance structures (Community Assembly, Local Management Committee, Local Monitoring and Evaluation Committee, and Council of the Wise) had a community vision of their action. The proximity of each representative to the village that appointed him/ her to the committee allows them to better understand and report on the different sensitivities to reflect the vision of the communities in the decisions that are being made in each committee. One participant explained it as follows:

We do not come to our meetings for the sole purpose of meeting, but to listen to each other in order to work together. Each member of the committee must bring to the table the concerns of the village or the villages he/ she represents and, in return, everyone must report on the conclusions of the meetings.

Today, some families gather to sell their products and share the profits resulting from their production efforts and sales. Other participants stated that they were not a permanent part of the groups, but that they would join other members of the community in performing some tasks, as illustrated by a young person's statement in a focus group:

We do not have a safe job. But sometimes, some friends who find something pass the information; then we get together to do the job. For example, during the hunting season, we can go and place the traps together... But we do not have specific members, everyone can be a part when there is an opportunity.

Engagement in different groups and LCFC governance bodies played a major role in empowering marginalized groups such as women, Indigenous people and youth. For example, women who would have hesitated to speak in front of men in the past are now taking notes and speaking up more in such meetings, bringing concerns of their constituents to the community meetings and returning to their communities with meeting decisions.

3.2.3. Role of civil society organizations

Civil society organizations are locally recognized non-governmental organizations (NGOs) and have played an important role in setting conditions that are appropriate for community collaboration in community forestry. In both cases that were studied, participants in individual interviews and focus groups reported receiving various training in sustainable forest management, including participatory mapping, value chains and the use of NTFPs from these NGOs. In addition to these specific aspects of forest management, participants indicated that the training focused upon aspects that were related to group dynamics, gender and social inclusion. These training sessions have facilitated collaboration in carrying out certain common activities. Some participants acknowledged that they met for the first time when teams of facilitators and experts from local and international NGOs organized training workshops. One participant said:

Everyone is used to doing business without asking for help. Few times we met were at the workshops and when NGO people came to train us on community forestry, on sustainable approaches to land use, or on the processing and marketing of forest and agricultural products. Civil society organizations support and encourage regular meetings of committees set up for the management and governance of LCFCs. In Bisemulu, the legitimacy of governance structures stems from the fact that each committee member has been appointed by a group of the villages that he/she represents, and to whom he/she is accountable. This corresponds to local social organization and facilitates the emergence of a sense of belonging and a shared vision of LCFC management. In two focus groups with members of the four governance structures of the LCFC in Bisemulu, some participants indicated that they experienced moments of relaxation and well-being during their meetings, while stressing that this experience has transformed the nature of the relations between them. One of them explained:

We realize that working together is not as easy as we thought, we have to get to know each other, there are times of dispute, but we have to agree to move forward [...], but we take pleasure. Relationship between men and women are increasingly improving within different governance structures, and we hope that this will extend to non-committee members over time.

The Church, especially the Catholic Church through the diocesan development office, plays an important role in the implementation of development projects at the local level, with ongoing interventions in capacity-building initiatives and the development of agricultural projects. On one hand, the diocesan development office is a key player in training and civic engagement in the study area. On the other hand, schools tend to be a force, as teachers and those who work directly in education are credible to the rest of the community. Thus, religious denominations and schools (through parent committees) offer the opportunity and space for more collaboration between the different categories of actors. This is illustrated by the following statement made in an interview with a contact:

People rub shoulders according to affinities or whether they spend moments together (...). You will see, for example, even outside of service hours, teachers spend evenings together in the village. On the other hand, those who attend the same Church also socialize with each other (...), they feel confident while doing like this. Other people prefer to meet, spend time and do things together only with people of their age or generation.

In community life, it is the elders who have influence or a certain degree of authority. They speak publicly, especially in village assemblies. Like women, youth and other minority groups, Indigenous people remain on the sidelines. Few Bantu agree to approach Indigenous people, even in situations that require some form of collective action, such as agricultural labour or the collection of forest products by an extended family. In one focus group, this topic came back several times and was deplored by an Indigenous elder in these terms:

We are isolated. We are not involved in anything here. They consider us to be sub-human, and yet we are brothers (...) it is only when NGOs come from Mbandaka or Kinshasa that we are invited to their meetings, but when they leave, everything goes back to the way it was. It is not just because these forests are also for us, our whole life is there.

Local and international NGOs are playing a key role in bringing communities together for a common goal of sustainable forest resource management. It is during training that they provide or meetings that they facilitate where local community members with different interests come together, put forward their concerns, and explore the possibility of achieving a solution that is agreeable to all.

