

A Comparative Analysis of Collaborative Natural Resource Governance in Two Protected Areas in Zambia

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Abstract

In Zambia, early models of natural resource governance were based on state-centric approaches to conservation and later, to some degree, based on Community-Based Natural Resource Management (CBNRM) models. Both of the models delivered poorly in terms of improved biodiversity management, enhanced rural livelihoods, and rights-based benefits. A lack of productive dialogue, involvement, and participation of local communities in natural resource governance resulted in considerable conflicts between protected area managers and local communities, with substantial local political and socio-economic costs. Through a mixed-methods approach using a questionnaire, focus group discussions, and key informant interviews, the Environmental Governance Systems (EGS) framework was applied to compare how interactions among political, economic, and civil society actors influence resource use and the state of resources in the state-led Kaingu chiefdom and the community-managed Kaindu Community Conservancy. Results show limited communication, cooperation, and coordination among the actors in both cases. Conflicting interests over the use of land, wildlife, forests, and fisheries among actors have led to strained relationships, limited interactions, and many negative outcomes in both cases. Both protected areas exhibit a top-down structure of natural resources governance with limited community participation, conflictual relationships among actors, corruption, lack of transparency, and low accountability. The CBNRM structures and processes need to be changed legislatively to improve local ownership and a sense of responsibility and legitimacy by restructuring the constitutions of CBNRM organizations and developing their human resource, financial, and logistical capacities. The study proposes a proactive transformative model for mitigating negative impacts on the state of resources and resource use.

Keywords: *Environmental Governance, Interactions, Participation, Conservation*

Introduction

There is no single accepted definition of "governance", but as a concept, it can be described as the structures and process of how power and authority are established, exercised, and distributed, how decisions are made, and to what extent citizens participate in decision-making processes (Wingqvist *et al.*, 2012). The quality of governance determines the quality of its outcomes, i.e., good governance and bad governance can be distinguished based on the outcomes they produce.

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Good governance ensures inclusive participation of all stakeholders, aims to make governing institutions more effective, responsive, and accountable, and respects the rule of law (Wingqvist *et al.*, 2012). By contrast, bad governance is characterized by an acrimonious relationship between those who govern and those being governed due to inequitable decision-making, violation of accepted norms of liberal democracy, and unfair economic policies (Rose & Peiffer, 2019).

The governance of natural resources in protected areas can be termed as being good or bad based on the conservation and socio-economic outcomes. Natural resources governance (NRG), a subset of environmental governance, consists of the rules, practices, policies, and other institutions and organizations that shape how humans interact with the environment (water, soil, physical properties, and interrelationships that exist between them and humans and other living organisms) (Haque, 2017). Good environmental governance links and harmonizes policies, institutions, procedures, and information to allow equitable participation among public, private, civil society, and community actors in managing conflicts, establishing consensus, fundamental decision-making, and ensuring accountability for actions taken (Haque, 2017).

Table 1: The IUCN Governance types for protected areas (Borrini-Feyerabend *et al.*, 2013)

Governance types	Sub-types
Type A. Governance by government	<ul style="list-style-type: none"> ● Federal or national ministry or agency in charge ● Sub-national ministry or agency in charge (e.g., at regional, provincial, municipal level) ● Government-delegated management (e.g., to an NGO)
Type B. Shared governance	<ul style="list-style-type: none"> ● Transboundary governance (formal arrangements between one or more sovereign states or territories) ● Collaborative governance (through various ways in which diverse actors and institutions work together) ● Joint governance (pluralist board or other multi-party governing body)
Type C. Private governance	<ul style="list-style-type: none"> ● Conserved areas established and run by: <ul style="list-style-type: none"> - individual landowners - non-profit organizations (e.g., NGOs, universities) - for-profit organizations (e.g., corporate owners, cooperatives)
Type D. Governance by indigenous peoples and local communities	<ul style="list-style-type: none"> ● Indigenous peoples' conserved territories and areas – established and run by indigenous peoples ● Community-conserved areas and territories – established and run by local communities

In the context of this study, environmental governance takes place in protected areas, which are defined as "*clearly defined geographical spaces recognized, dedicated and managed, through legal or other effective means to achieve the long-term conservation of nature with associated ecosystem services and cultural value*" (Dudley, 2008). Good environmental governance is thus important because it can improve the implementation of environmental legislation and other environmental measures, is needed to manage large flows of environmental and climate change finance, and ensures access to information and public participation (Wingqvist *et al.*, 2012). It has the greatest potential to affect coverage, is the main factor that enhances the effectiveness and efficiency of management, determines the appropriateness and equity of decisions, and can ensure that protected areas are better embedded in society (Borrini-Feyerabend *et al.*, 2013). The IUCN classified the governance of protected areas into four different types (Table 1). From the descriptions of governance above and the classification by IUCN, it is evident that governance involves the interactions of actor organizations and, at its core, exchanges between human beings.

Most of the state-centric NRG systems in Africa are premised on the 'fortress conservation approach' (Hutton *et al.*, 2005). This type of governance seeks to preserve common-pool resources, such as wildlife and their habitat, through the forceful exclusion of local people who have traditionally relied on the environment in their quest for livelihood outcomes (Brockington, 2002; Lunstrum, 2016). The fortress conservation approach has been critiqued for its failure to deliver well on biodiversity management and even less on livelihoods and rights-based benefits (Vedeld *et al.*, 2012). Many cases where there is a lack of compensatory measures for local people living close to protected areas and who experience the high costs of wildlife raiding, loss of crops, livestock, and land, and reduced access to various natural resources have been reported. The fortress conservation approach also suffers from a general lack of real and productive dialogue, involvement, and participation of local communities. The resultant effects involve considerable conflicts between authorities and local communities, with substantial local political, economic, and social costs (Vedeld *et al.*, 2012).

To achieve enhanced environmental sustainability and improved governance, several variants of Community-Based Natural Resources Management (CBNRM) programs have been tested by developing countries, especially in southern Africa (Cocks *et al.*, 2001). The creation or restoration of local resources' proprietorship to local people, devolution of choices and

management to people who live with the resources, the internalization of resource costs and benefits, and the removal of market failures were principal elements of CBNRM (Child & Barnes, 2010). Despite theoretically sound principles, CBNRM initiatives experienced more failures than successes. This was due to heavy resistance to the approach from various economic and political actors, partly revealing different economic and political interests, dissimilar perceptions of rights and duties, and, generally, that CBNRM had been introduced in areas with asymmetric power relations and complex landscapes of institutional layers or bricolage (Dressler *et al.*, 2010; Cleaver, 2012).

Statement of the Problem

The governance of natural resources through the state-led system of CBNRM proved challenging due to the heavy top-down political structures, organizations, and institutions in Zambia. The power and responsibility for natural resource management is concentrated in a few strong and macro-oriented governance institutional structures and mechanisms (Bandyopadhyay & Tembo, 2010). This has constrained the inclusion of new actors and structures in governance, especially regarding local NRG and local communities (Child & Barnes, 2010). In Zambia, the principal ownership and control over wildlife, forests, and fisheries resources is not vested in the local communities but with the republican president, *res nullius* (GRZ, 2011; GRZ, 2015; GRZ, 2015b).

Weak legal mechanisms have failed to regulate the in-migration of non-local people attracted by the availability of land, firewood, timber, bushmeat, and fish in many protected areas (Luaba, 2021). Lindsey *et al.* (2014) report that the weakly enforced NRG policies are ineffective in preventing deforestation, habitat losses, and illegal settlements due to land clearing for agriculture and increased charcoal and fuel-wood production. The Department of National Parks and Wildlife (DNPW) in Zambia retains most of the income from consumptive tourism. It only remits 20% of the income from concession fees and 50% of animal trophy license fees to the communities through the Community Resource Boards (CRB) (Lindsey *et al.*, 2014). Moreover, the payments are generally not transparent, remitted late, erratic, and presented and paid as hand-outs without showing local communities that these are compensation payments made for local

communities to accept losses of resource access and costs accrued by living close to the protected area (Lindsey *et al.*, 2014).

Significance and Limitations of the Study

The significance of this study is that it proposes a solution to the challenges faced by both the state-led NRG system and the CBNRM. The challenges of both the fortress conservation approach and CBNRM, coupled with shifts in the distribution of power, knowledge, and resources in the global economy, have led to the emergence of new, and in many cases, more legitimate, participatory, and multi-actor environmental governance models (Newell *et al.*, 2012; Lemos & Agrawal, 2006). Furthermore, the growth in power and influence of international non-governmental organizations (NGOs) has facilitated non-state actors' increased enrolment and cooperation in environmental governance (Tarrow, 2005). Agrawal and Lemos (2007) show that diverse actors, including the state, the market, and the community, have become legitimate and necessary players in managing a range of environmental resources.

