The Dynamics of Governing Natural Resources in Namibia's Conservancies and Community Forests: Implications for Empowerment, Equity and Sustainability

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Author's Declaration

The work presented in this thesis is the result of my own work and is not an outcome of work done in collaboration, except where specifically indicated in text. No part of this thesis has been submitted to any other university for the award of any degree or diploma.

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Abstract

This thesis presents an analysis of community based natural resource management (CBNRM) policies in Namibia, focusing on institutional and organizational arrangements. The analysis is based on case studies of two CBNRM institutions: the Conservancy, a community based wildlife management programme, and the Community Forest programme. First, I introduce the policies that made provision for the formation of conservancies and community forests, and examine the differences between local institutional arrangements that have resulted from these policies. The policies and institutional arrangements of the two programmes have important differences resulting in variations in how local communities can implement, participate, benefit and use resources at the local level. Second, I examine the performance of the two programmes at the local level in terms of stated programme goals. I use the enriched version of Ostrom's Institutional and Development (IAD) framework, thereby making it suitable for policy analysis.

Results suggest that at the local level, both the conservancy and community forest programmes have not satisfactorily succeeded in achieving their intended goals. First, the two programmes have not sufficiently involved the majority of households affected by their formation in decision making. Rather, the likelihood of a household to influence decisions in conservancy and community forest meetings was observed to be related to gender, age, wealth and financial benefits from the programme. Second, while conservancies have collectively generated high revenues, equity in benefit distribution is not currently being achieved and benefits reach only a few households. Forests on the other hand have been found to be contributing more to rural livelihoods through both subsistence use and sale of forest resources by many households. Third, results also indicate that compliance with new rules introduced by conservancies and community forests is low. Specifically, results indicate that rule enforcement was not effective in all three case studies due to several reasons and that illegal harvesting and hunting was still taking place.

Finally, based on the findings of this study, I recommend broad courses of action to the challenges encountered by common-pool resource institutions such as conservancies and community for effective governance of the resources. It is recommended that conservation programmes seek to better understand the communities they work with to ensure effective participation of all affected members. The issue of equity in benefit distribution needs to be clearly addressed in laws and operational plans to ensure the benefit of the poor segments

of communities. In order for conservancies and community forests to work as development strategies and not only conservation strategies, there have to be mechanisms to enhance the amount of benefits and the distribution to a larger number of households. Lastly, there exist the need to strengthen existing rule monitoring and enforcement systems to ensure sustainable use of natural resources. In order to realize their goals, institutional arrangements in conservancies and community forests need to be re-designed on a site by site basis to reflect the varied socio-economic, cultural and institutional settings of local communities.

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Dedication

To my mother, Ms Mary Masule, a phenomenal woman. For working so hard against all odds, ensuring that all her children got an education.

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List of acronyms

AGM	Annual General Meeting
CAMPFIRE	Communal Areas Management Programme for Indigenous Resources
CBNRM	Community-based Natural Resource Management
CBO	Community-based Organization
CC	Communal Conservancy
CDCs	Constituency Development Committees
CF	Community Forest
CFN	Community forestry in Namibia
CGG	Community Game Guards
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
CPRs	Common-pool Resources
DED	German Development Service (Deutscher Entwicklungsdienst)
DLRR	Department of Land Reform and Resettlement
DNRM	Natural Resource Management Directorate
DoF	Directorate of Forestry
DRSPM	Regional Services and Parks Management Directorate
EC	Executive Committee
EIS	Environmental Information Service
GIZ	German Society for International Cooperation (Deutsche Gesellschaft für Internationale Zusammenarbeit)
GRN	Government of the Republic of Namibia
IAD	Institutional Analysis and Development
INRM	Integrated natural resource management
IRDNC	Integrated Rural Development and Nature Conservation
KAZA	Kavango - Zambezi Transfrontier Conservation Area
KMC	Kwandu Management Committee
MAWF	Ministry of Agriculture, Water and Forestry
MAWRD	Ministry of Agriculture, Water & Rural Development
MC	Management Committee

MET	Ministry of Environment and Tourism
MLR	Ministry of Lands and Resettlement
MMC	Mashi Management Committee
MRLGHRD	Ministry of Regional, Local Government and Housing and Rural Development
NACSO	Namibian Association of Community Based Natural Resource Management (CBNRM) Support Organizations
NAMPLACE	Namibia Protected Landscape Conservation Areas Initiative
NDP4	Fourth National Development Plan
NGO	Non-governmental Organization
NRM	Natural Resource Management
PAC	Problem Animal Control
PH	Professional hunter
RSPM	Regional Services and Parks Management
SMC	Sobbe Management Committee
UNFCCC	United Nations Framework Convention on Climate Change
USAID	U.S. Agency for International Development
WWF	World Wide Fund for Nature

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Chapter 1: Introduction

1.1 Natural resource management issues and challenges

One of the major challenges facing the world today is environmental degradation. In particular, deforestation and forest degradation have been identified as important environmental issues because of the crucial links of forest resources to ecosystem function and services (Westoby 1989, MA 2005). Forests supply a range of fundamental commodities such as; food, air, water, soil, a diversity of flora and fauna (MA 2005). In developing countries the value of forests to the local livelihoods is considerable, as people depend directly on them. The disappearance of forests over the last few decades is causing concern at global, national and local level. In addition, the decrease of many wildlife species due to uncontrolled hunting and poaching has also been a great concern. In order to deal with natural resource management challenges, many authors (e.g. Ostrom 1990, Dietz et al. 2003) have identified institutional and governance issues as playing a fundamental role in natural resource protection and management. Institutions can be seen as the formal and informal rules of a society that set the limits of individual action, which in turn determines the incentives faced by individuals in the sustainable use of resources (Gibson et al. 2000). An understanding of institutions can therefore give insights of issues that affect sustainability in the governance of natural resource.

1.2 Devolution of natural resource management to communities

Many concepts and approaches have been suggested to deal with the challenges of managing natural resource such as wildlife and forests. These include Common-pool resource (CPR) theories, Community-based Natural Resource Management (CBNRM), integrated natural resource management (INRM), co-management and institutional design principles, among others. An increasing number of governments in developing countries are now supporters of devolution and decentralisation of natural resource management (NRM) and access rights from the state to local communities (e.g. Kajembe et al. 2003, Katila 2005). This has become an important policy tool for many countries across the world. One of the reasons for this change in policy is the recognition of the limits of central governments in managing resources at the local level, which has resulted in degradation of natural resources and people's livelihood systems. In Namibia (and most Southern African countries), one reason for devolved natural resource management powers was to redress

past discriminatory policies and practices which recognised substantial rights over natural resources to *'white'* commercial farmers, but ignored *'black'* communal farmers rights (Hulme and Murphree 2001, Nelson 2010). Furthermore, there has been increased government recognition of people's capabilities to manage their natural resources (Maskey et.al. 2003, Ostrom 1990). Agreement has also emerged among scholars that devolved collective management of common pool resources (CPRs) by their users could be an appropriate system for overcoming the 'tragedy of commons' (Ostrom 1990, Berkes 1989, Baland and Platteau 1996). However, outcomes of such devolution of natural resource management and use are mixed and the reasons for differences in outcome are still not fully understood.

Namibia, where the research was undertaken has been at the forefront of devolving natural resource management authority to the local communities through the Community-based Natural Resource Management programme. The 1996 Amendment of the Nature Conservation Ordinance was a landmark in the history of Namibia's Community-based Natural Resource Management (CBNRM), as it set up the legal basis for the establishment of communal conservancies. This was the first national law in Namibia that recognized the importance of rural community involvement in the management of wildlife resources for improvements of their livelihoods and protection of the resources (GRN, 1996). This was followed by the passing of the Forestry Act in 2001, which recognized rights of local communities to manage their forest resources through the mechanism of community forests. In Namibia, the CBNRM approach is implemented through Communal Conservancies (CC) by the Ministry of Environment and Tourism (MET) and Community Forests (CFs) by the Ministry of Agriculture, Water and Forestry (MAWF). Both the forestry and wildlife sectors in Namibia have used similar Community-based Natural Resource Management (CBNRM) approaches, though with separate legislation recognising the rights of communities over wildlife and forest resources. The two CBNRM programmes are also implemented by different government ministries and have specific technical requirements for resource management.

As part of this approach, both conservancies and community forests are self-defined social units or groups of people that choose to manage their wildlife and forest resources together and become registered with the respective ministries. One of the requirements before registration is that a conservancy must be legally established with clearly defined boundaries that are not disputed by neighbouring communities. The main mechanism by which rights to use forest resources are recognized is through a written

agreement between government and a body representing the community which has traditional rights over an area.

1.3 Rationale of the Study

Recent years have seen a number of rural communities expressing a growing interest in establishing both conservancies and community forests in the same areas. In such overlapping areas, conflict between stakeholders has been apparent especially when many community based organisations (CBO) are operating at the same level in the same area. There is therefore increasing consensus regarding the need to find an approach that encourages more collaborative management of wildlife and forest resources in conservancies and community forests that crosses the boundaries of various government sectors. Apart from providing additional benefits to communities, a cross-sectoral approach also provides opportunities for integrated natural resource management. National policy makers are also in agreement with regards to the need of an integrated conservancy/community forest framework (NACSO Strategic Plan 2011-2015). Furthermore, although there are currently no truly integrated conservancies and community forests, a number of communities are combining forest management with wildlife management and there are a few community forests that overlap in some way with conservancies (NACSO, 2009).

Due to the growing interest for integrated natural resource management, efforts are being made to harmonize legislation relating to community forests and communal conservancies. Given that forestry is a land-use that is intimately linked with wildlife management, and many communities want to have both conservancies and community forests, it is imperative that we compare and contrast the two programmes in order to know whether there is potential for taking a more integrated approach in developing these CBNRM institutions. It is also important that stronger linkages are made between people working in each of these sectors. The hypothesis is that communities themselves, because they are often the same group of stakeholders, might integrate wildlife and forest management activities in conservancies and community forests, even though the initial development efforts are highly sectoral. It is useful to have a detailed understanding of the conservancy and community forest institutions in terms of processes of functioning and how these influence the outcomes of the two CBNRM programmes. According to Scoones (1998), understanding institutional processes is a requirement to identifying constraints and opportunities with regard to natural resource management and rural livelihoods. This is

because institutions shape user behaviour and the subsequent outcome of the natural resources, and also facilitate access to livelihood resources.

Although there are some difference between conservancies and community forests, the similarities in institutional arrangements are remarkable. Both have legal bodies with constitutions as mentioned. They both follow the principles of common pool resource management (Ostrom 1990), such as defined boundaries and membership. Despite these similarities, a number of differences in the two CBNRM programmes have been identified (Table 1-1).

Table 1-1: Main differences in features between CCs and CFs

Feature	CC	CF
Existence	Fairly old, the first CC was declared in 1998	Fairly recent, the first CFs were declared in 2006
Definition of membership	Community defines its members	Anyone that has traditional rights to the area is a member
Type of benefits	Economic benefits are prominent. The tourism industry provides most of the jobs within CCs	Subsistence use seems prominent. Economic benefits from CFs come from the marketing of NTFPs and timber products.
Type(s) of resource/ use rights	Use rights are only over wildlife	Over all other forest resources
Mobility of the resource	Mobile	Fixed
External support (technical and financial)	Fairly available	Limited
Priorities of Administrative bodies (perceived)	MET conservation-focused	MAWF is agricultural-focused

Furthermore, there have been substantial differences in the way wildlife and forestry policies have been implemented with regards to the establishment of conservancies and community forests. Conservancy establishment has been somewhat faster than community forest establishment throughout the country. This has partly been attributed to the unequal degree of support (financial and technical) to the different institutions. By 2014, 82 conservancies had been registered, covering 161,900 square kilometres of communal land, and 32 community forests (NACSO 2014). The differences highlighted above between CCs and CFs have partly directed the focus of the present study.

1.4 Research Aim and Objectives

The brief discussion above shows that CC and CF institutions are complex and are subject to various influences which shape their outcomes. On the basis of this discussion, the overarching aim of this research is to understand the formal and informal institutional mechanisms that govern access to, control, and use of natural resources in conservancies and community forests. By comparing the institutional performance of the two CBNRM programmes using case studies, the research aims to improve our understanding of how formal policy and local arrangements interact to influence the outcomes of the two programmes. The above aim is divided into five specific objectives corresponding to the empirical chapters:

1. To compare and contrast the legal and policy frameworks under which the conservancy and community forest institutions function.
2. To preliminarily assess how existing institutional arrangements in conservancies and community forests are likely to influence the performance or outcomes of the two "new" institutions in the three study areas.
3. To assess how existing institutional arrangements have affected the outcomes of conservancies and community forests in terms of:
3.1 Participation of communities in natural resource decision making
3.2 Distribution of benefits from natural resources among households, and
3.3 Resource use rule enforcement and compliance.

1.5 Organization of the thesis

This thesis is divided into three parts and ten chapters (figure 1-1) and the remainder of the thesis is organized as follows:

Part I of the thesis sets the study context by first presenting the research agenda and justification for the study in chapter 1. Following this introductory chapter, chapter 2 presents the theoretical framework around which the thesis is based. Given the emphasis placed on communal management of natural resources, the conceptual framework for this thesis borrows from common-pool resource theories and concepts. These theories are used as the starting point to build a conceptual model for analysing forest and wildlife management in conservancies and community forests. The study areas are introduced in chapter 3 and the methodology and methods used are discussed in chapter 4.

Part II of the thesis presents the policy, legislative and institutional environment under which conservancies and community forests operate. In chapter 5 I provide a comparative analysis of the two CPR or CBNRM institutions through the review of the legal framework for wildlife and the forestry resources, including organizational structures. Policies and legislations guiding conservancies and community forests are reviewed to describe how natural resource rights are defined and acquired in conservancies and community forests. Chapter 6 presents a qualitative in-depth analysis to assess how existing institutional arrangements in conservancies and community forests are likely to influence the performance or outcomes of the two CBNRM programmes.

