COLLABORATIVE NATURAL RESOURCE GOVERNANCE FOR BIODIVERSITY AND LIVELIHOODS AROUND PROTECTED AREAS: A DUAL CASE STUDY OF KAINGU AND KAINDU, ZAMBIA

by

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Declaration

By submitting this dissertation electronically, I declare that the entirety of the work contained therein is my own, original work, that I am the sole author thereof (save to the extent explicitly otherwise stated), that reproduction and publication thereof by Stellenbosch University will not infringe any third-party rights and that I have not previously in its entirety or in part submitted it for obtaining any qualification.

This dissertation includes [three] original working papers to be published in peer-reviewed journals. The development and writing of the papers (unpublished) were the responsibility of myself and, for each of the cases where this is not the case, a declaration is included in the dissertation indicating the nature and extent of the contributions of co-authors.

Kampinda Luaba

Date: December 2021

Regarding [chapter 4 – Legitimacy of State-centric Natural Resources Governance in Kaingu Chiefdom in Namwala Game Management Area, Zambia, pages 94-123 of the dissertation], the nature and scope of my contribution were as follows:

Nature of contribution	Extent of contribution (%)
Organised and reviewed literature	
Instrumentation, fieldwork, data gathering and data analysis	
Data management process	80
Conceptualised, framed and wrote the paper	

The following co-authors have contributed to [chapter 4. Pages 94-123 in the dissertation]:

Name	e-mail address	Nature of contribution	Scope of contribution (%)
Kobus Muller		Provided advice as the main supervisor Contributed to the editing of the paper	5
Pål Vedeld		Provided advice as a co-supervisor Contributed to the editing of the paper	10
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Signature of candidate: Declaration with signature in possession of candidate and supervisor

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Data management process	80
Conceptualised, framed and wrote the paper	

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Conceptualised, framed and wrote the paper	

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Vincent R. Nyirenda		Contributed to the editing of the paper	1

Signature of candidate: Declaration with signature in possession of candidate and supervisor

Date: 10 February 2021

Abstract

Spurred by increasing environmental problems, research about the contribution of natural resources governance to the conservation of biodiversity and the betterment of the lives of rural communities has gained ground in the recent past. There is a serious need for effective, context-appropriate, relevant and pragmatic solutions to biodiversity loss and poverty, especially in and around biodiversity hotspots, such as protected areas. The links between natural resources, human wellbeing, and governance are set in complex social-ecological systems that are often not well understood.

The complexity of human-environment interactions has led researchers to the conclusion that major environmental problems cannot be solved through a single blueprint model of governance or panacea as most mono-disciplinary studies have recommended. The top-down system of natural resources governance ("fortress conservation") and community-based natural resource management (CBNRM) are the most predominant approaches to the governance of natural resources in protected areas in Zambia. However, both approaches to natural resource management have several challenges and limitations with regard to halting biodiversity loss and provision of sustainable livelihood to rural communities. This is attributable to differing perceptions, interests and actions of the various actors involved. The poaching of wildlife, deforestation and overfishing are important drivers of resource degradation and destruction that continue to affect national parks and their buffer zones (i.e., game management areas).

Hybrid collaborative natural resource governance models are potentially more viable and can offer more management flexibility than both fortress conservation and CBNRM. However, they need to be critically analysed for key constraints and possible interventions within their particular environmental and institutional context. It is vital to note that collaborative programmes have yielded mixed results and are not a "one-size-fits-all" solution as well. There is limited knowledge on how the interactions among actors in natural resource governance systems influence socio-economic and conservation outcomes in Zambia. This study aims to contribute to addressing the challenges of closing this knowledge gap by exploring the linkages between the collaborative natural resource governance regimes and their conservation and socio-economic outcomes and, to propose an alternative model. The participation of all relevant stakeholders in policy formulation is vital for the development of effective natural resource governance strategies. The decision-making structures and processes must embrace the interests, values, and opinions of all the individuals, households and organisations that interact with or relate to the natural resources.

This dissertation employs a transdisciplinary approach to investigate the local systems of natural resources governance using mixed methods. Focus is placed on the quality of community-based natural resource governance systems in two protected areas (Kaingu chiefdom in Namwala game management area and the Kaindu community conservancy) adjoining Kafue National Park, in central-southern Zambia. The research undertakes extensive stakeholder engagement to assess the existing local natural resources governance systems for wildlife, forests, and fisheries. Context-specific comparative analysis is applied in order to identify opportunities for change and to develop a novel and more effective collaborative natural resources management governance model in the two case studies.

Findings from the first case study indicate that despite the presence of co-management boards and village committees, the lack of comprehensive and rights-based community participation in decision-making, planning, budgeting, setting of wildlife hunting quotas and distribution of benefits continues to challenge the legitimacy of local natural resources management in Kaingu chiefdom. The lack of access to outputs and the perception that costs and benefits are disproportionately and unfairly distributed further challenge the legitimacy of the state-led local natural resources governance system in the area. Perception about rights and responsibilities, the decision-making process, preferences and motivations also hamper the effectiveness of collective environmental action. Mistrust and animosity between community members and implementers of natural resources governance is widespread. The multi-ethnic and multi-cultural structure, commercialisation of environmental products and ever-changing conditions add to the complexity of natural resource governance and emphasises the need for adaptable institutions.

In the second case, Kaindu, findings indicate a long history of internal migration in the area, a complex political history, and a succession of unstable governance models since the 20th century, forming a complex and layered institutional landscape. There are concomitant low levels of participation and a lack of consensus and joint strategic visions, low accountability and transparency in decision-making, a lack of fairness and weak recognition and enforcement of rights and duties. These are serious weaknesses of both formal and informal local institutions. Consequently, uncontrolled access and utilisation have led to widespread resource degradation and destruction. This study highlights the need to reconsider the natural resources governance system considering the local social and environmental context.

Comparatively, the community-based organisations lack potency in delivering benefits to their members as they do not have much say in taking the decisions regarding natural resources in both cases. The capacities and constitutions of the Kaingu Community Resources Board and the Kaindu Natural Resources Trust need to be built up and empowered to facilitate the formation of collective-choice

arrangements. The current top-down approach of the existing governance systems must be changed to place communities at the top in the decision-making structure, even in Kaindu where there is a board that in theory at least, represents the community.

Institutional change is important for a well-regulated resource regime that provides for effective biodiversity conservation and sustainable resource use to be set up in the two protected areas. Redesigning the local governance models entails redefining the roles of the actors and their patterns of interaction regarding the use of natural resources to achieve the desired outcomes. The roles of the political actors are critical because they are the institutions governing the policy process, including constitution building and collective-choice rules. Equally, new rules to regulate economic actors, such as private companies with access to the resources, must be formulated and implemented. The technology and infrastructures used must be regulated to suit the attributes of the environmental resources of interest. As the most prominent actor, the state must take the lead in allowing for the devolution of authority regarding key aspects of the management of natural resources to communities.

This study may contribute to policy formulation, practice and literature through policy briefs, recommendations and journal publications, respectively. This dissertation provides empirical knowledge of the status of wildlife, forest and fisheries resources under two different governance regimes as developed through a transdisciplinary process involving various stakeholders. It highlights the key social, political and ecological factors that constrain the natural resource governance systems from delivering positive conservation and socio-economic outcomes. The study concludes by proposing a hybrid and novel transformative natural resource governance model that combines aspects of both the fortress approach and CBNRM.

KEYWORDS: Collaborative governance, community-based natural resource management, good governance, environmental governance, institutions, protected areas, participation, legitimacy, transdisciplinarity

Opsomming

Aangespoor deur toenemende omgewingsprobleme, het navorsing oor die bydrae van bestuur van natuurlike hulpbronne tot die behoud van biodiversiteit en die verbetering van die lewens van landelike gemeenskappe in die onlangse verlede veld gewen. Daar is 'n ernstige behoefte aan doeltreffende, konteks-toepaslike, relevante en pragmatiese oplossings vir verlies aan biodiversiteit en armoede, veral in en rondom brandpunte vir biodiversiteit, soos beskermde gebiede. Die skakels tussen natuurlike hulpbronne, menslike welstand en bestuur word bepaal in komplekse sosiaal-ekologiese stelsels wat dikwels nie goed verstaan word nie.

Die kompleksiteit van interaksie tussen mens en omgewing het navorsers tot die gevolgtrekking gelei dat groot omgewingsprobleme nie opgelos kan word deur 'n enkele bloudrukmodel van bestuur of wondermiddel nie, soos die meeste monodissiplinêre studies aanbeveel het. Die top-down stelsel van bestuur van natuurlike hulpbronne ("vestingbewaring") en gemeenskapsgebaseerde bestuur van natuurlike hulpbronne (CBNRM) is die mees oorheersende benaderings tot die bestuur van natuurlike hulpbronne in beskermde gebiede in Zambië. Beide benaderings tot die bestuur van natuurlike hulpbronne het egter verskeie uitdagings en beperkings met betrekking tot die stop van biodiversiteitsverlies en die voorsiening van volhoubare lewensbestaan aan landelike gemeenskappe. Dit kan toegeskryf word aan verskillende persepsies, belange en optrede van die verskillende rolspelers. Die stropery van wild, ontbossing en oorbevissing is belangrike dryfvere vir die agteruitgang en vernietiging van hulpbronne wat steeds nasionale parke en hul buffersones (dws wildbestuursgebiede) beïnvloed.

Hibriede samewerkingsmodelle vir natuurlike hulpbronne is moontlik lewensvatbaarder en bied meer buigbaarheid in die bestuur as beide die bewaring van vestings en CBNRM. Hulle moet egter krities geanaliseer word vir sleutelbeperkings en moontlike ingrypings binne hul spesifieke omgewings- en institusionele konteks. Dit is belangrik om daarop te let dat samewerkingsprogramme gemengde resultate opgelewer het en ook nie 'n 'een-grootte-pas-almal' oplossing is nie. Daar is beperkte kennis oor hoe die interaksie tussen akteurs in natuurlike hulpbronbeheerstelsels sosio-ekonomiese en bewaringsuitkomste in Zambië beïnvloed. Hierdie studie het ten doel om by te dra tot die aanspreek van die uitdagings om hierdie kennisgaping te beperk deur die verband tussen die samewerkende regerings van natuurlike hulpbronne en die bewaring en sosio-ekonomiese uitkomste daarvan te ondersoek, en om 'n alternatiewe model voor te stel. Die deelname van alle relevante belanghebbendes aan beleidsformulering is noodsaaklik vir die ontwikkeling van effektiewe strategieë vir die bestuur van natuurlike hulpbronne.

Die besluitnemingstrukture en -prosesse moet die belange, waardes en menings van alle individue, huishoudings en organisasies wat met die natuurlike hulpbronne omgaan, verband hou.

Hierdie proefskrif gebruik 'n transdissiplinêre benadering om die plaaslike stelsels van bestuur van natuurlike hulpbronne met behulp van gemengde metodes te ondersoek. Daar word gefokus op die gehalte van gemeenskapsgebaseerde bestuurstelsels vir natuurlike hulpbronne in twee beskermde gebiede (Kaingu-hoofgebied in Namwala-wildbestuursgebied en die bewaringsgebied van die Kaindu-gemeenskap) wat aan Kafue Nasionale Park, in die suidelike Zambië, grens. Die navorsing onderneem uitgebreide belanghebbendes om die bestaande plaaslike bestuurstelsels vir natuurlike hulpbronne vir wild, woude en visserye te beoordeel. Konteksspesifieke vergelykende analise word toegepas om geleenthede vir verandering te identifiseer en om 'n nuwe en effektiewer gemeenskapsgebaseerde bestuursmodel vir bestuur van natuurlike hulpbronne in die twee gevallestudies te ontwikkel.

Bevindinge uit die eerste gevallestudie dui aan dat ondanks die teenwoordigheid van mede-bestuursrade en dorpskomitees, die gebrek aan omvattende en regte-gebaseerde gemeenskapsdeelname aan besluitneming, beplanning, begroting, die opstel van kwotas vir wildlewe en die verspreiding van voordele steeds betwis die legitimiteit van plaaslike bestuur van natuurlike hulpbronne in Kaingu-hoofstad. Die gebrek aan toegang tot uitsette en die persepsie dat koste en voordele buite verhouding en onregverdig versprei word, betwis die legitimiteit van die staatsgeleide plaaslike bestuurstelsel vir natuurlike hulpbronne in die gebied. Persepsie oor regte en verantwoordelikhede, die besluitnemingsproses, voorkeure en motiverings belemmer ook die effektiwiteit van kollektiewe omgewingsoptrede. Wantroue en vyandigheid tussen gemeenskapslede en implementeerders van bestuur van natuurlike hulpbronne is wydverspreid. Die multi-etniese en multikulturele struktuur, kommersialisering van omgewingsprodukte en steeds veranderende toestande dra by tot die kompleksiteit van die bestuur van natuurlike hulpbronne en beklemtoon die noodsaaklikheid van aanpasbare instellings.

In die tweede geval, Kaindu, dui bevindings op 'n lang geskiedenis van interne migrasie in die gebiede, 'n ingewikkelde politieke geskiedenis en 'n opeenvolging van onstabiele regeringsmodelle sedert die 20ste eeu, wat 'n komplekse en lae institusionele landskap vorm. Daar is gepaardgaande lae vlakke van deelname en 'n gebrek aan konsensus en gesamentlike strategiese visies, lae aanspreeklikheid en deursigtigheid in die besluitneming, 'n gebrek aan regverdigheid en swak erkenning en afdwinging van regte en pligte. Dit is ernstige swakpunte van sowel formele as informele plaaslike instellings. Gevolglik het ongekontroleerde toegang en gebruik gelei tot wydverspreide agteruitgang en vernietiging van

hulpbronne. Hierdie studie beklemtoon die noodsaaklikheid om die stelsel van bestuur van natuurlike hulpbronne te heroorweeg met inagneming van die plaaslike sosiale en omgewingskonteks.

Vergelykend, die gemeenskapsgebaseerde organisasies het nie die mag om voordele aan hul lede te lewer nie, want hulle het nie veel inspraak in die besluite oor natuurlike hulpbronne in beide gevalle nie. Die kapasiteite en grondwette van die Kaingu Community Board Board en die Kaindu Natural Resources Trust moet opgebou en bemagtig word om die vorming van kollektiewe keuse-reëlings te vergemaklik. Die huidige top-down-benadering van die bestaande bestuurstelsels moet verander word om gemeenskappe bo in die besluitnemingstruktuur te plaas, selfs in Kaindu, waar daar 'n raad bestaan wat in die minste die gemeenskap verteenwoordig.

Institusionele verandering is belangrik vir 'n goed gereguleerde hulpbronregime wat voorsiening maak vir effektiewe bewaring van biodiversiteit en die gebruik van volhoubare hulpbronne in die twee beskermde gebiede. Die herontwerp van plaaslike bestuursmodelle behels die omskrywing van die rolle van die akteurs en hul interaksiepatrone rakende die gebruik van natuurlike hulpbronne om die gewenste uitkomste te bereik. Die rolle van die politieke akteurs is van kritieke belang, want dit is die instellings wat die beleidsproses beheer, insluitend die bou van grondwet en reëls vir kollektiewe keuse. Net so moet nuwe reëls geformuleer en geïmplementeer word om ekonomiese rolspelers te reguleer, soos private ondernemings met toegang tot die hulpbronne. Die tegnologie en infrastruktuur wat gebruik word, moet gereguleer word om by die eienskappe van die omgewingshulpbronne van belang te pas. As die belangrikste akteur moet die staat die leiding neem om toe te laat dat gesag afgewentel word rakende sleutelaspekte van die bestuur van natuurlike hulpbronne aan gemeenskappe.

Hierdie studie kan bydra tot beleidsformulering, praktyk en literatuur deur onderskeidelik beleidsopdragte, aanbevelings en tydskrifpublikasies. Hierdie proefskrif bied empiriese kennis van die status van wild-, bos- en visseryhulpbronne onder twee verskillende bestuurstelsels soos ontwikkel deur 'n transdissiplinêre proses waarby verskillende belanghebbendes betrokke is. Dit beklemtoon die belangrikste sosiale, politieke en ekologiese faktore wat die stelsel van bestuur van natuurlike hulpbronne belemmer om positiewe bewaring- en sosio-ekonomiese uitkomste te lewer. Die studie word afgesluit deur 'n hibriede en nuwe transformerende model van natuurlike hulpbronne voor te stel wat aspekte van beide die vestingbenadering en CBNRM kombineer.

SLEUTELWOORDE: Samewerkende bestuur/regering, gemeenskapsgebasseerde natuurlike, goeie regerering, omgewingsbestuur, beskermde areas, deelname, legitimiteit, transdissiplinariteit

Dedication

I dedicate this research to my wife Precious and to my son Ethan, who have been with me every step of the way during this study. Thank you for your patience and sacrifice. I love both of you with all my heart.

Also to my parents, Mr K. D. Luaba and Mrs E. C. Luaba. Thanks mom, rest in peace, dad.

Acknowledgements

Acronyms

ADC	Area Development Committee
ADMADE	Administrative Management Design for Game Management Area
CAMPFIRE	Communal Areas Programme for Indigenous Resources
CBOs	Community-Based Organisations
CBNRM	Community–Based Natural Resource Management
CRB	Community Resources Board
DNPW	Department of National Parks and Wildlife
DoF	Department of Fisheries
FD	Forestry Department
FGD	Focus Group Discussion
FMC	Fisheries Management Committee
FPIC	Free, Prior and Informed Consent
GMA	Game Management Area
GRZ	Government of the Republic of Zambia
IUCN	International Union for the Conservation of Nature
KCC	Kaindu Community Conservancy
KNP	Kafue National Park
KNRT	Kaindu Natural Resources Trust
LIRDP	Luangwa Integrated Rural Development Project
MLNR	Ministry of Lands and Natural Resources
MNRE	Ministry of Natural Resources and Environment
MTA	Ministry of Tourism and Arts
NRMP	Natural Resources Management Project
NORAD	Norwegian Agency for Development Cooperation

NORHED	Norwegian Programme for Capacity Development in Education and Research for Development
NRG	Natural Resources Governance
NRM	Natural Resource Management
PA	Protected Area
SES	Social-Ecological System
UNDP	United Nations Development Programme
USAID	United States Agency for International Development
VAG	Village Action Group
WWF	World Wide Fund for Nature

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CHAPTER ONE : General Introduction

1.1 Introduction

1.1.1 Background: Biodiversity, ecosystem services and livelihoods

The wellbeing of human beings as a species depends to a large extent on the ecosystem services derived from the environment (Costanza et al., 2014). The Millennium Ecosystem Assessment (MA), identified four types of ecosystem services that include provisioning (e.g. timber), regulating (e.g. water quality regulation), cultural (e.g. recreation) and supporting (e.g. nutrient cycling) (MA, 2005). Biodiversity is defined as *"the variety of life on planet earth including all organisms, species and populations; the genetic variation among these and their complex assemblages of communities and ecosystems"* (UNEP, 2010). Biodiversity is important as it supports the delivery of ecosystem services thereby supporting human economies and development (Carpenter et al., 2009). Prompted by a proportional increase of human population and intensive economic activity, human action has rapidly altered the structure and functioning of the world's ecosystems during the second half of the twentieth century leading to both positive and negative outcomes (MA, 2005; Rockström et al., 2009).

Negative outcomes that include the degradation of 60% of the global ecosystems, exacerbation of human poverty and growing inequities and disparities across groups of people have outweighed positive outcomes such as gains in food production and increased access to water (MA, 2005). Currently, there is a substantial reduction in biodiversity because of damage to and loss of many natural resources through intensified agriculture, forest clearing and intensive exploitation of fisheries (MA, 2005; Ostrom, 2009). Further, the advent of climate change has catalysed the negative impacts of these threats and adversely affected the livelihoods of the rural communities (Hahn et al., 2008; Limuwa et al., 2018).

Scoones (1998) defined a livelihood as "*the capabilities, assets (including both material and social resources) and activities for making a living*". Further, a livelihood can be said to be sustainable if it can cope with and recover from stresses and shocks, and maintain or enhance its capabilities and assets, while not undermining the natural resource base. Most of the rural population (65% of the national population) in Zambia engage in agriculture as their main livelihood activity with about 50% involved in the rearing of livestock such as cattle, pigs, goats and chickens (FEWSNET, 2014). In addition to agriculture, rural communities' (including those within protected areas) livelihoods are almost strictly related to natural

resource exploitation which includes hunting, logging, charcoal production, fishing and honey production (FEWSNET, 2014). These livelihood activities have however led to the destruction and degradation of the environment and numerous conflicts over environmental resources among and within communities (Merten & Haller, 2008; Chirwa et al., 2015). Natural resources such as wildlife, forests and fisheries in and around Kafue National Park (KNP) are and have for decades been under massive pressure due to the failure of institutions to enforce regulations in the area (Chabwela & Haller, 2010). This situation places a high demand on the institutions governing natural resources to be more effective and sustainable.

1.1.2 Natural resource governance institutions in protected area management

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). Governance cuts across international, national and sub-national levels and deals with economic, political and administrative aspects (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. Good governance or democratic governance ensures inclusive participation of all stakeholders, aims to make governing institutions more effective, responsive and more accountable, and respects the rule of law and international norms and principles (Wingqvist et al., 2012). By contrast, bad governance is characterised 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).

From the characteristics of good and bad governance above, it is clear the environmental governance of resources in protected areas can be termed as being good or bad based on the conservation and socio-economic outcomes. Environmental governance consists of the rules, practices, policies and other institutions and organisations 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 harmonises policies, institutions, procedures, tools and information to allow equitable participation among public, private, civil society and community actors in the management of conflicts, the establishment of consensus, fundamental decision-making and ensuring accountability for action taken (Haque, 2017).

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In the context of this study, environmental governance takes place in protected areas which are defined as "*clearly defined geographical spaces recognised, 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). The quintessential type of protected area is the national park, "*a large natural or near natural area set aside to protect large-scale ecological processes, along with the complement of species and ecosystems characteristic of the area, which also provide a foundation for environmentally and culturally compatible spiritual, scientific, educational, recreational and visitor opportunities*" (Borrini-Feyerabend et al., 2013).

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 it ensures access to information and public participation (Wingqvist et al., 2012). Additionally, good governance of protected areas has the greatest potential to affect coverage, is the main factor that enhances 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 has classified the governance of protected areas into four different types as shown in Table 1-1 (Dudley, 2008). From the descriptions of governance above and the classification by IUCN, it is evident that governance involves the interactions of actor organisations and, at its core, exchanges between human beings.

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

Governance types	Sub-types
Type A. Governance by government	• 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	• 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	• Conserved areas established and run by:
	  - individual landowners
	  - non-profit organisations (e.g., NGOs, universities)
	  - for-profit organisations (e.g., corporate owners, cooperatives)

Type D. Governance by indigenous peoples and local communities	• Indigenous peoples' conserved territories and areas – established and run by indigenous peoples • Community conserved areas and territories – established and run by local communities

A good understanding of human motivation is essential to analyse environmental problems because they fundamentally concern human action (Vatn, 2015). The author further clarifies that institutions are humanly created "rules" that take the form of conventions, norms, or various types of rights which not only protect certain interests or values but also facilitate coordination among actors. Governance is the arena in which various actors and institutions interact and integrate concerning policy and decision-making (Liebrand, 2015). Most studies of Natural Resources Management (NRM) have historically focused on local institutions to decipher how users were managing or could manage resources sustainably without interference from the state or the market. However, the critique that local institutions are highly informed by external linkages and by the insight of government agencies, policies and professionals inspired a shift to study higher levels of governance post-2000 (Liebrand, 2015).

1.1.2.1 Top-down NRM institutions

The top-down or "command and control" model of NRM comprises a main central actor (usually the state) with *de jure* authority to make decisions, control benefit-sharing mechanisms and decide the management objectives. This approach assumes that problems are well-bounded, clearly defined, relatively simple and largely linear (Holling & Meffe, 1996). However, a top-down approach cannot easily be applied to complex, non-linear and poorly understood natural environments like Social-Ecological System (SESs). The same predictable expected outcomes are usually not obtained, resulting in severe socio-economic and ecological consequences (*ibid*). Resultant outcomes of command-and-control regimes include unforeseen collapses in resources, and socio-economic strife and losses in biodiversity (Holling & Meffe, 1996). Globally, top-down approaches to environmental management have been criticised due to their predisposition of prioritising and exclusive appreciation of professional and scientific knowledge (Smith, 2008). Consequently, the top-down approach is prone to alienating local communities and their internal resource management schemes due to its paternalistic and exclusive nature (*ibid*). The failures and limitations of top-down NRM led to increasing acceptance of bottom-up approaches that typically appreciate and incorporate local people and their skills, needs, and experiences (Smith, 2008).

1.1.2.2 Bottom-up institutions

The advent of Community-Based Natural Resource Management (CBNRM) as an alternative to conservation approaches in national parks in the 1970s and 1980s promoted bottom-up approaches by arguing that both conservation and local developmental goals would be met if the local people managed the land and other natural resources (Reid, 2014). Besides, Reid (2014) summarises the limitations and lessons from CBNRM as a bottom-up approach as:

(i) **Vulnerable communities must be central to planning**: Many conservation programmes that were labelled as CBNRM were not, because they were externally initiated to mask top-down management.

(ii) **Demonstrate effectiveness:** CBNRM that was premised on providing economic benefits and development was labelled as a conservation disaster by critics because it stimulated rather than reducing the demand for natural resources.

(iii) **Addressing the institutional, governance and policy context:** The concept of CBNRM has grown from a response to an environmental problem to becoming an institutional or organisational development programme aimed at (a) enhancing direct community involvement, (b) policy and law recognising and devolving rights and management authority from the central government to communities, (c) collective community ownership of natural resources, and (d) benefit-sharing mechanisms that ensure tangible benefits to communities.

(iv) **Widening benefits by scaling up:** The CBNRM approach must not only be placed in a broader institutional and policy framework that supports devolution of NRM, rights and responsibilities to local people, but must also be scaled up to ensure that benefits reach millions of poor rural people.

(v) **Provision of incentives:** Most CBNRM programmes provided less tangible long-term, non-cash benefits from sustainable NRM, but failed to incentivise sustainable behaviour through more visible direct, short-term household-level benefits.

In summary, it can be noted that both the top-down and bottom-up approaches have their limitations. The limitations of bottom-up approaches such as CBNRM need to be critically analysed to avoid the trap of exaggerating and necessitating the community-based approach (Smith, 2008). As such, context-specific analysis is a requirement for identifying key governance bottlenecks and priority interventions for environmental management (Wingqvist et al., 2012). This is because there exists a wide array of potential governance mechanisms and specific national, regional, or local circumstances that determine what needs to be strengthened and in what order. Additionally, context-specific analysis helps to identify the steps that are possible in the process of improving governance in the short, medium and long term (Wingqvist et al., 2012).

1.2 Statement of the problem and research hypothesis

Globally, biodiversity is under increasing threat from species overexploitation, land and sea usage, pollution, climate change and invasive species and disease (Mulhern, 2020). Rapid human population growth and unsustainable patterns of resource consumption are the primary drivers of the current unsustainable rates of habitat loss and overexploitation (Population Matters, 2021). For instance, 68% of all vertebrate wildlife populations have been lost since 1970, global forest cover has reduced by 80 million hectares since 1990 and 70% of fish stocks are used, overused or in crisis (WWF, 2020; FAO & UNEP, 2021). The overexploitation and degradation of natural resources by poor rural communities is not surprising because the resources provide ecosystem services and products that are directly and intricately linked with livelihoods activities (Hardin, 1968). However, effective natural resource management can conserve biodiversity and ensure the sustainable supply of ecosystem services (Watson et al., 2014).

The creation of protected areas such as national parks in the 20th century was relevant and initially effective at maintaining biodiversity but, by the turn of the century many of them, especially in developing countries proved ineffective (Abdulaziz et al, 2019). Managerial problems such as the exclusion of indigenous people and communities proximal to protected areas have been identified as major challenges (Child, 2004). This stimulated the need for better performing systems of natural resources management. Natural Resource Governance (NRG) systems have evolved from traditional state-led governance to CBNRM initiatives and other multi-actor systems (Child & Wojcik, 2013; Abdulaziz et al., 2019).

Conservation of biodiversity and the provision of sustainable livelihoods have been the aims of many state-led CBNRM programmes in Zambia, but few have produced tangible positive outcomes. Instead, biodiversity losses and poverty have persisted in most rural communities surrounding national parks and their buffer zones i.e. Game Management Areas (GMAs). Furthermore, aspects such as the size of the protected areas, limited funding for conservation, lack of manpower and logistical resources have hampered the coverage and effectiveness of state authorities in managing wildlife, forests and fisheries resources (Simasiku et al., 2008; Lindsey et al., 2013). The question of how best to limit the use of natural resources to ensure their long-term socio-economic viability, posed by Ostrom (1990) remains valid.

Protected area governance and management is complex and necessitates the participation of many stakeholders/actors including the state, private firms, non-governmental organisations (NGOs) and local communities to be successful (Ostrom & Cox, 2010; Fiorino & Ostergren, 2012). The failure of NRG

models to integrate the needs, interests, objectives and intentions of all actors has contributed to poor environmental and socio-economic outcomes (Ostrom, & Cox 2010). The poor interactions among actors in NRG as a driver of degradation and destruction of wildlife, forests and fisheries forms the main problem investigated in this study. The study contributes to addressing knowledge gap between collaborative NRG systems and their socio-economic and conservation outcomes by focussing on the patterns of interaction among actors.

Many modern thinkers have emphasised the need for a multi-disciplinary and multi-dimensional collaborative approaches to NRG due to conflicts arising from different actor interests (Bothwell, 2019; Nakakaawa et al., 2015). Thus, the formation of new partnerships or institutions based on better communication, inclusiveness and appropriate role designation is imperative (Davies & White, 2012). The interactions of several actors with varying interests, perceptions and attitudes entails that NRG institutions be designed to be more adaptive, resilient and effective (Ostrom, 2009; Ayivor et al, 2020). Further, a good understanding of historical relationships among actors is indispensable in designing novel collaborative NRG arrangements that can ensure sustainability (Fischer et al., 2014). The relationships between the communities around protected areas and other actors is especially important as communities share their physical space with natural resources and are more likely to degrade and vandalise them.

Therefore, it is the hypothesis of this study that if the communities around protected areas are empowered by law to become equitable partners in NRG, they will value and not destroy the natural resources within their proximity. The study primarily aims at examining the existing models of governance and management of wildlife, forests and fisheries, based on relevant NRG theory with the aim of developing and proposing a novel and transformative collaborative NRG model. This research uses a transdisciplinary (TD) research approach to evaluate the existing NRG systems in Kaingu (Namwala GMA) and Kaindu Community Conservancy (KCC) in Zambia.

1.3 Goal, objectives and scope of the study

This dissertation presumes that governance, specifically local governance of wildlife, forests and fisheries, is one of the most important management tools that can be used to ensure biodiversity conservation and sustainable livelihoods, if modelled according to the context in which these natural resources are found. It advocates good governance practices in decision-making and implementation of management objectives in protected areas through more elaborated guidelines/principles.

The overall goal of this research is to contribute to biodiversity conservation and improvement of livelihoods for communities living in Kaindu and Kaingu protected areas by adding to the knowledge, theory, evidence and tools for governing wildlife, forests and fisheries. To achieve this goal, the focus is placed on comparing the local outcomes of the emerging community-based NRG system in chief Kaindu's area in Mumbwa district, with the more prevalent country-wide, state-led NRG system in chief Kaingu's area, in Namwala GMA in Itezhi-Tezhi district regarding the use of the natural resources and the state of the natural resources. Thus, the study relates the quality of the governance system to its ultimate effect on local natural resources and livelihoods.

1.3.1 Research aim, objectives and related questions

1.3.1.1 Aim:

    i.   To develop a community-driven and transformative model for collaborative NRG that can contribute to the formulation of effective strategies for biodiversity conservation and improved livelihoods.

1.3.1.1.1 Objective 1:

To assess the quality of existing CBNRM governance systems in Kaindu and Kaingu conservation areas.

Related questions:

    i.   How robust and legitimate are the local NRG institutions in the CBNRM system?

    ii.   What policy governing institutions and resource regimes are operating in the protected areas?

    iii.   What is the environmental and institutional history of CBNRM in the protected areas?

    iv.   How effective are the local NRG institutions in conserving wildlife, forests and fisheries?

    v.   Are good governance principles upheld in the decision-making processes on key issues concerning the protected area?

1.3.1.1.2 Objective 2:

To determine the main structures and processes of the existing CBNRM governance systems that need to be changed for improved conservation of wildlife, forests and fisheries in the Kaindu and Kaingu conservation areas.

Related questions:

    i.   What are the structures and processes of NRG in the CBNRM models that can be changed to integrate good governance in decision-making?

    ii.   How can the novel governance options improve effectiveness, efficiency, equity, social acceptance and resilience?

1.3.1.1.3 Objective 3:

To formulate a novel adaptive collaborative CBNRM model of governance for wildlife, forests and fisheries resources by comparing the NRG systems in Kaindu and Kaingu conservation areas.

    Related questions:

    i.   How can the patterns of interaction among actors in CBNRM be improved to ensure positive outcomes?

    ii.   What are the incentives for and against participation?

    iii.   What can be done to improve trust, commitment, shared understanding, intermediate outcomes and face-to-face dialogue in the collaborative process?

    iv.   Which actors should provide facilitative leadership in each case?

1.4 Significance of the study

This study is significant because it contributes to the NRG policy formulation, practice and literature. The problem of natural resource degradation and destruction is major concern for natural resource managers in Zambia. Key issues include land degradation, poaching, deforestation and overfishing. As such, the study applies several theories and institutional frameworks for the governance of environmental resources to assess NRG regimes. It proposes an alternative and transformative model of collaborative NRG. The recommendations from the study are summarised as policy briefs and constitute a valuable contribution to policy-makers, especially the government departments responsible for wildlife, forest and fisheries management.

The study also has the potential to provide support to other collaborating actors in NRG by outlining the roles and responsibilities of each actor. The empirical results from state-centric CBNRM and community-led NRG systems can serve as a scientific and research-based guide for optimal collaboration among traditional authorities, private firms, NGOs and the communities. The study highlights the structures and processes within NRG systems that need to be changed, the main actors to facilitate the change, areas

needing capacity development and future prospects for NRG models in Zambia. As such, this research is envisaged to have potential to contribute to uplifting the welfare of rural communities.

Finally, the study contributes to literature through the submission of adapted versions of chapters 4, 5 and 6, for publication as research articles. The manuscript adapted from chapter 4 assesses the legitimacy of CBNRM institutions as run by the state and their effectiveness in delivering positive conservation outcomes and ensuring sustainable livelihoods. The article based on chapter 5 assess the quality of NRG by exploring the lessons learnt from a community-owned conservancy and is currently under second stage of review by the *Development Southern Africa* journal. Lastly, a manuscript adapted from chapter 6 is a comparative study of the preceding chapters aimed at drawing out the pros and cons of two NRG models.

1.5 Dissertation structure and overview

This dissertation is made up of seven chapters i.e. three descriptive chapters, three empirical chapters and the conclusion chapter. The empirical chapters 4-6 have been written for journal publication with their theory sections, descriptions of the study areas and reference lists. The chapters are set up such that the findings of each chapter forms the point of departure for the subsequent chapter.

Chapter 1 introduces the concepts of biodiversity, ecosystem services and livelihoods and establishes their links to governance, institutions and the transdisciplinary approach. It also briefly introduces the main theoretical and practical contextual issues that this research seeks to address and gives an outline of the research problem, philosophical argument, the goal, research objectives and their associated research questions and scope of the study.

Chapter 2 gives a detailed account of the key theories and literature that underpins the study. It delves deeper into the theories surrounding social-ecological systems and the environmental problems thereof. This chapter is aimed at revealing the gaps that cause a disparity between the intentions and objectives of natural resource management strategies and the actual outcomes they have produced within the Zambian context. Section 1 introduces the need for collaboration among actors in the governance of protected areas. Section 2 presents the theoretical underpinnings of governance, explains the differences between governance and management, and highlights the links between environmental governance, conflicts and collaboration. Section 3 describes the governance of natural resources in protected areas in Zambia and presents the variants of collaborative NRG (i.e. market-based CBNRM, public-private partnerships and multi-partner governance in Zambia). Section 4 discusses the systemic, structural and

process-related gaps that are responsible for the non-achievement of management goals from a governance perspective in Zambia.

Chapter 3 presents the methodology supporting the research process. Section 1 presents the conceptual framework which combines a transdisciplinary approach with the Environmental Governance Systems (EGS) framework posited by Vatn (2015). Section 2 describes the philosophical worldview, embedded case study research design, research strategy, methods, analyses and outputs of the study. Section 2 further describes the biophysical and demographic structure of the study site and the limitations of the study.

Chapter 4 is formulated as an article for publication. It presents an empirical description of the legitimacy of a top-down CBNRM system of NRG in Kaingu chiefdom in Namwala GMA. The chapter addresses the first and second objectives applied to a state-owned protected area. Section 1 outlines the historical background to the formation of national parks and the social and ecological problems associated with them. It also highlights the link between socio-ecological problems and the governance of natural resources. Additionally, the legitimacy theories are introduced concerning their applicability to the Kaingu case study. Section 2 is a biophysical, demographic and political description of the study area. Section 3 presents and discusses the results regarding the legitimacy of NRG institutions with a particular focus on input legitimacy, output legitimacy, rights and responsibilities and perceptions of structures, quality of decisions made, and types of motivation among actors.

Chapter 5 presents the empirical findings from the Kaindu Community Conservancy (KCC) regarding the robustness of local NRG institutions, their patterns of interaction and their impact on the state of the wildlife, forest and fisheries resources. The chapter is structured as an article and addresses research objectives 1 and 2 regarding the local governance of natural resources in a community-owned protected area with a unique governance system. Section 1 describes the underperformance of protected areas as tools for conservation despite the vast terrestrial area they cover and despite the introduction of CBNRM. Section 2 describes the study area and data collection and data analysis. Section 3 presents the results of the case study regarding the institutional history and the quality of NRM. Section 4 discusses the robustness of NRG institutions and the quality of the process of NRM.

Chapter 6 is built on the empirical results presented in chapters 4 and 5. It presents the results of a comparative analysis of the NRG system from the two study sites. This chapter addresses research objective 3. Applied thematic analysis and statistical analysis are used to compare the two protected areas

and the different stakeholders' perceptions regarding the quality of collaboration between stakeholders, participation and outcomes. In section 1 the features and performance of both the fortress conservation and CBNRM approaches are presented. Section 2 presents the EGS framework and the participatory theory as key concepts for analysing the difference between the NRG systems in the two case studies. The third section presents features of the two study areas and the methods used to collect and analyse data because the chapter is structured as an article for publication. Section four presents the results in relation to the components of the EGS framework and the processes that link them. Thereafter the results are discussed in section 5.

Chapter 7 details the synthesis of the study by presenting the proposed novel model for the governance of natural resources in the protected areas of Zambia. It presents the main insights gained and policy recommendations towards better local governance of wildlife, forests and fisheries. The chapter also amalgamates the conclusions of the dissertation, highlights expected challenges and recommends important aspects for future research.

References

Abdulaziz, H., Shuaibu, A.-W., & Abdulaziz, M. A. (2019). Role of Governance in Management of Conservation Areas. *Global Scientific, 7*(6), 649-708.

Ayivor, J. S., Nyametso, J. K., & Ayivor, S. (2020). Protected Area Governance and Its Influence on Local Perceptions, Attitudes and Collaboration. *Land, 9*(310). doi:10.3390/land9090310

Bothwell, K. N. (2019). Practicing Collaborative Natural Resource Management with Federal Agencies: Keys to Success across Partnership Structures. *Journal of Forestry, 117*(3), 226-233. doi:10.1093/jofore/fvz010

Carpenter, S. R., Mooney, H. A., Agard, J., Capistrano, D., Defries, R. S., Diaz, S., Whyte, A. (2009). Science for managing ecosystem services: Beyond the Millennium Ecosystem Assessment. *Proceedings of the National Academy of Sciences of the United States of America, 106*, 1305-1312.

Chabwela, H. N., & Haller, T. (2010). Governance issues, potentials and failures of participatory collective action in the Kafue Flats, Zambia. *International Journal of the Commons*, Vol 4, No 2. 621–642.

Child, B. (2004). *Parks in Transition: Biodiversity, Rural Development and the Bottom Line.* London: Earthscan.

Chirwa, P. W., Larwanou, M., Syampungani, S., & Babalola, F. D. (2015). Management and restoration practices in degraded landscapes of Southern Africa and requirements for upscaling. *International Forestry Review, 17*(S3), 31-41.

Costanza, R., de Groot, R., Sutton, P., van der Ploeg, S., Anderson, S. J., Kubiszewski, I., Turner, R. K. (2014). Changes in the global value of ecosystem services. *Global Environmental Change, 26*, 52-158.

Davies, A. L., & White, R. M. (2012). Collaboration in natural resource governance: Reconciling stakeholder expectation in deer management in Scotland. *Journal of Environmental Management, 112*, 160–169.

Dudley, N. (2008). *Guidelnes for Applying Protected Area Management Categories.* Gland: IUCN.

FAO, & UNEP. (2020). *The State of the World's Forests: Forests, Biodiversity and People.* Rome: FAO and UNEP. doi:10.4060/ca8642en

FEWSNET. (2014). *FEWSNET*. Retrieved December 6, 2016, from FEWSNET: www.fews.net

Fiorino, T., & Ostergren, D. (2012). Institutional Instability and the Challenges of Protected Area Management in Russia. *Society and Natural Resources, 25*(2), 191-202.

Fischer, A., Wakjira, D. T., Weldesemaet, Y. T., & Ashenafi, Z. T. (2014). On the interplay of actors in the co-management of natural resources – A dynamic perspective. *World Development, 64*, 158-168.

Hahn, M. B., Riederer, A. M., & Foster, S. O. (2008). The Livelihood Vulnerability Index: A pragmatic approach to assessing risks from climate variability and change – A case study in Mozambique. *Global Environmental Change, 19*, 74–88.

Haque, M. (2017). Environmental Governance. In A. Farazmand (Ed.), *Global Encyclopedia of Public Administration, Public Policy, and Governance.* Cham: Springer. doi:10.1007/978-3-319-31816-5_1766-1

Hardin, G. (1968). Tragedy of the Commons. *Science, 162*(3859), 1243–1248. doi:10.1126/science.162.3859.1243

Holling, C. S., & Meffe, G. K. (1996). Command and Control and the Pathology of Natural Resource Management. *Conservation Biology, 10*(2), 328-337.

Liebrand, J. (2015). *Methods for researching institutions: Critical institutional perspectives.* King's College London, Department of Geography, London: King's College London.

Limuwa, M. M., Sitaula , B. K., Njaya , F., & Storebakken, T. (2018). Evaluation of Small-Scale Fishers' Perceptions on Climate Change and Their Coping Strategies: Insights from Lake Malawi. *Climate, 6*(34), 1-23. doi:10.3390/cli6020034

Lindsey, P., Nyirenda, V., Barnes, J., Becker, M., Tambling , C., Taylor, A., & Watson , F. (2013). *Zambian Game Management Areas.* Lusaka: Wildlife Producers Association of Zambia.

Merten, S., & Haller, T. (2008). We are Zambians – Don't tell us how to fish! Institutional Change, Power Relations and Conflicts in the Kafue Flats Fisheires in Zambia. *Human Ecology, 36*, 699-715.

Millennium Ecosystem Assessment. (2005). *Ecosysytems and human wellbeing: Synthesis.* Washington DC: Island Press.

Mulhern, O. (2020, December 4). *Earth.org*. Retrieved July 28, 2021, from Earth.org: Biodiversity Loss in Numbers, the 2020 WWF Report: https://earth.org/data_visualization/biodiversity-loss-in-numbers-the-2020-wwf-report/

Nakakaawa, C., Moll, R., Vedeld, P., Sjastaad, E., & Cavanagh, J. (2015). Collaborative resource management and rural livelihoods around protected areas: A case study of Mount Elgon National Park , Uganda. *Forest Policy and Economics,* 57, 1-11

Ostrom, E. (1990). *Governing the commons: The evolution of institutions for collective action.* Cambridge: Cambridge University Press.

Ostrom, E. (2009). A General Framework for analysing Sustainability of Social-Ecological Systems. *Science, 325*, 419-422.

Ostrom, E., & Cox, M. (2010). Moving beyond panaceas: A multi-tiered diagnostic approach for social-ecological analysis. *Environmental Conservation, 37 (4)*, 451-463.

Population Matters. (2021). *Population Matters*. (Charity 1114109, Company 3019081) Retrieved July 31, 2021, from https://populationmatters.org/the-facts/biodiversity?gclid=CjwKCAjwxo6IBhBKEiwAXSYBsxO_v332cTdvirfISsjfrJQw_LSMs JJa2m3CWaXLMb2viDsaevkGrxoCU1gQAvD_BwE

Reid, H. (2014). *PreventionWeb:* Retrieved December 23, 2020, from The Knowledge Platform for Disaster Risk Reduction: https://www.preventionweb.net/news/view/38716

Rockström, J., W. Steffen, K. Noone, Å. Persson, F. S. Chapin, E. F. Lambin, T. M. Lenton, M. Scheffer, C. Folke, and H. J. Schellnhuber. 2009. A safe operating space for humanity. Nature **461**:472-475.

Rose, R., & Peiffer, C. (2019). *Bad Governance and Corruption.* Cham: Palgrave Macmillan.

Scoones, I. (1998). *Sustainable Rural Livelihoods: A Framework for Analysis.* Brighton: Sustainable Livelihood Programme.

Simasiku, P., Simwanza, H. I., Tembo , G., Bandyopadhyay, S., & Pavy, J. (2008). *The Impact of Wildlife Management Policies on Communities and Conservation in Game Management Areas in Zambia: Message to Policy Makers.* Lusaka: Natural Resources Consultative Forum.

Smith, J. L. (2008). A critical appreciation of the bottom-up approach to sustainable water management: Embracing complexity rather than desirability. *Local Environment , 13*(4), 353-366.

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UNEP. (2010). *What is Biodiversity? Come with us on a journey.* Nairobi: United Nations Environment Programme.

Vatn, A. (2015). *Environmental Govenance: Institutions, policies and actions.* Cheltenham: Edward Elgar.

Watson, J. E., Dudley, N., Segan, D. B., & Hocking, M. (2014). The Performance and Potential of Protected Areas. *Nature, 7525*(515), 67-73.

Wingqvist, G. Ö., Drakenberg, O., Slunge, D., Sjöstedt, M., & Ekbom, A. (2012). *The role of governance for improved outcomes.* Stockholm: Swedish Environmental Protection Agency.

WWF. (2020). Living Planet Report 2020 - Bending the curve of biodiversity loss. (R. E. Almond, M. Grooten, & T. Petersen, Eds.) Gland, Switzerland: WWF.

Yeboah-Assiamah, E., Muller, K., & Domfeh, A. K. (2016). Institutional assessment in natural resource governance. *Forest Policy and Economics*, 1-12.

CHAPTER TWO : Collaborative Natural Resources Governance in Zambia

2.1 Introduction

Governance by the government alone will not conserve the wildlife, forests and fisheries even within protected areas. Zambia is a party to more than 20 global environmental conventions that guide the laws, policies and actions for the realisation of sustainable socio-economic development through environmental and natural resource management (CBD, 2020). The constitution of Zambia contains the supreme laws that govern land, wildlife, forests and fisheries. According to these laws, the governance of natural resources has been allocated to the prerogative of the central government with all authority under the office of the republican president (GRZ, 1995; GRZ, 2011; GRZ, 2015; GRZ, 2015b). This top-down system of governance, or the "fortress approach" (fortress conservation), led to the establishment of protected areas like national parks and Game Management Areas (GMAs) in the colonial era, and has been the choice for most of the post-colonial states in Africa (Child, 2004).

There has been a rapid change in the governance of natural resources since the end of the Second World War. The state has increasingly become less important as environmental problems have become more urgent, connected, unforeseen with unexpected impacts (Agrawal & Lemos, 2007). Additionally, the author notes that environmental problems in the 21st century demand more careful, systematic and thoughtful attention than ever before. They emphasise that the complexity and multi-scale character of the most demanding environmental issues invalidate the pure models of governance in which the state or market actors alone play the leading role. No single actor has the capacity to mitigate the impacts of wide-ranging environmental issues such as climate change, biodiversity loss, natural resource degradation and destruction. The early strategies of fortress conservation and state-centric collaborative Community-Based Natural Resource Management (CBNRM) have proved inadequate in the management of protected areas (Hutton et al., 2005).

In Zambia, as in other southern African countries, the traditional fortress conservation approach was inherited from the colonial system of protected area management (Child, 2004). In the late 1980s and early 1990s, CBNRM was vigorously implemented to overcome the failures of the top-down fortress approach (Hutton et al., 2005). However, CBNRM has only managed to produce mixed results ranging

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from total failure to temporal and spatial success (Child & Barnes, 2010). Some responders have called for the return to the fortress approach, while others have argued that the reasons for the varied performance of CBNRM should be analysed on a case-by-case basis to formulate improved alternatives (Hutton et al., 2005).

It must be noted that the state, market and community actors still have significant roles to play in environmental governance, hence the development of hybrid or collaborative natural resource governance models. By its nature, collaborative governance must grapple with the competing interests of the different actors involved, by balancing the requirements of environmental protection on the one hand and the socio-economic wellbeing of communities on the other hand (Yeboah-Assiamah et al., 2018). It is thus imperative that the new forms of environmental management undergo institutional transformations through adaptive evolution to deliver positive outcomes regarding the state of natural resources and the standard of life for rural communities around protected areas (Koontz et al., 2015). The state, the market, NGOs and communities must interact meaningfully to foster development at the global, regional, national and local levels of governance. Many concepts of NRG and NRM have been developed and tried in real-life situations with varying levels of successes owing to context-specific environmental and socio-cultural factors (Nelson et al., 2008).

This section of the study examines the experiences of CBNRM in selected national parks, i.e. the Kafue National Park, South Luangwa National Park, North Luangwa National Park, Kasanka National Park and the Liuwa Plain National Park of Zambia, for the identification of bottlenecks that may constrain effective NRG. This chapter investigates the performance of selected CBNRM models considering the theory that supports CBNRM as a concept. It contributes to theory by drawing out the challenges faced by the CBNRM initiatives in each of the protected areas.

2.2 Review methodology and key concepts

This review adopted a chronological and critical literature review to trace the evolution of collaborative NRG in Zambia to highlight the key attributes of past and current NRG systems in protected areas. An in-depth assessment and review of the performance of NRG programmes was conducted through a critical review of journal articles, scholarly books and government documents. Literature was identified through an inductive process using the keywords and phrases "collaborative governance", "CBNRM", "environmental governance", "protected areas", "natural resources management" and "good governance". Depending on accessibility and relevance, several search domains, such as *Google Scholar,*

Research Gate and *Science Direct* were used. Journal articles were selected on the criteria that they reported the theoretical and empirical results of in-depth analyses of similar NRG systems. Community participation in decision-making, benefit-sharing regimes and the patterns of interaction among actors in NRG were the main themes analysed.

2.2.1 Theoretical underpinnings

This study is anchored on SES theories which recognise that human and ecological subsystems are integrated, interdependent and that they interact in complex adaptive systems that are nested across scales (Harrington et al., 2010; Delgado-Serrano et al., 2015; Bouamrane et al., 2016). Human beings have always relied on the environment for the provision of natural assets such as land, water and air, which are necessary for sustenance and survival (Tallis & Kareiva, 2005; Sitas, 2014). Human engineered systems such as roads, irrigation systems and communication networks enable the harnessing of natural ecosystems such as fisheries, forests and water resources by human populations creating complex SESs (Ostrom, 2009). The interlinked and complex nature of the interactions between humans and their environment makes the description, understanding, governance and management of SESs difficult (Ostrom & Cox, 2010).

2.2.2 Governance

Wherever decisions are being made and power and authority exercised, some form of "governance" is in place (Borrini-Feyerabend et al., 2013). Some have contended that governance is an exclusive function of governments. For example, Fukuyama (2013) defined governance as a government's ability to enforce rules and provide services regardless of whether that government is democratic or not. Similarly, Lynn, Hienrich, & Hill (2001), described governance as implying the regimes of laws, rules, judicial decisions, and administrative practices that constrain, prescribe and enable the provision of publicly supported goods and services.

However, these definitions of governance are not holistic enough to include other stakeholders involved in the governance process. To be more encompassing, the definition of governance should not only provide room for traditional governmental structures and emerging forms of public/private decision-making bodies but should include the fact that governance is also about collective decision-making (Ostrom, 1990; Ansell & Gash, 2007). Collective decision-making as being the focus of governance was propounded by Stoker (1998), who argued that as a baseline definition governance can be taken as the rules and forms that guide collective decision-making and that governance is not about an individual or

organisation making a decision, but rather about groups of individuals or organisations or systems of organisations making decisions. This study espouses the wider and more inclusive definitions such as that posited by Graham, Amos, & Plumptre (2003), who stated that: "*Governance is the interaction among structures, processes and traditions that determine how power and responsibilities are exercised, how decisions are taken and how citizens and other stakeholders have their say*".

Further, Graham et al., (2003) show that governance as a concept applies to different kinds of collective action and has four "zones" or levels where it is particularly relevant. They categorise the zones as global governance (governance by collective governments), national governance (governance by government and prominent civil society organisation at the national, provincial and local levels), organisational governance (governance within organisations, e.g. private firms and public schools), and community governance (local level governance by an organisation with or without a constitution and governing board).

Eagles et al. (2013) classified governance as falling into political, economic or administrative spheres. They described political governance as the process of decision-making that determines policy, economic governance as the governance that concerns the processes through which economic decisions are made and administrative governance as the system that implements law and policy. They emphasised that the three spheres of governance are intertwined and dependent on each other. The exchange between the different spheres of governance creates a complexity that demands a concerted approach among actors who are involved in the governance process.

2.2.3 Differences between governance and management

Although governance has been equated to management by some scholars, this work subscribes to the descriptions by Borrini-Feyerabend et al. (2013), which show distinct differences between the two concepts (see Table 2-1). The authors argue that despite there being a close relationship between the two, governance and management are different. They see governance as concerned with "who holds authority and responsibility and can be held accountable for the key decisions for a given protected area according to legal, customary or otherwise legitimate means", whereas "management denotes the steps taken to achieve objectives and the means and actions implemented". They further clarify that governance considers not only those actors who hold authority *de jure* (prescribed and recognised by law), but also those who make decisions *de facto* (whether by right or not). Therefore, management must be supported by good governance for it to be effective.

Table 2-1: The difference between governance and management.

Governance	…is about…	- **who decides** what **the objectives** are, **what to do to** pursue them, and with **what means?** - **how** those decisions are taken - who holds **power, authority and responsibility?** - who is or should be held **accountable**
Management	…is about…	- **what is done** in pursuit of given objectives - **the means and actions** to achieve such objectives

(Adapted from Borrini-Feyerabend, 2013)

2.2.4 Environmental governance, conflicts and collaboration

Environmental governance concerns the use and protection of the environment regarding interventions that aim at changes in environment-related incentives, knowledge, institutions, decision-making and behaviours (Lemos & Agrawal, 2006; Vatn, 2015). Environmental resources such as air, land and water are common resources that human beings share through biogeochemical processes such that pollution by one individual causes others to endure the consequences brought about by the polluter (Vatn, 2015). Further, Vatn (2015) stresses that the interdependencies of humans often lead to conflict thereby creating the need for coordinated action regarding environmental issues. Fundamentally, environmental conflict also denotes social conflict (violent and non-violent) that is linked to environmental resources (Le Billon, 2015). Neo-Malthusian perspectives of environmental conflict postulate that in as much as environmental processes, particularly resource scarcity, have put much strain on social relations, environmental conflicts may not necessarily be about scarce resources (Le Billon, 2015).

Other authors have noted that environmental conflicts belong to a larger class of public conflicts involving a wide range of issues that include health and health care, race and ethnicity, economic development and governance (d'Estrée et al., 2002). Therefore environmental conflicts may be more about issues of jurisdiction and precedent at multiple levels of jurisdiction such as local, regional, national and international (Dukes, 2004; Vatn, 2015).

Environmental conflicts are broadly classified in two categories: (1) conflicts associated with **access** to environmental resources; and (2) conflicts related to **side effects** of economic activity (Vatn, 2015). In the first instance Vatn (2015) indicates that the scarcity and varied quality of natural resources often causes conflict among resource users who rely on them for their basic needs. Further, he notes that land is the fundamental asset that offers many other resources and the basis of numerous economic activities. However, the access to environmental resources or lack thereof has caused conflicts and wars between

groups, nations or between classes of people within society. This has stratified individuals into landowners, landless people who own their labour and slaves who do not even own their labour (Vatn, 2015).

Secondly, Vatn (2015) shows that economic activities may produce unwanted or undesirable side effects such as loss of biodiversity and increased pollution. He stresses that activities such as agriculture and mining alter opportunities for others and may produce waste that is harmful to the ecosystem consequently imposing costs on individuals, villages or communities that may not have access to the resources, thereby creating conflict. He argues that this type of conflict is about who may impose costs on whom; about whether the polluter is free to pollute while others bear the cost; or whether the victims have the right to be protected. This conceptualisation identifies two scenarios, i.e. symmetrical and asymmetrical conflicts. Symmetrical conflict is a scenario where those polluting also endure the consequences, while asymmetrical conflict is where the side effects are unequally distributed (e.g. where upstream households or factories that are polluting a river do not experience the negative effects experienced by downstream communities).

The theories of environmental conflict resolution began with advocating for mediation, to the inclusion of terms such as consensus building, collaboration, collaborative planning and collaborative natural resources management (Dukes, 2004), and more recently collaborative governance (or multi-partner governance). To establish a clear understanding of collaborative governance researchers must identify a set of relevant actors and their networks are clearly identified (Berardo et al., 2020). Collaboration is not a unidimensional concept but one that includes several different types of collaboration, distinct steps and different types of ties among actors (Berardo et al., 2020). Collaborative governance is conceptualised as "an arrangement where one or more public agencies directly engage non-state stakeholders in a collective decision-making process that is formal, consensus-oriented, and deliberative and that aims to make or implement public policy or manage public programmes or assets" (Ansell & Gash, 2007).

In this concept of collaborative governance Ansell and Gash (2007) emphasise six important criteria, namely: (i) the forum is an initiative of public institutions or agencies; (ii) inclusion of non-state actors; (iii) all participants engage directly and are not merely consulted by public agencies; (iv) the forum is formally organised and meets collectively; (v) the forum aims to make decisions through consensus; and (vi) the focus of the collaboration is on public policy or public management. Further, they summarise the process of collaborative governance as the interaction of the starting conditions (context), the institutional

design and facilitative leadership, where face-to-face dialogue builds trust, leads to commitment to the process, shared understanding and immediate outcomes.

There are four main types of collaborative governance (Figure 2-1): (i) co-management (between state agencies and communities); (ii) public-private partnerships (between state agencies and private firms); (iii) private-social partnerships (between private firms and NGOs/communities); and (iv) multi-partner governance (involving all categories of actors) (Agrawal & Lemos, 2007). It is emphasised that there are hundreds of variants of the multi-partner governance arrangements in which the actors play diverse roles.

Despite increasing empirical evidence showing the effectiveness of different collaborative governance arrangements in addressing environmental problems, studies have revealed that in some instances actors only collaborate as a means of advocating their interests, without a willingness to contribute to jointly negotiated solutions to common problems (Bodin, 2017). Consequently, most environmental governance models produce symbolic outcomes where conflicts of interest are unattended to, and without any tangible results (Bodin, 2017). The presumed uncertainty of seemingly chaotic interactions associated with multiple decision-makers in environmental governance led to most researchers recommending extreme centralisation, extreme decentralisation or privatisation led by one coherent actor (Marshall, 2005; Ostrom & Cox, 2010).
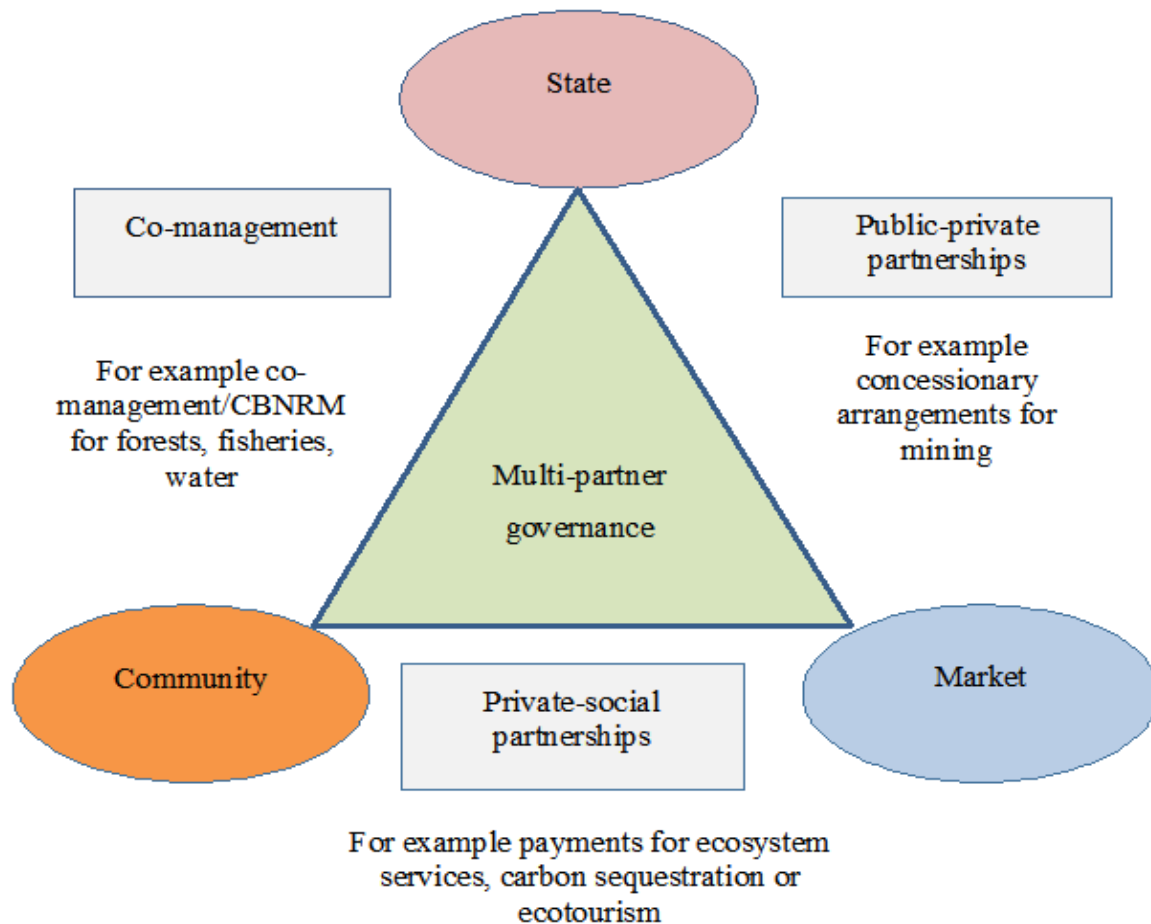
Figure 2-1: A model of collaborative environmental governance (Adapted from Agrawal & Lemos, 2007)

Environmental governance models usually recommend overly simplified prescriptions to environmental problems and have formed what Ostrom and Cox (2010) call the "panacea problem". Effective sustainable environmental governance systems demand going beyond the frequently recommended simple panaceas by building general diagnostic frameworks that allow more rigorous research and better policy analysis (Ostrom & Cox, 2010). The development of common diagnostic frameworks for solving environmental problems is complicated because of the different scientific concepts and jargon that different scientific disciplines use to examine SESs (Ostrom, 2009). Several collaborative governance frameworks that identify the general variables for institutional analysis to address environmental problems have been developed by prominent scientists. Examples include the Institutional Analysis and Development (IAD) framework by Ostrom (1990), the Regime Effective framework by Underdal (2002), the SES framework by Ostrom (2009) and, the Environmental Governance Systems framework by Vatn (2015).

An overarching theme in all these frameworks is the influence that different variables in the governance system have on outcomes, specifically the patterns of interaction among the different actors involved in NRG. Protected area effectiveness entails many different aspects regarding the functioning of protected areas including economic, sociological and ecological performance (Simasiku et al., 2008; Eklund & Cabeza, 2016). Most of the recent assessments of protected area effectiveness, however, have focused on conservation outcomes and management effectiveness with more emphasis on establishing the links between conservation outcomes and governance (Pressey et al., 2015). Embedded in this approach to protected area governance is the postulation that governance that is "good" leads to favourable conservation outcomes and that negative outcomes are to an extent the products of poor governance (Borrini-Feyerabend et al., 2013; Eklund & Cabeza, 2016). However, the adaptability of governance systems to different contexts and a changing environment is another important factor to consider.

Adaptive governance is a broad and multi-scalar approach that emphasises the management of ecosystems (Folke et al., 2006). As a philosophy, adaptive governance posits that human and natural systems are inherently connected and as such there is a need to live with change and uncertainty, to nurture adaptive capacity and ensure the resilience of governance systems (Cleaver & Whaley, 2018). Additionally, Cleaver and Whaley (2018) opine that the governance of common-pool resources such as wildlife, forests and fisheries entails co-management among the different actors in SESs. This will in turn demand wide stakeholder participation and effective cross-scale linkages. Additionally, they postulate that effective adaptive co-management relies on social learning and linkages that are set in an organised adaptive governance structure with wider institutions and scales. Hence it follows that for any NRG system to produce positive or desirable outcomes it must be perceived as legitimate by all stakeholders involved (Vatn, 2015), should be robust enough to withstand environmental and institutional shocks (Ostrom 1990) and must incorporate good governance principles (Graham et al., 2003) in its structures and processes (see Table 2-2). These characteristics are important in assessing the quality of governance and are used as the points of departure to develop the novel NRG model.

Table 2-2: The different criteria used to describe the quality of governance across scales

Legitimacy Theory (Vatn, 2015)	Design principles for CPRs (Ostrom, 1990)	IUCN Principles of Good Governance (Graham et al., 2003)
1. **Input legitimacy**: The "appropriateness and acceptability of decision-making processes on both principle grounds and concerning the interests of various actors" 2. **Output legitimacy**: The measure of the effectiveness and appropriateness of policies in delivering the desired results regarding distributive justice, effectiveness and efficiency	1a. Clearly defined user boundaries 1b. Clearly defined resource boundaries 2a. Rules fit the local context 2b. Congruent appropriation of costs and provision of benefits 3. Collective-choice arrangements 4 a. Monitoring users 4 b. Monitoring the resource 5. Graduated sanctions 6. Conflict resolution mechanisms 7. Minimal recognition of rights 8. Multiple layers of nested enterprises	1. Legitimacy and voice 2. Direction 3. Performance 4. Accountability 5. Fairness and rights

2.3 Natural resources governance within and around protected areas

This section presents the results of the literature search regarding the importance of governance and management as a mechanism for delivering favourable conservation and socio-economic outcomes from protected areas. Evidence from wider global and regional perspectives with a focus on the local situations in different protected areas in Zambia is presented.

IUCN states that a protected area is "a clearly defined geographical space recognised, 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). To be effective, protected areas must be integrated into the wider landscape or seascape and into the wider concerns of society (Borrini-Feyerabend et al., 2013). There are six classes of protected areas according to the IUCN Protected Area Category and International Name based on the management objectives (see table 2-3).

Table 2-3: IUCN categories of protected areas

Protected Area Category and International Name	Management objectives
Ia. Strict Nature Reserve	Strictly protected areas set aside to conserve biodiversity and, possibly, geological/geomorphological features, where human visitation, use and impacts are strictly controlled and limited to ensure the protection of the conservation values.
Ib. Wilderness Area	Large unmodified or slightly modified areas, retaining their natural character and influence, without permanent or significant human habitation, which are protected and managed to preserve their natural condition.
II. National Park (ecosystem protection; protection of cultural values)	Large natural or near natural areas set aside to protect large-scale ecological processes, along with the complement of species and ecosystems characteristic of the area, which also provide a foundation for environmentally and culturally compatible spiritual, scientific, educational, recreational and visitor opportunities.
III. Natural Monument	Areas are set aside to protect a specific natural monument, such as a landform, sea mount, a cave or even a living feature such as an ancient grove. They are generally quite small areas and often have high visitor, historical or cultural value.
IV. Habitat/ Species Management	Areas dedicated to the conservation of species or habitats. Many Category IV protected areas need regular, active management interventions to meet their objective.
V. Protected Landscape /Seascape	An area where the interaction of people and nature over time has produced a distinct character and significant ecological, biological, cultural and scenic values.
VI. Protected Area with Sustainable Use of Natural Resources	Protected areas that conserve ecosystems and habitats, together with associated cultural values and traditional natural resource management systems. They are generally large, with most of the area in a natural condition and part under sustainable natural resource management.

