

Research article

Institutional rearrangements in the north Luangwa ecosystem: Implications of a shift to community based natural resource management for equity in protected area governance

Rhoda Nthena Kachali ^{a,b,*}, Neil M. Dawson ^c, Jacqueline Loos ^{b,d}^a *Institute of Ecology, Leuphana University Lüneburg, Universitätsallee 1, 21335, Lüneburg, Germany*^b *Social-Ecological Systems Institute, Leuphana University Lüneburg, Universitätsallee 1, 21335, Lüneburg, Germany*^c *School of Global Development, University of East Anglia, Norwich Research Park, Norwich, NR4 7TJ, United Kingdom*^d *Department of Botany and Biodiversity Research, University of Vienna, Rennweg 14, 1030, Vienna, Austria*

ARTICLE INFO

Keywords:Area-based conservation
Community-based natural resource management
Customary institutions
Power relations
Full and effective participation
Traditional leadership

ABSTRACT

Community Based Natural Resource Management (CBNRM) is presented as an equitable approach, particularly relative to strict types of Area-based conservation. In Zambia, traditional and formal, contemporary institutions were combined to leverage CBNRM for natural resource management. We investigate whether and how this shift in conservation approach and interaction between institutions works in practice, and to what extent it produces more equitable governance processes. We identified 30 key informants from NGOs and government departments via snowball sampling. We conducted 20 focus group discussions involving local community participants in three Game Management Areas (GMAs) adjacent to North Luangwa National Park. Focus groups were divided by age and gender to minimize any potential influence of unequal power relations. Data collection included informal discussions with individual community members and participant observation. We found that the customary roles held by chiefs gave them relative power over the Community resources board and made them gatekeepers for NGOs and government institutions. Instead of fostering community participation and empowerment, new CBNRM institutions have had the unintended consequence of increasing the customary chiefs' power through commercialization and bureaucratization of their positions. Rather than reinforcing local and indigenous institutions CBNRM has become a vehicle through which governments and NGOs centralize power and manufacture consent while weakening traditional institutions and reproducing existing patterns of inequity. This research provides unique insights into the workings of a CBNRM institution that is a hybrid between traditional (socially embedded) and Government (bureaucratic) institutions. We recommend that rather than simply setting up idealized institutions as a means to devolve power and enhance equity, the realisation of effective local participation and representation in CBNRM projects requires careful assessment of cultural contexts, local institutions and power dynamics.

* Corresponding author. Social-Ecological Systems Institute, Leuphana University Lüneburg, Universitätsallee 1, 21335, Lüneburg, Germany.
E-mail addresses: rhoda.kachali@leuphana.de (R.N. Kachali), Neil.Dawson@uea.ac.uk (N.M. Dawson), jacqueline.loos@univie.ac.at (J. Loos).

<https://doi.org/10.1016/j.heliyon.2024.e33549>

Received 2 February 2024; Received in revised form 18 June 2024; Accepted 24 June 2024

Available online 24 June 2024

2405-8440/© 2024 The Authors. Published by Elsevier Ltd. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

1. Introduction

Protected Areas (PAs) have, in many instances, led to the displacement and exclusion of Indigenous Peoples and Local Communities [1–3]. In Africa, many areas that had once been important hunting grounds and sacred sites for Indigenous Peoples and Local Communities came under the centralized control first of colonial and later national governments [1,2,4,5]. The restrictions that came with conservation drove resistance from local communities which led to declines and local extinctions of key species such as elephants and rhinos starting in the 1970s [5–8]. Conservationists began to question the ethics and effectiveness of interventions that forced local people to comply with rules and regulations that harmed their social and material well-being [9,10]. Thus, in recent decades, alternative forms of conservation interventions have emerged involving greater devolution of control and hybrids between customary and contemporary institutional arrangements, with the aim to implement more just strategies for governing protected areas and managing natural resources within them [11].

As a response to the failure of conventional PA governance, several countries in East and Southern Africa have implemented Community Based Natural Resource Management (CBNRM) programs [12,13]. The consensus was that shared governance with local people was the best way to shift towards a more balanced and equitable approach that could more effectively reconcile the relationship between biodiversity protection and the wellbeing of local people [1,3,7,14–16]. CBNRM aimed to create decentralized, socially inclusive institutions for sustainable utilization of natural resources through the incorporation of local institutional arrangements for natural resources management and benefit sharing mechanisms [17]. In many cases, policy shifts that facilitated the creation of these new institutions redefined resource management and local governance arrangements through the creation of new institutions that included the participation of state and non-state actors [18].

Local peoples participation in governance of protected areas is considered to be paramount for conservation success [19]. However, participation has often been measured only by frequency of opportunities local people have to attend meetings or express their opinions about conservation. This ignores the complexity of decision-making which involves multiple actors across different scales with varying levels of influence as well as diverse values, interests, capacities and resources [20,21]. Although the effective implementation of CBNRM initiatives are contingent on local actors and their institutions, there is little research on their roles and bargaining power to advance transformation towards more equitable governance of PAs [22]. To advance understanding of transformations towards more equitable governance, there is therefore a need to explore the role of diverse actors, the way in which different customary and contemporary institutions interact through CBNRM to shape the quality of their representation, participation and influence in decision making [23].

Institutional design for CBNRM was based on the premise that, by including local people, local norms that had evolved over long time-scales could be leveraged to promote collective action towards sustainable resource use [23–25]. The ways in which CBNRM is “formed, promoted and institutionalized” arises through various levels of influence consisting of diverse values, considerations and motives that span the local, national, and international levels [8]. Despite the obvious promise of CBNRM in terms of power-sharing, conflict resolution and equity, practical experiences have been plagued with challenges. CBNRM has been criticized for commonly being implemented through mostly top-down blueprint approaches without sufficient adaptation to differing contexts [8,26]. Further, related challenges include: elite capture, conflict and internal divisions within communities amid changing cultural contexts [27,28,29]. Therefore, understanding how CBNRM contributes to more equitable protected area governance outcomes requires us to unravel the institutional arrangements and internal dynamics of different actors.

We therefore draw on the concept of bricolage to examine the multifaceted and dynamic nature of natural resource management and the fit between institutions with the livelihood systems and practices in which they are rooted [30]. Bricolage refers to a process by which people consciously and unconsciously draw on existing social and cultural arrangements to shape institutions (Fig. 1). Bricolage centers on “critical institutionalism”, drawing attention to actors’ social and cultural embeddedness by acknowledging their complex identities and the practice of cross fertilization between formal (bureaucratic) and informal (socially embedded) institutions which may result in equitable or inequitable outcomes. This is in contrast to what Cleaver calls “old institutionalism” a perspective that institutions were able to determine the behaviour of individuals simply through ‘design principles’ focused on the codification of written rules and property rights. The best representation of design principles are Ostrom’s [31] eight principles of ‘institutional strengthening’. Cleaver [30] argues this presents a simplified unilinear model of institutional evolution that a purely instrumental view of cultures and social structures. This is a simplistic view of governance, which has been noted among conservationists, NGOs and

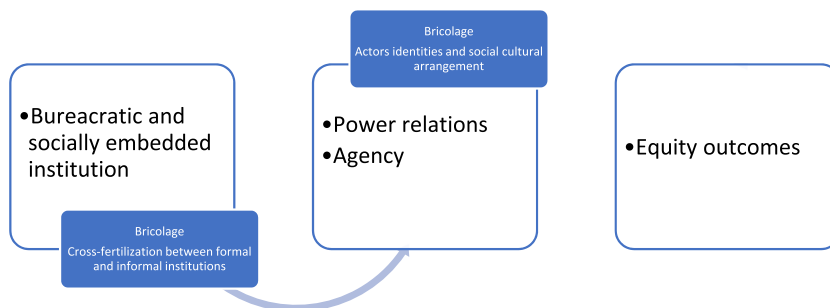


Fig. 1. Illustration of the linkages between institutions, bricolage and equity outcomes.

governments implementing CBNRM [32].