Part III of the thesis evaluates the performance or outcomes of the two CPR or CBNRM institutions in chapters 7, 8 and 9. I start in chapter 7 by addressing one of the stated goals of the Namibian CBNRM programme, which is empowerment through household participation in decision making. Here I analyse how a combination of institutional arrangements and local social contexts have influenced participation of local communities in natural resource decision making. In chapter 8, I address the second primary goal of the Namibian CBNRM programme, 'improvement of rural livelihoods'. Here I investigate and contrast the contribution of conservancy and community forest benefits with other important livelihood activities in response to changes in accessibility and availability in resources brought about by the introduction of the two institutions.

In chapter 9 I examine whether the introduction of conservancies and community forests has resulted in sustainable resource use. Specifically, I analyse fieldwork data to show how the formal and informal mechanisms regulating resource use in conservancies and community forests affect household compliance with resource use rules.

Finally, in chapter 10, I synthesize the findings of the research. I also reflect on theoretical and conceptual implications of the research findings. The thesis concludes with a presentation of the overall conclusions about the main research objective and suggest areas for future research.

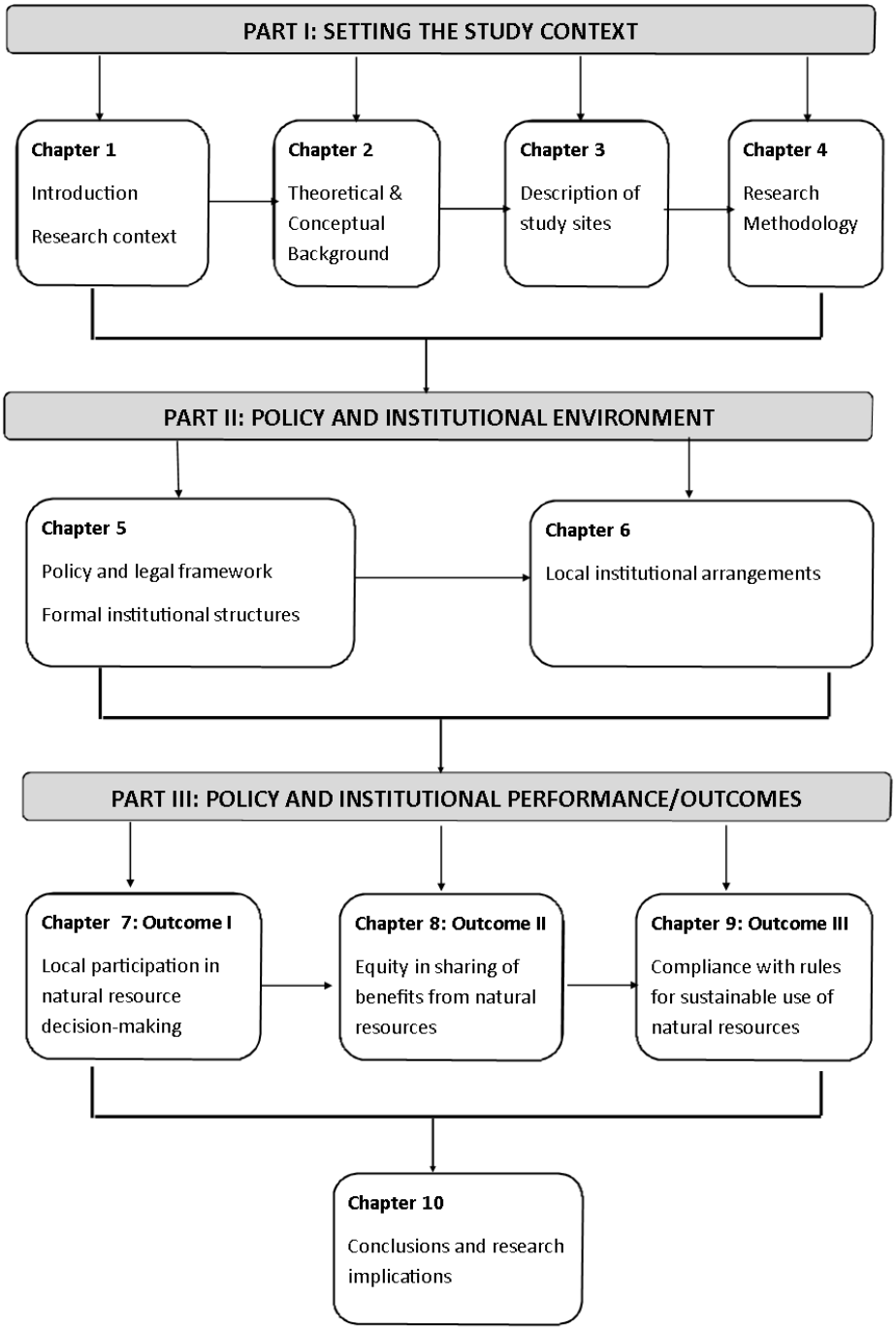

Figure 1-1: A schematic outline of the thesis structure, including chapter titles

Chapter 2: Perspectives on the role of institutions in governing common-pool resources

This chapter is divided into two main parts. The first part describes the theoretical background to the research framework, exploring the concepts of common-pool resources and institutional analysis. The second part presents the conceptual framework of the research.

2.1 Theoretical Background

Given the emphasis placed on the importance of institutions in managing communal natural resources, the conceptual framework for this research borrows from Common Pool Resource (CPR) theories and institutional analysis concepts. These theories are used as the starting point to build a conceptual model for analysing management of wildlife and forest resources in conservancies and community forests.

2.1.1 Common Property Theory and Natural Resource Management

Resource degradation in the developing countries has been attributed to common property systems for many years. It is well accepted that wildlife and forest resources which are held in common are exposed to over use and degradation. This agreement is based on Hardin's model on 'The tragedy of the Commons' (Hardin 1968) which asserts that 'freedom of the commons brings ruin to all'. The idea was that when resources are limited and publicly owned, it is rational for each individual to over-use them even though this behaviour results in tragedy for the group (Feeny et.al. 1990). To avoid this tragedy, Hardin (1968) concluded that the commons could be privatised or kept as public property to which rights to entry and use could be allocated. The perception that common property and open access are the same has been widespread for a long time. However, today this perception is recognised as having no basis in reality by many authors (e.g. Ostrom 1990, Bromely & Cernea 1989), as they have observed that not all common property resources are subject to over-use. Some authors assert that the degradation actually originates in the dissolution of local-level institutional arrangements whose purpose was aimed at resource use patterns that were sustainable. In Southern Africa in particular, the dissolution of community based institutions such as traditional authorities arose from colonial administrations (Fabricius et al. 2004, Nelson 2010). Groups of individuals have over

centuries organised themselves to collectively manage and use their natural resources without external force throughout human history (Murombedzi 2010). How this happens has been the fundamental drive behind common property research.

Several authors (e.g. Bromely & Cernea 1989, Feeny et.al. 1990) assert that what matters in managing common property is not the type of resource (e.g. wildlife vs. forest resources), but the property right regime that it is associated with, namely open access, private property, communal property and state property. The following definitions are given by Feeny et.al. (1990) to describe the property right regimes. In the 'State property' rights, ownership and control of the resources rest exclusively in the hands of the state. The government makes decisions concerning who should have access to the resource, as well as the condition and the level and nature of exploitation. In the 'Private Property' regime, the rights to exclude others from using the resource and to regulate the use of the resource are vested in an individual or group. The 'Communal Property' regime represents private property for a group or community. In this property regime, the group may exclude outsiders from resource use while regulating use among members. The rights are unlikely to be exclusive or transferrable and are often rights of equal access and use. Lastly, in the 'open access' regime, there is absence of well-defined property rights and access to the resource is unregulated, free and open to anyone.

Hardin's model would have been completely correct if common property resources were only managed under an open access regime. However, management experiences from common property has recognised that what is needed is a more dynamic partnership in which capacities of local resource users are complemented by the ability of the state to provide enabling legislation (Borrini-Feyerabend et al. 2002). This type of partnership involving multiple actors has been termed co-management and has received increasing attention as it is thought to enhance sustainability of resource governance (Fischer et al. 2014).

There is now recognition that in most cases of CBNRM, local communities do not manage resources on their own, but that other actors also play a role (Pomeroy and Berkes, 1997; Fischer, 2014). The Namibian Communal Conservancy (CC) and Community Forestry (CF) or collectively, the CBNRM programme, does not completely fit in any one of the regimes described by Feeny et al. (1990) above but can be categorized as co-management between communities and the state. It is rather somewhere between 'state' and 'common' property, because rights over the resources are conditional and they are limited (Jones 2009), and the state still plays a major role in the governance of natural

resources. As highlighted by Fischer et al. (2014), the Namibian CBNRM programme involves diverse governmental actors from different levels and sectors (forestry and wildlife). Both conservancies and community forests have few recognised rights to exclude unwanted outsiders from their land. With less-secure rights, conservancies and community forests have reduced incentives to invest in conservation and in natural resource based entrepreneurial opportunities. Despite the brief points discussed above, the Namibian CC and CF programmes closely fall under the common property system (also known as the common pool resource – CPR), with an emphasis on co-management between government and communities.

2.1.2 Institutional Analysis Framework

There are a number of research frameworks available for the study of common pool resource (CPR) systems. The Institutional Analysis and Development (IAD) framework (Ostrom 1990) has been selected for use in this research because it is both specific enough for organising investigation, but general enough to be useful in a wide variety of situations. Given the focus of this study, which is to investigate collaborative management of natural resources between government and communities (and other institutions), it is useful to start by defining institutions. In the context of this research, it is important to distinguish between institutions and organisations or actors. Ostrom (1990) and (also see North 1990) define institutions as 'the sets of working rules that are used to determine who is eligible to make decisions in some arena, what actions are allowed or constrained, what aggregation rules will be used, what procedures must be followed, what information must or must not be provided, and what payoffs will be assigned to individuals dependent on their actions'. Organisations or actors on the other hand are groups of individuals bound by some common factors to achieve particular objectives. Actors in this research are defined as individual or groups of individuals involved in implementing various wildlife and forest management activities in CCs and CFs. Actors will therefore include government official at various levels (regional and national), NGOs, traditional authorities and other stakeholders.

It is essential to understand how rules affect the behaviour and outcomes achieved by communities using wildlife and forestry resources in CCs and CFs. Within this context, many factors have been identified as facilitating collective action and outcomes are assumed to be affected by the following types of variables: (i) characteristics of the

resource system, (ii) characteristics of the community within which actors are embedded, (iii) institutional arrangements which involve rules that create incentives and constraints for certain actions, (iv) patterns of interactions with other individuals and (v) outcomes (Ostrom 1990, Oakerson 1992, Agrawal 2001, Platteau 2000 and Koontz 2003). At the core of the institutional framework are individuals or groups that hold different positions, who must decide on actions that cumulatively affect the outcomes (Gibson et al. 2000).

According to Edwards and Steins (1999), problems of the commons usually result from the physical characteristics of the resource. The resource will need to be evaluated with respect to each separate extractive and non-extractive use, and the resource systems ability to support such multiple uses. The capacity of the resource system to support different uses will depend upon its general physical condition and the impact of each type of use. In overlapping resource – use areas such as CCs/CFs, this evaluation is particularly important because of the emphasis on different uses of resources by the different users.

There is an underlying assumption that forest condition and human use of forests and other natural resources are determined largely at the local level, as local institutions regulate access and resource allocation and provide for sanctions for non- compliance (Gibson et al. 2000, Ostom et al. 1994). Two kinds of rules exist within CPR or government-community management systems; 'working rules' and 'rule of law'. Working rules are those actually used, monitored and enforced by individuals within a community. Ostrom (1990) emphasizes the importance of making people aware of these rules, if monitoring is expected to be done by those directly involved. Working rules may or may not resemble the formal laws (rule of law) that are expressed in legislation and administrative regulations. Major differences in rules regarding resource use may result in conflict in co-managed systems. Therefore when opting for co-management of wildlife and forest resources, we should also start thinking of ways to make rules that do not undermine local or traditional rules.

In multiple-use analysis like in the present study, it is important to recognize that rules can occur at different levels of decision-making, forming a 'nested' rule structure (Kiser & Ostrom 1982). Rules are defined by authority relationships that specify who decides what in relation to whom. There are three levels of rules which are closely linked that affect all governance actions taken and outcomes (Ostrom et.al. 1994): (i) operational level, (ii) collective-choice level and (iii) constitutional level.

Operational rules directly affect the day to day decisions that govern and regulate resource use (e.g. hunting wildlife) and management. Their purpose is to regulate

behaviour in order to maintain the resource system. Operational rules might comprise for example definition of users such as a register of people entitled to access the commons and details of their rights, rules concerning the manner in which the commons may be used and details of how the different rules will be enforced (Edwards & Stein 1999). It is clear here that coordination of the use of the commons is facilitated if all users have knowledge of the operational rules relating to resource use. C*ollective-choice rules* affect operational choices indirectly. These rules are applied by local users, their officials or external authorities in making policies about how CPRs should be run. They establish institutional structures to enforce the operational rules, resolve any conflict and enforce decisions. *Constitutional choice* rules on the other hand affect operational activities and outcomes through their effects in determining who is eligible to participate in the CPR system, what specific rules will be used to form the set of collective action rules and subsequent operational rules (Ostrom 1982 cited in Edwards & Steins 1999). It is therefore at the constitutional level that we must analyse the processes used to create, enforce and modify collective action rules (Edwards & Steins 1999). An Institutional Analysis which focuses on the institutional arrangements, the set of rights and rules by which communities and government organise resource management and use in CCs and CFs, form part of the framework of this research. When carrying out institutional analysis, it is advisable that the researcher also examines some aspects of organisations because their strategies can influence or lead to changes in institutions.

2.2 Research Framework

Based on the theoretical concepts described in the above sections, an analytical framework has been developed for use on co-management of wildlife and forest resources in conservancies and community forests. The analysis begins with an identification of variables affecting the collective action situation; biophysical, socio-cultural, economic, characteristics of the resource users and the resource. These variables form the context within which resource users and other actors manage and use the resource. The framework is presented in figure 2-1 and distinguishes three categories of characteristics used to analyse CPR situations: (i) characteristics of the resource, (ii) Institutional arrangement (decision-making rules governing use of the resource system) and (iii) characteristics of the user community.