(Source: Borrini-Feyerabend et al., 2013)

Geldmann et al., (2019) stress the need to understand the extent to which protected areas in different socio-economic and management contexts mitigate the increasing anthropogenic pressures characterising most natural ecosystems given the fact that protected areas make up a sixth of the global terrestrial area. Despite being relatively effective in the formal conservation of biodiversity, protected areas are not a panacea for halting the loss of biodiversity (Geldmann, 2013). The performance of protected areas is to a great extent dependent on the management strategy employed (Geldmann, 2013). The establishment of protected areas can weaken the tenure rights and erode the authority of indigenous and local communities, prompting illegal and informal encroachment (Geldmann et al., 2019). Furthermore, protective areas may lead to an over-exploitation of previously sustainably utilised natural resources by local communities as they can weaken the collective long-term NRM, and the protection of resources deprives local communities of livelihood options leading to illegal exploitation (Ostrom, 1990; Geldmann et al., 2019).

In most countries, the provisions of the national constitutions contain the fundamental laws upon which the regulations and policies governing protected areas are based (He & Cliquet, 2020). As much as most governments recognise the important role that protected areas play in biodiversity conservation and sustainable development, many still face diverse challenges in protected area management (Lambi et al., 2012; Lordkipanidze et al., 2019; He & Cliquet, 2020). Climate change, increasing human population and associated increased demand for the Earth's finite resources, enhanced industrialisation, globalised commerce and instant communication lead to transformation, reduction and loss of biodiversity in protected areas (Worboys, 2015).

In East Africa (Burundi, Kenya, Rwanda, Tanzania and Uganda) protected area management for biodiversity conservation is vital since protected areas are the mainstay of conservation programmes covering more than 27% of the terrestrial surface (Riggio et al., 2019). The failure of conservation to effectively compete with alternative land uses, habitat degradation, blockage of wildlife corridors, over-exploitation, illegal resource extraction, wildfires, human population growth, poverty, HIV/AIDS and human-wildlife conflicts and, above all, misaligned government policies are major issues and challenges facing the management of protected areas (Kideghesho et al., 2013). Most studies of protected area governance and management do not focus on the more subtle impacts of governance structures and management interventions because it is difficult to link the governance structures, interventions or practices to the positive outcomes of biodiversity conservation (Oestreicher et al., 2009; Geldmann, 2013).

More detailed and systematic assessments of social and governance features of protected area management are needed to address specific elements such as equity as prescribed in the CBD Aichi Target 11, including aspects such as legitimacy, accountability and fairness (Borrini-Feyerabend et al., 2013; Geldmann, 2013). It has been demonstrated that the persistence of biodiversity and its conservation is correlated to the capacity and availability of resources to managers of natural resources in protected areas (Waldron et al., 2017; Geldmann et al., 2019). Of particular importance is the involvement of local stakeholders, effective management and strong governance and management structures in place (Oldekop et al., 2016; Pfaff et al., 2015; Panlasigui et al., 2018). It has also been found that weak protected area governance and management may lead to negative outcomes, despite adequate funding, but in the worst cases, poor allocation of funds to protected area governance exacerbates declines in wildlife and increases illegal activities such as poaching (Geldmann et al., 2019).

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The CBNRM approach emerged as an international model for NRM and gained popularity between the late 1980s and early 2000s (Gruber, 2010). The essence of CBNRM is to provide direct and tangible links between rural communities and the natural resources within their vicinity to incentivise the conservation of wildlife, forests and fisheries and in turn address problems concerning livelihoods and access rights (Denkler, 2009; Roka, 2019). The CBNRM approach has been widely accepted as a viable alternative to the centralised models of NRM associated with protected area governance that are characterised by top-down decrees, faulty designs, intrusive systems of sanctions, inefficiencies and corruption with dismal ecological and socio-economic outcomes (Gruber, 2010; Musavengane & Simatele, 2016).

Inadequate information about resources and finances, low levels of participation, empowerment and personal involvement characterise the natural resources governance and management systems of most multi-village communities adjoining national parks and other categories of protected areas in Southern Africa (Zambia, Zimbabwe, Botswana and Namibia) (Child & Barnes, 2010). Further, Child and Barnes (2010) report that such communities do not receive direct benefits such as cash or social projects, but they rather exhibit financial mismanagement. In Southern Africa, CBNRM was born out of the argument that the sharing of benefits from wildlife was asymmetrical and favoured white commercial farmers and that if rural communities were given similar rights both they and the wildlife would benefit (Child et al., 2012).

In Zimbabwe, the CAMPFIRE programme was funded by USAID and Norway and was set up to devolve the appropriation authority for managing and benefiting from wildlife to district councils so that 50% of revenues would accrue to the communities (Murphree, 2005). Successes of CAMPFIRE are especially conspicuous in single-village communities such as Masoka and Mahenye where the CBNRM programmes have shown the ability to recreate themselves even after a "collapse" due to political turmoil in the local leadership, centralisation, weak public accountability and economic struggles (Child & Barnes, 2010).

Revenue creation, NRM and monitoring were the main points anchoring the development of the national CBNRM programme in Namibia which began as an anti-poaching programme to protect desert rhinos in the 1980s through assistance by the WWF (Jones & Weaver, 2009). The CBNRM model in Namibia was developed by committed civil servants who advocated for legislative changes that institutionalised community conservancies to avoid the problem of asymmetrical sharing of wildlife revenues by the district councils experienced by the CAMPFIRE programme (Jones & Murphree, 2004; Child & Barnes,

2010). However, the local governance institutions in Namibian conservancies lack adequate benefit-sharing systems and do not have clear guidelines regarding the benefits due to the community, and as such the local governance structures need more external monitoring and support to facilitate fair and equitable benefit-sharing (Mosimane & Silva, 2015).

Child and Barnes (2010) report that, in contrast to the Zimbabwean and Namibian models, CBNRM in Botswana was designed by external technical experts with funding from USAID. They indicate that communities received revenues from wildlife via a 15-year land lease that involved the allocation of hunting and tourism concessions to the private sector on an open and competitive basis. Additionally, despite the CBNRM model generating funds quickly, little attention was given to the institutional design, leading to waste or misuse of funds and low levels of participation and benefits accrued by communities.

2.3.1 State-centric natural resource governance in Zambia

As in other African countries, the state-centric fortress approach in Zambia to NRM during the colonial and post-independence eras largely failed to stop and reverse the loss of biodiversity and provide sustainable livelihoods (Bwalya, 2002; Child & Barnes, 2010). This necessitated the search for an alternative regime that could provide a win-win situation to the management of wildlife, forests and fisheries in Zambia (Bwalya, 2002). The predominant international interest in wildlife conservation of the 1980s is the genesis of transformative policies (see table 2-4) that allowed the communities to retain some of the revenue from wildlife (Gibson, 1999; Child, 2003). CBNRM provided a possible solution to the environmental, social and economic problems that the fortress approach could not solve (Bwalya, 2002). In Zambia, CBNRM was introduced to ensure sustainable use of natural resources and maximise benefits to communities (Child, 2003).

Table 2-4: Zambian laws and their corresponding policies in NRM

Act	Purpose	Policy	Purpose
The Lands Act, 1995	Provides for the statutory recognition and continuation of customary tenure Provides for the conversion of customary tenure into lease-hold tenure	Draft Land administration Policy, 2015	Articulates a comprehensive land policy that takes account of emergent issues (like climate change) and contributes to national development objectives
The Fisheries Act, 2011	Provides for the sustainable development of fisheries and a precautionary approach in fisheries management, conservation, utilisation and development Establishes fisheries management areas and fisheries management committees	The Draft Fisheries Policy 2010-2020	Provides for an overall national vision for the development of the fisheries sector Prescribes institutional arrangements for the management of the fisheries sector Calls for co-management of fisheries
The Forests Act, 2015	Establishes and declares national forests, local forests, joint forest management areas, botanical reserves, private forests and community forests Provides for the participation of local communities, local authorities, traditional institutions, NGOs and other stakeholders in sustainable forest management	Forest policy, 2015	Creates a framework for the reduction of deforestation and forest degradation Regulates the export of timber and the production of charcoal Establishes a framework for participatory forest management.
The Zambia Wildlife Act, 2015	Provides for the establishment, control and management of national parks, bird and wildlife sanctuaries for the conservation and enhancement of wildlife ecosystems and biological diversity	The National Parks and Wildlife Policy, 2018 (MTA, 2018)	Provides for the management and conservation of wildlife Entrenches local community participation in conservation of wildlife

(Adapted from PSAf, 2017)

The Administrative Management Design for Game Management Areas (ADMADE) and the Luangwa Integrated Resources Development Project (LIRDP) were ground-breaking CBNRM projects in Zambia (Gibson, 1999). ADMADE was designed by the Zambian government through the then National Parks and Wildlife (NPWS) with support from USAID (Gibson, 1999). Being a top-down regime, the project reinforced the political power that the government had on the management of wildlife, but it did not significantly improve wildlife conservation. The project's benefit-sharing system favoured the central government such that half of the revenue from the protected areas went to the treasury and the remainder was divided among the NPWS (25%), employment of village scouts by the NPWS (40%) and 35% was

allocated to community projects (Child, 2003). Ultimately, the communities which have given up their land and access to resources received less than 4% of the revenue because the funds were disproportionately distributed and benefited the chiefs (Child, 2003). The ADMADE programme failed to arrest poaching and devolve the ownership of wildlife and other resources to local communities (Gibson, 1999). Instead, there was a lack of accountability, corruption, mismanagement and a weak benefit-sharing mechanism.

The LIRDP was established in 1988 with funding from NORAD and relied heavily on the support of the Republican president (Kenneth Kaunda at the time) because it did not have a legal foundation as ADMADE did (Lillehagen, 2016). The project operated in the Lupande GMA adjacent to the South Luangwa National Park in the Eastern Province of Zambia (Dalai-Clayton & Child, 2003). Initially, the project had a centralised top-down structure that failed to deliver project goals such as the improvement of conservation and ensuring inclusive community participation (Lillehagen, 2016).

Later, the LIRDP was transformed into a bottom-up organisation that formed strong village institutions, with 45 democratic structures that had democratic accountability, community transparency and fairness (Dalai-Clayton & Child, 2004). The community received 100% of the revenue from wildlife with 80% at the village level making the LIRDP the only example of a fully devolved benefit and participatory village-level democracy in Zambia (Child, 2003). A breakdown of the relationship between the local government departments and ministries and the LIRDP project managers who they accused of using methods that were "too confrontational" has been reported (Lillehagen, 2016). Eventually, the resentment between the two parties caused the failure by LIRDP to maintain stable and efficient NRM institutions. Other inter-stakeholder issues also negatively affected the success of the LIRDP.

Dalai-Clayton and Child (2004) indicate that the community through the Area Development Committee (ADC) expressed the view that there was a lack of transparency regarding the community account specifically, the amount of revenue raised from wildlife, how such revenue was spent and the project managers "looking after" the community account. Also, the chiefs did not like the transparent process of allocating funds to them and regarded it as disrespectful. They felt side-lined and stated that they had been stripped of their power which had gone to the holders of donor money. The government departments expressed concern about the escalating conflicts between the community and law enforcement agencies including local village scouts. Communication and coordination among the stakeholders had improved but still had challenges as there were calls for the project to improve its public relations. The villagers had mixed opinions as some bemoaned the few benefits received from the project, while others including

the chief praised the provision of electricity, the building of schools, roads and clinics. The lack of compensation of victims of human-wildlife conflict was also highlighted.

There are several reasons for the shortcomings of both ADMADE and LIRDP, but paramount among them was the failure to effectively devolve much of the authority and management of wildlife and other natural resources to the local communities (Nkhata & Breen, 2010). Despite the claim of being CBNRM initiatives, the two projects were implemented in a manner similar to the fortress approach with interventions such as increased policing by village scouts paid by the state to limit the communities' access and control over natural resources, thereby diminishing the main essence of CBNRM (Lillehagen, 2016; Dalai-Clayton & Child, 2004). The unwillingness of government authorities to relinquish the power over wildlife, forest and fisheries resources to communities, and the low profitability of CBNRM was and continues to be the overarching cause of the limited progress for many CBNRM projects (Child, 2003).

According to Lillehagen (2016), the two projects did not adequately consider the different perceptions, attitudes and interests of the community and other stakeholders involved. In doing so, the projects mainly addressed the communal needs of the people, e.g. by building clinics, schools and roads without accounting for the needs at the household level such as improving individual household incomes. Community members continued to engage in illegal activities such as poaching, deforestation and illegal fishing. The inception of ADMADE and the LIRDP brought with it the desire by political actors in NRM to gain more control over the natural resources, rather than to devolve the governance to local communities. The international donors were satisfied with the building of schools, clinics and other infrastructure in the communities, while the political actors benefited by keeping the programmes alive to assert their power over resources and deemed participatory institutions and household level targets as too expensive (Lillehagen, 2016).

In the end, the instituting of CBNRM in Zambia through the ADMADE and LIRDP programmes did not improve the governance and management of natural resources in Zambia, nor did they mitigate poaching or improve wildlife conservation or enhance community livelihoods. On the contrary, the projects showed little community involvement and exacerbated elite capture of benefits by traditional leaders and local authorities on the one hand, and poaching by residents on the other hand. (Gibson, 1999).

2.3.2 Models of collaborative CBNRM in Zambia

Many scholars and practitioners have tried to explain the uneven performance of CBNRM in Zambia by assessing the underlying principles of CBRNM, local social and ecological contexts and connections with larger political and historical patterns (Lyons, 2012). Further, an understanding of the institutional history and internal dynamics of CBNRM reformation projects is necessary (Lyons, 2012). Several different models of CBNRM with mixed outcomes have emerged in recent times in Zambia. This section presents the models of collaborative environmental governance in Zambia based on the model by Agrawal and Lemos (2007) (Figure 2-1). It must be noted, however, that the models of collaborative governance presented share many overlapping aspects and are not rigid with regard to structure and processes.

2.3.2.1 Fisheries co-management

The Department of Fisheries (DoF) has piloted co-management arrangements with several fishing communities on Lakes Mweru-Luapula, Bangweulu, Kariba and Tanganyika and, the upper Zambezi and Kafue Rivers as a solution to some of the limitations of the state-centric fisheries management system (Haambiya et al., 2015). The governance and management of fisheries were the sole responsibility of the state for decades, until community participation in fisheries management was introduced via the Fisheries Act No: 22 of 2011 (GRZ, 1974; GRZ, 2011). However, despite these co-management initiatives not occurring as part of the protected area system in Zambia, their results and lessons are useful to collaborative protected area governance. Table 2-5 summarises key aspects of the co-management projects in the fishery areas of Zambia.

Table 2-5: Fisheries co-management projects in selected fishery areas in Zambia

Major feature	Lake Kariba	Lake Tanganyika	Upper Zambezi River	Kafue River
Inception year	1993	1998	1996	2004
Project initiators	Zambia/Zimbabwe SADC Fisheries Project with support from NORAD and DANIDA.	Lake Tanganyika Biodiversity Project (LTBP) with support from UNDP/GEF.	A donor-funded project initiated a participatory approach in the management of natural resources.	Lessons drawn from other fishery areas.
Direction to governance reforms	Inadequate revenue collected by councils; Influx of immigrant fishers; Increased theft of catch from commercial fishers.	Overfishing and continued use of unsustainable fishing methods by local and industrial fleets leading to decline in catches.	Need to reduce the role of TAs in the affairs of VNRCs and formation of parallel management institutions in the same fishery competing for recognition.	Inadequate social and health services Inadequate sanitation and issues of immigrant fishers inform the type of reforms.
Key partners	TAs, fishers, business persons, local authorities and DoF.	TAs, DoF, local authorities, fishing associations, fishers, business persons, farmers and fish traders.	DoF, BRE and fishers	DoF, fish-traders, fishers and TAs.
Activities of local institutions	Controlling access to the fishery, monitoring and enforcing fishing regulations.	Local resource user enforcement of fishery management regulations	To develop local by-laws to empower local communities to manage natural resources.	Implementation of bylaws, monitoring of fishing regulations, fighting the HIV/AIDS pandemic, sanctioning those who break by-laws and regulating fish-trade.
Major results/lessons	VMCs and ZMCs were established; Involvement of stakeholders in fishery management was widely accepted, yet the decision-making process has remained with DoF; ZMCs was registered as voluntary organization under the Registrar of Societies Act; User committees collect levies from fishers and fish traders.	VCDCs were formed; Stratum Committees and a Fishery Committee were initiated by DoF in conjunction with TAs with a view to complement efforts by VCDCs; Inconsistence in operations of local-level structures.	VNRCs were formed; Increased tensions between government officials and traditional representatives; Competition between government and BRE renders VNRCs non functional.	Governance reforms emerged at a much later period compared to other fisheries in the country; Management committees that regularly consult TAs were formed; Complete end to the paying of "entry fees" to the fishery; DoF considers health and sanitation issues outside their mandate

SADC: Southern Africa Development Community; NORAD: Norwegian Agency for Development; DANIDA: Danish International Development Assistance; DoF: Department of Fisheries; UNDP: United Nations Development Programme; GEF: Global Environmental Facility; TAs: traditional authorities; VMCs: Village Management Committees; ZMCs: Zonal Management Committees; VCDCs: Village Conservation and Development Committees; VNRCs: Village Natural Resources Committees; BRE: Barotse Royal Establishment.

(Adapted from Haambiya et al., 2015)

2.3.2.2 Private-social partnerships

2.3.2.2.1 Community-Based Natural Resource Management and Sustainable Agriculture

Funded by the USAID, the Community-Based Natural Resource Management and Sustainable Agriculture (CONASA) was a CBNRM project formed in 2001 and operated by a consortium of three international and seven local NGOs (Jones, 2007; Lyons, 2012). The project operated in five Community Resources Boards (CRBs) in the GMAs around Kafue National Park and focused on both governance and the development of small businesses at the local level. It offered support to community-based organisations for their day-to-day operations of village action groups and village management committees and formed commodity groups to promote beekeeping, contract farming and the selling of curios (CONASA, 2003; Jones, 2007).

Between 2001 and 2003 CONASA achieved much success in the promotion of the commercial production of maize and sunflower by 450 households, generating an income of US$47,000 and US$9,700 from the two crops respectively (Jones, 2007). Additionally, there was raised awareness for the need for wildlife conservation evidenced by the increased number of poachers that surrendered snares, guns and ammunition. The project created seven sunflower growing commodity groups, a sunflower processing enterprise, a tourist campsite and linked curio producers to markets in the same period (Jones, 2007). However, in the fourth year of the CONASA project, the main donor changed its approach to rural development and the core NGOs could not adapt or find new funding to keep it running. The failure of CONASA has raised questions about the need to maintain good social relationships among actors in CBNRM, especially between funders, local communities, government and implementing partners (Lyons, 2012).

2.3.2.2.2 Community Markets for Conservation (COMACO)

COMACO is a non-profit company that helps local communities to manage agriculture and forest land by linking smallholder farmers to markets, with the aim of conserving wildlife and forests through a value chain-based model (Hou-Jones et al., 2019). The project primarily targets communities that live in areas adjoining North Luangwa and South Luangwa National Parks to enhance the benefits from conservation of resources within these protected areas (Lewis et al., 2011). Core project activities include the identification and training of food-insecure households in sustainable agricultural practices, i.e. conservation farming techniques that are environmentally friendly and meet household needs (Lewis et al., 2011). Additionally, the project specifically targets individuals involved in severe depletion of natural

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resources such as poachers and trains them in alternative livelihood activities that include carpentry, beekeeping and as village scouts (Lewis et al., 2011)

Lewis et al., 2011 report that COMACO delivers extension services and access to high-value markets that is beyond the reach of the farmers. The conservation farming is based on crops that are chosen by the participants from the communities, can be grown organically, are available in the Luangwa valley, can impact food security, increase resistance to climate variations, and can be marketed as is, or can be value-added processed products. Furthermore, as a precondition for participation and show of commitment, community participants are required to turn in guns and wire snares. The COMACO model (Figure 2-2) has evolved through an adaptive management process since 2003 and has since established and partnered with 80 cooperatives which work with 179,000 farmers in the Eastern Province of Zambia (COMACO, 2020).

The COMACO benefit-sharing system rewards high-performing communities (those who conform to high conservation standards) at the end of every year with a substantial part of the revenue from sales of agricultural products (COMACO. 2020). The sale of food products partially offsets the operational costs and as such COMACO does not solely rely on donor aid but is a market-driven, self-sustaining venture that continues to restore wildlife and forests (COMACO, 2020).
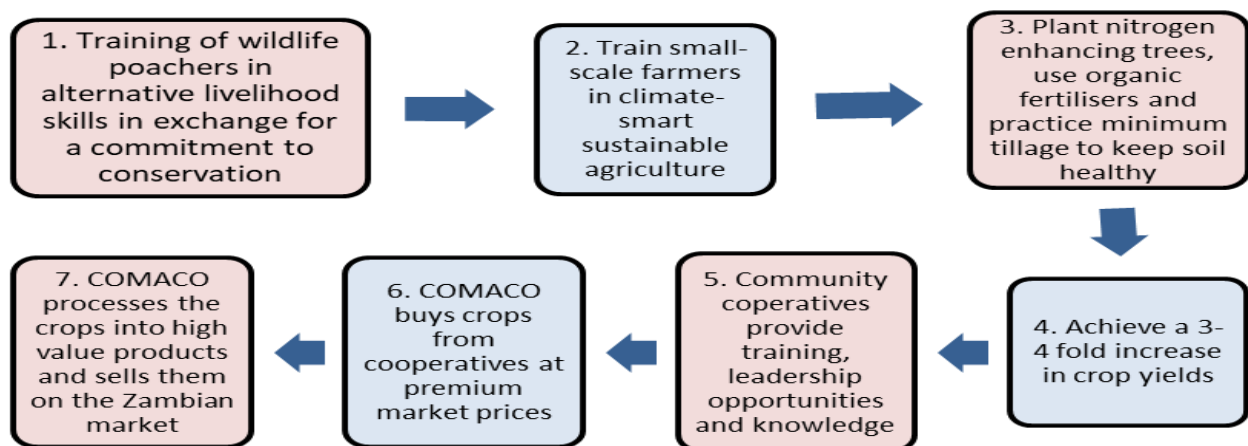
Figure 2-2: The COMACO model (Source: www.itswild.org, 2020)

2.3.2.3 Public-private partnerships

2.3.2.3.1 Kasanka Trust

Kasanka National Park is in the Serenje District of the Central Province, in Zambia. It is managed as Kasanka Trust through a public-private partnership between the Department of National Parks and Wildlife (DNPW) and Kasanka Trust Limited (KTL), premised on the promotion of tourism for conservation (The Kasanka Trust, 2019). The park encompasses rich wetlands, floodplains and riverine forests with several small rivers and is therefore, an important conservation area with a diversity of wildlife, plants and birds that comprise several endangered species (Kasanka National Park, 2020). The management of KTL focuses on four key areas, i.e. resource protection, infrastructure development, community development and environmental education, and tourism development.

The poaching of wildlife for meat and ivory is a serious threat in the park and as a countermeasure, the trust employed 30 trained scouts who work with the DNPW and the community in law enforcement (Kasanka Trust Limited, 2019). In addition, the trust also invests in the improvement of infrastructure such as communication systems, roads, bridges, workshops, offices and housing to ensure effective management of the park. It also aims to increase people's knowledge and understanding of the need to protect the park and promotes sustainable livelihoods as alternatives to poaching to garner community support for long-term success (Kasanka Trust Limited, 2019). Further, a portion of the revenue from the trust's two lodges is reinvested into the park to directly contribute to the conservation of the natural resources in the park.

However, the assumption by KTL management that the traditional authority and community had the same interests and perceptions was erroneous because the community perceived that ideas for NRM were formulated by the KTL management and the DNPW and thereafter imposed on them (Mutamba, 2004). The community indicated that their role and participation in wildlife management was not clearly defined. The author noted a lack of understanding of the concept of community participation among all the stakeholders. Consequently, the lack of transparency, limited communication and contact caused speculation, mistrust and suspicion among the KTL, chieftaincy and the community. In conclusion, Mutamba (2004) recommended the development of new multi-actor management approaches that ensured equitable distribution of benefits from park entrance fees, setting up of democratic structures and processes that enabled the election of community representative besides the chief and, more support to community-based organisations.

2.3.2.3.2 Luambe Conservation Project

The Luambe Conservation Project (LCP), initiated in 2016, is located in Luambe National Park (LNP), the smallest national park in the Luangwa Valley, Eastern Province, Zambia (Luambe Conservation Project, 2021). The lack of clear boundaries between LNP and the nearby Chanjuzi GMA caused conflicts between surrounding tourist lodge owners situated inside LNP, professional hunters who rented the GMA and the local chief (Ray, 2011). The villagers wanted unhindered access to fishing grounds, firewood and timber trees, but the lack of clear boundaries meant they trespassed into the GMA and LNP (Ray, 2011).

The LCP aims to restore wildlife numbers that were reduced by poaching and attain the highest mammal biomass per square kilometre in Zambia by improving resource protection, education of communities and habitat protection (Luambe Conservation Project, 2021). The project is market oriented and generates revenue through non-consumptive tourism (game drives, walking safaris and bird identification and tagging) and thereafter investing the profits in conservation and community education. Since its inception, the LCP has restored and stabilised the populations of elephant (*Loxodonta africana*), wildebeest (*Connochaetes taurinus*), giraffe (*Giraffa camelopardalis thornicrofti*) and zebra (*Equus quagga*). The project also implemented a community survey of human-wildlife conflicts, conducts eco-training and agricultural extension in Chitungulu community, drilled boreholes for communities and for wildlife and, provides equipment and logistical support to the Zambia Carnivore Programme (ZCP) (Luambe Conservation Project, 2021).

2.3.2.4 Multi-partner natural resources governance

2.3.2.4.1 Liuwa Plain National Park (LPNP)

The LPNP is in the Western Province of Zambia and measures about 3,660 km^2 and is about 105m above sea level (Nyirenda & Nkhata, 2013). The park has a largely flat grassland landscape, experiences seasonal flooding between December and June, and contains high biodiversity of flora and fauna (Nyirenda & Nkhata, 2013). There is a dual management approach to conserving the biodiversity of the park and ensuring sustainable use by the surrounding communities, i.e. about 20,000 inhabitants in 432 villages (Apse & Seybert, 2010).

The government took over the management of the natural resources in LPNP from the Barotse Royal Establishment (BRE) through a legal statute when the park was established in 1972 (DNPW, 2009). A combination of limited state funding and intensified poaching in the 1980s, led to the formation of partnerships based on decentralisation policies for rural development and poverty reduction (Nyirenda

& Nkhata, 2013). Subsequently in 2004, a multi-partner governance partnership represented by a Partnership Board, was formed between the DNPW (as the government management agency), Stichting African Parks Foundation (SAPF) (as a private partner) and the BRE (representing the local communities) to manage the high-value common property resources in LPNP. Nyirenda and Nkhata (2013) report that the management team of the LPNP Partnership Board learnt from the experiences from other national parks and developed an incentive-based adaptive management approach to manage park law enforcement, tourism development, infrastructure development, and community relations.

The multi-partner governance model (Figure 2-3) was established in 2004 between DNPW, SAPF and BRE (links 1, 2 and 3) to help mitigate resource depletion. In the Partnership, the DNPW retained its regulatory roles (link 4) as the employer of the park's law enforcement staff, supplier of animals to restock the park, and provider of appropriate legislative interpretation to the park management team (Nyirenda & Nkhata, 2013). The authors report that tourism development, valorisation of natural resources, transferring income generated to benefit local communities and facilitating the preservation of cultural heritage was the responsibility of SAPF (link 5). Moreover, the local communities would benefit from the raw materials in the park by making and selling baskets and could catch fish from designated park fishponds free of charge. Additionally, they could hunt animals in the neighbouring Upper West Zambezi GMA under "resident" licences. They also retained the revenue from the five campsites, firewood sales to tourists, cultural performances at campsites and four rice mills.

The communities contributed SAPF-trained village scouts to resource protection and monitoring. SAPF had the mandate of procuring sufficient funding from cooperating partners and recruiting technical experts in park operations and tourism development. SAPF oversaw animal population growth, capital assets, wildlife translocations, resource economics and local leadership. Local support for conservation was garnered by involving the BRE at the policy-making level, facilitating community projects and participation in conservation programmes (link 6). SAPF indirectly took on the roles of pursuing external support and legitimising the operations of the partnership (see figure 2-3) (*Ibid*).
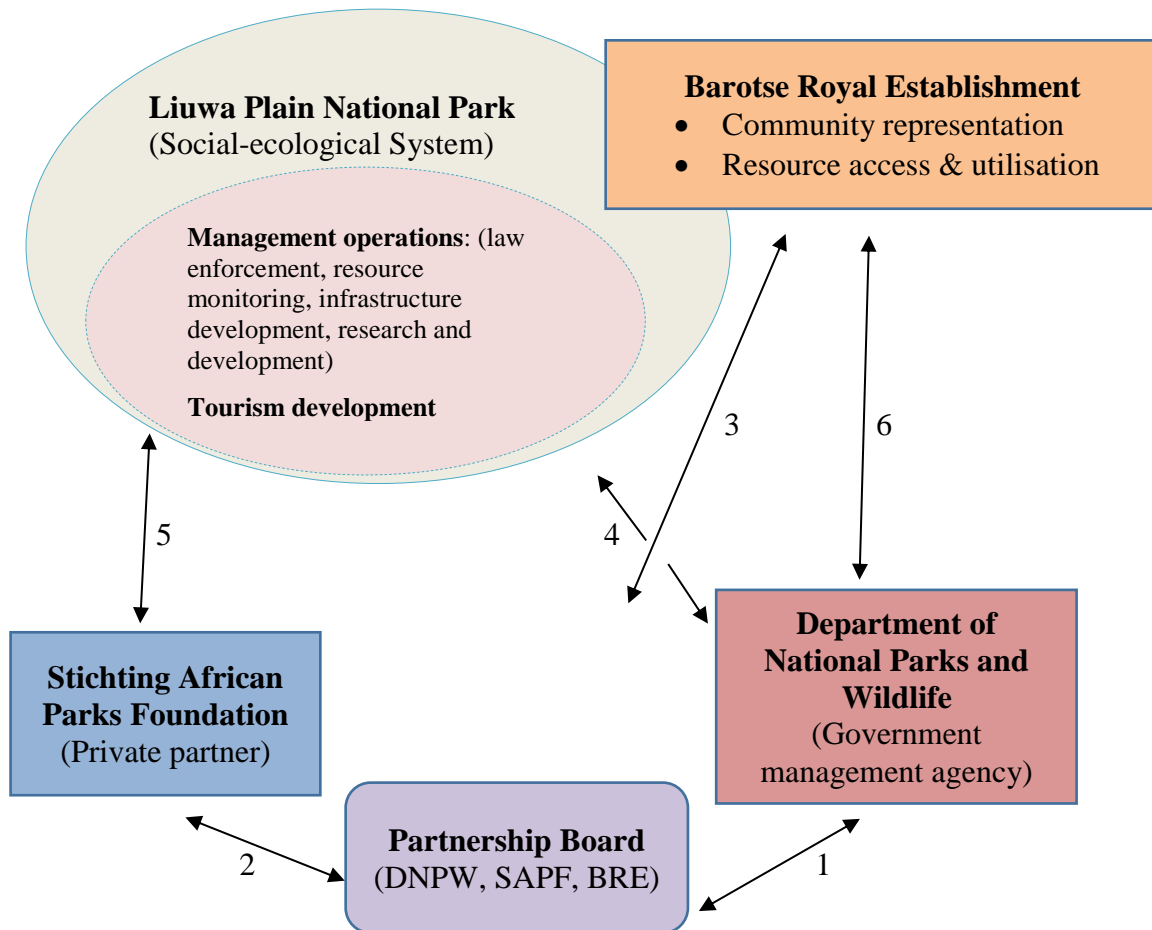
Figure 2-3: Operational framework for the multi-partner governance partnership in Liuwa Plain National Park, 2004-2011 (Adapted from Nyirenda & Nkhata, 2013).

Improved ecological and socio-economic performance were the key outcomes of the LPNP Partnership Board. Ecologically there was a significant increase in the numbers of zebra (*Equus quagga*), Red lechwe (*Kobus leche leche*), tsessebe (*Damaliscus lunatus*) and blue wildebeest (*Connochaetes taurinus*) between 2004 and 2011 (Nyirenda & Nkhata, 2013). The authors reported that the jobs provided by the park increased from 12 in 2004, to 100 in 2011. Other socio-economic benefits included the provision of 37 school scholarships, the construction of classroom blocks, the building of houses for teachers and campsite attendants, the establishment of a reforestation programme, the setting up of a V-sat internet facility and the sinking of boreholes (Nyirenda & Nhkata, 2013).

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2.3.2.4.2 The Bangweulu Wetlands Project

The Bangweulu wetlands lie within the protected Ramsar site 531 and are an important breeding ground and habitat for many wildlife, bird and fish species, including the threatened endemic black lechwe (*Kobus leche smithemani*), wattled crane (*Grus carunculatus*) and shoebill stork (*Balaeniceps rex*) (Ramsar, 2014; African Parks, 2021). They cover parts of Isangano National Park and its associated GMAs (Bangweulu, Chambeshi and Kafinda) in north-east and Lavushi Manda National Park in the south-east including Mansa GMA in the south-west (Munyeme, et al., 2011). There are about 50,000 legal human inhabitants in the communities surrounding the wetland who hold the rights to sustainably harvest local natural resources (African Parks, 2021).

The Bangweulu Wetlands Project (BWP) is a partnership between the communities living in the GMAs, the DNPW and African Parks Foundation (APF), formed in 2008 to mitigate the effects of poaching and overfishing (African Parks, 2021). The numbers of black lechwe have increased from 35,000 to 50,000 since the project's inception and, the enforcement of the fish ban is more effective consequently improving the nutritional levels of community members who rely on bushmeat and fish for animal protein (African Parks, 2021). The project has also built schools for the community and contributed to improving healthcare for the communities. Despite the successes, the project managers recommend more effective management and strong community sensitisation, engagement and participation in planning in order to achieve sustainable livelihoods for future generations from the wetlands (African Parks, 2021).

2.3.2.4.3 BioCarbon Partners

The BioCarbon Partners (BCP) project in Zambia was initiated in 2012 to address the problems associated with deforestation due to agricultural expansion (Maliasili, 2020). The project is a partnership between BCP, local communities and private landowners (Davis et al., 2020). It was created to add value to forests and wildlife and conserve natural forests using the revenue derived from the sale of carbon offsets (Maliasili 2020; Davis et al., 2020). The BCP was piloted in Rufunsa Conservancy, a 41,000 hectare private ranch that lies adjacent to Lower Zambezi National Park between 2012 and 2019. Funding was provided by USAID via US$ 14 million grant to develop the Community Forest Programme (CFP) by adapting the BCP's REDD+ model to a targeted 700,000 hectares of communal and customary lands (Davis et al., 2020). The project was successful such that 12 Community Forest Management Associations (CFMAs) were created in 12 adjoining chiefdoms covering 943,676 hectares in Eastern and Lusaka Provinces. Key actors included CRBs, traditional authorities, government and private stakeholders (Davis et al., 2020).

In spite of its successes, Davis et al., (2020) reported that the BCP project faces some challenges regarding its long-term impact and effectiveness. The limited capacity of the CRBs regarding their central role in governing and managing the CFMAs is a major concern. This is especially critical in the management of village scouts and the significant revenues generated from carbon sales. Despite the CRBs showing signs of independence, governance and management, the 3-year term for CRB office bearers is not long enough to enhance the governance capacity and turnover after elections results in institutional memory loss. The project also encountered excessive influence from the chief, elite capture and attempts to deny the project's managers access to the VAG by the CRB. Suspicion among actors, miscommunication and misinformation, inertia in transferring rights from the government to the communities and resistance from some hunting concession holders were additional challenges (Davis et al., 2020).

2.4 Key issues affecting the performance of collaborative CBNRM in Zambia

This section relates the theories of collaborative governance of natural resources to the experiences from the models presented in the results section to expose gaps that may influence the outcomes of CBNRM models. The section paragraphs are divided into (i) the issues relating to the governance systems; (ii) issues regarding the CBNRM structures; and (iii) issues concerning the governance and management processes in the CBNRM model and summarised in Table 2-6.

2.4.1 Systemic issues and their impacts

2.4.1.1 Legal foundations

A strong legal foundation is important for any NRG system to be successful because without it, the decentralisation and devolution policies cannot stand environmental or institutional shocks. As observed in the challenges faced by the LIRDP, the success of CBNRM projects based only on the support of individual champions and donor initiatives but without a firm legal framework is fleeting and temporal (Child & Barnes, 2010). Such projects are susceptible to factors affecting the availability of champions such as the change of governments and relocation of donor interests and personnel. In addition, Child and Barnes record that the successful CAMPFIRE model is a product of a prudent process of legislative craftsmanship by champions of CBNRM who went above and beyond their normal responsibilities. A robust legal framework that espouses bottom-up CBNRM and good governance principles is undeniably the single most important factor for ensuring positive outcomes from a CBNRM programme within NRG and is unfortunately lacking in many CBNRM projects in Zambia.

Another reason for the mixed performance of CBNRM programmes in Zambia is the conceptual conflict that exists between CBNRM and the hostile and hardly nurturing politico-legal environment in which it is placed (Martin, 2009). Further, Martin (2009) stresses that "successful" cases of state-led CBNRM programmes have been conditional indulgences by state authorities who permitted them permission but no mandate over natural resources. The long-term success of CBNRM heavily relies on the recognition of the necessary shifts in national policies regarding the tenure of communal lands and property rights for collective communal units over wildlife, forests, fisheries and other natural resources (Martin, 2009). The author concludes that externally derived innovation in CBNRM must come to an end and usher in an era of local, self-determined, robust and securely tenured communal natural resource management.

2.4.1.2 Top-down system and community participation in CBNRM

Top-down indigenous governance systems that comprised the king and his indunas (ministers) such as the BRE were established before the colonial era (before 1888) (Kowero, 2004). Natural resources such as forests were regarded as collectively owned and access was regulated through customary institutions and conventions (Banda, 2002). Therefore the governance of natural resources was characterised by strong traditional values, a high degree of social responsibilities and equitable sharing of resources (Banda et al, 1997; Kowero, 2004; Banda, 2002). However, Kowero (2004) attributes the positive aspects of pre-colonial NRG not only to effective institutions but also to contextual factors such as low population density, low technological levels for harvesting of natural resources and limited knowledge about the environment. Modern-day traditional authorities, however, may limit community participation and will not accurately represent and meet the challenges of the ordinary members of the local communities as observed in the LIRDP.

All the CBNRM programmes and projects discussed here are based on statutory laws and have incorporated within them a top-down system of decision-making regardless of whether they are market-based or public-private partnerships. This violates one of the key principles of good governance, i.e. equity and inclusiveness (Child & Wojcik, 2014). Intrinsically, the decisions made in such a CBNRM will be biased towards the more dominant actors and disadvantage the more vulnerable groups. This approach has its roots in problematic and paternalistic colonial knowledge relations which generally assert that superior environmental knowledge originates in the global north for transfer to the south, thereby discounting the environmental practices of indigenous and local communities (Robbins, 2012). The experience in the successful CAMPFIRE may question this assertion since the programme was developed by an eclectic group of local Zimbabwean bureaucrats (Child et al., 1997; Child and Barnes,

2010). Whether at the micro or meso level, the top-down system of governance highlights inequality, lack of consensus and intrinsic unfairness in the distribution of power and benefits among actors. This has permeated into most CBNRM projects and limits their success.

2.4.1.3 Power relations

Despite the prefix "community-based", the ultimate power in CBNRM projects in Zambia does not lie with the communities. Most projects are the initiative of the state or the market i.e. state-centric or market-based collaborative NRG. The community typically occupies the lowest level of power despite bearing much of the social and economic cost of these projects. This is exacerbated by the communities' limited capacity to understand the technicalities of NRG, engage with state and private technocrats and effect any form of unified decision-making.

Similar findings were made by Noga et al. (2018), who noted a divide between government wildlife officials and the community due to skewed power relations. The government officials hold most of the decision-making power, while the village committees are relegated to performing advocacy roles. They concluded that CBNRM programmes have had limited success due to skewed power relations and hierarchical control between participants. The outcomes of such a lopsided power arrangement include differences in access to information and resources, low community participation and the capture of benefits by the elite actors (Muyengwa & Child, 2017).

2.4.1.4 Benefit-sharing mechanisms

The equitable delivery of benefits from conservation and NRM to communities is one of the foundational objectives of CBNRM but is often impeded by elite capture. The capture of financial and material benefits by state, traditional leaders, local CBOs and private firms is well documented (Gibson, 2000; Baird et al., 2011). Elite capture and weak social capital are powerful drivers of the perceptions among community members and that can hinder the development of more equitable benefit-sharing mechanisms (Mosimane & Silva, 2015).

In market-based CBNRM such as CONASA and COMACO, the proportion of revenue allocated to households is not determined by the households themselves but the dominant actor – the private firms. Similarly, the benefit-sharing mechanisms in public-private partnerships like the Kasanka Trust and LPNP Partnership Board are largely determined by the DNPW and donor organisations. Without a well-balanced benefit-sharing scheme that considers the needs of communities as having equal importance as conservation, the degradation and destruction of resources will continue to be a serious problem. The

needs of the communities must be critically analysed and addressed if the long-term survival of CBNRM is to be guaranteed. It is for this reason that the structures of most CBNRM projects need to be redesigned.

2.4.2 Issues regarding the structures of CBNRM

2.4.2.1 Community interests and conflict resolution

To be strictly community-based, NRM initiatives must originate from the ideas, interests, perceptions and attitudes of households towards the resource in their vicinity. CBNRM structures such as local government departments, traditional ruling bodies (e.g. place committees), CRBs and partnership boards must harmonise their objectives to the interests of the community. Both local government departments and traditional governance organisations possess a dictatorial disposition coupled with a *de jure* or hereditary power structure that to an extent imposes their interests and objective upon the community (Borrini-Feyerabend et al., 2013). The CBOs that are formed from the coming together of state and traditional authorities inherently have the same disposition. For example, the decision-making authority in a state-led CBNRM is not vested in the VAG committee but with the CRB. Therefore, CBOs such as the Partnership Board in LPNP must place all stakeholders on an equal footing. The Zambian CBNRM experience has shown that this is easier said than done as conflicts between the communities and other actors are common (Dalai-Clayton & Child, 2003; Lubilo & Child, 2010).

Due to their economic power and influence, private firms and NGOs involved in tourism and wildlife conservation also dominate the community in multi-partner CBNRM programmes. Thus they can dictate terms and conditions to the community based on their interests. In some cases, this has positive outcomes, e.g. in the cases of CONASA and COMACO where the surrender of firearms and wire snares by poachers is a precondition to show commitment and access benefits for communities. In the purest sense of CBNRM, however, the community should be able to devise and implement such management conditions for a more effective conservation outcome, i.e. collective-choice arrangements where "most individuals affected by a resource regime are authorised to participate in making and modifying its rules" (Ostrom, 1990; Cox et al., 2010). The decentralisation policies in Zambia have not fully devolved authority to communities to design their own rules.

2.4.3 Issues regarding processes of CBNRM

2.4.3.1 Inter-actor relationships

It is also important to harmonise the relationships among actors because powerful actors such as local government departments and traditional leaders are usually hesitant to meaningfully devolve authority

for managing natural resources. Apart from legal barriers, the fear that communities will cause natural resource degradation, favour local over national interests and a lack of grassroots pressure can be serious constraints to effective devolution (Charnley & Poe, 2007; Child & Wojcik, 2014). These notions are held not only by government officials but by private actors, especially those involved in tourism. By partnering with the DNPW, enterprises such as the KTL and the LPNP Partnership Board have adopted some of the management practices of the top-down fortress approach. This aspect within CBNRM sets up the possibility of negative relationships and confrontation with the community.

2.4.3.2 The importance of trust

Logically, most multi-partner CBNRM organisations are referred to as trusts, e.g. The Kasanka Trust. Trust plays a key role in facilitating collective action and legitimising public, private and civil society institutions (Tsang et al., 2009). Further, Tsang et al. (2009) note that when levels of trust between government decision-makers and other stakeholders are low, a deliberation strategy using professional facilitation is necessary to improve public participation and improve trust. Being the most dominant actor in Zambia, the state is the best-placed stakeholder to undertake such facilitation.

In addition, Tsang et al. (2009) elucidate that despite trustworthiness being evaluated on competence, credibility, openness, accountability, reliability, intentions, benevolence and honesty, it does not automatically bring trust from a group of citizens. They explain that trust between government officials and communities is a product of effective and legitimate communication. The lack of trust among stakeholders may be driven by the disparity between the perceived and the actual benefits accruing to community members, therefore face-to-face dialogue is crucial (Nyirenda & Nkhata, 2013; Mosimane & Silva, 2015).

2.4.3.3 Poor communication and coordination

It has been noted that communication and coordination are key challenges of CBNRM in Zambia and Southern Africa (Chidakel, 2011; Mdiniso et al., 2017). Low communication of programme purpose, limits of revenue generation and poor relations between the park management and traditional authorities constrained outreach efforts aimed at explaining the positive attitude towards conservation in Kasanka National Park (Chidakel, 2011). Coordination is intimately connected to stakeholders having a shared vision that enhances collective actions, and as such a coordination problem can only be solved by developing shared understanding and consensus among all stakeholders (Hovmand, 2014). The complexity of SESs such as the protected areas in which the CBNRM programmes occur demand clear communication and coordination between actors, otherwise conflict may arise. Transparent

communication channels in the decision-making process are vital in ensuring trust and accountability (Child & Wojcik, 2014).

2.4.3.4 Transparency and accountability

The governance of protected areas can be measured on how it effectively supports the achievement of management outcomes and on how well it incorporates the principles of good governance, including transparency and accountability (Lockwood et al., 2010). Local-level NRG in many protected areas in Africa is mostly poor and characterised by a lack of transparency and accountability (Roe et al., 2009). The lack of financial transparency, in addition to elite capture of benefits and recentralisation of the local level, were among the main factors that hampered the overall performance of ADMADE (Lubilo & Child, 2010). Afterwards, the managers of the LIRDP derived lessons from the fall of ADMADE. They demanded financial transparency and well-spread, quarterly dissemination of accurate financial accounts to community members. Lublio and Child (2010) record that there were drawn-out and fierce conflicts among actors over revenues which were only resolved after numerous interactions between the political actors (chiefs, politicians and bureaucrats) and the community. This scenario highlights why it is important for participants, especially leaders in CBNRM to be accountable for their actions, decisions and policies (Child & Wojcik, 2014). Correspondingly, emphasis must be placed on ensuring that individuals and groups are answerable to the community or the CBO they represent.

However, the CAMPFIRE experience in Zimbabwe and community-based forest management in Tanzania has shown that the development of local systems of accountable governance takes time because the mechanisms of accountability are adapted to local social norms (Roe et al., 2009). Then again, Roe et al. (2009) indicate that, CBNRM initiatives are rarely accompanied by long-term investments in capacity-building to guarantee the accountability of local leaders to their communities. To be sustainable, community NRG institutions need persistent and long-term quality facilitation and support that emphasises transparency and accountability (Jones, 2007). The early CBNRM programmes put much effort into developing representative committees (e.g. VAGs in Zambia), which were expected to act on behalf of local communities in relatively large geographical areas but neglected to build relationships between the committees and residents (Jones, 2007). In the end, Jones (2007) shows that CBNRM committees have become accountable upwards to government, NGOs or donors, but not downwards to residents.

Generally, there is a patchy institutional layout that may be due to conscious and non-conscious responses to changing conditions termed as institutional bricolage by Cleaver (2012). She states that institutional bricolage produces dynamic hybrids of modern, traditional, formal and informal institutions that exhibit uneven functionality and impact. Additionally, Cleaver (2012) shows that institutions formed through bricolage are based on several factors including the naturalisation, necessary improvisation of everyday life, moral rationalities (The subjective view that "it is always rational to do what morality demands" (Van Ackeren & Sticker, 2018) e.g. the idea that it is humanity's responsibility to conserve nature for posterity), conscious agency and non-conscious practice, authoritative processes, and legitimisation. For instance, in the case of COMACO and the Kasanka Trust, moral rationalities drive the objectives of conservation and provision of sustainable livelihood. In LPNP, the state departments and the BRE operate based on authoritative processes and legitimisation. However, Cleaver (2012) also points out several pitfalls of institutions that are formed through bricolage, including the reproduction of societal inequalities and inclusion or exclusion of groups of people. Further, institutions may have functions or meaning that is beyond NRG, making it difficult to judge their effectiveness.

Table 2-6: Key issues affecting the models of CBNRM in Zambia

CBNRM model	Systemic issues				Structural issues		Processual issues			
	Legal foundations	Top-down system & community participation	Power relations	Benefit-sharing mechanisms	Community interests	Conflict resolution	Inter-actor relationships	Trust	Poor communication & coordination	Transparency & accountability
Market based CBNRM	Legal establishment but vulnerable to changes of interests of firms/funders	Private firms decide the management objectives with expectations of community compliance	Power is biased towards private firms	Successful conservation and some household level benefits	Subject to the interests of private firms and funders	Based on statutory law and the firm's manage-ment decisions	Reluctance to devolve decision-making power by firms to communities	Trust is possible between firms and communities based on provision of incentives and benefits	Short communication channels may ensure effective coordination of conservation action	Demanded by the firms from the communities but firms are rarely transparent or held accountable by communities
Public-private partnership	Strong and more stable legal establishment	Purely top-down organisations with expected compliant community participation	State departments and firms dictate terms to communities	Relatively successful conservation with minimal household-level benefits	Subject to the interests of state and private firms	Based on statutory law and the firm's manage-ment decisions	Reluctance to devolve decision-making power by state departments and firms to communities	Communities may trust private partner but not the state department due to ineffective benefit-sharing mechanisms and illegitimate communication	Bureaucratic communication channels may hinder coordination and effective action	Communities are rarely availed details, nor do they hold either of the other actors accountable
Multi-partner NRG	Strong, broader and legally established partnerships	Community participation is regulated by the state and traditional leaders	State departments and chiefs dictate terms to communities	Relatively successful conservation with minimal household-level benefits	Subject to the interests of state, traditional leaders and private firms	Based on statutory and customary laws, and the decisions of the Partnership Board	Reluctance to devolve decision-making power by state departments and traditional leaders to communities	Trust depends on effective and legitimate communication by the partnership board and the communities	Communication, coordination and conservation actions are complicated by the multiple partners	Communities are rarely availed details, nor do they hold either of the other actors accountable

In summary, the challenges facing collaborative natural resource governance in the context of CBNRM in and around the protected areas in Zambia relate to their systems, structures and processes. As a system of NRG, CBNRM programmes need strong legislation and policies to withstand changes in the environmental and institutional settings. They must provide a level playing field for participation in decision-making for all stakeholders, especially vulnerable communities. Equitable power relations and benefit-sharing mechanisms are essential components for the success of any CBNRM programme. This is vital to harmonise community interests and manage conflicts within collaborative governance structures. However, to function effectively, the processes linking the CBNRM structures must generate synergistic relationships among actors, trust and effective communication and coordination are essential prerequisites.

2.5 Summary

Positive outcomes such as conserved biodiversity and sustained livelihoods can only be achieved if the gaps between NRG theory and practice are reduced. The use of theoretical concepts in decision-making processes demands that the knowledge be credible, salient and legitimate and entails the involvement of natural resources managers as important actors in bridging the gap between theory and practice (Reed et al., 2013). The study showed that NRG theories have advanced from recommending simple panaceas under centralised management regimes to environmental governance frameworks that can be tailored to different contexts involving diverse actors including the state, the market and local communities.

Natural resource managers in Zambian protected areas face many challenges but also have many opportunities. The advent of CBNRM has provided hope in ensuring positive conservation and livelihood outcomes. However, this review has shown that there are systemic, structural and process-related issues that need to be addressed to streamline the path from concepts to positive governance. Pertinent gaps among the systemic issues are the lack of strong legal foundations, limited community participation, lack of equitable power relations and lopsided benefit-sharing mechanisms. The CBNRM structures do not focus the decision-making power on the community and jeopardise effective conflict resolution. Disharmony in inter-actor relationships, low level of trust due to poor communication and coordination and the lack of transparency and accountability affect the processes of CBNRM. It is also clear that there is no one-size-fits-all solution as cases are not homogeneous.

This chapter calls attention to a vital need for context-specific and adaptable NRG governance models for biodiversity conservation and livelihoods. It presented the main theories and concepts that underpin

NRG in Zambia. Focus was placed on the different configurations that the collaboration of actors in the governance of natural resources takes and their consequences. The next chapter presents the conceptual framework, research design, a description of the study site and, the limitations and assumptions of the study.

References

African Parks. (2021). Retrieved June 15, 2021, from Bangweulu Wetlands: https://www.africanparks.org/the-parks/bangweulu

Agrawal, A., & Lemos, M. C. (2007). A Greener Revolution in the Making? Environmental Governance in the 21st Century. *Environment Vol. 49 No. 5*, 36-45.

Ansell, C., & Gash, A. (2007). Collaborative Governance in Theory and Practice. *Journal of Public Administartion Research and Theory*, 543-571.

Apse, C., & Seybert, R. (2010). *African Parks management of Liuwa Plain National Park.* Lusaka: The Nature Conservancy.

Baird, S., McIntosh, C., & Özler, B. (2011). The regressive demands of demand-driven development. *Policy Research Working Paper Series, 5883*.

Banda, J A. Banda P., & Tengnas B. (1997). Agroforestry Manual for Extension Workers in Central and Lusaka Provinces. Nairobi Regional Soil Conservation Unit.

Banda, G. (2002). Customary Law and Natural Resources Management. In IUCN, *Human and Social Perspectives in Natural Resource Management: A Regional Training Handbook*. Harare. IUCN.

Berardo, R., Fischer, M., & Hamilton, M. (2020). Collaborative Governance and the Challenges of Network-Based Research. *The American Review of Public Administration, 0*(0), 1-16.

Bodin, Ö. (2017). Collaborative environmental governance: Achieving collective action in social-ecological systems. *Science, 357*(659).

Borrini-Feyerabend, G., Dudley, N., Jaeger, T., Lassen, B., Broome, N. P., Phillips, A., & Sandwith, T. (2013). *Governance of Protected Areas: From Understanding to Action. Best Practice Protected Area Guidelines Series No. 20.* Gland: IUCN.

Bouamrane, M; Spierenburg, M; Agrawal, A; Boureima, M; Cormier-Salem, -C; Etienne, M; Le Page, C; Levrel, H; Mathevet, R. (2016). Stakeholder engagement and biodiversity conservation challenges in social-ecological systems: some insights from biosphere reserves in western Africa and France. *Ecology and Society, 21*(4), 25. doi:10.5751/ES-08812-210425

Bwalya, S. M. (2002). Critical Analysis of Community-Based Wildlife Resource Management in Southern Africa: Case Study From Zambia. *'The Commons in an Age of Globalisation. The Ninth*

Conference of the International Association for the Study of Common Property. Victoria Falls, Zimbabwe: http://www.cbnrm.net/pdf/bwalya_sm_001_zambiacbwm.pdf.

CBD. (2020). *Convention on Biological Diversity (CBD) National CHM for the Republic of Zambia.* Retrieved December 18, 2020, from Convention on Biological Diversity (CBD) National CHM for the Republic of Zambia: http://zm.chm-cbd.net/

Charnley, S., & Poe, M. R. (2007). Community Forestry in Theory and Practice: Where Are We Now? *Annual Review of Anthropology, 36*, 301–336. doi:10.1146/annurev.anthro.35.081705.123143

Chidakel, A. (2011). Conservation Attitudes and Community-Based Natural Resource Management in an Understocked Game Management Area of Zambia. *Masters Thesis(450).* Miami, Florida, USA: Florida International University. doi:10.25148/etd.FI11080302

Child, B. (2003). Origins and efficacy of modern community-based natural resource management (CBNRM) practices in the Southern African region. IUCN. Retrieved November 30, 2020, from http://cmsdata.iucn.org/downloads/cca_bchild.pdf

Child, B. (2004). *Parks in Transition: Biodiversity, Rural Development and the Bottom Line.* London: Earthscan.

Child, B., & Barnes, G. (2010). The conceptual evolution and practice of community-based natural resource management in southern Africa: past, present and future. *Environmental Conservation, 37*, 283-295.

Child, B., & Dalai-Clayton, B. (2004). Transforming Approaches to CBNRM: Learning from the Luangwa experience in Zambia. In T. O. McShane, & M. Wells, *Getting Biodiversity Projects to Work Towards More Effective Conservation and Development* (pp. 256-289). New York: Columbia University Press.

Child, B., & Wojcik, D. (2014). *Developing Capacity for Community Governance of Natural Resources Theory and Practice.* Bloomington: AuthorHouse.

Child, B., Musengezi, J., Parent, G. D., & Child, G. F. (2012). The economics and institutional economics of wildlife on private land in Africa. *Pastoralism: Research, Policy and Practice, 2:18.*

Child, B., Ward, S., & Tavengwa, T. (1997). Zimbabwes CAMPFIRE programme: Natural Resource Management by the People. *Environmental Issues Series*(2).

Cleaver, F. 2012. Introducing bricolage. In: Cleaver, F. Development through Bricolage: rethinking Institutions for Natural Resource Management. Abingdon, Routledge. Pp. 33-52.

Cleaver, F., & Whaley, L. (2018). Understanding process, power, and meaning in adaptive governance: a critical institutional reading. *Ecology and Society, 23*(2).

COMACO. (2020, December 4). *COMACO*. Retrieved December 4, 2020, from COMACO: https://itswild.org/about-us/

CONASA. (2003). *Community-Based Natural Resource Management and Sustainable Agriculture Project.* Lusaka: CONASA.

Cox, M., Arnold, G., & Villamayor Tomas, S. (2010). A Review of Design Principles for Community-based Natural Resource Management. *Ecology and Society, 15*(4), 38. Retrieved from http://www.ecologyandsociety.org/vol15/iss4/art38/

d'Estrée, T. P., Dukes, E. F., and Navette-Romero, J. (2002). Environmental Conflict and Its Resolution. In B. Bechtel, & A. Churchman (Eds.), *Handbook of Environmental Psychology* (pp. 589-606). New York: Wiley.

Dalai-Clayton, B., & Child, B. (2003). *Lessons from Luangwa: The Story of the Luangwa Integrated Resource Development Project, Zambia.* London: International Institute for Environment and Development.

Davis, A.-L,, Blomley, T., Homer, G., Sommerville, M., & Nelson, F. (2020) *Community-Based Natural Resource Management in Zambia: A review of institutional reforms and lessons from the field.* Washington DC: Maliasili, the USAID Intergrated Land and Resource Governance TAsk Order under the Strenghthening Tenure and Resource Rights II (STARR II) IDIQ, and The Nature Conservancy.

Delgado-Serrano, M., E. Oteros-Rozas, P. Vanwildemeersch, C. Ortíz Guerrero, S. London, R. Escalante. (2015). Local perceptions on social-ecologocal systems in Latin America in three community-based natural resource management systems. *Ecology and society, 20*(4), 24.

Denkler, J. L. (2009). Community-Based Natural Resource Management: Power, Isolation and Development in Rural Botswana. *Master of Art Thesis*. University of Florida.

Dudley, N. (2008). *Guidelnes for Applying Protected Area Management Categories.* Gland: IUCN.

Dukes, E. F. (2004, Fall-Winter). What We Know About Environmental Conflict Resoulution: An Analysis Based on Research. *Conflict Resolution Quarterly, 22*(1-2).

Eagles, P. F., Romagosa, F., Buteau-Duitschaever, W. C., Havitz, M., Glover, T. D., & McCutcheon, B. (2013). Good governance in protected areas: an evaluation of stakeholders' perceptions in British Columbia and Ontarion Provincial Parks . *Journal of Sustainable Tourism*, 60-79.

Eklund, J., & Cabeza, M. (2016). Quality of governance and effectiveness of protetcted areas: Crucial concepts for conservation planning. *Annals of the New York Academy of Sciences, 1399*, 27-41.

Folke, C., Hahn, T., Olsson, P., & Norberg, J. (2006). Adaptive governance of social-ecological systems. *Annual Review of Environment and Resources, 30*(1), 441-473.

Fukuyama, F. (2013). *What Is Governance?* Washington DC: Centre for Global Development.

Geldmann, J. (2013). Evaluating the effectiveness of protected areas for maintaining biodiversity, securing habitats, and reducing threats. *PhD Thesis*. Copenhagen: University of Copenhagen.

Geldmann, J., Manica, A., Burgess, N. D., Coad, L., & Balmford, A. (2019). A global-level assessment of the effectiveness of protected areas at resisting anthropogenic pressures. *Proceedings of the National Academy of Sciences of the United States of America, 116*(46), 23209–23215.

Gibson, C. (2000). Political Institutions and Conservation Outcomes: Wildlife Policy in Zambia. *Swiss Political Science Review, 6*(1), 87-121.

Gibson, C. C. (1999). Politicians and Poachers: The Political Economy of Wildlife Policy in Southern Africa. Cambridge: Cambridge University Press.

Graham, J., Amos, B., & Plumptre, T. (2003). Governance principles for protected areas in the 21st century. *The Fifth World Parks Congress.* Durban: Institute on Governance.

Gruber, J. S. (2010). Key Principles of Community-Based Natural Resource Management: A synthesis and interpretation of identified effective approaches for managing the commons. *Environmental Management, 45*, 52-66.

GRZ. (1995). The Lands Act (29 of 1995). Government Printers.

GRZ. (2011). The Fisheries Act. Lusaka: Governement printers.

GRZ. (2015). The Zambia Wildlife Act, 2015. Lusaka, Zambia: Government Printers.

GRZ. (2015b). The Forest Act. Lusaka, Zambia: Government Printers.

Haambiya, L., Kaunda, E., Likongwe, J., Kambewa, D., & Kagoli, M. (2015). Local-Scale Governance: A Review of the Zambian Approach to Fisheries Management. *Journal of Agricultural Science and Technology, B 5*, 81-92.

Harrington, R; Anton, C; Dawson, T P; de Bello, F; Feld, C K; Haslett, J R; Kluvánkova-Oravská, T; Kontogianni, A; Lavorel, S; Luck, G W; Rounsevell, D A; Samways, M J; Settele, J; Skourtos, M; Spangenberg, H; Vandewalle, M; Zobel, M; Harrison, P A. (2010). Ecosystem services and biodiversity conservation: concepts and a glossary. *Biodiversity and conservation, 19*(10), 2773-2790. doi:10.1007/s10531-010-9834-9

He, M., & Cliquet, A. (2020). Challenges for Protected Areas Management in China. *Sustainability, 12*(5879), 1-29.

Hou-Jones, X., Franks, P., & Chung, J. (2019). *Creating enabling conditions for managing trade-offs between food production and forest conservation in Africa: Case studies from Ethiopia and Zambia.* London: IIED.

Hovmand, P. S. (2014). *Community-Based System Dynamics.* New York: Springer Science+Business Media.

Hutton, J., Adams, W. M., & Murombedzi, J. C. (2005). Back to Barriers? Changing Narratives in Biodiversity Conservation. *Forum for Development Studies, 32*, 341-370.

Jones, B. T. (2007). *Synthesis of the CBNRM Policy and Legislation in Botswana, Malawi, Mozambique, Namibia, Zambia and Zimbabwe.* Harare: WWF – SARPO.

Jones, B., & Murphree, M. (2004). Community-based natural resouces management as a conservation mechanism: lessons and directions. In B. Child (Ed.), *Parks in Transition. Biodiversity, Rural Development and the Bottom Line* (pp. 63-104). London: Earthscan.

Jones, B., & Weaver, C. (2009). CBNRM in Namibia: growth, trends, lessons and constraints. In H. Suich, & B. Child (Eds.), *Evolution and Innovation in Wildlife Conservation* (pp. 223-242). London: Earthscan.

Kasanka National Park. (2020, December 5). *About Kasanka National Park*. Retrieved December 5, 2020, from Kasanka National Park: https://kasankanationalpark.com/about/park-information/

Kideghesho, J. R., Rija, A. A., Mwamende, K. A., & Selemani, I. S. (2013). Emerging issues and challenges in conservation of biodiversity in the rangelands of Tanzania. *Nature Conservation, 6*, 1-29.

Koontz, T. M., Gupta, D., Mudliar, P., & Ranjan, P. (2015). Adaptive institutions in social–ecological systems governance: A synthesis framework. *Environmental Science and Policy, 53*, 139-151.

Kowero, G. (2004). The Influence of Major Sectoral Policies on Forestry in Southern Africa: An Overview. *CIFOR Newsletter (Special Issue)*.

Lambi, C. M., Kimengsi, J. N., Kometa , C. G., & Tata, E. S. (2012). The Management and Challenges of Protected Areas and the Sustenance of Local Livelihoods in Cameroon. *Environment and Natural Resources Research, 2*(3), 10-18.

Le Billon, P. (2015). Environmental conflict. In T. Perreault, G. Bridge, & J. McCarthy (Eds.), *The Routledge Handbook of Political Ecology* (pp. 598-608). New York: Routledge.

Lemos, M. C., & Agrawal, A. (2006). Environmental Governance. *Annual Reviews of Environmental Resources*, 297-325.

Lewis, D., Bell, S. D., Fay, J., Bothi, K. L., Gatere, L., Kabila, M., Travis, A. J. (2011). Community Markets for Conservation (COMACO) links biodiversity conservation with sustainable improvements in livelihoods and food production. *PNAS, 108*(34), 13957–13962.

Lillehagen, C. T. (2016). *Stakeholders' attitudes, values and norms towards governance of protected areas in Zambia - an institutional analysis.* Norwegian University of Life Sciences, Department of Internantional and Environment Studies., Retrieved August 20, 2019, from https://pdfs.semanticscholar.org/eb64/95837de0de13c5c6377932cf6c5a48079986.pdf

Lockwood, M., Davidson, J., Curtis , A., Stratford, E., & Griffith, R. (2010). Governance principles for Natural Resource Management. *Society and Natural Resources, 23*, 986-1001.

Lordkipanidze, M., Bressers, H., & Lulofs, K. (2019). Governance assessment of a protected area: the case of the Alde Feanen National Park. *Journal of Environmental Planning and Management, 62*(4), 647-670. doi:10.1080/09640568.2018.1441014

Luambe Conservation Project. (2021). (H. G. Portifolio, Producer) Retrieved May 10, 2021, from Luambe Conservation Project.

Lubilo, R., & Child, B. (2010). The Rise and Fall of Community-Based Natural Resource Management in Zambia's Luangwa Valley: An Illustration of Micro- and Macro-Governance Issues. In F. Nelson (Ed.), *Community Rights, Conservation and Contested Land.* Earthscan.

Lynn, L. E., Hienrich, C. J., & Hill, C. J. (2001). *Improving governance: A new logic for empirical research.* Washington DC: Georgetown University Press.

Lyons, A. (2012). The Rise and Fall of a Second-Generation CBNRM Project in Zambia: Insights from a Project Perspective. *Environmental Management, 51*, 65–378. doi:10.1007/s00267-012-9996-1

Maliasili. (2020). *Maliasili: Investing in People for Nature*. (Maliasili) Retrieved June 20, 2021, from Maliasili: Investing in People for Nature: BCP: https://www.maliasili.org/biocarbon-partners

Marshall, G. (2005). *Economics for Collaborative Environmental Management: Renegotiating the Commons.* London: Earthscan.

Martin, R. B. (2009). Murphree's Laws, Principles, Rules and Definitions. In B. B. Mukamuri, J. M. Manjengwa, & S. Anstey, *Beyond Proprietorship. Murphree's Laws on Community-Based Natural Resource Management in Southern Africa* (pp. 7-28). Harare: Weaver Press.