4. Discussion

4.1. Typology and composition of village groups

Samndong (2016) argues that local citizen groups encourage participation in various community-based development initiatives. Local citizen groups play a key role in information sharing and contribute to collective decision-making processes by reducing information asymmetries and transaction costs. Indeed, the lack of cooperation between stakeholders, together with the centralization of decisionmaking power, has been a key factor in the failure of the state and the market to manage forests (Oyono and Ludovic, 2003; Jones et al., 2012). Groups within the communities are more appropriate than a coercive central state for establishing institutions which enable effective governance of natural resources (Thondhlana et al., 2015). Approaches that entrust full control of resources to central governments or private entities are less effective in managing the natural resources that are used jointly by different stakeholders (Harribey, 2011). In a study in Liberia that was coordinated with randomized experiments in five other countries, Christensen et al. (2021) have shown that citizen monitoring broadens participation in rule-making, increases accountability of chiefs (local leaders) and material benefits for households and, ultimately, enhances forest governance.

Although their privileged contact with communities predisposes them to play a role in sustainable forest management, not all community groups have the required technical and organizational capacity (Uphoff and Buck, 2006; Spielman et al., 2008; Brown and Sonwa, 2015). Local citizen groups should be empowered by training and other capacitybuilding activities to prepare them to take on the various tasks that are involved (Lynch, 1998; Spielman et al., 2008; Brown and Sonwa, 2015). In the management of LCFCs, for example, it would be essential to strengthen legal, institutional and operational capacity of these groups for the management of community forests. There is often a lack of synergy and collaboration between different groups (Saxenian and Sabel, 2008; Rickenbach, 2009). In Madagascar, the lack of accountability of local actors, low transparency in local fund management, insecure land tenure, and limited participation of local people in planning were also identified as the key issues and challenges in forest governance (Dhital et al., 2015).

The groups that were identified in the two study sites tended to be homogenous, as they included members of the same gender, with the same level of education, practicing similar occupations, having the same age, coming from the same family, the same ethnic group, or attending the same Church. Homogenous groups are preferred over their heterogeneous counterparts in generating collective action, give that the latter pose challenges in building consensus and enforcing rules due to their inherent differences in understanding and interpretation of rules (Varughese and Ostrom, 2001). For example, religious groups and schools (through parent committees) foster collaboration between different segments of the population, allowing them to work on various themes, regardless of the affinities of social categories (Ojha et al., 2016; Samndong, 2018). These homogeneous spaces, where people identify as being similar, are the medium of political expression for local democracy (Angelstam et al., 2019; Pelletier et al., 2018). However, group homogeneity can sometimes be an obstacle to local development, thereby limiting learning opportunities compared to groups whose members have diverse experiences to share (Crona et al., 2011; Brown and Sonwa, 2015). Some authors view local groups as important sources of information on local, traditional and official forest management institutions (Jones et al., 2012; Samndong, 2018). Indeed, as Bullock and Hanna (2012) and Samndong (2016) have suggested, a locally inked institutional system allows challenges that are perceived and experienced by local communities to be addressed. Moreover, as Brown and Sonwa (2015) and Pratiwi and Suzuki (2017) have pointed out, rural institutions and the networks that they form play a key role in helping vulnerable community members to adapt to unexpected situations, such as climate change. Thus, the governance mechanisms of LCFCs must be considered in the context of local realities (Thondhlana et al., 2015) rather than imposed by the central government or other external entities.

Some authors argue that the homogeneity of local groups fosters the effective conservation of biodiversity and reduction of poverty (Varughese and Ostrom, 2001; Antinori and Rausser, 2007; Thondhlana et al., 2015), yet not all such groups have been found to be effective. For example, Buchy and Rai (2008) investigated the status of resource access and benefit sharing in women-only community forest user groups in western Nepal and found that the level of equity in benefit sharing among the women who were involved was not different from mixed forest user groups where both men and women were members. Thondhlana et al. (2015) reported that even within some communities that are considered homogeneous, conflicts can arise because of competing interests, lack of transparency, strained power relations or unfair access to resources. Male domination and elite capture of access and control of resources and sharing of benefits are two major shortcomings that have been observed in several decentralized forest management regimes (Ribot et al., 2006; Buchy and Rai, 2008). Since there are contested reports on homogeneity or heterogeneity as the preferred structure of local groups involved in collective action, additional research will be required before concluding whether the homogenous structure of groups that are involved in LCFCs is more effective or not.