The institutional arrangements analysis links the contextual variables characterizing key aspects of the resource and the resource users with the management institutional

arrangements (rights and rules). The institutional arrangements and contextual variables affect the actions of the resource users and other actors involved in the management of wildlife and forest resources by shaping their interest to coordinate and cooperate in resource management and use. This in turn shapes the behaviour and patterns of interactions between co-management partners, which generate particular types of outcomes.

Lines between variables indicate the relationship between the different parts of the framework. Nonetheless, physical characteristics can have an indirect effect on outcomes by influencing the type of the decision making rules, user behaviour and interactions. The influence of external / exogenous factors on the internal variables of the framework is presented by a small box outside the main framework (figure 2-1). The exogenous factors can influence each of the internal variables as well as interactions between them.

2.2.1 Characteristics of the resource

The physical characteristics of the resource include the area of the forest and the wildlife in it, type and species composition which determine the productive of the resource system. By the physical attributes of the resource we mean the state of the resource such as the levels of scarcity, size of the resource system. Collective action situations have been shown to develop when a group is highly dependent on a resource and when the availability of the resource is limited. To understand the actions that individuals in CCs and CFs have taken requires an understanding of the harvesting and hunting locations, stocks of plant and wildlife resources and boundary conditions. Specific questions that are considered are found in Appendix 3.

2.2.2 Institutional Arrangements

Broadly speaking, institutional arrangements at community level concern the right and rules that apply to and regulate the resources which the community manage and use. In this research, attributes of the institutional arrangements include variables such as: (i) operational rules, which directly affect the use of resource (e.g. allocation rules, monitoring and sanctioning rules, fines and penalties in case of rule violation), (ii) nature of collective action rules which consists of information about the structure of the CC and CF Committees, decision making processes, mode of representation, participation of resource users, and (iii) the size of private benefits from CCs and CFs (e.g. household income from

resource management, nature of access to resources). Other important issues include representation, decision-making procedures and implementation of decisions.

Local organisational capacity and cooperation has been suggested to affect collective action (Olson 1965, Ostrom 1990). According to Schneider and Anthem (2011), local organisational capacity refers to the ability of people to work together, organize themselves, make decisions and mobilize resources to solve problems of common interest. Community organizations (also referred to as Community-based Organizations, CBOs) may be informal through sharing of labour or assets among member, or more formal with legal registration e.g. conservancies and community forests in Namibia. Nonetheless, even with legal registration, informal organizations are still prominent in many communities, for example a group of women who initiate communal harvesting of a certain forest product for one reason or another.

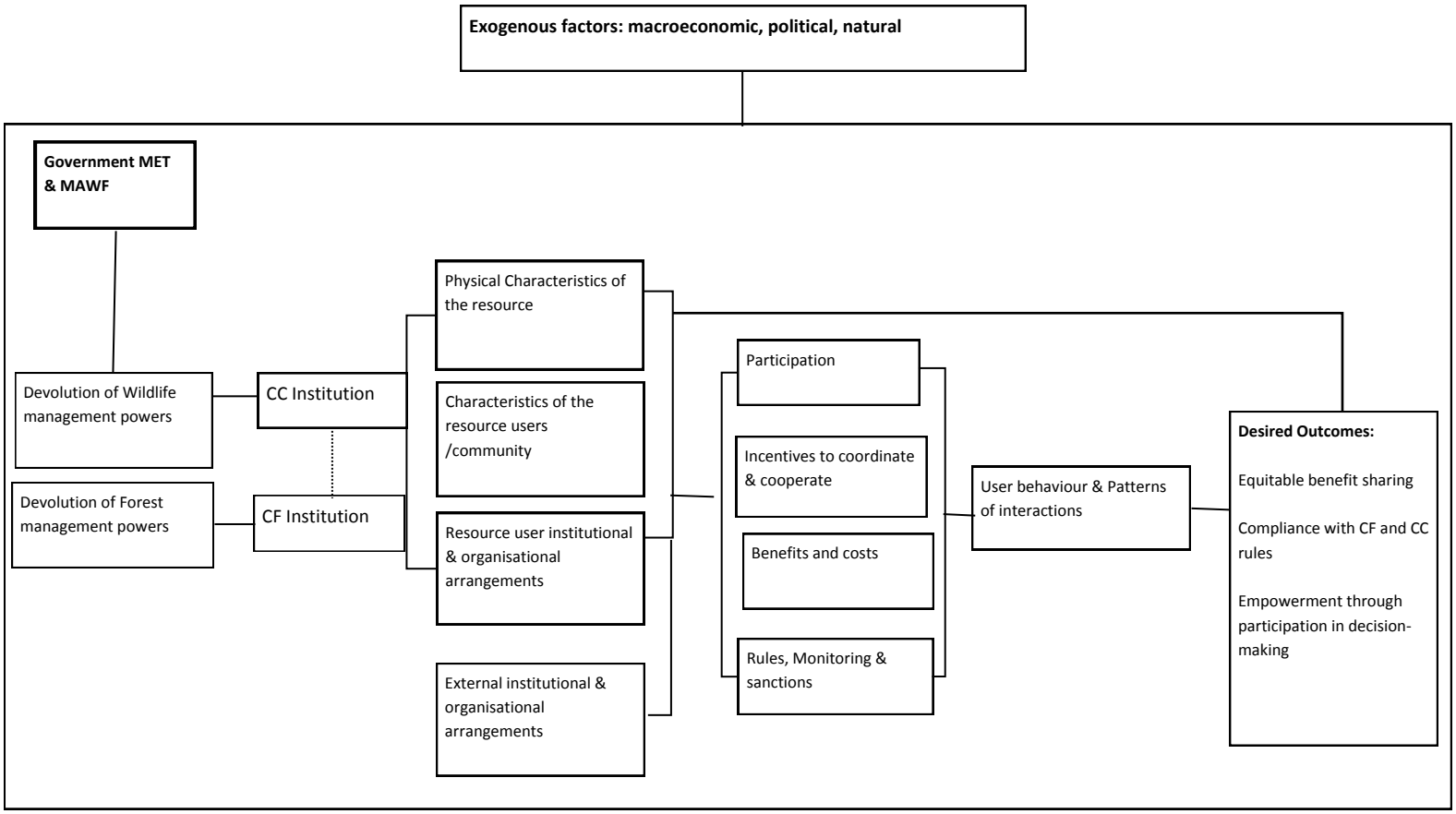

Figure 2-1: Analytical framework for analysing co-management of natural resources in CCs and CFs (Adapted from Oakerson 1992)

The problems in collective management of natural resources as indicated from the literature arise from the following (e.g. Fleischman 2009, Gibson et al. 2005, Chhatre and Agrawal 2008). Firstly, it arises when rules for the use and management of natural resources are set in the community vs. when the rules are set externally by government departments. An important question to ask here is 'who sets the rules for access and management within communities'? How effective are these rules? The second problem arises over monitoring and enforcement of rules in the community. How effectively are the rules monitored and enforced? Hence it is imperative to assess the extent to which people are involve in rule-making decisions for wildlife and forest resources in CCs and CFs, if we want to understand how this affects outcomes/ compliance with these rules.

2.2.3 Characteristics of the community

'Characteristics of the community' is a term that is usually used to encompass all relevant aspects of the social and cultural context within which the collective action is situated (e.g. group size, assets ownership and income, proximity of the resource user to the location of the resource) which is considered source of heterogeneity. Some literature suggest two key attributes which lead to incentives to cooperate (Ostrom 1990): (i) if a community using a resource exhibits a high degree of social, cultural and economic homogeneity (ii) if there is high dependency by users on the resource for their livelihoods. However, Ostrom (1992) also argues that heterogeneity in assets can favour collective action, especially where there is a need for leadership.

It is now well-accepted that natural resource assets do not necessarily need external protection from the destructive actions of people (Pretty & Smith 2004), as communities can actually work together collectively to sustainably manage natural resources for the long term (Ostrom 1990). One possible solution to the problem of destructive action may be to rely on social capital through social norms and sanctioning mechanisms that a group can self-enforce without the strict regulation of an outsider like government (Ostrom 1990, Uphoff & Wijayaratna 2000, Krishna & Shrader 1999).

2.2.4 External institutions and organisations

Institutional arrangements at higher levels than the community level often affect the institutional arrangements at the local level. In the case of CCs and CFs, the institutional arrangements at the community level were developed at a higher level to meet national

level needs and fit into a multiple layer structure. For this reason, CCs and CFs have to follow rules and procedures that are more or less compatible with the local conditions. Other organisational arrangements that may affect community level institutions include NGOs and many other support organisations. Some key questions to be asked are included in Appendix 2.

In a multiple use situation like the CC/CF, it is important to recognize the presence of different stakeholders. In the context of this study, stakeholders are all individuals, groups of individuals and organizations that have an influence over or are influenced by the institutional arrangements of the CC and CF, either directly or indirectly. Within this definition it is desirable to construct categories of groups so that some patterns of use and norms can be established. According to Edwards and Steins (1999) such distinctions are important since they help to explain the types of pressure on the resource system and the vested interests of the different groups.

Schneider and Anthem (2011) believe that facilitation of stakeholder relationships is a major empowerment strategy that influences people livelihoods and biodiversity conservation. Dialogue between communities and other stakeholders can provide fora for discussing and managing potential conflict and trade-offs between livelihoods and conservation goals. They can also help all stakeholders understand each other's perceptions and challenges. This is especially important in the context of this study, because of the emphasis on co-managing wildlife and forest resources in CCs and CFs.

2.2.5 External Factors

Factors external to CCs and CFs can have an impact on their implementation within communities. These factors go beyond the control of the resource users and community. For example, Namibia has enacted enabling legislation that allows communities to manage wildlife and forest resources through the formation of CCs and CFs. However, communities are still substantially dependent on government decision makers for enforcing some operational rules. Sometimes these external factors may even go beyond higher level government entities. The control over trade in endangered species through the Convention of International Trade in Endangered Species of Fauna and Flora (CITES) is an example of external factors beyond governments that are parties to the convention. These could be shocks to the community or management systems brought about by macroeconomic, political or natural occurrences.

2.2.6 Outcomes

The outcomes of the conservancy and community forest institutions are evaluated in terms of meeting the objectives of the Namibian CBNRM programme: (i) empowerment of communities, (ii) improvement of rural livelihoods and (iii) sustainable resource use and management.

Improving livelihoods through equitable benefit sharing

Equity in the distribution of benefits from CCs and CFs within a community is an important issue that is likely to affect or be affected by participation of community members in natural resource decision making. This in turn affects the sustainability of CC and CF institutions. According to Maskey et al. (2003), the chances of successful CPR systems are higher if people see high economic potential of the resources. However, this could also result in the opposite outcome, for example people might start over-harvesting a resource in order to have higher economic gains in the short-term. This brings up the importance of understanding long-term benefits by local people. The livelihood approach in particular emphasizes the understanding of stakeholders' participation in the management and benefit sharing of resources (Pant et al. 2005). This is important in knowing how the benefits are distributed among community members and its differential impact at the household level. Poor households have been found not benefit from community forests compared to well-off households and are not very interested in community participation (e.g. Agrawal and Gupta, 2005). If only certain people benefit from CCs and CFs and others feel marginalized, they may start to be resentful of the CC and CF institutions. As a consequence they may start to break use rules and not cooperate in the management of resources. If sustainability is to be achieved in CCs and CFs, it is imperative that benefits are fairly distributed among community members. Hence this research assesses the processes of benefit distribution in CCs and CFs.

In order to get a clear picture of the benefits of CCs and CF, one also needs to consider the costs associated with these institutions, and the management of the resources. This is in fact one of Murphree's CBNRM principles 'People seek to manage the environment when the benefits of management are perceived to exceed its costs' (Murphree 1993). Living with wildlife and other resources carry costs associated with negative socio-economic impacts. For example wildlife can cause damage to people's property and can even result in human deaths. An estimated half of households in seven

Namibia's conservancies report such damage as a cost of CBNRM (Bandyopadhyay et.al. 2004). Most human-wildlife conflicts (HWC) in Namibia result from crop damage and livestock losses to predators. In their study in the Zambezi region, Rodwell et.al. (2000) found that elephants were responsible for the greatest number of wildlife conflicts in the region, while lions had the greatest financial impact on farmers. Due to the high occurrence of HWC incidents, conservancies have been piloting a human animal conflict compensation scheme to deal with the problem.

Empowerment through participation

Participatory approaches to natural resource management often aim to devolve decision-making rights and benefits to local people, along with responsibilities for resource management. People are more likely to be successful in managing their natural resources if they depend on them and have an understanding of the value of these resources (Ostrom 1998, Larson and Ribot 2004). Effective participation is expected to be achieved by devolving more power to local users. In fact, one of the objectives of the Namibian CBNRM program is to empower rural communities by providing them with opportunities to participate in decision making processes of natural resource management. Like most decentralization and devolution programmes, the Namibian CBNRM programme has assumed that participation in decision making is automatically ensured with the devolution of power. However, many studies have shown that participation is not automatic (e.g. Pokharel and Suvedi 2007, Agrawal 2001), and have shown that CBNRM approaches have not adequately dealt with equity issues of participation in decision - making.

Access to information is fundamental to socio-economic empowerment. Knowledge is an essential element of human capital and hence key to sustainable livelihoods and natural resource management. According to Poteete and Ostrom (2004), when people lack information, coordination becomes difficult despite common goals. Information enables people to make better informed decisions, take advantage of opportunities, access services and markets, exercise their rights, negotiate effectively and hold duty bearers to account (Schneider and Anthem 2011). For people to take effective action, they require information that is relevant, timely and easily understood. In his study, Lubilo (2011) found that sharing of information strengthened accountability in a conservancy in Namibia. When regular meetings were held to inform members about conservancy affairs, members felt that they could now decide what they wanted to be done and tell committee members what to do.

Sustaining resources through rule enforcement and compliance

Rule enforcement is necessary for successful management of natural resources (Gibson et al. 2005). Effective rule enforcement often depends on guards that are proactive to impose sanctions on rule violators (Ostrom et al. 1994). Nonetheless, effective monitoring is not easily achieved as it requires substantial investment in terms of manpower and funding (Ghate and Nagendra 2005). More literature on rule enforcement and compliance is included in the relevant data chapters (chapters 6 and 9).