This research provides unique insights into the workings of a CBNRM institution that is a hybrid between traditional (social embedded) and Government (bureaucratic) institutions. Through an in-depth case study of the institutional and social dynamics of a CBNRM initiative in Zambia, we explore the extent to which a hybrid institutional design, which intends to bridge customary authority with equitable resource management in protected areas enables more equitable protected area outcomes. The study addresses the conflicts and marginalization within CBNRM that may occur vertically between local people and government actors as well as horizontally within local communities to unveil factors that may impact collaborative action and equitable governance [33]. We apply the following research questions to the Zambian case study.

- i. How do institutional arrangements impact power relations in the governance of the North Luangwa Ecosystem?
- ii. How do institutional arrangements impact the quality of local participation and representation in the North Luangwa ecosystem?

Findings from this research can help sharpen governance and institutional interactions for conservation that bring about equitable collaboration and long-term sustainability. From a policy perspective, the results provide insights into the governance of PAs by bridging the gap between local peoples culturally based motivations which are still embedded in customary institutions, and broader political structures.

CBNRM efforts effected across Sub-Sahara Africa were intended to be a form of democratic decentralization which established and scaled up the popular participation that would make CBNRM effective [34,35]. In Zambia, governance design for more equitable outcomes from protected areas became enshrined into law through the Zambia Wildlife Act of 2015. This act facilitated the formation of Community Resource Boards (CRBs). A CRB consists of between seven to ten community members who each represent a Village Action Group (village Action Group). Households in each village elect at least one community member to the village Action Group committee (Fig. 2). The CRB is part of a governance structure embedded into the regional and national levels of PA governance. It includes socially embedded customary institutions represented by the local chief as well as bureaucratic or formal government institutions represented by the Department of National Parks and Wildlife (DNPW) and the District council. The Chief and DNPW representative are represented on Community Resources Board as advisors and to provide oversight. By law, Chiefs are the Patron of the CRB [36]. They appoint a representative to sit on the board and provide guidance and advice for the CRB. The CRB and DNPW are also in partnership with various Non-Governmental Organizations who are the main conduit for funding of conservation and livelihood interventions.

The rationale behind the structure of the CRB was the intention of ‘Giving back what was taken’ Mwenya et al., 1990 quoted in Ref. [37] This institutional arrangement was meant to undo the displacement of the chief’s customary authority which was lost under colonial rule while also providing legitimacy to the democratically elected CRBs [5,37,38]. CRB entails formal public structures with

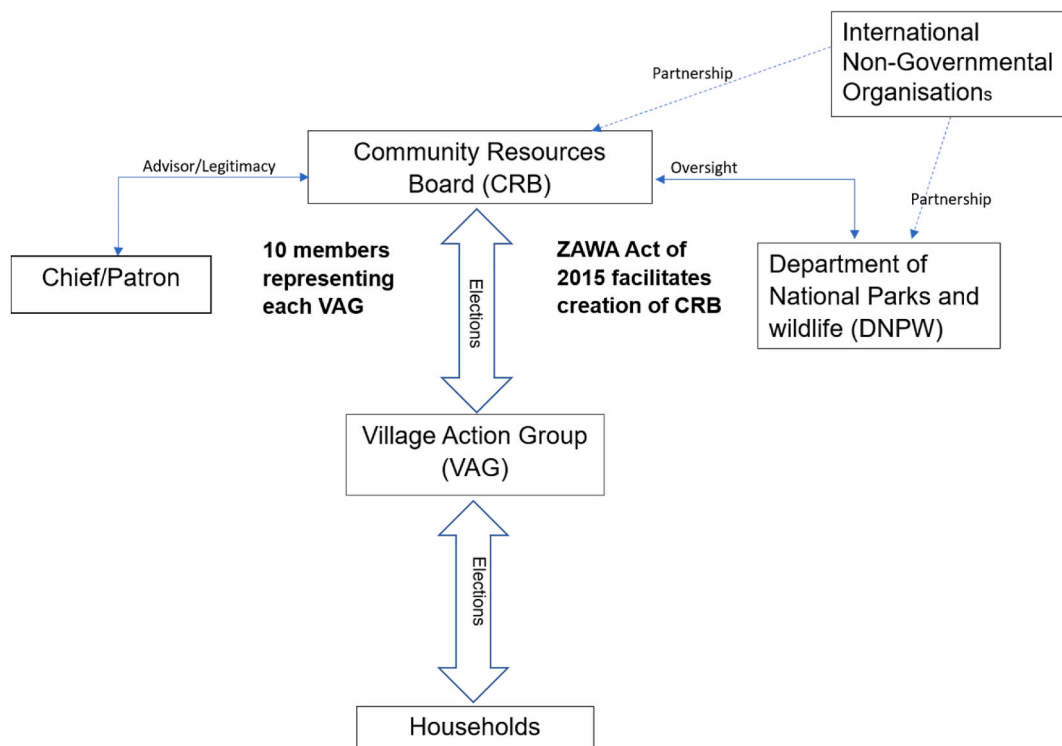


Fig. 2. Illustration of CBNRM governance structure in North Luangwa Ecosystem.

clear boundaries, transparency and rules that should enhance participation and benefit sharing. Despite mixed results, CBNRM is considered the best way to achieve conservation equity for local peoples living adjacent to PAs going forward [34,39]. CBNRM is also important for addressing cross-cutting global challenges, such as climate change, conservation, poverty, and food insecurity [39].

2. Methods

2.1. Study area

The case study area is in North Luangwa National Park, and its surrounding Game Management Areas (GMAs) collectively known as the North Luangwa Ecosystem (Fig. 3). North Luangwa National Park covers 4636 km². It is the northernmost of three parks in the Luangwa River valley. The park was initially founded as a game reserve in 1938 and was upgraded to its current International Union for Conservation of Nature (IUCN) category II status in 1972 [40]. No human settlement or other types of land use except for conservation, tourism or research are allowed inside the park. The park is the site of a Black Rhino re-introduction and has the highest density of elephants in the Luangwa Valley [41]. Surrounding Game Management Areas (GMAs) act as buffer zones, allowing human settlements and permitting sustainable consumption of wildlife. These areas fall under IUCN Management category VI. The GMAs