4.2. Power relations

Within the communities under study, power relations are dictated and governed by gender and class considerations. Consequently, they affect the level of community involvement. Certain community members are sidelined and have little or no participation in decision-making processes. Power relations determine the attitude of the local authorities and those of the main actors who are involved in forest management, which in turn affects the level of involvement and interest of citizens (Ribot and Peluso, 2003; Thondhlana et al., 2015). Examining local citizen group dynamics helps to understand how community members can influence those who govern or have the responsibility to represent them (Samndong, 2016; Ribot et al., 2008; Christensen et al., 2021). The results show that local NGOs can play a key role in encouraging collaborative practices among community members and ensuring good governance of LCFCs.

4.2.1. Gender dynamics

There are significant differences in the roles of men and women pertaining to LCFC governance in the study areas. In the DRC in general, and particularly in both cases that were studied, most communities are patriarchal, which has an impact on forest management and access to resources (Samndong and Kjosavik, 2017). Previous studies have indicated that like youth and Indigenous people, women have traditionally experienced inequalities in the distribution of collective resources, with limited access to opportunities (Ribot and Peluso, 2003). These stakeholders are not involved in decision-making processes and are nearly absent from most income-generating activities, such as logging (Marit and Aasland, 2016; Samndong, 2016). Yet, frequent visits by women to the forest mean that they possess the knowledge necessary to manage forest resources (Manfre and Rubin, 2013). For example, women are very active in the collection of firewood, as well as various NTFPs for family use, and should not be sidelined from the decision-making process to achieve a common goal of sustainable forest management (Manfre and Rubin, 2013).

Community members express their voices in some instances, such as family reunions, regardless of the social categories to which they belong. They also share their concerns with their peers of the same age or common professional interests (Stiem and Krause, 2016; Samndong and Kjosavik, 2017). This result is interesting in that it illustrates the spaces where certain marginalized individuals or groups can raise their concerns. In the DRC, patriarchal social structures are characterized by an unequal distribution of power in the family and in the society at large that favours men (Pelletier et al., 2018). This imbalance of power is manifested in governance structures, regardless of whether these are in the form of formal laws or social norms that perpetuate gender inequality. For example, in forest communities, women tend to move away from discussions involving men, especially when it comes to discussing distribution of forest resources (Stiem and Krause, 2016). Social norms play a key role in perpetuating gender gaps within communities (Coleman and Mwangi, 2013; Stiem and Krause, 2016; Milazzo and Goldstein, 2019; Nguyen et al., 2020). The regulatory and legal framework for the implementation of community forestry, therefore, should ensure gender equality (Coleman and Mwangi, 2013), while also considering reforms explicitly alluding to gender equitable involvement in LCFC governance structures. Yet, such actions could provoke negative reactions if informal systems and social norms are stronger or if traditionally powerful actors oppose these changes (Milazzo and Goldstein, 2019; Nguyen et al., 2020; Nxumalo and Fagbayibo, 2020). Education and awareness campaigns on the importance of gender equity in the management of LCFCs may be necessary in such circumstances.

4.2.2. Community participation

Few community members are directly involved in logging, which is considered the most income-generating activity at the local level. This activity requires substantial financial resources to pay for operating equipment and to pay the workforce (Adebu and Kay, 2010). Community members are used as labour by the operators, most of whom come from Mbandaka and Kindu, i.e., two city centres that are located far away from the forests.

Various other inequalities were found at both sites with respect to access to information and participation in decision-making processes, particularly for youth and Indigenous people. The latter group is considered inferior, mainly in Penzele, as is the case in the entire province of Équateur (Samndong and Kjosavik, 2017; Pelletier et al., 2018). This can reduce social cohesion, increase inequality and maintain conflict within the community (Bullock and Hanna, 2012; Gilmour, 2016; Pelletier et al., 2018). Regarding youth and Indigenous people in particular, the results of this study reinforce the findings of previous studies that were conducted in rural areas, which showed that these categories of people are restricted in their access to information and that they do not have the opportunity to express themselves (Baynes et al., 2015; Manfre and Rubin, 2013). Unfortunately, inequalities in local communities often limit the achievement of favourable socio-economic and environmental outcomes of community forestry programs (Baynes et al., 2015; Samndong, 2018). Indeed, for a sustainable forest management program to succeed, it is essential that all sections of society are provided opportunities to access and use forest resources (Manfre and Rubin, 2013; Fapa Nanfack et al., 2020a; Christensen et al., 2021).