MCC. (2011). *Situational and Livelihoods Analysis Study in Nine Game Management Areas, surrounding Kafue National Park, Zambia.* Millenium Challenge Corporation. Chemonics International Inc.

Mdiniso, J. M., Ezeuduji, I. O., & Nzama, A. T. (2017). Evaluating nature conservation and tourism development effectiveness: Local communities around Hluhluwe-iMfolozi Game Park, South Africa. *6.* KwaDlangezwa, KwaZulu, South Africa. Retrieved November 8, 2020, from www.ajhtl.com

Mosimane, A. W., & Silva, J. A. (2015). Local Governance Institutions, CBNRM and Benefit-sharing Systems in Namibian Conservancies. *Journal of Sustainable Development, 8*, 99-112.

Mutamba, E. (2004). Community Participation in Natural Resource Management: Reality or Rhetoric? Lessons from the Kasanka Game Management Area communities Serenje district, Zambia. *Environmental Monitoring and Assessment, 99*, 105-113.

MTA. (2018). *National Parks and Wildlife Policy.* Lusaka: Ministry of Tourism and Arts.

Munyeme, M., Muma J. B., Mung'andu, H.M., Nalubamba, K. S., Kankya, C., Skjerve, E.,…Tryland, M. (2021). Failure to detect tuberculosis in Black lechwe antelopes (*Kobus leche smithemani*) in Zambia. *BMC Research Notes*, 4(233). doi: 10.1186/1756-0500-4-233

Murphree, M. (2005). Congruent objectives, competing interests, and strategic compromise: concept and process in the evolution of Zimbabwe's CAMPFIRE, 1984–1996. In J. P. Brosius, A. I. Tsing, & C. Zerner (Eds.), *Communities and Conservation. Histories and Politics of Community-Based Natural Resource Management* (pp. 105–148). Oxford: Rowman & Littlefield Publishers.

Musavengane, R., & Simatele, D. M. (2016). Community-based natural resource management: The role of social capital in collaborative environmental management of tribal resources in KwaZulu-Natal, South Africa. *Development Southern Africa, 33*(6), 1-16. doi:10.1080/0376835X.2016.1231054

Muyengwa, S. (2015). Determinants of Individual Level Satisfaction with Community-Based Natural Resource Management: A Case of Five Communities in Namibia. *Environments*, 608-623.

Muyengwa, S., & Child, B. (2017). Re-Assertion of Elite Control in Masoka's Wildlife Prgoramme, Zimbabwe. *Journal of Sustainable Development, 10*(6), 28-40.

Nelson, R., Holden, M., & Smith, M. S. (2008). Using adaptive governance to rethink the way science supports Australian drought policy. *Environmental Science and Policy, 11*(7), 588-601.

Nkhata, B. A., & Breen, C. M. (2010). Performance of community-based natural resource governance for the Kafue Flats (Zambia). *Environmental Conservation, 37*, 296-302.

Noga, S. R., Kolawole, O. D., Thakadu, O. T., & Masunga, G. S. (2018). Wildlife officials only care about animals: Farmers' perceptions of a ministry-based extension delivery system in mitigating human-wildlife conflicts in the Okavango Delta, Botswana. *Journal of Rural Studies, 61*(7), 216-226. doi:10.1016/j.jrurstud.2018.06.003

Nyirenda, V. R., & Nkhata, B. A. (2013). Collaborative Governance and Benefit Sharing in Liuwa Plain National Park, Western Zambia. *PARKS, 19*(1), 103-114.

Oestreicher, J. S., Benessaiah, K., Ruiz-Jaen, M. C., Sloan, S., Pelletier, J., Guay, B., Potvin, C. (2009). Avoiding deforestation in Panamanian protected areas: an analysis of protection effectiveness and implications for reducing emissions from deforestation and forest degradation. *Global Environmental Change, 19*, 279–291.

Oldekop , J. A., Holmes, G., Harris, W. E., & Evans, K. L. (2016). A global assessment of the social and conservation outcomes of protected areas. *Conservation Biology, 30*, 133–141.

Ostrom, E. (1990). *Governing the commons: The evolution of institutions for collective action.* Cambridge: Cambridge University Press.

Ostrom, E. (2009). A General Framework for analysing Sustainability of Social-Ecological Systems. *Science, 325*, 419-422.

Ostrom, E., & Cox, M. (2010). Moving beyond panaceas: A multi-tiered diagnostic approach for social-ecological analysis. *Environmental Conservation, 37 (4)*, 451-463.

Panlasigui, S., Rico-Straffon, J., Pfaff, A., Swenson, J., & Loucks, C. (2018). Impacts of certification, uncertified concessions, and protected areas on forest loss in Cameroon, 2000 to 2013. *Biological Conservation, 227*, 160-166.

Pfaff, A., Robalino, J., Herrera, D., & Sandoval, C. (2015). Protected areas' impacts on Brazilian Amazon deforestation: Examining conservation-development interactions to inform planning. *PLoS One, 10*, e0129460.

Pressey, R. L., Visconti, P., & Ferraro, P. J. (2015). Making Parks Make a Difference: Poor alignment of policy, planning and manangement with protected-area impact and ways forward. *Philosophical Transactions of the Royal Society, 370*. doi:http://dx.doi.org/10.1098/rstb.2014.0280

PSAf. (2017). *Media Brief on Community-Based Natural Resource Management.* Lusaka: Panos Institute Southern Africa.

Ramsar. (2014). (The Ramsar Secretariat). Retrieved June 2, 2021 from, Ramsar: https:// https://www.ramsar.org/news/zambia-adds-large-new-ramsar-sites

Ray, R.-R. (2011). Ecology and population status and the impact of trophy hunting of the leopard Panthera pardus (LINNAEUS, 1758) in the Luambe National Park and surrounding Game Management Areas in Zambia. *Dissertation for the degree of Doctor of Science (Dr. rer. nat.) in Zoology* Bonn: Rheinische Friedrich-Wilhelms-Universität

Reed, M., Hubacek, K., Bonn, A., Burt, T. P., Holden, J., Stringer, L. C., Chapman, P. J. (2013). Anticipating and managing future trade-offs and complementarities between ecosystem services. *Ecology and Society*.

Riggio, J., Jacobson, A. P., Hijmans, R. J., & Caro, T. (2019). How effective are the protected areas of East Africa? *Global Ecology and Conservation, 17*, e00573.

Robbins, P. (2012). *Political Ecology: A Critical Introduction* (2nd ed.). Chichester: John Wiley and Sons.

Roe, D., Nelson, F., & Sandbrook, C. (Eds.). (2009). *Communtiy Management of Natural Resources: Impacts, Experiences and Future Directions.* London, UK: International Institute for Environment and Development. Retrieved 12 1, 2019, from https://pubs.iied.org

Roka, K. (2019). Community-Based Natural Resources Management. In A. A. Leal Filho W. (Ed.), *Life on Land. Encyclopedia of the UN Sustainable Development Goals.* Springer, Cham. doi:10.1007/978-3-319-71065-5_18-1

Simasiku, P., Simwanza, H. I., Tembo , G., Bandyopadhyay, S., & Pavy, J. (2008). *The Impact of Wildlife Management Policies on Communities and Conservation in Game Management Areas in Zambia: Message to Policy Makers.* Lusaka: Natural Resources Consultative Forum.

Sitas, N. (2014). Opportunities and Challenges for Mainstreaming Ecosystem Services in Decision-making. *PhD Thesis*. Stellenbosch, Western Cape, South Africa: Stellenbosch University.

Stoker, G. (1998). Governance as Theory: Five Propositions . *International Social Science Journal*, 17-28.

Tallis, H., & Kareiva, P. (2005). Ecosystem Services. *Current Biology, 15*, R746-R748.

The Kasanka Trust. (2019, December 5). *The Kasanka Trust*. Retrieved Decenber 5, 2020, from The Kasanka Trust: https://kasanka.com/

Tsang, S., Burnett, M., Hills, P., & Welford, R. (2009). Trust, Public Participation and Environmental Governance in Hong Kong. *Environmental Policy and Governance, 19*, 99-114.

Underdal, A. (2002). One question, two answers. In E. Miles, A. Underdal, S. Andresen, J. Wettestad, J. B. Skærseth, & E. Calin, *Environmental Regime Effectiveness, Confronting Theory with Evidence* (pp. 3-45). Cambridge, MA: The MIT Press.

Van Ackeren, M., & Sticker, M. (2018). Moral Rationalism and Demandingness in Kant. *Kantian Review, 23*(3), 407-428. doi: 10.1017/S1369415418000225

Vatn, A. (2015). *Environmental Govenance: Institutions, policies and actions.* Cheltenham: Edward Elgar.

Vedeld, P. (2017). *Something that NGOs do? Notes on participation and governance in the environment and development policy field.* International and Environmental Development Studies NORAGRIC. As: Norwegian University of Life Sciences.

Waldron, A., Miller, D. C., Redding, D., Mooers, A., Kuhn, T. S., Nibbelink, N., Gittleman, J. L. (2017). Reductions in global biodiversity loss predicted from conservation spending. *Nature, 551*(7680), 364–367.

Worboys, G. L. (2015). Concept, purpose and challenges. In G. L. Worboys, M. Lockwood, A. Kothari, S. Feary, & I. Pulsford (Eds.), *Protected Area Governance and Management* (pp. 9-42). Canberra: ANU Press.

Yeboah-Assiamah, E., Muller, K., & Domfeh, K. A. (2018). Transdisciplinary approach to natural resource governance research: A conceptual paper. *Management of Environmental Quality, 29*(1), 15-33.

Yeboah-Assiamah, E., Müller, K., & Domfeh, K. A. (2018). Complex crisis and the rise of collaborative natural resource governance: institutional trajectory of a wildlife governance experience in Ghana. *Environment, Development and Sustainability, 20*, 2205–2224. doi:10.1007/s10668-017-9985-x

CHAPTER THREE : Concepts, research methodology and case study areas

3.1 Conceptual framework

The study is underpinned by several concepts that regard the interactions of human beings and the environment. Humans have always relied on the environment for natural resources through ecosystem services and ecosystem functions for their sustenance. But human socio-economic activities have also led to degradation or unsustainable use of ecosystem services, which may lead to ecological collapse in many regions of the world (Tallis & Kareiva, 2005). This study recognises that wildlife and forest resources are embedded in complex social-ecological systems (SESs) and as such the environmental problems regarding them cannot be addressed using concepts held in one scientific discipline. This approach has proven to yield simplistic models that do not address the complex environmental problems in SESs (Ostrom, 2009). The protected areas studied are complex SESs as they are composed of many interacting components including the physical environment (wildlife, forests and fisheries) and human activities (communities, government, non-governmental organisations and private companies) which both exhibit non-linear, short-range interactions with feedback loops over time (Cilliers, 1998; Cilliers et al., 2013).

The complex nature of SESs invites the application of complex governance systems that can balance the diverse interests of various stakeholders who have different understandings of the purpose and benefits of the SES (Ostrom & Cox, 2010; Voinov & Bousquet, 2010). In this dissertation, governance is also understood as the process of shaping priorities, facilitating coordinated action and handling conflicts (Vatn, 2015) through a system of formal and informal rules that establish the interaction and cooperating guidelines among different stakeholders that intervene in the decision-making process (Roca, 2006). Governance has over the past decades been promoted as an important factor in the management of natural resources for human wellbeing and conservation (Ostrom et al., 2007; Nolte et al., 2013; Borrini-Feyerabend et al., 2013).

It is however not easy to find a governance model that successfully balances stakeholder interests and resolves all conflicts equitably. The governance and management of SESs have become increasingly difficult as they have become more interlinked as the size of human populations and economic development have increased (Ostrom & Cox, 2010). The traditional bureaucratic and state-centric approach of Natural Resources Governance (NRG) is being replaced by more inclusive models that acknowledge and involve many actors who have a stake in the resources in question, i.e. collaborative natural resource governance (Yeboah-Assiamah et al., 2018). It is therefore, necessary that the various stakeholders involved in the governance of natural resources, including the community as custodians of indigenous knowledge, interact to co-design and co-produce workable and amicable scientific solutions to problems.

However, the ecological and social sciences have developed independently and do not combine easily (Vedeld, 1994; Norgaard, 2008; Ostrom, 2009). Sustainable development requires the production of knowledge that strikes a balance between scientific and other types of knowledge (Pohl et al., 2010). A major challenge in co-designing and co-production of knowledge is overcoming the barriers among and between scientific disciplines. This challenge becomes more explicit with increasing specialisation (Akkerman & Bakker, 2011) and complicates the linking of knowledge in ways that underpin human wellbeing and prevent developmental activities from eroding the resilience of SESs (Sitas, 2014).

A transdisciplinary (TD) approach to research may overcome many of these challenges by crosscutting academic boundaries, actors, fields and approaches to produce practical knowledge that is transformative (Yeboah-Assiamah et al., 2018). Fundamentally, a TD approach aims at solving real-world problems through a process of problem identification, problem structuring, problem investigation and lastly the phase of bringing the results to fruition (Pohl, 2008). The TD process differentiates and integrates knowledge from various societal and scientific bodies of knowledge to synchronously find solutions to societal problems and their related scientific challenges (Lang et al., 2012). As such, the TD process relies on active consultation with and participation of the communities of practice involving not only the research team but also practitioners and community members (Regeer & Bunders, 2003). Through this approach, the research can identify the past and present local NRG institutions and the processes that have shaped them, the enforcement laxities and the actors' aspirations for future institutional arrangements (Yeboah-Assiamah et al., 2018).

Ultimately, the TD process produces three kinds of knowledge, i.e. systems, target and transformational knowledge as described by Pohl and Hirsh Hardon (2008) and Messerli and Messerli (2008):

i. **Systems knowledge**: Entails knowledge concerning the current situation and seeks to answer questions regarding the origins and evolution of the existing local NRG regimes. This concept is applied in chapters 4 and 5.

ii. **Target knowledge:** The knowledge of the desired situation which involves determining and explaining the need for change. What is the most context-appropriate and beneficial NRG model for the protected areas in question? Chapters 4, 5 and 6 apply these aspects of target knowledge.

iii. **Transformational knowledge**: The knowledge necessary for fostering change from the current situation to the target situation (as set through the consensus of stakeholders). What are the key aspects of the current local NRG that need to be transformed to achieve the envisioned/desired institutional arrangements of NRG? Transformational knowledge also involves the knowledge generated out of the outcomes of the implementing the changes to the NRG system. However, this second aspect of transformational knowledge cannot be wholly captured by this research nevertheless, the findings of this investigation can be an important basis for future transformational TD research (Chapters 6 and 7).

There are four main aspects of TD research that make it appropriate for this research as posited by Pohl (2005):

i. TD research accounts for the complexity of a situation, i.e. the factors that collectively explain a situation's current state and dynamics; addressing both science and society's diverse perceptions of an issue;

ii. TD sets aside the idealised context of science to produce practically relevant knowledge;

iii. TD deals with the issues and possible improvements of the status quo that are involved in balancing the diverse interests and inputs of individual stakeholders and disciplines;

iv. TD is more oriented towards "the common interest" which has to do with institutional designs and enforcement complementarities to create value (Tress et al., 2005).

Historically, humans have responded and regulated the use of environmental resources through governance and management practices that intervene to halt or mitigate the degradation and destruction of natural resources. Therefore the study adapts the Environmental Governance Systems (EGS) framework developed by Vatn (2015) as shown in figure 3-1. This framework tries to distinguish between different actors with their motivations, and institutions (rules) with different roles.

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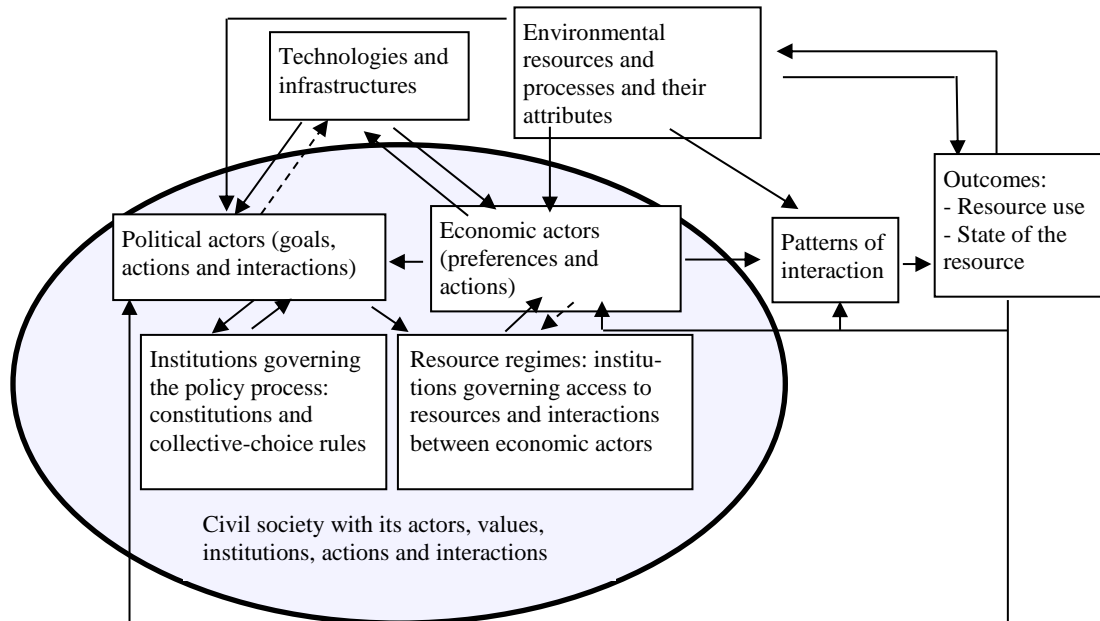
Figure 3-1: The EGS framework for environmental governance systems (Source: Vatn 2015)

Vatn addresses three main concepts:

i.   **The resource regime:** Comprises institutions that govern the use and protection of environmental resources and processes. This covers two kinds of institutions: (i) the rules regarding access to environmental resources, (ii) the rules governing the interactions within and between actors who have access to environmental resources and those being influenced by decisions regarding them. These include property and use rights including statutory and customary law, norms and conventions.

ii. **The governance structure:** This concept is based on the actors and institutions in a social-ecological system. Actors include (i) the economic actors – owners and users of productive resources, (ii) political actors – those who have the power to define property/use rights and interaction rules and (iii) civil society actors who ensure democratic legitimacy of political action.

iii. **Environmental governance systems:** This concept broadens the framework to include the environmental resources and processes, technologies and infrastructures, patterns of interaction and outcomes, i.e. the resource use and the state of the resource. The attributes of the environmental resources influence the outcomes and the choice of resource regime based on the perceptions actors have of the resources and their attributes. The patterns of interaction also depend on the attributes of the environmental resource and the choices made by individual

economic actors and the number of such actors involved. Further, the state of resources influences the political and economic choices of both civil society and political actors who may try to influence policy processes if the outcomes are deemed as not being acceptable. Different actors' choices are also influenced by technologies and infrastructure. By altering the resource regime, policymakers can shape technological development and change the conditions for production by economic actors.

The research presented in this dissertation was aimed at exploring the existing NRG systems at the local level in Zambia to identify the features and opportunities for the integration of good governance principles. Thus this study is intrinsically complex, and this necessitates the inputs not only from multiple academic disciplines but also from other non-academic stakeholders. To meet the objectives the study methodology was set in a TD approach that recognised the importance of inputs from stakeholders. Being part of academia, this study involves other stakeholders within civil society, the public sector, the private sector and the community to co-produce and exchange knowledge. This stakeholder engagement is aimed at developing ways of addressing biodiversity loss and poverty. Focus is placed on the quality of NRG by local institutions as a controlling factor for biodiversity loss and poverty reduction in rural communities. Thus the study assesses the quality of governance or how "good" the governance of the wildlife, forest and fisheries is, using mixed methods. Table 3-1 shows the research objectives, research questions, theory elements and methods applied in this study.

Table 3-1: The research objectives, research questions, theories and methods

Specific Objective	Research questions (RQ)	Theory elements	Methods
1. To assess the quality of existing CBNRM governance systems in Kaindu and Kaingu conservation areas.	How robust and legitimate are the CBNRM institutions in the protected areas of Zambia?	• Ostrom (1990) • IUCN/UNDP principles of good governance • Legitimacy theories (Vatn, 2015; Nantongo, 2017)	• Focus group discussions • Key informant interviews • Governance dashboard questionnaire/survey • Document analysis
2. To determine the main structures and processes of the existing CBNRM governance systems that need to be changed for improved conservation of wildlife, forests and fisheries in the Kaindu and Kaingu conservation areas.	What are the structures and processes of NRG in the CBNRM models that can be changed to integrate good governance in decision-making?		
3. To formulate a new adaptive collaborative CBNRM model governance for wildlife, forests and fisheries resources in Kaindu and Kaingu conservation areas.	How can the patterns of interaction among actors in CBNRM be improved to ensure positive outcomes?	• EGS framework • Participation theory	

3.2 Research design

The case study approach was used to bring out insights into the complex topics of governance of protected areas for livelihoods. The two case studies used in this research addressed the research question by examining multiple units of analysis, namely individual community members, households and stakeholder organisations. Units of analysis included families/households, village headmen and Community Resources Boards (CRBs). Both governmental and non-governmental institutions were included as units of investigation. The research process was dual phased and involved the use of mixed methods to assess the community-based governance systems at play in two protected areas. This entailed collecting data on the history and culture, governance type, *de jure* and *de facto* rights holders and stakeholders, management units and the governance process (Borrini-Feyerabend et al., 2013).

The TD approach described above was set in an embedded dual case study design as defined by Yin, (2009). The embedded design is aptly compatible with the TD approach for the following reasons:

- It allows for multiple units and sub-units of analysis and consequently provides more opportunities for extensive analysis;
- It prevents or avoids slippage, i.e. does not digress from the original orientation and focus on addressing the research questions like other designs such as the holistic case study design;
- It allows for replication as it involves dual or multiple cases, and thus
- It brings out more robust results and compelling arguments.

However, embedded multiple case studies also carry the following weaknesses:

- They focus too much on sub-units and may lose higher level holistic aspects. This occurs when the investigation fails to return to a higher unit of analysis. To solve this problem, higher-level officials such as district heads of government departments, private sector managers, community leaders and heads of NGOs were integrated into the research design as the higher units of analysis.
- They require more time, logistical and financial resources. Therefore, a convergent parallel design was used in the implementation of the case study.

A mixed-method strategy was used to collect both quantitative and qualitative data to explore the current NRG system, draw out opportunities for change and devise a novel CBNRM model in Kaindu and Kaingu, two sites that adjoin a major protected area for wildlife, forests and fisheries, the Kafue National Park (KNP). The methodological framework guiding the research shown in figure 3-2 relates the research

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design, philosophical worldview, research strategy, methods for data analysis, output and, feedback (Sitas, 2014).
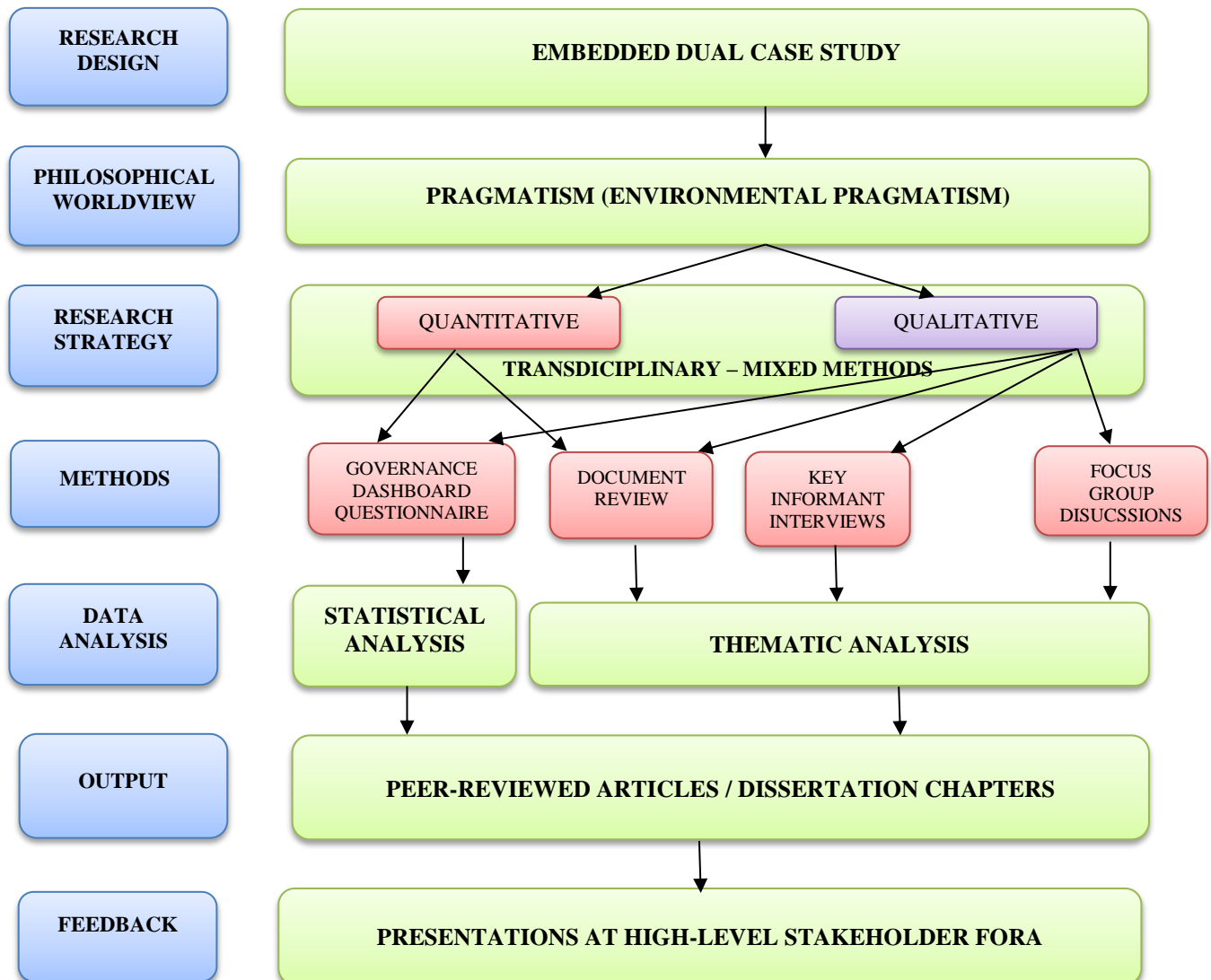
Figure 3-2: Components of the research design and methodology (Adapted from Sitas, 2014)

3.2.1 Philosophical worldview

This research is based on a pragmatist worldview that is not committed to any one system of philosophy and reality and does not consider the world as one absolute unit. This allows the researcher freedom of choice of methods, techniques and procedures that best suit the researcher's needs (Creswell, 2014). Creswell (2014) states that pragmatism as a worldview does not arise from antecedent conditions but out of actions, situations and consequences.

The pragmatic worldview also assists in focusing on the research problem and then uses pluralistic approaches such as transdisciplinarity to derive knowledge about the problem (Tashakorri and Treddlie, 2010). It is geared towards problem-solving using a "what works" approach (Patton, 2002). The pragmatist researcher therefore, has more freedom to choose the methods, techniques and procedures of research that best meet their needs and purposes (Creswell, 2014). This research applied mixed methods, i.e. qualitative and quantitative methods, to better understand the "real world" research problems within two protected areas. Sitas (2014) points out that a pragmatic approach works well in transdisciplinary research that seeks to integrate multiple knowledge systems and assumptions.

The recognition that the reality of the environment is not external to humans led to the development of an environmental pragmatism that is embedded in the general pragmatism paradigm (Parker, 1996). Environmental pragmatism developed as a neutral philosophy between anthropocentric and non-anthropocentric ethics by distinguishing strong and weak anthropocentrism (Light and Katz, 1996). Since the research takes place in SESs it embraces the reality that humans are a part of the environment. Further, this study adopts the assertion by Light and Katz (1996), that the urgency of ecological crises requires that action be necessary through negotiation and compromise. Environmental pragmatism is appropriate for this study as it advocates moral pluralism while implying that environmental problems have multiple correct solutions and consequently allows for multiple viewpoints to be assessed when trying to reach a common resolution (Simpson, 2010). In practice this implies that the viewpoints of each stakeholder must be considered to determine cross-cutting environmental issues that contribute to achieving the goals of the study.

3.2.2 Investigative approach

This study is anchored by a pragmatic, transdisciplinary approach that requires a combination of qualitative and quantitative methods. The mixed-methods strategy was selected because a purely qualitative or purely quantitative inquiry on their own would not have adequately encapsulated the complexity of the different socio-ecological aspects embedded within the study. The mixed-method approach provides strengths that offset the weaknesses of purely qualitative or quantitative research. Mixed methods allow for a large pool of information to be generated from diverse sources thereby creating a more holistic understanding of NRG in protected areas.

The rationale behind the mixed-method approach was to ensure credibility and transferability of the results through triangulation, complementarity and development (Babbie et al., 2012). Triangulation is

the collection of data through multiple sources and is a means for seeking convergence across qualitative and quantitative methods (Creswell, 2014). For example, triangulation is used to add weight to the interpretation of how historical issues affect the governance of protected areas today. Complementarity was ensured by comparing data from different methods, e.g. the findings from focus group discussions were clarified and enhanced by data from the dashboard questionnaire. Comparison between empirical data and document reviews was also done to complement findings. The development of the study followed a convergent parallel design to ensure a refined research process where qualitative and quantitative data were collected and analysed concurrently. Transferability was ensured by contextualising the governance process via thick descriptions, e.g. who makes decisions and is held accountable about how revenue from natural resources is utilised.

3.2.3. Data collection

The methods used to collect data were selected based on their relevance to addressing the research questions. A household survey was conducted by means of a governance dashboard questionnaire (Appendix I). The questionnaire was programmed in the Open Data Kit® (ODK) on computer tablets for rapid and paperless data collection, preliminary data analysis, password protection of data and quality control. Both qualitative and quantitative data was collected through open-ended and closed questions (Merz, 2013). The governance dashboard questionnaire was used to assess levels of satisfaction with the local NRG systems among the heads of households (women, men, married or single who were 18 years and older) in the two case studies. Primary qualitative data were collected through focus group discussions (FGDs) and semi-structured Key Informant Interviews (KIIs) (Appendix II) (Laforest, 2009). The mixed methods were used to develop a comprehensive understanding of the CBNRM governance system for wildlife, forests and fisheries resources. These methods generated a range of data including interview transcripts, stakeholder presentations, demographic data, livelihood data and data on the local governance system.

Key informants were selected based on their position, expertise and experience in the fields of wildlife, forests and fisheries management (Boyce & Neale, 2006). The interviewees represented a spectrum of organisations including government departments, NGOs and CBOs. The analysis of relevant documents followed an iterative process that was guided by a literature study of published authoritative studies in the field of governance of protected areas and examination of pertinent legislation that governs land tenure, wildlife, forests and fisheries in the Republic of Zambia. Free, Prior and Informed Consent (FPIC)

was sought from the interview and survey participants before making audio recordings and written transcripts of the data were obtained.

The descriptions of the application of the data collection and analysis procedures are presented in the empirical chapters 4, 5, and 6 because these chapters are presented as draft journal articles. They include among other details the number of Village Action Groups (VAGs) sampled and the number of households surveyed in each case.

3.2.3.1. Stakeholder engagement

In this study, a stakeholder is defined as "any individual or group of individuals with an interest in an activity" (McGrath & Whitty, 2017). In this case, the activity is the process of governance of wildlife, forests and fisheries resources in protected areas. Also of relevance to this research, McGrath and Whitty (2017) further categorised stakeholders according to their interests in an activity. Interest groups include: (i) Invested stakeholders (those who have some control of the activity); (ii) Contributing/primary stakeholders (those whose participation is necessary to sustain the activity); (iii) Observer/secondary stakeholders (those whose acceptance or compliance is required to sustain the activity; (iv) End-user/tertiary stakeholders (those who utilise the output of the activity). Stakeholders' interests and mandates may overlap and not be mutually exclusive, therefore different approaches were tailored to engage each group. A range of approaches was applied in the stakeholder engagement process. Stakeholder workshops were held at the national level as part of the NORHED project, regional heads of stakeholder organisations were key informants in formal semi-structured interviews, and focus groups discussions and surveys facilitated the engagement of household heads in the communities in question.

3.2.3.2 Sampling

The total numbers of households in the study areas (N) were obtained from the Zambia 2010 Census of Population and Housing: *Preliminary Population Figures* report (CSO, 2011), the chiefs' registers and the CRB register (in Kaingu). The sample size (n) for the household survey in each study area was determined using an online sample size calculator (Creative Research Systems, 2016). Thereafter, proportionate straified sampling was used to divide the study area into strata that corresponded to the VAGs (see Table 3-2). This was done to ensure that the sample size of each stratum is proportional to and representative of the population of the stratum (Hayes & Westfall, 2016). Also, the VAGs/strata cover large areas (several thousands of square kilometers) such that it is not possible to capture each and every household within them.

Afterwards, the subpopulations of each VAG/stratum (N_h) were obtained from local government reports such as the Itezhi-Tezhi District Situation Analysis report (ITTDC, 2015) and the chiefs'registers. The sample sizes for each stratum were then calculated using the formula for propotionate stratifed samples,

$$n_h = \left(\frac{N_h}{N}\right) * n$$

where:

- n_h = the sample size for stratum h,
- N_h = the population size for stratum h,
- N = the total population size
- n = the total sample size   Adapted from (Stattrek, 2019).

In order to avoid bias, random number tables were used to select a household that acted as a starting point in each strata (OpenStax College, 2013). Then, a systematic random sampling process in which every 2nd household was selected for inclusion in the survey (OpenStax College, 2013).

Table 3-2: Number of households (HH) and sample sizes in the two study areas

KAINDU (N = 3276, n = 344)					
Stratum/VAG	**Kamilambo**	**Kafwikamo**	**Kalwanyembe**	**Misamba**	**Mpusu**
No: of HH in stratum (N_h)	805	536	867	535	533
Sample size (n_h)	85	56	91	56	56

KAINGU (N = 3772, n = 347)					
Stratum/VAG	**Bushinga**	**Kaanzwa**	**Masombo**	**Mbuma**	**Milangu**	**Mulilabanyama**
No: of HH in stratum (N_h)	726	905	533	328	946	334
Sample size (n_h)	67	83	49	30	87	31

The stakeholder organisations involved in this study were purposively selected using a snowball or chain referral sampling (Biernacki & Waldorf, 1981) to extract knowledge from key informants with specialised expertise such as wildlife, forestry and fisheries management. Key informants were selected from government departments, local government committees, traditional authorities, NGOs and private enterprises. Most of the exchanges with participants took place at their places of work and allowed the

primary investigator to experience the real-life working conditions of the participants. FGDs were held in all the VAGs in Kaindu and in 6 out of the 7 VAGs in Kaingu (Maunga had no VAG committee at the time of the study). The household surveys and FGDs provided insights into the perceptions and attitudes of ordinary community members towards the decision-making processes regarding local natural resources by governing organisations.

3.2.3.3 Reliability and validity of data

Reliability concerns the consistency of measures and is the degree to which a data-collection instrument produces equivalent results for repeated trials (Bless et al., 2014). The governance dashboard questionnaire is an adaptive management tool that has been applied to diagnose and address governance issues in CBNRM programmes in Botswana, Mozambique, Namibia and Zimbabwe (Merz, 2013). In many cases it has been used to investigate the governance of wildlife, but in this study, it was adapted to include measurements of aspects of forest and fisheries resources. To establish its reliability the questionnaire was refined after a pilot test was done on a sub-sample of 10 households in Misamba VAG. An overall test of the consistency of the questionnaire was done using Cronbach's Alpha as the coefficient of reliability. The questionnaire had an overall score of 0.72, which is regarded as acceptable in the social sciences (Bless et al., 2014).

Conventionally, the term validity refers to the degree to which an empirical measure adequately reflects the concept under consideration (Babbie et al., 2012). In this research, the quality of governance of natural resources was the main variable of investigation. Sections of the questionnaire were based on relationships between all other variables that are strongly related to the quality of NRG, including the levels of understanding of the structure and function of local CBNRM organisations, understanding of the constitution and rights to natural resources, participation, elections of office-bearers, the flow of information, costs and benefits of living close to wildlife, management and land-use plans, and the communities' attitudes towards wildlife, the protected area and natural resources managers (Bless et al., 2014).

Table 3-3: Stakeholder organisations engaged in natural resources governance in Kaindu and Kaingu, Zambia, 2016)

Name of organisation	Type of organisation
Department of National Parks and Wildlife	Government
Department of Forestry	Government
Department of Fisheries	Government
Ministry of Chiefs and Traditional Affairs	Government
Department of Agriculture	Government
Department of Social Welfare	Government
The Nature Conservancy	Non-governmental organisation
Game Rangers International	Non-governmental organisation
Amatheon Agri Limited	Private
Royal Kafue Limited	Private
Kaindu Royal Establishment	Traditional authority
Kaingu Royal Establishment	Traditional authority
Kaindu Natural Resources Trust	Community-based organisation
Kaindu Community Resources Board	Community-based organisation
Kaingu Community Resources Board	Community-based organisation
Mumbwa Municipal Council	Local government
Kaindu Area Development Committee	Local government
Itezhi-Tezhi Municipal council	Local government

3.2.4. Data analysis

Several methods of data analysis were used in this study. The methods were selected according to how well they suited the specific data-collection method used. Thematic analysis was employed in the analysis of qualitative data, while descriptive statistics and non-parametric statistical analyses including cross-tabulation were used to analyse quantitative data.

Thematic analysis helps to identify, analyse and report patterns or themes in data (Braun & Clarke, 2006) to decipher complex phenomena and thereafter provide answers to practical research problems (Sitas, 2014). Atlas.ti 7 software was used to code and draw out themes from the qualitative data. Descriptive statistics assist the summarising of information about data sets (Bless et al, 2014). Cross-tabulation

analysis was used to check the relationships between variables (Namukonde & Kachali, 2015). All quantitative data were analysed using the IBM SPSS 20 software.

3.2.5. Ethical considerations

This research was classified as low risk by the Departmental Ethics Screening Committee (DESC) of Stellenbosch University (Appendix III). The application for ethics clearance was approved before the commencement of fieldwork and proceeded without any challenges. This is due to the research proposal meeting the criteria that:

- FPIC would be obtained from research participants before any exchange of research data;
- The details of the research would be explained to the participants and that their participation would be entirely voluntary in that they could decline, refuse to answer some questions or withdraw from the study at any time after consenting to participate (none of the research participants withdrew from the study, but in some cases declined to answer particular questions);
- Research participants would be informed that the research had been approved by the DESC and would be conducted according to internationally and nationally accepted ethical guidelines and principles;
- The information obtained would not negatively affect the research participants in any way and would only be used for academic purposes;
- All recordings would only be made with the permission of the research participants and other responses would be strictly confidential (one key informant was not ready to be voice recorded);
- The information would be anonymised, coded and stored on a computer server that is only accessible to the principal investigator;
- That the research participants would be made aware that they would benefit from research by contributing to the decision-making process concerning the governance of wildlife, forest and fisheries resources in the protected area.

The documents and other publications used in this study were either in the public domain or used after permission was obtained directly or indirectly from the copyright holders.

3.3 Study site

Located in the central south-western region between 14º 03'–16º 43' S and 25º13'-26º 46' E, KNP is the largest national park in Zambia, covering 22,480 km^2 (Nyirenda & Chomba, 2012). The park stretches 306 km from north to south and 145 km east to west and is surrounded by Kasempa (North-western

province), Mumbwa (Central province), Kaoma (Western province), Namwala (Southern province) and, Kalomo (Southern province) districts (DNPW, 2013). The park is also bounded by nine Game Management Areas (GMAs) (IUCN category VI protected areas) namely Bilili, Kasonso-Busanga, Lunga Luswishi, Sichifulo, Mufunta, Mumbwa, Namwala, Nkala and Mulobezi, and two open areas. Alone, KNP represents 36% of the national park estate in Zambia, and together with its attached GMAs covers nearly 68,000 km^2 of protected area (Mwima, 2001; DNPW, 2013). The research was conducted in two sites that border KNP, i.e. Kaingu chiefdom in Namwala GMA and Kaindu Community Conservancy (KCC) in the open area to understand the practical aspects of local CBNRM governance of wildlife, forests and fisheries (see figure 2-3).

3.3.1. Selection of cases: reasons and logic

The two cases were selected to compare the governance of natural resources in different contexts. The Kaingu chiefdom in Namwala Game Management Area (GMA) is representative of the archetypal and most common type of protected area that border all the national parks in Zambia. Such protected areas typically have a top-down NRG system that is led by the state (GRZ, 2015). The second case, the KCC, also adjoins KNP but is unique because it is owned and managed by the community (TNC, 2016). The different governance types presented an opportunity to draw out informative lessons that would reveal vital aspects for a new NRG model. This study is built on the logic that a critical analysis of the strengths, weakness and opportunities in each case can build a strong basis for a more legitimate, robust and broad-based system for governing natural resources around national parks in Zambia.
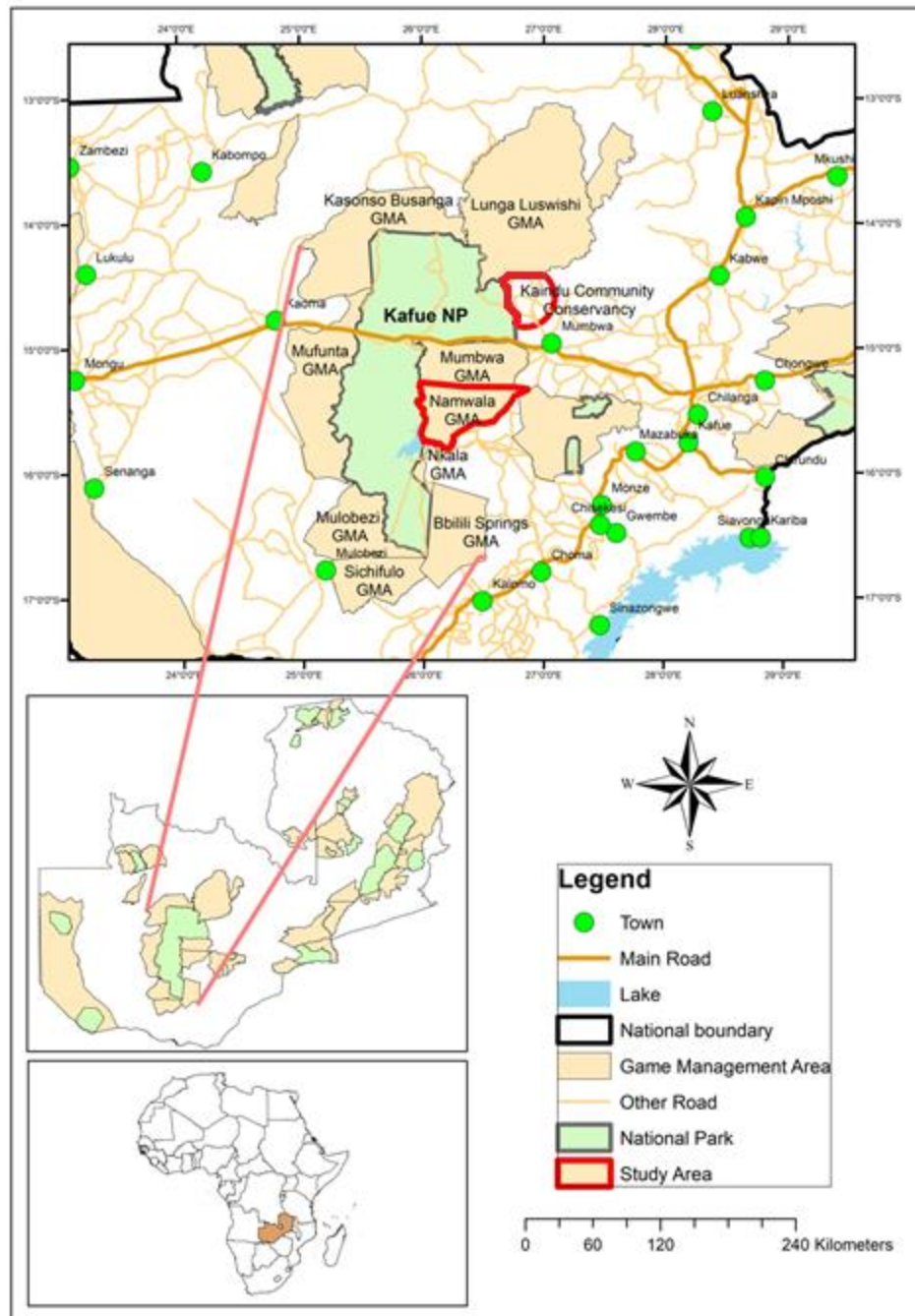
Figure 3-3: Location of Kafue National Park, Kaindu Community Conservancy and Namwala GMA

3.3.2. A Brief background of Kafue National Park

The history of KNP is fundamental to understanding the complexities of NRG in the protected area. In his comprehensive historical account of KNP, Mwima (2001) traced the origin of the park from the early 1920s when the British colonial government set up the Kafue Game Reserve to curb the progressive attrition of wildlife populations. He reports that the establishment of KNP was proposed in 1948 as an

obligation to the International Convention on the Protection of Flora and Fauna of 1933. After consultations with provincial administrators, indigenous authorities and district commissioners, the boundaries of the Kafue Game Reserve were adjusted and the area was renamed KNP by the governor of Northern Rhodesia (now the Republic of Zambia) on 20th April 1950 (Mwima, 2001). The park was officially gazetted as a National Park on 25th February 1972 under the National Parks and Wildlife Act (Namukonde & Kachali, 2015; Mkanda et al., 2018).

Mwima (2001) recorded that many indigenous communities inhabited the area before it was proclaimed as a reserve. These included the Busanga group of villages under Chief Kasonso in the northwest, Chief Kabulwebulwe's villages in the west, Chief Kaingu's area in the central-southern region, the Katobo group of villages in the south-west and chiefs Musungwa and Shezongo in the south-eastern region. Because the establishment of KNP was based on exclusion principles of the "fortress approach" (Igoe, 2004), all the communities living within the designated boundaries of the park were relocated to other areas. The terms of relocating the Busanga villagers to an area in the north were agreed upon by the colonial government and Chief Kasonso in 1945. Communities under Chief Kaingu were moved to the east of the Kafue River from 1954 to 1958.

The relocation of communities ended in 1960 when the last remnant of Chief Kabulwebulwe's subjects agreed to move after the colonial government imposed the relocation as a precondition for the official recognition of the chiefdom. Most of the people were moved into areas bordering the park known as Controlled Hunting Areas established in 1938. These areas were later reclassified as GMAs, which act as buffer zones where humans and wildlife were to co-exist (Ngoma, 2011). The GMAs did not only act as reservoirs of wildlife populations but have also developed into the key sites for CBNRM, where wildlife management strategies are implemented (GRZ, 2015).

The government departments charged with the management of KNP and its associated GMAs have evolved from the Department of Game and Tsetse Control in 1940, which was responsible for management and law enforcement through to 1959 when the tsetse control was moved to the Ministry of Agriculture (Mwima, 2001). In 1974 the wildlife and fisheries components were split into different departments, i.e. the Department of National Parks and Wildlife Services and the Department of Fisheries (Mwima, 2001; GRZ, 1974). The Zambia Wildlife Authority (ZAWA) was instituted through the Zambia Wildlife Act No. 12 of 1998, which provided for the creation of CRBs in communities living in areas near borders of the park (GRZ, 1998). Under the centralised state-led management, access to the park became restricted to on-duty public officers, holders of immovable property within the park, *bona fide*

prospectors such as miners and travellers (restricted to the Mumbwa-Kaoma and Mumbwa-Kasempa roads) (Mwima, 2001).

The Zambia Wildlife Act No. 14 of 2015 ended the existence of ZAWA and replaced it with the Department of National Parks and Wildlife (GRZ, 2015). Despite the NRG model for wild resources in the park incorporating CBNRM through the establishment of CRBs, both KNP and its adjoining GMA exhibited poor economic, ecological and sociological performance (Simasiku et al., 2008; Lindsey et al., 2013). Three policy-related matters were highlighted as among the factors that led to the poor performance of ZAWA:

i. Inadequate funding for wildlife conservation;

ii. Inadequate incentives for conservation of wildlife on customary land vis-à-vis lack of security of tenure, and inability to access and benefit from wildlife resources;

iii. Weak sectoral linkages and coordination with other sector policies that have both direct and indirect bearing on wildlife and tourism (MTA, 2018).

In accordance with the new Act, the National Parks and Wildlife Policy of 2018 was issued by the government through the Ministry of Tourism and Arts in August 2018 (MTA, 2018). Key and relevant to this study among the guidelines of the policy are:

i. Sustainable conservation and economic development and poverty alleviation;

ii. The devolution of management rights; costs and benefits wherever it is appropriate and tenable to landowners and communities and where wildlife exists;

iii. Equitable access and fair distribution of economic and environmental benefits derived from wildlife among all stakeholders;

iv. Partnerships and collaborations: establishment of institutional relationships with stakeholders in the private sector, civil society, donor communities and international agencies;

v. The recognition and incorporation of traditional knowledge, rights and practices in management plans.

While it is progressive that the new wildlife policy embraces sustainable development in the sector at the national level, the mechanisms to implement the policy guidelines at the local level are yet to be developed and assessed.

3.3.3. Important biophysical characteristics

As a national park, KNP was designed to be as complete an ecosystem as possible and it encompasses 25% of the Kafue River catchment area (DPNW, 2013). The park has a generally undulating topography that tilts down the river valleys between altitudes of about 1,477 m and 1,000 m in Mutumbe Hill in the north-east and Itezhi-Tezhi in the south-east respectively (DNPW, 2013). The northern and southern sectors consist of large alluvial floodplains in Busanga and Nanzhila respectively, with smaller low-lying edaphic grassland terraces found between the Kafue River levees and the woodlands beyond (DNPW, 2013).

The DNPW (2013) records that the park experiences a mean annual rainfall between 1,100 mm in the north and 700 mm in the south as it lies in a sub-tropical intermediary climatic zone. There is a distinct seasonality in precipitation that splits the year into a six or seven-month-long rainy season and a dry season. Mean annual temperatures range from 19.4 ⁰C to 22 ⁰C in the south-east at Ngoma. The highest mean temperatures (30.8 ⁰C-34.9 ⁰C) are recorded in October, while the lowest temperatures (14.9 ⁰C-17.6 ⁰C) occur in July (DNPW, 2013).

According to Simpson (1967), the physical and climatic factors affecting the park have led to three broad geomorphological zones, the south, central and north, each with its associated vegetation type. Further, Simpson (1967) described the south as comprising alluvial soils with Mopane and termitaria vegetation, deep sandy soils with Miombo woodland (especially associations of *Brachystegia* and *Isoberlina*) and some teak forests and thickets (see Figure 3-4). The central zone has sections of light brown to red leached plateau soils, pale grey clay soils and extensive sands that hold wide grasslands with scattered Miombo woodland. Large areas of termitaria and small patches of forest and thicket are also found. Isolated hills and ridges characterise the northern zone with seasonally inundated grasslands and shallow alluvial basins overlying a formation of Zambezi sand. A permanent papyrus (*Cyperus papyrus*) swamp at the northend of the zone adjacent to well-preserved Miombo woodlands, a contour of hot springs and a salt pan are also found. Cracking clay is found in patches with scattered termitaria vegetation.
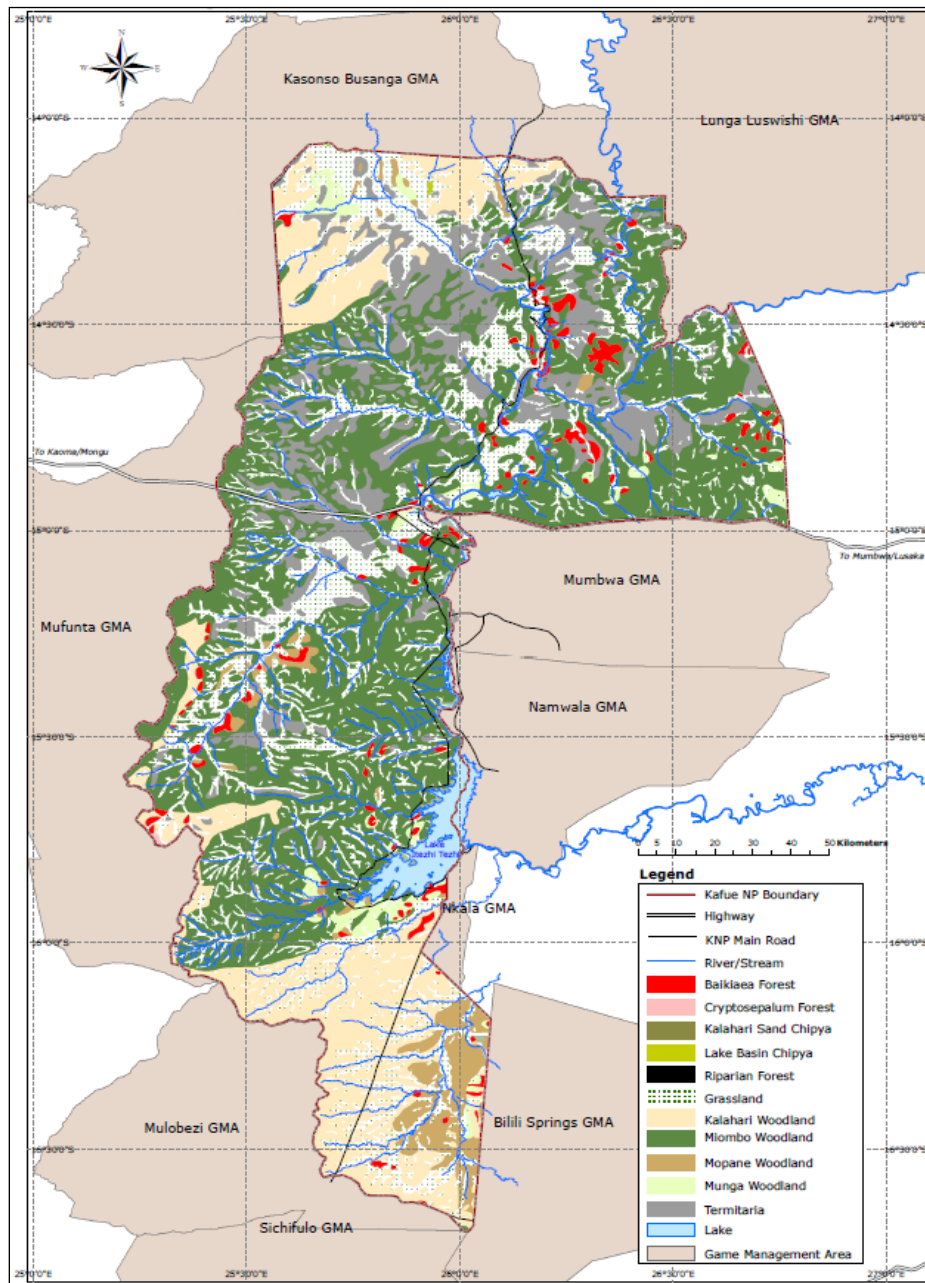
Figure 3-4: Vegetation of Kafue National Park (Source. DNPW, 2013)

The perennial pools, seasonal streams, extensive open grasslands and classic dambos (shallow wetlands) constitute an assortment of habitats for diverse kinds of species (Moss, 1976). The numbers of species recorded include 481 birds (representing over half of the species in Zambia and 80% of all genera), 158 mammals, 69 amphibians, 36 reptiles and 58 fishes (Mkanda et al., 2018). Elephant (*Loxodonta africana*), lion (*Panthera leo*), buffalo (*Syncerus caffer*), leopard (*Panthera pardus*), roan antelope (*Hippotragus equinus*), sable antelope (*Hippotragus niger*), cheetah (*Acinonyx jubatus*), the African wild

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dog (*Lycaon pictus*) and eland (*Taurotragus oryx*) are the high-profile wild animal species found in the park (Moss, 2007).

The park is almost exclusively reserved for conservation and non-consumptive wildlife utilisation with some limited consumptive utilisation via usufruct rights, and the only residence permitted is for DNPW staff and staff at tourism lodges and camps (DNPW, 2013). The GMAs around the park are divided into management zones (i.e. the buffer zone, conservation zone, special-use zone and tourism development zone) with specified land uses and as such there exists a diversity of land uses within the GMAs, including non-consumptive and consumptive wildlife utilisation, forestry, fisheries, agriculture, mining and human habitation (DNPW, 2013).

3.3.4. Challenges facing rural communities and environmental resources

It is estimated that about 200,000 people live in the GMAs around KNP. They are mostly traditional agriculturists, small-scale commercial farmers and natural resource users (MCC, 2011). The human population growth in terms of in-migration and increased births is the principal factor driving and hindering biodiversity conservation and ecosystem protection (Lindsey et al., 2013). There is widespread poverty and a steadily increasing human population which is exerting pressure on land, wildlife, forests, non-timber forest products (NTFPs) and fisheries resources (Ngoma, 2011). The increase in human population was 0.4%, 2.0% and 3.4% in Mumbwa, Namwala and Mufunta GMAs between 2008 and 2017 respectively (UNDP, 2014). Human population growth also exacerbates other threats to ecosystem integrity in GMAs, such as human encroachment, poaching, fire, subsistence and commercial agriculture, illegal fishing, charcoal production, mining, water pollution, invasive species and wildlife diseases (UNDP, 2014). All the GMAs are experiencing increasing levels of encroachment and settling of people causing widespread depletion of natural resources (MCC, 2011).

Simasiku et al. (2008) observed that the increasing human population in GMAs raised the demand for bushmeat and with time has transformed subsistence hunting to commercial poaching. The great demand for bushmeat by wealthy urban dwellers has made it more expensive than beef resulting in increased demand for illegal bushmeat being transported to and sold commercially in towns at higher prices (ARC ZAMBIA, 2017). An "insatiable" demand for illegally harvested and exported wildlife products such as elephant ivory, lion bones, pangolin scales, wildlife skins and parrots is now a global problem (ARC ZAMBIA, 2017). The poaching of wildlife for bushmeat and commercial use is a major threat to biodiversity conservation and KNP experienced the extinction of the Black Rhino (*Diceros bicornis*

minor) and drastic declines in numbers of the African elephant (*Loxodonta africana*) in the 1980s and 1990s (Nyirenda and Chomba, 2012). To halt and avert such wide-scale biodiversity losses, Nyirenda and Chomba (2012) highlight the need for a two-tier approach in natural resources management that includes on the one hand a robust exclusionary and punitive law enforcement approach within core protected areas like national parks, and a complementary collaborative community-based conservation in GMAs on the other hand.

About 56% of KNP and 53% of the GMAs are burnt every year due to late-season fires that cause extensive degradation to forests, grasslands and peat beds (UNDP, 2014). The fires burn an average of 1,251,600 hectares every year, representing about 182,000 tons CO_2e/year in KNP and affecting about 20% of Mumbwa and 29% of Namwala GMAs (UNDP, 2014). Concomitant to the effects of fire is the expansion of agriculture which thrives due to the *de facto* open-access resource regimes and weak controls on the conversion to slash-and-burn smallholder agriculture even in protected areas (UNDP, 2014). Both smallholder agriculture and commercial agriculture are major drivers of deforestation and degradation of forests and woodlands in GMAs resulting in considerable emissions of CO_2 (UNDP, 2014). The clearing of forests and woodlands for agriculture directly supports charcoal production as a land-use option. Despite charcoal production being lower in Mumbwa and Namwala GMAs than in the open areas, there is a need for a sound CBNRM system with strong property rights, revenue retention and governance to regulate charcoal production before it becomes a dominant livelihood activity (UNDP, 2014). The effects of mining, water pollution, invasive species and wildlife diseases on biodiversity conservation and community livelihoods are well beyond the scope of this study but are acknowledged.

3.4 Limitations and assumptions of the study

3.4.1. Methodological limitations

3.4.1.1. Lack of reliable household census data

There was a limitation in obtaining accurate data about the number of households (N) in the first study site (Kaindu chiefdom) due to a disparity between data recorded in the national census of population and housing report (CSO, 2012), technical reports by active NGOs (TNC, 2015), and the data in the chief's register. The number of households was important in calculating the sample size (n) using the formula for proportionate stratified sampling used in the study i.e.

$$n_h = \left(\frac{N_h}{N}\right) * n$$

Where:

n_h is the sample size for stratum h, N_h is the population size for stratum h, N is the total population size and n is the total sample size (Stattrek, 2019). This limitation was caused by the dated data in the CSO (2012) report and the limited accuracy of the chief's register. It was assumed that an amalgamation of the available sources of data would be more accurate and N was determined as such.

3.4.1.2. Reliance on self-reported data

Despite the use of mixed methods, some aspects could not be scientifically verified. This was due to the self-reported way data were collected. By nature, self-reported data are prone to selected memory (remembering or not remembering experience or events), telescoping (recalling past events as if they occurred at a different time), attribution (attributing positive events and outcomes with one's agency but attributing negative events and outcomes with external forces) and exaggeration (the act of representing and embellishing events as more significant than is suggested from other data) (Stephanie et al., 2013).

3.4.1.3. Instrument used to collect data

The governance dashboard questionnaire that was adapted in the study is focused more on the quality of governance than livelihoods. Livelihood indicators such as natural capital, economic/financial capital, human capital and social capital were not adequately captured. Thus, the analysis of livelihood data was limited to describing the major livelihood activities of the communities, the contribution made by income from wildlife (hunting and photographic tourism) and the relationship between livelihoods and the two different governance types in the study sites.

3.4.1.4. Limitations of using tablet computers and Open Data Kit® (ODK) in the context of the study sites

The reliance on electronic gadgets, i.e. computer tablets and internet connectivity, to collect and store data expedited the data-collection process, but this also came with some limitations and challenges. The electricity outages experienced in the study areas meant that the tablets could only be charged on some days, resulting in delays. To overcome these limitations, the charging of tablets was only done at the end of each day in Mumbwa where the power supply was somewhat more reliable. Internet connectivity was often weak as the routers relied on diesel power (e.g. in Kaindu), delaying the uploading of data to the server. Uploading of data was also maximised in Mumbwa some hours or days after collection. The Copperbelt University server was not yet online during the data collection period. The data were password protected and uploaded to a free server located in Nairobi Kenya at www.ona.io.

3.4.2. Limitations of the researcher

3.4.2.1. Access to some key informants and focus group

Some of the key informants identified through snowball sampling could not be interviewed due to unavailability at places of work for various reasons and incompatible schedules. Despite this, other informants were identified and interviewed within the same category (government, NGO, private, traditional authority or local government) to compensate for the interviews that could not take place. A scheduled FGD in one out of the seven VAGs in Namwala GMA could not be held due to the lack of a functional VAG committee, therefore the other six FGDs were considered as representative of the GMA as they represented 86% of the VAGs.

3.4.2.2. Longitudinal effects

Despite applying the TD approach, the research was limited to capturing only fully generating systems knowledge and the target knowledge. The study could only generate part of the transformational knowledge as it would take much more time, lobbying and policy change to develop and test the novel transformational NRG model. Therefore the results of this study are limited to formulating and proposing theoretical governance models. However, the accuracy of these models if applied can be verified through the strong literature and background on which they are based. For instance, the EGS framework has been successfully used to describe environmental problems such as overgrazing of lichen pastures by reindeer in Finnmark County in the Sami communities of Norway (Vatn, 2015).

3.4.2.3. Language barriers

The high ethnic diversity in the communities in question meant that the study took place in areas where many different languages are spoken, and most are not well understood by the researcher. Thus research assistants were recruited from within the communities and trained in ODK to help administer the dashboard questionnaire and interpreters were engaged during the FGDs. The key terms used in the research were translated by local polyglots from English to Kaonde and Lamba in Kaindu and English to Ila in Kaingu.

The next chapter is presented as a journal publication and a logical first step to the development of a novel NRG model. It presents the results of an assessment of the quality of NRG based on the legitimacy of CBNRM institutions in a state-centric top-down context. Focus is placed on the normative assessment of legitimacy which is assessed by external researchers using several criteria. Secondly, the sociological aspect of legitimacy is investigated through the perceptions of the different actors who are part of the Kaingu chiefdom in Namwala GMA.

References

Akkerman, S. F., & Bakker, A. (2011). Boundary crossing and boundary objects. *Review of Educational Research, 81*(2), 132-169.

ARC ZAMBIA. (2017). *ARC Zambia conservation challenges*. Retrieved June 11, 2019, from Animal Research Connections (ARC) Zambia: https://www.arczambia.com/conservation/challenges/

Babbie, E., Mouton, J., Vorster, P., & Prozesky, B. (2012). *The Practice of Social Research.* Cape Town: Oxford University Press Southern Africa.

Biernacki, P., & Waldorf, D. (1981). Snowball sampling: Problems and Techniques of Chain Referral Sampling. *Sociological Methods and Research, 10*(2), 141-163.

Bless, C., Higson-Smith, C., & Sithole, S. L. (2014). *Fundamentals of Social Research Methods: An African Perspective.* Cape Town: Juta & Company.

Borrini-Feyerabend, G., Dudley, N., Jaeger, T., Lassen, B., Broome, N. P., Phillips, A., & Sandwith, T. (2013). *Governance of Protected Areas: From Understanding to Action. Best Practice Protected Area Guidelines Series No. 20.* Gland: IUCN.

Boyce, C., & Neale, P. (2006). *Conducting in-depth interviews: A guide for designing and conducting in-depth interviews for evaluation input.* Watertown: Pathfinder International.

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative research in psychology, 3*(2), 77-101.

Cillers, P., Biggs, H. C., Blignaut, S., Choles, A. G., Hofmeyr, J. H., Jewitt, G. P., & Roux, D. J. (2013). Complexity, Modelling and Natural Resources Management. *Ecology and Society, 18*(3).

Cilliers, P. (1998). *Complexity and postmodernism. Understanding complex systems.* London, UK: Routledge.

Creswell, J. W. (2014). *Reserach Design: Qualitative, quantitative and mixed methods* (4th ed.). Thousand Oaks: SAGE Publications Inc.

CSO. (2011) Zambia *2010 Census of Population and Housing: Preliminary Population Figures Report.* Lusaka: Central Statistical Office.

CSO. (2012). *2010 Census of Population and Housing: National Analytical Report.* Lusaka: Central Statistical Office.

DNPW. (2013). *Kafue National Park: General Management Plan.* Lusaka: Department of National Parks and Wildlife, Ministry of Tourism and Arts.

GRZ. (1998). The Zambia Wildlife Act, 1998. Lusaka, Zambia: Government Printers.

GRZ. (2015). The Zambia Wildlife Act, 2015. Lusaka, Zambia: Government Printers.

Hayes, A., & Westfall, P. (2016, January 4). *Investopedia.* Retrieved from Investopedia: https://www.investopedia.com

Igoe, J. (2004). *Conservation and Globalization: A Study of National Parks and Indigenous Communities from East Africa to South Dakota.* Belmont: Wadsworth/Thompson Learning.

ITTDC. (2015). *District Situational Analysis.* Itezhi-Tezhi: The Planning Unit, Itezhi-Tezhi District Council.

Laforest, J. (2009) Safety Diagnosis Tool Kit for Local Communities: Guide to Organising Semi-structured Interviews with Key Informants. Quebec: Quebec National Institute of Public Health

Lang, D. J., Wick, A., Bergmann, M., Stauffacher, M., Martens, P., Moll, P., Thomas, C. J. (2012). Transdisciplinary research in sustainability science: practice, principles and challenges. *Sustainability science, 7*, 25-43.

Light, A., & Katz, E. (1996). *Environmental Pragmatism.* London : Routledge.

Lindsey, P. A., Nyirenda, V. R., Barnes, J. I., Becker, M. S., McRobb, R., Tambling, C. J., t'Sas-Rolfes, M. (2014). Underperformanceof African Protected Area Networks and the Case of New Conservation Models: Insights from Zambia. *PLoS ONE 9(5). doi:101371/journal.pone.0094109.*

Lindsey, P., Nyirenda, V., Barnes, J., Becker, M., Tambling, C., Taylor, A., & Watson, F. (2013). *Zambian Game Management Areas.* Lusaka: Wildlife Producers Association of Zambia.

MCC. (2011). *Situational and Livelihoods Analysis Study in Nine Game Management Areas, surrounding Kafue National Park, Zambia.* Millenium Challenge Corporation. Chemonics International Inc.