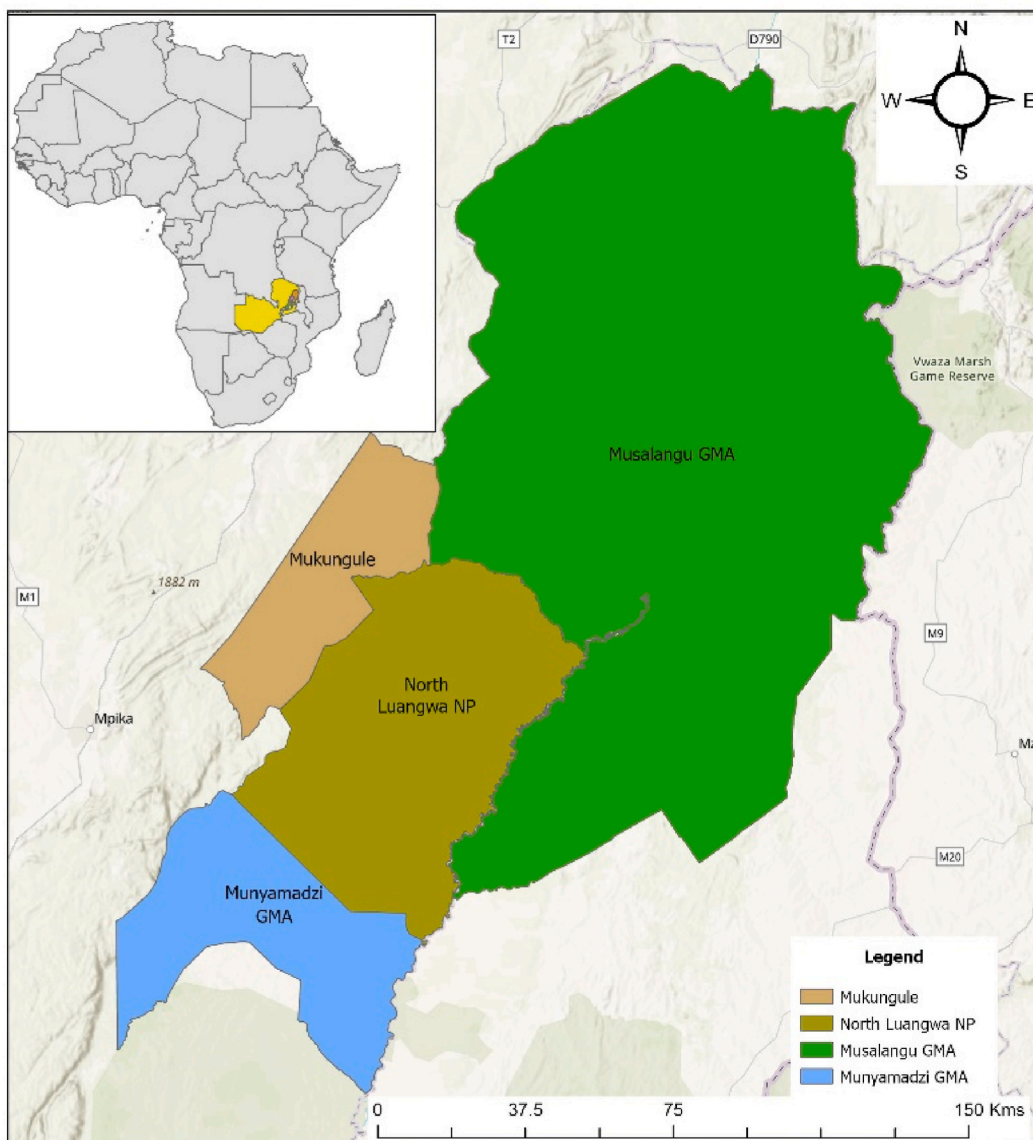


Fig. 3. Map of North Luangwa National Park and surrounding GMAs with its location within Zambia highlighted in green in the upper left corner. (For interpretation of the references to colour in this figure legend, the reader is referred to the Web version of this article.)

cover a total area of 22,500 km² with Musalangu covering the largest area of 17,350 km² followed by Munymadzi at 3,300 km² and Mukungule at 1,900 km².

Local people in GMAs belong to two related groups, these are, Bisa in Mukungule and Munyamadzi and the Senga in Musalangu [42,43]. Present day Sengas separated from the main Bisa chieftainship in the 18th century and settled among the Tumbuka speaking people of Musalangu while other Bisa peoples settled in Mukungule and Munymadzi [42,43]. Bisa society was historically organized around hunting guilds which bestowed status on members. Hunters were esteemed as men of knowledge, wisdom and skilled providers of sustenance who possessed the experience needed to lead their kinsmen [13,43]. With the advent of modern conservation, local hunting went from a communal act to an individualized activity that was considered illegal. Once community rites that marked important life events have become secretive and dissident activities [13].

2.2. Data collection

Data were collected from September to December 2022. Data collection entailed unstructured key informant interviews, focus group discussions and participant observation. Thirty stakeholders involved in governance were initially identified based on a snowball sampling approach. These key informants were interviewed in the study area as well as in the capital Lusaka where headquarters for NGOs and government departments are located. In the study area, a total of 20 focus group discussions involving local community participants were conducted, 8 in Munymadzi, 6 in Musalangu and 6 in Mukungule GMAs respectively. Each focus group had between 7 and 12 participants, and separate focus groups were conducted based on their age and sex. Focus group members were identified through the village Action Group chairpersons and Village Headmen who were key respondents identified through the snowball sample. Each focus group participant came from a different village Action Group so that there was a wide representation of views from each chiefdom. Participants were also divided by age and sex to represent their different lived experiences. Dividing groups by gender and age was important to minimize any potential influence of unequal power relations.

Prior to interviews all respondents were asked to give verbal consent. Verbal consent was preferred due to low literacy levels among community members. During the discussions, participants were invited to consider which stakeholders were involved in and had influence over governance, and decision-making in the PA. Data was also collected via opportunistic observations at five meetings held in the study area during the research stay. Three of the meetings were convened by proponents of a Reducing Emissions from Deforestation and Forest Degradation (REDD+) project while two were agricultural cooperative meetings convened by local community members.

The first author also had informal interactions with local community members to explore daily routines, livelihood activities and relationships with governance institutions. These interactions helped to build trust, which supported to direct the discussions during the focus groups. Informal conversations and daily observations served as a way of triangulating data [44]. Informal conversations and secondary data collection was also meant to reduce respondents bias as a result of negative asymmetries, a case where respondents, place more information value on adverse events and think of them as more valid indicators of reality [45]. The insights gained and trust established during the participant observation and unstructured interviews helped to direct the discussions during the focus groups as well as to support the thematic data analysis [10].

All interview conversations and focus group discussions were conducted by the first author in English, Bemba or Tumbuka depending on the preferred language of a respondent. The first author was fluent in English and Tumbuka and had a working knowledge of Bemba. A local translator participated in the Bemba and Tumbuka interviews to help articulate local terms surrounding equity that were context-specific. Interviews were recorded after participants gave their consent and subsequently transcribed and coded with the MAXQDA 2022 software.

Time and access to parts of the study area were key constraint during the field work. Parts of Munyamadzi GMA were unreachable due to rough terrain, lack of bridges over main rivers and their isolated location in Luangwa valley. Given the need to gain a deeper understanding of local community actors and how they interacted with each other, a longer term ethnographic approach is recommended in the study of environmental justice in traditional hierarchical societies such as those of the North Luangwa ecosystem [46]. Fortunately, the first author is native to eastern Zambia and lived in the study area from 2009 to 2015. She was thus able to leverage previous knowledge and trust built with local actors prior to the field study.

2.3. Coding and analysis

The coding process included a categorization of governance stakeholders based on institutional affiliation as well as ability to influence or control the behaviour of others with respect to natural resource governance [47]. Governance stakeholders were also categorized as formal or bureaucratic or socially embedded customary or traditional institutions. Traditional institutions can include “chiefs, lineage leaders, vigilantes, religious fraternities, political factions and activists, hometown associations, and neighbourhood groups [48]. They are also called ‘twilight institutions’ which refers to the fact that various institutions “have a twilight character; they are non-state actors who exercise public authority” [48].

The coding also identified themes and narratives that occurred in interview transcripts and then linked them to dimensions of equity. Equity is a product of intersecting dimensions which include distribution, procedure, and recognition [28,49]. Recognition equity deals with respect for different identities as well as social and cultural differences, including gender [50,51]. Distributive equity deals with equitable distribution of environmental goods and services as well as costs related to nature conservation while procedural equity seeks to establish participatory and inclusive decision-making processes that engender transparent and meaningful involvement of relevant actors in environmental affairs that concern them [49,52]. In a first round of coding, we inductively created codes

according to themes of equity that were perceived locally. In the next round of coding, a deductive approach was taken in classifying codes according to equity dimensions as described by Schreckenberg [52] and Schlosberg [49]. The coding for this paper has been informed by conceptualizations of governance and procedural equity. Subjective well-being and people's behavior especially is influenced by perceptions of procedural justice with significant consequences for conservation and equity outcomes [49,53].

We thus analysed narratives and themes with regard to bureaucratic and socially embedded customary institutions in relation to procedural justice in PA governance. We investigate how diverse governance actors interact to determine how power is exercised as well as how less powerful actors were represented and incorporated into decision-making.

3. Results

Our results highlight the complex power dynamics and challenges within the governance of the North Luangwa Ecosystem, where different stakeholders, including the government, NGOs, traditional leaders, and CRBs, play critical roles but often with unequal power and limited community participation, affecting the equity outcomes in the ecosystem's governance. In the first part, we provide an in-depth examination of the power relations among various stakeholders involved in the governance of the North Luangwa Ecosystem and the way in which different institutions, particularly customary authority and contemporary democratic institutions interact within CBNRM governance. In the second part, we report on community participation and representation within the governance framework. The discussion then focuses on the impacts of these power dynamics and limited community participation on equity in community-based natural resource management.