Objectives of the Paper

The main objective of this paper is to formulate a transformative, collaborative, and multi-actor governance model for wildlife, forests, and fisheries resources in the Kaindu and Kaingu conservation areas of Zambia.

Specific Objectives:

- To determine how the patterns of interaction among actors in NRG could be improved to ensure positive conservation and livelihood outcomes.
- To determine the incentives for and against participation
- To ascertain what should be done to improve communication, cooperation, coordination and ease competition for natural resources
- To identify which actors should provide facilitative leadership in each case

Main Concepts and Theoretical Framework

The Environmental Governance Systems Framework

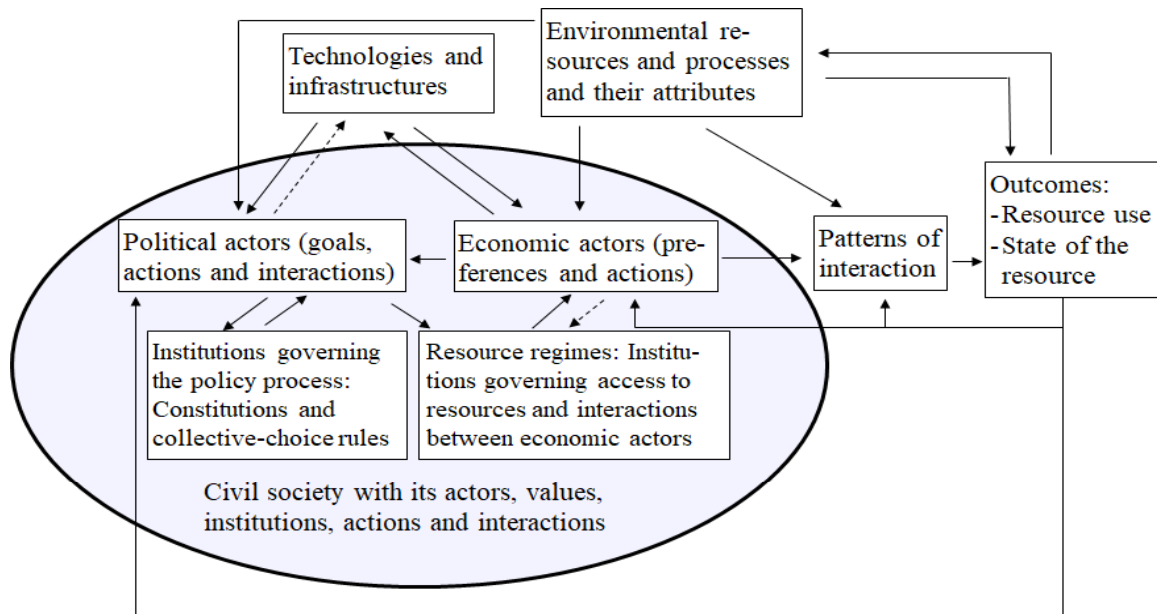


Figure 1: The Environmental Governance Systems Framework for Analysing Institutional Networks (Sourced with permission from: Vatn, 2015)

Environmental governance concerns regulatory processes, mechanisms, and organizations through which political and other actors influence environmental actions and outcomes (Lemos & Agrawal, 2006). It is, thus, not a function of the state as a single actor; otherwise, it would be referred to as government or an international law related to private standards or a formal civil regulation process (Newell *et al.*, 2012). Traditional state-centric models of environmental governance often have an inadequate reach, low effectiveness, lack of legitimacy, and/or even the authority to solve complex global environmental problems because they fail to accommodate non-state actors (Newell *et al.*, 2012). We apply the Environmental Governance Systems (EGS) framework (Figure 1), developed by Vatn (2015), to describe similarities and differences in the two cases as they relate to key components of NRG systems.

Participation Theory

The complex nature of environmental problems and their effects on multiple actors and agencies demand the incorporation of transparent stakeholder participation in environmental decision-making processes (Reed, 2008; Voinov & Bousquet, 2010; Vedeld, 2017). Participation

emphasizes the improvement of the legitimacy of public rule and ensures that policy objectives are met through the devolution of power and resources from the public to local governments and communities (Vedeld, 2017). Although not a panacea for all environmental problems, the participatory approach stimulates a "people-centered" development agenda (Burkey, 1993; Cleaver, 1999; Nussbaum, 2000). It is important to link participation to transforming the existing political, economic, and social structures (Samndong, 2017).

Participation and governance are inseparable components of social-ecological systems (SESs) because they relate to the content and distribution of power, resources, and influence through organizational and institutional structures and processes (Vedeld, 2017). At the local level, participation is intimately connected to the local governance of natural resources because it can empower local communities, transform governance structures, increase accountability, and ensure all stakeholders' inclusiveness in decision-making in the best cases (Samndong, 2017).

Lockwood *et al.* (2010) suggest that inclusive governance only occurs when all relevant stakeholders in the governance process can engage each other equitably and provide opportunities to participate in and influence the decision-making processes. There must be a high level of trust among actors to achieve inclusiveness. Trust facilitates collective action and provides legitimacy to public, private, and civil society institutions (Tsang *et al.*, 2009).

Vatn (2015) notes that social interaction among actors in an SES is based on their direct communication, cooperation, coordination, and competition. *Communication* occurs when there is a sharing of meaning because of an exchange of information between individuals or institutions (Castells, 2009). However, actors must also be willing to *cooperate* to gain mutual benefits. Cooperation entails that the actors can self-organize and resolve any conflicts among them (Ostrom, 2009). Selfishness among actors can result in losses for some or all parties involved (Axelrod, 1997). This necessitates the need for coordination to achieve mutually favorable outcomes among stakeholders.

Coordination may ensure equity, effectiveness, and fairness in the decisions made. Hovmand (2014) explains that the lack of coordination is a larger determinant of the outcomes than the accuracy and alignment of problems with the "correct" technical solutions. Many rigorously thought-out scientific and technically sound solutions are often rejected due to a lack of consensus among stakeholders (Hovmand, 2014). The lack of consensus reflects different and

competing interests among stakeholders regarding natural resources and their management within SESs (Vedeld, 2020).

Ratner *et al.* (2018) showed that the *competition* for renewable resources, such as land and water, can cause significant conflicts among actors at the local level. They showed that social contexts characterized by intense competition for resources, high poverty levels, high dependence on natural resources for food security and livelihoods, and a limited ability of local stakeholders to influence decision-making processes and policies effectively can broaden social conflict if not addressed.

This study is anchored on the hypothesis that improved conservation and livelihood outcomes can be achieved if all the stakeholders (including the local communities) inclusively and equitably participate in the NRG process. In this paper, the participatory theory is applied to decipher the inclusiveness, communication, coordination, and competition processes that link the different components of the EGS framework. After that, the outcomes of the two NRG systems at the two study sites are compared and discussed based on the patterns of interaction among political, economic, and civil society actors as influenced by the attributes of environmental resources.