Although social capital is not the focus of this research, it will be useful to get some understanding of how the different actors in CCs and CFs work together, especially at the local level. Oslon (1965) argues that individuals will not spontaneously organise for collective action, and there is no way of preventing individuals that break rules from benefiting unless people are willing to work together. Ostrom (1990) hypothesizes that this problem could be solved through mechanisms of trust and a sense of togetherness among individuals. This should lower the cost of monitoring behaviour and inducing rule compliance (Dietz et al. 2003). Perhaps what could be more useful in the context of this study would be to understand how members of the same community cooperate and work together and with other stakeholders.

Working collectively in day to day activities requires coordination, which give rise to transaction costs (Meshack 2003). Ostrom (1994) suggests that transaction costs arising from coordination activities are influenced by the social cohesion of the community members. It has been found that cooperation in communities with high stocks of social capital require less enforcement and resources spent on regulation and monitoring are less than those with low social capital (Greiling 2006, cited in Yee and Rolfe 2007). As social capital lowers the transaction costs of working together, it facilitates voluntary cooperation. Individuals have the confidence to invest in collective NRM activities knowing that others will also do the same (Yee and Rolfe 2007). They are also less likely to engage in private actions with negative outcomes such as resource overuse. Other costs could be competition for land, grazing and water resources with other CBNRM-related activities. Some communities have been quoted saying they will not form conservancies because conservancies take their farming areas away from them.

This chapter has discussed the general theories and concepts on which the thesis is based. Further specific details of theories and concepts are included in the relevant data and analytical chapters (chapters 5 to 9).

Chapter 3: Description of study sites

3.1 Introduction

This chapter introduces the Zambezi Region as the area in which the studied conservancies and community forests are located. It provides general information on the geography, biophysical condition of the natural resource system, social and institutional attributes that are important to understand the context in which the research took place. The chapter starts with a general description of Namibia including culture, economic development and governance structures. This is followed by a description of the study region in terms of location, economy and natural resource characteristics. The last part of the chapter provides a description of the three study sites focusing on attributes such as size, population and resource characteristics.

3.2 Namibia

3.2.1 Geography and Political Affairs

The Republic of Namibia is a vast, sparsely populated country situated along the south Atlantic coast of Africa. The country covers an area of 825,234 square kilometres, and has a population of about 2.1 million (NSA – Namibia Statistic Agency 2012a). It shares borders with Angola and Zambia in the north, Botswana and Zimbabwe in the east, South Africa in the south, while the Atlantic Ocean spans the western side. The country is administered into 14 regions, which are further subdivided into 121 constituencies. A councillor is elected by the inhabitants of the area to represent the constituency on the regional council. Regional councillors are responsible for the overall well-being of their constituencies.

The Namibian landscape is diverse and consists mainly of five geographical areas namely; the Central Plateau, the Namib Desert, the Great Escarpment, the Bushveld, and the Kalahari Desert (Mthoko et al. 1990, cited in (Okitsu 2005). The central Plateau is a mountainous area characterized by highly undulating landforms, and is home to the highest point (2,606m) in Namibia. Namibia's capital, Windhoek is situated in the Central Plateau at about 1700m. The Namib Desert is a wide area of gravel plains but mainly sand dunes that stretch along the entire Namibian coastline. The Bushveld is found in the north eastern parts of the country including the Zambezi Region. These areas are generally flat and

dominated by sandy soil. The Kalahari Desert consists of flat gravel plains and rainfall is relatively stable compared to the unpredictable nature of rainfall in the Namib Desert. The Great Escarpment separates the Namib Desert from the Central plateau, and consists of mountains of up to 1000m high (Mendelsohn et al. 2002). Generally, Namibia has a dry climate with extremely variable and unpredictable rainfall. Though the north eastern part of Namibia receives a significantly higher amount of rainfall than the rest of the country, the dominant sand soils limit their ability to retain water.

Three national censuses have been conducted since Namibia's independence in 1990. According to the latest 'Population and Housing Census Report', the Namibian population has grown steadily rising from 1.4 million in 1991, to 1.8 million in 2001 and reached 2.1 million in 2011(NSA 2012a). The annual population growth rate has decreased from 2.6% in 2001 to 1.4% in 2011. The report further indicates that the urban population has grown by 49%, while the rural population has decreased by 1.4% between 2001 and 2011, showing high rates of rural-urban migration. The average number of people per household has decreased from 5.1 in 2001 to 4.4 persons in 2011(NSA 2012a).
Namibia has a diversity of ethnic groups. The country's largest ethnic group is the Ovambo, making up about half of the country's people. Other large ethnic groups include the Kavango, Herero, Damara/Nama, Caprivian (now Zambezi), mixed race, Namibian whites and Tswana. The Ovambo, Kavango and Caprivians occupy mostly the northern part of the country, while the Damara/Nama mostly occupy the southern parts. The official language in Namibia is English but more than 20 languages are spoken including Oshiwambo (most spoken), Oshiherero, Damara/Nama, Rukwangali, Silozi, Afrikaans and German.

Namibia is among the last two countries to gain independence in Africa. It gained its independence from the South African colonial regime in 1990, four years before South Africa gained its own independence from Britain. Since independence, Namibia has been able to change from the white minority apartheid rule to a democratic society. Multiparty democracy was introduced and has been maintained through the holding of regular national, regional and local elections. Several political parties are represented in the National Assembly, though the SWAPO party has won elections with a two-thirds majority since independence. The first three terms (15 years) after independence were under the leadership of Sam Nuyoma, with the current President Hifikepunye Pohamba succeeding Nuyoma in 2005. Despite being a politically peaceful country, in 1999 there was an armed conflict between a secessionist group of the Zambezi (formerly Caprivi) region and the

Namibian government. The Caprivi treason trial has been one of the longest and largest in the history of Namibia (Werner Menges 11/02/2005). Nonetheless, Namibia has by far achieved political stability since independence compared to many other African countries.

Table 3-1: Attributes of the Zambezi region in relation to the whole of Namibia. Figures are from various sources

	Namibia	**Zambezi Region**
Land area (km^2)	823,290	14,785 (1.8%)
Population size	2,113,077	90,596 (4%)
Annual Growth Rate (%)	1.4	1.3
Population Density (Person/ km^2)	2.6	6.1
Unemployment rate (%)	27	28
Average Household size	4.4	4.2
Use of firewood /charcoal for cooking (%)	54	89
Use of bush as toilet (%)	48.6	73.5
Access to safe drinking water (%)	80	73.2
Sources of income (%):		
Farming	16.4	20.6
Business activities	11.6	25.2
Wages and salaries	47.7	29.5
Old-age pension	14.1	13.8
Cash Remittances	5.4	5.9

3.2.2 Economic development

Namibia is categorized as an upper middle income country with an estimated annual GDP per capita of USD 5,293 (NPC – National Planning Commission 2012a). This relatively high income status, however, when considered alone could be misleading because Namibia is characterized by great economic inequality. According to the fourth National Development Plan (NDP4), Namibia's current Gini coefficient is 0.597, indicating high levels of income inequality. Poverty levels are high and estimated at 29% of the population. According to the Namibia Labour Force Survey 2012, the country's unemployment rate is 27% (NSA, 2012b), which is also very high.

The Namibian economy is heavily dependent on the primary industry of natural resource extraction for the export market, mainly comprising of mining, fisheries and agriculture. The primary industry contribution to GDP has been declining while that of the secondary industry has increased, and the tertiary industry continues to be the largest contributor to GDP (NPC 2012b). Nonetheless, the agricultural sector (largely subsistence

agriculture) is an important sector of livelihood, supporting more than half of the country's population. The bulk of the revenue from the mining sector comes from diamond mining, while other important mineral resources such as copper, lead and zinc are also exported. Namibia features extensive wildlife and is among the prime destinations in Africa, resulting in the tourism sector being an important contributor to the country's GDP.

Due to the country's dependency on primary commodities for export earnings, Namibia is susceptible to fluctuations in the world market prices caused by external shocks such as global economic crisis, drought and exchange rates. This raises doubts of whether Namibia's vision of being an industrialized nation by 2030 will be realized. Tourism together with logistics, manufacturing and agriculture have been listed in the latest national development plan (NDP4) as strategic economic priorities. According to NACSO (2013), tourism has made considerable contribution to rural economies through employment and income generation, and has had a noticeable impact on reducing rural poverty. In order to unleash the full potential of tourism, Namibia has adopted a Tourism Policy which states among other things that local participation and equity should be increased in order to ensure the spread of benefits.

3.2.3 Land Allocation

Land redistribution has been one of Namibia's priorities since independence due to inequality of land ownership inherited from the colonial era. Despite the fact that over half of the Namibian population live on communal land, less than half of the country's land is allocated as communal land. The country's land is allocated as follows: communal land (38%), freehold farmland (44%), national parks (17%) and declared urban areas (1%). Communal land in Namibia belongs to the state, but residents of communal areas are allocated customary land rights to use parts of these lands and to pass on those rights to their descendants (Meijs and Kapitango 2010). Rights on communal land are recognized primarily for residential and subsistence farming. As part of land reform, Namibia has embarked on the process of communal land registration through the Ministry of Lands and Resettlement (MLR). In the past, the traditional authorities used to allocate land use rights to their people by following their traditional tenure systems. These allocations were usually oral and not written down, and resulted in many land disputes (Mendelsohn 2008). In order to minimise the number of land disputes on communal land, the government is trying to formalize and clearly document land tenure (Meijs & Kapitango 2010).

The maximum size of land to be granted by the Lands Board is 20ha for non-commercial purposes (residential and farming) and 50ha for commercial purposes, otherwise permission needs to be sought from the Minister of Lands and Resettlement. If communal land residents wished to use communal land for income generating activities, they would have to go through long processes to convert their land rights to leaseholds. This means that the majority of the Namibian population that live on communal land are discouraged from using their land for such purposes due to these long processes. With new legislation after independence, part of communal land can be declared a conservancy or community forest for the benefit of the residents of the area. The state is however still the formal or legal owner of all communal land and can allocate any part for another land use as they see fit.

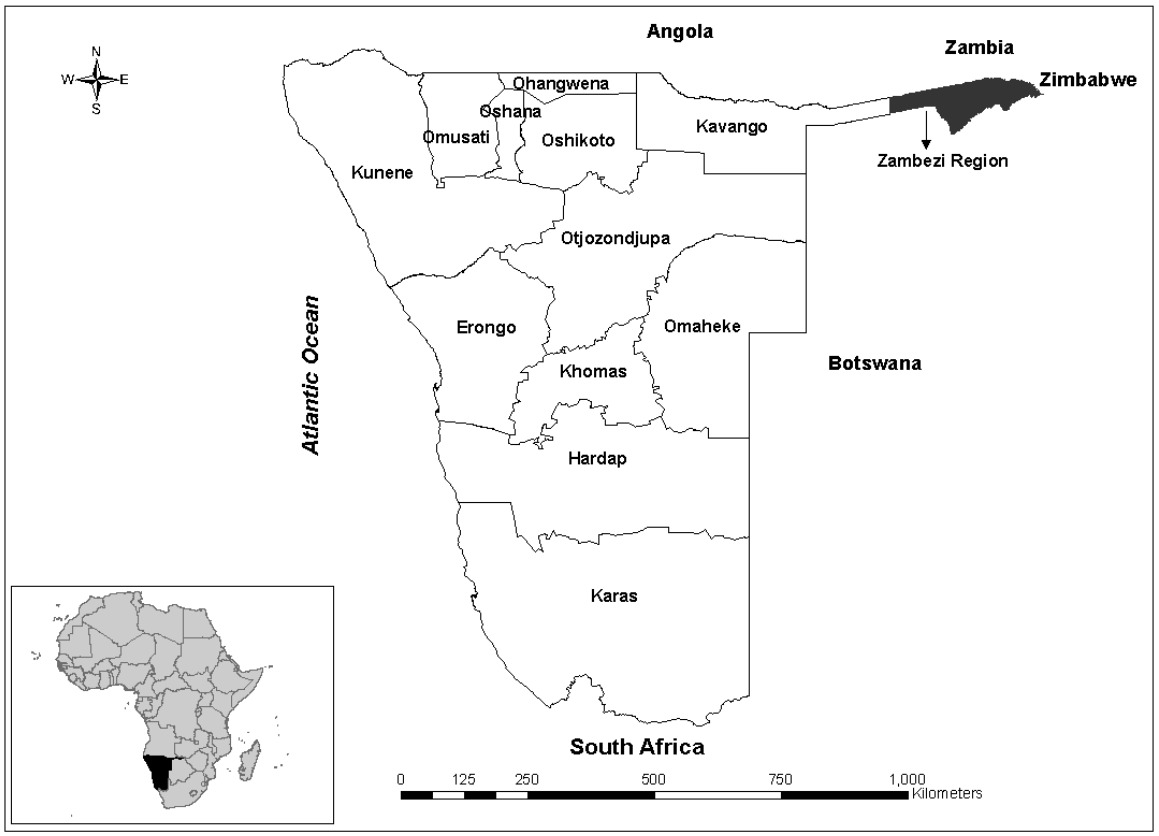

Figure 3-1: Administrative map of Namibia – the Zambezi Region is highlighted in black

3.3 The Zambezi Region

3.3.1 Geography and Local Government System

In an effort to decentralize functions from the central line ministries, the Constitution of Namibia makes provision for the establishment of a regional and local government system throughout the country (MRLGH 2003). For this purpose the country has been divided into fourteen regions. This study was undertaken in one of Namibia's 14 regions, the Zambezi region, where the conservancy and community forest programmes have been implemented. The Zambezi region until 2013 was formerly known as the Caprivi and its capital is Katima Mulilo. The Zambezi is a narrow strip of land, 450km long and up to about 100km wide in the north east corner of Namibia (Mendelsohn et al. 1997), covering an area of 14,785km^2. The region is surrounded by four countries – Angola, Botswana, Zambia and Zimbabwe (figure 3-1).