McGrath, S. K., & Whitty, S. J. (2017). Stakeholder defined. *International journal of managing projetcs in business*, 721-748.

Merz, L. (2013). *Situational Analysis of Mangalane, Mozambique for a Community-Based Natural Resource Programme* Gainesville: University of Florida.

Messerli, B., & Messerli, P. (2008). From local projects in the Alps to global change programmes in the mountains of the world: milestones in transdisciplinary research. In G. Hirsch Hadorn, H. Hoffmann-Riem, S. Biber-Klemm, W. Grossenbacher-Mansuy, D. Joyce, C. Pohl, . E. Zemp, *Handbook of transdisciplinary research* (pp. 43-62). Zurich: Springer.

Mkanda, F. X., Munthali, S., Milanzi, J., Chifunte, C., Kaumba, C., Muswema, N., Mwakifwamba, A. (2018). The Giant Sleeps Again? - Resource, Protection and Tourism of Kafue National Park, Zambia. *PARKS, 24.1*, 23-34.

Moss, P. F. (1976). *Kafue National Park A Management Plan.* Chilanga: Deaprtment of National Parks and Wildlife.

Moss, P. F. (2007). *The Feasibility of Establishing Block Tourism Concessions (Non-consumptive) in Kafue Natonal Park.* Chilanga: Department of National Parks and Wildlife.

MTA. (2018). *National Parks and Wildlife Policy.* Lusaka: Ministry of Tourism and Arts.

Mwima, H. (2001). A Brief History of Kafue National Park, Zambia. *Koedoe, 44*(1), 57-72.

Namukonde, N., & Kachali, R. N. (2015). Perceptions and Attitudes of Local Communities Towards Kafue National Park, Zambia. *Parks*.

Ngoma, P. (2011). *Land Use Practices Interface: Human-Wildlife Conflict in Lupande Game Management Area.* Lusaka: University of Zambia.

Nolte, C., Agrawal, A., Silvius, K. M., & Soares-Filho, B. S. (2013). Governance regime and location influence avoided deforestation success of protected areas in the Brazilian Amazon. *PNAS*, 4956-4961.

Norgaard, R. B. (2008). Finding Hope in the Millennium Ecosystem Assessment. *Conservation Biology, 22*(862), 86-2869.

Nyirenda, V. R., & Chomba, C. (2012). Field foot patrol effectiveness in Kafue National Park. *Journal of Ecology and the natural Environment*, 163-172.

OpenStax College (2013). Introductory Statistics, OpenStax College. <http://cnx.org/content/col11562/latest/>.

Ostrom, E. (2009). A General Framework for Analysing Sustainability of Socio-ecological Systems. *Science*, 419-422.

Ostrom, E., & Cox, M. (2010). Moving beyond panaceas: A multi-tiered diagnostic approachn for socio-ecological analysis. *Environmental Conservation, 37*(4), 451-463.

Ostrom, E., Janssen, A. M., & Anderies, J. M. (2007). Going beyond panaceas. *Proceedings of the National Academy of Sciences, 104*(39), 15176-15178.

Parker, K. (1996). Pragmatism and environmental thought. In A. Light & E. Katz *Environmental Pragmatism* (pp. 21-37). London: Routledge.

Patton, M. Q. (2002). *Qualitative research and evaluation methods* (3rd ed.). Thousand Oaks: SAGE Publishing Inc.

Pohl, C. (2005). Transdisciplinarity collaboration in environmental research. *Futures, 37*(2005), 1159-1178.

Pohl, C. (2008). From Science to Policy Through Transdisciplinary Research. *Environmental Science & Policy, 11*(1), 46-53.

Pohl, C., & Hirsch Hadorn, G. (2008). Core terms in transdisciplinary research. In G. Hirsch Hadorn, H. Hoffmann-Riem, S. Biber-Klemm, W. Grossenbacher-Mansuy, D. Joyce, C. Pohl, E. Zemp, *Handbook of Transdisciplinarity* (pp. 427-432). Zurich: Springer.

Pohl, C., Rist, S., Zimmermann, A., Fry, P., Gurung, G. S., Schnieder, F., Wiesmann, U. (2010). Researchers' roles in knowledge co-production: experience from sustainability research in Kenya, Switzerland, Bolivia and Nepal. *Science and Public Policy*, 267-281.

Regeer, B. J., & Bunders, J. F. (2003). The epistemology of transdisciplinary research: from knowledge integration to communities of practice. *Interdisciplinary Environmental Review, 5*(2), 98-118.

Roca, J. (2006). *Governance for sustainable development.* Barcelona: Generalitat de Catalunya - CADS.

Simasiku, P., Simwanza, H. I., Tembo , G., Bandyopadhyay, S., & Pavy, J. (2008). *The Impact of Wildlife Management Policies on Communities and Conservation in Game Management Areas in Zambia: Message to Policy Makers.* Lusaka: Natural Resources Consultative Forum.

Simpson, F. (2010). Environmental Pragmatism and its Application to Climate Change: The Moral Obligations of Developed and Developing Nations to Avert Climate Change as viewed through Technological Pragmatism. *Humanities and Social Sciences, 6*(1), 1-12.

Simpson, J. G. (1967). *Summary of Geomorphology and Geology of Kafue National Park.* Lusaka: Department of Geological Survey.

Sitas, N. (2014). *Opportunities and challenges for mainstreaming ecosystem services in decision making.* Stellenbosch: Stellenbosch University.

Stattrek. (2019, June 12). *Stat Trek Teach Yourself Statistics: Sample size: Stratified samples*. Retrieved June 11, 2019, from Stat Trek Teach Yourself Statisitcs: https://stattrek.com/sample-size/stratified-sample.aspx

Stephanie, B., Aguinis, H., & Wassmer, U. (2013). Self-Reported Limitations and Future Directions in Scholarly Reports: Analysis and Recommendations. *Journal of Management, 39*(1), 48–75. doi:https://doi.org/10.1177/0149206312455245

Tallis, H., & Kareiva, P. (2005). Ecosystem Services. *Current Biology, 15*, R746-R748.

Tashakorri, A., & Treddlie, C. (2010). *SAGE Handbook of mixed methods in social and behavioural research* (2nd ed.). Thousand Oaks: SAGE Publications Inc.

TNC. (2015). *Baseline Socio-economic Assessment for the Kaindu Community near Kafue National Park in Zambia.* Lusaka: The Nature Conservancy.

Tress, B., Tress, G., & Fry, G. (2005). Integrative studies on rural landscapes: policy expectations and research practice. *Landscape and urban planning, 70*(1), 177-191.

UNDP. (2014). *Strengthening Management Effectiveness and Generating Multiple Environmental Benefits within and around the Greater Kafue National Park and West Lunga National Park in Zambia.* Lusaka: United Nations Development Programme.

Vatn, A. (2015). *Environmental Govenance: Institutions, policies and actions.* Cheltenham: Edward Elgar.

Vedeld, P. (1994). The environmental and interdisciplinarity ecological and economical neoclassical approaches to the use of natural resources. *Ecological Economics, 10*(1), 1-13.

Voinov, A., & Bousquet, F. (2010). Modelling with stakeholders. *Environmental modelling and software*, 1-14.

Yeboah-Assiamah, E., Muller, K., & Domfeh, A. K. (2016). Institutional assessment in natural resource governance. *Forest Policy and Economics*, 1-12.

Yeboah-Assiamah, E., Muller, K., & Domfeh, K. A. (2018). Transdisciplinary approach to natural resource governance research: a conceptual paper. *Management of Environmental Quality: An International Journal, 29*(1), 15-33.

Yin, R. (2009). *Case Study Research: Design and Methods* (4th ed., Vol. 5). Thousand Oaks: SAGE
Publications Inc.

CHAPTER FOUR : Legitimacy of state-centric collaborative natural resources governance in Kaingu chiefdom in Namwala Game Management Area[1]

Abstract

The introduction of Community-Based Natural Resource Management (CBNRM) of wildlife, forests and fisheries did not halt the rampant illegal harvesting of these resources in Kaingu chiefdom in Namwala district of Zambia. This situation has been attributed partly to flawed structures and processes of environmental governance systems which have failed to effectively devolve planning and decision-making authority to communities for equitable distribution of benefits among stakeholders. This chapter aims at assessing the quality of the state-centric NRG system in Kaingu chiefdom in Namwala GMA and to draw out aspects of the CBNRM system that need to be changed for improved NRG. There is a focus on the legitimacy of the CBNRM system, as it influences environmental action and underpins the acceptance and justification of shared institutions and rules by communities. Primary data regarding stakeholder perceptions were collected using mixed methods comprising a household survey, focus group discussions and key informant interviews. The lack of community participation in the planning of overall goals and passive participation in decision-making violated the fundamental conditions of input legitimacy and underpinned a strong perception by the communities that the system of governance was illegitimate. Additionally, there was a lack of transparency in decision-making processes and the community's lacked the capacity to hold decision-makers accountable. The output legitimacy was evidenced by a disproportionate distribution of costs and benefits where the community bears much of the cost while the state, safari companies and the traditional authority receive the bulk of benefits. Government departments lacked adequate capacity and acceptance to effectively implement policies and safeguard them. We recommend more devolution of rights and responsibilities to local people by the state to **firstly** increase opportunities for community participation, **secondly** create more equitable cost-benefit-sharing mechanisms, **and finally** enhance transparency and secure legitimate monitoring in both decision-making and policy implementation processes.

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[1] An adapted version of this chapter has been submitted for publication in an academic journal and is currently under review. Therefore there is some overlap in the introduction and study site descriptions with other chapters.

4.1 Introduction

4.1.1 Background

At the Berlin Conference ("the Scramble for Africa") in 1884, 14 European states allocated themselves vast territories on the continent of Africa (Stiwell, 2002). In Southern Africa, they established settler colonies in South Africa, Namibia, Angola, Mozambique, Zimbabwe and Zambia to accumulate capital and accommodate their "surplus population" (Ekechi, 2002). The increased and aggressive European imperialism, diplomatic pressures, military invasion and eventual conquest and colonisation between 1870 and the early 1900s (Iweriebor, 2011) had attendant drastic impacts on the populations of indigenous wildlife and other wild resources in Africa (Child et al., 2012).

Before colonisation, wild resources were plentiful in Zambia and the local hunting and gathering did not cause any threat to sustainable use. However, the introduction of technology such as guns, wagons and railways by colonial settlers decimated wildlife and enabled hunters to harvest large numbers of wild resources at low cost, opening both local and new global markets (MacKenzie, 1997; Child et al., 2012; Adams, 2003). With limited institutions controlling wildlife offtake, the benefits from wild resources were appropriated by individuals, while the long-term costs were externalised to the society and a massive depletion and degradation of wildlife stocks occurred (Child et al., 2012).

The International Conference on the Protection of Flora and Fauna (the London Convention) in 1933, made three policy decisions that established a legal mechanism for protected areas, restricted the commercial use of wildlife and centralised the ownership of wildlife in the imperial state, i.e. the fortress approach (Heijnsberger, 1997). The legal, formal conservation of biodiversity through protecting areas was and still is the basis for the fortress approach to conservation (Lillehagen, 2016). This approach entails the relocation and exclusion of indigenous African communities from their native areas which were turned into protected areas, denying them access to traditional hunting, forests and fishing grounds. Traditional hunting methods, the ownership of firearms, grazing of livestock, collection of firewood and other resources were highly restricted and forbidden for local communities in the protected areas (Brockington & Igoe, 2006; Vedeld, 2002). Land clearing for agriculture, increasing land scarcity and increased pressure on protected area resources driven by population growth, rural-rural migration, and excessive hunting and poaching by various actors, led to a rapid decline of many wildlife stocks (DeGeorges & Reilly, 2009). Fortress conservation policies performed poorly during the 1960s and

1970s due to increased threats to biodiversity, deprivation to usufruct rights of communities, increasing human population densities and pro-community advocacy (Vedeld, 2002).

By the 1990s, the concepts, policies and practices of conservation had shifted from the colonial and neo-colonial fortress approach adopted by most independent African countries, to somewhat more community-based approaches (Hulme & Murphree, 1999). The new community approaches were meant to incorporate local communities and introduce more private activities involving market-oriented actors and redefine conservation in line with an ecological modernisation approach (Hulme & Murphree, 1999). State-enforced natural resource protection was no longer viable due to limited financial and logistical capacities, elite capture of benefits and poor relationships between government enforcers and local communities (DeGeorges & Reilly, 2009; Muyengwa & Child, 2017).

CBNRM has been part of the state-centric governance of natural resources in Zambia since the late 1980s (Barrow & Murphree, 2001). CBNRM was developed to realise the goals of environmental, economic and social justice by integrating natural resources conservation and rural development objectives in a single, encompassing programme (Bwalya, 2002). CBNRM is based on the principle of community participation and has had more success in cases where the communities closest to the resources have fully participated in decision-making over management, conservation and deriving of economic benefits (PSAf, 2017).

The ownership of wildlife, forests and fisheries is vested in the president of the Republic of Zambia under the Ministry of Tourism and Arts (MTA), Ministry of Natural Resources and Environment (MNRE) and, Ministry Fisheries and Livestock (MLF) respectively. The CBNRM governance of these natural resources is embedded within the centralised top-down system implemented by the respective ministries through the DNPW, FD and the DoF. The government departments operate in conjunction with traditional authorities, i.e. the chiefs and communities participate through a representative system of democracy via Community Resource Boards (CRBs), Village Action Groups (VAGs) and Fisheries Management Committees (FMCs) headed by elected members (PSAf, 2017).

4.1.2 Statement of the problem and research objectives

The CBNRM governance system faces numerous challenges in conserving biodiversity resources and at the same time providing sustainable livelihoods in most of the protected areas in Zambia (Simasiku et al., 2008). There is rampant illegal harvesting of resources within national parks and the GMAs, including poaching, illegal logging, charcoal production and fishing (Rodary, 2009; Richardson et al., 2012). The

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annihilation of vulnerable wildlife species, habitat destruction and degradation, deforestation and overfishing have resulted (Eagles et al., 2013; Lindsey et al., 2014; Macura et al., 2015). Researchers have attributed these scenarios to flawed structures and processes within environmental governance systems. The CBNRM schemes have often failed to devolve planning and decision-making and secure a reasonable benefit distribution to communities. This is often compounded by poor social relationships between government actors, the private sector and local rural communities (Nkhata & Breen, 2010; PSAf, 2017).

This chapter addresses research objective 1 and part of objective 2 of this dissertation. The lack of scientific knowledge on how the structures and processes of the state-centric collaborative natural resources governance (NRG) system affect conservation outcomes is investigated. First, the chapter aims at assessing the quality of the state-centric NRG system in Kaingu chiefdom in Namwala GMA, in Zambia. Second, some aspects of the CBNRM system that need to be changed for improved NRG are investigated. There is a focus on the legitimacy of the CBNRM system, based on the perceptions of the political, economic and civil society actors. The study concentrates on the legitimacy of NRG institutions and on how governance structures influence environmental action. Emphasis is placed on the conditions for decision-making, power distribution, forms and conditions for participation, transparency in decision-making processes and the accountability of decision-makers. Legitimacy is also studied from the perspectives of distributive justice and effectiveness. Further, the rights and responsibilities of actors, perceptions of the decision-making structures and the quality of the decision made are investigated.

4.1.3 Theoretical and conceptual approaches

"Legitimacy is a generalised perception or assumption that the actions of an entity are desirable, proper or appropriate within some socially constructed system of norms, values, beliefs and definitions" (Suchman, 1995). Schiopoiu and Popa (2013) conceptualise that in order to fulfil their social contracts, organisations and governments must respect rules, values and norms and, must disclose social and environmental information as dictated by contemporary socio-economic and environmental challenges based on the legitimacy theory. The **Legitimacy theory** for both forming and evaluating governance structures and processes based on Vatn (2015) is broadly applied. This entails assessing (i) whether decisions are made according to due process regarding the law; (ii) if the decision-making process is seen as appropriate by all the stakeholders involved; and (iii) whether the decision-making process abides by normative standards of what a "good" process and outcome should be (Vatn, 2015).

Another facet of the legitimacy theory by Nantongo (2017) differentiates between sociological and normative legitimacy is adapted. Sociological (empirical) and normative (democratic) concepts of legitimacy underpin the acceptance and justification of shared institutions and rules by communities (Nantongo, 2017). Whereas normative legitimacy is evaluated by an external observer using external criteria (participation, deliberation, transparency and accountability), sociological assessment is an evaluation done from the "inside" by research participants based on the perceptions and attitudes of different actors as guided by historical systems of values, norms, beliefs and definitions (Nantongo, 2017).

Inherent in this approach to the study of the legitimacy of local CBNRM governance institutions is the input-output relationship. **Input legitimacy** is defined here as the "appropriateness and acceptability of decision-making processes on both principle grounds and the interests of various actors" (Vatn, 2015). Concerning input legitimacy, responsibility, participation, accountability and transparency are essential to the policy formulation process. Input legitimacy demands the inclusion of different interests in policy formulation and implementation and that decision-makers be accountable both to the stakeholders and to the wider society. In the context of this study, this definition applies to the interests of community members, state authorities and traditional leaders.

Output legitimacy is a measure of the effectiveness and appropriateness of policies in delivering the desired results (Vatn, 2015) and comprises:

i. **Distributive justice:** the principles of allocating benefits and burdens across activities in a society. This study subscribes to the *difference principle* (where everyone has a claim to a fully adequate scheme of equal basic rights and liberties, with socio-economic inequalities being acceptable under two conditions, namely: (a) these inequalities should be attached to positions and offices open to all in fair equality of opportunity, and (b) they are to be to the greatest benefit of the least advantaged members of society.

ii. **Effectiveness:** regarding the capacity to ensure that the defined goals are reached. In this study, the effectiveness is determined by the perceptions of community members and government heads of departments, i.e. (DNPW, FD and DoF).

iii. **Efficiency:** meeting the desired result at a minimal cost. This is beyond the scope of this study as it demands that all costs and benefits are valued and priced.

The legitimacy theory is applied within the overarching transdisciplinary (TD) approach specifically as part of the systems and target knowledge (Messerli & Messerli 2008; Pohl & Hirsh Hardon, 2008). This assessment of the CBNRM governance system/structure focuses on the NRG structure at the local level in Kaingu regarding the decision-making process (input legitimacy) and the effectiveness of the decisions made on conservation and community livelihoods (output legitimacy). The governance structure comprises three groups of actors: (a) economic actors: those owning/using productive resources; (b) political actors: those having the power to define property/use rights and interaction rules; and (c) civil society: those ensuring democratic legitimacy of political action (Vatn, 2015).

Vatn (2015) points out that input and output criteria for assessing legitimacy may be in conflict, e.g. when legitimate processes produce outputs that are considered bad and vice versa. There is a conflict between focusing on ensuring a particular output and giving equal opportunity to all actors during the process of deciding. On the other hand, he also notes that not all problems can be solved despite ensuring procedural justice. He emphasises that governance structures influence environmental action through several important factors including, rights and responsibilities of actors, transaction costs, perceptions, preferences and types of motivation. Action is based on beliefs of what needs to be acted upon and beliefs about the effects of the action. Beliefs are dependent on people's perceptions about what the key issues are and how the physical and social worlds operate. Given the complexity and high levels of unawareness and uncertainty in environmental issues, influencing community beliefs is never a straightforward process (Vatn, 2015). The focus was placed on the rights and responsibilities of actors, perceptions and preferences and motivation because transaction costs, e.g. the cost of establishing new governance structures are outside the scope of this study and could not be captured by the data-collection tools used.

4.2 Methodology

4.2.1 Study area

Namwala GMA lies 1,000 m above sea level, on the eastern side of KNP (Figure 4-1), and covers about 3,600 km^2 in the Itezhi-Tezhi district of the Southern Province in Zambia (DNPW, 2013). The GMA was established to foster socio-economic and cultural development by giving local communities rights to access, utilise and manage natural resources (Mkanda et al., 2014). The Wildlife Act No: 14 of 2015

provides for the conservation and management of ecosystems in the GMA to preserve them from the impacts of human activities (GRZ, 2015).

4.2.1.1 Geology and soils

Intrusive granite, alluvium and superficial deposits make up the geology in the northern and eastern sectors of the GMA. Chalcedony, ironstone and Kalahari bed-sand, dolomite, limestone, quartzite and slates are widely distributed. There are sandy to medium textured leached soils that overlay heavier sub-soils in the northern, central and southern parts of the GMA. Medium to heavy textured fertile soils occur in the south-eastern and north-eastern parts. The soils in the eastern part of the GMA, along the Kafue River, are associated with the grasslands, highly hydromorphic and experience seasonal flooding (DNPW, 2013).

4.2.1.2 Drainage and topography

The area is generally flat except for granite hillsides that form the catchment area for the Kafue River. Lake Itezhi-Tezhi and the Kafue River are the largest and most important water bodies in the GMA. They receive waters from several tributaries that flow from various directions, i.e. the Yongwe and Kela streams in the northwest; the Kandikwa stream in the western part; Mbuma, Baunza and Banga in the central part; Kangumbea in the northern part; and Lukomezi located in the eastern part (DNPW, 2013).

4.2.1.3 Climate

Namwala GMA experiences three seasons annually, i.e. the rainy season (November to April), the cold season (May to July) and the hot season (August to October) (ITTDC, 2015). Aggregate mean temperatures (1975-2011) ranged from 24 °C and 34 °C in July and October respectively (Ngoma, 2019). The aggregated mean rainfall figures ranged between 0 mm in June, July and August and 215 mm in January (Ngoma, 2019). Consequently, the GMA is prone to seasonal floods and droughts (ITTDC, 2015).

4.2.1.4 Flora

Namwala GMA is spatially covered by Miombo woodland, Mopane woodland, mixed forests, Baikiaea forests, Acacia shrubland, termitaria woodland and grasslands (Appendix V). Miombo species are mostly *Brachystegia* and *Julbernardia* genera. Ninety percent of the Mopane woodland is *Colophosperum mopane*, while *Baikiaea plurijuga* and *Pterocarpus antunesii* make up most of the Baikiaea forests and is ideal habitat for small mammals. *Combretum zeyheri* makes up 95% of the Acacia shrubland found

along the banks of the Kafue River. The grasslands are mostly *Hyparrhenia* species and are prime habitat for middle-sized wildlife species (DNPW, 2013).

4.2.1.5 Fauna

There are more than 20 large mammal species indigenous to Namwala GMA, including elephant (*Loxodonta africana*), buffalo (*Syncerus caffer*), hippo (*Hippopotamus amphibius*), lion (*Panthera leo*), eland (*Taurotragus oryx*), zebra (*Equus quagga*) and kudu (*Tragelaphus strepticeros*). Lake Itezhi-Tezhi, the Kafue River and its tributaries are important fishery areas containing various fish species from the *Clarias, Tilapia, Brycinus* and *Barbus* genera. There are also several species of birds and reptiles (DNPW, 2013).
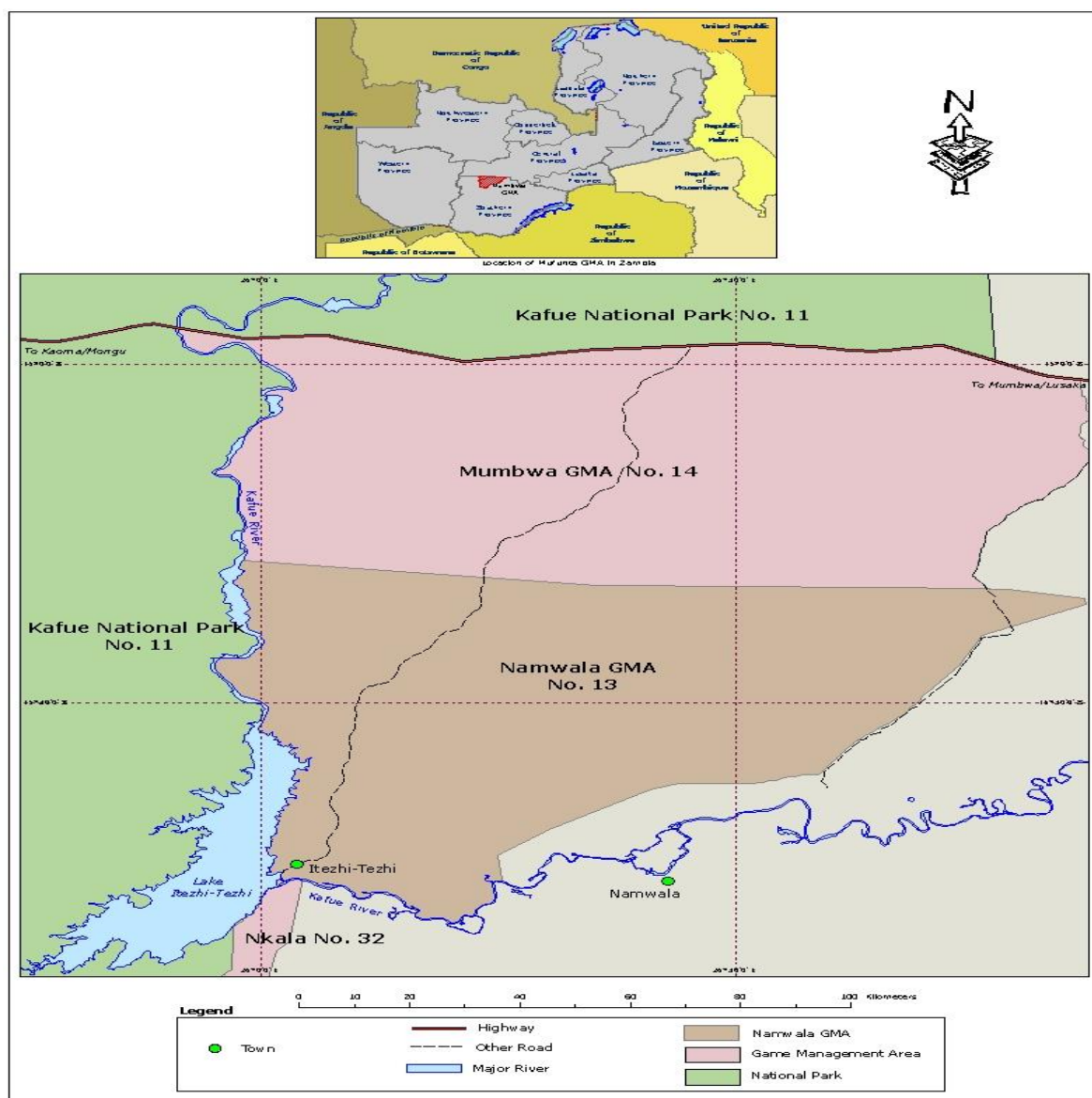
Figure 4-1: Location of Namwala GMA in Zambia (Source: DNPW, 2013)

4.2.1.6 Demography

The human population in Itezhi-Tezhi district stood at 65,899 with a growth rate of 4.8% according to the 2010 census of population and housing (CSO, 2012), putting the current population at around 89,623 individuals. With an area of 15,000 km^2 the population density in the district was estimated at 4.6 persons/km^2 in 2010 (CSO, 2010) and the current estimate is around 6 persons/km^2. About 76% of the population in the district live in rural areas. Most of the human settlements are concentrated along the banks of the Kafue River and Lake Itezhi-Tezhi. This is due to the ease of access to the fishery, which is one of the main livelihood activities in the district. There are also communities spread over the interior parts of the district that engage in the rearing of livestock, especially cattle. (ITTDC, 2015). The Ila is the main ethnic group in the district, but the Kaonde, Tonga, Lozi and Luvale are also present (Lillehagen, 2016).

4.2.1.7 Land governance and land-use zones

Land in Namwala GMA is customary land but may be converted to leasehold as provided for in the Lands Act No: 29 of 1995 (GRZ, 1995). The GMA encompasses three chiefdoms: Chilyabufu, Shimbizhi and Kaingu. Village headmen are authorised by the chiefs to allocate land to members of the community and in-migrants (Mkanda et al., 2014). This research was conducted in the Kaingu chiefdom, in the northern sector of Namwala GMA. The Kaingu CRB is the principal agent for CBNRM in the chiefdom. The CRB is made up of representatives from seven VAGs, namely: Bushinga, Kaanzwa, Masombo, Maunga, Mbuma, Milangu and Mulilabanyama.

The CRB is authorised to apportion the revenue from tourism received from the DNPW as follows: 45% to resource protection, i.e. employment of village scouts and other logistics, 35% to the implementation of community development projects and 20% to cover administrative costs (Roe et al., 2009).

The GMA has been divided by the DNPW into five land-use zones (Figure 4-2) i.e.:

i. **The Wildlife Conservation Zone:** encompasses about 36% of the total GMA, it contains the prime wildlife habitats and is the main area for consumptive utilisation of wildlife,

ii. **The Buffer Zone:** covers 6% of the GMA and provides a transitional link between the wildlife conservation zone and the developmental zone,

iii. **The Tourism Zone:** covers about 11% of the GMA and is set aside for non-consumptive wildlife utilisation,

iv. **The Special Use Zone:** covers 8% of the GMA and provides opportunities for limited fishing, recreation and permissible developments.

v.   **The Development Zone:** is the most heavily settled and cultivated zone. It covers 39% of the GMA and is reserved for socio-economic and infrastructure development (DNPW, 2013).
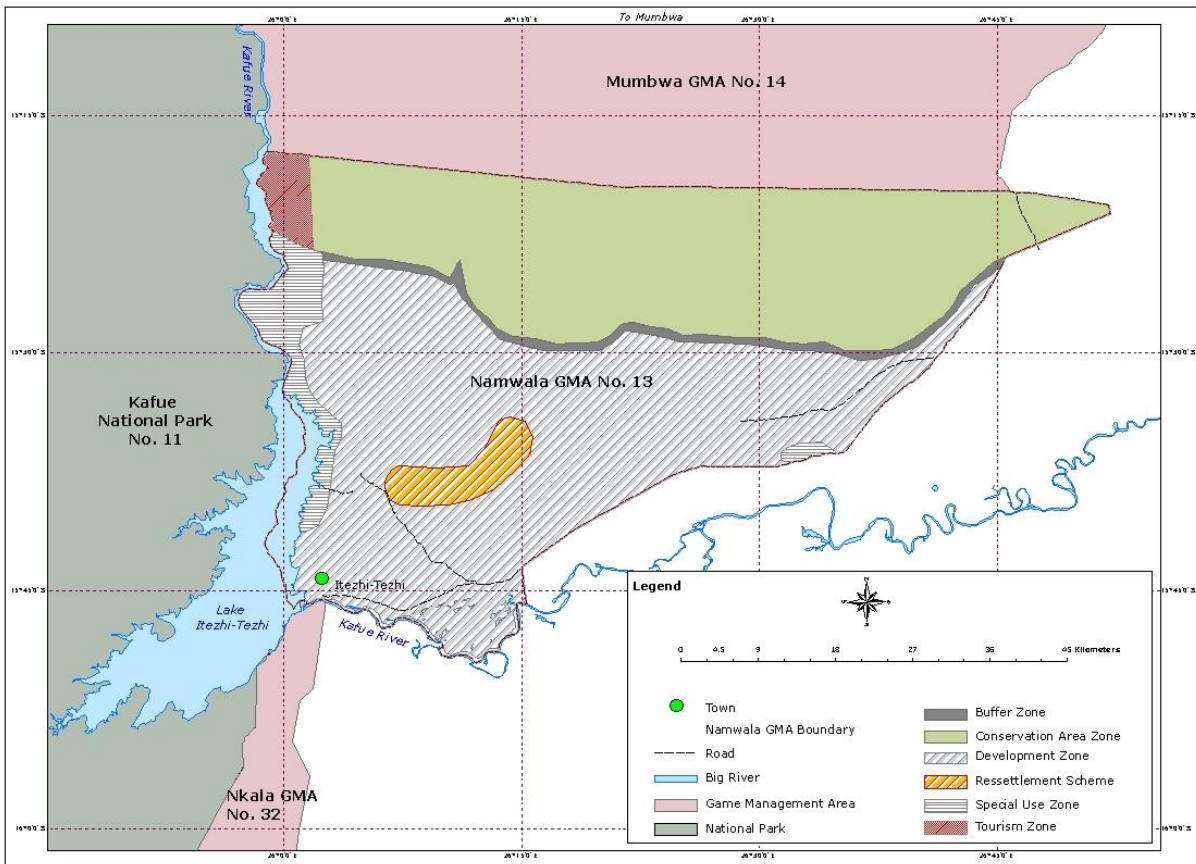
Figure 4-2: Land-use zones in Namwala GMA (Source: DNPW, 2013)

Agriculture (crop production and livestock rearing), fisheries, and the collection of non-timber forest products (NTFPs) such as firewood, fodder, wild fruits, mushrooms and wooden poles are the main land uses in Namwala GMA. The main crops produced in Kaingu are maize (*Zea mays*) and cassava (*Manihot esculenta)*, while cotton (*Gossypium hirsutum)*, sweet potato (*Ipomoea batatas*) and groundnuts (*Arachis hypogaea*) are also common in the other chiefdoms. Cattle (*Bos taurus*), goats (*Capra aegagrus hircus***)**, pigs (*Sus scrofa domesticus*), chicken (*Gallus domesticus***)**, ducks (*Anas platyrhynchos domesticus*) and pigeons (*Columba livia domestica*) are the common livestock reared. Local communities in Kaingu are also engaged in charcoal production, hunting, logging, subsistence fishing, small-scale mining, carving and pottery (ITTDC, 2015; Lillehagen, 2016).

There is some form of human activity in all the zones except the buffer zone. The zoning has led to several potential environmental conflicts both among communities and between humans and wildlife. Many environmental problems have arisen from uncoordinated and incompatible land-use programmes

and the expansion of human settlements with their attendant negative impacts on wildlife habitats, other natural resources and the wider ecosystem (DNPW, 2013). The environmental problems in Namwala GMA suggest the need for a more legitimate, robust and adaptable natural resources governance model targeted at ensuring the preservation of biodiversity and offer sustainable livelihoods to local communities.

4.2.1.8 Data collection

The data-collection process followed a convergent parallel design in which quantitative and qualitative data were collected during the same phase. The results were analysed independently (Creswell & Plano Clark, 2011). A total of 191 households were sampled from six of the seven VAGs in Kaingu, namely Bushinga, Kaanzwa, Masombo, Mbuma, Milangu and Mulilabanyama. The sub-samples from each VAG were determined using a proportionate stratified sampling approach (Stattrek, 2019).

A household survey using a semi-structured governance dashboard questionnaire was conducted to collect both quantitative and qualitative data from household heads (Appendix VII). Quantitative data such as ethnic groups, gender, education levels, and the number of persons in households and the sizes of fields owned were recorded. The questionnaire and conversations with the heads of households were also used to capture more qualitative data on community satisfaction on the operations of the CRB, opinions on the CRB constitution, opinions on rights to participate in the CRB, the decision-making process, the quality of decisions made, participation and fairness in elections of VAG and CRB members. Qualitative data were assembled regarding community opinions on management and accountability of the CRB and other institutions, the flow of information from the CRB to the community, and costs and benefits to the community. Focus group discussions (FGDs) were held with men, women and youths from the community in 6 of the 7 VAGs as Maunga community had not yet elected a CRB and VAG committee at the time of the study (see appendix VII).

A total of 10 key informant interviews with heads of stakeholder organisations, such as government departments, private companies, CRB, VAGs and the traditional authority were conducted. The main aspects of these interviews regarding the GMA were the history and culture, governance type, rightsholders and stakeholders, management unit and, the governance process (Borrini-Feyerabend et al., 2013). Descriptive statistics were used to analyse quantitative data using the IBM SPSS 20 statistical package. The qualitative data were analysed using the thematic analysis (Braun & Clarke, 2006), using Atlas.ti 7 software.

4.3 Results and discussion

This study follows a comprehensive and systematic methodology to understanding the legitimacy of the state-centric collaborative Natural Resources Governance (NRG) system for wild resources. This chapter aims at assessing the quality of the state-centric NRG system in Kaingu chiefdom in Namwala GMA and to draw out aspects of the CBNRM system that need to be changed for improved NRG. It contributes not only to the improvement of CBNRM in GMAs but also to elucidate the importance of multi-stakeholder engagement in addressing environmental problems. An input-output legitimacy approach was used to analyse the state-centric natural resources governance system. The mixed-method approach considers the diverse interests, concerns and expectations of various stakeholders in the governance of wildlife, forests and fisheries in Namwala GMA.

4.3.1 Input legitimacy of institutions

This section presents results from the FGDs and the governance dashboard survey concerning fundamental aspects of the input legitimacy.

4.3.1.1 Conditions for decision-making

All the FGDs stressed that the authority to decide on matters concerning natural resources management was with the government departments and the chief. However, they recognised that they also had a responsibility in the conservation of wildlife, forests and fisheries and that government policies had failed because they did not provide for the full participation of the community. This perception may be due to the low involvement and consultation of the community during the planning and development stages of the CBNRM programmes. This scenario places communities at the lowest level in a top-down NRG hierarchy and undermines both normative and sociological elements of the legitimacy of CBNRM institutions. Lack of commitment to CBNRM projects and hostile reactions have been observed in situations where communities have been treated as co-operating users instead of natural resource managers by state authorities (Chirenje et al., 2013).

4.3.1.2 Power distribution/delegation

The FGD participants were cognisant of how the decision-making power is delegated. They identified the state and the traditional authority as the two most influential actors in the NRG system. One participant made the following statement:

> *"Government rules are implemented through the chief and the community has no choice but to obey".*

All six FGDs concluded that there was a lack of legitimacy because the community's voice was not considered in the formulation of the natural resource management objectives. They asserted that the DNPW, FD and DoF generally do not consult them, but rather inform and impose ready-made plans and objectives on the CRB. One FGD observed that not even the traditional leaders hold consultative meetings with the local communities, but instead force people to agree with their decisions.

The results point to an inflexible NRG system that marginalises the local communities while showcasing them to be beneficiaries on paper. Weak enforcement of benefits-sharing mechanisms, unwilling local NRG structures and a lack of principles that direct the benefit-sharing mechanism towards community expectations hinder the effectiveness of NRG systems in providing benefits to communities (Mosimane & Silva, 2015).

4.3.1.3 Forms and conditions for participation

The establishment, structure and operation of the Kaingu CRB as with all other CRBs in Zambia are guided by the Wildlife Act No: 14 of 2015. The chairperson and vice-chairperson from each VAG are members of the CRB and represent the people and their interests from their respective areas (DNPW, 2018). The CBNRM guidelines developed by the DPNW do, however, dictate the structure and functions of the CRB. The community participation in NRG therefore, is passive as the people are told what is going to happen, or what has happened through unilateral announcements by administrators or what Arnstein (1969) would call manipulation and Pretty at best would term "passive participation" (Pretty, 1995).

The household survey results indicated that about 74% of respondents did not attend the previous year's AGM, 45% did not even know the year when the preceding AGM was held and 60% did not know the name of the CRB chairperson. This poor participation can be attributed to negative attitudes towards the CRB and its legitimacy or lack thereof. Lillehagen (2016) reported that community motivation, social constraints and complexities in local institutions influence levels of participation in Kaingu. In her study (Lillehagen, 2016) most of the people (73%) indicated that they did not participate in conservation because they do not receive any personal economic benefits from it. There was furthermore low participation by women during the FGDs. This is part of a more general social constraint where women as part of the local culture of the communities are often not heard or involved in local political and economic matters.

Differing interests, beliefs and attitudes among community members have created complexities in the smooth design, management and operation of local NRG institutions. The survey results still showed that 57% of the respondents have a positive attitude towards wildlife, even if their reasons for this varied widely. Twenty percent (20%) thought that wildlife is very important for national economic growth, but only 13% of them thought that it is very important for community empowerment.

4.3.1.4 Transparency in decision-making processes

The FGDs complained about the lack of transparency in the decision-making process. The survey revealed that less than 2% of respondents had been given information on the annual budget for the CRB, the sources and scales of income from natural resources in the preceding year, the progress of projects and the value and use of wildlife. In Masombo VAG, the FGD highlighted that there is confusion whenever decision-making rules are changed without informing the community. The transparency of CBNRM agents is vital to achieving good governance in terms of trust and legitimacy in CBNRM institutions. Not only does information regarding decisions, the decision-making process and implementation of decisions need to be freely available to those affected and involved, it also needs to be provided in a format that is easily understood by all involved (Child & Wojcik, 2014). Transparency creates trust and leads to the acceptance of CBNRM processes by local communities (Harrison et al., 2015). This transformation of perception is key to facilitating rights-based development.

4.3.1.5 Accountability of decision-makers

There was a general contention in all the FGDs that the NRG system does not have a mechanism for the community to hold the government departments, traditional authorities and the CRB accountable. The lack of knowledge about how to hold the DNPW accountable was a recurring point. Many discussants did not think they had the right to question the government about how the revenues derived from natural resources were utilised. Further, they pointed out that the DNPW and CRB do not avail the financial accounts to the communities. They stated that the DNPW does not honour its promises nor does it see the need to give an account to the community. The results indicate weak NRG institutions due to a lack of control and monitoring system coupled with a lack of trust among actors.

The results are corroborated by findings by Mulenga (2003) who observed a general lack of accountability and transparency in the management of funds and poor information sharing regarding the entitlements of communities by CRBs in Zambia. Similarly, in a study of the impacts of wildlife conservation on rural household welfare in GMAs, Richardson et al. (2012) reported that village leaders and residents complained of insufficient funds, delayed payments and lack of access to financial records.

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In summary, the input legitimacy of the NRG system in Kaingu faces many challenges that are attributable to the limited participation by the community in the planning of the governance structure and the plans for management objectives. The result is a lack of local commitment to projects headed by the CRB and the community. The unpredictable manner of when meetings are held by the government departments and the traditional authority with the community has led to further marginalisation of the community in decision-making and stability of CRB projects. The representative democracy system setup in NRG has failed to accommodate the diverse interests of community members. This scenario is compounded by the lack of transparency in the decision-making process. The lack of knowledge about the CRB's financial transactions and lack of access to financial reports has weakened the community's ability to hold decision-makers accountable.

4.3.2 Output legitimacy of institutions

This section presents results from the FGDs and the governance dashboard survey regarding the distributive justice and effectiveness of the output legitimacy of CBNRM institutions.

4.3.2.1 Distributive justice and outputs

The investigation set out to determine whether there was an equitable or reasonable distribution of benefits and costs across the VAGs in Kaingu from the community's standpoint – the output legitimacy. Since the flow of benefits is meant to trickle down from the central government to the community, it is important to evaluate how much of the benefits reaches the community. When asked if they directly received any benefits from wildlife, 95% of the survey interviewees said no.

The FGDs confirmed that few benefits from the wildlife management reached the community after the creation of KNP and the Kaingu CRB. They emphasised that unlike the safari hunting companies, local people were not allowed to hunt in the conservation zone and hence did not get any direct benefits from the area. There was an assertion in the Bushinga VAG that the system of NRG was illegitimate because only the government, safari lodges and the chief were getting benefits from wildlife. The elite capture of benefits, i.e. revenue from wildlife by the DNPW and affluent members of communities in GMAs, has previously been observed in many places in Zambia (Bandyopadhyay & Tembo, 2010; Muchapondwa & Stage, 2015).

In both the survey and in all the FGDs, human-wildlife conflicts were highlighted as the main sources of costs or burdens to the communities. The survey respondents emphasised the losses of livestock to predators, injuries to members of households, crop-raiding and other costs. In corroboration, the FGDs

stressed that there are no compensation measures in place for costs incurred due to human-wildlife conflicts. As a result, the community members seem to have no or little sense of ownership of or responsibility for natural resources, especially wildlife. They highlighted the swift action by DNPW to arrest villagers who killed marauding wildlife and complained about the lack of compensation measures from the government in instances where wildlife destroyed crops, killed livestock, or injured or even killed community members.

To conserve wildlife and secure human safety, the community and other local stakeholders must be integrated into the planning, decision-making and implementation processes of CBNRM projects (Treves et al., 2006). Strategies to mitigate human-wildlife conflicts must be co-developed with the community to provide alternative or compensation schemes, e.g. the payment for ecosystem services, development of alternative products and employment opportunities (Dickman, 2010; Morgera & Tsioumani, 2010). Therefore there is little observable output legitimacy and minimal planning allocated to distributive justice in the CBNRM programme. As a result, there is a lack of local commitment and no sense of ownership of the programme.

4.3.2.2 Effectiveness

From the community's perspectives, the process of managing natural resources through the CRB did not meet the overall goals of government policies. Participants in all the FGDs alluded to the lack of implementation of management objectives for a variety of reasons. They pointed to the imposition of the GMA on the community and the lack of community consultation in the formulation of the objectives as main reasons why policies fail. The FGDs highlighted the lack of projects to employ youth in the community and the continued failure by politicians and DNPW to honour commitments as some of the important causes of the ineffective implementation of policy. The FGD in Mulilabanyama stressed that:

> *"Rules are just on paper and not implemented by government departments … government makes the rules and tells the people about them, the people do not obey the government. The destruction of resources is caused by failure of government to improve livelihoods".*

There was a consensus that this scenario coupled with stringent rules for utilising natural resources deprives the community members of important livelihood options. As a result, some community members especially the youth resort to poaching, charcoal production or illegal fishing to earn a living, while others emigrated to the cities in search of employment. As such, the *de jure* intent to conserve biodiversity by the government does not match *de facto* actions and situations.

Popular participation can change policy and enhance the management and the governance of natural resources (Mutamba, 2004). Furthermore, Mutamba (2004) showed that communities can develop collective responsibility regarding the management of their natural resources and projects through various participatory techniques. Factors such as the lack of financial and logistical resources, limited personnel, failure to sensitise the community and weak management capacities of community members have hindered the government departments from effectively implementing CBNRM policies on resource protection and community development in Zambia (PSAf, 2017).

The governance structure has impacts on or implications for environmental actions and outcomes for different groups of people and the effectiveness of output delivery. In addition to resource regimes, governance structures contain rules and regulations, rights and the different groups of actors. They also contain the terms of interaction among actors and influence how various interaction patterns impact outcomes.

4.3.3 The influence of governance structures on environmental action

The governance factors that influence environmental action in Kaingu were analysed based on the rights and responsibilities of actors, their perceptions of the structures for decision-making, their perceptions of the quality of the decisions made and, their preferences and motivations. According to Vatn (2015), these factors compensate for the conflict between the criteria for input legitimacy and output legitimacy.

4.3.3.1 Rights and responsibilities

The responses from the household survey regarding rights and responsibilities were categorised into political and economic elements. The structure of the political rights and responsibilities were analysed based on whether the respondents had the right to stand in a CRB/VAG election, remove corrupt officers, vote for CRB/VAG leaders, amend the CRB constitution, and being able to demand meetings with the CRB. Despite indicating that they had the right to stand in a CRB election, remove corrupt officials and vote for the CRB, most of the respondents did not consider themselves as having the *de facto* right to amend the CRB constitution or demand a meeting with the CRB. The frequencies of responses are summarised in Table 4-1. Regarding responsibilities, about 60% of respondents did not know the name of the CRB chairperson, 87% did not know the name of the secretary and 91% did not know who the treasurer was. These results indicate considerable input legitimacy shortcomings of the CBNRM system.

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Table 4-1: Respondents' perceptions on political rights and responsibilities, Kaingu CRB, Zambia, 2018

Responses	Right to stand in an election	Right to remove corrupt CRB officials	Right to vote for CRB	Right to amend CRB constitution	Right to demand a meeting with CRB
No	12 (11.9%)	25 (24.8%)	8 (7.9%)	84 (84.2%)	79 (78.2%)
Yes	89 (88.1%)	76 (75.2%)	93 (92.1%)	16 (15.8%)	22 (21.8%)
Total	101 (100%)	101 (100%)	101 (100%)	101 (100%)	101 (100%)

Economic rights and responsibilities were analysed with respect to whether the community has the rights to make decisions on revenues from wildlife, check CRB expenditures, set hunting quotas and choose safari operators or joint venture partners. As indicated in Table 4-2, most respondents stated that they have the right to make decisions on revenue from the wildlife and to check the expenditure by the CRB. However, the majority did not think that they had the right to set hunting quotas and to choose safari hunting operators or establish joint venture partners. This marginalisation of the community indicates a lack of input legitimacy in the CBNRM programme.

Table 4-2: Respondents' perception of economic rights and responsibilities, Kaingu CRB, Zambia, 2016

Responses	Right to make decisions on revenue from wildlife	Right to check CRB expenditure	Right to set hunting quotas	Right to choose safari hunting operators	Right to choose joint venture partners
No	26 (25.7%)	31 (30.7%)	99 (98%)	98 (97%)	97 (96%)
Yes	75 (74.3%)	70 (69.3%)	2 (2%)	3 (3%)	4 (4%)
Total	101(100%)	101 (100%)	101 (100%)	101 (100%)	101 (100%)

The Kaingu CRB constitution is based on the CBNRM guidelines from DNPW. These documents are not properly in sync concerning the number of members and composition of the CRB and the roles, rights and responsibilities of office-bearers. The rights of the ordinary community members are not well articulated by the two documents. Despite the existing guidelines giving *de jure* right to the community to participate in NRG, these rights appear to be more theoretical than exercised due to the limited transparency of the political and economic processes. It is therefore difficult for the CRB to function effectively as there are no clear guidelines on the roles of these stakeholders. The success of any CBNRM institution such as the CRB relies upon its members having the *de facto* rights and power to make decisions, allocate financial resources call for accountable financial reporting (Child & Wojcik, 2014). The failure by the government to devolve decision-making and benefit distribution processes to the

communities – the structure of the governance's right and duties – has therefore led to the poor performance of CBNRM in Kafue (Nkhata & Breen, 2010). Consequently it is difficult for the CRB in its current state to produce outputs that can be considered legitimate by the community.

The Human Rights-Based Approach (HRBA) encompasses participation, accountability, non-discrimination and equality, empowerment and legality (ENNHRI, 2019). It is important to educate the actors in the NRG system on the importance of rights instead of the needs of beneficiaries because unfulfilled needs lead to dissatisfaction but rights that are not respected lead to violation (UNFPA, 2021). Further, the rights-based approach allows for the legal and legitimate claim for redress or reparation among actors and can also reinforce the capacities of local institutions to respect and guarantee these rights (UNFPA, 2021).

4.3.3.2 Perceptions on the structures of how decisions are made

Most of the survey respondents (54%) perceived that the CRB makes decisions without consulting or informing the community and 11% indicated that the community is only occasionally informed. On the other hand, 31% stated that the community is always informed. Figure 4-3 shows the result of cross-tabulation between all the Village Action Groups (VAGs) and responses to the question of how decisions are made. The FGDs revealed that the Kaingu residents did not feel that their opinions or interests were considered by DNPW and the CRB in the decision-making process.
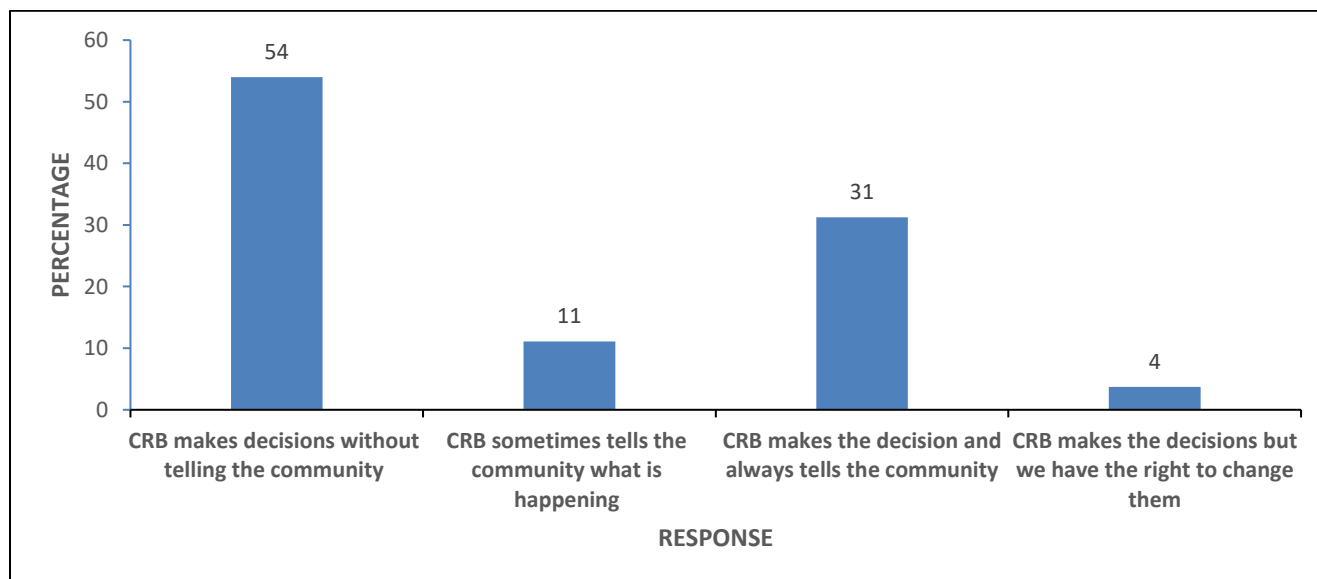
Figure 4-3: Perceptions of how decisions are made, Kaingu CRB, Zambia, 2018

In an in-depth interview, the CRB chairperson stated that the DNPW and FD sometimes do hold public meetings and workshops with the community to sensitise and educate community members about policy matters regarding the management of natural resources. He explained that the wildlife and forestry extension officer undertakes visits to households to teach the community about environmental concerns such as climate change, the impacts of resource degradation and destruction and how to mitigate them. However, he stressed that these visits and meetings are erratic because they are heavily dependent on available funding from the government.

The key informants from DNPW, FD and DoF strongly believe in the governance structure and processes outlined in the national constitution and its policies. They singled out Chief Kaingu and traditional institutions as a key structure in the governance process. The key informant interviews revealed that heads of departments admitted that there is minimal consultation with the community in the formulation of laws, bylaws and regulations and that this is a source of conflict. The head of DoF in Itezhi-Tezhi stated the following:

> *"In Zambia there are laws and regulations issued for the people to abide by and to follow and we have traditional institutions and government institutions that enforce those particular laws and regulations. We also have traditional bylaws that are developed with stakeholders that are supposed to be working in tandem with the laws of Zambia on condition that these laws do not flout the main laws of the land".*

The limited community consultation in the development of laws and bylaws explain the limited positive outputs delivered by the CBNRM system in Kaingu. The degree and nature of community consultation is one of the determinants of the success of a CBNRM programme because it is directly linked to the degree to which a community will contribute to natural resource conservation (Thakadu, 2004). This factor needs to be addressed to establish input and output legitimacy in the CBNRM system in Kaingu.

4.3.3.3 Perceptions on the quality of decisions made

Most (68%) of the respondents indicated that they did not know if the motives behind the decisions made by the government, traditional authorities and the CRB were good for them. This trend was observed in all VAGs. Twenty-seven percent of respondents thought that the decisions were good and 5% that decisions were sometimes not good for them. In the FGDs, this aspect was captured through the question of whether there was fairness in the decisions made. Five out of the six FGDs concluded that the decisions made were not fair. The non-fulfilment of commitments by the DNPW, lack of community involvement

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in the formulation of rules and corruption during enforcement of the rules were cited as reasons for this perception. One participant made the contribution below:

"They should explain the rules before they implement them ... for example if in a marriage the man does not tell his plans to his wife, there will be no harmony in the home. The same is true for the relationship between government and the community".

Most of the heads of government departments considered the decisions they made to be fair and attributed the causes of some of the failures in NRG to the community. They claimed that despite allowing the community some liberties such as hunting licences, forest and fishing permits, the community members still broke the NRG laws through poaching, illegal logging and illegal fishing. Some government officers accused the community of being unfaithful because they elect the CRB but do not trust them. They pointed out that there is acrimony between their departments and some communities due to a lack of trust that is due to the communities providing false information aimed at manipulating government policy interventions for the benefit of a select group of individuals.

However, other officers perceived that there were weaknesses in the representative democracy system because it was subject to the representative's character and moral standing. They highlighted that it is difficult to hold the members of parliament and other fixed-term office-holders accountable for poor decisions under the current governance system. Hence the quality of decisions made is dependent on the office-holder. The senior fisheries officer stated the following:

"It is very difficult to say whether the decisions made are fair or not. This is because those who seek political office make many promises before they are elected to office but what they do after being elected might be something else. Decisions would be fairer if there were a categorical rule that disqualifies those who digress from their campaign promises".

The lack of accountability in the CBNRM governance system is a major challenge to its legitimacy as it deprives the community of social justice. Effective governance systems are built on integrated long-term strategies that are based on the cooperation of government and communities (Johnstone, 2002). Accountability is necessary because it interacts with the rule of law and transparency to produce legitimate and effective governance systems that have the support of the citizens (Johnstone, 2002).

4.3.3.4 Preferences and types of motivation

Despite the Ila being the indigenous ethnic group in Kaingu, many other in-migrating groups form the larger proportion of the population, most notably the Tonga and Lozi (see figure 4-4). In-migration has brought together a diversity of different cultures with their concomitant beliefs, interests, norms and conventions. Legitimacy is formed from the normative beliefs of the communities being governed and these beliefs are shaped by the structures and processes that define the governing body (Turner et al., 2016).

Several preferences and motivations among the different ethnic groups based on their various cultural backgrounds were noted. The FGDs revealed that fishing, crop farming, hunting, livestock farming (mostly cattle) and harvesting of non-timber forest products and (NTFPs) such as honey are the traditionally preferred livelihood activities. The Ila and Tonga are traditionally cattle farmers who attach great value to their livestock, while the Lozi practice fishing and hunting. However, when compared with the other groups, the Tonga are more inclined to do extensive crop farming. From the sample, there are also other in-migrating ethnic groups including the Bemba (hunters and fishermen) and Lamba (hunters).
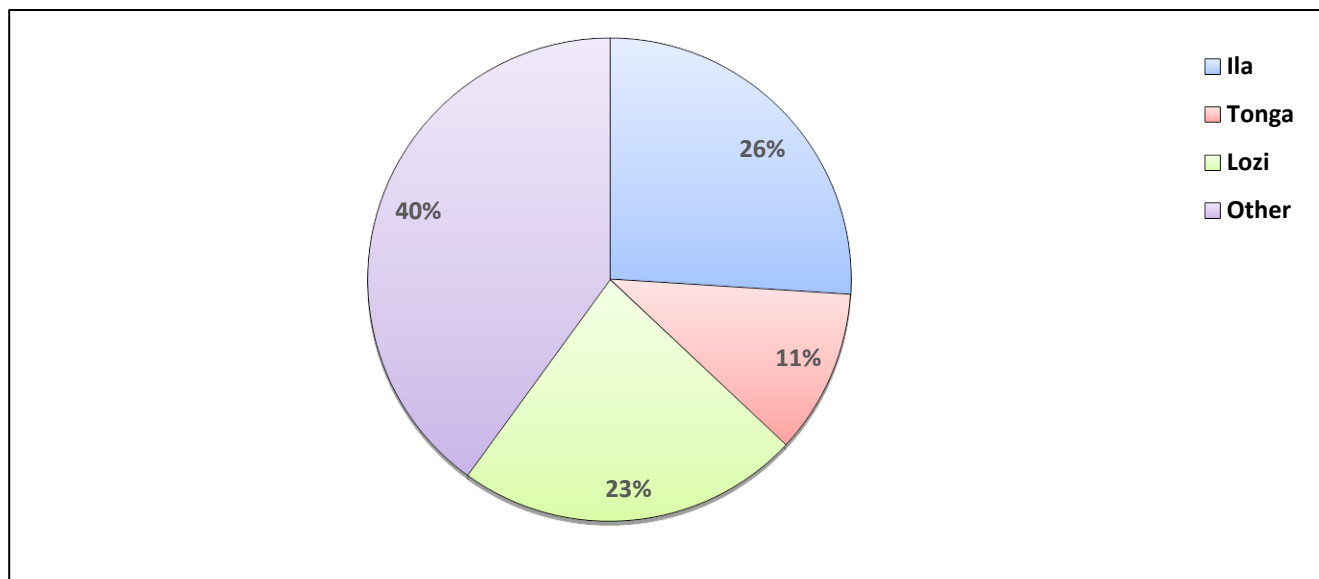
Figure 4-4: Proportions of the main ethnic groups in Kaingu CRB, Zambia, 2018

The creation of KNP and the GMA altered the rights of and defined the roles in which surrounding communities could operate. The Kaingu community had to learn the new laws and regulations regarding natural resource utilisation. Their interests, preferences and motivations were reshaped accordingly. The FGDs indicated that the commercialisation of natural resources has led to high demand for charcoal, bushmeat, fish and honey in Itezhi-Tezhi, Mumbwa and Lusaka. This led to excessive exploitation of

these resources. Therefore the community operates under different types of preferences and acts under different individual and social rationalities.

The FGD in Mulilabanyama indicated that in-migrants from the south (the Tonga) indiscriminately cut down trees to clear land for agriculture within the conservation zone. Additionally, this deforestation led to negative impacts such as wildlife leaving the area and changes in rainfall patterns. The increased and uncontrollable late burning of the bush to extract honey destroyed beehives, medicinal plants, food for browser and grazer wildlife species and populations of small wildlife species. The community members attributed these impacts to the failure by the government to provide alternative sources of livelihood. They recognised the damage and impact that these activities have on the climate and emphasised the need for mitigation measures.

Generally, the members of the community did not have a clear understanding of their rights and responsibilities within the confines of the CRB constitution. This is complicated further by the conflicting nature of the CRB constitution and the CBNRM guidelines from DNPW. There is a disparity in the perceptions of the decision-making processes among community members, and between the community, CRB and government departments. Consequently, the three stakeholder groups have differing opinions about the quality of decisions made. In-migration has led to the formation of a complex multi-ethnic and multi-cultural social structure in Kaingu. This social make-up has also been altered by the creation of the GMA, which ushered in novel institutions of NRG in a community that relied on wild resources for their livelihood. Scarcity of bushmeat, timber and NTFP, and restrictions on their utilisation led to increased demand, overexploitation and depletion of these products. The interactions of ethnic groups with diverse and competing interests, preferences and motivations have in tandem had a detrimental effect on the ecosystem.

The governance structure itself thus has impacts and implications for environmental actions and for different groups of people. The study focused on the consciousness of local people and other actors, the socio-cultural institutional origins, their various perceptions of rights and duties, motivations and interactions between actors. These issues were investigated to understand how they impact the legitimacy, outcomes and overall quality of the local CBNRM system.

4.4 Conclusions and recommendations

This chapter aimed at evaluating the quality of the NRG systems at work in Namwala GMA by analysing stakeholder perceptions of the legitimacy of the state-centric collaborative NRG structures and processes at work in the protected area. Inquiry was also made into how governance structures influence environmental action. The research results show that the success of natural resource management depends on the support of various stakeholders shaped by their perceptions of its legitimacy (Turner et al., 2016). This investigation has uncovered several issues that undermine or weaken the legitimacy of the NRG system in Kaingu. The recommendations here are based on the findings as informed by the legitimacy theory applied in the study. It is hoped that the proposed changes to the NRG system in Kaingu can be generalised to other GMAs in different settings.

In as much as the establishment of co-management boards such as the CRB can open greater resilience and legitimacy of the management of natural resources (Borsdorf, 2013), comprehensive and rights-based participation of the local communities is vital. The rights-based approach is double-faceted, first, to empower people (in this case, the Kaingu community) to know and claim their rights by giving them more opportunities to participate in decision-making. Second, to increase the ability of those with the responsibility for fulfilling rights (in this case the CRB and VAG committee) to recognise and know how to respect those rights, and make sure they can be held to account (ENNHRI, 2019).

The people of Kaingu do not accept or recognise the present processes of establishing the structures and the planning processes in the governance of wildlife, forests and fisheries via the CRB as legitimate systems. The findings show that an overarching reason for this rejection is the lack of community participation in the formulation of management objectives. As in many top-down NRG models, the conditions for decision-making typically limit the community from having control or even inputs in the planning, budgeting, setting of wildlife hunting quotas and distribution of benefits. The legitimacy of NRG is further challenged by the lack of access to outputs of the implementation of CBNRM projects. The distribution of costs and benefits is inequitable and perceived as illegitimate by the community.

The disparity in perceptions among the different groups of stakeholders regarding the rights and responsibilities, the process of decision-making, the quality of decisions made, and the preferences and motivations constrain effective environmental action. The lack of transparency, whether intentional or otherwise, has created mistrust and animosity among community members and NRG implementing agencies. The community views decisions as being unfair, lacking integrity and influenced by corruption.

The multi-ethnic and multi-cultural structure of the Kaingu community, tied in with the institutions attached to the GMA and commercialisation of environmental products, forms a complex NRG landscape with ever-changing conditions and layered institutions.

Institutional change is both a difficult and volitional activity (Vatn, 2015), but is also necessary for legitimising the NRG model in Kaingu. There is no panacea or a quick-fix for the diverse problems facing NRG in Kaingu. However, it is evident that more and real devolution of rights by the central government to the local community is essential. The community must have more control of and benefit from the resources in their vicinity and have the ability and right to buffer costs. Hence increasing the level of participation is fundamental to any proposed intervention in the NRG system. To achieve this there is a need for a greater proportion of revenues to fund the CRB, which should ensure benefits to the community through a bottom-up structure. The VAGs must engage in entrepreneurial projects that encourage the conservation of natural resources for present and future generations. Thus there is an urgent need for building the capacity of the community, VAGs, CRB and even local government officials. Champions, i.e. individuals and/or organisations that take responsibility for publicising and gathering support for a "cause" (Sitas, 2014), need to be identified or formed. Developing and capacitating community-based organisations such as the CRB is important to secure local rights, eliminate corruption and establish a more legitimate local CBNRM governance system (Miles & Samndong, 2015).

It is logical to expect that some of the factors that constrain local communities in the state-centric collaborative CBNRM system discussed above may be worked out or circumvented in a community-owned CBNRM system. It is from this assumption that the next chapter considers the robustness of local NRG institutions in a community-owned protected area. The contrast between the two cases may provide valuable insights and reveal different facets of the governance of natural resources.

References

Adams, M. (2003). *Land tenure policy and practice in Zambia: Issues relating to the Development of the Agriculture Sector.* Oxford: Mokoro Ltd.

Arnstein, S. R. (1969). A Ladder Of Citizen Participation. *Journal of the American Planning Association, 35*(4), 216-224.

Bandyopadhyay, S., & Tembo, G. (2010). Household Consumption and Natural Resources Management Around National Parks in Zambia. *Journal of Natural Resources Policy Research, 2*(1), 39-55. doi:10.1080/19390450903350838

Barrow, E., & Murphree, M. W. (2001). Community Conservation: from concept to practice. In D. Hulme, & M. W. Murphree, *African Wildlife and Livelihoods* (pp. 24-37). Oxford: James Currey.

Borrini-Feyerabend, G., Dudley, N., Jaeger, T., Lassen, B., Broome, N. P., Phillips, A., & Sandwith, T. (2013). *Governance of Protected Areas: From Understanding to Action. Best Practice Protected Area Guidelines Series No. 20.* Gland: IUCN.

Borsdorf, F. F. (2013). *Resilience and Legitmacy of Natural resource Governance through adaptive management: The case of Nunavut's co-management boards.* Innsbruck: Institute of Interdisciplinary Mountain Research (IGF), Austrian Academy of Sciences.

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology, 3*(2), 77-101.

Brockington, D., & Igoe, J. (2006). Eviction for conservation: A Global Overview. *Conservation and Society*, 424-470.

Bwalya, S. M. (2002). Critical Analysis of Community-Based Wildlife Resource Management in Southern Africa: Case Study From Zambia. *The Commons in an Age of Globalisation – The Ninth Conference of the International Association for the Study of Common Property.* Victoria Falls, Zimbabwe: http://www.cbnrm.net/pdf/bwalya_sm_001_zambiacbwm.pdf.

Child, B., & Wojcik, D. (2014). *Developing Capacity for Community Governance of Natural Resources Theory and Practice.* Bloomington: AuthorHouse.

Child, B., Musengezi, J., Parent, G. D., & Child, G. F. (2012). The economics and institutional economics of wildlife on private land in Africa. *Pastoralism: Research, Policy and Practice, 2:18*.