4.2.3. Role of civil society organizations in LCFC implementation

Over the years, the socio-historical context of forest management in the DRC has led to a climate of mistrust between communities and state services, particularly in the area of forest management (Baraka et al., 2021). The two communities that were studied received a range of training from civil society organizations regarding group dynamics, negotiation, community dialogue, and forest management. These training sessions seem to have improved practices and supported collective initiatives to develop forest resources.

Civil society organizations that support local communities in the community forestry process have also received technical and financial support from some international NGOs, including the Rainforest Foundation Norway for Penzele, and the German Society for International Cooperation for Bisemulu. Technical and financial partners, in collaboration with civil society organizations supporting the community forestry process, play an important role in facilitating the management of LCFCs by local communities (Spielman et al., 2008; Brown and Sonwa, 2015). Other studies have shown that support from external organizations, including NGOs, plays an important role in community empowerment and self-confidence (Baynes et al., 2015; Samndong, 2016; Samndong, 2018). Community forestry programs often fail because of significant challenges that are faced by local communities, including a lack of professional expertise and a lack of technical, financial and institutional capacity (Baynes et al., 2015). The

contribution of external organizations to building the capacity of local groups is thus essential (Rickenbach, 2009; Lescuyer et al., 2019; Fapa Nanfack et al., 2020a). Although civil society organizations seem to play a part in the successful implementation of LCFCs, active support of the government to make such initiatives successful is equally important. This study showed that beyond legal reform, government participation in the implementation of LCFCs was limited. Instead, complex bureau-cratic structures are increasing transaction costs of the LCFC. Similar results were observed by Efoua (2001) in Cameroon.

4.3. Building on the traditional model of social organization

Understanding local citizen group dynamics allows to consider the local context, predict forest management outcomes, build on existing strengths and anticipate barriers in the context of LCFC management (Bullock and Hanna, 2012; Nyange, 2014; Fapa Nanfack et al., 2020a; Ojha et al., 2016). Homogeneous groups, whose members are identified according to their affinities, offered spaces of expression in the two communities that were studied. The establishment of spaces that are adapted to the way the community operates can allow all categories of stakeholders to be heard (Agrawal and Gibson, 1999). Furthermore, it is important that LCFC governance structures receive support to consolidate and promote institutional recognition of community participation frameworks (Bullock and Hanna, 2012). If separate spaces for deliberation are not available, it is important to ensure that vulnerable social groups are represented within governance structures (Baynes et al., 2015; Baynes et al., 2016; Górriz-Mifsud et al., 2016).

5. Conclusion

This study aimed to identify and elaborate a typology of local citizen groups within LCFCs, understand their composition and functioning, and examine the effects of power relations and gender dynamics within LCFC governance. Local citizen groups have significant potential for collective mobilization and, therefore, play a key role in LCFC governance. In both case studies, there is a diversity of groups whose members share certain socio-cultural traits or interests, and are mobilized towards common affinities and goals. Most community members belong to at least one group, and such groups tend to be homogenous. Groups provide spaces to express concerns, share experiences, and benefit from learning opportunities. They provide a foundation upon which individual or collective activities can be implemented, thereby facilitating effective LCFC governance and the creation of economic value.

Challenges remain to achieve the common goal of sustainable LCFC management. A reform of the legal framework of community forestry appears necessary, to ensure that the governance structure of LCFCs more closely reflect the local context. Indeed, power relations shape access to and use of forest resources. Traditionally marginalized groups such as youth, women and Indigenous people should be represented in the decision making bodies of LCFCs, as their exclusion can result in the loss of important sources of information and expertise. Members of local citizen groups need training and external capacity-building support to enable them to play an effective role in LCFC governance. Civil society organizations can provide such training and, thus, can play an important role in empowering local citizens, questioning social norms, and restoring a climate of trust between communities and state forest services. Mechanisms to resolve conflicts arising due to legal plurality also need to be established. The government should simplify the LCFC implementation process, so that users can complete it at a reasonable cost.

Author statement

Prince Baraka: Conceptualization, methodology development, data collection and analysis, writing

Narayan Dhital: Guidance on research conceptualization and

methodology development, support in data analysis and writing Hugo Asselin: Support in data analysis and writing Jean-Paul Kibambe: Reviewed the manuscript Jean Semeki Ngabinzeke: Reviewed the manuscript

Damase P. Khasa: Overall direction of the research, logistical support, reviewed and edited the manuscript

Declaration of Competing Interest

The authors declare no conflict of interests.

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