The Zambezi region has a population of about 90,000 people with a population density of 6.1 person/km^2 (NSA 2013), which is more than double the average density for Namibia. The average household size for the Zambezi region is 4.2 persons, which is slightly lower than the national average of 4.4 persons. While there are many different tribes living in the Zambezi region, before independence all tribes were grouped together under the two largest ethnic groups, the Masubia and the Mafwe. Up to now, these two groups still remain the largest. After independence, two other groups, the Mayeyi and Mashi and their respective chiefs were legally recognized. The population is largely rural (69%) and the majority of households have no electricity and use firewood for cooking (table 3-1). According to the national 'Poverty Dynamics Report' (NSA 2012b), the Zambezi is amongst the three poorest regions in the country.

Each of Namibia's regions is further sub-divided into constituencies for electoral purposes. Each constituency elects one member (a councillor) to the regional council. The Zambezi region comprises eight constituencies, and the studied conservancies and community forests falls within two of the constituencies, Kongola and Linyanti. The local authorities are responsible for service delivery in urban area, while the regional councils are responsible for specific service delivery in rural areas (Kuusi, 2009). The constituency (represented by a councillor) forms the lowest formal government administrative unit in rural Namibia. According to the Ministry of Regional, Local Government and Housing (MRLGH 2003), conservation and forest development and management are among the functions for immediate decentralization to regions. However, there is no immediate link at the constituency level between rural communities and government offices such as Department of Forestry (DoF) and Ministry of Environment and Tourism (MET). If for instance a conservancy or community forest needs a service regarding forestry or wildlife,

they will have to contact the regional offices based in the regional town. Although Constituency Development Committees (CDCs) exist at the constituency level, their main purpose is for the broader effective coordination of planning and the development of the region.

Rural Zambezi is made up of villages, within which there are several levels of traditional authority. Each village has a headman. A senior headman will represent a number of villages in the traditional authority court (‘*khuta’)*, which is the governing body of the rural areas in the region. A lot of issues including small crimes are sorted out by the *khuta*. The Zambezi region has three recognized ‘big *khutas*’ (or Royal *khutas*), each representing the three major ethnic groups. Typically, Royal *Khutas* comprise of the *Litunga* (Chief), *Ngambela* (Royal Advisor), *Natamoyo* (Second Advisor), Senior *Indunas* (High Officers), *Indunas* (Officers) and Secretaries. Each sub-ethnic group or district has their own *khuta* with a structure similar to the Royal *khuta*, but without a chief and they report to the Royal *khuta*.

3.3.2 Physical Characteristics

The whole of the Zambezi is predominantly flat with no structures recognizable as hills and covers an area of 14,785km^2. The extensive Kalahari sands and the permanent rivers with their related floodplains are the two major features which shape the landscape of the Zambezi region (Mendelsohn et al. 1997). The region holds a number of perennial rivers; including the Kwandu in the west, the Zambezi (River) in the north east and the Chobe in the south east. There are three national parks in the Zambezi region; Bwabwata (6274km^2), Mudumu (1010km^2), and Mamili (320km^2).

Given the extreme dry and hot climate which characterizes Namibia, the Zambezi is more tropical than any other region in Namibia, with an average total rainfall of 700mm (Mendelsohn et al. 1997). Most of the area is covered in thick deposits of Kalahari sands and some river plains, floodplains, and woodland, which shape the landscape. Although the region receives the highest rainfall in the country, the rainfall pattern varies from year to year, leaving a lot of people vulnerable as the rural livelihood is greatly dependent on subsistence farming.

2.3.3 The CBNRM Movement in Namibia

Since the late 1990s, Namibia has embarked on the process of legally recognizing communal land residents' rights over management and sustainable use of wildlife and forest resources on their land. The CBNRM program has been implemented through communal conservancies (wildlife management units) and community forests (forest resources management units). The process involves voluntary registration of an area with clearly defined boundaries and an established management committee. It is hoped that a sense of ownership of natural resources will encourage people to use natural resources sustainably. Natural resource management can now be seen as a way of diversifying livelihoods options on communal land, in addition to farming and other activities. Out of the 79 registered conservancies in Namibia (as of March 2013), 13 are found in the Zambezi region, covering an area of 3,782km^2, which is 26% of the region's land area (NACSO 2013a, MET 2010). Out of the 32 declared community forests, seven (7) are found in the Zambezi region, and for the most part overlap with conservancies.

Until after the creation of conservancies, wildlife was considered as a nuisance by many communities because of the damage caused to people's property and threat to human life. In recent years, attitudes towards wildlife seem to have improved because people can now see the benefits of living with wildlife (Rust and Marker 2013). Plants on the other hand have provided people living in this region with a wealth of resources for a very long time. Most are used daily by most people, for example grazing for livestock, reeds for fences, grass for roofs, trees for building and fuel. Other plants are used for food (e.g. water lilies, wild fruits and wild spinach) or medicinal purposes (e.g. Devil's claw – *Harpagophytum procumbens*). People have recently started marketing and selling Devil's claw to generate income.

Returns generated from CBNRM activities have proven to be substantial. According to NACSO (2013b), community conservation generated a total cash income and in-kind benefits of over N$58 million in 2012. However, it is not clear how this aggregated amount translates to household benefits. Communities living in conservancies and community forests have considerable new employment opportunities within tourism and other related industries. Human capital should be improving in these communities because of the access to training and capacity building provided by these new institutions.

3.4 The study location

3.4.1 The Mudumu North Complex (MNC)

The study was located in what is known as the 'Mudumu North Complex' (MNC), which is a cluster of conservancies, community forests and state protected areas in the Zambezi region (figure 3-2). The Mudumu North Complex was formed in 2005 after a group of conservation stakeholders recognized that a group of conservation areas along the Kwandu River were interdependent and required some form of joint management (NNF – Namibia Nature Foundation, 2009). The land on which the study area is situated is communal land and control and management of this land is vested in the traditional authorities and communal land boards. These are multiple use areas where activities such as settlements, farming, and wildlife management are permitted.

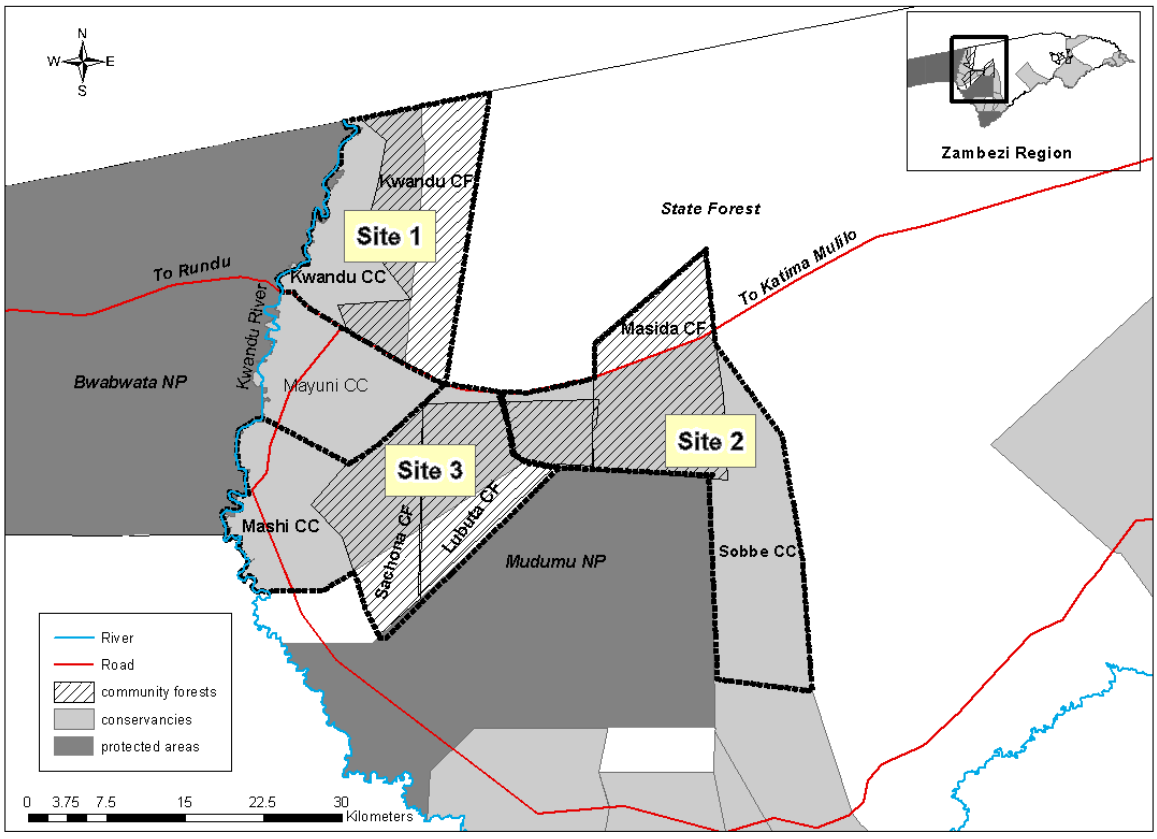

Figure 3-2: The wider study area with its neighbouring conservation areas

The various primary stakeholders of MNC (e.g. MET and the people of Kongola and Linyanti constituencies) in these land units believe that collaborative management of resources within this cluster would achieve goals greater than any small unit could achieve

on its own (NNF 2009). The MNC is among initiatives that have resulted in the launch of the National CBNRM Policy by the Ministry of Environment and Tourism. The aim is to have an encompassing CBNRM policy that facilitates a more collaborative approach in managing different natural resources by local communities. Compared to other areas of Namibia, the MNC has a very high diversity of animals and plants (NACSO 2012). At a local scale, this is because of the many habitats found in and around the Kwandu riverine environment. The high levels of biodiversity are also due to the fact that the Zambezi environment in general is much wetter than any other area in the country as mentioned before.

The average annual rainfall in the study area is between 500-650mm. According to NNF (2009), wildlife population in the Zambezi region declined considerably in the 1970s and 1980s due to poaching by local people and the South African Defence Force. However, wildlife species are now reported to have increased considerably over the past few years, and this increase is attributed to the establishment of conservancies (NACSO 2012). Both wetland animal species and dry woodland species are found in the Mudumu North Complex (Table 3-2). About 20 ungulate species are sufficiently abundant to hunt in the MNC, and Martin (2006) has identified seven more species which are suitable and could be introduced for utilisation in this area. None of the land units within the MNC are fenced off, therefore wildlife roam freely across the entire landscape. Species with wider ranges such as elephant even move across the borders of Angola and Botswana.

Trees such as Angolan Teak, Zambezi Teak, Red Syringa, False Mopane, Silverleaf *Terminalia* and various *Combretum* species dominate the landscape. Unfortunately, most of the valuable timber resources such as the Angolan and Zambezi Teak have been lost to logging and to frequent fires that burn in the Zambezi region (NNF 2009). For example, MAWF (2011) reported that about 70% destruction of the Kwandu community forest was due to fire, followed by wild animals (23%). Currently there is a ban on timber harvesting in Namibia. Therefore most community forests in the Zambezi that generated most of their income from timber sales have been affected.

The study area has a diverse cultural heritage and a complex history of traditional and livelihood interests. It is dominated by Sifwe speaking people though few other languages are also spoken. Kwandu people are mostly Sifwe and Mbukushu speaking, while Sobbe is dominated by Sifwe speaking people. There are three predominant languages in Mashi namely: Sifwe, Mbukushu and Mbarakwena (NNF 2009). The research established that the study area experiences a mix of interaction of residents with non-

residents due to their proximity to the Zambian border. On a daily basis there is a flock of Zambians into (especially) the Kwandu area and other neighbouring areas. These migrants come into Namibia for a number of reasons; including labourer work such as herding cattle or working in fields, buying household supplies and visiting family members among others. Some immigrants to these areas have inter-married into the communities as I learnt from the household interviews that especially women are married to immigrants from Zambia. Interviews with elders revealed that the Kwandu community (especially those closer to the border) consider themselves as one people with communities across the border as many of them speak the same language. While some of the traditional practices may be the same among these communities, they somewhat differ based on their socio-political circumstances. These mixed families may in turn contribute to the transformation of traditional practices, even in terms of resource use.

The study area is divided by the Trans-Caprivi highway that connects it to the region's town, Katima Mulilo and also connects the Zambezi region to the Kavango region and subsequently to the rest of the country. The highway is tarred and is accessible throughout the year. At the time of the research another tarred road that runs across the Mashi conservancy was being constructed.

Throughout rural Namibia, forest resources are known to complement livelihood strategies in addition to other strategies. Like many rural communities in the Zambezi region, the studied communities engage in a diversity of productive livelihood activities dominated by crop farming and livestock keeping. The major crops grown during the rainy season (November to March) are maize, millet and sorghum. Legume crops such as peanuts and beans are also sometimes grown. Forest resources play a dominant role in the lives of households in all three study sites as most households depend on them on a daily basis, for food, fuel and building materials. Apart from being important for subsistence, natural resources like thatch grass, building poles and some non-timber forest products (NTFP) are also sold for income. Cash incomes are acquired from both formal (e.g. wages, state pensions) and informal (e.g. remittances, sale of natural resources) sources. Government support in the form of food for the vulnerable and drought relief aid has become important with the increase of orphaned children and recurring droughts.

Table 3-2: Population estimates of selected wildlife species in the Mudumu North Complex. *Numbers are based on population estimates from Martin (2006)*

Species	Population Estimate
Elephant	5,500
Hippopotamus	185
Giraffe	50
Buffalo	1500
Zebra	400
Eland	50
Kudu	1300
Lion	100
Spotted Hyaena	200
Leopard	100
Crocodile	500
Baboon	2000
Bush-pig	500

3.4.2 The study sites

In order to address the objectives of this study, three conservancies and four community forests located in the Zambezi Region were selected for investigation at three sites. The three sites under investigation are defined by the geographic boundaries of Kwandu CC/ Kwandu CF, Mashi CC/ Lubuta/ Sachona CFs and Sobbe CC/ Masida CF, and the study population are defined as people living within these boundaries. The three case studies were selected at the level of a conservancy/ community forest. These groupings are based on how residents defined themselves as communities with a common purpose to form conservancies and community forests. Usually, a community in the study sites consists of several neighbouring villages. The Kwandu conservancy and community forest fall within the Kongola constituency, while Sobbe and Mashi conservancies and their corresponding community forests fall within the Linyanti constituency (see figure 3-2). Each conservancy/ community forest is made up of sub-areas called *sub-khutas* (districts), which are traditional district authority courts. Since in all cases residents are within the boundaries of the conservancy (and not always within the boundaries of the community forest), the conservancy name will be used to refer to the wider community living in each of the study sites. A description of each of the study sites is provided in the next sections.