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Chirenje, L. I., Giliba, R. A., & Musamba, E. B. (2013). Local communities' participation in decision-making through planning and budgeting in Africa. *Chinese Journal of Population Resources and Environment, 11*(1), 10-16. doi:10.1080/10042857.2013.777198

Creswell, J. W., & Plano Clark, V. L. (2011). *Designing and Conducting Mixed Methods Research* (2nd ed.). Los Angeles: SAGE Publishers.

CSO. (2012). *2010 Census of Population and Housing: National Analytical Report.* Lusaka: Central Statistical Office.

DeGeorges, P. A., & Reilly, B. K. (2009). The Realities of Community-Based Natural Resource Management in Sub-Saharan Africa. *Sustainability*, 734-788.

Dickman, A. J. (2010). Complexities of conflict: the importance of considering social factors for effectively resolving human–wildlife conflict. *Animal Conservation, 13*, 458-466. doi:10.1111/j.1469-1795.2010.00368.x

DNPW. (2013). *Land Use Plan for Namwala Game Management Area.* Chilanga: DNPW.

DNPW. (2018). CBNRM Guidelines. Chilanga, Zambia: Department of National Parks and Wildlife.

Eagles, P. F., Romagosa, F., Buteau-Duitschaever, W. C., Havitz, M., Glover, T. D., & McCutcheon, B. (2013). Good governance in protected areas: an evaluation of stakeholders' perceptions in British Columbia and Ontarion Provincial Parks . *Journal of Sustainable Tourism*, 60-79.

Ekechi, F. (2002). The Consolidation of Colonial Rule: 1885-1914. In T. Falola (Ed.), *Africa: Colonial Africa: 1885-1939* (Vol. 3, pp. 27-52). Durham: Carolina Academic Press.

ENNHRI. 2019. *Applying a Human Rights-Based Approach to Poverty Reduction and Measurement: A Guide for National Human Rights Institutions*. Brussels: European Network of National Human Rights Institutions.

GRZ. (1995). The Lands Act (29 of 1995). Government Printers.

GRZ. (2015). The Zambia Wildlife Act, 2015. Lusaka, Zambia: Government Printers.

Harrison, E. P., Dzingirai, V., Gandiwa, E., Nzuma , T., Masviele, B., & Ndlovu, H. (2015). Progressing Community-Based Natural Resource Management in Zimbabwe. Sustainability Research Institute Briefing Note No:6. University of Leeds.

Heijnsberger, P. V. (1997). *International legal protection of wild fauna and flora.* Amsterdam: IOS Press.

Hulme, D., & Murphree, M. (1999). Communities, Wildlife and the New Conservation in Africa. *Journal of International Development*, 277-285.

ITTDC. (2015). *District Situational Analysis.* Itezhi-Tezhi: The Planning Unit, Itezhi-Tezhi District Council.

Iweriebor, E. E. (2011). *AFRICANA AGE: Africa & African Diasporan Transformations in the 20th Century*. Retrieved August 2019, from Schomberg Centre for Research in Black Culture: http://exhibitions.nypl.org/africanaage/essay-colonization-of-africa.html#scramble

Johnstone, M (2002). Good governance: Rule of Law Transparency and Accountability, Retrieved January 31, 2021, from ETICO: *https//etico.iiep.unesco.org/en/resource/good-governance-rule-law-transparency-and-accountability*

Lillehagen, C. T. (2016). *Stakeholders' attitudes, values and norms towards governance of protected areas in Zambia – an institutional analysis.* Norwegian University of Life Sciences, Department of Internantional and Environment Studies. Retrieved August 20, 2019, from https://pdfs.semanticscholar.org/eb64/95837de0de13c5c6377932cf6c5a48079986.pdf

Lindsey, P. A., Nyirenda, V. R., Barnes, J. I., Becker, M. S., McRobb, R., Tambling, C. J., t'Sas-Rolfes, M. (2014). Underperformanceof African Protected Area Networks and the Case of New Conservation Models: Insights from Zambia. *PLoS ONE 9(5). doi:101371/journal.pone.0094109*.

MacKenzie, J. M. (1997). *The empire of nature. Hunting, conservation and British Imperialism: Studies in Imperialism.* Manchester: Manchester University Press.

Macura, B., Secco, L., & Pullin, A. (2015). What evidence exists on the impact of governance type on the conservation effectiveness of forest protected areas? Knowledge base and evidence gaps. *Environmental Evidence, 4*(24), 1-29. doi:10.1186/s13750-015-0051-6

Miles, W. B., & Samndong, R. A. (2015). Community participation as a means or an end: Local perspectives on REDD+ from Indonesia and the Democratic Republic of Congo. *The Green Economy, 3*, 101-123.

Mkanda, F. X., Mwakifwamba, A., & Simpamba, T. (2014). Traditional stewardship and conservation in the game management aeas of Nkala and Namwala, Zambia. *Oryx, 48*(4), 514-521.

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Morgera, E., & Tsioumani, E. (2010). The Evolution of Benefit Sharing: Linking Biodiversity and Community Livelihoods. *Review of European Community and International Environmental Law, 19*(2), 150-173.

Mosimane, A. W., & Silva, J. A. (2015). Local Governance Institutions, CBNRM and Benefit-sharing Systems in Namibian Conservancies. *Journal of Sustainable Development, 8*, 99-112.

Muchapondwa, E., & Stage, J. (2015). Whereto with Institutions and Governance Challenges in African Wildlife Conservation? *Environmental Research Letters*. doi:1088/1748-9326/10/9/095013

Mulenga, B. S. (2003). Understanding Community-Based Wildlife Governenace in Southern Africa: A Case of Zambia. *Africa Journal of Environmental Assessment and Management, 7*, 41-60.

Mutamba, E. (2004). Community Participation in Natural Resource Management: Reality or Rhetoric? Lessons from the Kasanka Game Management Area communities Serenje district, Zambia. *Environmental Monitoring and Assessment, 99*, 105-113.

Muyengwa, S., & Child, B. (2017). Re-Assertion of Elite Control in Masoka's Wildlife Programme, Zimbabwe. *Journal of Sustainable Development, 10*(6), 28-40.

Nkhata, B. A., & Breen, C. M. (2010). Performance of community-based natural resource governance for the Kafue Flats (Zambia). *Environmental Conservation*, 296-302.

Patton, M. Q. (2002). *Qualitative research and evaluation methods* (3rd ed.). Thousand Oaks: SAGE Publishing Inc.

Pretty, J. N. (1995). Participatory Learning for Sustainable Agriculture. *World Development, 23*(8), 1247-1263.

PSAf. (2017). *Media Brief on Community-Based Natural Resource Management.* Lusaka: Panos Institute Southern Africa.

Richardson, R. B., Fernandez, A., Tschirley, D., & Tembo, G. (2012). Wildlife Conservation in Zambia: Impacts on Rural Household Welfare. *World Development, 40*(5), 1068-1081.

Rodary, E. (2009). Mobilizing for nature in Southern African Community-based conservation policies, or the death of the local. *Biodiversity and Conservation, 18*(10), 2585-2600.

Roe, D., Nelson, F., & Sandbrook, C. (Eds.). (2009). *Communtiy Management of Natural Resources: Impacts, Experiences and Future directions.* London, UK: International Institute for Environment and Development. Retrieved 12 1, 2019, from https://pubs.iied.org

Schiopoiu B. A., Popa I. (2013) Legitimacy Theory. In: Idowu S.O., Capaldi N., Zu L., Gupta A.D. (eds) Encyclopedia of Corporate Social Responsibility. Springer, Berlin, Heidelberg. https://doi.org/10.1007/978-3-642-28036-8_471

Simasiku, P., Simwanza, H. I., Tembo , G., Bandyopadhyay, S., & Pavy, J. (2008). *The Impact of Wildlife Management Policies on Communities and Conservation in Game Management Areas in Zambia: Message to Policy Makers.* Lusaka: Natural Resources Consultative Forum.

Sitas, N. (2014). *Opportunities and challenges for mainstreaming ecosystem services in decision-making.* Stellenbosch: Stellenbosch University.

Stattrek. (2019, June 12). *Stat Trek Teach Yourself Statistics: Sample size: Stratified samples*. Retrieved June 11, 2019, from Stat Trek Teach Yourself Statisitcs: https://stattrek.com/sample-size/stratified-sample.aspx

Stiwell, S. (2002). The Imposition of Colonial Rule. In T. Falola (Ed.), *Africa: Colonial Africa 1885-1939* (Vol. 3, pp. 3-26). Durham: Carolina Academic Press.

Suchman, C. M. (1995) Managing Legitimacy: Strategic and Institutional Approaches. *Academy of Management Review 20* (3) 571-610. doi 10.2307/258788

Treves, A., Wallace, R., Naughton-Treves, L., & Morales, A. (2006). Co-managing Human-Wildlife Conflicts: A Review. *Human Dimensions of Wildlife, 11*, 383-396. doi:10.1080/10871200600984265

Turner, R. A., Addison, J., Arias, A., Bergseth, B. J., Marshal, N. A., Morrison, T. H., & Tobin, R. C. (2016). Trust, confidence and equity affect the legitimacy of natural resource governance. *Ecology and Society, 21*(3). doi:10.5751/ES-08542-210318

UNFPA. (2021). *United Nations Population Fund.* Retrieved July 2021 from United Nations Population Fund: https://www.unfpa.org/human-rights based-approach

Vatn, A. (2015). *Environmental Govenance: Institutions, policies and actions.* Cheltenham: Edward Elgar.

Vedeld, P. (2002). The Process of Institutional Building to Facilitate Local Biodiversity Management. *NORAGRIC Working Paper No. 24*, 32.

CHAPTER FIVE : Robustness of local natural resource governance institutions: Lessons from Kaindu Community Conservancy[2]

Abstract

The integration of Community-Based Natural Resource Management (CBNRM) into the local state-led natural resources governance systems in Zambia has been unsuccessful in halting resource destruction and degradation. This chapter assesses the robustness of local wildlife, forests and fisheries governance institutions within the Kaindu Community Conservancy in central Zambia. The good governance principles developed by the IUCN/UNDP and the design principles for robust common-pool resource institutions posited by Ostrom (1990) were applied to analyse the evolution of this local governance system. Mixed methods comprising a household survey, key informant interviews and focus group discussions were conducted. The results indicate a long history of internal migration, a complex political history and a succession of unstable governance models, forming a complex institutional landscape. Low levels of participation, a lack of consensus and joint strategic visions, low accountability and transparency in decision-making, a lack of fairness and weak recognition of rights were observed. The weaknesses of both formal and informal local institutions have led to uncontrolled access and utilisation resulting in widespread resource degradation. This study highlights the need to reconsider natural resources governance systems considering the local social and environmental context. Well delineated resource and user boundaries that the community and other actors can identify with, take part in and respect must be co-developed to prevent the expropriation of local benefits. Capacity building for better governance of natural resources must be undertaken.

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[2] A version of this chapter has been submitted to the Development Southern Africa journal and is in the second phase of the review process. Therefore there is some overlap in the introduction and study site descriptions with other chapters

5.1 Introduction

Protected areas have for a long time been the principal strategy and measure for biodiversity conservation and management, and the main tool for maintaining habitat integrity (Andrade & Rhodes, 2012). However, despite an exponential increase in their numbers and extent, the loss of biodiversity and threats of extinction of species has not halted (Eklund & Cabeza, 2016; Da Silva et al., 2018). The improved governance and management of protected areas is important because of the vital ecosystems and their provisioning, supporting, regulating and cultural services and the different habitats and species they encompass (MEA, 2005; Eagles et al., 2013).

As an alternative to the fortress approach where local people were excluded from utilising natural resources (Child, 2009; Van der Dium et al., 2015), the CBNRM approach was developed in the 1980s and 1990s based on the knowledge and capacity of local people to manage resources sustainably (Barrow & Murphree, 2001). Fundamentally, local participation is a strategy of devolution of authority and power, resources, distribution of rights and duties from central government to local levels of governance (Vedeld, 2002). CBNRM was integrated into the state-centric governance systems for natural resource management in Zambia between 1988 and 1999, with the aim of devolving elements of environmental governance to local communities (Hutton et al., 2005). Although CBNRM in Zambia was a promising model (Mbewe et al., 2005), it has been largely deemed unsuccessful. As in other regional cases, CBNRM in Zambia has become a divisive mechanism between government departments and local communities and within communities themselves, creating and instituting major political disjunction among local communities, conservationists and donors (Mogende & Kolawole, 2016).

Failures are attributed to CBNRM having been historically established outside national authority, programme or national policy body and outside the general policy frameworks, with accompanying poor political, social and practical relationships between the government actors and the local communities (Child & Barnes, 2010; Nkhata & Breen, 2010). Local and in-migrating human populations have impacted directly on the resource base and threatened the legitimacy and operational effectiveness of the key existing local natural resources and land-use management institutions (Malenga, 2004).

Community Resources Boards (CRBs) were established by the Zambian government as the main organisations to manage the shared governance of natural resources between government and the rural communities at local level through Village Action Group (VAG) committees. The CRBs are local policy bodies responsible for resource management, wealth creation and execution of user rights in their areas

of jurisdiction. The VAGs are expansive geographical units that are made up of a cluster of villages that elect VAG committees to represent them on the CRB. A CRB has between 7 and 10 elected representatives from the various VAG committees, a local councillor, a representative of the local chief (patron of the CRB), a co-opted member (without voting power), and a senior officer from the Department of National Parks and Wildlife (DNPW) (GRZ, 2015). This CBNRM model has fostered an inflexible and less adaptive co-management system as the central government still makes the ultimate decisions regarding natural resource management (Mogende & Kolawole, 2016; Nkhata & Breen, 2010).

The underperformance and questionable adaptive capacity of local CBNRM institutions in Zambia form the rationale for this study. This chapter investigates the robustness of local institutions that are involved in the governance of common-pool resources (CPRs), i.e., land, wildlife, forests and fisheries resources in a communally-owned protected area. The study aimed to determine the effectiveness and adaptability of the Kaindu Natural Resources Trust (KNRT) and other organisations involved in CBNRM, focusing on the quality of the CBNRM processes. The research questions addressed are: (1) what is the environmental and institutional history of the Kaindu Community Conservancy (KCC)? (2) how effective are the local natural resources governance institutions in conserving wildlife, forests and fisheries? (3) are good governance principles being upheld in the decision-making processes on key issues concerning the protected area? The KCC was selected as a case due to its unique place as the only protected area adjacent to KNP that is owned by the local community.

5.1.1 Theoretical and conceptual overview

A complex system is said to be robust if it can maintain some system characteristics when its parts and environment fluctuate (Ostrom, 2009). Robust natural resource governance (NRG) systems are therefore more capable of maintaining sustained positive conservation outcomes. It is important to assess the robustness of existing NRG institutions before suggesting any interventions and changes. The transdisciplinary approach (TD) as described by Sitas (2014) is applied as an overarching concept for developing both systems knowledge (knowledge concerning the current situation) and target knowledge (the knowledge of the desired situation). In deciphering the robustness of the NRG institutions in the KCC, the eight principles for managing CPRs posited by Ostrom (1990) and refined by Cox et al. (2010) are used as criteria for assessing the management of land, wildlife, forests and fisheries at the community level (Table 5-1). The design principles are used as a diagnostic framework to analyse the KNRT as a CBNRM initiative.

Table 5-1: Ostrom's design principles for managing common-pool resources.

Design principle	Description
1a. Clearly defined user boundaries	Should delineate clear and locally understood boundaries between legitimate users and non-users (Membership)
1b. Clearly defined resource boundaries	Should delineate clear boundaries that separate a specific common-pool resource from a larger social-ecological system
2a. Rules fit to the local context	Appropriation rules must be congruent with local social environmental conditions
2b. Appropriation and provision	Appropriation rules are congruent with provision rules; the distribution of costs is proportional to the distribution of benefits
3.Collective-choice arrangements	Most individuals affected by the resource regime are authorised to participate in making and modifying its rules
4 a. Monitoring users	Individuals who are accountable to or are the users monitor the appropriation and provision levels of users
4 b. Monitoring the resource	Individuals who are accountable to or are the users monitor the condition of the resource
5. Graduated sanctions	Sanctions for rule violation start very low but become stronger if a user or users repeatedly violates a rule
6. Conflict resolution mechanisms	Rapid low-cost, local arenas exist for resolving conflicts among users or with officials
7. Minimal recognition of rights	The rights of local users to make and enforce their own rules are recognised by the government
8. Multiple layers of nested enterprises	Local natural resources governance regime must be nested in a larger organisation for it to be long-enduring and self-governing

(Adapted from Cox et al., 2010 and Yeboah-Assiamah et al., 2016)

The principles of good governance posited by IUCN were selected to assess the quality of the CBNRM governance processes, noting the context and its effectiveness to conservation (Borrini-Feyerabend et al., 2013). To achieve good governance there must be processes in place to allow for different perspectives to be heard and valued, and for the needs and values of the community to be reflected in the decisions (Child & Wojcik, 2014). Table 5-2 describes nine possible criteria that anchor good governance as developed by the United Nations Development Programme (UNDP) (1997) and the five categories into which they are summarised by Graham et al. (2003).

Table 5-2: Good governance criteria.

IUCN principles of good governance (Graham et al., 2003)	Basic Principles (UNDP, 1997)
Legitimacy and voice	**Public participation:** All people should have a voice in decision-making, either directly or through legitimate intermediate institutions that represent their interests.
	Consensus orientation: The ability to mediate differing interests to reach a broad consensus on what is in the best interest of the group.
Direction	**Strategic vision:** Looking constructively towards the future with the consideration of the historical, cultural and social complexities of each situation.
Performance	**Responsiveness:** Institutions try to serve all stakeholders using a proactive manner regarding complaints and criticism.
	Effectiveness and efficiency: Processes and institutions try to produce results that meet needs while making the best use of resources.
Accountability	**Accountability:** Officials in government, private sector and civil society organisations answer to the public as well as to institutional stakeholders and act on criticisms or requirements made of them and accept responsibility for failure, incompetence or deceit.
	Transparency: Processes, institutions and information are directly accessible to those concerned with them, and enough information is provided to understand and monitor them.
Fairness and rights	**Equity:** All men and women have opportunities to improve or maintain their wellbeing.
	Rule of law: Legal frameworks should be fair and enforced impartially.

(Adapted from Graham et al, 2003)

The study recognises the complementary nature of the IUCN/UNDP principles of good governance and Ostrom's design principles for the successful management of CPRs. The IUCN/UNDP criteria, i.e. legitimacy and voice, direction, performance, accountability and fairness and rights, are respectively complementary to the collective choice arrangements, clearly defined user and resource boundaries, monitoring, graduated sanctions and minimal recognition of rights as postulated by Ostrom. However, each set of principles complements the other by placing emphasis on partly different elements of local CBNRM institutions and that together can help to contrast nuances. For example, the IUCN/UNDP principles generalise the need for the rule of law, while Ostrom's design principles specify that rapid and low-cost conflict resolution mechanisms are essential.

5.2 Methodology

5.2.1 Study area

The KCC is located on customary land at the north-eastern border of the KNP in Kaindu chiefdom, Mumbwa district, Central Province of Zambia (Figure 5-1). The areas surrounding the conservancy have

been leased to private developers and non-governmental organisations by the state as provided for in the Lands Act No. 29 of 1995. The KCC was established in 2004 through the Land (Perpetual Succession) Act No. 25 of 1964 (MLNR, 2004). The conservancy is bordered by several private commercial farms involved in game ranching, cattle ranching and crop farming.
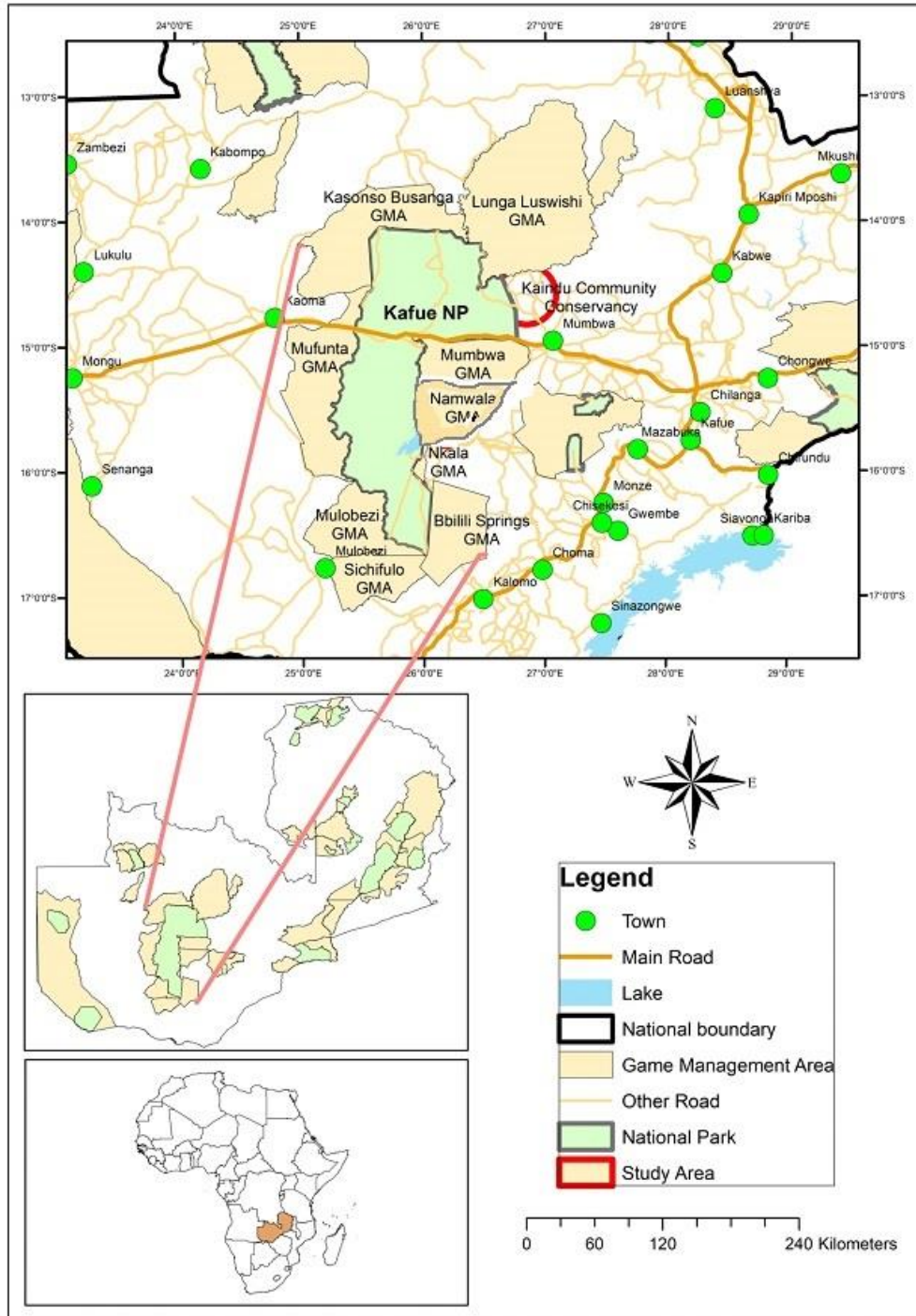
Figure 5-1: Map of Kaindu in the context of KNP, Zambia, and Africa

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Being communally owned, the KCC is a relatively new and different model for the devolution of rights to local communities living in the open areas that border national parks in Zambia. The Kaindu local community acquired 15,500 hectares of titled land and set aside 13,900 hectares for use as a community conservancy, managed by the KNRT board (TNC, 2015).

5.2.1.1 Physical environment

The KCC lies in a region that is geologically composed of the Muva Supergroup comprising quartzite, schist, phylitte and conglomerate (DNPW, 2013c). Fluvial-glacial beds, carbonaceous shale, dolomite and ironstone are also common. The southern part of Kaindu has red leached plateau soils, small areas of pale grey clays and extensive sands. Other parts have brown to yellowish-brown, friable, clayey to fine loam soils that are well-drained to poorly drained (DNPW, 2013c). The Kafue River is the main waterbody in Kaindu and separates the area from Lunga-Luswishi GMA in the north. The area lies at around 1200 m above sea level and has flat topography (DNPW, 2013). Kaindu receives an annual rainfall 1000 mm in a season and experiences temperatures between 18 and 40 degrees Celsius.

5.2.1.2 Biological environment

The vegetation in Kaindu is mostly Miombo woodlands with intermittent wide expanses of grasslands. The south-eastern part has Tremitaria woodland comprising trees like *Acacia nigrescens*, *Tetradenia riparia, Garcinia livingstonei and Syzygium guineense, Terminalia cericea* (DNPW, 2013c). The riparian woodland along the Kafue River is dominated by tall trees (*Diospyros mespiliformis, Homalium abdessammadii, Syzygium guineense* and shrubs (*Warneckea sanibaricum, Canthium glaucum, Azanza garkeana, Vangueria infausta, Phoenix reclinata, Rhus longipes, Rhus pyroides Kraussia floribunda, Antidesma vernosum, Hippocratea indica, Tetradenia riparia and Carissa edulis)* (DNPW, 2013c).

The vegetation forms important habitat for many wildlife species including migratory mega-wildlife, such as elephant (*Loxodonta africana*), lion (*Panthera leo*), buffalo (*Syncerus caffer),* leopard (*Panthera pardus*) (DNPW, 2013b). Other species include sable antelope (*Hippotragus niger niger*), kudu (*Tragelaphus strepsiceros*), puku (*Kobus vardonii*) and impala (*Aepyceros melampus*) (DNPW, 2013). Fishing by local people is important as the conservancy is bordered by the Kafue River which has many fish species including the three-spot tilapia (*Oreochromis andersonii*), red breasted bream (*Coptodon rendalli*), the African pike (*Hepsetus odoe*) and the Silver catfish (*Schilbe mystus*) (DNPW, 2013).

5.2.1.3 Demographics and local governance

The human population residing in the KCC was estimated at 15,477 individuals in the 2010 census (TNC, 2015) and comprises 3,276 households, according to Chief Kaindu's register of 2016. The KCC

comprises two administrative wards, namely Kalwanyembe and Mpusu, which have 3.9 people/km^2 and 6.1 people/km^2 respectively (CSO, 2012). The state has a dual local governance system with the Mumbwa District Council on the one hand and the District Commissioner's (DC) Office on the other. Together these offices coordinate government departments and implement local government programmes at the district level as stipulated in the Local Government Act No. 30 of 1995 (GRZ, 2002). Traditional authority is held by Chief Kaindu through the Chief's Act No. 13 of 1995 to discharge the traditional functions of his office under customary law in compliance with the constitution, natural justice and morality (GRZ, 1994). Besides the KNRT board, the conservancy has an operational CRB that is made up of five VAGs: Kafwikamo, Kalwanyembe, Kamilambo, Misamba and Mpusu (TNC, 2016).

The Kaindu community has partnered with The Nature Conservancy (TNC) to ensure the economic viability of the community conservancy while conserving the wildlife resources. The limited capacity of local people to effectively run the community game ranch led the KNRT board to engage a partner company (an outfitter), Royal Kafue Limited, in 2012. Through this partnership, the community receives all funds generated from hunting (apart from trophy fees), while the outfitter retains revenues from service charges, such as lodging and logistics. The KNRT board disburses the earnings to VAGs for the implementation of community projects.

5.2.2 Data collection and analysis

The five VAGs were used as strata in the sampling strategy. Proportionate stratified sampling (Stattrek, 2019) was used to determine the number of households to be sampled from each VAG. The overall proportionately stratified sample of 344 was obtained from the 3,276 households in Kaindu at 95% confidence level and with a margin of error of 5 using an online sample size calculator (Creative Research Systems, 2016). However, only 330 respondents were captured as the remaining 14 refused to participate.

Mixed methods (Creswell, 2014) were applied to collect both quantitative and qualitative data from government department heads, local traditional leaders and ordinary community members. A household survey, was conducted to capture levels of satisfaction regarding the local governance of natural resources by the KNRT board among community members. Data were captured using a semi-structured governance dashboard questionnaire that was programmed onto the Open Data Kit$^®$ (ODK). To ensure a paperless, and expedited data collection process, data were collected using computer tablets. The main interest group sampled in the study comprised household heads (husbands, wives or singles) who were categorised as adults i.e. >18 years old (see appendix VII). One focus group discussion (FGD) comprising

8 to 12 discussants was held with ordinary community members who included women, men and youths in each of the five VAGs. The age of participants ranged from 18 to 69 years and were farmers, local traditional leaders (headmen) and civil servants (see appendix VII). Other qualitative data were captured through 17 key informant interviews (KIIs) with the heads of various stakeholder organisations or delegated participants. Quantitative data was analysed through descriptive statistics using the IBM SPSS 20 software package. Thematic content analysis was used to code and draw out themes from the qualitative data (Braun and Clarke, 2006).

5.3 Results and discussion

5.3.1 Environmental and institutional history of the KCC

The governance of natural resources in the area has undergone a complex evolution over the last 200 years. The results from the FGDs, interviews and literature reveal three distinct eras regarding NRG: the pre-colonial, colonial and post-independence periods (Table 5-3). The area was originally sparsely populated and had abundant wildlife, forest and fish resources. The Ila inhabited the area and governed natural resources through their local institutions; values, norms, rights and conventions that formed a sustainable resource management regime. During the colonial time protected areas were established and the Ila were dispossessed of their land.

The establishment of "structural scarcities" of access to land and other natural resources led to increased conflicts between the colonial government and local people. Much of the colonial statutory law and protected area management system was maintained by the central government, which created more protected areas, creating increasing pressures on the remaining resources. Population growth and influx coupled with bad governance and increased resource degradation in the area. The local informal NRG institutions were weakened by the introduction of more formal institutions by state and donor/NGO ambitions, and the in-migration of people from a variety of ethnic groups with different perceptions of resource use and management. Table 5-3 presents the key aspects of NRG during each era up to the establishment of the KCC.

Table 5-3: The history of the Kaindu chiefdom and establishment of the Kaindu Community Conservancy

TIME PERIOD	KEY FEATURES OF NATURAL RESOURCE GOVERNANCE
PRE-COLONIAL ERA (BEFORE 1924)	• **18th-19th century:** Migration of the Kaonde tribe led by chief Kaindu from the Luba-Lunda Kingdom to Kasempa District. • NRG done by the chiefs and community with strong traditional values and equitable sharing of resources (Kowero, 2004). • Low population density, limited technology and knowledge entailed limited degradation of natural resources (Kowero, 2004).
COLONIAL ERA (1924-1964)	• **1940s and early 1950s:** Colonial law allocates the Kaindu area British veterans of the Second World War for farming i.e. 'The Big Concession' farming block (Chu and Phiri, 2015). • NRG results in the displacement of local communities from the area and the creation of KNP. • Functions of local traditional leaders limited to issuing of licences and collection of fees and royalties which were paid into the district treasury at the discretion of the governor (Mfune, 2012).
POST-INDEPENDENCE (AFTER 1964)	• **1964-1971:** Kaindu, including the big concession area were categorised as Kalwanyembe GMA. • **1972:** The state reclassified Kalwanyembe GMA as customary land and allocated it to Chief Kaindu to establish his chiefdom. • The community had access to natural resources as prescribed in the Zambian statutory and customary laws (GRZ, 1994). • **1973:** The state becomes the sole agent in NRG to protect natural resources by changes in legislation in 1965 and 1973. • **1975:** Freehold of land was changed to leasehold through the Conversion of Titles Act of 1975 (Mulolwa, 2002). • Chiefs could no longer receive royalties from natural resources because they were vested in the Republican president (Mulolwa, 2002). • **1990s - 2003**: Leasing of portions of the land to investors intensifies with the rampant displacement of community • **2004**: Kaindu community establishes a board of trustees and applies for purchase of land • KNRT reserves 13,900ha as a community conservancy

5.3.2 Evaluation of the quality of natural resource management

This section presents and discusses local people's assessments of the current governance quality and its effect on the land, wildlife, forests and fisheries resources in the established protected areas as has come out through survey and interviews.

5.3.2.1 Land

The geographical boundaries of the community-controlled area are not well known to most community members but known only by the elite members of the KNRT board. Most of the participants in the FGDs

referred to frequent conflicts with private commercial farms that surround the chiefdom regarding issues, such as the ownership and boundaries of land resources, access to non-timber forest products (NTFP), such as thatch, mushrooms and wild fruits, fishing ground rights and in some cases to wildlife.

The members of the FGD claimed that portions of the land initially allocated to them have also been sold to private farming enterprises, such as Amatheon Agri Limited and Simba Milling Limited between 2010 and 2013 by Chief Kaindu (see also Chu & Phiri, 2015). The sales of these lands have turned most of the Kaonde settlers into squatters on the land they perceived to be theirs (Mushinge & Mwando, 2016; Silima, 2018). There is a lack of transparency and strong suspicions of corruption in the sales of land by the chief as the community has not been involved at any stage of the land transaction processes (Mushinge & Mwando, 2016). Informal estimates by some community members asserted that about 5,000 hectares of Kaindu land had been sold illegally.

5.3.2.2 Wildlife stocks

Most people (86%) perceived that wildlife stocks are increasing (Table 5-4). They related their answer and their experiences to the rising occurrences of human-wildlife conflicts, which also can imply that there are increased human-wildlife interactions as the wildlife stocks and/or human population are increasing. The views of local people on the increasing wildlife stocks are supported by both the DNPW (2013) and a study by Mkanda et al. (2018), who investigated the population trends of "key" wildlife species (elephant, buffalo, puku and Red lechwe) in KNP, which is the pool for the wildlife populations in the community conservancy. However, they attributed the increase in wildlife populations to increased funding for resource protection in the Kafue programme, which ran from 2005-2011 in KNP. They fear that the consecutive reduction in funding for resource protection and challenges in co-management and governance in the areas surrounding KNP may threaten future wildlife stocks.

With the assistance of TNC, the community through the KNRT board has established a Resource Protection Unit (RPU) of community scouts, trained by the DNPW to curb poaching, illegal fishing and extraction of forest products (see Appendices IV, V and I). However, the community will only sustain its support for such undertakings if it receives increased benefits from the community conservancy. A headman participating in the focus group at Kafwikamo stated:

> *"We do not get any benefits from wildlife, only problems, because they destroy our crops … if we were getting enough money from the conservancy to buy food and pay school fees we would be in the forefront of taking care of our wildlife".*

5.3.2.3 Poaching

As the formal organisation charged with wildlife governance, the KNRT appears to have led to a reduction in incidences of poaching since it was established. This is according to 60% of the respondents (Table 5-4). From the survey results, it seems these positive effects are due to the anti-poaching efforts by the RPU and the resultant fear of being arrested, according to 52% of the respondents. This view is strengthened by the intermittent increases in poaching when RPU activities reduced. The FGD participants in Kamilambo and Mpusu VAGs respectively asserted the following:

"The village scouts have reduced poaching because they actively patrol the area and enforce wildlife rules and regulations".

"People engage in poaching because there are no other livelihood options".

5.3.2.4 Forest stocks and deforestation

The deforestation rates in Zambia have been steadily rising and at 1.5% per year, it is regarded as one of the highest in the world (Henry et al., 2011). Chidumayo (2012) estimated the deforestation rate in Central Province to be 0.65 % per year. In the community conservancy, indications of massive deforestation are observable. The perceptions of local people concur with this. The study indicates that 62% of the respondents independently perceived that there was a declining trend of forest cover in the area (Table 5-4). The key informant from the forestry department stated that:

"KCC is one of the areas where there is a lot of deforestation due to issues like charcoal production and farming activities … most of the charcoal sold in Mumbwa comes from the KCC".

In so far as deforestation is concerned the FGD participants in Kafwikamo VAG stressed the following:

"Uncontrolled charcoal production has disturbed the rainfall pattern … there is a need to employ forest scouts to regulate the cutting down of trees".

The Forest Department (FD) has limited capacity to effectively manage the forests in KCC. Besides KCC, the FD office in Mumbwa has the responsibility to protect an area of more than 10,000 km^2 with only four ill-equipped technical officers. There has been little community engagement by the FD due to their limited resources and capacity in executing their duties. Joint forestry management pilot schemes aimed at increasing the community benefits from forests were still in the planning phase at the time of the study. Further, there was no evidence of any working relationship between the FD and the RPU.

5.3.2.5 Fish stocks and illegal fishing

Sixty-five percent of respondents regarded the fish stocks as declining (Table 5-4). Concerning fishing, about 43% reported no changes in levels of illegal fishing since the KNRT was launched, 30% claimed that there was a decline and 27% reported an increase. The estimated fish catch in the Kafue River declined from around 8,000 metric tons in the year 2005 to 4,000 metric tons in 2015 and it continues to decline (Kefi & Mofya-Mukuka, 2015). They attribute this decline to weak institutional arrangements in general, unclear objectives of fisheries management, weak enforcement of fisheries regulations, conflicting legal frameworks and climate change.

The situation was also described by the fisheries technical officer at Mumbwa as follows:

> *"In the past, the people could fish all along the stretch of the river, but when the land was given to the private game ranchers, the fishers were prohibited from fishing on the stretch of the river bordering the ranches … this increased the fishing pressure on the stretch of the river under the community".*

Regarding illegal fishing, the FGD in Kalwanyembe VAG emphasised that:

> *"Royal Kafue and other neighbouring game ranches have overstretched their control of fisheries by prohibiting community members from fishing in the river which they do not own".*

> *"The investors confiscate our fishing nets and boats when we go fishing … it is not their job".*

Limited staff, lack of operational funds and patrol vehicles constrain the Department of Fisheries (DoF) from preventing the use of illegal fishing gear, enforcing the closed season, controlling the fishing effort and protecting the fish-breeding area. DoF has engaged the community through sensitisation campaigns and training regarding the fishing ban and the benefits of using the right kind of fishing gear, but apparently with limited success.

The RPU are the *de facto* enforcers of government regulations especially during the closed fishing season. The unit has the mandate to apprehend suspects and surrender them to DNPW and DoF for prosecution and confiscation of illegal fishing gear. However, the RPU still faces major challenges, such as limited firearms, uniforms, radio equipment, patrol vehicles and boats to effectively fulfil their resource protection mandate.

Table 5-4: Trends in natural resources stocks and their associated illegal harvest after the launch of the KNRT in Kaindu, Zambia 2016.

Attribute	Wildlife Stocks	Poaching	Forest abundance	Illegal logging	Fish stocks	Illegal fishing
	Responses (%)					
Increasing	86	6	30	55	26	26
The same	2	34	8	28	10	44
Gone down	12	60	62	17	64	30
Total	100	100	100	100	100	100

5.3.3 Evaluation of the robustness of natural resources institutions

The results from the FGDs and dashboard survey based on Ostrom's design principles are presented in this section. The section summarises the main findings regarding the adherence to Ostrom's design principles by the government departments, traditional authority and the KNRT.

5.3.3.1 Principle 1: Well-defined boundaries

User boundaries: There are weak and unclear resource user boundaries as the headmen are empowered to allocate land for settlement and farming to anyone they deem fit. There are no written rules on these processes. The lack of formal rules in land allocation has led to allegations of corruption in some cases. Consequently, there is a general mistrust and conflicts over land (and trees for charcoal) in Kaindu chiefdom and access to fishing grounds in the KCC among the indigenous inhabitants and in-migrants, including commercial companies that acquire land directly from Chief Kaindu. Natural resource managers lack the resources to ensure that only licensed members have access to fishing grounds. The indigenous inhabitants accuse the in-migrants of degrading the resources by not abiding by cultural norms and conventions of NRG. Well defined rules can prevent strangers such as in-migrants from overusing a resource and can also help to avert free-riding among the actors with access to resources (Ostrom, 2009).

Resource boundaries: There is a lack of clearly stated rules on the boundaries of resources that can and cannot be accessed and withdrawn by community members. Some villagers have defied the KNRT board directive to leave the wildlife habitats in the community conservancy area. This situation has not only exacerbated conflict between the two parties but has led to increased cases of human-wildlife conflict and some poaching. There is continued cutting down of trees for charcoal production and to clear the area for agriculture. Cases of conflict over access to fishing grounds between the commercial game

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ranchers and the community and the destruction of field crops by elephants and hippos are common occurrences. The conflict over resource boundaries could have been accounted for if members of the community had also been involved in the drawing of boundaries (Ostrom, 2009).

5.3.3.2 Principle 2: Congruence between appropriation and provision rules and local conditions

This principle requires that the appropriation and provision rules (the rules that restrict time, place, technology and quantity of resource units) must conform to local conditions (Cox et al., 2010). In addition, the benefits obtained by each actor from the CPRs as determined by the appropriation rules, must be proportional to the costs incurred by each actor as determined by the provision rules.

Rules fit the local context: There is a mismatch between the appropriation rules and the social and environmental conditions in KCC. Decisions made by the most influential actors are imposed on the community. The government, the chief and the commercial game ranchers and farmers do not coordinate or harmonise their engagements with the community. For instance, the game ranchers have imposed a private "fishing ban" on the stretch of the Kafue River bordering their farms without any *de jure* statutory or customary authority. Consequently, the Kaindu community has rejected this action by the game ranchers and continues to fish in the area. Thus the remaining fish stocks have come under increased extraction pressure. There will often be negative consequences when externally imposed rules do not match local customs and livelihood strategies (Cox et al., 2010).

Appropriation and provision: Costs and benefits are not proportionately distributed among actors, indicating that appropriation and provision rules are not congruent. There is a tendency of benefits accruing to a few powerful actors, while the costs are often internalised by poor people with limited ability to diversify and avoid costs of living close to the protected areas, such as in the case of increased human-wildlife conflicts. To be effective and derive socially acceptable outcomes, the KNRT must develop the ability to accommodate the multiple interests, expectations and values of community members (Gruber, 2010). Weak relational social capital, elite capture, divergent expectations and experiences, and weak policy guidelines are serious challenges that constrain the development of an effective and legitimate benefit-sharing mechanism in many CBNRM institutions in Africa (Mosimane & Silva, 2015).

5.3.3.3 Principle 3: Collective-choice arrangements

Collective choice arrangements within the Kaindu community are lacking. The rules regarding the utilisation of CPRs are mostly dictated to the community by government officers and the chief. The members of the community perceive their chief and the KNRT board as a corrupt, dictatorial and suppressive regime that lacks legitimacy and that stifles their viewpoints and claims. The KNRT board is supposed to make decisions on behalf of the Kaindu community in a representative democracy arrangement. However, this is a prominent cause of elite capture of benefits and abrogates the third design principle (Ostrom, 2009). The KNRT has minimal participation in the decisions regarding the kind of resources to harvest and in what quantity, but relies on decisions made by technocrats from DNPW, FD and DoF. As such, the community members do not perceive the KNRT board as a legitimate body that can provide them with tangible benefits from the CPRs.

5.3.3.4 Principle 3: Monitoring

Monitoring users: This principle presumes the presence of legitimate monitors. There is limited presence of government or RPU monitors to adequately regulate the number of users of land, forests and fisheries. Monitoring of agricultural activities and forest utilisation and their impact on aspects like soil quality and forest cover is practically non-existent. The fishery in KCC has regressed into an open-access system with little regulation of the number and type of users by DoF. The users who do not comply with the rules are rendered invisible to the community, stifling the mechanisms for effective enforcement of rules (see also Cox et al., 2010).

Monitoring the resource: This principle implies that the monitors should be members of the community or at least be accountable to the community. They should be legitimate actors. The results indicated that there is little interaction between the community and those designated to monitor the resource, i.e. the government departments and the KNRT board. This constrains accountability to the community by the monitors. The lack of information on the condition of the CPRs also constrains the adaptation of effective appropriation and provision rules for sustainable resource utilisation (see also Cox et al., 2010).

5.3.3.5 Principle 5: Graduated sanctions

The presence of a set of sanctions that progress incrementally with repetitive offences is vital in the governance of local CPRs (Ostrom, 1990). Both the customary and statutory systems impose graduated sanctions on offenders. The FGDs revealed that there were repeated offenders who had been either fined for unlicensed charcoal production or fishing, whose illegal stock had been confiscated by government officials, or those who were given jail sentences for elephant poaching. Essentially, sanctions are in

theory supposed to be so costly in relation to any expected benefit that people will not break the law (Ostrom, 2009), i.e. the high ratio of costs over returns. However, sanction structures in KCC are weak and not strictly implemented, and consequently sanctions are often ineffective to positively contribute to resource protection.

5.3.3.6 Principle 6: Conflict resolution mechanisms

There are few local, legitimate, rapid and low-cost arenas for conflict resolution as prescribed by Ostrom (1990). Conflict resolution processes are carried out at different levels in the area, where minor cases, such as destruction of crops by livestock are settled by the traditional authority using customary laws and norms, while serious conflicts, such as land ownership disputes, are resolved through litigation mechanisms in the courts of law via statutory law. A case of conflict involving the alleged sale of 20,000 hectares by chief Kaindu is before the national courts of law awaiting to be processed (Coulibaly, 2017). The government and the traditional authority are in the process of resolving conflicts over a proposed fence for wildlife and access to the fishing grounds on the Kafue River between the KNRT, Royal Kafue and Mushingashi Game Ranch (a large-scale farming enterprise bordering KCC) (Phiri, 2019). The community expressed a lack of trust in the chief and local government to resolve their conflicts with the commercial farmers adjoining KCC.

5.3.3.7 Principle 7: Minimal recognition of rights

This principle implies that the external government agencies must recognise the rights of the community to control assets and make and enforce their own rules (Ostrom, 2009). There is a localised top-down structure of governance where the government departments, the chief and the KNRT board decide what the management objectives for the conservancy are. Community participation is typically passive and is limited to providing information to external researchers at best (Pretty, 1995). Despite the conservancy being communally owned, the devolution of decision-making power to the community has not happened.

5.3.3.8 Principle 8: Nested enterprises

Despite the KNRT being a community initiative and nested in a larger NRG system, it is still subject to the top-down NRG system at work in all protected areas in Zambia. This is because the KNRT has no autonomy from the Kaindu Royal Establishment (KRE) which in turn is subject to the government, according to the Zambian constitution (GRZ, 1994). The authoritative government officers, especially from the DNPW, hand down rules that they believe are best for local institutions and consequently weaken the local NRG institutions (Ostrom, 2009). The KNRT is nested in a national CBNRM policy framework that has been historically criticised for weak governance and a lack of accountability to people

due to the nationalisation of the wildlife resource (Child & Bergstrøm, 2001). The ineffectiveness of government departments and the corruption of traditional and state authorities erode the fabric of rural societies necessary for the success of CBNRM institutions and constrain the emergence of local jurisdiction over CPRs (Turner, 2004; Nelson & Agrawal, 2008).

5.3.3.9 Summary

The robustness of the NRG institutions in Kaindu chiefdom has many constraints and challenges. Both the user and resource boundaries are unclear, and this has resulted in poaching, illegal logging and illegal fishing and numerous conflicts regarding access to land, forests and fishing grounds among the different actors. Additionally, there is no congruence between appropriation and provision rules and the local context. This is evidenced by the limited coordination among actors and the disproportionate allocation of costs and benefits among actors. Consequently, collective choice arrangements are highly constrained, and the monitoring of resources and resource users is hampered. The graduated sanctions prescribed by statutory law are not highly effective, as evidenced by the many cases of repeat offenders. The conflict resolution process is lethargic and despite being nested in higher NRG structures, the rights of the community over the natural resources in their locality are not adequately recognised by the more powerful actors such as the government and private firms.

5.3.4 Evaluation of the quality of the process of natural resources governance

The findings from the FGDs and governance dashboard survey are presented in Table 5-5, regarding the quality of the CBNRM governance, according to the IUCN/UNDP principles of good governance. The KNRT lacks a clearly stated strategic vision apart from the objectives outlined in the KNRT trust deed. Annual plans are made by the KNRT board without the participation, engagement or sensitisation of the community, partly due to the limited capacity of the KNRT and/or deliberate withholding of information from the community by the KNRT board. Regardless of the reason for this, it has led to a lack of consensus in the decision-making process and the elite capture of benefits by the board and the chief. Muyengwa and Child (2017) noted that when the policy is weak, the elite are empowered at the expense of the community, which may again lead to unintended outcomes. Consequentially, some individuals in the Kaindu community engage in poaching, illegal logging and charcoal production and illegal fishing to earn a living.

Table 5-5: Perceptions of the quality of the CBNRM governance process in Kaindu, Zambia, 2016.

UNDP Basic principles of good governance	Observations	Key responses from FGDs	Survey results
Public participation: **Consensus orientation:**	Corruption in traditional leadership. No regular meetings between the KNRT board and the community. Dictatorial decision-making by the chief, palace committee and KNRT board.	*"When plans are being made or decisions being taken by the KNRT board, the meeting takes place in Kalwanyembe without inviting us and we only hear about what was resolved later".*	More than 90% (n=290) of the respondents did not attend the previous year's AGM because they did not know when or where it was taking place.
Strategic vision:	KNRT leaders hide information for their personal gain and perpetuate elite capture by the KNRT board.	*"For the KNRT it is a means of livelihood ... they know that if they tell the community the vision then they will not be able to secretly capture the money from wildlife".*	71% (n=266) were not aware if the KNRT board had a management or even a land-use plan.
Responsiveness: **Effectiveness and efficiency:**	The community did not receive any tangible benefits from the KNRT. Limited livelihood options from KNRT are considered as evidence of ineffective management.	*"KNRT cannot be performing well because the community has very few sources of income so sometimes they go fishing in the breeding area causing the plans made to conserve fish not to be realised".*	91% (n=290) of the households indicated that they do not receive any direct benefits from the wildlife, 58% (n=108) that they receive non-financial benefits and 36% (n=108) that they received meat.
Accountability: **Transparency:**	KNRT board has never called for any financial meetings with the community. No proper record keeping within the KNRT, no qualified bookkeeper and no written record of accounts. Knowledge of the system of natural resources management at play in KNRT is a privilege of the KNRT board and VAG committee members and not the community.	*"Money amounting to ZMW10, 000 was allocated to build the mother's shelter at the clinic but when you inspect the works done only about ZMW4,000 was spent".*	97% (n=290) were not given information about the source and amount of money earned by the KNRT in the previous year, 98% (n=290) did not know how the money earned the previous year was spent and 99% (n=290) were not given any progress report of the KNRT projects.
Equity: **Rule of law:**	No equity and upholding of the rule of law in the way the KNRT board exercised authority and responsibility. KNRT board and Kaindu palace committee allegedly suppressed of freedom of speech. Antagonism between the KNRT board and some VAGs and intimidation of the latter by the former.	*"Things are not fair because decisions and benefits are one-sided favouring the KNRT board. We have rights, but we do not exercise them because we are not given an audience with the KNRT. They just exclude themselves from the community".*	37% (n=107) believed they had a right to vote a member into the KNRT board, 15% (n=107) that they had the right to amend the KNRT constitution and 4% (n=107) that they had a right to demand for a meeting with the KNRT board.

The KNRT board is not responsive to the community and does not offer any platform for addressing criticisms. In addition, transparency and accountability are lacking because there is no monitoring and virtually no auditing of financial accounts and the KNRT board does not hold financial meetings with the community. This lack of transparency does not permit participation, conflict resolution, and it promotes ignorance and shields corruption (Petursson & Vedeld, 2017; Milupi et al., 2017). The community is left to speculate as to how much of the resources are harvested and conserved. The amount of money realised by the KNRT and how it is disbursed is largely unknown. The KNRT board needs to improve the quality of financial record keeping and dissemination to the community to avoid excessively high expectations from the community.

The KCC residents perceive that their rights are not recognised. They reported a lack of equity in the decision-making process and attributed this to a lack of adherence to the constitution by the KNRT board. They asserted that decisions were one-sided favouring elites (members of the KNRT board and the KRE) without due consideration of the rule of law. The livelihoods of community members are adversely affected; there is no compensation of individual households who bear the costs or ecosystems disservices, such as human-wildlife conflicts (e.g., livestock attacks and crop damage by wildlife) due to the community conservancy. Such conditions compromise the people's decency and dignity (Borrini-Feyerabend et al., 2013). Community members have an acrimonious attitude towards the KNRT board.

5.4 Conclusions and recommendations

This chapter sought to assess whether the KNRT and other local NRG institutions were robust, effective and adaptive enough to provide sustained quality governance in the management of land, wildlife, forests and fisheries. The local NRG system in KCC has undergone a complex evolution from informal institutions under traditional systems in pre-colonial times through the colonial and finally to post-independence national government regimes. The KNRT was established to upgrade the lives of people living in Kaindu chiefdom through sustainable utilisation of natural resources in the area by providing benefits. However, the establishment of the KCC has not added meaningful benefits to the community in the area. In-migration, displacement of inhabitants, exclusion from natural resources, unclear land allocation procedures and corruption still impede effective, efficient and legitimate NRG. The KNRT has instead become a divisive institution splitting the community into two groups of individuals, i.e. the elite and the rest.

Overall, the KCC residents as resource users do not design or enforce their own rules. The government departments and traditional authorities that enforce the rules are not accountable to the community. The process of enforcing graduated sanctions through the courts is bureaucratic while the customary

laws are too feeble to deter offenders, and do not clearly define resource users and their boundaries. Subsequently, the costs and benefits are disproportionate and negatively affect collective action and monitoring. Further, despite the local NRG institutions being in multiple layers of nested enterprises, e.g. regarding wildlife and forests where VAGs are nested in the CRB, the limited recognition of community rights by the government has resulted in weak institutions.

The lack of a platform for public participation prevents consensual or participatory decision-making within the community. The KNRT board has not created and sustained any collective-choice arrangements that define clear geographical and resource user boundaries. Neither does the community design its own rules nor enforce them through graduated sanctions. The KNRT board cannot monitor the CPRs and has only had small pockets of success in monitoring resource users under its RPU. The failure by the KNRT board to outline and disseminate a clear strategic vision of natural resource governance to the community has contributed to the acrimony between the two parties. Despite operating under layers of multiple NRG organisations, such as government departments and NGOs, accountability in the KNRT is practically non-existent. Monitoring by these partner institutions is also limited. The KNRT board is not transparent in its operations, lacks equity in the decisions made and has questionable legitimacy regarding adhering to the rule of law.

There is therefore an urgent need to establish well-delineated boundaries which the community and other private game ranchers can easily identify with, take part in and respect. Resource user boundaries must be co-developed and be enforced so that in-migrants and other outsiders do not expropriate benefits. The capacity of the KNRT needs to be built to ensure equity, transparency, fairness, effectiveness and efficiency in decision-making regarding resource management and delivery of benefits.

Despite this situation, the KNRT remains the primary and basic organisation for improved CBNRM. On paper, this model of CBNRM accords comparatively more authority over natural resources to the Kaindu community than to a purely state-centric CBNRM model. It is a potential conduit for increased community participation, ownership, control and benefits from wildlife, forests and fisheries resources in Kaindu. It is for this reason that a comparative analysis of the two systems of NRG is presented in chapter 6. This is necessary to draw out the strengths and weaknesses of each model and would essentially drive the development of better NRG models for protected areas in Zambia.

References

Andrade, G. S., & Rhodes, J. R. (2012). Protected areas in local communities: An inevitable partnership towards successful conservation strategies? *Ecology and Society, 17*(4), 14. doi:10.575/ES-05216-170414

Barrow, E., & Murphree, M. W. (2001). Community conservation: from concept to practice. In D. Hulme, & M. W. Murphree, *African Wildlife and Livelihoods* (pp. 24-37). Oxford: James Currey.

Borrini-Feyerabend, G., Dudley, N., Jaeger, T., Lassen, B., Broome, N. P., Phillips, A., & Sandwith, T. (2013). *Governance of Protected Areas: From Understanding to Action. Best Practice Protected Area Guidelines Series No. 20.* Gland: IUCN.

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology, 3*, 86-93.

Chidumayo, E. N. (2012). *Development of reference emission levels for Zambia.* Lusaka: FAO.

Child, B. (2009). Private conservation in Southern Africa: Practice and emerging principles. In H. Suich, B. Child, & A. Spenceley, *Evolution and innovation in wildlife conservation: Parks and game ranches to transfrontier conservation areas* (pp. 103-112). London: Earthscan.

Child, B., & Barnes, G. (2010). The conceptual evolution and practice of community-based natural resource management in southern Africa: past, present and future. *Environmental Conservation, 37*, 283-295.

Child, B., & Bergstrøm, C. (2001). Community Wildlife Management in Zambia: Testing Indicators of Sustainable Use in a Case Study of South Luangwa. In B. G. Ousmane, B. Child, C. Bergstrøm, C. v. Dam, I. Bryceson, J. Ahmed,. T. L. Price, *Lessons learned: Case studies in sustainable use* (pp. 13-47). Gland: IUCN.

Child, B., & Wojcik, D. (2014). *Developing Capacity for Community Governance of Natural Resources Theory and Practice.* Bloomington: AuthorHouse.

Chu, J., & Phiri, D. (2015). *Large-scale Land Acquisitions in Zambia: Evidence to inform policy.* Belville: Institute of Poverty, Land and Agrarian Studies, University of the Western Cape, Faculty of Economic Management.

Coulibaly, J. (2017, June 4). *Times of Zambia*. Retrieved from www.timesofzambia.co.zm: http://www.times.co.zm/?p=95790

Cox, M., Arnold, G., & Villamayor Tomas, S. (2010). A Review of Design Principles for Community-based Natural Resource Management. *Ecology and Society, 15*(4), 38. Retrieved from http://www.ecologyandsociety.org/vol15/iss4/art38/

Creative Research Systems. (2016, January 15). Retrieved January 15, 2016, from www.surveysystem.com

Creswell, J. W. (2014). *Reserach Design: Qualitative, quantitative and mixed methods* (4th ed.). Thousand Oaks: SAGE Publications Inc.

CSO. (2012). *2010 Census of Population and Housing: National Analytical Report.* Lusaka: Central Statistical Office.

Da Silva, M. X., Paviolo, A., Tambosi, L. R., & Pardini, R. (2018). Effectiveness of protected areas for biodiversity conservation: Mammal occupancy patterns in Iguacu National Park, Brazil. *Journal for Nature Conservation, 41*, 51-62.

DNPW. (2013). *Kafue National Park: General Management Plan.* Lusaka: Department of National Parks and Wildlife, Ministry of Tourism and Arts.

DNPW. (2013b). *Mumbwa Game Management Area: General Management Plan (2013-2023).* Lusaka: Department of National Parks and Wildlife, Ministry of Tourism and Arts.

DNPW. (2013c). *Lunga-Luswishi Game Management Area: General Management Plan (2013-2023).* Lusaka: Department of National Parks and Wildlife, Ministry of Tourism and Arts.

Eagles, P. F., Romagosa, F., Buteau-Duitschaever, W. C., Havitz, M., Glover, T. D., & McCutcheon, B. (2013). Good governance in protected areas: an evaluation of stakeholders' perceptions in British Columbia and Ontarion Provincial Parks. *Journal of Sustainable Tourism, 21*, 60-79.

Eklund, J., & Cabeza, M. (2016). Quality of governance and effectiveness of protetcted areas: Crucial concepts for conservation planning. *Annals of the New York Academy of Sciences, 1399*, 27-41.

Graham, J., Amos, B., & Plumptre, T. (2003). Governance principles for protected areas in the 21st century. *The Fifth World Parks Congress.* Durban: Institute on Governance.

Gruber, J. S. (2010). Key Principles of Community-Based Natural Resource Management: A synthesis and interpretation of identified effective approaches for managing the commons. *Environmental Management, 45*, 52-66.

GRZ. (1994). The Chiefs Act. *The Laws of Zambia*. Lusaka, Zambia: Government Printers, Government of the Republic of Zambia.

GRZ. (2002). The National Decentralisation Policy: Towards Empowering the People. Lusaka, Zambia: Office of the President, Cabinet Office, Government of the Republic of Zambia.

GRZ. (2015). The Zambia Wildlife Act, 2015. Lusaka, Zambia: Government Printers.

Henry, M., Maniatis, D., Huberman, D., & Valentini, R. (2011). Implementation of REDD+ in Sub-Saharan Africa: State of knowledge, challenges and opportunities. *Environment and Development Economics, 16*, 381-404.

Hutton, J., Adams, W. M., & Murombedzi, J. C. (2005). Back to Barriers? Changing Narratives in Biodiversity Conservation. *Forum for Development Studies, 32*, 341-370.

Kefi, A. S., & Mofya-Mukuka, R. (2015). *The Fisheries Sector in Zambia: Status, Management and Challenges.* Lusaka: Indaba Agriculture Policy Research Institute (IAPRI).

Kowero, G. (2004). The Influence of Major Sectoral Policies on Forestry in Southern Africa: An Overview. *CIFOR Newsletter (Special Issue).*

Malenga, G. (2004). *Audit of eight community resource boards in Mumbwa, Namwala and Kafue Flats Game management Areas 2000-2004 .* Lusaka: CBNRM-Mumbwa Project (Danida).

Mbewe, B., Makota, C., Hachileka, E., Mwitwa , J., Chundama, M., & Nanchengwa, M. (2005). *Community-based natural resource management in Zambia: status report.* Lusaka: WWF.

Mfune, O., (2012). *From fortresses to sustainable development: the changing face of environmental conservation in Africa, the case of Zambia.* Glasgow: Glasgow Thesis Publishers.

Millenium Ecosystem Assessment. (2005). *Ecosysytems and human wellbeing: Synthesis.* Washington DC: Island Press.

Milupi, I. D., Sommers, M. J., & Ferguson, W. (2017). A Review of Community-Based Natural Resource Management. *Applied Ecology and Environmental Research, 15*, 1121-1143.

Mkanda, F. X., Munthali, S., Milanzi, J., Chifunte, C., Kaumba, C., Muswema, N., Mwakifwamba, A. (2018). The Giant Sleeps Again? - Resource, Protection and Tourism of Kafue National Park, Zambia. *PARKS, 24.1*, 23-34.

MLNR. (2004). *Trust Deed*. Lusaka, Zambia: Ministry of Lands and Natural Resources, Government of the Republic of Zambia.

Mogende, E., & Kolawole, O. (2016). Dynamics of local governance in natural resource conservation in the Okanvango Delta, Botswana. *Natural Resources Forum, 40*, 93-102.

Mosimane, A. W., & Silva, J. A. (2015). Local Governance Institutions, CBNRM and Benefit-sharing Systems in Namibian Conservancies. *Journal of Sustainable Development, 8*, 99-112.

Mulolwa, A. (2002). *Integrated Land Delivery: Towards Improving Land Administration in Zambia.* Delft: Delft University Press.

Mushinge, A., & Mwando, S. (2016, May 20). Implications of Pro-market Land Policies on Customary Land Users in Zambia: A Case of Large-scale Land Investments in Kaindu Chiefdom, Mumbwa District. Munich, Bavaria, Germany. Retrieved September 17, 2018, from Researchgate.net: http://dx.doi.org/10.11114/ijsss.v4i8.1585

Muyengwa, S., & Child, B. (2017). Re-Assertion of Elite Control in Masoka's Wildlife Prgoramme, Zimbabwe. *Journal of Sustainable Development, 10*(6), 28-40.

Nelson, F., & Agrawal, A. (2008). Patronage or participation? Community-based Natural Resource Management Reform in Southern Africa. *Development and Change, 39*, 557-585.

Nkhata, B. A., & Breen, C. M. (2010). Performance of community-based natural resource governance for the Kafue Flats (Zambia). *Environmental Conservation, 37*, 296-302.

Ostrom, E. (1990). *Governing the commons: The evolution of institutions for collective action.* Cambridge: Cambridge University Press.

Ostrom, E. (2009). Design Principles of Robust Property-Rights Institutions: What have we learned? In G. K. Ingram, & Y. H. Hong (Ed.), *Property Rights and Land Policies* (pp. 25-51). Cambridge, MA: Lincoln Institute of Land Policy.

Petursson, J. G., & Vedeld, P. (2017). Rhetoric and reality in protected area governance. *Ecological Economics, 133*, 166-177.

Phiri, C. (2019, June 12). *Zambia Reports*. Retrieved June 21, 2019, from zambiareports.com: https://zambiareports.com/2019/06/12/kashokoto-creates-400-jobs-kaindu-chiefdom/chief-kaindu/

Pretty, J. (1995). *Regenerating Agriculture: Politics and Practice for Sustainability and Self-reliance.* London: Earthscan.

Sitas, N. (2014). *Opportunities and challenges for mainstreaming ecosystem services in decision-making.* Stellenbosch: Stellenbosch University.

Silima, D. (2018, April 6). *theagricoopnews*. Retrieved from The Agri-coop news: http://agricoopnews.com/kaindu-cooperative-in-limbo/

Stattrek. (2019, June 12). *Stat Trek Teach Yourself Statistics: Sample size: Stratified samples*. Retrieved June 11, 2019, from Stat Trek Teach Yourself Statistics: https://stattrek.com/sample-size/stratified-sample.aspx

TNC. (2015). *Baseline Socio-economic Assessment for the Kaindu Community near Kafue National Park in Zambia.* Lusaka: The Nature Conservancy.

Turner, S. (2004). A crisis in CBNRM: Affirming the commons in southern Africa. *Paper presented at the tenth IASCP Conference.* Oaxaca: Centre for International Cooperation Vrije Universiteit Amsterdam.

UNDP. (1997). *Governance for sustainable Human Development.* New York: UNDP.

Van der Dium, R., Lamers, M., & Van Wijk, J. (2015). *Institutional Arrangements for Conservation, Development and Tourism in Eastern and Southern Africa: A Dynamic perspective.* Dordrecht: Springer.

Vedeld, P. (2002). The Process of Institutional Building to Facilitate Local Biodiversity Management. *NORAGRIC Working paper No. 24*, 32.

Yeboah-Assiamah, E., Muller, K., & Domfeh, A. K. (2016). Institutional assessment in natural resource governance. *Forest Policy and Economics, 74*, 1-12.

CHAPTER SIX : Collaborative natural resource governance quality: A comparative analysis of two protected areas[3]

Abstract

The effectiveness of multi-actor natural resource governance models depends on the quality of interaction between the different actors. In Zambia, the Community-Based Natural Resource Management (CBNRM) model operates both as part of the state-centric top-down management approaches in national park buffer zones and as community-led initiatives in community-owned protected areas. Applying a mixed-methods research approach, the Environmental Governance Systems framework is applied to compare how interactions among and between political, economic and civil society actors influence resource use and the state of resources in the state-led Namwala Game Management Area (Kaingu) and the Kaindu Community Conservancy. Results show limited communication, cooperation and coordination among the actors in both cases. The results also indicate that conflicting interests over the use of land, wildlife, forests and fisheries among actors have led to strained relationships, limited interactions and negative outcomes. There is relatively more success in terms of resource protection in Kaindu community conservancy than in Kaingu. Both protected areas exhibit a top-down structure of natural resources governance with limited community participation, poor relationships among actors, corruption, lack of transparency and low accountability. The CBNRM structures and processes need to be changed through legislative action. This entails restructuring the constitutions of the organisation responsible for CBNRM in the two cases and developing their capacities in terms of human, financial and logistical resources. The study proposes a counteractive transformative model for the mitigation of negative impacts on the state of natural resources and natural resource use.

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[3] An adapted version of this chapter has been submitted for publication in an academic journal. Therefore there is some overlap in the introduction and study site descriptions with other chapters.

6.1 Introduction

6.1.1 Background

Most of the state-centric natural resources governance (NRG) systems in Africa are premised on the fortress 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 approach assumes that humans are either uninvolved or dominant over nature and that nature should be cautiously utilised by humans with a focus on conservation (Igoe, 2004).

The fortress approach to conservation has been critiqued for its failure to deliver well on biodiversity management and even less on livelihoods and the fair distribution of local benefits. Vedeld et al. (2012) show that there are many cases where there are problems of high costs of wildlife raiding, of issuing compensation for loss of crops and land, and of compensating for reduced access to resources. There is thus a lack of compensatory measures for the costs of local people living close to the protected areas. They also indicate a general lack of productive dialogue, involvement and participation involving local communities and people. Resultant effects include considerable conflicts with local communities, with substantial local political, economic and social costs (Vedeld et al., 2012).

Many African governments find it difficult to fund the established substantial protected-area networks adequately (Lindsey et al., 2014). In developing countries, the lack of profitability of the protected areas itself, combined with state budgetary crises, have constrained the state's capacity and willingness to effectively enforce environmental protection policies, and the financial crises have also increased the motivation to extract natural resources to support economic growth (Agrawal & Lemos, 2007). Thus elements of deforestation and forest degradation, partly due to bad governance and corruption, are found even within protected areas (Petursson & Vedeld, 2017).