3.1. Institutional fit and power relations in the governance of the north Luangwa ecosystem

Interviewees and focus group participants raised issues regarding the position and relative power of local institutions within CBNRM in the North Luangwa Ecosystem. The key stakeholders included government departments involved in biodiversity and resource management, biodiversity-focused NGOs, traditional institutions, and the Community Resources Board (CRBs).

Power relations among these stakeholders in the North Luangwa Ecosystem are complex. The Department of National Parks and Wildlife (DNPW) holds substantial authority over natural resource governance but faces criticism for replicating colonial conservation strategies and resource constraints. Frankfurt Zoological Society, as an NGO, wields influence through funding allocation, while chiefs possess customary authority but may not consistently prioritize community interests. The CRBs, intended for community representation, often fall short of this goal, facing issues of interference from customary authorities as well as government bureaucracies. These dynamics shape decision-making, resource allocation, and policy formulation in the region, underscoring the need for greater equity and community involvement in governance.

There are numerous government departments with stakes in natural resource governance, complicating the amount of power local communities can exercise. These include the Forestry Department, the Fisheries Department, the Ministry of Agriculture, and the DNPW. Among these, the DNPW held a unique position with legal authority over National Parks and Game Management Areas, as mandated by the Zambia Wildlife Act of 2015. It possessed the pivotal power to regulate wildlife resource utilization, from setting hunting quotas to licensing and overseeing payments to traditional chiefs. However, the DNPW was not immune to critique. Some viewed it as a relic of colonial governance structures, prompting calls for a reassessment of its relevance in the contemporary context. Financial constraints, bureaucratic systems and staff shortages further hampered the DNPW's effectiveness. DNPWs' budget in the North Luangwa Ecosystem was largely reliant on donor funding that was received via Frankfurt Zoological Society. External donors included United States Agency for International Development (USAID) and KfW banking group of Germany among others. Local communities recognized the DNPW's role in law enforcement and acknowledged the need for its intervention in wildlife conservation. However, there was a prevailing perception that the DNPW prioritized conservation interests over those of local communities, leading to sentiments of disempowerment. A community member expressed the concern that local human communities were simply being managed to further the interests of wildlife, stating, "*We have become animals, and the animals have become people*" [FGD02].

The Frankfurt Zoological Society emerged as the primary NGO active in the North Luangwa Ecosystem, establishing partnerships with both the Zambian government and CRBs through the North Luangwa Conservation Project (NLCP) since 1986. Frankfurt Zoological Society played a significant role in securing international funding from organizations like USAID, KfW Banking Group of Germany and other philanthropic donors. Their initiatives spanned conservation and livelihood programs, offering support for law enforcement efforts within the National Park and GMAs. While Frankfurt Zoological Society was perceived as a positive force in wildlife conservation, concerns emerged regarding its dominance in decision-making related to donor funding allocation. It was perceived that Frankfurt Zoological Society exercised ultimate control over donor funds, impacting project prioritization and resource allocation. This perception led to a disconnect between the NGO and the local populace, as the latter felt excluded from parts of decision-making processes. Nonetheless, Frankfurt Zoological Society had made noteworthy contributions to gender equity within the CRBs by enhancing women's participation in Village Action Group elections and facilitating microcredit schemes known as Community Conservation Banks. These efforts resulted in increased female representation on CRB boards and bolstered the number of female village scouts employed by CRBs.

Clear issues were raised regarding the interaction between different local institutions within CBNRM. Namely, customary authority and CRBs were both primarily represented by chiefs within the study sites, their role formalized through the Zambia Wildlife Act of 2015. While chiefs were recognized as influential gatekeepers, perceptions of how they wielded power varied widely. In one case, a chief was perceived as self-serving, prioritizing personal interests over those of his community while at the same time acting as a force for good who protected local people from government land grabs and unfair arrests. Perceptions of unfairness were more widely

reported and particularly pronounced in cases where chiefs were to some degree associated with nepotism and interference in CRB functions. By law, chiefs were expected to send representatives to CRB meetings, in practice however, at least one of the 4 chiefs in the study site attended and chaired CRB meetings while another sent his bodyguard described as someone “*he could control*” (KR 03). This raised concerns about the extent to which chiefs actively influenced decision-making processes and agreements related to the day-to-day work of the CRB.

Under the Wildlife Act of 2015, CRBs are mandated to facilitate community representation and fair benefit sharing. However, there was a discrepancy between their intended purpose and actual functionality. They were meant to empower local communities, yet the reality was one of limited inclusiveness and equity. Elections and representation in CRBs were perceived as mere formalities, with many people viewing them as subservient to the authority of traditional chiefs. Meetings among CRB members and ordinary villagers were reported to be infrequent, and decisions regarding job allocation and benefit sharing often took place without community involvement. This lack of transparency led to disengagement among community members, who felt uninformed and apathetic toward CRB activities. A community member expressed this sentiment, saying, “*We don't know what the CRB does, and we have never seen a budget*” [FGD 04].

3.2. Community participation and representation

In the North Luangwa Ecosystem, there existed a stark contrast between the appearance of community participation and the actual influence local people have in decision making. Focus group respondents frequently reported inadequate participation (55 % of codes), lack of access to information (30 % of codes) and lack of access to Justice (15 % of codes) as matters of concern with regard to procedural equity. While formal elections for the CRB were conducted in all study sites, and, in some cases, gender equality was achieved, the core issue remained that those elected to the CRB were ultimately beholden to the authority of the traditional chiefs. This underlying power dynamic meant that even if the entire community elected a fully representative board, there was little motivation for the CRB to be accountable to the local constituents at the Village Action Group and household levels. In instituting a democratic system, the current system does not take into consideration the cultural identity of local peoples as subjects of the chief vulnerable to the chief's influence, including the possibility of expulsion from the chieftom. In some areas, such as Munymadzi, the chief's control over the CRB was perceived to be almost absolute, as expressed by one respondent: “*Under normal circumstances, the CRB chairman is selected through elections. We vote for two people, one will be the chairperson of the Village Action Group, the other would be the secretary of the Village Action Group. These two people represent us on the CRB board. Selected Village Action Group members from different places then select a chairperson for the whole CRB from among themselves. This is in an ideal situation. However, the reality is that everybody on that committee is told who to vote for before they even go for the first meeting*” [FGD 05]

When asked why individuals didn't challenge the chief's preferences, respondents explained the consequences: “*What happens is if I, as an individual, decide to stand against him, for instance, other people will tell him that I'm the one who has disregarded him or disrespected him. I will be singled out as a person with no respect. I will be blacklisted. When you are blacklisted, you will not be called for meetings, and you will never get a job. You will be locked out*” [FGD 05]. This fear of retribution extended to concerns about losing access to land and homes, which could directly impact local people's livelihoods. In one focus group interview respondents reported that they had been subject to the chief's wrath due to a conflict over their ancestral claim to the Chieftaincy that meant that “*no one from here has ever been selected as CRB chairperson*” [FGD 05]. The chief's power was also perceived as having a partly spiritual dimension, with some community members believing that the chief had special powers and would somehow “*find out*” [KR 007] if they spoke against him.

Effective participation at the local level was hindered by infrequent Village Action Group meetings. The meetings that were held were during election campaigns or to announce decisions that had already been made, leaving little room for genuine community input. Furthermore, community members rarely received information about the revenues received or expenditures by the CRB or Village Action Group. Meetings were viewed as mere formalities, as decisions were believed to be preordained by those in positions of power. For instance, during a meeting introducing a new REDD + project, a woman's reluctance to speak was attributed to the suspicion that proposals laid out by project proponents had already been approved by the chiefs: “*The chief has already agreed, it does not matter what I say*” [KR 02]. The only requirement to prove participation for government officials and NGO facilitators who had travelled from the district headquarters to hold the REDD + sensitization meetings was a report on proceedings of the meeting and an attendance list. Meetings, it seemed, were convened not for decision-making but for the purpose of demonstrating the appearance of participation.