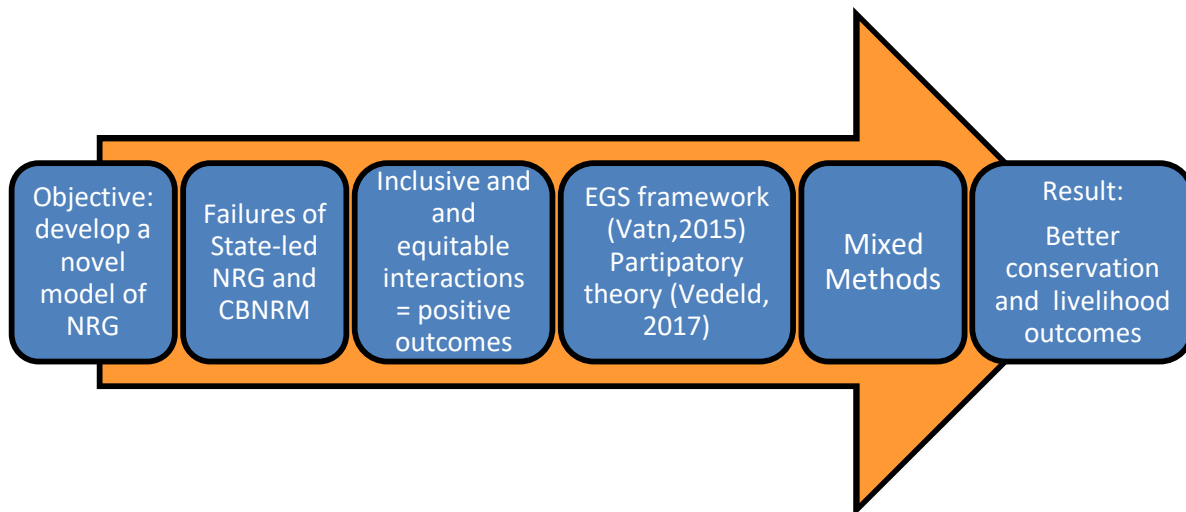


Figure 2: Theoretical Framework (Source: Authors)

Materials and Methods

A comparative research methodology with similar data collection and analysis methods was used to explore the NRG systems in the two case studies. The study sites were selected on the criteria that they are both under a CBNRM system of NRG. Kaingu is the archetypal protected area for state-centric NRGs in Zambia, while the Kaindu Community Conservancy (KCC) in Kaindu chiefdom is a novel model of NRG and one of the few community-owned protected areas in Zambia.

Study Areas

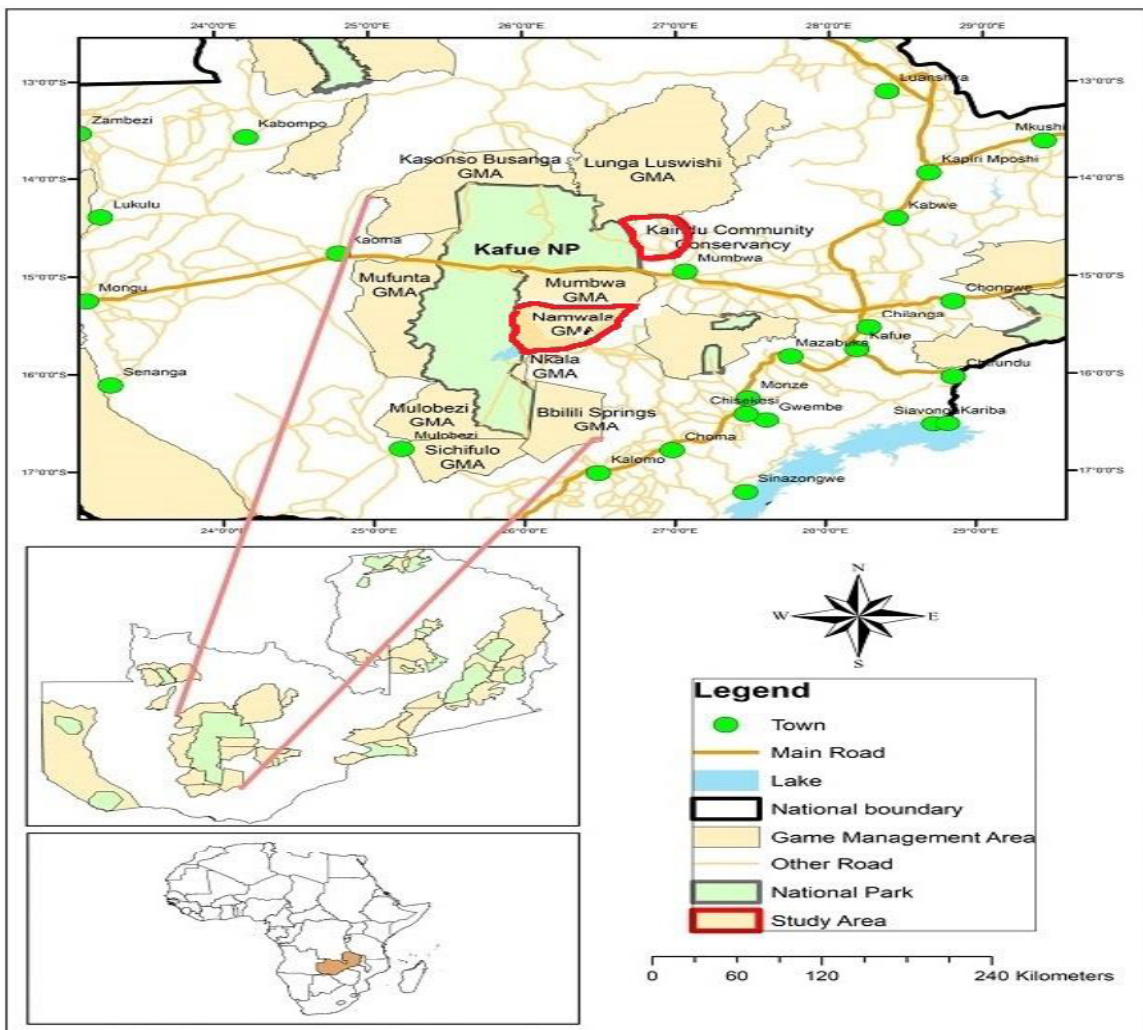


Figure 3: The locations of Kaingu (Namwala GMA) and Kaindu Community Conservancy (Source: Authors)

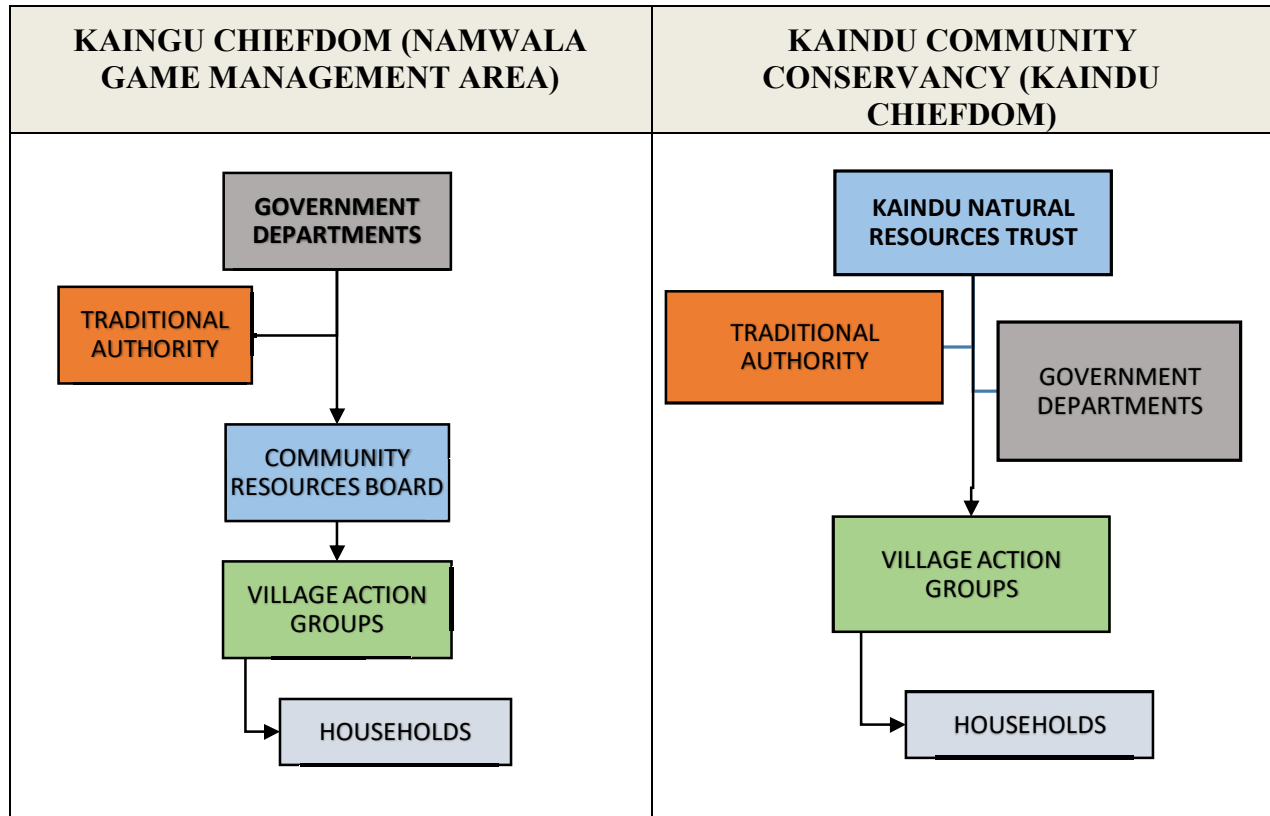


Figure 4: The Natural Resource Governance Models in Kaingu and Kaindu, Zambia (Source: Authors)

Kaingu

The Kaingu chiefdom is situated in the Namwala Game Management Area (GMA) in central south-western Zambia (Figure 3). It lies in the Itezhi-Tezhi district on the eastern border of the Kafue National Park (KNP). Mixed forests of Miombo and Mopane woodland are common habitats for various important wildlife species that include elephant (*Loxodonta africana*), buffalo (*Syncerus caffer*), and lion (*Panthera leo*) (DNPW, 2013). Lake Itezhi-Tezhi and the Kafue River are important fishery areas. Itezhi-Tezhi district has a population of about 90,000 (CSO, 2012). Kaingu is divided into seven Village Action Groups (VAGs), where most people are subsistence farmers involved in cattle rearing and growing maize, cassava, and groundnuts (ITTDC, 2015). Ila is the dominant ethnic group among a diversity of in-migrant ethnic groups (Lillehagen, 2016).