To achieve environmental sustainability and improved governance, several variants of CBNRM programmes have been tested by developing countries, especially in southern Africa (Cocks et al., 2001). The creation of proprietorship of local resources and devolution of choices and management to people who live with the resources, the internalisation of resource costs and benefits, and the removal of market failures were principal elements of CBNRM (Child & Barnes, 2010). However, 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

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revealing different economic and political interests, perceptions of rights and generally that CBNRM had been introduced in areas with asymmetric power relations (Dressler et al., 2010). A general lack of implementation competence underpinned by insufficient training and lack of deep understanding of CBNRM concepts eroded the confidence of the government, donors, and local communities (Child & Barnes, 2010).

6.1.2 Statement of the problem

Despite principally adopting CBNRM in the 1980s, its implementation proved challenging due to the existing heavy top-down political structures, organisations 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).

Furthermore, there are no general explicit legal mechanisms established to provide benefits or to prevent costs accruing to local communities. Weak legal mechanisms have failed to regulate the in-migration of non-local people who are attracted by the availability of bushmeat, fish and land in protected areas (see Chapter 4). The weakly enforced NRG policies are ineffective in preventing habitat losses due to land clearing for agriculture, illegal settlements and deforestation due to increased charcoal and fuel-wood production (Lindsey et al., 2014). The Department of National Parks and Wildlife (DNPW) retains most of the income from consumptive tourism and only remits 20% of the income from concession fees and 50% of animal trophy licence fees to the communities through the Community Resource Boards (CRB) (Lindsey et al., 2014). Moreover, the payments are generally not transparent, come late and are erratic. They are presented and paid as hand-outs, without showing local people that these are compensation payments made for local people to accept losses of resource access and costs accrued by living close to the protected area.

The challenges of both the fortress approach and CBNRM coupled with shifts in the distribution 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 organisations (NGOs) has facilitated the increased enrolment and cooperation of non-state actors in environmental governance (Tarrow, 2005). Agrawal and Lemos (2007) show that

diverse kinds of actors including the state, the market and the community have become necessary players in the management of a range of environmental resources.

Based on the overarching transdisciplinary (TD) approach, this chapter endeavours to bring out transformational knowledge that is essential to drive the change process from the current situation to the target situation (Sitas, 2014). This chapter addresses objective 3 of this dissertation. It presents the results of a comparative study of two different collaborative NRG governance systems aimed at linking their structures, processes and patterns of actor interactions to conservation outcomes. The chapter focuses on the levels and types of participation among state and non-state actors, what needs to be done to improve trust, commitment, shared understanding, legitimacy, immediate outcomes and face to face dialogue in the collaborative process.

6.2 Theoretical frameworks

6.2.1 The Environmental Governance Systems Framework

Environmental governance refers to the set of regulatory processes, mechanisms and organisations through which political and other actors influence environmental actions and outcomes. Governance is not the same as government. It does include actions of the state, but in addition encompasses involving actors such as private businesses and civil society through local communities, and partly through NGOs (Lemos & Agrawal 2006). Environmental governance is thus not a function of the state as a single actor. In that case it would be referred to as a 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 due to their failure to accommodate non-state actors (Newell et al, 2012).

This study applied the Environmental Governance Systems (EGS) framework (Figure 6-1), developed by Vatn (2015) to describe similarities and differences in the two cases as they relate to three key components of the EGS framework, i.e.:

(a). **The resource regime:** This covers two kinds of institutions: (i) the rules regarding access to environmental resources; (ii) the rules governing the interactions within and between **actors** who have access to environmental resources and those being influenced by decisions regarding them. These include property and use rights including statutory and customary law, norms and conventions.

(b). **The governance structure:** The political, economic and civil society actors with their goals/motivations, capacities, rights and responsibilities. It includes the institutions/rules governing

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the political (constitutional and collective-choice rules), economic (resource regime) and civil society processes.

(c). **The environmental governance system:** This comprises the environmental resources attributes and processes, technology and infrastructures, patterns of interactions and outcomes. The quality of outcomes hinges on the patterns of interaction among actors which in turn is dependent on the form of participation and fairness in the distribution of power and outcomes.
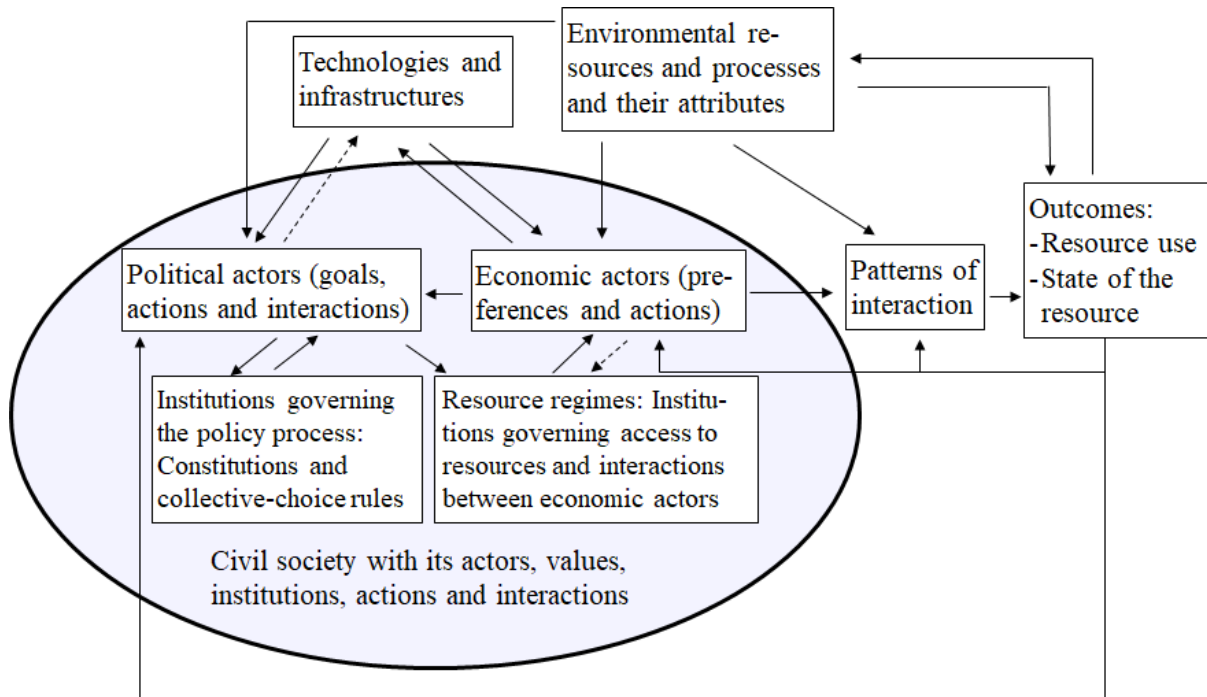
Figure 6-1: The Environmental Governance Systems framework for analysing institutional networks (Source: Vatn, 2015)

6.2.2 Participation theory

The complex nature, uncertainty and multi-scale character 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). Over the last decades, participation, stakeholder engagement, and collaboration have become important concepts in many management-oriented areas of science – including environmental governance (Voinov & Bousquet, 2010; Vedeld, 2017). At its core, participation emphasises the improvement of the legitimacy of public rule and ensuring that policy objectives are met through the devolution of power and resources from the public to local governments and local communities and people (Vedeld, 2017). By focusing on the role of social capital, capabilities, freedom and abilities of ordinary people to manage their development, participatory approaches stimulate a "people-centred" development agenda (Burkey, 1993; Nussbaum, 2000).

The participatory approach is however not a panacea for all environmental problems. Cleaver (1999) provides a comprehensive critique of the "traditional" participatory approach. She stresses that there is no convincing proof of positive long-term material outcomes of participation and, that the evidence for the sustainable empowerment of communities is often partial, tenuous and often relies on assertions of the rightness of the participatory approach and processes. However, she also points to empirical evidence that supports the participatory approach, especially when applied on a small scale.

Mutamba (2004) observed that community participation is important as one of the core principles of CBNRM, but that in many cases it has been excessively abused by various actors to advance their interests. Participation in CBNRM can and has been used to manipulate people's opinions to consolidate power through political, economic and traditional leadership. Rather than using participation as a device to legitimise problems of poverty and inequality, it is important to link participation to the transformation of the existing economic, social and political structures, i.e. governance (Samndong, 2017). *"Governance concerns who decides what the objectives are, what to do to pursue them, what means to use, how decisions are taken, who holds power, responsibility and who can be held accountable".* (Borrini-Feyerabend et al., 2013).

Participation and governance are furthermore inseparable components of social-ecological systems (SESs) because they relate to the content and distribution of power, resources and influence through organisational and institutional structures and processes (Vedeld, 2017). Arnstein (1969) hypothesised that citizen participation has many levels that range from low to high, analogous to rungs on a ladder. Arnstein's ladder helps to identify which actor has the most power when important decisions are being made (Dobson, 2021). Placed in ascending order, the ladder broadly classifies participation into 3 major groups i.e. non-participation (manipulation and therapy), tokenism (informing, consultation and placation) and citizen control (partnership, delegation and citizen control) that encompass different rungs/levels. Table 6-1 describes the different levels of citizen participation according to Arnstein (1969).

Table 6-1: Arnstein's ladder of citizen participation

Category	Level/rung		Description
Non-participation	1.	**Manipulation**	Both are non-participative. The aim is to cure or educate the participants. The proposed plan is the best and the job of participation is to achieve public support through public relations.
	2.	**Therapy**	
Tokenism	3.	**Informing**	The most important first step to legitimate participation. But, too frequently the emphasis is on one-way flow of information. There's no channel for feedback.
	4.	**Consultation**	Another legitimate step involving attitude surveys, neighbourhood meetings and public enquiries but, considered as window dressing rituals by Arnstein.
	5.	**Placation**	Allows citizens to advise or plan *ad infinitum* but retains for power holders to judge the legitimacy or feasibility of the advice. For example co-option of hand-picked "worthies" onto committees.
Citizen control	6.	**Partnership**	Power is in fact redistributed through negotiation between citizens and power holders. Planning and decision-making responsibilities are shared e.g. through joint committees.
	7.	**Delegation**	Citizens holding a clear majority of seats on committees with delegated powers to make decisions. Public now has the power to assure accountability of the programme to them.
	8.	**Citizen control**	Have-nots handle the entire job of planning, policy making and managing a programme e.g. neighbourhood corporation with no intermediaries between it and the source of funds.

(Adapted from Dobson, 2021)

At the local level, participation is intimately connected to the local governance of natural resources because it can be capable of bringing about the empowerment of local communities, the transformation of governance structures, increasing accountability and ensuring inclusiveness of all stakeholders in decision-making in best cases (Samndong 2017). Lockwood et al. (2010) postulate that inclusiveness entails providing opportunities for stakeholders to participate in and influence decision-making processes and actions. They further show that inclusive governance only occurs when all relevant stakeholders in the governance process can engage each other on an equal basis. They point out that problems in natural resource management demand substantial changes and the participation of the affected actors. This approach provides governance authorities with access to different perspectives and kinds of knowledge because no single actor has all the resources and skills to tackle the many complex environmental problems. However, there must be a high level of trust among actors for inclusiveness to be achieved. Trust plays an important role in facilitating collective

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action and provides legitimacy to public, private and civil society institutions (Tsang et al., 2009). Concerning inclusiveness, Lockwood et al. (2010) conclude that: "*Better solutions to complex problems and increased innovation are the likely outcomes of incorporating diverse perspectives and ideas into decisions*".

Inclusiveness is a necessary requirement for effective interaction among the different stakeholders. Vatn (2015) notes that social interaction among actors in a SES is based on their direct communication, cooperation, coordination and competition. Communication is said to occur when there is sharing of meaning because of an exchange of information (Castells, 2009). To understand meaning, we need to first understand the context of the social relationships where information and communication take place (Schiller, 2007).

Communication among stakeholders is not sufficient to ensure favourable outcomes for all actors. Actors must be willing to cooperate to gain mutual benefits. Cooperation entails that the actors can self-organise and resolve any conflicts among them (Ostrom, 2009). However, actors may be selfish, and this can result in losses for some or all parties involved (Axelrod, 1997). Axelrod further shows that environmental problems are more complex because they typically involve many agents. This necessitates the need for coordination to achieve mutually favourable outcomes among stakeholders.

There must be coordination to guarantee equity, effectiveness and fairness in the decisions made. Hovmand (2014) explains that the lack of coordination is a larger determinant of the outcomes than accuracy and alignment of problems with the right technical solutions. Many rigorously thought-out scientific and technically sound solutions often end up being rejected due to a lack of consensus among stakeholders (Hovmand, 2014). The lack of consensus reflects the different and competing interests among stakeholders regarding the natural resources within SESs.

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

In this chapter, the participatory theory is applied to decipher the inclusiveness, communication, coordination and competition processes (represented by solid and broken arrows in figure 6-1) that link the different components of the EGS framework. Thereafter, the outcomes of the two governance systems in the two study sites are compared and discussed based on the patterns of interaction among the political and economic actors as influenced by technologies and infrastructure and the attributes of environmental resources.

6.3 Methodology

6.3.1 Study areas

For this study, two case studies were selected where the governance model for natural resources were different. In Kaingu, the local governance of natural resources is headed by the state in partnership with the traditional authority through a typical top-down approach (Figure 6-2). The state and the chief are the formal custodians of the land, wildlife, forests and fisheries. Government departments such as the DNPW hold the power and decide on what the objectives are, and what structures, processes, measures and instruments should be applied to pursue the objectives. They institute the government policy and engage with the community through the Kaingu CRB. The government departments also receive and distribute incomes from natural resources through a top-down approach, from the central government to the communities via the CRB.

In the other case, local governance of natural resources within the Kaindu Community Conservancy (KCC) is the responsibility of the Kaindu Natural Resources Trust (KNRT) board of trustees and the chief (Figure 6-2). The KNRT board formulates plans, management strategies and makes decisions on behalf of the entire Kaindu community. It is responsible for obtaining hunting licences from the DNPW and selling them to trophy hunters through a joint venture with an outfitting company (Royal Kafue Limited). Thereafter, it disburses the incomes to VAG committees who will practically undertake community projects as defined by the communities. The outfitter retains the revenue from lodging and provision of logistical support to clients. The KNRT board also has the responsibility of ensuring resource protection and works with the government departments that have jurisdiction over the natural resources.
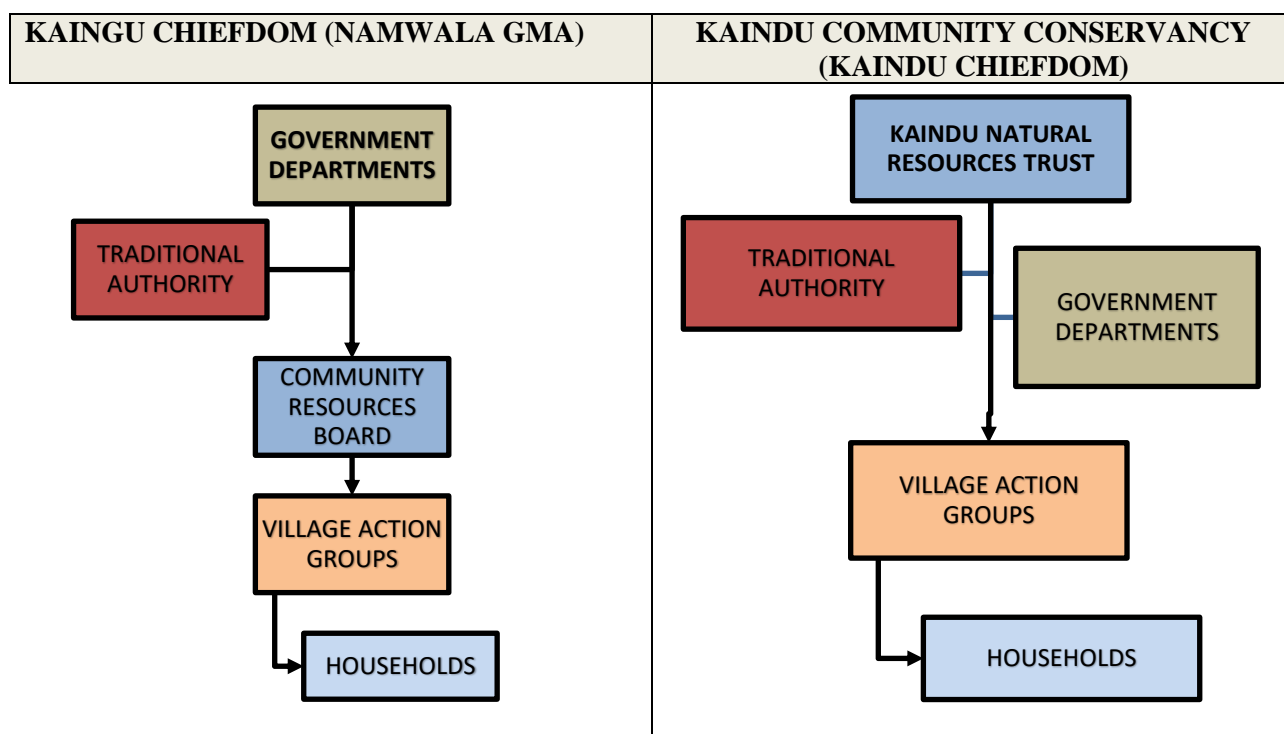
Figure 6-2: The Natural Resource Governance models in Kaingu and Kaindu, Zambia

6.3.2 Environmental resources and governance systems

6.3.2.1 Kaingu

The Kaingu chiefdom is in Namwala GMA in central south-western Zambia (Figure 6-3). It lies in the Itezhi-Tezhi district on the eastern border of the KNP. It is forested by Miombo woodland, Mopane woodland and mixed forests and serves as habitat for various important wildlife species of large mammals that include elephant (*Loxodonta africana*), buffalo (*Syncerus caffer*), hippo (*Hippopotamus amphibius*), lion (*Panthera leo*), eland (*Taurotragus oryx*), zebra (*Equus quagga*) and kudu (*Tragelaphus strepticeros*) and smaller mammals like warthog (*Phacochoerus africanus*), puku (*Kobus vardonii*), impala (*Aepyceros melampus*) and the common duiker (*Sylvicarpa grimmia*) (DNPW, 2013). Lake Itezhi-Tezhi and the Kafue River make up the western border of the chiefdom and constitute important fisheries that include many species of Tilapia, the African catfish (*Clarias gariepinus*) and the Kafue pike (*Hepsetus odoe*).

Despite being on customary land, the management of wildlife, forests and fisheries is the responsibility of the DNPW, Forest Department (FD) and the Department of Fisheries (DoF) respectively and under Zambian Law. Each of these government departments have over time integrated some form of CBNRM within their structures, intending to reduce poverty through sustainable management of environmental resources (DNPW, 2018). Itezhi-Tezhi district has a human population of about 90,000 (CSO, 2012). Kaingu lies within the geographical jurisdiction of

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Itezhi-Tezhi district council and is divided into seven Village Action Groups (VAGs), namely Bushinga, Kaanzwa, Maunga, Masombo, Mbuma, Milangu and Mulilabanyama (ITTDC, 2015). Most of the people are subsistence farmers involved in cattle rearing and grow maize, sweet potatoes, cassava and groundnuts (ITTDC, 2015). The Ila are the dominant ethnic group, despite the presence of Kaonde, Tonga and Lozi in-migrants (Lillehagen, 2016).

Apart from the government departments, the Kaingu Royal Establishment is a prominent political actor in Kaingu. Several economic actors operate in Kaingu, including safari hunting companies and lodges, e.g. Kaingu Lodge Limited. Civil society actors include various NGOs with different interests and motivations that include community development and wildlife conservation.

6.3.2.2 Kaindu Community Conservancy

The KCC is a community-owned protected area that lies in Kaindu chiefdom in the north-eastern part of Mumbwa district (Figure 6-3). It is a CBNRM joint venture between the Kaindu local community and a private outfitting company, Royal Kafue Limited established under the Land (Perpetual Succession) Act No. 25 CAP 186 of 1964. The conservancy covers an area of 13,900 hectares and is bordered by private game and cattle ranches and farms on the east and west, and the Kafue River in the north. The area is predominantly covered by Miombo, Termitaria and Riparian woodland, Baikiaea forest and grassland (DNPW, 2013b). The conservancy is in prime habitats for prominent wildlife species including elephant, buffalo and lion. The human population of Kaindu stands at 15,477 individuals (TNC, 2015) who are mostly subsistence maize (*Zea mays*) and groundnut (*Arachis hypogaea*) farmers. Soya beans (*Glycine max*) and cotton (*Gossypium herbaceum*) are important cash crops in the area (TNC, 2016).

Under the CBNRM joint venture, the Kaindu community and Royal Kafue Limited earn incomes from hunting and photo tourism based on wildlife. An elected board of trustees, i.e. the KNRT, manages the conservancy on behalf of the Kaindu community and receives income from the sale of hunting licences obtained from the DNPW to trophy hunters. The KNRT board allocates the proceeds from hunting to five VAGs (i.e. Kafwikamo, Kalwanyembe, Kamilambo, Misamba and Mpusu), for the implementation of community projects (TNC, 2016). Royal Kafue Limited retains the earnings from lodging and logistics and equipment. The KNRT also receives financial, logistical and material support from the state through the DNPW and involved NGOs, e.g. The Nature Conservancy (TNC).
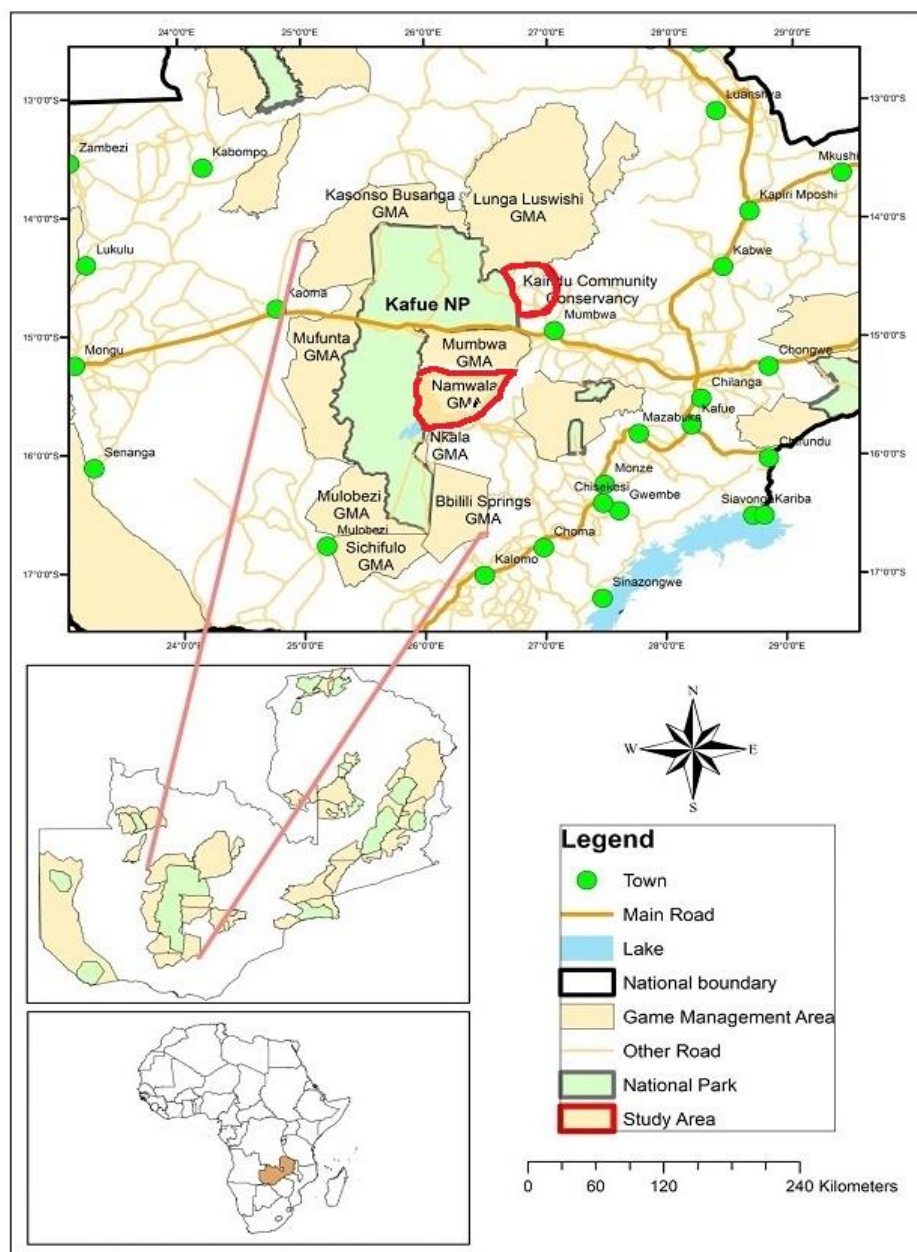
Figure 6-3: The locations of the two study sites

6.3.3 Methods

A comparative research methodology with similar methods of data collection and analysis 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 (Namwala GMA) served as the archetypal protected area for state-centric collaborative NRG in Zambia, while the KNRT was considered as a novel model of NRG as it is the first formally community-owned protected area in Zambia. Thus, it could have the potential to be both more legitimate and participatory and deliver greater benefits in terms of biodiversity conservation and enhanced rural livelihoods, compared to a state-led venture.

A mixed-methods approach utilised both qualitative and quantitative methods in this study. The methodology allowed for triangulation and simplified the comparison of the two cases. The qualitative data gave a depth of insights to the quantitative results by allowing the analysis of variables that cannot be analysed quantitatively. The qualitative methods used were focus group discussions (FGDs), semi-structured key informant interviews (KIIs) and some sections of a governance dashboard questionnaire. Key informants were selected through a snowball sampling procedure. A total of 27 interviews were conducted (17 in the Kaindu community and 10 in Kaingu). The informants included CRB and KNRT board members, representatives of the traditional authority, heads of government departments, private company representatives and NGO officials.

The FGDs were held with members of the community including men, women and youths in each VAG. The FGDs were conducted in all five VAGs in Kaindu and seven of the eight VAGs in Kaingu. Open-ended questions in the dashboard questionnaire were used to identify reasons for specific responses to quantitative questions. The qualitative methods were aimed at uncovering 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.

Using the VAGs as strata, proportionate stratified sampling was used to select households in the governance dashboard household survey. Data were obtained from 191 households in Kaingu and 290 in Kaindu. Primary quantitative data were collected using a semi-structured governance dashboard questionnaire which covered the specific aspects of the CBNRM system in each case. Inclusiveness through participation was the basis of the analysis of each section. Questions relating to participation were measured on a categorical scale, e.g. questions requiring a "yes" or "no" response. Questions regarding perceptions were measured on a five-point Likert scale (Very satisfactory, Satisfactory, Neutral, Unsatisfactory and Very unsatisfactory) that allowed respondents to rate specific issues, e.g. on the quality of CBNRM. The hypothesis that there are differences between the perceptions among households in the Kaingu and Kaindu communities towards the NRG system was tested using cross-tabulation i.e. the chi square test of association.

Free, prior and informed consent (FPIC) was sought from key informants and heads of households (>18 years old). Audio recordings of the interviews were made and later transcribed. FGD responses were recorded on flip charts, voice recorders and an FGD template form. The questionnaire was programmed onto the Open Data Kit® (ODK) platform and administered using tablet computers that stored data on a password-protected server. The data presented in this chapter was collected at the same time as that presented in chapters 4 and 5. However, this chapters also includes data that has not been presented in the preceding chapters.

Qualitative data were analysed using thematic content analysis (Braun & Clarke, 2006), using ATLAS.ti 7 software to generate codes, search for themes, reviewing the themes and defining the themes. The Statistical Package for the Social Sciences (SPSS) version 20 was used to analyse the quantitative data. Descriptive statistics (i.e. response frequencies) were used to describe the general attitudes towards participation in the CBNRM arrangement by community members.

6.4 Results

The EGS framework is used to compare the two case studies regarding technologies and infrastructure, political actors, economic actors, civil society actors and the patterns of interactions and outcomes.

6.4.1 Environmental resources, processes and their attributes

The results revealed several differences and some similarities in the stocks and flows of wildlife, forests and fisheries. Table 6-1 compares the characteristics of environmental resources in the two study areas.

Table 6-2: A comparison of the status of environmental resources in Kaingu and Kaindu

Case study	Kaingu	Kaindu
Environmental resource	**Characteristics and trends of natural resource**	
Land	• Relatively clear geographical boundaries • Community restricted to the development zone of GMA	• Unclear boundaries • Reducing land area
Wildlife	• Increased poaching • Reducing wildlife stocks	• Reduced poaching • Increasing wildlife stocks
Forests	• High deforestation rates	• High deforestation rates
Fisheries	• Declining fish stocks	• Declining fish stocks

6.4.2 Technologies and infrastructure

A review of documents, personal communication and observation gave an overview of the technology used in the harvesting of wildlife, forests and fisheries resources use in the two cases. Poachers and subsistence hunters of wildlife in both study areas use various types of firearms including shotguns, homemade shotguns and muzzle loader guns (MLGs) and in some cases military grade (AK-47) rifles (DNPW, 2016). Wire snares, spears and axes are also used in the illegal harvesting of wildlife in both cases. Trophy hunters use state-of-the-art hunting gear, such as off-road vehicles to track the game and high-power sport rifles to kill animals of interest in both the conservation zone of Namwala GMA in Kaingu and the KCC game ranch.

Key informants in both cases indicated that clearing of land for agriculture by the removal of trees by numerous small-scale farmers utilising homemade axes and in a few cases, chainsaws have led to forest degradation and deforestation. They also stated that the use of gill nets of both legal and illegal sizes, mosquito nets, poisons and sometimes even explosives by the numerous local fishers have also decimated fish stocks in both areas .

The road infrastructure is poor and impassable in some sections in both study areas, especially in the rainy season. This is especially observable in Kaindu where the VAGs are farther away from the tarred road than those in Kaingu. The tarred Itezhi-Tezhi road transects all the VAGs in Kaingu, but the KCC is a greater distance (>60 km) from the nearest paved road. Both study areas have poor cellular phone coverage as they are a considerable distance off the communication grid. Comparatively, there are more houses with iron sheet roofs in Kaingu (63%) than in Kaindu (33%). No houses in the survey had piped water.

To sum up, the legal and illegal utilisers of wildlife, forest products and fishery resources in Kaingu and the KCC use similar technology. Both study areas have poor road infrastructure, but Kaingu is closer to the tarred road than the Kaindu. The houses in Kaingu are relatively better constructed than those near the KCC in Kaindu.

6.4.3 Political actors

Four of the six FGDs (Bushinga, Kaanzwa, Masombo and Mulilabanyama) in Kaingu regarded the government departments as the overall authority because the chief was also subject to statutory law. However, the other two FGDs (Mbuma and Milangu) concluded that the chief was the most influential actor because his officials (unlike the government officers) were permanently based in their locality. They indicated that the community members had more respect and fear for the chief than the state authorities.

Similarly, two of the five FGDs in Kaindu (Kalwanyembe and Mpusu) regarded the chief as the most powerful actor as he was the *de facto* head of NRG. The FGD in Misamba ascribed the greatest influence to economic actors (i.e. the surrounding private game ranches). The research participants in the other two VAGs in Kaindu (Kamilambo and Kafwikamo) indicated that the private game ranches bordering the KCC had just as much influence as the government and traditional authority.

Key informant interviews reported that government departments are mandated by statutory law to contribute to achieving the goals of resource conservation, sustainable utilisation of natural resources and rural development (improving rural livelihoods) in both Kaingu and Kaindu. Their main actions

include the management and planning of protected areas by regulating the utilisation of natural resources by economic actors and civil society. They enforce policy through patrolling and licensing of resource users. They are also involved in the establishment of collective-choice rules and partnerships with communities in NRG. 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. That is where the CRB's issues come in and we work with them to manage the wildlife. Even the villages have their law enforcement*".

Chiefs are authorised to contribute to the central government's goals for sustainable natural resource utilisation and adhere to its objectives through applying customary law. Chiefs operate through a system of headmen and headwomen to allocate customary land and to resolve possible conflicts regarding access to land and land use.

In summary, the perceptions on the levels of influence held by the state and by the traditional authority seem to be similar in the two cases. The state is regarded as having the *de jure* power over natural resources, while the chief is seen as the main *de facto* actor.

6.4.4 Economic actors

There is a difference in the perception towards economic actors in the two cases. The private safari companies in Kaingu are a third level actor in terms of influence but are regarded as the top level of influence, equal to the state and the chief in Kaindu. The main professional economic actors in Kaingu are private hunting and tour operators (i.e. Nsonga Game Management and Lodges Limited and, the Kaingu Safari Lodge). The former offers both consumptive and non-consumptive tourism through trophy hunting and fishing, while the latter provides game drives, foot safaris, canoeing and boating.

In Kaindu, the KNRT and its partner, Royal Kafue Limited utilise the wildlife resources that migrate from KNP to the KCC in cooperation with adjoining private game ranches, Mushingashi and Desai for profit. Amatheon Agri Limited is the largest commercial agricultural enterprise bordering the KCC.

Some ordinary community members in both cases are furthermore informal, small-scale but rather extensive economic actors deriving profits from the sale of charcoal and fish, while others engage in illegal poaching of wildlife for trophy and bushmeat. Local people claimed that the private companies were overstepping the boundaries of the resources under their jurisdiction by restricting the community's access to these resources. The community's interests are mostly related to subsistence use of these resources, but without clear customary rules, this descends to resource degradation and

vandalism. The private tour operators attribute resource and habitat destruction to members of the community. The safari companies in Kaingu and Royal Kafue Limited in Kaingu have taken up resource protection to supplement the efforts of government departments.

> *"When the investor (Kaingu Lodge owner) came, we allocated him a section of our land to carry out his business, but they have now forbidden anyone from even passing near the area. Only commercial hunting is allowed in the conservation area. What about us?" – Headman (1) in Kaingu.*

In summation, the community in Kaingu ascribes relatively less influence on the governance of environmental resources to private companies, when compared to the Kaindu community. In both cases, the profit-oriented and conservation aims of private companies in the utilisation of environmental resources conflict with the communities' intentions of subsistence consumption.

6.4.5 Civil society actors

Several international NGOs promote their values and interests in both study areas. Some are focused on the conservation of natural resources, and others on uplifting the socio-economic status of communities living within the protected areas.

The prominent NGOs in Kaingu include the Conservation Farming Unit (CFU), World Vision International (WVI) and Game Rangers International (GRI). The Nature Conservancy (TNC) and ChildFund Zambia are also found in Kaindu. Resource degradation and destruction by poaching of wildlife, deforestation, soil erosion and habitat destruction are some of the challenges the NGOs address. In both areas the NGOs cooperate with the government, traditional authorities and private actors to achieve their objectives.

Prominent economic actors, such as Kaingu Safari Lodge and Amatheon Agri Limited, play a civic function because they have strong connections with the communities through their corporate social responsibility policies and efforts in Kaingu and Kaindu. They are involved in the planning and development of community projects. Kaingu Safari Lodge has constructed a primary school for the community and Amatheon Agri Limited operates an agricultural out-grower scheme that involves local small-scale farmers. They aim to harmonise community interests with their own and they comply with policy regulations and local conventions, norms and customs.

Many NGOs (apart from TNC which is only found in Kaindu) have representation in both Kaingu and Kaindu and with similar values, actions and interactions. The NGOs in both areas work in collaboration with government departments and private actors. Harmonisation of actors' interests has,

however, still not been attained and this continues to have detrimental effects on environmental resources.

6.4.6 Patterns of interactions

6.4.6.1 Communication

All FGDs indicated that the community had little or no "voice" to express their opinions and to contribute to the setting of NRG objectives. They asserted that government departments, chiefs, CRB and KNRT do not in any way consult the community when making decisions about the use of 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, however, was significantly lower in Kaingu (i.e. 48%), ($\chi^2 = 92.708$, df = 1, p<0.001).

The attendance of the preceding meeting was significantly higher in Kaingu (26%) than Kaindu (8%) ($\chi^2 = 29.011$, df = 1, p<0.001). Measured on a five-point Likert scale, 5% of the 49 attendees in Kaingu and 30% of the 23 attendees in Kaindu indicated that they were very satisfied and or satisfied. Little information regarding finances, wildlife value and use, and wildlife-related events was provided to the communities by the CRB in Kaingu and the KNRT board in Kaindu in the previous year. More than 90% "no" responses were obtained in each question category in both cases.

6.4.6.2 Cooperation

There are low reported levels of cooperation between the community and their agents for CBNRM in the two study sites (Figure 6-4). Cooperation was measured via the level of participation of the community according to the CBNRM guidelines in Kaingu and the KNRT constitution in Kaindu.
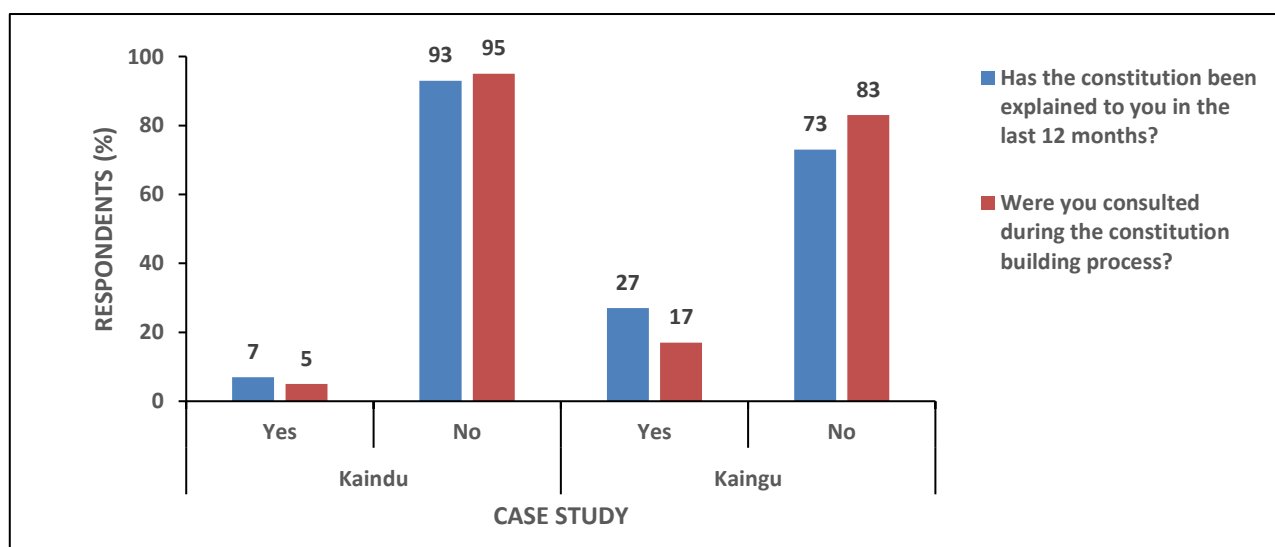
Figure 6-4: Cooperation between community and their CBNRM agents in Kaindu and Kaingu, Zambia 2016

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There were significant differences in responses to the first two questions between the two case studies. The CRB in Kaingu had explained the CBNRM guidelines to 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).

Despite the difference between responses ($\chi^2 = 112.085$, df = 5, p<0.001), most of the survey participants in both cases indicated that they did not know whether the constitution organised the community well (51% in Kaingu and 81% in Kaindu) (see figure 6-5). However, despite most respondents not knowing how well the community followed the constitution, more respondents stated that the CBNRM guidelines/constitution was followed in Kaingu than Kaindu ($\chi^2 = 124.340$, df = 5, p<0.001).
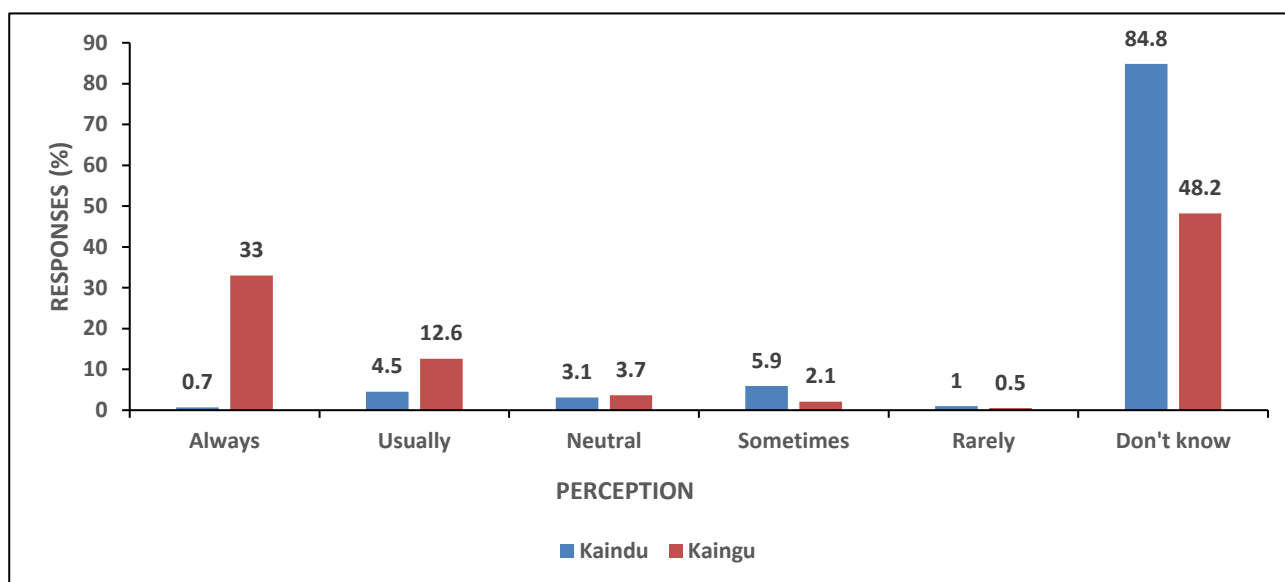
Figure 6-5: Perceptions about how well the community adheres to the constitution in Kaindu and Kaingu, Zambia 2016

Table 6-2 shows the three categories of conflicts between actors identified by the 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). Most (63%) of the respondents in Kaingu indicated that they trusted the CRB with their financial accounts (Figure 6-6).

Most of the household heads thought that the KNRT board did not manage their interests appropriately and did not properly account for the finances (Figure 6-6). There was 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 6-3: Conflicts/issues among the different actors in Kaingu and Kaindu, Zambia 2016

Conflict type / Case study	Community vs government departments	Community vs traditional leaders	Community vs private safari companies
Kaingu	• Restrictions on subsistence hunting, forestry and fishing • *De jure* intent in resource conservation does not match *de facto* action/scenario • Expensive licences for access 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.	• Dictatorial decision-making • Elite capture of benefits	• Abrogating terms of contract agreements with CRB • Prevent access to resources • Safari companies only offer casual employment as opposed to permanent jobs as agreed with the community through CRB
Kaindu	• Restrictions on subsistence hunting, forestry and fishing • *De jure* intent does not match *de facto* 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	• Selling of community land and its associated resources to investors • Dictatorial overturning of communal decisions • Elite capture of benefits	• Abrogating terms of contract agreements with KNRT • Prevent access to resources • Royal Kafue only offers casual employment as opposed to permanent jobs as agreed with community through KNRT
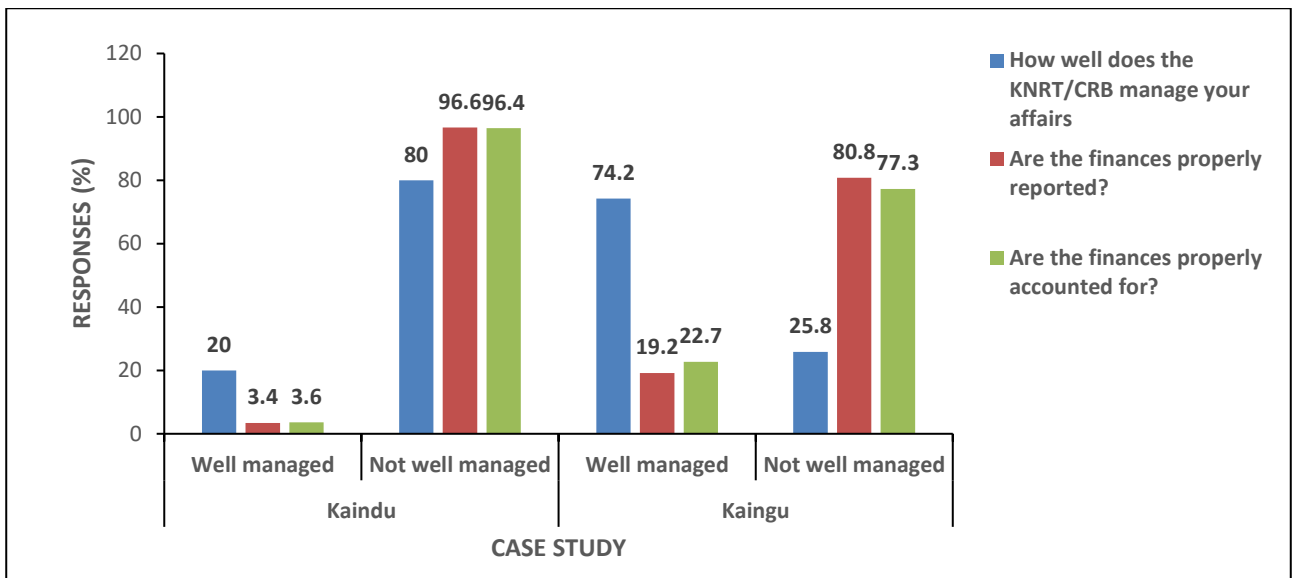
Figure 6-6: The quality of management of CBNRM in Kaingu and Kaindu, Zambia 2016

The majority in Kaindu do not trust the KNRT to handle their finances (Figure 6-7). In contrast to the people 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 informing them.
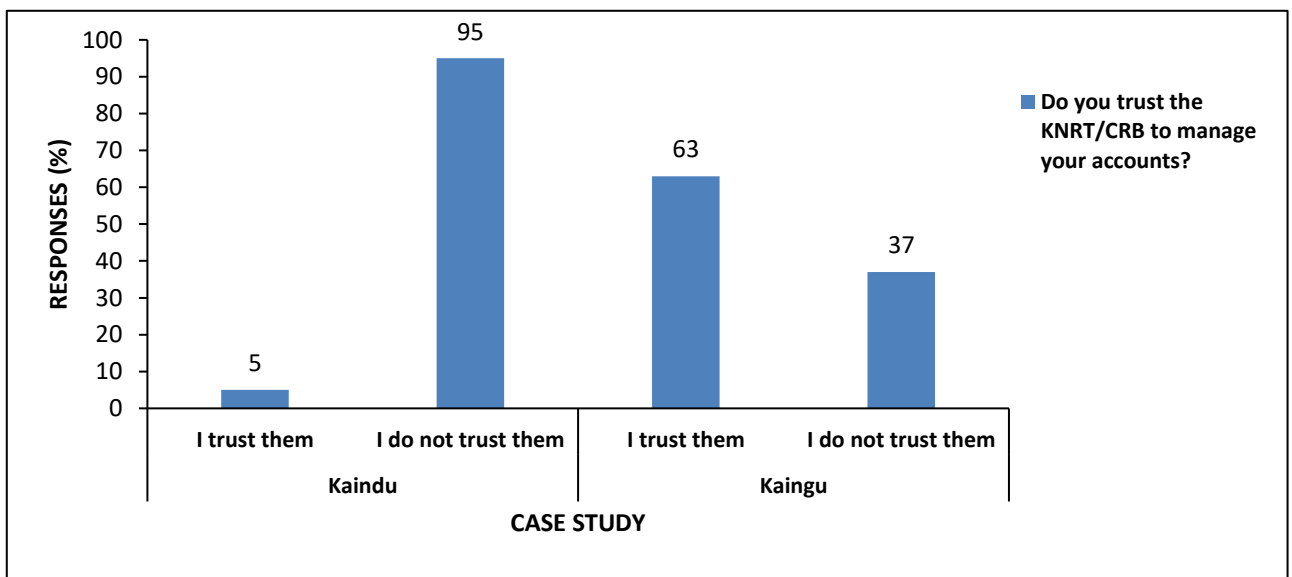
Figure 6-7: Levels of trust by the community towards their CBNRM boards, Kaingu and Kaindu, Zambia 2016

Attitudes towards the DNPW in the two cases were significantly different (χ^2 = 289.764, df = 4, p<0.001). In Kaingu, (where the DNPW have more mandated power) no single respondent indicated that they liked the DNPW staff. Most people (84%), however, indicated a neutral attitude, but declined to give explicit reasons for their answers. In contrast, there were varied responses in Kaindu where 63% of respondents indicated that they liked them (Figure 6-8). The FGDs did express a favourable attitude towards NGOs.

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"The DNPW have only concentrated in protecting wildlife but have failed to ensure benefits for the community". – Headman (2) in Kaingu.
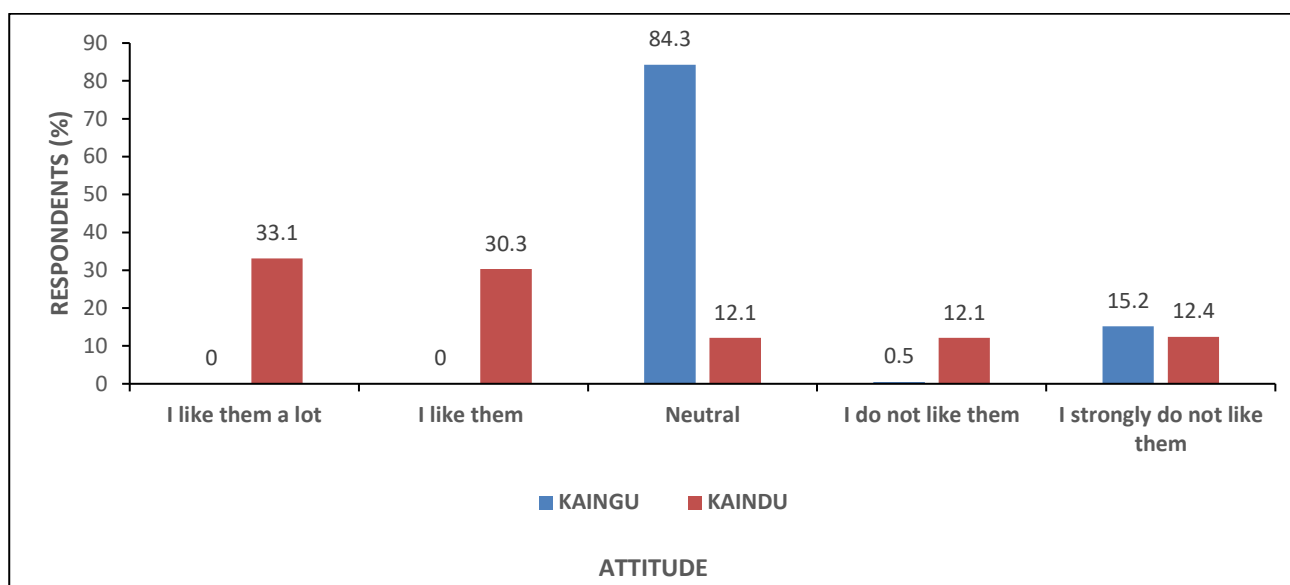
Figure 6-8: Community attitudes towards state wildlife authorities in Kaindu and Kaingu, Kafue, Zambia 2016

6.4.6.3 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 typically revealed many, different and even opposing opinions among the different actors.

In Kaindu, the private game ranches and the outfitting company declined to comment on the local NRG, stating that their main interest is securing profit. However, they stated that they work together with the chief and the community as part of their corporate social responsibility by funding community projects decided upon with the community. A common theme in both Kaingu and Kaindu was that the community-based organisations, including the traditional authority and local government, considered their decisions in the community to be equitable, effective and fair, while the local people did not. The DNPW officer-in-charge for both areas emphasised that they were the wildlife experts, and they knew how best to look after it. The FD informant emphasised that the lack of financial and logistical resources hindered coordination with the community and other actors, thereby affecting the equity, effectiveness and fairness of outcomes. However, the FD and DoF in Kaindu indicated that limited community engagement on their part hindered equitable decision-making. The KNRT informant alleged that the community members do not like the KNRT board and DNPW because they want to engage in poaching and other illegal uptake of the resources.

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"The main problem is that the key players do not function as one. Fisheries will go and say this, forestry will go and say that. Wildlife will also go and say A, B, C, and D. The tour operators also have their way. Each one is pulling in a different direction before the same community".

6.4.6.4 Competition

In both areas, the different types of interests towards wildlife, forests and fisheries among the actors have caused competing actions and land uses. All the FGD participants stated that they are 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. There was more livestock lost and injuries suffered in Kaingu than in Kaindu due to wildlife but the figures were negligible. There were no significant differences regarding the reported bags of grain lost and other losses due to wildlife in the two areas. Human-wildlife conflicts in general, contribute to the communities' negative attitude towards wildlife.

The state, private safari companies and NGOs have different attitudes towards wildlife, regarding trade-offs between conservation and sustainable use. The primary interest of the outfitter, Royal Kafue Limited in the KCC, and the safari lodges in Kaingu is to resuscitate and conserve the wildlife estate for tourism. The counsellors act as local governors of resources through the ADCs with the objective of resource conservation through sustainable use. The traditional authorities are influential in the local NRG. In the Kaindu case, both the outfitting company and the community attribute most of the problems of wildlife forests and fisheries to poor leadership by the chief and his headmen. In this regard, the manager for Royal Kafue Limited 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 for a miner to come here although the Ministry of Lands-Trust document forbids such activities … but… he is the chief and he extracts an income …. My lease agreement says that the riverfront should be vacant for the wildlife project but now there's a village there because the chief wants a village there because someone pays him money".

To sum up, both cases exhibited poor and ineffective communication between the community and the political actors leading to low cooperation and coordination. There was relatively less conflict and more cooperation among actors in Kaingu than those in Kaindu regarding community consultation in constitution building by the CRB and the community's adherence to the constitution. Both the government departments and the community acknowledge the lack of coordination, equity,

effectiveness and fairness in decision-making in the two cases. Farming, conservation and tourism are competing land use activities in both areas.

6.4.7 Outcomes (Resources use and the state of the resource)

6.4.7.1 Land ownership and alienation

The land in Kaingu is both customary land and a state-owned protected area. Thus the chief cannot demarcate and sell any of this land but can only allocate land to would-be settlers in the development zone of the GMA. The state has the overall control of land and land uses in the GMA (GRZ, 2015).

The land in Kaindu is customary land (open area) and a portion of it has been set aside as the communally-owned KCC. The open area status gives more flexibility to the chief regarding transactions of rights and sales. However, the FGDs indicated that they were unaware of the land alienation processes that *de facto* are taking place and they are not consulted when such decisions are being made. Thus the local governance structure embedded in the CBNRM model in the KCC seems to exclude ordinary local people from taking part in decisions to sell and share the benefits from sales of land and other resources, such as wildlife.

In both cases, land can be transacted but benefits from the sales do not accrue to local people. An important difference is that in Kaindu, the chief has more control over land and can solely sell it, unlike chief Kaingu, who is restricted by statutory protected area laws.

6.4.7.2 Wildlife stocks and flows

There is a difference in the perceptions of community members regarding wildlife abundance ($\chi^2 = 159.848$, df = 4, p<0.001) in the two protected areas. Most respondents in Kaingu (30%) indicated that there was a decline in the numbers and species of wildlife despite there being good wildlife management by DNPW. In Kaindu, most of the respondents (63%) perceived that there was an increase in wildlife as could be seen by the increasing incidences of elephant crop-raiding and an effective anti-poaching programme 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 differ in terms of wildlife with the state-controlled protected area (Kaingu) seemingly having have less wildlife than the communally owned KCC.

6.4.7.3 Forest abundance and flows

In both areas the community members perceive that the number of trees is declining over the last 12 months (61% in Kaingu and 71% in the Kaindu community). The Global Forest Watch (2020) indicates that Itezhi-Tezhi district (where Kaingu is located), recorded 7 hectares of tree cover loss in

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2019. The KCC lies in Mumbwa district which recorded an overall loss of 854 hectares of tree cover in 2019 alone, (Global Forest Watch, 2020). Increased illegal logging and poor protection of trees were the main reasons given for a perceived decline in tree abundance in both cases. The scope of illegal logging in the area yielded different opinions in the two areas, with higher reported deforestation in Kaingu than the communal Kaindu (χ^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. Regarding the availability of thatch and edible insects (Mopane worms – *Gonimbrasia belina*), people in the two areas held different views (χ^2 = 38.925, df = 4, p<0.001) and (χ^2 = 28.658, df = 4, p<0.001), respectively.

6.4.7.4 Fish stocks and flows

The communities in Kaingu reported a higher rate of decline of fish stocks than the decline reported from Kaindu (χ^2 = 10.618, df = 3, p<0.001). Both communities attributed the drop in fish catches to increased fishing effort, which has resulted in overfishing. This could also be observed in the lower availability of fish in the markets, high 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 (χ^2 = 35.517, df = 3, p<0.001).

In summary, the overexploitation of natural resources in both NRG regimes has led to a general decline in the resource base regarding wildlife stock (in Kaingu), habitat for wildlife, forests and fishery stocks. However, this is more so in the Kaingu (state-centric collaborative NRG) than in the KCC, a communal/private regime).

6.5 Discussion

This section identifies key issues arising from the results and highlights their relevance as regards the resource regimes, governance structure and environmental governance systems at work in the two study areas. Emphasis is placed on the **outcomes** of the patterns of interactions among the environmental resources, political, economic and civil society actors.

6.5.1 Environmental resources, processes and attributes

6.5.1.1 Land

The more distinct geographical boundaries in Kaingu are due to the formal processes of separating human settlements from wildlife habitats that were done at the establishment of KNP and Namwala GMA (DPNW, 2013). Thus these boundaries are more generally recognised, adhered to and respected by actors, albeit with some exceptions of illegal encroachment on protected land and poaching.

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Despite human settlements being restricted to the developmental zone, the zone is a large expanse of land that has a much higher capacity to absorb the shocks of human encroachment. In Kaindu, however, the relatively small size of the chiefdom and conservancy and unclear boundaries, coupled with an increasing human population, have increased the demand for land and added more pressure to the local natural resources.

6.5.1.2 Attributes of wildlife stocks

The community in Kaingu reported increased poaching based upon the reduced stocks of wildlife. In Kaindu, the community reported contrasting results of reduced poaching and increasing wildlife stocks. The NRG structures and processes in Kaingu are more bureaucratic and rigid due to their state-centric nature. The lack of a sense of ownership among community members may explain the higher rate of poaching in Kaingu as compared to Kaindu, where the chain of command is shorter and headed by a community-owned organisation, the KNRT. The reduced cases of poaching may also be due to the CBNRM structure incorporating the joint venture with Royal Kafue Limited which has financial incentives based on conserving the wildlife stocks.

6.5.1.3 Attributes of forest and fish stocks

High rates of deforestation and overfishing were reported in both areas and this can be attributed to the effect of land clearing for agriculture and the demand for food fish. The FD and DoF with their associated challenges regulate charcoal production and the harvesting of non-timber forest products in both areas. One gets the sense that the KNRT-Royal Kafue partnership has prioritised wildlife conservation and consumptive tourism over forest and fishery conservation due to the profit-oriented nature of their activities.

6.5.2 Technologies and infrastructure

There are not many differences in the technology present in the two study areas, the reason being that technology for the harvesting of wildlife, forest products and fisheries regulated by DNPW, FD and DoF use the same policy guidelines. However, the regulation of firearms and other wildlife harvesting technology and techniques seems more effective in KCC than in Kaingu due to the concerted efforts of the private companies and the DNPW. The proliferation of illegal natural resource harvesting techniques has had similar effects on the state of forest and fisheries resources as there is rampant deforestation and depletion of fish stocks in both areas. The technological change from traditional hunting, logging and fishing methods in the early 20th century reduced the cost of harvesting natural resources, increased profits and without appropriate rules decimated stocks of wild resources (Merten & Haller, 2008; Child et al., 2012). Consequently, the policies on the utilisation of wild resources

have emphasised sustainable use in general and resource conservation in particular (GRZ, 2011; GRZ, 2015; GRZ, 2015b)

A major difference in infrastructure is the proximity of the study areas to the main access tarred road. The relatively short distance from Kaingu to the tarred road that goes to Itezhi-Tezhi town gives easy access to markets and goods to the communities in Kaingu. This also aids criminals in transporting illegally obtained natural resources, such as animal trophies, charcoal and fish. The existing cooperation between government departments, private safari companies and NGOs has yielded limited success in the regulation of poaching, deforestation and illegal fishing. In contrast to Kaingu, the long distance from tarred roads in and around the KCC and Kaindu appear to have indirectly contributed to the successes of the Resource Protection Unit (RPU) in curbing the smooth transportation of contraband by criminals, especially during the rainy season. However, opening the Kaindu area with better quality roads and infrastructure can create opportunities to establish more police checkpoints, but this also requires more financial and logistic resources to be effective.

6.5.3 Interactions of the political, economic and civil society actors with the environmental resources

In both cases, there is a passive community participation profile (Vedeld, 2017) in decision-making as people are being told what is going to happen or what has happened without involving the communities. This adversely affects the patterns of interaction between the government departments, private safari companies and the local community. There is 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 governing agencies such as market stalls and boreholes do not persist because of the limited or total lack of involvement and participation by the communities. The result is that the government departments and chiefs are unable to effectively regulate the use of environmental resources, resulting in further degradation of natural resources.

The mostly neutral attitude towards DNPW staff by the Kaingu community can be attributed to the more formal zonation of Namwala GMA, unlike Kaindu where the boundary between the protected area – the KCC and the rest of the chiefdom – is unclear (see Chapter 5). Kaingu has clearer boundaries that separate the development zone from the wildlife conservation zone where anti-poaching efforts are concentrated. However, the communities in Kaingu do not have a sense of ownership of resources, as is the case in the KCC. Vedeld (2017) asserts that the extent to which local communities are involved and the willingness and capabilities of the community to uphold what has been introduced is crucial for the continuity of projects or institutional interventions. In this case, the

community members in Kaingu are not part of the resource regime as they do not have the right to access, withdraw, manage, exclude others and alienate the resources (Ostrom, 2009b).

In both cases, the economic actors are cognisant of the *command* type of interaction (Vatn, 2015) that they have with government departments. Despite the government prescribing collective choice-rules regarding the technology for the utilisation of wild resources through policy processes and constitutions, the lack of compliance by economic actors (including the communities) has had negative effects on the state of the resources. In response, the government has realigned its policy on the kinds of technology to be used in the harvesting of natural resources. For example, the Statutory Instrument Number 11 of 2018 (Community Forest Management Regulations) was issued and allowed communities in both cases to apply to the director of the FD to form community forest groups and manage their own forests under a pilot scheme (GRZ, 2018). However, these applications and community forestry agreements are still subject to approval by the central government. In both cases, the safari companies support the DNPW in resource protection and this has prompted different perceptions and attitudes from the communities.

The disparity among VAGs as to who the most influential actor indicates different impacts of the powers held by political actors in different geographical locations. This scenario ultimately leads to a patchy pattern of perceptions, attitudes and choices among community members. Consequently, the conflicts between economic actors and the communities are enhanced as is the situation in the KCC where the locals go fishing within the designated hunting grounds for aquatic trophy species, such as crocodiles and hippos. The situation is compounded by the lack of effective monitoring and enforcement by DoF and leads the private game ranchers (including Royal Kafue Limited) to enforce *ad hoc* regulations. Reports of abuse of locals, corruption of local leaders and violent confrontations among actors are rampant.

The main underlying cause of social conflicts in Zambia and as observed in Kaindu is the process of land control and allocation, which according to Munshifwa (2018) is marred by inertia, confusion and corruption. He asserts that the inertia which the state purposefully adopted by instituting an extremely slow process of land tenure reform during the 1990s has led to an inconclusive land policy formulation process whose drafts are constantly rejected by traditional leaders. Further, this inconclusiveness has led to a tug of war over who should oversee the alienation of land between the president and the traditional leaders. Inaction and confusion coupled with different levels of transparency and accountability have furthermore created an ideal environment for corruption to take place (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 have offered various gifts with promises to traditional leaders to build schools and clinics in exchange for land (Mushinge and Mwando, 2016). Laws and regulations meant to protect the community are flouted with impunity by key players in the land acquisition process. Traditional leaders sell land to whomever they want without consulting the community as is formally required through the customary laws (Mbinji, 2012). Additionally, Mushinge and Mwando (2016) show that corruption has negatively impacted local customary land users through economic and social instability, undemocratic leadership structures, lack of appropriate legislation, lack of transparency, lack of accountability, lack of professional ethics and the greed of economic and political elites.

As most local NGOs operate at the intersection of their interests and those of the political actors, they are also affected by the corrupt decisions made. Thus there has been limited success especially in anti-poaching, forest conservation and even less in fisheries conservation. Some members of civil society have in the recent past demonstrated against corruption in public institutions (Zambian Watchdog, 2018). Social conflicts also exist within and between civil society organisations, thereby adding to the complex nature of the SESs. This exposes the lack of harmony and inclusiveness among civil society actors. The communities look to the private companies for answers to their socio-economic problems as they seem to provide more tangible solutions than those promised by the government's ineffective benefit-sharing systems. These projects (e.g. building community schools) are usually context specific and limited in their impacts.

The Kaingu and Kaindu communities were not availed of appropriate platforms for communicating with authorities and were impacted negatively by various policy measures. Effective communication and interaction across and among stakeholders enhance social capital which facilitates the efficient functioning of environmental collaborations and helps to accumulate other productive capitals, such as education (Musavengane & Simatele, 2016). A complete redesign of the resource regime to ensure patterns of interaction that yield positive outcomes is required. This also entails changing the current communication system among actors to a more equitable one that gives the community members opportunity to express their opinions and take part in planning and management processes. We do find evidence for elite access to information in the areas, which is a precondition for elite capture of resources and benefits. Ultimately, the rift between the elites and the rest of the community impedes cooperation among actors.

The quality of CBNRM in both cases is negatively affected by limited levels of cooperation as evidenced by most community members not being consulted during the constitution-building process

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and not having the constitution explained to them. This communication gap was worsened by the lack of accountability in the reporting of finances and management of community affairs. As a result, the community in Kaindu has little trust in the government and its partners (i.e. the traditional authority and private safari companies) to deliver benefits to them. Mutual trust among actors, especially between various agencies and the community, is one of the critical factors for a successful CBNRM programme as it influences social acceptability of resource access and natural resources management (NRM) (Thakadu, 2004; Sharp & Curtis, 2014). Trust among stakeholders entails having a "good" relationship and the ability to rely on each other in a one-way manner, or a reciprocating fashion (Sharp et al., 2013).

Trust within local communities can also be differentiated into institutional trust and interpersonal trust (Davenport et al., 2007). Further, Davenport et al. show that institutional trust is dependent on both the processes and the outcomes of NRM strategies. They highlight unclear communication, limited community engagement, limited community power and historical resentment as the constraints to trust related to institutions. Conflicting values and slow progress were found to be the main factors affecting outcomes of NRM interventions. All these factors were identified in both case studies. The higher levels of trust in the Kaingu CRB can be attributed to the more formalised and democratic procedure for electing the CRB which further legitimises office-bearing, as opposed to the KNRT board in Kaindu.

Limited cooperation among actors drives the lack of coordination not only among the different actors but even between different government departments. The perception by the local communities that they are denied access to and use of resources has fuelled social conflicts 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 are asymmetric and favour the private and the state actors. This has resulted in negative attitudes by the local communities who view the NRG process (see chapter 5) as illegitimate. 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 (Metcalfe, 2001). Government departments must coordinate their programmes and intervention projects as they implement policies because poor coordination constrains sustainable planning and implementation, especially if it occurs among agencies that have overlapping and competing development mandates (Mallarach, 2008).

6.5.4 Outcomes (Resources use and state of the resources)

6.5.4.1 Land ownership and alienation

Both the Kaingu and Kaindu chiefdoms are governed by the Lands Act No: 29 of 1995. However, the KCC which lies entirely within Kaindu 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) have stronger ownership, i.e. the right to access, withdraw, manage, exclude and alienate the natural resources (Ostrom, 2008) in the protected area than Chief Kaingu and the CRB. Thus, Kaingu has a governance by government system, whereas the KCC is a private/shared governance regime (Borrini-Feyerabend et al., 2013).