Young respondents reported the least participation in the CBNRM governance structures. Whereas adult men and women generally had similar reasons for their exclusion in decision making, young people directly attributed exclusion to being young often stating “*we are young and no one listens to us*” [FGD07]. This was reflection of hierarchies within their culture in which respect for elders is highly emphasized. The majority of youth focus group respondents reported often not being informed about issues surrounding benefit sharing or decision making. Only a few young focus group participants reported attending community meetings, and none had any roles in the CRB. Respondents also reported that benefits such as jobs and educational opportunities were only given to young people whose parents were part of the ruling elite or the CRB. In Musalangu, respondents said they were not only ignored by their elders but almost all interventions from NGOs were targeted at women who were seen as the most vulnerable group.

In addition to traditional institutions' influence, NGOs were perceived to have a significant role in decision-making processes. Stakeholders acknowledged that NGOs held sway due to their funding capabilities as one respondent put it that “*people use money to wield power. So, they have influence over everybody else. So, I can't say FZS doesn't have influence over certain decisions. if we look at the local level, do you think a warden or ranger will disagree with FZS? The answer is no.*” [KR 04]. This had the potential to weaken long-term development of local capacities for conservation. While NGOs and donors often perceived interventions as participatory and in line with local needs, government staff and local communities were aware that their success was dependent on aligning with NGO and

donor objectives. One example was the implementation of a global health program funded by USAID. It was described by one respondent as “*a fortuitous arrival worth 10 million dollars. It wasn't really driven by the donors because it was the work we would like to do in the area, but, no one ever went to the local constituents beforehand and asked the questions "What are really your needs? What are your desires? What are your wants? What we have been trying to do is to some extent retrofit and get consent to try and hopefully end up with a convergence from the constituents* [KR 05] Thus the project success was judged based on predefined targets set by outsiders with some sort of consultative process that retroactively included communities after decisions had been made. Even if pre-set targets aligned with local communities' priorities, the fact that they had already been decided took agency away from local people. Further respondents indicated that receipt of further finances was largely contingent on implementing projects according to the donor or NGOs guidelines. Therefore, local people may find it difficult to go against interventions even when they went against their own interests.

The power dynamics in the North Luangwa ecosystem were characterized by centralization and symbolic participation of local communities, even if the structural framework appeared to allow for devolved decision-making. Key decisions were made by government bodies, NGOs, and donors, while elites within traditional institutions held considerable sway, fortified by the government's formalization of their roles. Chiefs were recognized for their pivotal influence on project implementation and government departments and NGOs accepted this in order to implement interventions. Traditional leaders, aware of the impermanence and fragility of government institutions, considered themselves more enduring and influential. As one traditional leader put it, “*We are mountains, they are rains*” [TL 001]. Meanwhile, CBNRM, with its potential for community representation, often served to legitimize decisions made in the chief's office while further marginalizing local people.

4. Discussion

The North Luangwa Ecosystem, with its intricate web of governance structures and power dynamics, provides a unique backdrop for examining the complexities of implementing CBNRM. The introduction of CBNRM, as a concerted shift away from more exclusive protected area governance and management and towards more devolved and shared governance, also provides important insights into the institutional dynamics and issues associated with changes away from top-down conservation models and towards more inclusive, collaborative and equitable governance. While the vision of CBNRM in Zambia is to empower local communities and involve them in conservation efforts, this study illustrates how and why the reality often deviates from this ideal. Rather than reinforcing local and indigenous institutions CBNRM has become a vehicle through which governments and NGOs centralize power and manufacture consent while weakening traditional institutions and reproducing existing patterns of inequity. In practice, the creation of the CRB has not garnered effective participation, rather it has allowed a situation in which governance actors from government and NGOs can tick boxes and create the illusion of successful participation through elections and occasional meetings. This allows for the continuation of conservation and governance approaches that are driven by external actors and are often still rooted in colonial worldviews [54].

One fundamental challenge lies in the predefined structure of CBNRM initiatives. These initiatives typically come with pre-determined goals and objectives, which may not necessarily take internal power relations inherent in customary institutions into consideration [23,30]. Current policy prescriptions have centered the role of the chiefs with the justification that they best represent indigenous and local people as their traditional leaders. Local people provide little resistance to government and NGO actors as long as consent has been given by the chief. This may set up conditions that may lead to green grabs, a type of land grab justified in the name of conservation [17]. Displacement as result of expansion of conservation areas are a concern for indigenous and local people [12,55,56]. Implementation of global environmental policies such as REDD+ and target 3 of the Convention on Biological Diversity which advocates for the expansion of sustainably governed conserved areas to 30 % of the planet's land and ocean by the year 2030 have the potential to further marginalize local people. While equity considerations are strongly advocated for in these policies, our research shows that national governments and NGOs will domesticate global environmental policies using path dependent structures that may only deliver superficial, symbolic participation as opposed to more collaborative or empowering forms of participation that involve greater influence in and control over decision making processes by local community members and various social groups among them. If socio-economic, political circumstances, as well as wellbeing needs and lived realities of those most directly reliant upon biodiversity are not considered, progress on global goals will be undermined [57].

Another aspect related to institutional bricolage present in the North Luangwa Ecosystem is the concept of legal pluralism, a situation in which multiple formal and informal legal frameworks operate at the same time [58]. In the North Luangwa, local people are subject to both customary and statutory legal frameworks. The Chiefs role is recognized under the Zambia Wildlife act of 2015. However, other local institutions such as traditional hunting guilds are not recognized. The practical outcome is that the chief's role has become bureaucratized and gained power in the formal realm while local hunting guilds have been criminalized. Chiefs went from being direct beneficiaries of wildlife products that came from a system of traditional hunting to only benefiting from commercialized safari hunting revenue with quotas set by the DNPW [15,43]. Thus, Chiefs are no longer dependent on their subjects for resources and have no incentives to uphold the norms of reciprocity that are inherent in the Bisa traditional system [43]. Rather than enhancing traditional systems for natural resources CBNRM proponents have appropriated parts of local culture for the purpose of revenue generation and at the expense of local hunters. Policies that prioritize conservation while criminalizing local people resource use are said to be the cause of diverse forms of state violence with in turn lead to inequity and injustices such as loss of human dignity, lack of recognition and even loss of life [59,60].

Inequitable conservation that disempowers and does not support environmental stewardship of Indigenous peoples and local communities represents the primary threat to effective conservation of biodiversity [61]. However, true devolution that includes indigenous peoples rights has not gained much political traction in Africa [61]. Rather than decentralization we found that interactions involved in the reorientation of governance to CBNRM, between formal institutions like government departments and NGOs, along

with traditional institutions, created a centralized power dynamic. This centralization has significant implications for marginalized local people who often find themselves excluded from meaningful participation in the decision-making processes related to protected area governance. Often, policy makers see local people's ability to vote for CRB members and recognition of the chief's role in Zambian law as way to secure rights and protect local people through representation and access to justice. However, at best the CBNRM paradigm in the North Luangwa Ecosystem can be described as 'decentralization without empowerment,' as characterized by Castro and Nielsen [62]. In this context, local communities are tasked with bearing the externalities associated with resource management without meaningful transfer of decision-making authority. In this case, the consequences of centralization manifest in the concentration of power within the office of the chief. Thus, decentralization efforts, which are intended to empower local communities, can sometimes inadvertently bolster the power of some actors while further disempowering others. An example of this can be seen in Bangladesh, where villagers were required to relinquish their land tenure rights in co-management agreements [62]. The implications of this centralization are profound for marginalized community members who find themselves on the periphery of decision-making processes.