The local governance of natural resources is headed by the state in partnership with the traditional authority (the chief) through a typical top-down approach (Figure 4). Government departments, such as the DNPW, Forest Department (FD), and the Department of Fisheries (DoF), hold the overall formal power and decide on the objectives and what structures, processes, measures, and instruments should be applied to pursue the objectives. Each of these government departments has, over time, integrated some form of CBNRM within their structures (DNPW, 2018). They institute government policy receive, and distribute incomes from natural resources through a top-down approach from the central government to the communities *via* the Kaingu CRB.

Kaindu Community Conservancy (KCC)

The KCC is a community-owned protected area in the northeastern part of the Mumbwa district (Figure 3). It is a CBNRM joint venture between the Kaindu local community and a private outfitting company. The conservancy covers 13,900 hectares bordered by private farms (game and cattle ranches) and the Kafue River. The area is predominantly covered by Miombo, Termitaria, Riparian woodland, Baikiaea forest, and grassland (DNPW, 2013b). The conservancy is in prime habitats for prominent wildlife species, including elephants, buffalo, and lions. The human population of Kaindu stands at 15,477 individuals, who are mostly subsistence maize (*Zea mays*) and groundnut (*Arachis hypogaea*) farmers (TNC, 2015). Soya beans (*Glycine max*) and cotton (*Gossypium herbaceum*) are important cash crops in the area (TNC, 2015).

The Kaindu community and the outfitter earn incomes from hunting and photo tourism based on wildlife. An elected board of trustees, the Kaindu Natural Resources Trust (KNRT), manages the conservancy on behalf of the Kaindu community. The KNRT obtains hunting licenses from the DNPW and sells them to trophy hunters for a profit as a source of income. The KNRT board allocates the proceeds from hunting to five VAGs to implement community projects (TNC, 2015) (see Figure 4). The outfitter retains the earnings from lodging logistics and equipment. The KNRT also receives the state's financial, logistical, and material support through the DNPW and NGOs. The board and outfitter are also responsible for ensuring resource protection and working with the responsible government departments (Luaba, 2021).

Data Collection Protocols

The study applies a mixed-methods approach for triangulation and a simplified comparison of the two cases. The qualitative methods aimed to uncover the goals, actions, and interactions of the political actors, the preferences and actions of economic actors, and the values, actions, and interactions of civil society actors. The qualitative methods used were focus group discussions (FGDs), semi-structured key informant interviews (KIIs), and a questionnaire.

A total of 27 key informants (10 in the Kaingu and 17 in Kaindu) from the CRB, KNRT, traditional authorities, government departments, private companies, and NGOs were selected through a snowball sampling procedure. The FGDs were held with community members, including men, women, and youths in each VAG. Proportionate stratified sampling (using VAGs as strata) was used to select households in the survey. Data were obtained from 191 households in Kaingu and 290 in Kaindu.

The primary quantitative data were collected using a semi-structured questionnaire covering specific aspects of the CBNRM system in each case. Free, prior, and informed consent (FPIC) was sought from key informants and heads of households (>18 years old). The questionnaire was programmed onto the Open Data Kit[®] (ODK) platform and administered using tablet computers that stored data on a password-protected server.

Results, Analysis and Discussion

The qualitative data generated from this study were analyzed using thematic content analysis (Braun & Clarke, 2006). The Statistical Package for the Social Sciences (SPSS) version 20 was used to analyze the quantitative data. Descriptive statistics were used to describe community members' general attitudes towards participation in the CBNRM arrangement.

Results and Analysis

Environmental Resources, Processes, and Their Attributes

Table 2: A comparison of the status of environmental resources in Kaingu and Kaindu, in Mumbwa and Itezhi-Tezhi Districts, respectively Zambia, 2016

Case study	Kaingu	Kaindu
Environmental resource	Conditions and trends of natural resource	
Land	<ul style="list-style-type: none"> • Relatively clear and undisputed geographical boundaries • Community restricted to the development zone of GMA 	<ul style="list-style-type: none"> • Unclear boundaries • Reducing land area
Wildlife	<ul style="list-style-type: none"> • Increased poaching • Reducing wildlife stocks 	<ul style="list-style-type: none"> • Reduced poaching • Increasing wildlife stocks
Forests	<ul style="list-style-type: none"> • High deforestation rates 	<ul style="list-style-type: none"> • High deforestation rates
Fisheries	<ul style="list-style-type: none"> • Declining fish stocks 	<ul style="list-style-type: none"> • Declining fish stocks

The results revealed both differences and similarities in the stocks and flows of wildlife, forests, and fisheries. Table 2 compares some key characteristics of environmental resources in the two study areas.

Political Actors

Four of the six FGDs in Kaingu regarded the government departments as the overall authority because the chief was also subject to statutory law. The other two FGDs concluded that the chief was the most influential actor because his officials (unlike the government officers) were permanently based in their locality. In Kaindu, two of the five FGDs regarded the chief as the most powerful actor, as he was the *de facto* head of NRG. One FGD ascribed the greatest influence to the economic actors (*i.e.*, the surrounding private game ranchers). Key informants reported that government departments are the *de jure* actors overall responsible for achieving resource conservation goals, sustainable utilization of natural resources, and rural development by enforcing policy - in both cases. The DNPW informant stated the following:

“We as the DNPW are mandated by the Zambia Wildlife Act to manage wildlife in partnership with the local community. We work with the CRBs to manage the wildlife.”

Economic Actors

There is a difference in the perception of economic actors in the two cases. The private safari companies in Kaingu were third-level actors in terms of influence but regarded as the top level of

influence, equal to the state and the chief in Kaindu. The main professional economic actors in Kaingu were private hunting and tour operators. In Kaindu, the KNRT and its outfitting partner utilized for profit the wildlife resources that migrate from KNP to the KCC in cooperation with adjoining private game ranchers.

Ordinary community members in both cases were informal, small-scale but rather extensive economic actors deriving profits from the sale of charcoal and fish, while others engaged in illegal wildlife poaching for trophies and meat. Local people claimed that the private companies were overstepping their authority by restricting the communities' access to resources. The local communities' interests were mainly related to the subsistence use of these resources in both cases, but without clear customary rules and boundaries, this descended into resource degradation and vandalism. The private tour operators attribute resource and habitat destruction to community members, creating animosity between the two actor groups. The safari companies in Kaingu and the outfitter in Kaindu have both formed a Resource Protection Unit (RPU) to supplement the efforts of government departments.

Civil Society Actors

Civil society actors in Kaingu included several international NGOs addressing environmental degradation challenges, including wildlife poaching, deforestation, soil erosion, and habitat destruction. In both cases, NGOs cooperated with the government, traditional authorities, and private actors to achieve their objectives. In many ways, the harmonization of actors' different interests had not been attained.

Patterns of Interaction

Communication

All FGDs asserted that government departments, chiefs, the Kaingu CRB, and the KNRT do not in any way consult the communities when developing plans, setting goals, and making decisions about managing natural resources.

In both case studies, discussants stated that decisions were imposed on them through a “biased, corrupt, and dictatorial process”. The results from the FGDs were corroborated by the household survey in which 93% of respondents in Kaindu did not know when the last AGM was held. This

figure was significantly lower in Kaingu (*i.e.* 48%), ($\chi^2 = 92.708$, $df = 1$, $p < 0.001$). Little information regarding key aspects of NRG, e.g., finances, wildlife value, and use, was provided to the communities in the preceding year.