It was noted that the processes of allocation of land in both chiefdoms is unclear and is considered illegitimate by local community members (see chapters 4 and 5). Hall et al, (2017) report that the allocation and administration of land by chiefs and headmen in Zambia is extremely un-transparent and centralised. Customary rules regarding land allocation are not documented and chiefs are guided by knowledgeable advisors ("indunas"), oral knowledge and histories of past and present allocations. The villagers in Kaindu are suspicious of new visitors because they have experienced much displacement when commercial farmers buy 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 dynamic socio-economic and political conditions are drivers of tenure insecurity (Hall et al., 2017).

6.5.4.2 Wildlife stocks and flows

The differences in perceptions about the state of the wildlife resource between the two cases indicate the importance of the interests of the *de facto* actors and the size of the protected area regarding conservation. The RPU is more effective in wildlife protection in the KCC because it focuses on and allocates 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 is six times larger than Kaindu, i.e. the conservancy plus the new annex in Lunga Luswishi GMA.

However, the KCC, the KNRT, Royal Kafue Limited and DNPW still continue to face challenges in monitoring the resource, controlling resource users and managing the enforcement of rules and this is despite forming the RPU (see chapter 5). 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, 2020). The unit has arrested more than 700 poachers, seized 361 illegal

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firearms, rescued 15 live pangolins and seized 372kg of ivory in KNP including Kaingu but excluding the KCC (Game Rangers International, 2020).

6.5.4.3 Forest abundance and flows

Most of the communities in both cases rely on subsistence agriculture and various environmental resources for food and income. As such, there is a conflict regarding the basic human needs and conservation of forests. Vinya et al (2012) indicate that agricultural expansion, wood extraction and uncontrolled bush fires are the proximal drivers of forest cover loss identified in Mumbwa district and with the accompanying effects on wildlife stocks as is reported here. The community projects such as soil rehabilitation and conservation agriculture undertaken by the CFU must be encouraged and supported by all actors in both areas. Despite higher agricultural yields using Conservation Farming (CF) methods being reported in both cases, there are low levels of adoption among small-scale farmers (Haggblade & Tembo, 2003; Arslan et al., 2013). A higher rate of logging in Kaindu is expected because Mumbwa district has both greater forest cover (315kha) and the more commercially important *Baikiaea* tree species compared to Itezhi-Tezhi (4.4kha) (DNPW, 2013b; Global Forest Watch, 2020).

6.5.4.4 Fish stocks and flows

The declining fish stocks in Lake Itezhi-Tezhi and the Kafue River are documented (FAO, 2006; Kefi & Mofya-Mukuka, 2015). The reported fish catches in Lake Itezhi-Tezhi have declined from 2,500 tonnes in 2012 to 2,300 tonnes in 2013 and, from 6,000 tonnes in 2010 to below 4,000 tonnes in 2015 (DoF, 2013). The higher 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 kilometres stretch of Kafue River bordering the KCC that support a more extensive but subsistence fishery. The successful efforts of the RPU in the KCC have also had a positive impact on the regulation of fishing activities.

To sum up, lack of community involvement, transparency and accountability in the governance of land in both cases has created tenure insecurity among community members. The size of the protected area contributes to the effectiveness of its management. Higher incidences of poaching, tree-cutting and overfishing were reported in the larger Kaingu (Namwala GMA) than the KCC. This is attributable to the larger scale of wildlife, forests and fishery areas that the former sustains when compared to the latter.

Table 6-3 summarises the main issues concerning NRG in the two case studies, the consequences/indicators of the issues, the recommended counteractive action and the proposed lead actor. A low level of community participation has fuelled hostility, mistrust and non-compliance to CBNRM directives by the communities in both cases. This has hampered the ability of the state and

traditional authorities to regulate the exploitation of environmental resources. The well-defined geographical boundaries for land use in Namwala GMA have isolated the local communities who show limited willingness to uphold state-centric collaborative NRG projects. The little compliance by the community and other economic actors has detrimental effects on the natural resources and in some cases has compelled the realigning of government policies. However, the results and efficacy of these alignments are yet to be realised. The different perceptions by different actors have led to conflicts and in some cases violent exchanges.

There is also an underlying tug of war for the ownership and control of land between the state and the traditional authorities due to policy disagreements. Unscrupulous economic actors exploit this situation by using corrupt means to advance their interests. The effects of corrupt practices also affect civil society actors such as NGOs, resulting in a lack of harmony, restricted inclusiveness and limited impacts. Effective collaboration and efficient functionality among actors are constrained by a lack of suitable platforms of communication with the community and this has resulted in low social capital. There are also low levels of cooperation that can be attributed to a general lack of trust among the actors. The Kaingu community trusts the state and private actors more than the local people in Kaindu. Asymmetrical distribution of costs among actors has caused negative attitudes towards the CBNRM by community members.

Table 6-4: Key natural resources governance issues and recommended remedial strategies

Natural Resources Governance (NRG) Issues	Presence of NRG issue in the case study		Consequence/indicator of NRG issue	Recommended counteractive action	Actor responsible for counteractive action
	Kaingu	KCC			
Limited/passive community participation in NRG	Yes	Yes	• Ineffective NRM strategies	• Devolution of decision-making powers to the community	• Central government
				• Provision of more financial and logistical support to DNPW, FD and DoF for loose-tight natural resources management	• Central government, local private companies, international and local NGOs
Poor relationship with DNPW	Yes	No	• No sense of ownership of natural resources in Kaingu	• Community sensitisation and education on the benefits from the work of the DNPW	• Local government, CRB, KNRT and local NGOs
			• High incidences of poaching	• Fair treatment of community as an equal partner in NRM	• Local government, traditional authority, local private companies, CRB and KNRT
Command type of interaction between political and economic actors	Yes	Yes	• Low level of compliance by economic actors • Negative impact on natural resources	• Realigning of policy to integrate the community in the planning and implementation of NRG strategies	• Central government
Villagers have different perceptions of the power/influence of political actors	Yes	Yes	• Non-compliance to government policy decisions	• Reorganising the governance hierarchy to make actors more equitable	• Central government, local government and private companies
			• Local ad hoc regulations by powerful private companies taking advantage of the community	• Increasing the participation of villagers in decision-making and benefit-sharing	• Local government, traditional authority, local private companies and NGOs
Lack of transparency in the allocation and control of the customary land process by chiefs	Yes	Yes	• Violation of laws and policy by chiefs and private companies	• Increasing monitoring of resources and resource use	• Local government, CRB/KNRT, local and international NGOs
			• Displacement of communities	• Formation of transparent and fair resource allocation processes/rules	• Local government, CRB/KNRT, local and international NGOs
Corruption in government departments and chiefs affects NGOs as well	Yes	Yes	• Limited success of NGO projects	• Introduction of anti-corruption interventions at higher governance	• Central government, regional government and local NGOs
			• Social conflicts between actors	• Formation of conflict resolution interventions/programmes	• Local government, traditional authority, CRB/KNRT, local and international NGOs
			• Context specific solutions with limited impacts	• Establishment of transparent and consensus-based benefit-sharing processes	• Local government, traditional authority, CRB/KNRT, local private companies, local and international NGOs

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Natural Resources Governance (NRG) Issues	Presence of NRG issue in the case study		Consequence/indicator of NRG issue	Recommended counteractive action	Actor responsible for counteractive action
	Kaingu	KCC			
Lack of communication platforms for community	Yes	Yes	• Negative impacts of NRG policies on communities • Lack of social capital • Elite access to information and capture of benefits • Impediment of cooperation between actors	• Development of equitable policies • Strengthening of the collective-choice rules and mechanisms in the CRBs and VAGs	• Central government, Local government, local private companies, CRB/KNRT, local and international NGOs
Low cooperation, consultation and accountability	Yes	Yes	• Low levels of trust in the government and private firms by the community • Poor relationships among actors	• Improving relationships and reciprocity among actors through trust-building • Establishment of more joint ventures between the communities and private actors	• Local government, local private companies, CRB/KNRT, local and international NGOs
Lack of institutional trust in NRG agent (CRB/KNRT) by communities	Yes	No	• Poor relationship between communities and local NRG agent • No reciprocity between actors	• Local NRG agents must invest in trust-building activities and interventions with the community	• Local government, local private companies, CRB/KNRT, local and international NGOs
Poor coordination among actors	Yes	Yes	• Conflicts of the community with private companies and government departments	• Government departments must coordinate and involve the community and other stakeholders in the planning of programmes	• Central government, local private companies, international and local NGOs

6.6 Conclusions and recommendations

The existing patterns of interactions among actors in the governance of environmental resources in Kaingu and the KCC have contributed to the unsustainable use and 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 dissimilar NRG systems.

The main question was: how do the interactions between actors and their interactions with environmental resources influence outcomes of the NRG system? The study analysed differences in the levels of community participation, face-to-face dialogue, trust, shared understanding and immediate outcomes in the collaborative process. The results of this study revealed that the NRG systems in the two case studies share many common features but also have differences that contribute to the success or failure of each system in ensuring sustainable resources. 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 has the potential to yield better outcomes in terms of biodiversity conservation and livelihoods since it places the community in a more powerful position. The KNRT has greater governance flexibility than the GMA in Kaingu, but requires more community participation and increased community capacity to be more effective.

Conservation of scarce natural resources is one of the primary objectives of the government, traditional authorities and private companies, for socio-economic and commercial interests, objectives and incentives. However, the conservation of wildlife, forests and fisheries and ensuring the flow of benefits to the local communities by political actors in both cases are largely ineffective. The opportunities and mechanisms for the participation of the community in the planning and implementation of management objectives in the NRG systems of both study sites are limited and constrained. The vast areas that wildlife traverse as they migrate make it vulnerable to poaching and difficult to monitor by understaffed and poorly resourced communities and government departments. Pressures from clearing land for agriculture and overfishing have degraded the forest and fisheries resources. The government as the foremost political actor must empower both the CRB in Kaingu and the KNRT in Kaindu so that they can actively participate in the planning, monitoring and implementation of conservation and benefit-sharing objectives. This entails restructuring the constitutions of the two CBNRM systems and developing their capacities in terms of human, financial and logistical resources.

The constrained opportunities given to local communities to participate and contribute to the management of resources have created acrimony among the actors. Local communities in both cases perceive that they have been marginalised and impoverished by poor management by government departments, dictatorial decision-making and corruption in the sale of resources by the chiefs. In both cases, communities consider the influential economic actors to have breached the agreements made with them by restricting access to resources. Conflicts and violent confrontations among the actors are common occurrences in Kaindu and the KCC. However, the local community members have amicable relationships and interactions with civil society organisations, especially international NGOs due to the more tangible benefits they obtain. The antagonism among actors is a major constraint to effective NRG. Inter-actor conflict resolution mechanisms facilitated by the state need to be developed. Possible solutions include the establishment of shorter benefit chains. It is vitally important that resources and resource user boundaries are established with appropriate accountability mechanisms.

The lethargic, unclear and corrupted processes of selling/allocating land by both the government and traditional authorities have confused the members of the local community, resulting in mixed perceptions of who the most influential actors are. The conflicts among civil society actors also contribute to the confusion and have a detrimental effect on outcomes. Catalysed by ineffective communication, lack of trust and limited coordination, limited cooperation and unfair competition for resources, the conflicts among actors have contributed to the poor state of natural resources through uncontrolled and destructive uses in both cases. Legislative changes that integrate consensus in decision-making regarding the sale of land where communities not only have title but also access to all resources on their land are recommended. Further, there is an urgent need to build trust among all the actors through scheduled interactions, e.g. meetings, increased coordination and regulated equity in competition (Davenport et al., 2007). This implies the modification of the CBNRM structural arrangements to make them more compatible with the legal changes or establish new structures that are tailored to the proposed changes. CBOs must have a higher mandate and status in the governance of natural resources.

The next chapter provides a synthesis of all key empirical findings and proposes a novel NRG model that encompasses good governance for better outcomes. Chapter 7 highlights the proposed transformations in the structures, structural arrangement and processes that are necessary for more effective NRG. The chapter also proposes some changes to the roles that each actor plays to enhance their interaction for enhanced biodiversity conservation and more sustainable livelihoods.

References

Agrawal, A., & Lemos, M. C. (2007). A Greener Revolution in the Making? Environmental Governance in the 21st Century. *Environment Vol. 49 No. 5*, 36-45.

Arnstein, S. R. (1969). A Ladder Of Citizen Participation. *Journal of the American Planning Association, 35*(4), 216-224.

Arslan, A., McCarthy, N., Lipper, L., Asfaw, S., & Cattaneo, A. (2013). Adoption and Intensity of Adoption of Conservation Farming Practices. *Agriculture, Ecosystems and Environment, 187*(2014), 72-86. doi:10.1016/j.agee.2013.08.017

Axelrod, R. (1997). *The Complexity of Cooperation.* Princeton: Princeton University Press.

Bandyopadhyay, S., & Tembo, G. (2010). Household Consumption and Natural resources Management around National Parks in Zambia. *Journal of Natural Resources Policy Research, 2*(1), 39-55. doi:10.1080/19390450903350838

Borrini-Feyerabend, G., Dudley, N., Jaeger, T., Lassen, B., Broome, N. P., Phillips, A., & Sandwith, T. (2013). *Governance of Protected Areas: From Understanding to Action. Best Practice Protected Area Guidelines Series No. 20.* Gland: IUCN.

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology, 3*(2), 77-101.

Brockington. (2002). *Fortress Conservation: The Preservation of the Mkomazi Game Reserve,Tanzania.* Bloomington: Indiana University Press.

Burkey, S. (1993). *People First: A Guide to Partcipatory Rural Development.* ERIC.

Castells, M. (2009). *Communication Power.* Oxford: Oxford University Press.

Child, B., & Barnes, G. (2010). The conceptual evolution and practice of community-based natural resource management in southern Africa: past, present and future. *Environmental Conservation, 37*(3), 283-295.

Child, B., & Wojcik, D. (2014). *Developing Capacity for Community Governance of Natural Resources Theory and Practice.* Bloomington: AuthorHouse.

Child, B., Musengezi, J., Parent, G. D., & Child, G. F. (2012). The economics and institutional economics of wildlife on private land in Africa. *Pastoralism: Research, Policy and Practice, 2:18.*

Cleaver, F. (1999). Paradoxes in Participation. *Journal of International Development, 11*(4), 597-612.

Cocks, M., Dold, A., & Grundy, I. (2001). Challenges Facing a Community Structure to Implement CBNRM in the Eastern Cape, South Africa. *African Studies Quarterly, 5*(3), 57-70.

CSO. (2012). *2010 Census of Population and Housing: National Analytical Report.* Lusaka: Central Statistical Office.

Davenport, M. A., Leahy, J. E., Anderson , D. H., & Jakes, P. J. (2007). Building Trust in Natural Resource Management Within Local Communities: A Case Study of the Midewin National Tallgrass Prairie. *Environmental Management, 39*, 353-368. doi:10.1007/s00267-006-0016-1

Dobson, C. (2021). *The Citizen's Handbook.* Retrieved July 18, 2021, from The Citizen's Handbook: https://www.citizenshandbook.org/arnsteinsladder.html

DNPW. (2013). *Land Use Plan for Namwala Game Management Area.* Chilanga: DNPW.

DNPW. (2013b). *Mumbwa Game Management Area: General Management Plan (2013-2023).* Lusaka: Department of National Parks and Wildlife, Ministry of Toursm and Arts.

DNPW. (2016). *Ministry of Tourism and Arts Department of National Parks and Wildlife: Annual Report* . Chilanga: Department of National Parks and Wildlife.

DNPW. (2018). CBNRM Guidelines. Chilanga, Zambia: Department of National Parks and Wildlife.

DoF. (2013). *Department of Fisheries Annual Report.* Chilanga: Department of Fisheries.

Dressler, W., Busher, B., Schoon, M., Brockington, D., Hayes, T., & Kull, C. (2010). From hope to crisis and back again? A critical history of the global CBNRM narrative. *Environmental Conservation, 37*(1), 5-15.

Game Rangers International. (2020). Retrieved September 2, 2020, from Game Rangers International: https://www.gamerangersinternational.org/resourceprotection

Global Forest Watch. (2020, February 22). Retrieved January 10, 2020, from Global Forest Watch: https://www.globalforestwatch.org/

GRZ. (2011). The Fisheries Act. Lusaka, Government Printers.

GRZ. (2015). The Zambia Wildlife Act, 2015. Lusaka, Zambia: Government Printers.

GRZ. (2015b). The Forest Act. Lusaka, Zambia: Government Printers.

GRZ. (2018). The Forests (Community Forests Management) Regulations. Government Printers.

Haggblade, S., & Tembo, G. (2003). Conservation Farming in Zambia. *EPTD Discussion Paper*. Washington D.C.: International Food Policy Research Institute (IFPRI).

Hall, M., Murombedzi, J., Nkonkomalimba, M., Sambo, P., & Sommerville , M. (2017). *Zambia customary land documentation tenure assessment.* Lusaka: USAID Tenure and Global Climate Change Programme.

Hovmand, P. S. (2014). *Community-Based System Dynamics.* New York: Springer Science+Business Media.

Hutton, J., Adams, W. M., & Murombedzi, J. C. (2005). Back to Barriers? Changing Narratives in Biodiversity Conservation. *Forum for Development Studies*, 341-370.

Igoe, J. (2004). *Conservation and Globalization: A Study of National Parks and Indigenous Communities from East Africa to South Dakota.* Belmont: Wadsworth/Thompson Learning.

ITTDC. (2015). *District Situational Analysis.* Itezhi-Tezhi: The Planning Unit, Itezhi-Tezhi District Council.

Kefi, A. S., & Mofya-Mukuka, R. (2015). *The Fisheries Sector in Zambia: Status, Management and Challenges.* Lusaka: Indaba Agriculture Policy Research Institute (IAPRI).

Lemos, M. C., & Agrawal, A. (2006). Environmental Governance. *Annual Reviews of Environmental Resources, 31*, 297-325.

Lillehagen, C. T. (2016). *Stakeholders' attitudes, values and norms towards governance of protected areas in Zambia - an institutional analysis.* Norwegian University of Life Sciences, Department of Internantional and Environment Studies, as retrieved August 20, 2019, from https://pdfs.semanticscholar.org/eb64/95837de0de13c5c6377932cf6c5a48079986.pdf

Lindsey, P. A., Nyirenda, V. R., Barnes, J. I., Becker, M. S., McRobb, R., Tambling, C. J., t'Sas-Rolfes, M. (2014). Underperformanceof African Protected Area Networks and the Case of New Conservation Models: Insights from Zambia. *PLoS ONE 9(5).* doi:101371/journal.pone.0094109.

Lockwood, M., Davidson, J., Curtis, A., Stratford, E., & Griffith, R. (2010). Governance Principles for Natural Resource Management. *Society and Natural Resources, 23*(10), 986-1001.

Lunstrum, E. (2016). Green grabs, land grabs and the spatiality of displacement: eviction from Mozambique's Limpopo National Park. *Area, 48*(2), 142-152. doi:10.1111/area.12121

Mallarach, J. (Ed.). (2008). *Protected Landscapes and Cultural and Spritual Values.* Heidelberg: Kasparek Verlag on behalf of GTZ, IUCN and Obra Social de Caixa Catalunya.

Manning, I. P. (2012). The Landsafe Socioecological Developmental Model for the Customary Commons of Zambia: Evolution and Formalization. *Natural Resources.*

Mbinji, J. (2012). *Land justice, land reform and access: Proposals for land justice for poor families with particular emphasis on Zambia.* Dublin: Comhlámh, AITEC and WEED. Retrieved May 31, 2020, from

https://www2.weed-online.org/uploads/land_justice_land_reform_and_access_2012.pdf

Merten, S., & Haller, T. (2008). We are Zambians - Don't tell us how to fish! Institutional Change, Power Relations and Conflicts in the Kafue Flats Fisheries in Zambia. *Human Ecology, 36*, 699-715.

Metcalfe, L. (2001). Reforming European governance: old problems or new principle?. *International Review of Administrative Sciences, 67*(3), 415-443.

Munshifwa, E. (2018). Customary Land Governance in Zambia: Inertia, Confusion and Corruption. *Land Governance in an Interconnected World: Annual World Bank Conference on Land and Poverty.* Washington D.C.: World Bank.

Musavengane, R., & Simatele, D. M. (2016). Community-based natural resource management: The role of social capital in collaborative environmental management of tribal resources in KwaZulu-Natal, South Africa.
Development Southern Africa, 33(6), 1-16. doi:10.1080/0376835X.2016.1231054

Mutamba, E. (2004). Community Participation in Natural Resource Management: Reality or Rhetoric? Lessons from the Kasanka Game Management Area communities Serenje district, Zambia. *Environmental Monitoring and Assessment, 99*, 105-113.

Newell, P., Pattberg, P., & Schroeder, H. (2012). Multiactor Governance and the Environment. *Annual Review of Environment and Resources, 37*, 365-387. doi:10.1146/annurev-environ-020911-094659

Nussbaum, M. C. (2000). *Women and human development .* Cambridge: Cambridge University Press.

Ostrom, E. (2008). Design Principles of Robust Property-rights Institutions: What have we learned? *Land Policies and Property Rights.* Bloomington: Indiana University.

Ostrom, E. (2009). A General Framework for Analysing Sustainability of Socio-ecological Systems. *Science, 325*(5939), 419-422.

Ostrom, E. (2009b). Design Principles of Robust Property-Rights Institutions: What have we learned? In G. K. Ingram, & Y. H. Hong (Ed.), *Property Rights and Land Policies* (pp. 25-51). Cambridge, MA: Lincoln Institute of Land Policy.

Petursson, J. G., & Vedeld, P. (2017). Rhetoric and reality in protected area governance. *Ecological Economics*, 166-177.

Ratner, B., Burnley, C., Mugisha, S., Madzudzo, E., Oeur, I., Mam, K., Adriazola, P. (2018). Investing in multi-stakeholder dialogue to address natural resource competition and conflict. *Development in Practice, 28*(6), 799-812. doi:10.1080/09614524.2018.1478950

Reed, M. S. (2008). Stakeholder participation in environmental management: A literature review. *Biological Conservation, 141*, 2417-2431.

Samndong, R. A. (2017). *Governing the Jungle: REDD+ and forest governnce in the Democratic Republic of Congo: analysis of drivers, tenure, gender and participation.* As: Norwegian University of Life Sciences.

Schiller, D. (2007). *How to Think about Information.* Urbana: University of Illinois Press.

Sharp, E., & Curtis, A. (2014). Can NRM agencies rely on capable and effective staff to build trust in the agency? *Australasian Journal of Environmental Management, 21*(3), 268-280. doi:10.1080/14486563.2014.881306

Sharp, E., Thwaites, R., Curtis, A., & Millar, J. (2013). Trust and trustworthiness: Conceptual distinctions and their implications for natural resources management. *Journal of Environmental Planning and Management, 56*(8), 1246-1256. doi:10.1080/09640568.2012.717052

Simasiku, P., Simwanza, H. I., Tembo , G., Bandyopadhyay, S., & Pavy, J. (2008). *The Impact of Wildlife Management Policies on Communities and Conservation in Game Management Areas.* Lusaka: Natural Resources Consultative Forum.

Sitas, N. (2014). *Opportunities and challenges for mainstreaming ecosystem services in decision making.* Stellenbosch: Stellenbosch University.

Stöhr, C., & Chabay, I. (2014). From Shouting Matches to Productive Dialogue. Establishing Stakeholder Participation in Polish Fisheries Governance. *International Journal of Sustainable Development, 17*(4), 403-419.

Tarrow, S. (2005). *The New Transnational Activism.* New York: Cambridge University Press.

Thakadu, O. T. (2004). Success Factors in Community-Based Natural Resources Management in Northern Botswana: Lessons from Practice. *Natural Resources Forum, 29*, 199-212. doi:0.1111/j.1477-8947.2005.00130.x

Tsang, S., Burnett, M., Hills, P., & Welford, R. (2009). Trust, Public Participation and Environmental Governance in Hong Kong. *Environmental Policy and Governance, 19*, 99-114.

Vatn, A. (2015). *Environmental Govenance: Institutions, policies and actions.* Cheltenham: Edward Elgar.

Vedeld, P. (2017). *Something that NGOs do? Notes on participation and governance in the environment and development policy field.* International and Environmental Development Studies NORAGRIC. As: Norwegian University of Life Sciences.

Vedeld, P., Jumane, A., Wapaila, G., & Songorwa, A. (2012). Protected areas, poverty and conflicts: A livelihood case study of Mikumi National Park, Tanzania. *Forest Policy and Economics, 21*, 20-31.

Vinya, R., Syampungani, S., Monde, C., Kasubika, R., & Kasumu, E. C. (2012). *Preliminary Study on the Drivers of Deforestation and Potential for REDD+ in Zambia: A consultancy report prepared for the Forestry Department and FAO under the national UN-REDD+ Programme* . Lusaka: Ministry of Lands and Natural Resources.

Voinov, A., & Bousquet, F. (2010). Modelling with stakeholders. *Environmental Modelling and Software, 25*(11), 1-14.

Zambian Watchdog. (2018, September 21). Retrieved May 20th, 2020, from Zambian Watchdog: https://www.zambiawatchdog.com/ngos-to-demonstrate-against-corruption/

CHAPTER SEVEN : Synthesis and conclusion

7.1 Introduction

7.1.1 Background

This chapter presents a consolidated account of the environmental problems that predominate the global, regional and country levels and necessitate the application of effective environmental governance for the conservation of biodiversity and ensuring sustainable livelihoods in protected areas. The chapter is structured around the objectives and questions that shaped this research, including the findings of two case studies. Taking the findings into account, this chapter proposes a novel natural resources governance transformation model. The important insights gained from the research and policy recommendations are presented together with the challenges and limitations of the study. The chapter concludes by making propositions for future research.

The findings from two case studies are indicative of the outcomes of two models of Community-Based Natural Resource Management (CBNRM) in protected areas in Zambia. They were selected to advance the concept that bottom-up governance structures and processes hold solutions to most of the socio-economic and ecological limitations and challenges of the existing top-down systems of natural resources governance (NRG). The study employed an embedded case study approach using mixed methods. The limitations of the methodology (e.g. reliance on self-reported data) and researcher (e.g. longitudinal effects) demand caution in interpreting the conclusions as being exhaustive and applicable to the governance of natural resources in all protected areas in Zambia.

The conclusions of this study however provide important insights into the new forms of NRG that are emerging based on the different complexities of the issues affecting socioecological systems such as protected areas. The conclusions also have intrinsic value considering the undeveloped field of multi-actor protected area governance in Zambia. The conclusions provide not only specific practical knowledge about the structures and processes of NRG in the two cases but also broad generalisations that are relevant to CBNRM in Zambia.

7.1.2 Synthesis

The environment continues to face increasing pressure to provide more ecosystem services as the human population on Earth continues to rise (United Nations, 2019; Gavinet, 2020). The growing poverty of rural communities who directly depend on natural resources for their livelihood and survival in developing countries has exacerbated the already rapid degradation and destruction of wildlife, forests and fisheries stocks (PAI, 2011; Masanja, 2014; Gordon et al., 2018). The mostly negative side effects of anthropogenic activity are mounting and phenomenon such as climate change, biodiversity losses and environmental pollution have taken centre stage (Bowler et al., 2020). The efforts of international conventions and global initiatives to mitigate the destruction of biodiversity, reduce poverty and sustain ecosystems are lethargic and necessitate the need for new models of environmental governance (Bennett & Satterfield, 2018; Bierbaum et al., 2018). Just as different nations come together to find solutions to the destructive impacts of human activity on ecosystems, the diverse actors involved in the utilisation of natural resources at the local level need to collaborate to achieve sustainability (Armitage et al., 2012).

As a point of departure, the interests, perceptions opinions and attitudes of each stakeholder involved in NRG are important considerations for any collaborative environmental governance system to produce desired outcomes (Bennett & Satterfield, 2018). The patterns of interaction among actors and the environmental resources have a direct impact on the resources uses and the state of the resources in question (Vatn, 2015). Competing actor interests and asymmetric political and economic power relations have historically and still impede the collaborative process of NRG, thereby perpetuating the disproportionate distribution of costs and benefits and catalysing the detrimental impacts on natural resources (Wingqvist et al., 2012; Pereira, 2015). Despite the research being premised on the failure of local natural resources governance to ensure sustainable use of the wildlife, forests and fisheries resources in Zambia, the study also recognised that other technical, social and economic factors have contributed to this problem as well.

Chapter 2 presented a literature review of the theoretical foundations and concepts of successful collaborative natural resource governance and management in Zambia. The chapter traced the performance of past and current models of community-based natural resource management. The governance of natural resources in Zambia is based on state-led fortress conservation. It is a top-down system whose policy excludes local communities from designated protected areas and enforces statutory law for natural resource conservation. The literature showed that this approach has failed to deliver positive conservation and socio-economic benefits to rural communities. Thus in the late 1980s, the

Zambian government adopted the concept of CBNRM to address the shortcomings of the state-centric approach by co-opting rural communities into the conservation process with the pledge to provide a better benefit-sharing mechanism and achieve positive outcomes.

The early and purely CBNRM projects faced numerous challenges and did not persist due to a lack of legal support and devolution of the ownership of natural resources to rural communities (DeGeorges & Reilly, 2009). Various models of community-based natural resource management such as market-based CBNRM, public-private partnerships and multi-partner natural resource governance have been developed in several national parks and Game Management Areas (GMAs). The challenges faced by these variants of CBNRM are categorised into systemic, structural and processual issues. Systemic issues include legal foundations, the top-down system and community participation, power relations and benefit-sharing mechanisms. Structural challenges are related to community interests and conflict resolution. Lastly, processual concerns include inter-actor relationships, trust, communication and coordination and, transparency and accountability. The development of a research-based, context-specific and transformative natural resource governance model was recommended.

The primary goal of this study was to develop a community-driven, transformative and collaborative model for the governance of natural resources in protected areas in Zambia, which would contribute to the conservation of natural resources and sustainable livelihoods. The investigation followed a transdisciplinary (TD) approach with three specific objectives that addressed the systems knowledge, target knowledge and transformative knowledge component of a TD approach respectively:

1. To assess the quality of existing CBNRM governance systems in Kaindu and Kaingu conservation areas.

2. To determine the main structures and processes of the existing CBNRM governance systems that need to be changed for improved conservation of wildlife, forests and fisheries in the Kaindu and Kaingu conservation areas.

3. To formulate a novel adaptive collaborative CBNRM model of governance for wildlife, forests and fisheries resources by comparing the NRG systems in Kaindu and Kaingu conservation areas.

The research applied a combination of focus group discussions, key informant interviews and a governance survey. In chapter 4, the quality of the state-centric CBNRM protected area governance model was evaluated using stakeholder perceptions of its legitimacy based on legitimacy theories.

Findings indicated a lack of comprehensive and rights-based community participation despite the establishment of a community resources board (CRB). As such, the top-down system of NRG limits the Kaingu community's control and input into the management of natural resources, including the planning of objectives and distribution of benefits. The Kaingu community regards the CBNRM system of NRG as illegitimate as they do not have access to the outputs of the programme, indicating the unequal and unfair distribution of costs and benefits. Effective environmental action is hindered by the perceived negative outcomes of decisions made by the CRB, the lack of transparency in the decision-making process, mistrust and animosity among stakeholders, corruption and the complexity brought about by the multi-ethnic and multi-cultural demographic structure of the Kaingu chiefdom.

The results, presented in chapter 5, indicate a complex evolution of NRG institutions in Kaindu in the last century which culminated in the formation of the KNRT and the KCC to ensure sustainable utilisation of wildlife, forests and fisheries and provide benefits to the people of Kaindu chiefdom. The challenges impeding the KCC from providing significant benefits to the Kaindu community include in-migration, displacement and exclusion of locals from natural resources, and unclear and corrupt land allocation procedures by the chief. The community is not involved in the design of rules and the local government departments are not accountable to them. Bureaucracy and weak enforcement of rules affect the sanctioning of offenders and the definition of resource and resource user boundaries. The disproportionate allocation of costs and benefits among actors hampers effective monitoring and collective action and has weakened the NRG institutions and organisations. The legitimacy of the KNRT is challenged by the lack of accountability, transparency, equity and fairness in the decisions made.

Chapter 6 was premised on the findings of chapters 4 and 5 and recognised that the structure and agency, as well as the patterns of interactions among actors in the NRG systems of both protected areas, were a major determinant of their outcomes. Thus the chapter focused on comparing the outcomes of the two NRG systems with the view of developing a CBNRM governance model that is applicable in both contexts. Both systems have top-down structures and processes with the central government and the KNRT at the top of the Kaingu CBNRM and KCC, respectively. In both cases, conservation of wildlife and other natural resources for socio-economic and commercial interests is the prime objective of these main actors in both NRG systems. There was rampant resource degradation including poaching of wildlife, deforestation and decimated fish stocks in both cases. Both systems exhibited limited and constrained mechanisms for community participation, ineffective flow of benefits to the communities,

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low monitoring of resources and acrimonious relationships between government and private companies and the community.

The communities in both areas highlighted poor decision-making and corrupt practices in the sale or lease of local natural resources within the local government and traditional establishment. As a result, communities have mixed perceptions of the most influential actor and this has led to different attitudes towards resources. The effective implementation was greatly hindered by antagonistic relationships among the actors. This was spurred on by the poor communication, lack of cooperation and poor coordination between the different categories of actors. Competition over resource use was another underlying factor that influenced the position taken by the different actors. The resultant conflicts have had negative impacts on the state of the natural resources including degradation, vandalism and destruction. The communities had less hostility towards NGOs due to the more tangible benefits they provide.

The empirical findings of this research can only be translated into an effective and practical model of local NRG if synthesised into a model that is easily comprehensible to all stakeholders. Most of the issues hindering the integration of good governance principles were common in the two systems. Chapter 6 lists limited/passive community participation, poor relationships among actors, different perceptions of power and influence, lack of transparency in the process of allocating land, corruption, ineffective communication, low levels of cooperation, coordination and accountability, and lack of institutional trust in NRG agents as the main issues requiring attention. Systemic and structural changes such as legislative, power relations among actors and conflict resolution that integrate consensus between the community and other actors as a prerequisite in making decisions on the utilisation of natural resources must also be made in both CBNRM systems. The empirical findings of the research (chapters 4-6) are summarised and related to the research objectives, research questions in table 7-1.

Table 7-1: Outline of the main aspects of the research objectives, questions and findings

Research objective	Key research questions (RQ)	Short answer to RQ	Chapter in which RQ is addressed
1. To assess the quality of existing CBNRM governance systems in Kaindu and Kaingu conservation areas.	How robust and legitimate are the CBNRM institutions in the protected areas of Zambia?	Weak and illegitimate CBNRM institutions in need of transformation	4 and 5
2. To determine the main structures and processes of the existing CBNRM governance systems that need to be changed for improved conservation of wildlife, forests and fisheries in the Kaindu and Kaingu conservation areas.	What are the structures and processes of NRG in the CBNRM models that can be changed to integrate good governance in decision-making?	Change the constitutions to redesign the CBNRM structures (i.e. the CRB and KNRT). Refine the processes of community participation, benefit-sharing, monitoring and collective action.	4 and 5
3. To formulate a new adaptive collaborative CBNRM model governance for wildlife, forest and fisheries resources in Kaindu and Kaingu conservation areas.	How can the patterns of interaction among actors in CBNRM be improved to ensure positive outcomes?	Create equitable and bottom-up benefit-sharing and decision-making mechanisms through legislative change that enhance inclusiveness (for example communication, cooperation, coordination)	6

7.2 The novel transformative natural resources governance model for Kaingu and Kaindu community conservancy

This study takes cognisance of the fact that there is no one-size-fits-all solution to environmental governance issues as the context of the environmental problem has a significant influence on solutions. However, given the similar geographical, cultural and socio-economic issues in the two case studies, the model presented here (Figure 7-1) can be useful in mitigating the negative outcomes of both local NRG models at work in the two cases. Based on the transdisciplinary approach, the model highlights the actors' actions necessary (transformational knowledge) to evolve NRG structures and processes from the current situation (systems knowledge) through a description of the desired or targeted situation (target knowledge). It should be noted, however, that the processes highlighted in the model are non-linear and iterative. The model was developed from the recommended counteractive action points (chapter 6). The key actors and their recommended roles include:

7.2.1 Central and local government: Amendment of national legislation and policies

The amendment of legislation by the central government with input from other stakeholders is important and the basis for all other components of the proposed new model. The amended legislation should devolve property rights and decision-making to the community. This entails the realigning or

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reformulation of policies to integrate community opinions in the planning and implementation of NRG strategies. If the communities around the protected areas are not empowered by law to become equitable partners in NRG, they will continue to degrade and destroy the natural resources in their proximity. This process is reliant on the political will of the central government and local government to initiate and manage the change proposed. This affects both case studies as it should be facilitated by the central government. It is also vital that the amended legislation is in harmony with customary rules concerning the governance of natural resources. The traditional authority would have the responsibility of providing feedback and input into the policy based on the needs of their livelihood needs of their subjects and conservation. For instance the issue of Human-wildlife conflict and its drivers need to be urgently addressed. The council meetings must co-opt CRB members and incorporate their opinions in submissions to the office of the Member of Parliament.

7.2.2 Traditional authorities: Formalising of the customary rules for allocation of land and other natural resources

The chief and his palace committees must facilitate the drafting of customary rules and develop detailed criteria for resources users and resource boundaries, and prescribe the acceptable land uses in consultation with the community. In so doing they will provide guidelines and checks and balances to in-migrants and indigenous individuals regarding resources. Thus the formalising of customary rules must be done concurrently with the amendment of the national legislation and policy recommended above to synchronise both statutory law and customary rules to achieve common goals. In order to realise this recommendation the palace committees and indunas (traditional ministers) must play an active role. The rules must be documented, gazetted and implemented through village headmen and head women. In this way the traditional authority will be able to contribute to NRG more effectively. That is why it is important for the traditional authority to have a place in the council chamber to complement the work of the local councillor.

7.2.3 Local government and community-based organisations: Streamlining a clearly defined revenue generation process

Since the Lands Perpetual Act at work in the KCC allows the community to utilise natural resources for their benefit and upgrading 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, CRB in Kaingu and the KNRT in Kaindu. It is essential that trust among actors is 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 by ordinary community members. This information must be provided by the CRB and Village Action Groups (VAGs) committees. The state and private companies should improve their integrity by fulfilling their commitments to the communities following the agreed procedures.

7.2.4 Community-based organisations: Creation of bottom-up, transparent and equitable processes of disbursement of revenues

Decisions on the utilisation of revenue from the sale or lease of natural resource within the protected area should be made from the bottom-up, in a transparent and equitable manner. 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, expenditure and the progress of community projects in a clear manner. The community would then be empowered to monitor the quantity of available resources and the benefits that can be derived from them. Further, the community being the bearer of most of the social cost of resource utilisation must lead financial audit of the transactions of the CRB and VAG committees. This would also reduce the elite capture of benefits by the local leadership.

7.2.5 Local government and civil society: Building the capacity of community–based organisations and institutions

Capacity building must be ingrained in the local NRG constitutions so that local villagers are involved in the financial management of NRG programmes. The CRB and KNRT are weakened by the lack of well trained and competent personnel. These institutions can only be effectively managed and sustained if managed 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 must be sustained by the community after being established. Key areas that require capacity-building include NRM skills, accounts (bookkeeping), law enforcement (law expertise and enforcers), investments (business/entrepreneurship). Additionally, the CRB and VAGs must purposely equip themselves with all the facilities including infrastructure, vehicles necessary for effective natural resource conservation.
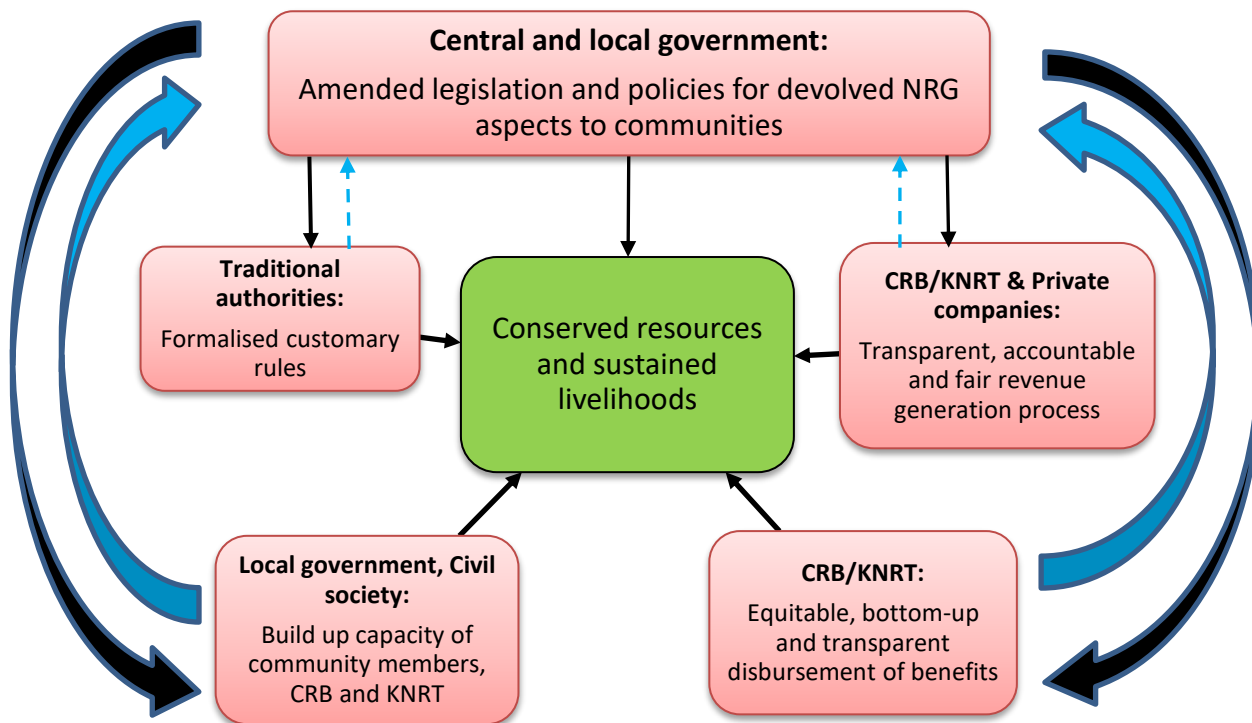
Figure 7-1: The proposed natural resource governance model for the conservation of biodiversity and sustainable livelihoods in Kaingu and Kaindu, Zambia

7.3 Important insights and policy recommendations

To go forward with the discussion on the best governance model for natural resources, a set of general findings can be synthesised from the chapters of this thesis. The following is an outline of the pertinent insights gained from this research.

7.3.1 Political will and flexibility

There must be an internal attitudinal shift in the structures and institutions of the central and local government to the concepts of collaborative natural resource governance. Despite the many challenges and failures of the fortress approach, the historical inflexible mind-set among the political actors (especially the DNPW) that only they can conserve natural resources and provide meaningful development to the rural communities in GMAs and open areas persists. The placing of CBNRM under the top-down, state-centric NRG system demonstrates the lack of willingness to devolve power in decision-making by the state. A deliberate policy of inculcating the principles of collaborative NRG in natural resource managers must be put in place at all levels within government departments. For CBNRM to succeed the state needs to be flexible and adopt more adaptive management principles in NRG.

7.3.1.1 Integration of the transdisciplinary approach in natural resources governance policies

The processes of NRG are not inclusive enough for the meaningful setting of management goals and objectives. The state, private firms and community should develop, interact and exchange knowledge and ideas in transparent collective choice arrangements. The transdisciplinary approach is a useful and effective way of bringing multiple actors together to formulate and implement NRG strategies. The community needs a higher platform of representation equal to the state and private firms. Engaging the stakeholders in a transdisciplinary way can build relationships and trust, help to manage uncertainty, mitigate tenure insecurity, build equity, and help to garner support for NRG initiatives and strategies. Additionally, the transdisciplinary approach can enhance communication, coordination and regulate competition among stakeholders. Thus this study recommends that the transdisciplinary approach be integrated into the wildlife, forest and fisheries policies.

7.3.1.2 Relative scale of protected area estate

The size of the protected area has a great impact on the governance of local natural resources. Most tools and principles for NRG are designed for relatively small protected areas and cannot be implemented on a large scale. It is therefore important to consider scale when designing interventions. Some workers have recommended subsidiarity (allowing the people who live with the resources to make decisions concerning them) (Child & Wojcik, 2014). This necessitates the need for redesigning the protected areas for enhanced coverage by local natural resource managers. Clear geographical boundaries must be defined in relation to the financial and logistical resources available for NRM. If implemented, this can reduce the cost of management.

7.3.1.3 Constitution amendment

The CBNRM guidelines upon which the CRB and the constitution of the KNRT are moulded must be amended through a consultative process that is embedded in the transdisciplinary approach. The inputs from non-scientific actors are invaluable to ensure success. The constitutions need to integrate and clearly define the level of community participation, outline the benefit-sharing mechanisms and indicate incentives for individuals and organisations to become champions of good governance in NRM.

7.3.1.3.1 Community participation

The constitution should be amended to improve community participation in NRG and management. The goal of this policy change should be to empower the communities in the two case studies to an interactive participation level where the communities will have the right to co-develop action plans, make collective-

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choice rules and have an input in the analysis of problems such as described by Pretty (1995), as a part of adaptive management processes.

7.3.1.3.2 Benefit-sharing mechanisms

The channelling of the income from community wildlife enterprises to enhancing participation is vital for the new model to work effectively. The policy must institute a bottom-up benefit-sharing mechanism in both cases. This entails that the VAGs must get the bulk of the proceeds from the sale of licences to trophy hunters from Royal Kafue Limited in the KCC. Similarly, the CRB in Kaingu must be empowered to sell hunting licences for wildlife in the conservation zone. With the guidance of the constitution and facilitation by the VAG committees, the communities must decide how they would prefer investing the monies. This excludes the unsustainable option of paying cash to individual community members. The formation of cross-actor conflict resolution mechanisms must go in tandem with the benefit-sharing scheme to resolve conflicts due to competing interests among actors.

7.3.1.3.3 Champions for conservation

The constitution must provide incentives for individuals and organisations to align themselves to causes within the community development or natural resource conservation sub-themes depending on their interests. Additionally, it should provide a legitimate basis for the development of the CBNRM governance model by safeguarding the rights of the local people and eliminating corruption within the CRB and KNRT. Champions can provide publicity and spark public interest for the benefit of rural communities and natural resource conservation.

7.3.2 Challenges and limitations

The research took place in cosmopolitan settings that demanded a transdisciplinary approach to encompass all stakeholder interests and opinions. This section presents several challenges and limitations encountered during this study.

Access to some stakeholders, especially civil society actors, i.e. NGOs, proved to be difficult during the data collection phase of this research. Most times, officers working in the prominent NGOs were away working in the villages or attending meetings in other towns. Cancellations and re-scheduling of appointments by heads of NGOs were common. Every opportunity was taken to conduct interviews with key informants, sometimes meeting by chance.

The participation of women in some FGDs was low and the collection of data from female respondents was assigned to female research assistant in the absence of the principal investigator. The quality of questioning (especially probing) could have been compromised. The cleaning of both quantitative and qualitative data removed some of the non-usable responses. The relatively large samples sizes helped to overcome this challenge.

Some factors are beyond the scope of this study but are nevertheless important for developing NRG intervention programmes. There was the need to conduct an in-depth study of the physical, cultural and socio-economic drivers influencing the choices of actors including livelihoods, economic indicators, behavioural patterns of communities in protected areas towards local natural resources and other aspects of human ecology. These factors could give a broader picture of the Socio-Ecological Systems (SES) landscape and open new areas of research, knowledge and sustainable development.

7.4 Proposed foci for future research

As a TD research project, this study focused on producing systems knowledge (the origins, evolution and current situation of local NRG institutions) and the target knowledge (the need for change to achieve the desired condition of local NRG institutions) of the two protected areas under consideration (Messerli & Messerli, 2008; Pohl & Hirsch Hadorn, 2008). The third component of the TD process, i.e. the transformational knowledge is difficult to capture in a single PhD study as cognitive change and change in agency takes much time and financial resources. However, the proposed NRG model can serve as the starting point and a guide for such transformation. Therefore this study can only recommend the following issues as foci for future research:

7.4.1 Cross-scalar NRG governance research

The CBNRM enterprises must be nested in more supportive and adaptable legislative frameworks and organisations (Ostrom, 2009). In this research, we recommend the devolution of legislation and policies to empower communities to manage natural resources more effectively. As such, this opens the need for investigating the processes required to link the NRG at different scales and how the macro and micro levels of NRG can be harmonised. Many questions as to how this process can be operationalised arise. It is important to investigate how these legal frameworks can be made more flexible at the local level so that the dynamic nature of conditions SES is accounted for.

7.4.2 Experimental NRG models

This study provides an understanding of the essential features of a collaborative NRG model that can be adapted for successful CBNRM programmes at the local level. This would entail researching by establishing pilot CBNRM in other protected areas in different biophysical and socio-economic contexts. The community forest groups piloted by the state under Statutory Instrument number 11 of 2018 (GRZ, 2018) are welcome, but further devolution to communities is necessary (see discussion in chapter 6). The model proposed in this chapter could be tested with some contextual modifications in the future. In-depth research should investigate how the management of wildlife and fisheries resources can be devolved to local communities without the central government retaining control.

7.4.3 Transformative collaborative development

More research is required on how the transformation of the current NRG institutions and organisations can be initiated and maintained. The transdisciplinary approach offers a novel and comprehensive alternative to achieve this. More research is needed on how the various actors should be able to contribute to the collaborative planning and implementation of NRG programmes and projects. For instance, proposals on how to remove the barriers to equitable participation in GMAs and how to institute novel transparent and equitable benefit-sharing among actors (chapters 4 and 5).

7.4.4 Compensatory mechanisms for communities affected by Human-Wildlife Conflicts

The distribution of costs and benefit is another aspect of NRG that needs much more research attention. Ways to mitigate the social costs of living close to wildlife incurred by local communities (chapters 4 and 5) must be established. Further to this, research on limiting the expropriation of benefits to the detriment of local communities must be prioritised (chapter 5). It would be important to investigate how property rights can be enhanced to give more decision-making power to ordinary community members.

References

Armitage, D., de Loe, R., & Plummer, R. (2012). Environmental governance and its implications for conservation practice. *Conservation Letters, 5*, 245-255.

Bennett , N. J., & Satterfield, T. (2018). Environmental governance: A practical framework to guide design, evaluation, and analysis. *Conservation Letters, 11*(6), 1-13.

Bierbaum, R., Cowie, A., Barra, R., Ratner, B., Sims, R., & Stocking, M. (2018). *Integration: To solve complex environmental problems.* Washington DC: Scientific and Technical Advisory Panel to the Global Environment Facility.

Bowler, D. E., Bjorkman, A. D., Dornelas, M., Myers-Smith, I. H., Navarro, L. M., Niamir, A., Bates, A. E. (2020). Mapping human pressures on biodiversity across the planet Mapping human pressures on biodiversity across the planet. *People and Nature, 2*, 380-394.

Child, B., & Wojcik, D. (2014). *Developing Capacity for Community Governance of Natural Resources Theory and Practice.* Bloomington: AuthorHouse.

DeGeorges, P. A., & Reilly, B. K. (2009). The Realities of Community-Based Natural Resource Management in Sub-Saharan Africa. *Sustainability*, 734-788.

Gavinet, E. (2020). Growth in human population and consumption both need to be addressed to reach an ecologically sustainable future. *Environment, Development ans Sustainability, 22*, 4979-4998.

Gordon, T. A., Harding, H. R., Clever, F. K., Davidson, I. K., Davidson, W., Montgomery, D. W., Santos, E. M. (2018). Fishes in a changing world: learning from the past to promote sustainability of fish populations. *Journal of Fish Biology, 92*, 804-827.

GRZ. (2018). The Forests (Community Forests Management) Regulations. Government Printers.

Masanja, G. F. (2014). Human Population Growth and Wildlife Extinction in Ugalla Ecosystem, Western Tanzania. *Journal of Sustainable Development Studies, 5*(2), 92-217.

Messerli, B., & Messerli, P. (2008). From local projects in the Alps to global change programmes in the mountains of the world: milestones in transdisciplinary research. In G. Hirsch Hadorn, H. Hoffmann-Riem, S. Biber-Klemm, W. Grossenbacher-Mansuy, D. Joyce, C. Pohl, . E. Zemp, *Handbook of transdisciplinary research* (pp. 43-62). Zurich: Springer.

Ostrom, E. (2009). A General Framework for Analysing Sustainability of Socio-ecological Systems. *Science, 325*(5939), 419-422.

PAI. (2011). *Population Action International.* Washington DC: Population Action International. Retrieved November 2, 2020, from Population Action International: https://pai.org/wp-content/uploads/2012/02/PAI-1293-FORESTS_compressed.pdf

Pereira, J. C. (2015). Environmental issues and international relations, a new global (dis)order – the role of International Relations in promoting a concerted international system. *Revista Brasileira de Política Internacional, 58*(1), 191-201.

Pohl, C., & Hirsch Hadorn, G. (2008). Core terms in transdisciplinary research. In G. Hirsch Hadorn, H. Hoffmann-Riem, S. Biber-Klemm, W. Grossenbacher-Mansuy, D. Joyce, C. Pohl, . E. Zemp, *Handbook of Transdisciplinarity* (pp. 427-432). Zurich: Springer.

Pretty, J. N. (1995). Participatory Learning for Sustainable Agriculture. *World Development, 23*(8), 1247-1263.

United Nations. (2019, October 15). *United Nations*. Retrieved from United Nations: https://www.un.org

Vatn, A. (2015). *Environmental Govenance: Institutions, policies and actions.* Cheltenham: Edward Elgar.

Wingqvist, G. Ö., Drakenberg, O., Slunge, D., Sjöstedt, M., & Ekbom, A. (2012). *The role of governance for improved outcomes.* Stockholm: Swedish Environmental Protection Agency.

FULL REFERENCE LIST

Abdulaziz, H., Shuaibu, A.-W., & Abdulaziz, M. A. (2019). Role of Governance in Management of Conservation Areas. *Global Scientific, 7*(6), 649-708.

Adams, M. (2003). *Land tenure policy and practice in Zambia: Issues relating to the Development of the Agriculture Sector.* Oxford: Mokoro Ltd.

African Parks. (2021). Retrieved June 15, 2021, from Bangweulu Wetlands: https://www.africanparks.org/the-parks/bangweulu

Agrawal, A., & Lemos, M. C. (2007). A Greener Revolution in the Making? Environmental Governance in the 21st Century. *Environment Vol. 49 No. 5*, 36-45.

Akkerman, S. F., & Bakker, A. (2011). Boundary crossing and boundary objects. *Review of Educational Research, 81*(2), 132-169.

Andrade, G. S., & Rhodes, J. R. (2012). Protected areas in local communities: An inevitable partnership towards successful conservation strategies? *Ecology and Society, 17*(4), 14. doi:10.575/ES-05216-170414

Ansell, C., & Gash, A. (2007). Collaborative Governance in Theory and Practice. *Journal of Public Administartion Research and Theory*, 543-571.

Apse, C., & Seybert, R. (2010). *African Parks management of Liuwa Plain National Park.* Lusaka: The Nature Conservancy.

ARC ZAMBIA. (2017). *ARC Zambia conservation challenges*. Retrieved June 11, 2019, from Animal Research Connections (ARC) Zambia: https://www.arczambia.com/conservation/challenges/

Armitage, D., de Loe, R., & Plummer, R. (2012). Environmental governance and its implications for conservation practice. *Conservation Letters, 5*, 245-255.

Arnstein, S. R. (1969). A Ladder Of Citizen Participation. *Journal of the American Planning Association, 35*(4), 216-224.

Arslan, A., McCarthy, N., Lipper, L., Asfaw, S., & Cattaneo, A. (2013). Adoption and Intensity of Adoption of Conservation Farming Practices. *Agriculture, Ecosystems and Environment, 187*(2014), 72-86. doi:10.1016/j.agee.2013.08.017

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Axelrod, R. (1997). *The Complexity of Cooperation.* Princeton: Princeton University Press.

Ayivor, J. S., Nyametso, J. K., & Ayivor, S. (2020). Protected Area Governance and Its Influence on Local Perceptions, Attitudes and Collaboration. *Land, 9*(310). doi:10.3390/land9090310

Babbie, E., Mouton, J., Vorster, P., & Prozesky, B. (2012). *The Practice of Social Research.* Cape Town: Oxford University Press Southern Africa.

Baird, S., McIntosh, C., & Özler, B. (2011). The regressive demands of demand-driven development. *Policy Research Working Paper Series, 5883*.

Banda, G. (2002). Customary Law and Natural Resources Management. In IUCN, *Human and Social Perspectives in Natural Resource Management: A Regional Training Handbook*. Harare. IUCN.

Banda, J A. Banda P., & Tengnas B. (1997). Agroforestry Manual for Extension Workers in Central and Lusaka Provinces. Nairobi Regional Soil Conservation Unit.

Bandyopadhyay, S., & Tembo, G. (2010). Household Consumption and Natural Resources Management Around National Parks in Zambia. *Journal of Natural Resources Policy Research, 2*(1), 39-55. doi:10.1080/19390450903350838

Barrow, E., & Murphree, M. W. (2001). Community Conservation: from concept to practice. In D. Hulme, & M. W. Murphree, *African Wildlife and Livelihoods* (pp. 24-37). Oxford: James Currey.

Bennett , N. J., & Satterfield, T. (2018). Environmental governance: A practical framework to guide design, evaluation, and analysis. *Conservation Letters, 11*(6), 1-13.

Berardo, R., Fischer, M., & Hamilton, M. (2020). Collaborative Governance and the Challenges of Network-Based Research. *The American Review of Public Administration, 0*(0), 1-16.

Bierbaum, R., Cowie, A., Barra, R., Ratner, B., Sims, R., & Stocking, M. (2018). *Integration: To solve complex environmental problems.* Washington DC: Scientific and Technical Advisory Panel to the Global Environment Facility.

Biernacki, P., & Waldorf, D. (1981). Snowball sampling: Problems and Techniques of Chain Referral Sampling. *Sociological Methods and Research, 10*(2), 141-163.

Bless, C., Higson-Smith, C., & Sithole, S. L. (2014). *Fundamentals of Social Research Methods: An African Perspective.* Cape Town: Juta & Company.

Bodin, Ö. (2017). Collaborative environmental governance: Achieving collective action in social-ecological systems. *Science, 357*(659).

Borrini-Feyerabend, G., Dudley, N., Jaeger, T., Lassen, B., Broome, N. P., Phillips, A., & Sandwith, T. (2013). *Governance of Protected Areas: From Understanding to Action. Best Practice Protected Area Guidelines Series No. 20.* Gland: IUCN.

Borsdorf, F. F. (2013). *Resilience and Legitmacy of Natural resource Governance through adaptive management: The case of Nunavut's co-management boards.* Innsbruck: Institute of Interdisciplinary Mountain Research (IGF), Austrian Academy of Sciences.

Bothwell, K. N. (2019). Practicing Collaborative Natural Resource Management with Federal Agencies: Keys to Success across Partnership Structures. *Journal of Forestry, 117*(3), 226-233. doi:10.1093/jofore/fvz010

Bouamrane, M; Spierenburg, M; Agrawal, A; Boureima, M; Cormier-Salem, -C; Etienne, M; Le Page, C; Levrel, H; Mathevet, R. (2016). Stakeholder engagement and biodiversity conservation challenges in social-ecological systems: some insights from biosphere reserves in western Africa and France. *Ecology and Society, 21*(4), 25. doi:10.5751/ES-08812-210425

Bowler, D. E., Bjorkman, A. D., Dornelas, M., Myers-Smith, I. H., Navarro, L. M., Niamir, A., Bates, A. E. (2020). Mapping human pressures on biodiversity across the planet Mapping human pressures on biodiversity across the planet. *People and Nature, 2*, 380-394.

Boyce, C., & Neale, P. (2006). *Conducting in-depth interviews: A guide for designing and conducting in-depth interviews for evaluation input.* Watertown: Pathfinder International.

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative research in psychology, 3*(2), 77-101.

Brockington, D., & Igoe, J. (2006). Eviction for conservation: A Global Overview. *Conservation and Society*, 424-470.

Brockington. (2002). *Fortress Conservation: The Preservation of the Mkomazi Game Reserve,Tanzania.* Bloomington: Indiana University Press.

Burkey, S. (1993). *People First: A Guide to Partcipatory Rural Development.* ERIC.

Bwalya, S. M. (2002). Critical Analysis of Community-Based Wildlife Resource Management in Southern Africa: Case Study From Zambia. *'The Commons in an Age of Globalisation. The Ninth Conference of the International Association for the Study of Common Property.* Victoria Falls, Zimbabwe: http://www.cbnrm.net/pdf/bwalya_sm_001_zambiacbwm.pdf.

Carpenter, S. R., Mooney, H. A., Agard, J., Capistrano, D., Defries, R. S., Diaz, S., Whyte, A. (2009). Science for managing ecosystem services: Beyond the Millennium Ecosystem Assessment. *Proceedings of the National Academy of Sciences of the United States of America, 106*, 1305-1312.

Castells, M. (2009). *Communication Power.* Oxford: Oxford University Press.

CBD. (2020). *Convention on Biological Diversity (CBD) National CHM for the Republic of Zambia.* Retrieved December 18, 2020, from Convention on Biological Diversity (CBD) National CHM for the Republic of Zambia: http://zm.chm-cbd.net/

Chabwela, H. N., & Haller, T. (2010). Governance issues, potentials and failures of participatory collective action in the Kafue Flats, Zambia. *International Journal of the Commons*, Vol 4, No 2. 621–642.

Charnley, S., & Poe, M. R. (2007). Community Forestry in Theory and Practice: Where Are We Now? *Annual Review of Anthropology, 36*, 301–336. doi:10.1146/annurev.anthro.35.081705.123143

Chidakel, A. (2011). Conservation Attitudes and Community-Based Natural Resource Management in an Understocked Game Management Area of Zambia. *Masters Thesis(450).* Miami, Florida, USA: Florida International University. doi:10.25148/etd.FI11080302

Chidumayo, E. N. (2012). *Development of reference emission levels for Zambia.* Lusaka: FAO.

Child, B. (2003). Origins and efficacy of modern community-based natural resources management (CBNRM) practices in the Southern African region. IUCN. Retrieved November 30, 2020, from http://cmsdata.iucn.org/downloads/cca_bchild.pdf

Child, B. (2004). *Parks in Transition: Biodiversity, Rural Development and the Bottom Line.* London: Earthscan.

Child, B. (2009). Private conservation in Southern Africa: Practice and emerging principles. In H. Suich, B. Child, & A. Spenceley, *Evolution and innovation in wildlife conservation: Parks and game ranches to transfrontier conservation areas* (pp. 103-112). London: Earthscan.

Child, B., & Barnes, G. (2010). The conceptual evolution and practice of community-based natural resource management in southern Africa: past, present and future. *Environmental Conservation, 37*, 283-295.

Child, B., & Bergstrøm, C. (2001). Community Wildlife Management in Zambia: Testing Indicators of Sustainable Use in a Case Study of South Luangwa. In B. G. Ousmane, B. Child, C. Bergstrøm, C. v. Dam, I. Bryceson, J. Ahmed,. T. L. Price, *Lessons learned: Case studies in sustainable use* (pp. 13-47). Gland: IUCN.

Child, B., & Dalai-Clayton, B. (2004). Transforming Approaches to CBNRM: Learning from the Luangwa experience in Zambia. In T. O. McShane, & M. Wells, *Getting Biodiversity Projects to Work Towards More Effective Conservation and Development* (pp. 256-289). New York: Columbia University Press.

Child, B., & Wojcik, D. (2014). *Developing Capacity for Community Governance of Natural Resources Theory and Practice.* Bloomington: AuthorHouse.

Child, B., Musengezi, J., Parent, G. D., & Child, G. F. (2012). The economics and institutional economics of wildlife on private land in Africa. *Pastoralism: Research, Policy and Practice, 2:18*.

Child, B., Ward, S., & Tavengwa, T. (1997). Zimbabwes CAMPFIRE programme: Natural Resource Management by the People. *Environmental Issues Series*(2).

Chirenje, L. I., Giliba, R. A., & Musamba, E. B. (2013). Local communities' participation in decision-making through planning and budgeting in Africa. *Chinese Journal of Population Resources and Environment, 11*(1), 10-16. doi:10.1080/10042857.2013.777198

Chirwa, P. W., Larwanou, M., Syampungani, S., & Babalola, F. D. (2015). Management and restoration practices in degraded landscapes of Southern Africa and requirements for upscaling. *International Forestry Review, 17*(S3), 31-41.

Chu, J., & Phiri, D. (2015). *Large-scale Land Acquisitions in Zambia: Evidence to inform policy.* Belville: Institute of Poverty, Land and Agrarian Studies, University of the Western Cape, Faculty of Economic Management.

Cillers, P., Biggs, H. C., Blignaut, S., Choles, A. G., Hofmeyr, J. H., Jewitt, G. P., & Roux, D. J. (2013). Complexity, Modelling and Natural Resources Management. *Ecology and Society, 18*(3).

Cilliers, P. (1998). *Complexity and postmodernism. Understanding complex systems.* London, UK: Routledge.

Cleaver, F. (1999). Paradoxes in Participation. *Journal of International Development, 11*(4), 597-612.

Cleaver, F. 2012. Introducing bricolage. In: Cleaver, F. Development through Bricolage: rethinking Institutions for Natural Resource Management. Abingdon, Routledge. Pp. 33-52.

Cleaver, F., & Whaley, L. (2018). Understanding process, power, and meaning in adaptive governance: a critical institutional reading. *Ecology and Society, 23*(2).

Cocks, M., Dold, A., & Grundy, I. (2001). Challenges Facing a Community Structure to Implement CBNRM in the Eastern Cape, South Africa. *African Studies Quarterly, 5*(3), 57-70.

COMACO. (2020, December 4). *COMACO*. Retrieved December 4, 2020, from COMACO: https://itswild.org/about-us/

CONASA. (2003). *Community-Based Natural Resource Management and Sustainable Agriculture Project.* Lusaka: CONASA.

Costanza, R., de Groot, R., Sutton, P., van der Ploeg, S., Anderson, S. J., Kubiszewski, I., Turner, R. K. (2014). Changes in the global value of ecosystem services. *Global Environmental Change, 26*, 52-158.

Coulibaly, J. (2017, June 4). *Times of Zambia*. Retrieved from www.timesofzambia.co.zm: http://www.times.co.zm/?p=95790

Cox, M., Arnold, G., & Villamayor Tomas, S. (2010). A Review of Design Principles for Community-based Natural Resource Management. *Ecology and Society, 15*(4), 38. Retrieved from http://www.ecologyandsociety.org/vol15/iss4/art38/

Creative Research Systems. (2016, January 15). Retrieved January 15, 2016, from www.surveysystem.com

Creswell, J. W. (2014). *Reserach Design: Qualitative, quantitative and mixed methods* (4th ed.). Thousand Oaks: SAGE Publications Inc.

Creswell, J. W., & Plano Clark, V. L. (2011). *Designing and Conducting Mixed Methods Research* (2nd ed.). Los Angeles: SAGE Publishers.

CSO. (2012). *2010 Census of Population and Housing: National Analytical Report.* Lusaka: Central Statistical Office.

d'Estrée, T. P., Dukes, E. F., and Navette-Romero, J. (2002). Environmental Conflict and Its Resolution. In B. Bechtel, & A. Churchman (Eds.), *Handbook of Environmental Psychology* (pp. 589-606). New York: Wiley.

Da Silva, M. X., Paviolo, A., Tambosi, L. R., & Pardini, R. (2018). Effectiveness of protected areas for biodiversity conservation: Mammal occupancy patterns in Iguacu National Park, Brazil. *Journal for Nature Conservation, 41*, 51-62.

Dalai-Clayton, B., & Child, B. (2003). *Lessons from Luangwa: The Story of the Luangwa Integrated Resource Development Project, Zambia.* London: International Institute for Environment and Development.

Davenport, M. A., Leahy, J. E., Anderson , D. H., & Jakes, P. J. (2007). Building Trust in Natural Resource Management Within Local Communities: A Case Study of the Midewin National Tallgrass Prairie. *Environmental Management, 39*, 353-368. doi:10.1007/s00267-006-0016-1

Davis, A.-L,, Blomley, T., Homer, G., Sommerville, M., & Nelson, F. (2020) *Community-Based Natural Resource Management in Zambia: A review of institutional reforms and lessons from the field.* Washington DC: Maliasili, the USAID Intergrated Land and Resource Governance TAsk Order under the Strenghthening Tenure and Resource Rights II (STARR II) IDIQ, and The Nature Conservancy.