All three study sites have government primary schools, four in Kwandu, four in Mashi and one in Sobbe. In addition to the primary schools, Kwandu also has a secondary school and a police station. Kwandu and Mashi also have health centres (clinics) located within their areas. The Sobbe community has the least provision of government services

(table 3-3). Water is very limited in Sobbe compared to Mashi and Kwandu, because government tend to provide tap water in places where they run services like schools and health centres. Therefore, the more these government services, the more the provision of water. All areas have no access to electricity, except for one district of Kwandu (Kongola) that is closer to the highway and government service buildings in the areas. All three areas are covered by mobile phone networks.

Table 3-3: Attributes of the study conservancies and community forests

	Kwandu CC	Sobbe CC	Mashi CC	Kwandu CF	Masida CF	Lubuta CF	Sachona CF
Year registered	1999	2006	2003	2006	2006	2006	2012
Size (km^2)	190	404	279	212	197	171	122
Population estimate	4300	2000	3900	-	-	-	-
Primary schools	4	1	4	-	-	-	-
Secondary schools	1	none	none	-	-	-	-
Clinic	yes	none	yes	-	-	-	-
Police station	yes	none	none	-	-	-	-
Road system	gravel/ tarred	tarred	tarred	-	-	-	-
Approximate distance to Town (km)	120	70	120	-	-	-	-

Kwandu CC/Kwandu CF

The Kwandu Conservancy covers an area of 190km^2 and has an estimated population of 4300 people. Across the Kwandu river to the west is the Bwabwata National Park while the Kwandu Community Forest partially overlaps the conservancy from the east. The Kwandu community forest covers an area of 200km^2, of which almost half is outside the boundaries of the Kwandu CC (figure 3-3). There are no people living in most parts of the community forests because it was previously part of the state forest. Everyone living within the boundaries of Kwandu conservancy is a member of the Kwandu community forest. The CC was registered in 1999 while the CF was registered in 2006. All districts of Kwandu are closely connected to a permanent river system, the Kwandu River. This water resource plays an important role in providing people with drinking water for their cattle and provides resources such as reeds and fish.

The landscapes of Kwandu are made up of a mixture of vegetation types, including grasslands and swamps which dominate the floodplains, while higher ground is dominated by woodland. Among tree species, the four most dominant species in 2004 were *Baikiaea plurijuga* (Zambezi teak), *Combretum collinum, Burkea africana and Lonchocarpus nelsii* (Parviainen 2012). Shrublands dominate many places that have been degraded by logging and fire. Key wildlife species found in Kwandu include elephant, lion, roan, kudu, duiker, crocodile, impala, hippopotamus, and bush pig. Most of these animals do not reside permanently in Kwandu but are shared with other neighbouring areas, parks and conservancies (including Sobbe and Mashi). Kwandu generates most of its income from trophy hunting.

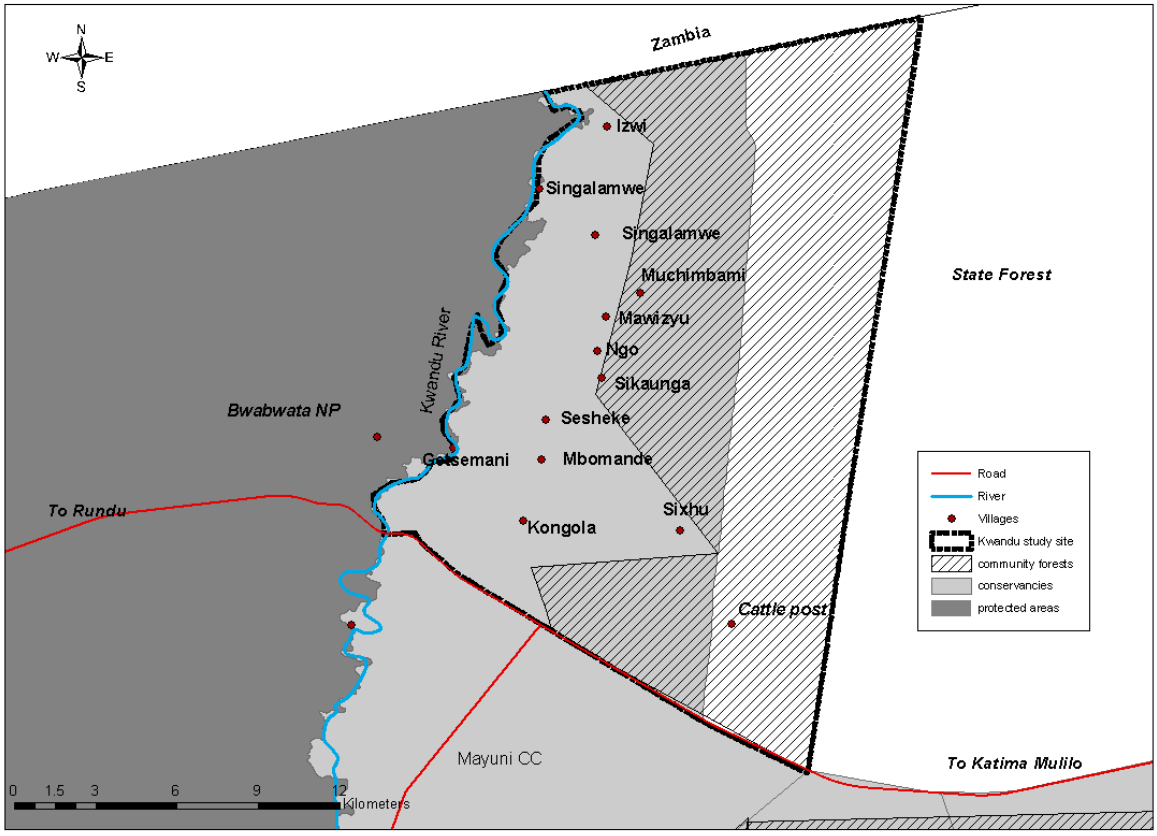

Figure 3-3: Study villages in Kwandu conservancy overlapping with Kwandu community forest

Sobbe CC/ Masida CF

Sobbe Conservancy borders the Mayuni conservancy and the Mudumu National Park and partially overlaps with Masida Community Forests. All residents of the Sobbe conservancy are members of the Masida community forest. The conservancy covers 404 km^2 while the community forest is 195 km^2 in size. There are about 2000 people in Sobbe, but there are

no people residing in the southern parts on the conservancy (figure 3-4). Both the conservancy and community forest were registered in 2006. The southern two-thirds of Masida CF overlap with Sobbe CC. The forest resources of Masida are often dominated by mopane woodland. Timber species such as Zambezi teak (*Baikiaea plurijuga*) and kiaat (*Pterocarpus angolensis)* are also present, and account for a significant part of the community forest income. Key wildlife species include elephant, kudu, roan, zebra, duiker, hyena and black-backed jackal. As mentioned earlier, most of these animals are not confined only to Sobbe but tend to move freely to other neighbouring areas. Sobbe is not closely connected to any water body, which means that they have no resources like reeds and other wetland plant and animal species. This also makes water a scarce resource compared to the other two areas, Kwandu and Mashi.

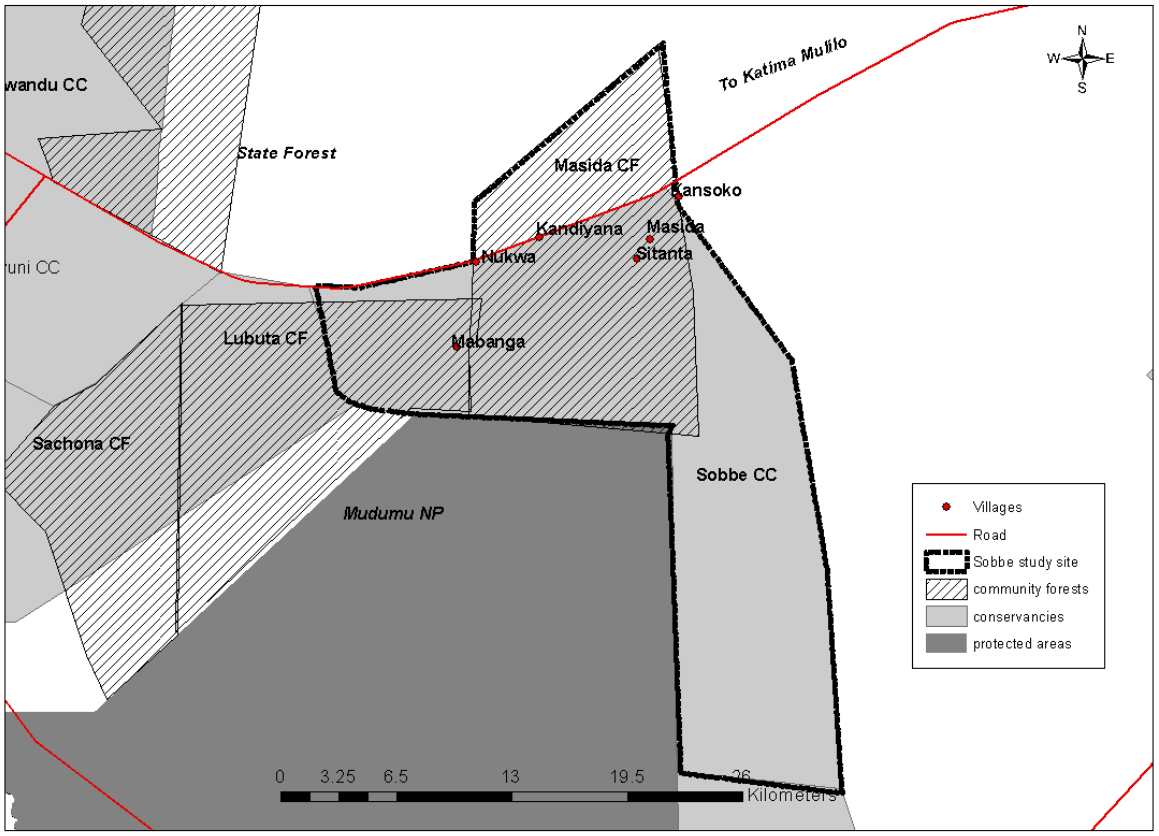

Figure 3-4: Study villages in Sobbe conservancy overlapping with Masida community forest

The Mashi Conservancy covers an area of 297 km^2 and has an estimated population of 3900 people. The Mudumu National Park lies to the south while Mayuni conservancy is in the north. Income for the CC is earned from a joint hunting concession with Kwandu and Mayuni CCs, and a joint venture agreement for a lodge. The CC was registered in 2003. Mashi overlaps with two community forests, Lubuta and Sachona. Lubuta CF is on the

eastern part of Mashi covering an area of 190 km^2 and was registered in 2006, while Sachona overlapping the central part covers an area of 122 km^2 and was registered in 2012. This area is generally dominated by mopane woodland. Mopane (*Colophospermum mopane*) is widely used as building material and for firewood. Mashi is closely connected to the Kwandu River, and therefore the same wildlife species found in Kwandu conservancy are also found in Mashi conservancy.

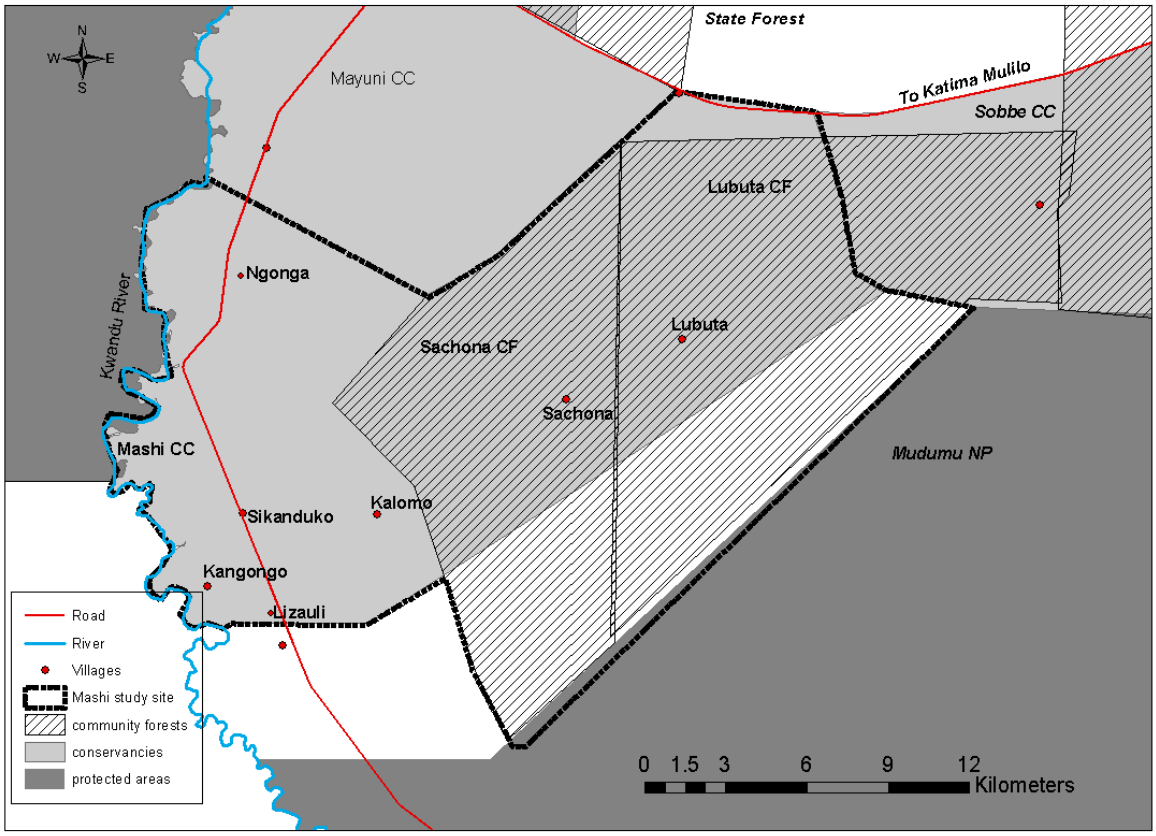

Figure 3-5: Study villages in Mashi conservancy overlapping with Lubuta and Sachona community forests

Chapter 4: Research Methodology

This chapter aims to describe the methodology and methods used to collect data presented in this thesis. The chapter starts by giving a brief and general overview of the fieldwork, followed by the theoretical justification for the selection of the study sites. The mixed methods approach is described, and justification for choosing this approach is provided. Qualitative methods employed in this research are described, followed by a description of the quantitative methods, outlining the main variables assessed. Finally, I provide a description of the qualitative analysis and statistical approaches that are used for analysing the data.