Cooperation

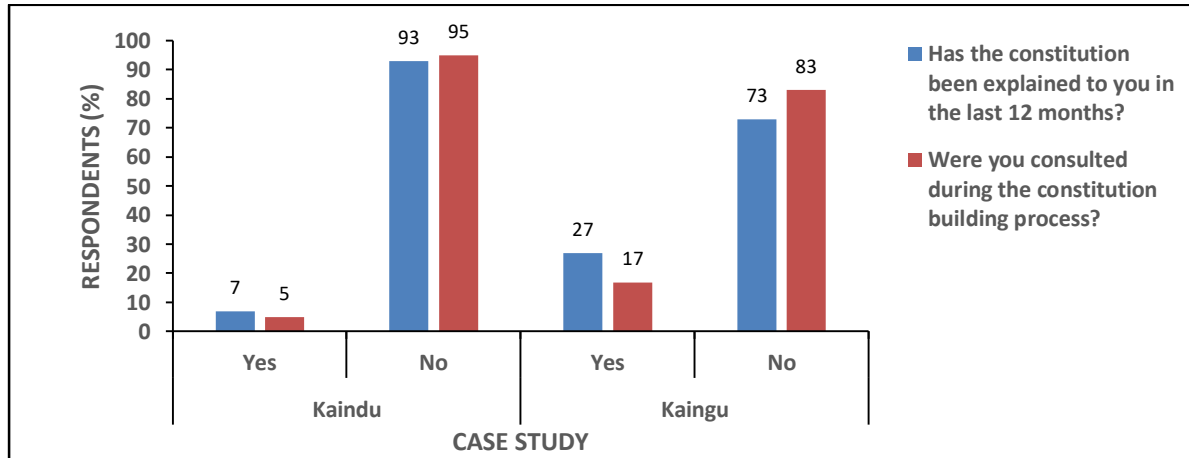


Figure 5: Cooperation between community and their CBNRM agents in Kaingu and Kaindu, 2016 Zambia

There were low levels of cooperation between the community and their agents for CBNRM in the two study sites (Figure 5). Cooperation was measured *via* the community participation level according to the CBNRM guidelines in Kaingu and the KNRT constitution in Kaindu. The CRB in Kaingu explained the CBNRM guidelines to significantly more households than the KNRT had in Kaindu ($\chi^2 = 34.785$, $df = 1$, $p < 0.001$). Additionally, more respondents in Kaingu indicated that they had been consulted during the constitution-building process ($\chi^2 = 15.320$, $df = 1$, $p < 0.001$).

Table 3: Conflictual issues between different actors in Kaingu and Kaindu, Zambia, 2016

Conflict type	Community vs. government departments	Community vs. traditional leaders	Community vs. private safari companies
Case study			
Kaingu	<ul style="list-style-type: none"> Restrictions on subsistence hunting, forestry and fishing <i>De jure</i> intent in resource conservation does not match <i>de facto</i> action/scenario Expensive licences for access 	<ul style="list-style-type: none"> Dictatorial decision-making Elite capture of benefits 	<ul style="list-style-type: none"> Abrogating terms of contract agreements with CRB Prevent access to resources Safari companies

	<ul style="list-style-type: none"> to natural resources • No compensation for damage caused by wildlife (human-wildlife conflict) • Elite capture of benefits by members of CRB • Low revenue from the CBNRM system led by DNPW through the CRB. 		<ul style="list-style-type: none"> only offer casual employment as opposed to permanent jobs, as agreed with the community through CRB.
Kaindu	<ul style="list-style-type: none"> • Restrictions on subsistence hunting, forestry and fishing • <i>De jure</i> intent does not match <i>de facto</i> action/scenario • Expensive licences for access to natural resources • No compensation for damage caused by wildlife (Human-wildlife conflict) • Elite capture of benefits by KNRT board • Low revenue from the CBNRM system led by the KNRT 	<ul style="list-style-type: none"> • Selling of community land and its associated resources to investors • Dictatorial overturning of communal decisions • Elite capture of benefits 	<ul style="list-style-type: none"> • Abrogating terms of contract agreements with KNRT • Prevent access to resources • The outfitter only offers casual employment as opposed to permanent jobs as agreed with the community through KNRT.

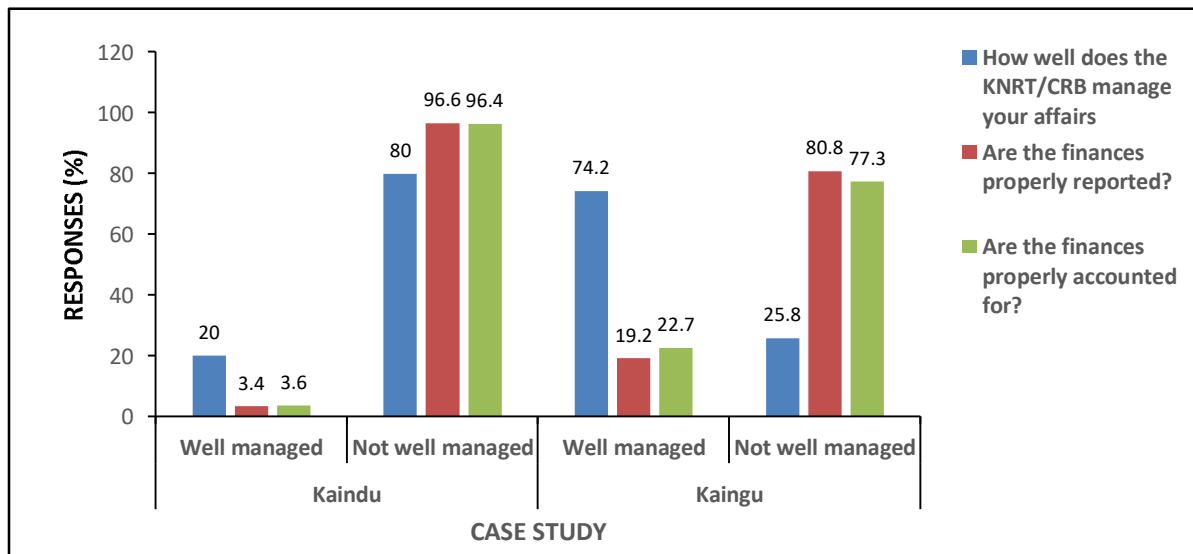


Figure 6: The Quality of Management of CBNRM in Kaingu and Kaindu, Zambia 2016

While a majority (63%) of the respondents in Kaingu indicated that they trusted the CRB with their financial accounts (Figure 7), most of the household heads in Kaindu (96.4%) thought that

the KNRT board did not manage their interests appropriately and did not properly account for the finances (Figure 6). There was thus a significant difference between the attitudes in Kaindu and those in Kaingu ($\chi^2 = 81.436$, $df = 5$, $p < 0.001$) and ($\chi^2 = 55.850$ $df = 4$, $p < 0.001$) respectively. Table 3 shows the conflict relations between the different actors identified by FGDs in the two cases. Despite the conflicts in Kaingu almost mirroring those in Kaindu, the Kaingu community's attitudes towards the CRB were significantly different ($\chi^2 = 146.408$, $df = 4$, $p < 0.001$).