Davies, A. L., & White, R. M. (2012). Collaboration in natural resource governance: Reconciling stakeholder expectation in deer management in Scotland. *Journal of Environmental Management, 112*, 160–169.

DeGeorges, P. A., & Reilly, B. K. (2009). The Realities of Community-Based Natural Resource Management in Sub-Saharan Africa. *Sustainability*, 734-788.

Delgado-Serrano, M., E. Oteros-Rozas, P. Vanwildemeersch, C. Ortíz Guerrero, S. London, R. Escalante. (2015). Local perceptions on social-ecologocal systems in Latin America in three community-based natural resource management systems. *Ecology and society, 20*(4), 24.

Denkler, J. L. (2009). Community-Based Natural Resource Management: Power, Isolation and Development in Rural Botswana. *Master of Art Thesis*. University of Florida.

Dickman, A. J. (2010). Complexities of conflict: the importance of considering social factors for effectively resolving human–wildlife conflict. *Animal Conservation, 13*, 458-466. doi:10.1111/j.1469-1795.2010.00368.x

DNPW. (2013). *Kafue National Park: General Management Plan.* Lusaka: Department of National Parks and Wildlife, Ministry of Tourism and Arts.

DNPW. (2013b). *Land Use Plan for Namwala Game Management Area.* Chilanga: DNPW.

DNPW. (2013c). *Lunga-Luswishi Game Management Area: General Management Plan (2013-2023).* Lusaka: Department of National Parks and Wildlife, Ministry of Tourism and Arts.

DNPW. (2013d). *Mumbwa Game Management Area: General Management Plan (2013-2023).* Lusaka: Department of National Parks and Wildlife, Ministry of Tourism and Arts.

DNPW. (2016). *Ministry of Tourism and Arts Department of National Parks and Wildlife: Annual Report* . Chilanga: Department of National Parks and Wildlife.

DNPW. (2018). CBNRM Guidelines. Chilanga, Zambia: Department of National Parks and Wildlife.

Dobson, C. (2021). *The Citizen's Handbook.* Retrieved July 18, 2021, from The Citizen's Handbook: https://www.citizenshandbook.org/arnsteinsladder.html

DoF. (2013). *Department of Fisheries Annual Report.* Chilanga: Department of Fisheries.

Dressler, W., Busher, B., Schoon, M., Brockington, D., Hayes, T., & Kull, C. (2010). From hope to crisis and back again? A critical history of the global CBNRM narrative. *Environmental Conservation, 37*(1), 5-15.

Dudley, N. (2008). *Guidelnes for Applying Protected Area Management Categories.* Gland: IUCN.

Dukes, E. F. (2004, Fall-Winter). What We Know About Environmental Conflict Resoulution: An Analysis Based on Research. *Conflict Resolution Quarterly, 22*(1-2).

Eagles, P. F., Romagosa, F., Buteau-Duitschaever, W. C., Havitz, M., Glover, T. D., & McCutcheon, B. (2013). Good governance in protected areas: an evaluation of stakeholders' perceptions in British Columbia and Ontarion Provincial Parks . *Journal of Sustainable Tourism*, 60-79.

Ekechi, F. (2002). The Consolidation of Colonial Rule: 1885-1914. In T. Falola (Ed.), *Africa: Colonial Africa: 1885-1939* (Vol. 3, pp. 27-52). Durham: Carolina Academic Press.

Eklund, J., & Cabeza, M. (2016). Quality of governance and effectiveness of protetcted areas: Crucial concepts for conservation planning. *Annals of the New York Academy of Sciences, 1399*, 27-41.

ENNHRI. 2019. *Applying a Human Rights-Based Approach to Poverty Reduction and Measurement: A Guide for National Human Rights Institutions*. Brussels: European Network of National Human Rights Institutions.

FAO, & UNEP. (2020). *The State of the World's Forests: Forests, Biodiversity and People.* Rome: FAO and UNEP. doi:10.4060/ca8642en

FEWSNET. (2014). *FEWSNET*. Retrieved December 6, 2016, from FEWSNET: www.fews.net

Fiorino, T., & Ostergren, D. (2012). Institutional Instability and the Challenges of Protected Area Management in Russia. *Society and Natural Resources, 25*(2), 191-202.

Fischer, A., Wakjira, D. T., Weldesemaet, Y. T., & Ashenafi, Z. T. (2014). On the interplay of actors in the co-management of natural resources – A dynamic perspective. *World Development, 64*, 158-168.

Folke, C., Hahn, T., Olsson, P., & Norberg, J. (2006). Adaptive governance of social-ecological systems. *Annual Review of Environment and Resources, 30*(1), 441-473.

Fukuyama, F. (2013). *What Is Governance?* Washington DC: Centre for Global Development.

Game Rangers International. (2020). Retrieved September 2, 2020, from Game Rangers International: https://www.gamerangersinternational.org/resourceprotection

Gavinet, E. (2020). Growth in human population and consumption both need to be addressed to reach an ecologically sustainable future. *Environment, Development ans Sustainability, 22*, 4979-4998.

Geldmann, J. (2013). Evaluating the effectiveness of protected areas for maintaining biodiversity, securing habitats, and reducing threats. *PhD Thesis*. Copenhagen: University of Copenhagen.

Geldmann, J., Manica, A., Burgess, N. D., Coad, L., & Balmford, A. (2019). A global-level assessment of the effectiveness of protected areas at resisting anthropogenic pressures. *Proceedings of the National Academy of Sciences of the United States of America, 116*(46), 23209–23215.

Gibson, C. (2000). Political Institutions and Conservation Outcomes: Wildlife Policy in Zambia. *Swiss Political Science Review, 6*(1), 87-121.

Gibson, C. C. (1999). Politicians and Poachers: The Political Economy of Wildlife Policy in Southern Africa. Cambridge: Cambridge University Press.

Global Forest Watch. (2020, February 22). Retrieved January 10, 2020, from Global Forest Watch: https://www.globalforestwatch.org/

Gordon, T. A., Harding, H. R., Clever, F. K., Davidson, I. K., Davidson, W., Montgomery, D. W., Santos, E. M. (2018). Fishes in a changing world: learning from the past to promote sustainability of fish populations. *Journal of Fish Biology, 92*, 804-827.

Graham, J., Amos, B., & Plumptre, T. (2003). Governance principles for protected areas in the 21st century. *The Fifth World Parks Congress.* Durban: Institute on Governance.

Gruber, J. S. (2010). Key Principles of Community-Based Natural Resource Management: A synthesis and interpretation of identified effective approaches for managing the commons. *Environmental Management, 45*, 52-66.

GRZ. (1994). The Chiefs Act. *The Laws of Zambia*. Lusaka, Zambia: Government Printers, Government of the Republic of Zambia.

GRZ. (1995). The Lands Act (29 of 1995). Government Printers.

GRZ. (1998). The Zambia Wildlife Act, 1998. Lusaka, Zambia: Government Printers.

GRZ. (2002). The National Decentralisation Policy: Towards Empowering the People. Lusaka, Zambia: Office of the President, Cabinet Office, Government of the Republic of Zambia.

GRZ. (2011). The Fisheries Act. Lusaka: Governement printers.

GRZ. (2015). The Zambia Wildlife Act, 2015. Lusaka, Zambia: Government Printers.

GRZ. (2015b). The Forest Act. Lusaka, Zambia: Government Printers.

GRZ. (2018). The Forests (Community Forests Management) Regulations. Government Printers.

Haambiya, L., Kaunda, E., Likongwe, J., Kambewa, D., & Kagoli, M. (2015). Local-Scale Governance: A Review of the Zambian Approach to Fisheries Management. *Journal of Agricultural Science and Technology, B 5*, 81-92.

Haggblade, S., & Tembo, G. (2003). Conservation Farming in Zambia. *EPTD Discussion Paper*. Washington D.C.: International Food Policy Research Institute (IFPRI).

Hahn, M. B., Riederer, A. M., & Foster, S. O. (2008). The Livelihood Vulnerability Index: A pragmatic approach to assessing risks from climate variability and change – A case study in Mozambique. *Global Environmental Change, 19*, 74–88.

Hall, M., Murombedzi, J., Nkonkomalimba, M., Sambo, P., & Sommerville , M. (2017). *Zambia customary land documentation tenure assessment.* Lusaka: USAID Tenure and Global Climate Change Programme.

Haque, M. (2017). Environmental Governance. In A. Farazmand (Ed.), *Global Encyclopedia of Public Administration, Public Policy, and Governance.* Cham: Springer. doi:10.1007/978-3-319-31816-5_1766-1

Hardin, G. (1968). Tragedy of the Commons. *Science, 162*(3859), 1243–1248. doi:10.1126/science.162.3859.1243

Harrington, R; Anton, C; Dawson, T P; de Bello, F; Feld, C K; Haslett, J R; Kluvánkova-Oravská, T; Kontogianni, A; Lavorel, S; Luck, G W; Rounsevell, D A; Samways, M J; Settele, J; Skourtos, M; Spangenberg, H; Vandewalle, M; Zobel, M; Harrison, P A. (2010). Ecosystem services and biodiversity conservation: concepts and a glossary. *Biodiversity and conservation, 19*(10), 2773-2790. doi:10.1007/s10531-010-9834-9

Harrison, E. P., Dzingrai, V., Gandiwa, E., Nzuma , T., Masviele, B., & Ndlovu, H. (2015). Progressing Community-Based Natural Resource Management in Zimbabwe. Sustainability Research Institute Briefing Note No:6. University of Leeds.

He, M., & Cliquet, A. (2020). Challenges for Protected Areas Management in China. *Sustainability, 12*(5879), 1-29.

Heijnsberger, P. V. (1997). *International legal protection of wild fauna and flora.* Amsterdam: IOS Press.

Henry, M., Maniatis, D., Huberman, D., & Valentini, R. (2011). Implementation of REDD+ in Sub-Saharan Africa: State of knowledge, challenges and opportunities. *Environment and Development Economics, 16*, 381-404.

Holling, C. S., & Meffe, G. K. (1996). Command and Control and the Pathology of Natural Resource Management. *Conservation Biology, 10*(2), 328-337.

Hou-Jones, X., Franks, P., & Chung, J. (2019). *Creating enabling conditions for managing trade-offs between food production and forest conservation in Africa: Case studies from Ethiopia and Zambia.* London: IIED.

Hovmand, P. S. (2014). *Community-Based System Dynamics.* New York: Springer Science+Business Media.

Hulme, D., & Murphree, M. (1999). Communities, Wildlife and the New Conservation in Africa. *Journal of International Development*, 277-285.

Hutton, J., Adams, W. M., & Murombedzi, J. C. (2005). Back to Barriers? Changing Narratives in Biodiversity Conservation. *Forum for Development Studies, 32*, 341-370.

Igoe, J. (2004). *Conservation and Globalization: A Study of National Parks and Indigenous Communities from East Africa to South Dakota.* Belmont: Wadsworth/Thompson Learning.

ITTDC. (2015). *District Situational Analysis.* Itezhi-Tezhi: The Planning Unit, Itezhi-Tezhi District Council.

Iweriebor, E. E. (2011). *AFRICANA AGE: Africa & African Diasporan Transformations in the 20th Century*. Retrieved August 2019, from Schomberg Centre for Research in Black Culture: http://exhibitions.nypl.org/africanaage/essay-colonization-of-africa.html#scramble

Johnstone, M (2002). Good governance: Rule of Law Transparency and Accountability, Retrieved January 31, 2021, from ETICO: *https//etico.iiep.unesco.org/en/resource/good-governance-rule-law-transparency-and-accountability*

Jones, B. T. (2007). *Synthesis of the CBNRM Policy and Legislation in Botswana, Malawi, Mozambique, Namibia, Zambia and Zimbabwe.* Harare: WWF – SARPO.

Jones, B., & Murphree, M. (2004). Community-based natural resouces management as a conservation mechanism: lessons and directions. In B. Child (Ed.), *Parks in Transition. Biodiversity, Rural Development and the Bottom Line* (pp. 63-104). London: Earthscan.

Jones, B., & Weaver, C. (2009). CBNRM in Namibia: growth, trends, lessons and constraints. In H. Suich, & B. Child (Eds.), *Evolution and Innovation in Wildlife Conservation* (pp. 223-242). London: Earthscan.

Kasanka National Park. (2020, December 5). *About Kasanka National Park*. Retrieved December 5, 2020, from Kasanka National Park: https://kasankanationalpark.com/about/park-information/

Kefi, A. S., & Mofya-Mukuka, R. (2015). *The Fisheries Sector in Zambia: Status, Management and Challenges.* Lusaka: Indaba Agriculture Policy Research Institute (IAPRI).

Kideghesho, J. R., Rija, A. A., Mwamende, K. A., & Selemani, I. S. (2013). Emerging issues and challenges in conservation of biodiversity in the rangelands of Tanzania. *Nature Conservation, 6*, 1-29.

Koontz, T. M., Gupta, D., Mudliar, P., & Ranjan, P. (2015). Adaptive institutions in social–ecological systems governance: A synthesis framework. *Environmental Science and Policy, 53*, 139-151.

Kowero, G. (2004). The Influence of Major Sectoral Policies on Forestry in Southern Africa: An Overview. *CIFOR Newsletter (Special Issue)*.

Laforest, J. (2009) Safety Diagnosis Tool Kit for Local Communities: Guide to Organising Semi-structured Interviews with Key Informants. Quebec: Quebec National Institute of Public Health

Lambi, C. M., Kimengsi, J. N., Kometa , C. G., & Tata, E. S. (2012). The Management and Challenges of Protected Areas and the Sustenance of Local Livelihoods in Cameroon. *Environment and Natural Resources Research, 2*(3), 10-18.

Lang, D. J., Wick, A., Bergmann, M., Stauffacher, M., Martens, P., Moll, P., Thomas, C. J. (2012). Transdisciplinary research in sustainability science: practice, principles and challenges. *Sustainability science, 7*, 25-43.

Le Billon, P. (2015). Environmental conflict. In T. Perreault, G. Bridge, & J. McCarthy (Eds.), *The Routledge Handbook of Political Ecology* (pp. 598-608). New York: Routledge.

Lemos, M. C., & Agrawal, A. (2006). Environmental Governance. *Annual Reviews of Environmental Resources*, 297-325.

Lewis, D., Bell, S. D., Fay, J., Bothi, K. L., Gatere, L., Kabila, M., Travis, A. J. (2011). Community Markets for Conservation (COMACO) links biodiversity conservation with sustainable improvements in livelihoods and food production. *PNAS, 108*(34), 13957–13962.

Liebrand, J. (2015). *Methods for researching institutions: Critical institutional perspectives.* King's College London, Department of Geography, London: King's College London.

Light, A., & Katz, E. (1996). *Environmental Pragmatism.* London : Routledge.

Lillehagen, C. T. (2016). *Stakeholders' attitudes, values and norms towards governance of protected areas in Zambia - an institutional analysis.* Norwegian University of Life Sciences, Department of Internantional and Environment Studies., Retrieved August 20, 2019, from https://pdfs.semanticscholar.org/eb64/95837de0de13c5c6377932cf6c5a48079986.pdf

Limuwa, M. M., Sitaula , B. K., Njaya , F., & Storebakken, T. (2018). Evaluation of Small-Scale Fishers' Perceptions on Climate Change and Their Coping Strategies: Insights from Lake Malawi. *Climate, 6*(34), 1-23. doi:10.3390/cli6020034

Lindsey, P. A., Nyirenda, V. R., Barnes, J. I., Becker, M. S., McRobb, R., Tambling, C. J., t'Sas-Rolfes, M. (2014). Underperformanceof African Protected Area Networks and the Case of New Conservation Models: Insights from Zambia. *PLoS ONE 9(5).* doi:101371/journal.pone.0094109.

Lindsey, P., Nyirenda, V., Barnes, J., Becker, M., Tambling , C., Taylor, A., & Watson , F. (2013). *Zambian Game Management Areas.* Lusaka: Wildlife Producers Association of Zambia.

Lockwood, M., Davidson, J., Curtis , A., Stratford, E., & Griffith, R. (2010). Governance principles for Natural Resource Management. *Society and Natural Resources, 23*, 986-1001.

Lordkipanidze, M., Bressers, H., & Lulofs, K. (2019). Governance assessment of a protected area: the case of the Alde Feanen National Park. *Journal of Environmental Planning and Management, 62*(4), 647-670. doi:10.1080/09640568.2018.1441014

Luambe Conservation Project. (2021). (H. G. Portifolio, Producer) Retrieved May 10, 2021, from Luambe Conservation Project.

Lubilo, R., & Child, B. (2010). The Rise and Fall of Community-Based Natural Resources Management in Zambia's Luangwa Valley: An Illustration of Micro- and Macro-Governance Issues. In F. Nelson (Ed.), *Community Rights, Conservation and Contested Land.* Earthscan.

Lunstrum, E. (2016). Green grabs, land grabs and the spatiality of displacement: eviction from Mozambique's Limpopo National Park. *Area, 48*(2), 142-152. doi:10.1111/area.12121

Lynn, L. E., Hienrich, C. J., & Hill, C. J. (2001). *Improving governance: A new logic for empirical research.* Washington DC: Georgetown University Press.

Lyons, A. (2012). The Rise and Fall of a Second-Generation CBNRM Project in Zambia: Insights from a Project Perspective. *Environmental Management, 51*, 65–378. doi:10.1007/s00267-012-9996-1

MacKenzie, J. M. (1997). *The empire of nature. Hunting, conservation and British Imperialism: Studies in Imperialism.* Manchester: Manchester University Press.

Macura, B., Secco, L., & Pullin, A. (2015). What evidence exists on the impact of governance type on the conservation effectiveness of forest protected areas? Knowledge base and evidence gaps. *Environmental Evidence, 4*(24), 1-29. doi:10.1186/s13750-015-0051-6

Malenga, G. (2004). *Audit of eight community resource boards in Mumbwa, Namwala and Kafue Flats Game management Areas 2000-2004* . Lusaka: CBNRM-Mumbwa Project (Danida).

Maliasili. (2020). *Maliasili: Investing in People for Nature*. (Maliasili) Retrieved June 20, 2021, from Maliasili: Investing in People for Nature: BCP: https://www.maliasili.org/biocarbon-partners

Mallarach, J. (Ed.). (2008). *Protected Landscapes and Cultural and Spritual Values.* Heidelberg: Kasparek Verlag on behalf of GTZ, IUCN and Obra Social de Caixa Catalunya.

Manning, I. P. (2012). The Landsafe Socioecological Developmental Model for the Customary Commons of Zambia: Evolution and Formalization. *Natural Resources*.

Marshall, G. (2005). *Economics for Collaborative Environmental Management: Renegotiating the Commons.* London: Earthscan.

Martin, R. B. (2009). Murphree's Laws, Principles, Rules and Definitions. In B. B. Mukamuri, J. M. Manjengwa, & S. Anstey, *Beyond Proprietorship. Murphree's Laws on Community-Based Natural Resource Management in Southern Africa* (pp. 7-28). Harare: Weaver Press.

Masanja, G. F. (2014). Human Population Growth and Wildlife Extinction in Ugalla Ecosystem, Western Tanzania. *Journal of Sustainable Development Studies, 5*(2), 92-217.

Mbewe, B., Makota, C., Hachileka, E., Mwitwa , J., Chundama, M., & Nanchengwa, M. (2005). *Community-based natural resource management in Zambia: status report.* Lusaka: WWF.

Mbinji, J. (2012). *Land justice, land reform and access: Proposals for land justice for poor families with particular emphasis on Zambia.* Dublin: Comhlámh, AITEC and WEED. Retrieved May 31, 2020, from https://www2.weed-online.org/uploads/land_justice_land_reform_and_access_2012.pdf

MCC. (2011). *Situational and Livelihoods Analysis Study in Nine Game Management Areas, surrounding Kafue National Park, Zambia.* Millenium Challenge Corporation. Chemonics International Inc.

McGrath, S. K., & Whitty, S. J. (2017). Stakeholder defined. *International journal of managing projetcs in business*, 721-748.

Mdiniso, J. M., Ezeuduji, I. O., & Nzama, A. T. (2017). Evaluating nature conservation and tourism development effectiveness: Local communities around Hluhluwe-iMfolozi Game Park, South

Africa. *6*. KwaDlangezwa, KwaZulu, South Africa. Retrieved November 8, 2020, from www.ajhtl.com

Merten, S., & Haller, T. (2008). We are Zambians - Don't tell us how to fish! Institutional Change, Power Relations and Conflicts in the Kafue Flats Fisheries in Zambia. *Human Ecology, 36*, 699-715.

Merz, L. (2013). *Situational Analysis of Mangalane, Mozambique for a Community-Based Natural Resource Programme* Gainesville: University of Florida.

Messerli, B., & Messerli, P. (2008). From local projects in the Alps to global change programmes in the mountains of the world: milestones in transdisciplinary research. In G. Hirsch Hadorn, H. Hoffmann-Riem, S. Biber-Klemm, W. Grossenbacher-Mansuy, D. Joyce, C. Pohl, . E. Zemp, *Handbook of transdisciplinary research* (pp. 43-62). Zurich: Springer.

Metcalfe, L. (2001). Reforming European governance: old problems or new principle?. *International Review of Administrative Sciences, 67*(3), 415-443.

Mfune, O., (2012). *From fortresses to sustainable development: the changing face of environmental conservation in Africa, the case of Zambia.* Glasgow: Glasgow Thesis Publishers.

Miles, W. B., & Samndong, R. A. (2015). Community participation as a means or an end: Loca perspectives on REDD+ from Indonesia and the Democratic Republic of Congo. *The Green Economy, 3*, 101-123.

Millenium Ecosystem Assessment. (2005). *Ecosysytems and human wellbeing: Synthesis.* Washington DC: Island Press.

Milupi, I. D., Sommers, M. J., & Ferguson, W. (2017). A Review of Community-Based Natural Resource Management. *Applied Ecology and Environmental Research, 15*, 1121-1143.

Mkanda, F. X., Munthali, S., Milanzi, J., Chifunte, C., Kaumba, C., Muswema, N., Mwakifwamba, A. (2018). The Giant Sleeps Again? - Resource, Protection and Tourism of Kafue National Park, Zambia. *PARKS, 24.1*, 23-34.

Mkanda, F. X., Mwakifwamba, A., & Simpamba, T. (2014). Traditional stewardship and conservation in the game management aeas of Nkala and Namwala, Zambia. *Oryx, 48*(4), 514-521.

MLNR. (2004). *Trust Deed*. Lusaka, Zambia: Ministry of Lands and Natural Resources, Government of the Republic of Zambia.

Mogende, E., & Kolawole, O. (2016). Dynamics of local governance in natural resource conservation in the Okanvango Delta, Botswana. *Natural Resources Forum, 40*, 93-102.

Morgera, E., & Tsioumani, E. (2010). The Evolution of Benefit Sharing: Linking Biodiversity and Community Livelihoods. *Review of European Community and International Environmental Law, 19*(2), 150-173.

Mosimane, A. W., & Silva, J. A. (2015). Local Governance Institutions, CBNRM and Benefit-sharing Systems in Namibian Conservancies. *Journal of Sustainable Development, 8*, 99-112.

Moss, P. F. (1976). *Kafue National Park A Management Plan.* Chilanga: Deaprtment of National Parks and Wildlife.

Moss, P. F. (2007). *The Feasibility of Establishing Block Tourism Concessions (Non-consumptive) in Kafue Natonal Park.* Chilanga: Department of National Parks and Wildlife.

MTA. (2018). *National Parks and Wildlife Policy.* Lusaka: Ministry of Tourism and Arts.

Muchapondwa, E., & Stage, J. (2015). Whereto with Institutions and Governance Challenges in African Wildlife Conservation? *Environmental Research Letters*. doi:1088/1748-9326/10/9/095013

Mulhern, O. (2020, December 4). *Earth.org*. Retrieved July 28, 2021, from Earth.org: Biodiversity Loss in Numbers, the 2020 WWF Report: https://earth.org/data_visualization/biodiversity-loss-in-numbers-the-2020-wwf-report/

Mulenga, B. S. (2003). Understanding Community-Based Wildlife Governenace in Southern Africa: A Case of Zambia. *Africa Journal of Environmental Assessment and Management, 7*, 41-60.

Mulolwa, A. (2002). *Integrated Land Delivery: Towards Improving Land Administration in Zambia.* Delft: Delft University Press.

Munshifwa, E. (2018). Customary Land Governance in Zambia: Inertia, Confusion and Corruption. *Land Governance in an Interconnected World: Annual World Bank Conference on Land and Poverty.* Washington D.C.: World Bank.

Munyeme, M., Muma J. B., Mung'andu, H.M., Nalubamba, K. S., Kankya, C., Skjerve, E.,…Tryland, M. (2021). Failure to detect tuberculosis in Black lechwe antelopes (*Kobus leche smithemani*) in Zambia. *BMC Research Notes*, 4(233). doi: 10.1186/1756-0500-4-233

Murphree, M. (2005). Congruent objectives, competing interests, and strategic compromise: concept and process in the evolution of Zimbabwe's CAMPFIRE, 1984–1996. In J. P. Brosius, A. I. Tsing, &

C. Zerner (Eds.), *Communities and Conservation. Histories and Politics of Community-Based Natural Resource Management* (pp. 105–148). Oxford: Rowman & Littlefield Publishers.

Musavengane, R., & Simatele, D. M. (2016). Community-based natural resource management: The role of social capital in collaborative environmental management of tribal resources in KwaZulu-Natal, South Africa. *Development Southern Africa, 33*(6), 1-16. doi:10.1080/0376835X.2016.1231054

Mushinge, A., & Mwando, S. (2016, May 20). Implications of Pro-market Land Policies on Customary Land Users in Zambia: A Case of Large-scale Land Investments in Kaindu Chiefdom, Mumbwa District. Munich, Bavaria, Germany. Retrieved September 17, 2018, from Researchgate.net: http://dx.doi.org/10.11114/ijsss.v4i8.1585

Mutamba, E. (2004). Community Participation in Natural Resource Management: Reality or Rhetoric? Lessons from the Kasanka Game Management Area communities Serenje district, Zambia. *Environmental Monitoring and Assessment, 99*, 105-113.

Muyengwa, S. (2015). Determinants of Individual Level Satisfaction with Community-Based Natural Resources Management: A Case of Five Communities in Namibia. *Environments*, 608-623.

Muyengwa, S., & Child, B. (2017). Re-Assertion of Elite Control in Masoka's Wildlife Prgoramme, Zimbabwe. *Journal of Sustainable Development, 10*(6), 28-40.

Mwima, H. (2001). A Brief History of Kafue National Park, Zambia. *Koedoe, 44*(1), 57-72.

Nakakaawa, C., Moll, R., Vedeld, P., Sjastaad, E., & Cavanagh, J. (2015). Collaborative resource management and rural livelihoods around protected areas: A case study of Mount Elgon National Park , Uganda. *Forest Policy and Economics,* 57, 1-11

Namukonde, N., & Kachali, R. N. (2015). Perceptions and Attitudes of Local Communities Towards Kafue National Park, Zambia. *Parks*.

Nelson, F., & Agrawal, A. (2008). Patronage or participation? Community-based Natural Resource Management Reform in Southern Africa. *Development and Change, 39*, 557-585.

Nelson, R., Holden, M., & Smith, M. S. (2008). Using adaptive governance to rethink the way science supports Australian drought policy. *Environmental Science and Policy, 11*(7), 588-601.

Newell, P., Pattberg, P., & Schroeder, H. (2012). Multiactor Governance and the Environment. *Annual Review of Environment and Resources, 37*, 365-387. doi:10.1146/annurev-environ-020911-094659

Ngoma, P. (2011). *Land Use Practices Interface: Human-Wildlife Conflict in Lupande Game Management Area.* Lusaka: University of Zambia.

Nkhata, B. A., & Breen, C. M. (2010). Performance of community-based natural resource governance for the Kafue Flats (Zambia). *Environmental Conservation, 37*, 296-302.

Noga, S. R., Kolawole, O. D., Thakadu, O. T., & Masunga, G. S. (2018). Wildlife officials only care about animals: Farmers' perceptions of a ministry-based extension delivery system in mitigating human-wildlife conflicts in the Okavango Delta, Botswana. *Journal of Rural Studies, 61*(7), 216-226. doi:10.1016/j.jrurstud.2018.06.003

Nolte, C., Agrawal, A., Silvius, K. M., & Soares-Filho, B. S. (2013). Governance regime and location influence avoided deforestation success of protected areas in the Brazilian Amazon. *PNAS*, 4956-4961.

Norgaard, R. B. (2008). Finding Hope in the Millennium Ecosystem Assessment. *Conservation Biology, 22*(862), 86-2869.

Nussbaum, M. C. (2000). *Women and human development* . Cambridge: Cambridge University Press.

Nyirenda, V. R., & Chomba, C. (2012). Field foot patrol effectiveness in Kafue National Park. *Journal of Ecology and the natural Environment*, 163-172.

Nyirenda, V. R., & Nkhata, B. A. (2013). Collaborative Governance and Benefit Sharing in Liuwa Plain National Park, Western Zambia. *PARKS, 19*(1), 103-114.

Oestreicher, J. S., Benessaiah, K., Ruiz-Jaen, M. C., Sloan, S., Pelletier, J., Guay, B., Potvin, C. (2009). Avoiding deforestation in Panamanian protected areas: an analysis of protection effectiveness and implications for reducing emissions from deforestation and forest degradation. *Global Environmental Change, 19*, 279–291.

Oldekop , J. A., Holmes, G., Harris, W. E., & Evans, K. L. (2016). A global assessment of the social and conservation outcomes of protected areas. *Conservation Biology, 30*, 133–141.

Ostrom, E. (1990). *Governing the commons: The evolution of institutions for collective action.* Cambridge: Cambridge University Press.

Ostrom, E. (2008). Design Principles of Robust Property-rights Institutions: What have we learned? *Land Policies and Property Rights.* Bloomington: Indiana University.

Ostrom, E. (2009). A General Framework for analysing Sustainability of Social-Ecological Systems. *Science, 325*, 419-422.

Ostrom, E. (2009b). Design Principles of Robust Property-Rights Institutions: What have we learned? In G. K. Ingram, & Y. H. Hong (Ed.), *Property Rights and Land Policies* (pp. 25-51). Cambridge, MA: Lincoln Institute of Land Policy.

Ostrom, E., & Cox, M. (2010). Moving beyond panaceas: A multi-tiered diagnostic approach for social-ecological analysis. *Environmental Conservation, 37 (4)*, 451-463.

Ostrom, E., Janssen, A. M., & Anderies, J. M. (2007). Going beyond panaceas. *Proceedings of the National Academy of Sciences, 104*(39), 15176-15178.

PAI. (2011). *Population Action International.* Washington DC: Population Action International. Retrieved November 2, 2020, from Population Action International: https://pai.org/wp-content/uploads/2012/02/PAI-1293-FORESTS_compressed.pdf

Panlasigui, S., Rico-Straffon, J., Pfaff, A., Swenson, J., & Loucks, C. (2018). Impacts of certification, uncertified concessions, and protected areas on forest loss in Cameroon, 2000 to 2013. *Biological Conservation, 227*, 160-166.

Parker, K. (1996). Pragmatism and environmental thought. In A. Light & E. Katz *Environmental Pragmatism* (pp. 21-37). London: Routledge.

Patton, M. Q. (2002). *Qualitative research and evaluation methods* (3rd ed.). Thousand Oaks: SAGE Publishing Inc.

Pereira, J. C. (2015). Environmental issues and international relations, a new global (dis)order – the role of International Relations in promoting a concerted international system. *Revista Brasileira de Política Internacional, 58*(1), 191-201.

Petursson, J. G., & Vedeld, P. (2017). Rhetoric and reality in protected area governance. *Ecological Economics, 133*, 166-177.

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Pfaff, A., Robalino, J., Herrera, D., & Sandoval, C. (2015). Protected areas' impacts on Brazilian Amazon deforestation: Examining conservation-development interactions to inform planning. *PLoS One, 10*, e0129460.

Phiri, C. (2019, June 12). *Zambia Reports*. Retrieved June 21, 2019, from zambiareports.com: https://zambiareports.com/2019/06/12/kashokoto-creates-400-jobs-kaindu-chiefdom/chief-kaindu/

Pohl, C. (2005). Transdisciplinarity collaboration in environmental research. *Futures, 37*(2005), 1159-1178.

Pohl, C. (2008). From Science to Policy Through Transdisciplinary Research. *Environmental Science & Policy, 11*(1), 46-53.

Pohl, C., & Hirsch Hadorn, G. (2008). Core terms in transdisciplinary research. In G. Hirsch Hadorn, H. Hoffmann-Riem, S. Biber-Klemm, W. Grossenbacher-Mansuy, D. Joyce, C. Pohl, E. Zemp, *Handbook of Transdisciplinarity* (pp. 427-432). Zurich: Springer.

Pohl, C., Rist, S., Zimmermann, A., Fry, P., Gurung, G. S., Schnieder, F., Wiesmann, U. (2010). Researchers' roles in knowledge co-production: experience from sustainability research in Kenya, Switzerland, Bolivia and Nepal. *Science and Public Policy*, 267-281.

Population Matters. (2021). *Population Matters*. (Charity 1114109, Company 3019081) Retrieved July 31, 2021, from https://populationmatters.org/the-facts/biodiversity?gclid=CjwKCAjwxo6IBhBKEiwAXSYBsxO_v332cTdvirfISsjfrJQw_LSMsJJa2m3CWaXLMb2viDsaevkGrxoCU1gQAvD_BwE

Pressey, R. L., Visconti, P., & Ferraro, P. J. (2015). Making Parks Make a Difference: Poor alignment of policy, planning and manangement with protected-area impact and ways forward. *Philosophical Transactions of the Royal Society, 370*. doi:http://dx.doi.org/10.1098/rstb.2014.0280

Pretty, J. (1995). *Regenerating Agriculture: Politics and Practice for Sustainability and Self-reliance.* London: Earthscan.

Pretty, J. N. (1995b). Participatory Learning for Sustainable Agriculture. *World Development, 23*(8), 1247-1263.

PSAf. (2017). *Media Brief on Community-Based Natural Resource Management.* Lusaka: Panos Institute Southern Africa.

Ramsar. (2014). (The Ramsar Secretariat). Retrieved June 2, 2021 from, Ramsar: https:// https://www.ramsar.org/news/zambia-adds-large-new-ramsar-sites

Ratner, B., Burnley, C., Mugisha, S., Madzudzo, E., Oeur, I., Mam, K., Adriazola, P. (2018). Investing in multi-stakeholder dialogue to address natural resource competition and conflict. *Development in Practice, 28*(6), 799-812. doi:10.1080/09614524.2018.1478950

Ray, R.-R. (2011). Ecology and population status and the impact of trophy hunting of the leopard Panthera pardus (LINNAEUS, 1758) in the Luambe National Park and surrounding Game Management Areas in Zambia. *Dissertation for the degree of Doctor of Science (Dr. rer. nat.) in Zoology* Bonn: Rheinische Friedrich-Wilhelms-Universität

Reed, M. S. (2008). Stakeholder participation in environmental management: A literature review. *Biological Conservation, 141*, 2417-2431.

Reed, M., Hubacek, K., Bonn, A., Burt, T. P., Holden, J., Stringer, L. C., Chapman, P. J. (2013). Anticipating and managing future trade-offs and complementarities between ecosystem services. *Ecology and Society*.

Regeer, B. J., & Bunders, J. F. (2003). The epistemology of transdisciplinary research: from knowledge integration to communities of practice. *Interdisciplinary Environmental Review, 5*(2), 98-118.

Reid, H. (2014). *PreventionWeb:* Retrieved December 23, 2020, from The Knowledge Platform for Disaster Risk Reduction: https://www.preventionweb.net/news/view/38716

Riggio, J., Jacobson, A. P., Hijmans, R. J., & Caro, T. (2019). How effective are the protected areas of East Africa? *Global Ecology and Conservation, 17*, e00573.

Robbins, P. (2012). *Political Ecology: A Critical Introduction* (2nd ed.). Chichester: John Wiley and Sons.

Roca, J. (2006). *Governance for sustainable development.* Barcelona: Generalitat de Catalunya - CADS.

Rockström, J., W. Steffen, K. Noone, Å. Persson, F. S. Chapin, E. F. Lambin, T. M. Lenton, M. Scheffer, C. Folke, and H. J. Schellnhuber. 2009. A safe operating space for humanity. Nature **461**:472-475.

Roe, D., Nelson, F., & Sandbrook, C. (Eds.). (2009). *Communtiy Management of Natural Resources: Impacts, Experiences and Future Directions.* London, UK: International Institute for Environment and Development. Retrieved 12 1, 2019, from https://pubs.iied.org

Roka, K. (2019). Community-Based Natural Resource Management. In A. A. Leal Filho W. (Ed.), *Life on Land. Encyclopedia of the UN Sustainable Development Goals.* Springer, Cham. doi:10.1007/978-3-319-71065-5_18-1

Rose, R., & Peiffer, C. (2019). *Bad Governance and Corruption.* Cham: Palgrave Macmillan.

Samndong, R. A. (2017). *Governing the Jungle: REDD+ and forest governnce in the Democratic Republic of Congo: analysis of drivers, tenure, gender and participation.* As: Norwegian University of Life Sciences.

Schiller, D. (2007). *How to Think about Information.* Urbana: University of Illinois Press.

Schiopoiu B. A., Popa I. (2013) Legitimacy Theory. In: Idowu S.O., Capaldi N., Zu L., Gupta A.D. (eds) Encyclopedia of Corporate Social Responsibility. Springer, Berlin, Heidelberg. https://doi.org/10.1007/978-3-642-28036-8_471

Scoones, I. (1998). *Sustainable Rural Livelihoods: A Framework for Analysis.* Brighton: Sustainable Livelihood Programme.

Sharp, E., & Curtis, A. (2014). Can NRM agencies rely on capable and effective staff to build trust in the agency? *Australasian Journal of Environmental Management, 21*(3), 268-280. doi:10.1080/14486563.2014.881306

Sharp, E., Thwaites, R., Curtis, A., & Millar, J. (2013). Trust and trustworthiness: Conceptual distinctions and their implications for natural resources management. *Journal of Environmental Planning and Management, 56*(8), 1246-1256. doi:10.1080/09640568.2012.717052

Silima, D. (2018, April 6). *theagricoopnews*. Retrieved from The Agri-coop news: http://agricoopnews.com/kaindu-cooperative-in-limbo/

Simasiku, P., Simwanza, H. I., Tembo , G., Bandyopadhyay, S., & Pavy, J. (2008). *The Impact of Wildlife Management Policies on Communities and Conservation in Game Management Areas in Zambia: Message to Policy Makers.* Lusaka: Natural Resources Consultative Forum.

Simpson, F. (2010). Environmental Pragmatism and its Application to Climate Change: The Moral Obligations of Developed and Developing Nations to Avert Climate Change as viewed through Technological Pragmatism. *Humanities and Social Sciences, 6*(1), 1-12.

Simpson, J. G. (1967). *Summary of Geomorphology and Geology of Kafue National Park.* Lusaka: Department of Geological Survey.

Sitas, N. (2014). *Opportunities and challenges for mainstreaming ecosystem services in decision making.* Stellenbosch: Stellenbosch University.

Smith, J. L. (2008). A critical appreciation of the bottom-up approach to sustainable water management: Embracing complexity rather than desirability. *Local Environment , 13*(4), 353-366.

Stattrek. (2019, June 12). *Stat Trek Teach Yourself Statistics: Sample size: Stratified samples*. Retrieved June 11, 2019, from Stat Trek Teach Yourself Statisitcs: https://stattrek.com/sample-size/stratified-sample.aspx

Stephanie, B., Aguinis, H., & Wassmer, U. (2013). Self-Reported Limitations and Future Directions in Scholarly Reports: Analysis and Recommendations. *Journal of Management, 39*(1), 48–75. doi:https://doi.org/10.1177/0149206312455245

Stiwell, S. (2002). The Imposition of Colonial Rule. In T. Falola (Ed.), *Africa: Colonial Africa 1885-1939* (Vol. 3, pp. 3-26). Durham: Carolina Academic Press.

Stöhr, C., & Chabay, I. (2014). From Shouting Matches to Productive Dialogue. Establishing Stakeholder Participation in Polish Fisheries Governance. *International Journal of Sustainable Development, 17*(4), 403-419.

Stoker, G. (1998). Governance as Theory: Five Propositions . *International Social Science Journal*, 17-28.

Suchman, C. M. (1995) Managing Legitimacy: Strategic and Institutional Approaches. *Academy of Management Review 20* (3) 571-610. doi 10.2307/258788

Tallis, H., & Kareiva, P. (2005). Ecosystem Services. *Current Biology, 15*, R746-R748.

Tarrow, S. (2005). *The New Transnational Activism.* New York: Cambridge University Press.

Tashakorri, A., & Treddlie, C. (2010). *SAGE Handbook of mixed methods in social and behavioural research* (2nd ed.). Thousand Oaks: SAGE Publications Inc.

Thakadu, O. T. (2004). Success Factors in Community-Based Natural Resources Management in Northern Botswana: Lessons from Practice. *Natural Resources Forum, 29*, 199-212. doi:0.1111/j.1477-8947.2005.00130.x

The Kasanka Trust. (2019, December 5). *The Kasanka Trust*. Retrieved Decenber 5, 2020, from The Kasanka Trust: https://kasanka.com/

TNC. (2015). *Baseline Socio-economic Assessment for the Kaindu Community near Kafue National Park in Zambia.* Lusaka: The Nature Conservancy.

Tress, B., Tress, G., & Fry, G. (2005). Integrative studies on rural landscapes: policy expectations and research practice. *Landscape and urban planning, 70*(1), 177-191.

Treves, A., Wallace, R., Naughton-Treves, L., & Morales, A. (2006). Co-managing Human-Wildlife Conflicts: A Review. *Human Dimensions of Wildlife, 11*, 383-396. doi:10.1080/10871200600984265

Tsang, S., Burnett, M., Hills, P., & Welford, R. (2009). Trust, Public Participation and Environmental Governance in Hong Kong. *Environmental Policy and Governance, 19*, 99-114.

Turner, R. A., Addison, J., Arias, A., Bergseth, B. J., Marshal, N. A., Morrison, T. H., & Tobin, R. C. (2016). Trust, confidence and equity affect the legitimacy of natural resource governance. *Ecology and Society, 21*(3). doi:10.5751/ES-08542-210318

Turner, S. (2004). A crisis in CBNRM: Affirming the commons in southern Africa. *Paper presented at the tenth IASCP Conference.* Oaxaca: Centre for International Cooperation Vrije Universiteit Amsterdam.

UNEP. (2010). *What is Biodiversity? Come with us on a journey.* Nairobi: United Nations Environment Programme.

UNFPA. (2021). *United Nations Population Fund.* Retrieved July 2021 from United Nations Population Fund: https://www.unfpa.org/human-rights based-approach

UNDP. (2014). *Strengthening Management Effectiveness and Generating Multiple Environmental Benefits within and around the Greater Kafue National Park and West Lunga National Park in Zambia.* Lusaka: United Nations Development Programme.

Underdal, A. (2002). One question, two answers. In E. Miles, A. Underdal, S. Andresen, J. Wettestad, J. B. Skærseth, & E. Calin, *Environmental Regime Effectiveness, Confronting Theory with Evidence* (pp. 3-45). Cambridge, MA: The MIT Press.

UNDP. (1997). *Governance for sustainable Human Development.* New York: UNDP.

United Nations. (2019). *United Nations*. Retrieved from United Nations: https://www.un.org

Van der Dium, R., Lamers, M., & Van Wijk, J. (2015). *Institutional Arrangements for Conservation, Development and Tourism in Eastern and Southern Africa: A Dynamic perspective.* Dordrecht: Springer.

Vatn, A. (2015). *Environmental Govenance: Institutions, policies and actions.* Cheltenham: Edward Elgar.

Vedeld, P. (1994). The environmental and interdisciplinarity ecological and economical neoclassical approaches to the use of natural resources. *Ecological Economics, 10*(1), 1-13.

Vedeld, P. (2002). The Process of Institutional Building to Facilitate Local Biodiversity Management. *NORAGRIC Working Paper No. 24*, 32.

Vedeld, P. (2017). *Something that NGOs do? Notes on participation and governance in the environment and development policy field.* International and Environmental Development Studies NORAGRIC. As: Norwegian University of Life Sciences.

Vedeld, P., Jumane, A., Wapaila, G., & Songorwa, A. (2012). Protected areas, poverty and conflicts: A livelihood case study of Mikumi National Park, Tanzania. *Forest Policy and Economics, 21*, 20-31.

Vinya, R., Syampungani, S., Monde, C., Kasubika, R., & Kasumu, E. C. (2012). *Preliminary Study on the Drivers of Deforestation and Potential for REDD+ in Zambia: A consultancy report prepared for the Forestry Department and FAO under the national UN-REDD+ Programme .* Lusaka: Ministry of Lands and Natural Resources.

Voinov, A., & Bousquet, F. (2010). Modelling with stakeholders. *Environmental modelling and software*, 1-14.

Waldron, A., Miller, D. C., Redding, D., Mooers, A., Kuhn, T. S., Nibbelink, N., Gittleman, J. L. (2017). Reductions in global biodiversity loss predicted from conservation spending. *Nature, 551*(7680), 364–367.

Watson, J. E., Dudley, N., Segan, D. B., & Hocking, M. (2014). The Performance and Potential of Protected Areas. *Nature, 7525*(515), 67-73.

Wingqvist, G. Ö., Drakenberg, O., Slunge, D., Sjöstedt, M., & Ekbom, A. (2012). *The role of governance for improved outcomes.* Stockholm: Swedish Environmental Protection Agency.

Worboys, G. L. (2015). Concept, purpose and challenges. In G. L. Worboys, M. Lockwood, A. Kothari, S. Feary, & I. Pulsford (Eds.), *Protected Area Governance and Management* (pp. 9-42). Canberra: ANU Press.

WWF. (2020). Living Planet Report 2020 - Bending the curve of biodiversity loss. (R. E. Almond, M. Grooten, & T. Petersen, Eds.) Gland, Switzerland: WWF.

Yeboah-Assiamah, E., Muller, K., & Domfeh, A. K. (2016). Institutional assessment in natural resource governance. *Forest Policy and Economics, 74*, 1-12

Yeboah-Assiamah, E., Müller, K., & Domfeh, K. A. (2018). Complex crisis and the rise of collaborative natural resource governance: institutional trajectory of a wildlife governance experience in Ghana. *Environment, Development and Sustainability, 20*, 2205–2224. doi:10.1007/s10668-017-9985-x.

Yeboah-Assiamah, E., Muller, K., & Domfeh, K. A. (2018). Transdisciplinary approach to natural resource governance research: A conceptual paper. *Management of Environmental Quality, 29*(1), 15-33.

Yin, R. (2009). *Case Study Research: Design and Methods* (4th ed., Vol. 5). Thousand Oaks: SAGE Publications Inc.

Zambian Watchdog. (2018, September 21). Retrieved May 20th, 2020, from Zambian Watchdog:https://www.zambiawatchdog.com/ngos-to-demonstrate-against-corruption/

APPENDIX I: GOVERNANCE DASHBOARD QUESTIONNAIRE:

Kaindu 2016
No:

Tracking Satisfaction with Kaindu Natural Resources Trust

EVALUATORS (asking questions)
Names: ………..……..…...... / ………………………… / ………………………………
Positions: ………..……..…...... / ………………………… / …………………….………..

STATEMENT ABOUT INFORMED CONSENT:

1. The purpose of this study is to understand what you think about the Kaindu Natural Resources Trust
2. We would like to ask you what you personally think about various aspects of your community conservation program
3. This survey should take less than one hour
4. You do not have to answer any question you do not want to
5. All information is confidential
6. You can stop the interview process at any time
7. You can ask for clarification on any question at any time
8. There are no right or wrong answers, and most importantly candid and honest answers are most useful.
9. There are no direct benefits, risks, or compensation to you for participating in the study
10. For questions about your rights as a research participant contact Stellenbosch University (Professor Kobus Muller) at +27(0) 806 3602 or Copperbelt University (Dr. Vincent Nyirenda) at +260 977352035

REMINDER TO INTERVIEWER

<u>Attitude questions</u> should be answered as they apply to the interviewee

➔ <u>ENUMERATOR: Answer the following questions **yourself**, after you have finished with the interview.</u>

Would you judge this household as: Rich / Medium / Poor / Destitute

General   Comments/Observations   by   Evaluator:

……………………………………..………………………………………………………
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RESPONDENT DETAILS

Name: ………….………….………… (Only if willing)
Age: ………..…….
Sex: Male / Female
Education grade: ……………
Year settled in area: …………..
Ethnic Group: ………………
Name of VAG: ………………….
Name of Village: ……………………...
Gender of head of household: male / female / female (male away for 6+ months/year)
How many people are there in your household? …………
How many people in household have wage employment in:

　　　　　　　　　　　　　　　 ＿＿＿＿
　　　　　　　　　　　　　　　 KNRT

　　　　　　　　　　　　　　　 ＿＿＿＿
　　　　　　　　　　　　　　　 Tourism & Hunting

　　　　　　　　　　　　　　　 ＿＿＿＿
　　　　　　　　　　　　　　　 Other

Position in KNRT:

- ☐　　　Manager / Management Employee
- ☐　　　Employee (Game Scout)
- ☐　　　KNRT Committee member
- ☐　　　Ordinary Villager
- ☐　　　Other ………… ………...

How many hectares did you plough in the last 12 months?   ………….

How many bags of grain did you harvest in the last season? ……….

How many cattle do you own?　　　　　0
　　　　　　　　　　　　　　　　　　　 1-5
　　　　　　　　　　　　　　　　　　　 6-20
　　　　　　　　　　　　　　　　　　　 21+

What type of house does the person have?

　　　　　　　　Roof:　　　　　 Thatch / Iron

　　　　　　　　Pit latrine:　　　 Yes / No

　　　　　　　　Water Pipe:　　　 Yes / No

1. GENERAL UNDERSTANDING OF KNRT STRUCTURE & FUNCTION

KNRT Annual General Meetings

1.1 In which year was the last AGM? ………… (year) / Don't Know
1.2 Did you attend the last AGM?   Yes / No
1.3 How satisfactory was the last AGM to you:

☺☺   It was very well run

☺   It was well run (i.e. just ok)

😐   Neutral

☹   It was unsatisfactory

☹☹ It was highly unsatisfactory

☐   I did not attend

KNRT General Meetings
1.4 In what month was the last General Meeting? ………………. / Don't Know

1.5 How many general meetings have you attended in the last 12 months? ………….

1.6 Where was the last General meeting held?   Village Level / KNRT Level / Don't Know

1.7 Approximately how many people attended the last general meeting? …………..
1.8 How satisfactory was the last General Meeting to you:

☺☺   It was very well run

☺   It was well run

😐   Neutral

☹   It was unsatisfactory

☹☹   It was highly unsatisfactory

2. UNDERSTANDING OF KNRT CONSTITUTION & RIGHTS

CONSTITUTION

2.1 Has your constitution been explained to you in the last 12 months? YES / NO

2.2 Were you consulted during the constitution building process? YES / NO

2.3 Do you think your constitution organizes the community well?

☺☺ The constitution works very well

☺   The constitution works reasonably well (just ok)

😐   Neutral

☹   The constitution is bad

☹☹ The constitution is very bad.

??? Don't know what it says

2.4 Does your community follow the constitution?

☺☺ We always follow it

☺   We mostly follow it

😐   Neutral

☹   We sometimes follow it, sometimes don't

☹☹ We seldom follow it

??? Don't know (What it says / if it is followed or not)

1.9	**Do you know the name of the KNRT Chair?** YES / NO
1.10	**Do you know the name of the KNRT Secretary?** YES / NO
1.11	**Do you know the name of the KNRT Treasurer?**

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2.5 Do you have the following rights (tick yes or no for each)?

           Yes   **No**

	Yes	No	
(a)	☐	☐	To stand in an election
(b)	☐	☐	To make decisions on the use of wildlife/KNRT money
(c)	☐	☐	To check how KNRT money was spent
(d)	☐	☐	To remove incompetent/corrupt officers (Chair, Treasurer, etc.)
(e)	☐	☐	To remove incompetent/corrupt employees (e.g. Manager)
(f)	☐	☐	To vote / choose KNRT leaders
(g)	☐	☐	To amend the constitution
(h)	☐	☐	To demand for a meeting (e.g. for explanation of Board performance)
(i)	☐	☐	To set animal quotas for hunting
(j)	☐	☐	To choose your hunting safari operator
(k)	☐	☐	To choose your tourism partners (Joint Venture)

2.6 As an ordinary person, do you have any responsibilities/duties in the CBNRM? Yes / No / Don't Know	
(a) The Board makes decisions without telling us anything	
(b) We are only told what is happening sometimes	
(c) The Board makes decisions, and informs us	
(d) The Board makes decisions, but we have the right to change them	
(e) We make decisions, and tell the Board what to do	

➔ <u>ENUMERATOR: If the person says the answers is a, b, c or d in question 2.8 above, ask the following question. If they answer e, skip this question and go to question 2.10.</u>

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2.9 When Elected Representatives (Board) make key decisions, which statement is true?	Tick one
(a) These decisions are good	
(b) These decisions are sometimes good, sometimes selfish	
(c) These decisions are selfish	
(d) Don't know	

2.10 Who makes the budget?	Tick one
(a) Community members at General Meetings	
(b) People we elected (the Board)	
(c) KNRT Employees	
(d) Don't know	

3. ELECTIONS

ELECTION OF VILLAGE ACTION GROUP COMMITTEES

3.1 Did you participate in choosing the VAG Committee?   Yes / No /
Don't Know

3.2 How was the VAG committee chosen?

  ○ Appointed by headman/chief
  ○ Appointed by government
  ○ Vote by hands
  ○ Vote by secret ballot
  ○ Don't know
  ○ Other means (Specify)…………………………………………………

3.3 Do you think the process of choosing the VAG Committee was fair? Yes / No / Don't Know

3.4 In which year was the last election for the VAG Committee? ……………./ Don't Know

3.5 In which year is the next election for the VAG Committee? ………………/ Don't Know

---

ELECTION OF KNRT BOARD

3.6 Did you participate in choosing Board Committee? Yes / No / Don't Know

3.7 How was the Board Chosen?

○ Appointed by headman/chief
○ Appointed by government
○ Vote by hands
○ Vote by secret ballot
○ Don't know
○ Other means (Specify)……………………………………………………

3.8 Do you think the process of choosing the Board was fair?   Yes / No / Don't Know

3.9 In which year was the last election for the Board? ….…………….…/ Don't Know

3.10 In which year is the next election for the Board? ……………………/ Don't Know

4. KNRT MANAGEMENT

General Impression	**4.1 How well does the KNRT Committee manage your affairs?**
	☺☺ The KNRT is very well managed
	☺ The KNRT is managed reasonably well
	😐 Neutral
	☹ The management of the KNRT is poor
	☹☹ The management of the KNRT is very bad

| **Finances** **Accountability** | **4.2 Did KNRT give you a financial report in the last year?** Yes / No / Don't Know |

4.3 Are the KNRT finances properly <u>presented</u> to you?

☺☺   Yes, well presented and we understand and believe these figures

☺   Yes, presented reasonably

😐   Neutral

☹   No, badly presented

☹☹   Not presented at all. We have no idea what is happening

☐   I did not go to the meeting

4.4 Are the KNRT finances properly <u>accounted</u> for?

☺☺   Yes, well accounted for

☺   Yes, reasonably accounted for

😐   Neutral

☹   No, badly accounted for

☹☹   No, very badly accounted for (and we do not trust the figures)

| **Financial** **Trust** | **4.5 Do you <u>trust</u> the KNRT leadership to manage and account for your finances?** |

☺☺   Yes, I trust them a lot

☺   Yes, I trust them

😐   Neutral

☹   No, I don't trust them

☹☹   No, I strongly distrust them

5. INFORMATION GIVEN TO YOU BY KNRT

In the last year, the KNRT gave me the following information (tick as applicable):

Did you get:	☺☺ All the information	☺ Some information	☹ Nothing	Don't Know	N/A
INFORMATION ON FINANCES AND PROJECTS					
5.1 Annual budget					
5.2 Source and amount of income (INCOME)					
5.3 How money was spent (EXPENDITURE)					
5.4 They explained the progress of projects					
INFORMATION ON WILDLIFE VALUE AND USE					
5.5 We were given a list of our hunting quota					
5.6 We were told how many animals were shot last year					
5.7 We were told the price of animals that we sold to the safari hunter					
5.8 We were told the income we got from our campsites					
INFORMATION FROM EVENT BOOK **We have been shown the following information:**					
5.9 Trends in Problem Animals					
5.10 Trends in animal populations					

6. WILDLIFE COSTS & BENEFITS TO INDIVIDUAL HOUSEHOLDS

6.1 Please list the <u>benefits</u> you and your household got from wildlife in the last 12 months:

Type of Benefit	Do you and your household receive benefit?	Amount/Describe	Enumerator to calculate approx. Kwacha Value
Cash	Yes / No		
Meat	Yes / No		
Employment	Yes / No		

KNRT Projects	Yes / No		
Education & Training	Yes / No		
Non-Financial Benefits Specify …………..	Yes / No		
Other (specify)	Yes / No		

6.2 Please list the <u>costs</u> you and your household suffered from wildlife in the last 12 months:

Type of Cost	Yes / No	Amount/Describe	Enumerator to calculate approx. Kwacha Value
Bags of grain lost	Yes / No		
Livestock losses	Yes / No		
Injury of person in your household	Yes / No		
Other (specify)	Yes / No		

7. PROJECTS

Please name the projects being developed by your wildlife KNRT:

Name of Project	Year Started	Is the Project Implemented Well?				
		Very Well	Well	Neutral	Badly	Very Badly
Write name	**Year**	☺☺	☺	😐	☹	☹☹
1.						
2.						
3.						
4.						
5.						
6.						
7.						

8. MANAGEMENT PLANS & LAND USE ZONES

8.1 Does your community have a land use plan or a management plan?

YES / NO / DON'T KNOW

8.2 Were you consulted in developing the land use plan? YES / NO

8.3 Has the KNRT set aside a place/zone exclusively for wildlife & tourism?

8.4 The areas/zone set aside for wildlife & tourism:

↑ Is too small and should be increased

→ Is about the right size

9. WILDLIFE & NATURAL RESOURCE MANAGEMENT

9.1 We have noticed the following trends in numbers of wildlife:

	↑	→	↓	??	N/A
Elephants					
Lions					
Leopards					
Buffalo					
Large animals like kudu, zebra					
Small animals like impala, bushbuck					
Other (specify) ……………………….					

9.2 Is there poaching in your area?

☐ **A lot**

☐ **A little**

☐ **Never**

☐ **Don't know**

9.3 Since CBNRM started, what have you noticed about the trends in poaching?

Poaching/Illegal logging/illegal fishing	↑	→	↓	??

9.4 Please explain why you came to this conclusion about poaching…..…

9.3 Is there over-fishing in your area?

☐ **A lot**

☐ **A little**

☐ **Never**

☐ **Don't know**

9.5 What, if anything, do <u>you</u> do to protect wildlife and natural resources?

10. VALUE OF WILDLIFE & NATURAL RESOURCE MANAGEMENT

Income:

10.1 How much money did your KNRT earn from wildlife last year? ZMW.....Don't Know

10.2 How much of this money reached your village?   ZMW……Don't Know

10.3 How much money did your household get?

ZMW....... Don't Know

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10.4 Last year, how much did the Safari Hunters pay KNRT (Royal Kafue) to shoot:

        an elephant?   ZMW……….. Don't Know

        a buffalo?   ZMW ……….. Don't Know

10.5 How many animals were harvested in your area last year?

	Safari	Problem Animals	Subsistence Hunting	Don't Know
Elephant				
Buffalos				

10.6 Income from Joint Venture Partner (Royal Kafue)

Name of Hunter/Company	How much did he pay to the CBO last year?
1.	ZMW……….……. / Don't Know
2.	ZMW……….……. / Don't Know
3.	ZMW……….……. / Don't Know
4.	ZMW……….……. / Don't Know
5.	ZMW……….……. / Don't Know
6.	ZMW……….……. / Don't Know
7.	ZMW……….……. / Don't Know

11. ATTITUDES TOWARDS WILDLIFE

11.1 Overall (taking into account positives and negatives) my attitude towards wildlife is:

☺☺	Strongly Positive
☺	Positive
☺	Neutral
☹	I do not support Wildlife
☹☹	I strongly dislike Wildlife

11.2 Why do you like wildlife? For each reason, indicate how important this is for you.

REASON FOR LIKING WILDLIFE	Very Important ☺☺	Important ☺	Neutral ☺	Not Very important ☹	Not at All Important ☹☹
Conservation for non-financial reasons					
Household benefits					
Jobs					
Development projects / Community income					
Brings development (i.e. economic growth)					
Hunting / Meat					
Helps us get better organized/empowered					
Others reasons (Specify)……………..…….					

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11.3 What do you think of the National Park / Game Reserve?

☺☺   Strongly Support the Park

☺   Support the Park

☺   Neutral / Not sure

☹   I do not support the Park

☹☹   I strongly dislike the Park

11.5 What do you think of the DNPW Staff?

☺☺   I like them a lot

☺   I like them

☺   Neutral / Not sure

☹   I do not like them

☹☹   I strongly dislike them

11.6 Explain why you feel the way you do about DNPW Staff……..……………………….

12. CONCLUSIONS

12.1 What are the <u>best</u> three things about the CBNRM Programme?

1. ……………………………………………………………………………………………

2. ……………………………………………………………………………………………

3. ……………………………………………………………………………………………

12.2 What are the <u>worst</u> three things about the CBNRM Programme?

1. ……………………………………………………………………………………………

2. ……………………………………………………………………………………………

3. ……………………………………………………………………………………………

12.3   What three changes / improvements would you make to the CBNRM Programme?

1. ……………………………………………………………………………………

2. ……………………………………………………………………………………

3. ……………………………………………………………………………………

12.4   Overall, please rate KNRT on the following:

	☺☺	☺	😐	☹	☹☹
My ability to participate in decisions					
Quality/number of meetings					
Honesty of financial management					
Quality of information provided to me					
Quality of leaders					
Amount of benefits					
Overall CBO					
Overall opinion of CBNRM					

THANK YOU FOR YOUR TIME

APPENDIX II: KEY INFORMANT INTERVIEW/FOCUS GROUP DISSCUSION GUIDE

INTERVIEW PLAN

Introduction of interviewer

Hello, my name is Kampinda Luaba, a student at Stellenbosch University in South Africa. I would like to talk to you about issues concerning the protected area as part of my PhD research which focuses on the Governance of wildlife, forests and fisheries in relation to biodiversity conservation and livelihoods; rural communities

During the interview I would like to discuss the following topics: History and culture, governance type, rightsholders and stakeholders, management units and the governance process

Background information on Interviewee

Date:
Name:
Organisation:
What is your job title?
What primary roles does your job involve?
Can you tell me how your organisation's roles intersect with the governance of the protected area?

1. History and Culture

Main question	Additional questions	Clarifying question
Can you tell me about the history of this PA?	• When was the PA established? • Who established it? • Who took part in the process and positively contributed to it? • Who opposed it? • Did some rightsholders or stakeholders take the lead? • Did others feel left out?	• Can you expand a little on this? • Can you tell me anything else? • Can you give some examples?

	• What existed before the PA was established?	
	• Who was in charge of deciding about wildlife and forest resources?	
	• Was there some continuity when the PA was established?	
	• Who were the ''winners'' and ''losers''?	
	• How did the situation evolve?	
	• What has remained of what was there before?	
In your opinion, which key historical and cultural issues affect communities today?	• Why?	

2. Governance type

Main question	Additional questions	Clarifying question
Who governs the PA?	• Who decided to establish the PA? Why? How? Who else was involved? • Who decided the main management objective and developed any management plan? • Who provided finances, time and physical effort? • Who provided political and moral support? • Who drew the boundaries? • Who decided any zoning?	• Can you expand a little on this? • Can you tell me anything else? • Can you give some examples?

How is the PA managed?	• Does the *de facto* practice reflect the *de jure* intent? • Who has been maintaining those decisions, or changing them since the establishment of the PA?	• Can you expand a little on this? • Can you tell me anything else? • Can you give some examples?

3. Rightsholders and stakeholders

Main question	Additional questions	Clarifying question
Who are the actors and institutions and how are they involved in the governance of the PA?	How many years has your organisation been active in the PA?	• Can you expand a little on this? • Can you tell me anything else? • Can you give some examples?
	Does your organisation have *de jure* access, use and tenure with respect to wildlife and forest resources in the PA?	
	Does your organisation have *de facto* access, use and tenure with respect to wildlife and forest resources in the PA?	
	What are the main interests, concerns, types of interaction with the PA? (e.g. cultural, subsistence-oriented, scientific, economic)	
	What is your organisation's current role in governing or managing the PA?	
	What key capacities does your organisation have for governing or managing the PA?	
	Are there any unresolved issues and claims with respect to the PA?	

In your opinion who is/ are most influential actors in the PA?	Why?	

4. Management Units

Main question	Additional questions	Clarifying question
What are the existing management units within or outside the PA?	Is the PA subdivided into sub-units?	
	Who are the rightsholders/stakeholders in each management unit?	
	Do these rightsholders/stakeholders have the capacity and willingness to contribute to governing those units?	Can you expand a little on this

5. Governance Process

Main question			Additional questions	Clarifying question
Can you take me through the process of decision-making in the utilisation of wildlife and forest resources?			Who has authority over the wildlife in the PA?	• Can you expand a little on this?
			Who holds authority over the forests in the PA?	• Can you tell me anything else?
			Who is responsible for the wildlife in the PA?	
			Who is responsible for the forests in the PA?	• Can you give some examples?
			How are decisions made?	
Do you think authority and responsibility in the decision-making process are exercised?				
	YES	NO		
Legitimately			Why?	
Purposefully			Why?	
Effectively			Why?	
Accountably			Why?	
Fairly			Why?	

THANK YOU FOR YOUR TIME

APPENDIX III: ETHICS SCREENING COMMITTEE REPORT

Departmental Ethics Screening Committee Report
For Kampinda Luaba 19292120

Ethics application reference number:

1) Please argue the ethical risks that are related to the research proposal submitted for review, together with the DESC's proposals on how to avoid or mitigate these ethical risks. *(Rows may be added if space below is limited)*

Any ethical issues that need to be highlighted?	What must/could be done to minimise the ethical risk?

2) Please mark with an X the applicable risk classification assessed for this project:

Minimal risk	
Low risk	X
Medium risk	
High risk	

For definitions of the above risk levels, please consult the DESC guidelines on the DRD-website: DESC Guidelines

3) If Minimal or Low risk, should this application <u>still</u> be referred to the Research Ethics Committee for further review? *(Please mark your decision with an X)*

Yes [ ]   No [X]

3.1) If YES, please motivate why the application has been referred for REC review:

4) Please mention any additional information that should be noted by the REC:

1. Signed:..   2. Signed................................

APPENDIX IV: WILDLIFE AND POACHING

African Elephant (*Loxodonta Africana*) in Kaingu (Source: Author)

Poachers arrested by the Resource Protection Unit (RPU), Kaindu (Source: Royal Kafue Limited)

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APPENDIX V: FORESTS AND DEFORESTATION

Illegal logging in Miombo forest, Kaingu (Source: Author)

Truck laden with charcoal impounded by the RPU, Kaindu (Source: Royal Kafue Limited)

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APPENDIX VI: FISH AND FISHERIES

The common fish (Tilapia species) caught in Lake Itezhi-tezhi, Kaingu and the Kafue River in Kaindu (Source: Author)

Ilegal fishers with illegal fishing gear arrested by the RPU, Kaindu (Source: Royal Kafue Limited)

APPENDIX VII: RESEARCH METHODS

Kaingu CRB office, the governance dashboard questionnaire (insert) and focus group discussion (Mbuma VAG), Kaingu (Source: Author)

Administering the governance dashboard questionnaire, Kaindu (Source: Author)

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The author conducting the focus group discussion at Kawikamo, Kaindu (Source: Author)