While CBNRM has attempted to create new spaces for representation and participation of previously marginalized groups, existing social inequalities continue to be perpetuated. Cleaver [23] highlights a situation in a communal water management group in Zimbabwe. Women had been given new opportunities but when the identities of the selected women are investigated further it was discovered that they were connected to elites in some way. In similar studies undertaken in southern Zambia, Siangulube [63] also observed that visible power to influence certain decisions was concentrated around the Chief and those closer to customary power, whilst community leaders further away in distance and familial ties were less influential in decisions and enforcement of local laws. Hence, the 'social situatedness' of actors had a bearing on who is recognized, benefits and participates in CBNRM institutions [63]. Further, apart from empowering the chiefs inner circle, CBNRM appears have created powers that the chief may not have previously had. With the inception of CBNRM programs chiefs were not only "gatekeeper for outsiders" but had the opportunity to benefit from new income streams and patronage networks that went beyond the local context [64]. provide a parallel example in Northern Western Zambia, where a mining boom empowered strategically positioned chiefs on multiple fronts. This power included their roles as development facilitators, political brokers, and economic agents. Such diversification of income and influence has similarly contributed to changing the traditional relationship between chiefs and their subjects in the North Luangwa Ecosystem.

Policies that promote conservation under the guise of equitable benefit sharing and effective participation have been promoted throughout the global south [34]. However, our study shows that new institutions for CBNRM may sometimes not be fit for this task. Approaches to implementing local-level resource management tend to ignore the complex and changing interactions amongst local peoples, government and non-governmental actors; to underestimate the dynamic nature of institutional governance in socio-ecological systems [23]. Institutionalizing equity entails, overcoming path dependencies that have been created with formalized CBNRM institutions that may unduly burden already marginalized local peoples [65]. Equity also necessitates acknowledging that people affected by environmental interventions frequently face knowledge production that often goes against their own interests and values [66]. There is therefore a need to prioritize local peoples ways of knowing and being-in-place and then aligning them to NGOs and government interventions rather than retroactively including communities after decisions had been made [67,68]. This approach would have wider impact on implementation of equitable conservation strategies in the global south were implementation of conservation are driven by countries and NGOs in the global north.

5. Conclusion

Formal, intentional shifts towards more inclusive and participatory models of conservation are not guaranteed to lead to more equitable processes, or to realize more equitable outcomes. The extent to which equity will be enhanced depends on the complex institutional interactions, the means through which local governance is formed and nested within wider structures, and the power dynamics that play out between many actors with diverse values, interests, and capacities. In complex ecosystems like the North Luangwa Ecosystem, the implementation of CBNRM faces significant challenges, including predefined project structures that may not align with the diverse needs of stakeholders, and the way in which formal and informal institutions interact to determine the quality of participation, and governance more broadly. To address these challenges and achieve true enhancements in equity through any conservation efforts, it is essential to consider the cultural and historic contexts in which projects are being implemented, assess the different types and scales of governance, and the complex ways in which they interact, and adopt reflective, flexible and adaptive approaches to address power inequalities and realize an appropriate and equitable institutional fit. Only through such a focus on governance as complex, dynamic and negotiated, and efforts to (re)-establish and support customary and local institutions that are locally legitimate and adaptive can CBNRM fulfill its promise of empowering local communities and ensuring the sustainable management of natural resources in complex contemporary contexts, like the North Luangwa Ecosystem.

At the policy level there is often support for devolved processes that acknowledge the complexity of PA governance when it includes customary and local institutions. However, due to high implementation costs and externally set agendas, breaking out of predefined project structures and devolving power beyond the chief and local elites rarely happens. Nevertheless, a good place to begin addressing equity would be at Village Action Group level, which is a reachable goal for key governance actors such as NGOs and government. In particular, there is a need to strengthen the capacity for local staff to identify marginalized and vulnerable community members rather than treating the community as a monolith represented by one central figure. Further, governance actors would benefit from ethnographic studies that investigate local conceptions of equity and how they align local people's ways of being-in-place and social organization.

Ethical Clearance

Ethics committee: Ethics Advisory Board of Leuphana University; Ethics approval number: 202003_02_Loos_WVJGovernance; Issued on: May 22nd, 2020.

Data availability statement

Data will be made available upon request.

CRediT authorship contribution statement

Rhoda Nthena Kachali: Writing – original draft, Formal analysis, Data curation, Conceptualization. **Neil M. Dawson:** Writing – review & editing. **Jacqueline Loos:** Writing – review & editing, Supervision, Funding acquisition.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Acknowledgments

Special thanks go to the Community members and key informants in and around the North Luangwa Ecosystem without whom this work would not have been possible. We also wish to thank Dennis Musonda, Chola Makama, Elder Ngulube and Leah Chilengwe for their assistance in data collection and translation. Thanks to Twakundine Simpamba and Dr. Dula Wakassa Duguma for assistance with maps of the study area. Finally, thanks go to the Robert Bosche Foundation GmbH for funding the project “Wildlife, Values, Justice”.

Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.heliyon.2024.e33549>.

References

- [1] E. Barrow, C. Fabricius, Do rural people really benefit from protected areas- rhetoric or reality? *Parks* 12 (2002) 67–79.
- [2] R.P. Neumann, *Imposing Wilderness: Struggles over Livelihood and Nature Preservation in Africa*, Univ of California Press, 1998.
- [3] N.J. Bennett, A. Calò, A. Di Franco, F. Niccolini, D. Marzo, I. Domina, C. Dimitriadis, F. Sobrado, M.-C. Santoni, E. Charbonnel, M. Milazzo, P. Guidetti, Social equity and marine protected areas: perceptions of small-scale fishermen in the Mediterranean Sea, *Biol. Conserv.* 244 (2020), <https://doi.org/10.1016/j.biocon.2020.108531>.
- [4] S.N. Chipungu, *Guardians in Their Time: Experiences of Zambians under Colonial Rule 1890-1964*, 1992. <https://www.africabib.org/rec.php?RID=108621545>. (Accessed 7 September 2023).
- [5] C.C. Gibson, *Politicians and Poachers: the Political Economy of Wildlife Policy in Africa*, Cambridge University Press, 1999.
- [6] N. Abel, P. Blaikie, *Elephants, people, parks and development: the case of the Luangwa Valley, Zambia*, *Environ. Manage.* 10 (1986) 735–751.
- [7] F. Berkes, Community-based conservation in a globalized world, *Proc. Natl. Acad. Sci.* 104 (2007) 15188–15193, <https://doi.org/10.1073/pnas.0702098104>.
- [8] W. Dressler, B. Büscher, M. Schoon, D.A.N. Brockington, T. Hayes, C.A. Kull, J. McCarthy, K. Shrestha, From hope to crisis and back again? A critical history of the global CBNRM narrative, *Environ. Conserv.* 37 (2010) 5–15, <https://doi.org/10.1017/S0376892910000044>.
- [9] G. Holmes, C. Sandbrook, J.A. Fisher, Understanding conservationists’ perspectives on the new-conservation debate, *Conserv. Biol.* 31 (2017) 353–363, <https://doi.org/10.1111/cobi.12811>.
- [10] L. Lecuyer, R.M. White, B. Schmoock, V. Lemay, S. Calmé, The construction of feelings of justice in environmental management: an empirical study of multiple biodiversity conflicts in Calakmul, Mexico, *J. Environ. Manage.* 213 (2018) 363–373, <https://doi.org/10.1016/j.jenvman.2018.02.050>.
- [11] N. Dawson, A. Martin, F. Danielsen, Assessing equity in protected area governance: approaches to promote just and effective conservation, *Conserv. Lett.* 11 (2018), <https://doi.org/10.1111/conl.12388>.
- [12] G.G. Gurney, V.M. Adams, J.G. Álvarez-Romero, J. Claudet, Area-based conservation: Taking stock and looking ahead, *One Earth* 6 (2023) 98–104, <https://doi.org/10.1016/j.oneear.2023.01.012>.
- [13] S.A. Marks, Contextual factors influencing a rural community and the development of a wildlife management regime in Zambia (1987–1997). <https://doi.org/10.1080/714852810>, 1999.
- [14] W.M. Adams, D. Hulme, If community conservation is the answer in Africa, what is the question? *Oryx* 35 (2001) 193–200, <https://doi.org/10.1046/j.1365-3008.2001.00183.x>.
- [15] C.C. Gibson, S.A. Marks, Transforming rural hunters into conservationists: an assessment of community-based wildlife management programs in Africa, *World Dev.* 23 (1995) 941–957, [https://doi.org/10.1016/0305-750X\(95\)00025-8](https://doi.org/10.1016/0305-750X(95)00025-8).
- [16] A.N. Songorwa, T. Bührs, K.F. Hughey, Community-based wildlife management in Africa: a critical assessment of the literature, *Nat. Resour. J.* (2000) 603–643.
- [17] B. Bersaglio, F. Cleaver, *Green grab by bricolage-The institutional workings of community conservancies in Kenya*, *Conserv. Soc.* 16 (2018) 467–480.
- [18] A. Agrawal, Sustainable governance of common-pool resources: context, methods, and politics, *Annu. Rev. Anthropol.* 32 (2003) 243–262, <https://doi.org/10.1146/annurev.anthro.32.061002.093112>.
- [19] J.A. Oldekop, G. Holmes, W.E. Harris, K.L. Evans, A global assessment of the social and conservation outcomes of protected areas, *Conserv. Biol.* 30 (2016) 133–141, <https://doi.org/10.1111/cobi.12568>.
- [20] F. Cleaver, J. De Koning, Furthering critical institutionalism, *Int. J. Commons* 9 (2015), <https://doi.org/10.18352/ijc.605>.
- [21] C. Wyborn, R.P. Bixler, Collaboration and nested environmental governance: scale dependency, scale framing, and cross-scale interactions in collaborative conservation, *J. Environ. Manage.* 123 (2013) 58–67, <https://doi.org/10.1016/j.jenvman.2013.03.014>.