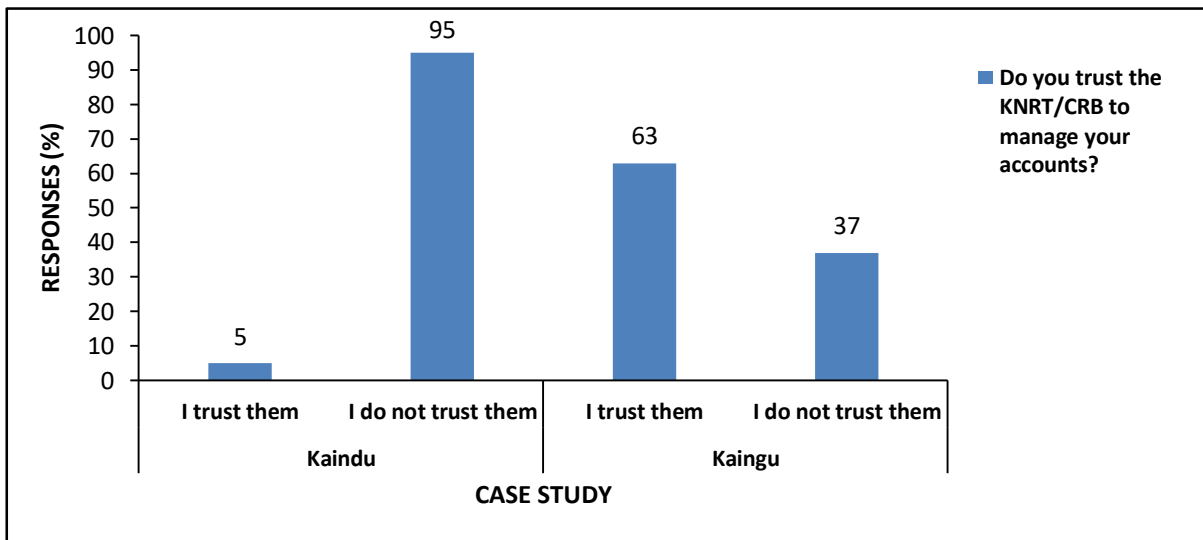


Figure 7: Levels of trust by the community towards their CBNRM boards, Kaingu and Kaindu, Zambia 2016

Most of the local community in Kaindu did not trust the KNRT to handle their finances (Figure 6). In contrast to the local community in Kaingu, the Kaindu community indicated that the chief, acting together with the KNRT, had sold portions of land to commercial farmers without consulting or even informing them.

Coordination

All FGDs in the two case studies concluded that there was a lack of equity, effectiveness, and fairness in the decisions made in their respective NRG systems. The key informant interviews revealed many, often different, and even opposing opinions among the actors. In both cases, the traditional authority and local government considered their decisions in the community equitable, effective, and fair, while the local community did not. The FD and DoF in Kaindu indicated that limited community engagement on their part hindered equitable decision-making. The FD and

DoF informants emphasized that the lack of financial and logistical resources constrained coordination with the community and other actors. The key informant from DoF stated that:

“The fisheries department will go to the community and say this, forestry will go and say that, and wildlife will also go and say something else. The tour operators also have their own way. Each one is pulling the same community in different directions”.

Competition

In the two areas, the different types of interests towards wildlife, forests, and fisheries among the actors caused competing actions and land uses. All the FGD participants were small-scale farmers. Most of the household heads in Kaindu (88%) and Kaingu (76%) indicated they had harvested between one and 30 hectares of maize in the preceding farming season. In both cases, there were reports of elephants and buffaloes destroying maize fields, leading to hunger and poverty for some households. Human-wildlife conflicts contribute to the communities' hostile attitude toward wildlife, especially since no compensation exists.

The state, private safari companies, and NGOs had different attitudes towards wildlife regarding trade-offs between conservation and sustainable use. The primary interest of the outfitter in Kaindu and the safari companies in Kaingu was to resuscitate and conserve the wildlife estate for tourism. In Kaindu, both the outfitting company and the community attributed most of the problems of NRG to poor leadership by the chief and his headmen and headwomen. The manager of the outfitting company stated the following:

“The communities are having problems with the chief and some headmen here. For instance, despite this being an environmental area, the chief is given and is receiving money from a miner to come here, although the Ministry of Lands-Trust document forbids such activities”.

Outcomes: Resource Use and the State of the Resource

Land Ownership and Alienation

The land use regime in Kaingu was both customary land and state-owned land in protected areas. Thus, the chief could not demarcate and sell any of this land. He can, however, allocate land to

prospective settlers in the development zone of the GMA. The 'open area' status of the land in Kaindu gave the chief more flexibility regarding rights and sales transactions. However, the FGDs reported that they were unaware of the land alienation processes that *de facto* are taking place. Thus, the local governance structure embedded in the CBNRM model in the KCC seemed to exclude ordinary members of the local community from taking part in decisions to sell and share the benefits from sales of land and other resources, such as wildlife.

Wildlife Stocks and Flows

There was a difference in community members' perceptions regarding wildlife abundance ($\chi^2 = 159.848$, $df = 4$, $p < 0.001$) in the two protected areas. About 30% of respondents in Kaingu indicated a decline in the numbers and species of wildlife despite the reportedly competent wildlife management system by DNPW. In Kaindu, most respondents (63%) perceived an increase in wildlife, as seen by the increasing incidences of elephant crop-raiding and an effective anti-poaching program that had boosted wildlife stocks. The local people in Kaingu reported a higher occurrence of poaching than in the KCC ($\chi^2 = 45.573$, $df = 3$, $p < 0.001$). As such, the two cases differed regarding wildlife, with the state-controlled protected area (Kaingu) reportedly having had less wildlife raiding than the communally owned KCC.

Forest Abundance and Flows

In both areas, the community members perceived the number of trees declining over the last 12 months (61% in Kaingu and 71% in the Kaindu community). According to the Global Forest Watch (2022), the average deforestation rates for the Itezhi-Tezhi and Mumbwa districts were 1.06% and 0.50% between 2015 and 2021, respectively.

Increased illegal logging and poor protection of trees were the main reasons for a perceived decline in tree abundance in both cases. The scope of illegal logging in the area yielded different perceptions for the two areas, with higher reported deforestation in Kaingu than in the communal Kaindu ($\chi^2 = 57.853$, $df = 3$, $p < 0.001$). Both communities indicated a declining trend in the status of non-timber forest products (NTFPs), *i.e.*, mushrooms, honey, and edible tubers.

Fish Stocks and Flows

The communities in Kaingu reported a higher rate of decline of fish stocks than the decline reported from Kaindu ($\chi^2 = 10.618$, $df = 3$, $p < 0.001$). Both communities attributed the drop in

fish catches to increased fishing efforts (number of fishers), which resulted in overfishing. This could also be observed in the lower availability of fish in the markets, higher demand, and increasing fish prices. Similar results were found in all categories of food fish species. A significantly higher occurrence of illegal fishing was reported in Kaingu than in the KCC ($\chi^2 = 35.517, df = 3, p < 0.001$).

Discussion

Environmental resources, processes, and attributes

Land

The more distinct geographical boundaries in Kaingu were due to the formal processes of separating human settlements from wildlife habitats that were explicitly carried out at the establishment of Namwala GMA in 1972 (DPNW, 2013a). These boundaries were generally recognized and adhered to by actors, albeit with the exceptions of illegal encroachment on protected land and poaching. In Kaindu, the relatively small size of the chiefdom and conservancy and unclear boundaries, coupled with an increasing human population, had increased the demand for land and added more pressure to the local natural resources and their management.

Attributes of Wildlife Stocks

The community in Kaingu reported increased poaching based on the reduced stocks of wildlife. In Kaindu, the community reported contrasting results of reduced poaching and increased wildlife stocks. The NRG structures and processes in Kaingu were more bureaucratic and rigid because of their state-centric nature. The lack of a sense of ownership among community members may explain the higher rate of poaching in Kaingu compared to Kaindu, where the chain of command is shorter and headed by a community-owned organization, the KNRT, which has financial incentives for conserving the wildlife stocks.

Attributes of Forest and Fish Stocks

High rates of deforestation and overfishing were reported in both areas. Deforestation is related to land clearing for agriculture. Overfishing is linked to increasing demand for fish and increased

harvesting efforts. The FD and DoF with their associates, try to regulate charcoal production and the excessive harvesting of NTFPs in both areas. The KNRT-outfitter partnership in Kaindu has prioritized wildlife conservation and consumptive tourism over forest and fishery conservation due to the higher profits in those activities.

Interactions of the Political, Economic, and Civil Society Actors with the Environmental Resources

In both cases, there was a passive community participation profile in planning and decision-making as stipulated by Vedeld (2017), as local communities are mostly told what will happen or what has happened without involving the communities. This policy adversely affected the patterns of interaction between the government departments, private safari companies, and the local community. The passive community participation generated hostility and mistrust between the community on the one side and the government departments and safari companies on the other. Various co-management projects initiated by local government agencies, such as market stalls and boreholes for water, did not persist because of the communities' limited or total lack of involvement and participation.

The Kaingu community had neutral or indifferent attitudes towards DNPW staff. This may be attributed to the more formal zonation of Namwala GMA, unlike in Kaindu, where the boundary between the protected area (the KCC) and the rest of the chiefdom – was quite unclear and had not been created through a formal demarcation process. Vedeld (2017) asserted that the extent to which local communities were involved and the willingness and capabilities of the community to uphold what was introduced are crucial for the continuity of projects or institutional interventions. In the case of Kaingu, the community members were not part of the resource regime as they did not have the right to access, withdraw, manage, nor exclude others and thus alienate the resources (Ostrom, 2009b).