4.1 Fieldwork overview

The fieldwork for this research lasted ten months from September 2012 to June 2013. Of the ten months, six months were spent in the study communities, two were spent engaging with officials at national level, one month with officials at the regional level and one month was used for preparation for the fieldwork. Preparation for the fieldwork included meetings with major CBNRM stakeholders, modifying sampling strata based on information gained in discussions and starting the process of selecting potential research assistants. The first two months were spent in the capital city (Windhoek) establishing contacts with key personnel within various organisations and reviewing relevant internal organisational documents. Key informant interviews were then conducted before moving to the study region, which is about 1300km from the capital city.

Once in the study region, I spent about a month making local contacts, introducing the research and conducting key informant interviews with regional officials. I also visited the study communities with government and NGO officials for an introduction to the communities during this period. I attended two major CBNRM events, a conservancy Annual General Meeting (AGM) and the Biannual CBNRM meeting for the region. This was very useful as it brought to my attention further issues for exploration that I had not thought about before. During the preliminary visit to the study communities, potential local field assistants were identified and recommended by the conservancy officers. I then conducted a two-week pilot study of the household questionnaire and training of two research assistants in one of the study communities. A total of 30 household questionnaires were administered during the pilot study period. This was followed by finalizing the household questionnaire and conducting the main data collection in the study communities.

I spent most of my time in the study areas except for brief visits to the town of Katima Mulilo to purchase supplies or for administrative work. While working in these communities, I stayed with a family in two of the areas and lived at a health centre house with a nurse in one of the communities. While my being able to speak the local language was important to build good relations with the communities, other things like providing transport to the local people when they were in need and giving away clothes that my children had outgrown seemed to have strengthened these relations.

4.2 Research approach

4.2.1 Selection of the study sites

A case study approach was used in this research because the analytical approach involves a detailed description of the case and the setting of the case within contextual conditions (Yin 2003). The choice of using case studies was deliberate because many scholars of common pool resources believe that contextual conditions are crucial in understanding collective action in these systems. In particular, this research adopted a multi-site study design (Audet and d'Amboise 2001) or a comparative case study design (Newing et al. 2011), which involves the study of two or more sites using cross-case comparisons to analyse data. (Yin 2003) advises that the multiple-site design uses the logic of replication where the procedures are replicated for each case, enabling the researcher to explore differences within and between cases. Overall, results created from multi-sites are considered robust and reliable (Baxter and Jack 2008).

Multi-level sampling strategies were employed because this research examined organisations in which different units of analysis are nested within one another (Teddlie and Yu 2007). In this research multi-level sampling involved the sampling of institutions involved in natural resource management in (i) conservancies and (ii) community forests at three levels: national, regional, conservancies and community forests (local) level, including households and individuals. The resulting sampling strategy required multiple sampling techniques, each of which was employed to address the various research objectives. Figure 4-1 shows the structure of the sampling and methods that were used.

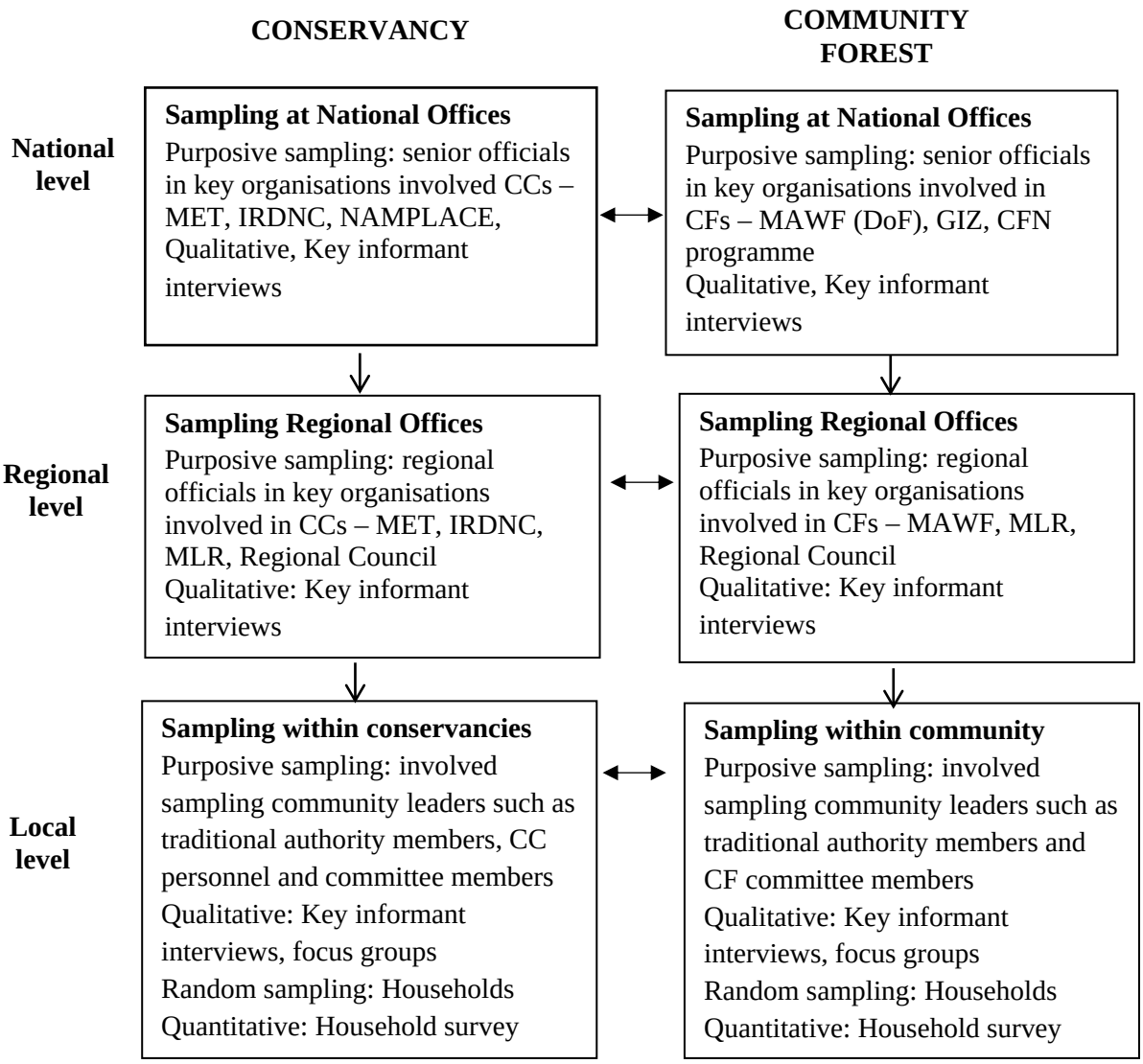

Figure 4-1: The mixed method sampling strategy and approaches used (adapted from Teddlie & Yu 2007)

In this research, the cases analysed are three sites where a conservancy and community forest(s) overlap. They were selected because of this overlap, and because they were alike in many other ways. I chose only three sites to investigate because the aim was to develop an in-depth understanding of each site about the management and use of wildlife and forest resources. Given time constraints of the research, selecting more sites from other landscapes would have meant less detail developed for each sites. Each site was considered as a case on its own, and the results of each case were compared with that of other cases, which gave plenty of scope for analysis of the results (Newing et al. 2011). Firstly, the three sites were selected because they are located in the same ecological zone or landscape and are inhabited by the same ethnic groups (although with a slight variation in languages spoken). Secondly, the selected sites were the only multiple sites in one landscape having

overlapping conservancies and community forests at the time of the research. Sampling from a different landscape and ethnic group would have introduced more variance in the data and made results difficult to interpret. Overlapping areas were ideal for the purpose of this study because they present the best cases to study interactions between the two institutions (conservancy and community forest).

Although the research covers three case studies with some important differences, some other aspects tend to be similar for all three areas. Therefore, I avoided making separate analyses for each individual case in my analytical approach when dealing with aspects that are similar for all cases. This was to make sure that issues that are similar were not continuously repeated.

At the community level, the idea was to understand how households make decisions about natural resource management and use under a range of community attributes, socio-economic and biophysical conditions in the context of the institutional frameworks provided by the community conservancies on the one hand and the community forests on the other. At the regional level, the aim was to qualitatively assess how regional officials implement natural resource management policies related to conservancies and community forests respectively, how they interact with communities at the local (conservancy/community forest) level and how these interactions influenced decisions about natural resource management and use at the local level. Lastly, the scope of analysis was broadened to the national level with the aim of understanding the interests and aims of national policy makers in natural resource management in CCs and CFs, how they interact with one another and link these to outcomes observed at the regional and local levels.

4.2.2 Mixed Methods

Since the objectives of this research involve multiple levels tested at different sites, the research employed a mixed methods approach (Johnson and Onwuegbuzie 2004). According to (Creswell and Clark 2007), a mixed methods approach is a procedure involving the collection, analysis and integration of both qualitative and quantitative data to answer research questions. Qualitative research approaches have traditionally been favoured when the main research objective is to improve our understanding of a phenomenon (Audet and Amboise 2001), especially when the phenomenon is complex and embedded in its context. The qualitative data were collected through key informant interviews and focus group discussions, while the quantitative data were collected through

a household questionnaire. The open-ended questions within the household questionnaire formed part of both qualitative and quantitative analysis depending on the analyses that were applied.

Data collection started with the qualitative part through key informant interviews at the national level. Once in the study regions, an exploratory sequential design (Creswell and Zhang 2009) was used for data collection, in which discussions in focus groups (qualitative data) informed the design of the household questionnaire (quantitative data). This process was invaluable in that it increased the researcher's understanding of the social and local culture context. According to Russell and Harshbarger (2003), gaining a deep understanding of local communities ensures that the researcher asks the right questions in the right way, thereby strengthening their research strategies. The later part of the research applied an explanatory sequential design which involved summarising information from the household survey (quantitative), followed by discussion of the results in focus groups, to get local explanations of the results that were emerging. Ivankova et al. (2006) describe an explanatory sequential design as one in which the researcher first gathers and analyses quantitative data, and then uses a qualitative follow-up data collection to help explain the quantitative results.

Both forms of data were analysed separately and the results were merged for interpretation, giving each form of data equal emphasis, resulting in a mixed methods design that closely fit the definition of a concurrent design. This study used three of the four mixed methods designs described by Creswell and Zhang (2009). Besides the fact that one data form informed the collection of the other, the use of both data forms was also necessary to understand concepts or issues from the perspective of two or more different types of evidence (Creswell and Zhang 2009). For example, during the household survey households were asked whether they acquired permits to harvest certain forest products; similarly a forest officer responsible for issuing harvesting permits was asked in an interview whether he has been issuing permits and how many permits he has issued. This was also a way of triangulation between actors.

Multiple sources of information were used as suggested by (Yin 2003), and these included interviews with key informants, focus group discussions, household surveys, and informal talks with individuals, observation and review of archival records. Data from multiple sources and methods were used to achieve many of the various objectives of the study, but also as a means of triangulation. The overall aim of the rigorous data collection was to develop an in-depth understanding of each case study and the context in which they

operate. Next, from all data sources, information was analysed to give a detailed description of each community's approach to the management and use of wildlife and forest resources in their area. Reliability of the data was achieved through the development of a thorough standard protocol (Yin 2003). This involved the discussion of the same issues with key informants and in focus groups, thereby providing the opportunity to present a diversity of views and explanations to questions asked.

Within each area where a conservancy and community forest overlap, existing management arrangements related to conservancies and community forests and their interactions were investigated. The institutions and actors within each arrangement were identified and assessed. The quantitative design (household questionnaires) was used to understand the level of household awareness and participation in CC and CF activities, benefit distribution and how it affects livelihoods and resource use. The study population from which the sample came was therefore defined as the total number of households from each area. The qualitative design was used to understand the role of different organisations in the management of natural resources in CCs and CFs.

4.3 Data collection

This study made use of both primary and secondary information but relied mostly on primary information due to limited availability of secondary information especially on community forests. A pre-assessment was conducted in one of the three study sites (Kwandu) prior to the main data collection to get a general understanding of existing institutional issues in the area. During this first visit, focus group discussions were held with community leaders and CC/CF members to get a general overview of the issues they are facing regarding the use and management of natural resources. A pilot survey of 30 households was also conducted to test the survey instrument. Data collection instruments were then adjusted accordingly based on the information gathered during the pre-assessment visit.

As mentioned in section 4.2, a mixed methods approach was employed as multiple sources of evidence add validity and reliability of research findings Yin (2003). Information was gathered though interviews with key informants, focus group discussions, household questionnaires, informal talks with individuals, observation and review of archival records. Each of these data collection methods is described in the sections that follow.

4.3.1 Key informant Interviews

In total, 28 key informant interviews at conservancy/community forests, regional and national levels were conducted. At conservancy/ community forest level, key informants included staff or committee members working for the CC/CF and villagers with particular social positions within the community (e.g. the village headman or *induna*). In-depth semi-structured interviews with key informants were essential for gaining long-term knowledge about the operations of institutions involved in the management of natural resources in conservancies and community forests. An organisational profile (Krishna and Shrader 1999) was intended to describe the role, function, responsibilities and the relationships and networks that exist among formal and informal institutions. In this study, organisational profile information was collected at several scales; community, regional and national levels. At community and regional level, this information mostly came from CC/CF managers and employees, NGO coordinators, regional foresters, chief control wardens and others, and was used to assess the organisation's characteristics that may promote or hinder the building of collective action in CCs and CFs. Profile information at national level was collected through a series of semi-structured interviews with a targeted sample of senior staff in the Ministry of Environment and Tourism (MET) and Ministry of Agriculture, Water and Forestry (MAWF), NGO leadership and other institutions (Appendix 2).