- [22] S. Boillat, J.-D. Gerber, C. Oberlack, J.G. Zaehring, C.I. Speranza, S. Rist, Distant interactions, power, and environmental justice in protected area governance: a telecoupling perspective, *Sustainability* 10 (2018), <https://doi.org/10.3390/su10113954>.
- [23] F. Cleaver, *Development through Bricolage: Rethinking Institutions for Natural Resource Management*, Routledge, 2017.
- [24] E. Ostrom, *Understanding Institutional Diversity*, Princeton University Press, 2009.
- [25] M. Fabinyi, L. Evans, S.J. Foale, Social-ecological systems, social diversity, and power: insights from anthropology and political ecology, *Ecol. Soc.* 19 (2014), <https://doi.org/10.5751/ES-07029-190428>.
- [26] E. Ostrom, M. Cox, Moving beyond panaceas: a multi-tiered diagnostic approach for social-ecological analysis, *Environ. Conserv.* 37 (2010) 451–463, <https://doi.org/10.1017/S0376892910000834>.
- [27] S. Muyengwa, B. Child, R. Lubilo, Elite capture: A comparative case study of meso-level governance in four southern Africa countries, in: *Adaptive cross-scalar governance of natural resources*, Routledge, 2014, pp. 179–202.
- [28] M. Leach, B. Reyers, X. Bai, E.S. Brondizio, C. Cook, S. Díaz, G. Espindola, M. Scobie, M. Stafford-Smith, S.M. Subramanian, Equity and sustainability in the Anthropocene: a social-ecological systems perspective on their intertwined futures, *Glob. Sustain.* 1 (2018) e13, <https://doi.org/10.1017/sus.2018.12>.
- [29] S. Turner, A crisis in CBNRM? Affirming the commons in southern Africa, in: Tenth IASCP Conf. Oaxaca Mex, 2004, pp. 9–13.
- [30] F. Cleaver, Reinventing institutions: bricolage and the social embeddedness of natural resource management, *Eur. J. Dev. Res.* 14 (2002) 11–30.
- [31] E. Ostrom, *Governing the Commons: the Evolution of Institutions for Collective Action*, Cambridge university press, 1990. (Accessed 16 May 2024).
- [32] M. Schnegg, Institutional multiplicity: social networks and community-based natural resource management, *Sustain. Sci.* 13 (2018) 1017–1030, <https://doi.org/10.1007/s11625-018-0549-2>.
- [33] K. Löhr, B. Aruqaj, D. Baumert, M. Bonatti, M. Brüntrup, C. Bunn, A. Castro-Nunez, G. Chavez-Miguel, M.L. Del Rio, S. Hachmann, Social cohesion as the missing link between natural resource management and peacebuilding: lessons from cocoa production in Côte d'Ivoire and Colombia, *Sustainability* 13 (2021) 13002.
- [34] N.J. Cook, Experimental evidence on minority participation and the design of community-based natural resource management programs, *Ecol. Econ.* 218 (2024) 108114, <https://doi.org/10.1016/j.ecolecon.2024.108114>.
- [35] J.C. Ribot, Democratic decentralization of natural resources, in: N. Van De Walle, N. Ball, V. Ramachandran (Eds.), *Struct. Adjust.*, Palgrave Macmillan US, New York, 2003, pp. 159–182, https://doi.org/10.1057/9781403981288_6.
- [36] G.R.Z., The Zambia Wildlife Act, 2015, Lusaka, Zambia: Government Printers - Google Search, 2015 2015 <https://www.google.com/search?client=firefox-b-d&q=GRZ.+%282015a%29.+The+Zambia+Wildlife+Act%2C+2015.+Lusaka%2C+Zambia%3A+Government+Printers+>. (Accessed 27 November 2023).
- [37] Clarke J.E., Evaluation of wildlife conservation society's administrative management design project (WCS/ADMADDE), Zamb. U. S. Agency Int. Dev. (2000). https://pdf.usaid.gov/pdf_docs/Pdabs343.pdf (accessed June 27, 2024).
- [38] S.A. Marks, Contextual factors influencing a rural community and the development of a wildlife management regime in Zambia (1987-1997), *J. Environ. Policy Plan.* 1 (1999) 235–246, <https://doi.org/10.1080/714852810>.
- [39] N. Esmail, J.M. McPherson, L. Abulu, T. Amend, R. Amit, S. Bhatia, D. Bikaba, T.A. Brichieri-Colombi, J. Brown, V. Buschman, M. Fabinyi, M. Farhadina, R. Hgayoumi, T. Hay-Edie, V. Horigue, V. Jungblut, S. Jupiter, A. Keane, D.W. Macdonald, S.L. Mahajan, A. McVey, A. Moehrensclager, F. Nelson, M. M. Noshirwani, Y. Ntiemoa-Baidu, J.L. Postigo, V. Rakotondrazafy, M. Rao, D. Roe, J.A. Sierra Huelsz, S. Stolton, A. Tawake, B. Wintle, What's on the horizon for community-based conservation? Emerging threats and opportunities, *Trends Ecol. Evol.* 38 (2023) 666–680, <https://doi.org/10.1016/j.tree.2023.02.008>.
- [40] North Luangwa Conservation Programme, North Luangwa National Park, (n.d.). <https://northluangwa.org/> (accessed November 27, 2023).
- [41] DNPW, Report on the 2020 Aerial Survey of Elephants and Other Large Herbivores in the Luangwa Valley, 2021.
- [42] Y. Chondoka, F.F. Bota, A History of the Tumbuka from 1400 to 1900, Xlibris Corporation, 2015. [https://books.google.com/books?hl=en&lr=&id=aR9NCwAAQBAJ&oi=fnd&pg=PT6&dq=Chondoka,+Y.,+%26+Bota,+F.-F.+\(2015\).+A+history+of+the+Tumbuka+from+1400+to+1900:+The+Tumbuka+under+the+M%27nyanjagha+and+the+Chewa,+Balowoka,+Senga+and+Ngoni+chiefs.+Xlibris,+d.,+&ots=VR6f0g5PCz&sig=HyRugrs7xM1jOL7LZmRtmFexFsU](https://books.google.com/books?hl=en&lr=&id=aR9NCwAAQBAJ&oi=fnd&pg=PT6&dq=Chondoka,+Y.,+%26+Bota,+F.-F.+(2015).+A+history+of+the+Tumbuka+from+1400+to+1900:+The+Tumbuka+under+the+M%27nyanjagha+and+the+Chewa,+Balowoka,+Senga+and+Ngoni+chiefs.+Xlibris,+d.,+&ots=VR6f0g5PCz&sig=HyRugrs7xM1jOL7LZmRtmFexFsU). (Accessed 17 May 2024).
- [43] S.A. Marks, *Large Mammals and a Brave People: Subsistence Hunters in Zambia*, Routledge, 2017. https://books.google.com/books?hl=en&lr=&id=MR4uDwAAQBAJ&oi=fnd&pg=PT9&dq=marks+large+mammals+and+a+brave+people&ots=C9fTz8j-u&sig=piUxAKHOSC_Q6Pw-3f3QHbb7fpY. (Accessed 29 September 2023).
- [44] B. Thyer, *The Handbook of Social Work Research Methods*, SAGE, 2009.
- [45] G. Labianca, D.J. Brass, Exploring the social ledger: negative relationships and negative asymmetry in social networks in organizations, *Acad. Manage. Rev.* 31 (2006) 596–614, <https://doi.org/10.5465/amr.2006.21318920>.
- [46] U. Das, Environmental justice research – limitations and future directions using qualitative research methods, *Qual. Res. J.* 21 (2021) 469–482, <https://doi.org/10.1108/QRJ-10-2020-0117>.
- [47] M. Berbés-Blázquez, J.A. González, U. Pascual, Towards an ecosystem services approach that addresses social power relations, *Curr. Opin. Environ. Sustain.* 19 (2016) 134–143, <https://doi.org/10.1016/j.cosust.2016.02.003>.
- [48] S.K. Mohmand, Customary institutions and public authority: a literature review, *Learn. Proj. Engag. Informal Local Gov. Inst. ILGI Switz, Swiss Agency Dev. Coop.* https://www.shareweb.ch/site/DDLGN/Documents/ILGI_20Literature_20review_Pdf (2015). (Accessed 17 November 2023).
- [49] D. Schlosberg, Theorising environmental justice: the expanding sphere of a discourse, *Environ. Polit.* 22 (2013) 37–55, <https://doi.org/10.1080/09644016.2013.755387>.
- [50] A. Martin, B. Coolsaet, E. Corbera, N.M. Dawson, J.A. Fraser, I. Lehman, I. Rodriguez, Justice and conservation: the need to incorporate recognition, *Biol. Conserv.* 197 (2016) 254–261, <https://doi.org/10.1016/j.biocon.2016.03.021>.
- [51] N. Zafra-Calvo, U. Pascual, D. Brockington, B. Coolsaet, J.A. Cortes-Vazquez, N. Gross-Camp, I. Palomo, N.D. Burgess, Towards an indicator system to assess equitable management in protected areas, *Biol. Conserv.* 211 (2017) 134–141, <https://doi.org/10.1016/j.biocon.2017.05.014>.
- [52] K. Schreckenberg, P. Franks, A. Martin, B. Lang, Unpacking equity for protected area conservation, *Parks* 22 (2016) 11–26, <https://doi.org/10.2305/IUCN-CH.2016.PARKS-22-2KS.en>.
- [53] C. Ruano-Chamorro, G.G. Gurney, J.E. Cinner, Advancing procedural justice in conservation, *Conserv. Lett.* 15 (2022) e12861, <https://doi.org/10.1111/conl.12861>.
- [54] K. Cockerill, S. Hagerman, Historical insights for understanding the emergence of community-based conservation in Kenya: international agendas, colonial legacies, and contested worldviews, *Ecol. Soc.* 25 (2020), <https://doi.org/10.5751/ES-11409-250215>.
- [55] N.M. Dawson, K. Grogan, A. Martin, O. Mertz, M. Pasgaard, L.V. Rasmussen, Environmental justice research shows the importance of social feedbacks in ecosystem service trade-offs, *Ecol. Soc.* 22 (2017), <https://doi.org/10.5751/ES-09481-220312>.
- [56] R. Witter, Elephant-induced displacement and the power of choice: moral narratives about resettlement in Mozambique's Limpopo National Park, *Conserv. Soc.* 11 (2013) 406–419, <https://doi.org/10.4103/0972-4923.125756>.
- [57] D. Armitage, P. Mbatha, E. Muhl, W. Rice, M. Sowman, Governance principles for community-centered conservation in the post-2020 global biodiversity framework, *Conserv. Sci. Pract.* 2 (2020) e160, <https://doi.org/10.1111/csp.2160>.
- [58] N. Sirimorok, A. Asfriyanto, The return of the muro: institutional bricolage, customary institutions, and protection of the commons in Lembata Island, Nusa Tenggara, for, *Soc.* 4 (2020) 61–80, <https://doi.org/10.24259/fs.v4i1.7676>.
- [59] T. Mushonga, Constitutional environmental rights and state violence: implications for environmental justice in protected forests, *Environ. Justice* 16 (2023) 194–202, <https://doi.org/10.1089/env.2022.0059>.
- [60] V. Tauli-Corpuz, J. Alcorn, A. Molnar, C. Healy, E. Barrow, Cornered by PAs: adopting rights-based approaches to enable cost-effective conservation and climate action, *World Dev.* 130 (2020) 104923, <https://doi.org/10.1016/j.worlddev.2020.104923>.
- [61] N. Dawson, W.D. Carvalho, J.S. Bezerra, F. Todeschini, M. Tabarelli, K. Mustin, Protected areas and the neglected contribution of Indigenous Peoples and local communities: struggles for environmental justice in the Caatinga dry forest, *People Nat* (2021), <https://doi.org/10.1002/pan3.10288>.
- [62] A.P. Castro, E. Nielsen, Indigenous people and co-management: implications for conflict management, *Environ. Sci. Policy* 4 (2001) 229–239.