The disparity among VAGs as to who were the most influential actors may also indicate differential impacts of the powers held by political actors in different geographical locations. This also led to a patchy pattern of perceptions, attitudes, and, eventually, choices among community members. Consequently, the conflicts between economic actors and the communities increased, as was the KCC, where the local communities fished within the designated hunting grounds for aquatic trophy species, such as crocodiles and hippos. The situation was compounded by DoF's lack of effective monitoring and enforcement and led the private game

ranchers (including the outfitter) to enforce *ad hoc* regulations and action. Reports of local community abuse, corruption of local leaders, and violent confrontations among actors were rampant.

The main underlying cause of social conflicts in Zambia, as observed in Kaindu, was the land control and allocation process, which, according to Munshifwa (2018), is marred by inertia, confusion, and corruption. The state purposefully generated a situation of inertness by instituting an extremely slow land tenure reform process during the 1990s, which has also led to inconclusive land policy formulation processes whose drafts are constantly rejected by traditional leaders. Further, this inconclusiveness led to a ‘tug-of-war’ between the president and the traditional leaders over who should oversee land alienation. Inaction and confusion, coupled with different levels of transparency and accountability, have created an ideal environment for corruption (Munshifwa, 2018).

Some private safari companies in Kaingu took advantage of the situation and manipulated the rules, granting access to resources and interactions. In the Kaindu chiefdom, so-called investors offered various gifts with promises to traditional leaders to build schools and clinics in exchange for land (Mushinge & Mwando, 2016). Traditional leaders sold land to whomever they wanted without consulting the community as was formally required through the customary laws (Mbinji, 2012). In addition, Mushinge and Mwando (2016) show that corruption negatively impacted local customary land users by generating economic and social instability, enforced by undemocratic leadership structures and a lack of appropriate legislation.

Most local NGOs operated at the intersection of their interests and those of the political and economic actors, and as such, were also directly and indirectly affected by the corrupt decisions and actions taken. Thus, there was limited success, especially in anti-poaching, forest conservation, and fisheries conservation. Some members of the civil society in the recent past demonstrated against corruption in public institutions (Zambian Watchdog, 2018).

The Kaingu and Kaindu communities were not provided with appropriate platforms for communication with authorities and were negatively impacted by various policy measures. Effective communication and interaction across and among stakeholders would enhance social

capital; facilitate the efficient functioning of environmental collaborations, and help households to accumulate other productive capital, such as education (Musavengane & Simatele, 2016). Stakeholder analysis and redesign of the resource regime to ensure patterns of interaction that yield positive outcomes seem warranted (Vedeld, 2020). This also implies changing the current communication system among actors to a more equitable one that allows the community members to express their opinions in the planning and management.

The quality of CBNRM is, in both cases, negatively affected by limited levels of cooperation. An indicator of this is that most community members were not consulted during the constitution-building process and did not have the constitution presented or explained to them. This communication gap was worsened by the lack of accountability in reporting financial accounts and managing community affairs. As a result, the Kaindu community has little trust that the government and its partners would deliver any benefits to them. Mutual trust among actors, especially between various agencies and the communities, is a critical factor for a successful CBNRM program as it influences the social acceptability of resource access and natural resources management (NRM) (Thakadu, 2004; Sharp *et al.*, 2013; Sharp & Curtis, 2014).

Davenport *et al.* (2007) show that institutional trust depends on the processes (input) and the outcomes of NRM strategies. They highlight unclear communication, limited community engagement, limited community power, and historical resentment as constraints to improved trust related to the institutions. Conflicting values and slow progress were found to be the main factors affecting the outcomes of NRM interventions in both cases. The higher levels of trust in the Kaingu CRB can be attributed to the more formalized and democratic procedure for electing the CRB, which further legitimizes office-bearing, as opposed to the KNRT board in Kaindu.

Limited cooperation among actors drove the lack of coordination among the different actors and even between different government departments. The perception by the local communities that they were denied access to and use of resources fuelled social conflicts, especially with private safari companies and government departments in both cases. The distribution of problems associated with competing uses of natural resources, such as using land for tourism versus agriculture, was asymmetric and, in practice, favored the private and state actors. This resulted in negative attitudes by the local communities, who view the NRM processes as illegitimate and untrustworthy. Input legitimacy is ensured by efficient coordination through a better exchange of

information, opportunities for feedback, the arbitration of conflicts, and the establishment of joint priorities (Metcalf, 2001). Government departments should coordinate their programs and intervention projects when they implement policies because poor coordination constrains sustainable planning and implementation, especially among agencies with overlapping and competing development mandates (Mallarach, 2008).

Outcomes of the Resource Regimes: Resource Use and State of the Resource Land Ownership and Alienation

Both the Kaingu and Kaindu chiefdoms were governed by the Lands Act No: 29 of 1995. Located entirely within Kaindu, the KCC is governed as a trust according to CAP 186 of the Lands (Perpetual Succession Act) No: 25 of 1964. Thus, Chief Kaindu and the board of trustees (the KNRT) had stronger ownership in the protected area, *i.e.*, the right to access, withdraw, manage, exclude, and alienate the natural resources (Ostrom, 2008) than is the case for Chief Kaingu and the CRB. While Kaingu had a governance by-government system, the KCC is a private and shared governance regime stipulated by Borrini-Feyerabend *et al.* (2013).

The land allocation processes in both chiefdoms were unclear and considered illegitimate by many local community members. Customary rules regarding land allocation are not documented, and chiefs are guided by knowledgeable advisors ("indunas") with oral knowledge and histories of past and present allocations. The villagers in Kaindu were suspicious of new visitors because they experienced much displacement when commercial farmers bought land from the chief without their knowledge. The lack of transparency and accountability in decision-making regarding land allocation, land management, and conflict resolution mechanisms in Zambia are key drivers of tenure insecurity and lack of outcome trust (Hall *et al.*, 2017).

Wildlife Stocks and Flows

The differences in perceptions about the state of the wildlife resources between the two cases indicated the importance of the *de facto* actors' interests and the protected area's size regarding conservation. The RPU was more effective in wildlife protection in the KCC because it focused on and allocated more resources towards ensuring the conservation of wildlife because its main income is from tourism. Additionally, its conservation efforts may be more effective because they cover a relatively smaller protected area compared to the much larger Kaingu area. Kaingu

was six times larger than Kaindu and required more financial and logistical resources to protect effectively.

The KNRT, outfitter, and DNPW continued to face challenges in monitoring the resource, controlling resource users, and enforcing rules despite forming the RPU. In Kaingu, the DNPW and Game Rangers International (GRI), through the Special Anti-Poaching Unit (SAPU), monitor and protect wildlife resources through field foot and aerial patrols and roadblocks, albeit with limited logistical and human resources (Game Rangers International, 2023). The unit has, since 2008, arrested more than 700 poachers, seized 361 illegal firearms, rescued 15 live pangolins, and seized 372kg of ivory in KNP, including Kaingu but excluding the KCC (Game Rangers International, 2023).

Forest Stocks and Flows

In both cases, local communities relied on subsistence agriculture and various environmental resources for food and income. As such, there was a conflict regarding the basic human needs and conservation of forests. Vinya *et al.* (2012) reported that agricultural expansion, wood extraction, and uncontrolled bushfires were the proximal drivers of forest cover loss in the Mumbwa district and accompanying effects on wildlife stocks. Despite somewhat higher agricultural yields using Conservation Farming (CF) methods reported in both cases, there were, in practice, low levels of adoption among small-scale farmers (Haggblade & Tembo, 2003; Arslan *et al.*, 2013). A higher rate of logging in Kaindu was expected because Mumbwa district had both greater forest cover (315,000ha) and the more commercially important *Baikiaea* tree species compared to Itezhi-Tezhi (4400ha) (DNPW, 2013b; Global Forest Watch, 2022).

Fish Stocks and Flows

The declining fish stocks in the main water bodies in Kaingu (*i.e.*, Lake Itezhi-Tezhi and the Kafue River) are well documented (Kefi & Mofya-Mukuka, 2015). The fish catches in Lake Itezhi-Tezhi declined from 6,000 tonnes in 2010 to below 4,000 tonnes in 2015 (DoF, 2013; Kefi & Mofya-Mukuka, 2015). The higher rates of decline of fish stocks in Kaingu can be attributed to the commercial scale of the fishery, which comprises the entire Lake Itezhi-Tezhi compared to the few kilometers stretch of Kafue River bordering the KCC that supported a more extensive but subsistence fishery. The successful efforts of the RPU in the KCC also positively impacted the regulation of fishing activities.

A low level of community participation and involvement fuelled hostility, mistrust, and non-compliance to CBNRM directives by the communities in both cases. This hampered the state's and traditional authorities' ability to regulate the exploitation of environmental resources. The well-defined geographical boundaries for land use in Namwala GMA isolated the local communities and showed a limited willingness to uphold state-centric collaborative NRG projects. The lack of compliance by the local communities and other economic actors had detrimental effects on the natural resources, and in some cases, it compelled the realigning of government policies.

A Transformative Natural Resources Governance Model for Kaingu and Kaindu

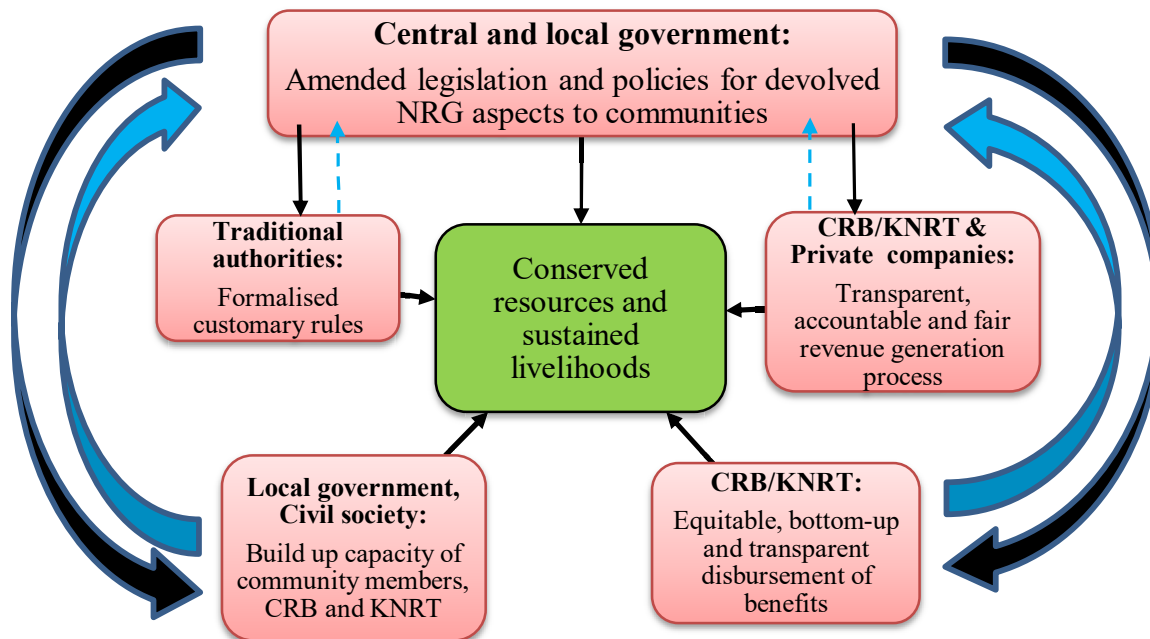


Figure 8: A Natural Resource Governance Model for Biodiversity Conservation and Sustainable Livelihoods in Kaingu and Kaindu, Zambia

Given the similar geographical, cultural, and socio-economic issues in the two case studies, the model presented here can be useful in mitigating the negative outcomes of both local NRG models at work in the cases (Luaba, 2021). The model highlights the actors' actions necessary to evolve NRG structures and processes from the current situation by describing the desired or

targeted situation. It should be noted, however, that the processes highlighted in the model are non-linear and iterative (Figure 8). The key actors and their recommended roles include:

Central and Local Government: Amendment of National Legislation and Policies

The amendment of the present legislation by the central government with inputs from other stakeholders is important and the basis for all other components of the proposed new model. The amended legislation should devolve clearer property rights and decision-making powers to the community. This entails realigning or reformulating policies to integrate community opinions and interests in the planning and implementation of NRG strategies. Suppose the communities around the protected areas are not legally empowered to become equitable and long-term legitimate/responsible partners in NRG. In that case, they are likely to continue to degrade and destroy the natural resources in their proximity. It is also vital that the amended legislation is in harmony with customary rules concerning the governance of natural resources.

Traditional Authorities: Formalizing Customary Rules for the Allocation of Land and Other Natural Resources

The chief and his palace committees must facilitate drafting customary rules, develop detailed criteria for resource users and resource boundaries, and prescribe acceptable land uses in consultation with the community. In doing so, they will provide guidelines and checks and balances to in-migrants and indigenous individuals regarding resource management. Thus, the customary rules must be formalized concurrently with the amendment of the national legislation and policy recommended above to synchronize both statutory law and customary rules to achieve common goals. The rules must be documented, gazetted, and implemented by village headmen and women. This way, the traditional authority will contribute to NRG more effectively than today.

Local Government and Community-Based Organizations: Streamlining a Clearly Defined Revenue Generation Process

Since the Lands (Perpetual Succession) Act No: 25 of 1964 at work in the KCC allowed the community to utilize natural resources for their benefit and upgrade their socio-economic status, this point is more pertinent to Kaingu, where there are no such provisions at present. This is the responsibility of the local NRG agents, *i.e.*, the councils, the CRB in Kaingu, and the KNRT in Kaindu. Trust among actors must be built through transparency, monitoring, and accountability.

This can be expedited through more formal and informal face-to-face dialogue between the community and other stakeholders.

Backed by strong policies, all the actors (especially the community) must be privy to financial information and the value of the resources before they are harvested. Information such as the annual budget and hunting quotas must be easily accessible to ordinary community members. This information must be provided by the CRB and VAG committees. The state and private companies should improve their integrity by fulfilling their commitments to the communities following the established procedures.

Community-Based Organizations: Creation of Bottom-Up, Transparent, and Equitable Processes of Disbursement of Revenues

Decisions on utilizing revenue from the sale or lease of natural resources within the protected area should be made from the bottom-up, transparent, and equitable. This is vital because there must be a balance between providing better livelihoods and ensuring sustainability by allocating a portion of the revenue to natural resource conservation. The VAG committees must provide communities with information on how many animals were shot, the prices paid by safari companies, expenditures, and the progress of community projects in a clear manner. The community would then be empowered to monitor the quantity of available resources, the benefits that can be derived from them and lead the audit of financial transactions of the CRB and VAG committees. This would also reduce the elite capture of benefits by the local leadership.

Local Government and Civil Society: Building the Capacity of Community-Based Organizations and Institutions

Capacity building must be ingrained in the local NRG constitutions so that local villagers can be involved in the financial management of NRG programs. The CRB and KNRT are weakened by the lack of well-trained and competent personnel. These institutions can only be managed and sustained by capable people who understand the concepts and contexts in which the CBNRM is taking place. Initially, capacity-building must be led by the state and NGOs but sustained by the community after being established. Key areas that require capacity-building include NRM skills, accounts (bookkeeping), law enforcement (law expertise and enforcers), and investments (business/entrepreneurship).

Conclusion

The existing patterns of interactions among actors in the governance of environmental resources in Kaingu and the KCC have contributed to unsustainable use and a degraded state of wildlife, forest, and fisheries resources. This investigation was directed at deciphering the outcomes of interactions among actors and between actors and the environment in two case studies of seemingly egalitarian communities with somehow dissimilar NRG systems. The study analyzed the outcomes of the pattern of interaction *vis-à-vis* communication, cooperation, coordination, competition, and the levels of community participation.

The results of this study revealed that the NRG systems in the two case studies shared many common governance-related features, but they also have differences that impact the level of sustainable resource use and equity. The two NRG models are both heavy and top-down structures despite the KCC being communally owned. However, they differ in terms of physical and institutional contexts regarding the land area, actor interests, and community perceptions and attitudes towards NRG. The NRG structure in Kaindu had the potential to yield better outcomes in terms of biodiversity conservation and livelihoods since it placed the community in a more powerful position. The KNRT had greater governance flexibility than the GMA in Kaingu but required more community participation and increased community capacity to be more effective. The careful re-alignment of the present institutions and organizational structure may improve resource outcome quality, livelihood impacts, and overall participation, trust, and legitimacy of the governance system.

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