- [63] F.S. Siangulube, M.A.F. Ros-Tonen, J. Reed, H. Djoudi, D. Gumbo, T. Sunderland, Navigating power imbalances in landscape governance: a network and influence analysis in southern Zambia, *Reg. Environ. Change* 23 (2023) 41, <https://doi.org/10.1007/s10113-023-02031-4>.
- [64] A. Fraser, M. Larmer, in: *Zamb. Min. Neoliberalism Boom Bust Glob. Copperbelt*, Springer, 2010.
- [65] W.A. Kiwango, M.B. Mabele, Why the convivial conservation vision needs complementing to be a viable alternative for conservation in the Global South, *Conserv. Soc.* 20 (2022) 179–189, https://doi.org/10.4103/cs.cs_45_21.
- [66] H. Svarstad, T.A. Benjaminsen, Reading radical environmental justice through a political ecology lens, *Geoforum* 108 (2020) 1–11, <https://doi.org/10.1016/j.geoforum.2019.11.007>.
- [67] H. Gambon, P. Bottazzi, The political ontology of protected area co-management: worlding and nature perceptions among stakeholders, *J. Polit. Ecol.* 28 (2021) 646–662, <https://doi.org/10.2458/jpe.3026>.
- [68] V. Reyes-García, Á. Fernández-Llamazares, Y. Aumeeruddy-Thomas, P. Benyei, R.W. Bussmann, S.K. Diamond, D. García-del-Amo, S. Guadilla-Sáez, N. Hanazaki, N. Kosoy, M. Lavides, A.C. Luz, P. McElwee, V.J. Meretsky, T. Newberry, Z. Molnár, I. Ruiz-Mallén, M. Salpeteur, F.S. Wyndham, F. Zorondo-Rodríguez, E.S. Brondizio, Recognizing Indigenous peoples' and local communities' rights and agency in the post-2020 Biodiversity Agenda, *Ambio* 51 (2022) 84–92, <https://doi.org/10.1007/s13280-021-01561-7>.