An interview guide was used to avoid losing focus and to ensure that all relevant questions were asked. Interviews were conducted with up to three members (wherever possible) of the same institution to ensure validity of the information. Information about the following attributes was collected: origins and development of the organisation in terms of historical context and interests; institutional capacity in terms of skills, personnel and financial resources; institutional linkages in terms of levels of collective actions and information exchange. The institutions most relevant to CC and CF operations were identified through both the researcher's own knowledge and experience and through talking to some stakeholders. Permission to audio record the interview was sought before the interview started, and in most cases permission was granted. Audio records were supplemented with hand written notes to make sure that information was not lost in case the recorder failed to operate during an interview.

4.3.2 Focus Group Discussions

According to Newing et al. (2011) focus groups are used to encourage discussion and produce explanations of views that are being expressed. A series of group interviews with key informants (mostly community leaders and CC/CF committee members) were conducted as part of the mixed method approach but also as a way to get an understanding of issues that were to be included in the household questionnaire. Focus groups were also conducted towards the end of the study in feedback sessions to get an explanation of some of the results that had emerged from the household survey.

The first focus group discussions were concerned with the development of a community profile. A community in this study is considered to be the broad CC/CF, consisting of several villages and districts. The main objective was to identify area characteristics that enable the researcher to have an understanding of the institutional arrangements, livelihoods activities, infrastructure and natural resource uses in each area. Information on the characteristics of each district was collected, which means that there were several district profiles within the same CC/CF, which was then combined to make up the profile of the wider community (the CC/CF). The idea of developing district level profiles is based on the argument that areas or districts are sometimes not homogenous in this setup. Furthermore, CCs and CFs boundaries only overlap to some extent; often the CF is smaller than the CC. Therefore, a district may be within a conservancy, but may not fall under the overlapping community forest under investigation. For example there are two community forests in Mashi conservancy but two of Mashi's districts do not belong or fall under any community forest. In contrast, all members of the Kwandu and Sobbe conservancies belong to the Kwandu and Masida community forest, respectively, even though some members do not reside within the boundaries of these community forests. Following group discussions, a community level summary was compiled as suggested by Krishna and Shrader (1999) allowing for a quick way of recording and accessing basic community characteristics.

Discussions in focus groups were loosely structured in nature. Information regarding the functioning of the conservancy and community forest was discussed focusing on but not limited to the following: (1) community characteristics, including common natural resource use rules, (2) historical context of natural resource use and governance, (3) organisation of the community in terms of decision making, (4) customary laws vs national laws, (5) conservancy and community forest formation mechanisms, (6) major challenges faced during the formation of the institution, (7) conflict of interests and conflict resolution

mechanisms, (8) level of communication with other institutions, and (9) livelihood activities and wealth indicators. At least four focus group discussions were conducted in each study site and between four to ten members participated in each discussion group. A checklist of themes and questions was used to guide discussions and probing questions were used to elicit more information from the group.

4.3.3 Household Survey

Developing the household questionnaire

The questionnaire was developed prior to fieldwork, starting with the adaptation of a questionnaire used by the International Forestry Resources and Institutions (IFRI) for the purpose of understanding how people interact with forest resources at the community level (see IFRI 2008 for the research instruments and descriptions). However substantial changes to the structure and content of the IFRI questionnaires were made to fit the purpose of this study. The draft of the questionnaire was tested on 30 households from one of the study sites, resulting in minor changes to the questionnaire used for data collection.

Local assistants

Competent and experienced interviewers are the most important factors in producing reliable data from the field (Centre for Disease Control and Prevention (CDCP) 2008). The researcher was assisted by two local community members from Kwandu conservancy, who had previously assisted other researchers working on CBNRM-related research. Therefore, both assistants had prior knowledge and skills of conducting household surveys. They both had higher secondary education, but were not employed, and they were fluent in English. The two field assistants received two weeks' training from the researcher through the discussion of the household questionnaires in detail. The questionnaire was in English and had to be translated into the local language during the face to face interviews in most cases. The researcher went through the questionnaire with the assistants, making sure that they had the same translation of each question and that they understood the objective of each question. Since the researcher was fluent in the local language (sifwe), translation of the questions was easy and quick. Although the questionnaires that were administered were in English, each assistant had one questionnaire that had difficult questions translated and explained in the local language for reference.

Further, both assistants accompanied the researcher during the pilot study to learn how she conducted the interviews. The researcher asked one of the research assistants at a time to conduct about three interviews while she observed. Any issues of concern arising from the way the interview was conducted were addressed immediately after the interview. At the end of the pilot study the researcher was confident that the assistants had a very good understanding of the research and the specific questions. During the main survey, the assistants and the researcher independently carried out the household interviews. At the end of each survey day the researcher reviewed the questionnaires for completeness or inconsistencies, and these were addressed the following morning before we continued with the survey.

Due to time constraints and in an effort to reduce training time and variability in the data, the researcher decided to use the same research assistants that were initially trained for all three study sites. However, since jobs opportunities are scarce in these communities, the local people in other areas saw this as an opportunity to earn money, so the strategy did not entirely work. In one area, the community insisted that the researcher uses research assistants from their area. In the end the researcher had to keep only one of the initially trained assistants and train a second one from the local community.

Sampling of households

The household survey was intended to generate quantifiable data about the relationship between and among conservancy and community forest actors and variables that affect households. In this context, actors refer to all people that have access, use or control over natural resources in the studied areas. The sample frame was always the entire conservancy/community forest consisting of several districts and villages. A household was defined as a group of people (who are biologically or not biologically related) living in the same place or under the same roof, regularly share the same meals, labour and decisions about household assets (Ellis 1993). This definition had to be emphasized during interviews when asking about household composition, to make sure there was no confusion about who is considered a member of the household. In some cases, parents considered their children that are married and have their own houses to still be members of their households, but for the purpose of this study these people were excluded from the household.

All three study sites are divided into districts, which are traditional administrative sub-units known as *sub-khutas* or districts. Instead of creating new strata or groups, this study adopted a cluster survey design (Daniel 2011) by using the already existing groupings of the population (districts) for sampling purposes. Due to the absence of a complete listing of households in each district, simple random sampling could not be done. Therefore a systematic sampling strategy had to be adopted.

The target sample size at each of the three study sites was 150 households. In order to decide on the sampling interval, first, based on population estimates of each study site, the approximate number of households was estimated using the average household size (4.4 persons) for the Zambezi region (NSA 2013). The total sample size (150 households) per study site was then divided by the number of districts in each study site to give the number of households to be sampled per district (table 4-1). This equal allocation of households per districts was done to facilitate between districts analyses.

Table 4-1: Sample sizes per study area

Area of Survey	Population estimate	Approximate HHs per area	Sample Size (HHs)	Number of Districts	Sample size per district	Sampling interval	Sampling %
Kwandu	4300	700	154	6	~25	5	22%
Mashi	3900	650	150	4	~37	4	23%
Sobbe	2000	330	151	6	~25	2	46%
Total households sampled households			**N = 455**	**101% of target number of 450**			

The sampling interval between each selected household was determined by dividing the total number of households per district by the required sample size of the district. For example, in Kwandu the estimated number of households was 700 and the sample size required was 150 households. In order to ensure proportionality of sample size for analysis purposes, each district was approximated at 117 households in Kwandu. Therefore, every fifth household was sampled. In cases when the sampling interval was not an integer, it was rounded off to make an integer (Ahmed 2009). Once the sampling interval was determined the first household was selected using a random method. This was done by randomly selecting a household between 1 and the sample interval integer. A random start was used every time a new district was surveyed.

Within the selected households, household heads (either wife or husband or oldest person) were interviewed depending on who was present or willing to take part. In few cases where neither husband nor wife was present, a household member 18 years or older was pre-assessed to determine whether they were able to provide the needed information. Every effort was made to include all households selected in the survey. Households that had no one present at the time of the visit were revisited later that day or on another day. In cases where a household refused to participate, the next closest household was interviewed.

A total of 455 households were interviewed of which 177 (39%) of respondents were men and the remaining 278 (61%) were women. Overall, when compared to the 2011 census for the Zambezi region (49% males and 51% females), our sample (39% males and 61% females) seems a bit biased towards women as we interviewed proportionally more women than men. This was mainly due to the fact that some men were not present during the interviews but also the willingness of women to be interviewed. The fact that more women were interviewed should not significantly influence our results because most questions were asked at the household level. Additionally, women were also found to be as confident in answering interview questions as the men were.

Questionnaire content

The questionnaire was organized into two parts and six main sections. The first part of the questionnaire collected (A) basic demographic and socio-economic data of households, (B) household awareness and level of participation in conservancy and community forest activities. The second part focused on specific issues such as (C) benefit distribution, (D) resource use, (E) rules and rule compliance and, (F) costs of living in conservancies and community forests (Appendix 3).

Socio-demographic information included gender, age, marital status and main occupation of household head or respondent. Similar details about other family members were also collected. Awareness was measured by asking respondents whether they have knowledge of their constitution and responsibilities of committees, approximate amount that the CC/CF generated in the past year. Participation of households in conservancy and community forest activities was measured at four levels: 1) membership in management committees 2) attendance of meetings 3) expression of opinion and 4) participation in decision making.

To determine how members are benefitting from CCs and CFs, households were also asked to specify the kinds of benefits and amounts (where applicable) they have received from the conservancy and/ or community forest. Any income reported as having been generated by the household from the sale of natural resources was also recorded. To determine patterns of resource use, households were asked to rate the most important wildlife and forest resources being harvested and used by their households. Regarding rules, households were asked whether they were aware of resource utilisation rules, whether they were satisfied with these rules and whether they complied with the rules. To understand the costs of living in conservancies and community forests, households were asked how much time they spent doing natural resource management activities and whether they had suffered damages or losses due to wildlife. Though not included in the analysis, households were also asked to comment on the leadership of the conservancy and community forest based on financial accountability and management abilities of management committees to get an idea of how members perceived the management of their natural resources.

In determining livelihood activities, a list of common activities was generated from a focus group discussion and households were asked to rate various activities that their households were involved in making a living. Household data were supplemented by data from archival records, interviews with key informants from government, NGOs and local organisations.

4.3.4 Archival Records

Published and un-published reports related to conservancies and community forests were reviewed for background information. This involved the retrieval of reports from government ministries, regional offices and local offices. The main sources of information were policy documents, CC/CF constitutions and event book records, meeting records and permit books. The online database of CBNRM-related publication hosted by the Namibian Association of CBNRM Support organizations (NACSO) was used (http://www.nacso.org.na). The researcher created the maps in this thesis using GIS data or GIS layers obtained from the Environmental Information Service (EIS) of Namibia (http://www.the-eis.com). Whenever necessary and possible, hard copies of these records were photocopied for further analysis. Information on conservancy profiles and game count data is also available on this site.

Wildlife population status

Annual game count data from the Ministry of Environment and Tourism (MET) were used to assess whether selected wildlife populations in the study area have increased, decreased or stayed the same since the studied conservancies were created. The researcher did not perform any analysis on the raw data, except for extracting figures relevant to this thesis and summarizing them. The Annual Zambezi (formerly Caprivi) Game Count covers both national parks and conservancies and is done on foot (NACSO 2011). The count is done by teams of MET rangers, conservancy game guards and staff from support organisations such as IRDNC, NNF and others. It is usually done by walking transects across the entire Mudumu North Complex (MNC) through following narrow tracks or cutlines through dense vegetation. Two counts per year (wet and dry season) were conducted for years prior to 2007, and only dry season counts have been conducted from 2007 onwards. For this study, population data from 2007 to 2012 were used to retain consistency and enable comparison between years for the Mudumu North Complex (MNC) area.

During the count, the counters or teams walk long distances in small groups noting every wild animal they see and supplement sighting records with information such as animal tracks and droppings less than a day old. Once the counting is completed, the data is consolidated into overall results and discussed at a feedback session, resulting in population estimations of the different wildlife species. Estimates are calculated using the software DISTANCE for species with sufficient sightings. Distance sampling is a commonly used method for estimating the size or density of biological populations, including game species (Thomas et al. 2010; Buckland et al. 1993).

4.3.5 Informal Talks

Informal talks were used to get more insights and to confirm and complement information collected using other methods. These talks were useful in generating more information which could not otherwise have been obtained during formal discussions. In formal discussions, people sometimes tend to hold back information they think could put them at a disadvantage or risk.

The advantage of staying within the villages is that the researcher could observe events as they occurred. People were very open in that they did not mind the researcher sitting in their meetings; therefore she was able to attend many meetings that were taking

place within the communities during my stay. In many cases the researcher observed dynamics in the relationship between the conservancy management and other local stakeholders such as professional hunters, traditional authority. Detailed notes about these events were taken for further reference. This added reliability and aided in explaining some of the trends seen emerging from the data collected.

4.3.6 Feedback Session

At the end of data collection in each of the three study areas, the researcher provided a summary of findings from the household survey to the management and executive committees. A selected number of questions were selected from the questionnaires; graphs were prepared on flip charts and presented to the management and workers of the conservancy and community forest. This process proved very useful as it stimulated a lot of discussion and explanation by community members around trends observed in the household survey data. The community also appreciated this process as one of the conservancy chairpersons was quoted saying:

'You are one of the first students to give feedback at the earliest… For now with this information, we can see some gaps where we really need to strengthen so that we can run a very good conservancy. I really appreciate this information that you gave us. This is very important data; it will enable us to start filling the gaps already. It will be easier for us to look at this information and refer to it in our operations'.

4.4 Data analysis

4.4.1 Qualitative data processing and analysis

All qualitative information elicited during discussions (key informant interviews, focus groups, informal talks and observations) was recorded either in detailed hand written notes, audio recorded or both. The initial stage of qualitative data analysis started with the transcription of all audio data, followed by the typing of all field notes into word. This provided the researcher with the opportunity to engage with the data and be familiar with the depth and scope of the content. At this point, I started making notes about ideas for coding. Once this was done, the formal coding process began based on thematic analysis.

The principles of thematic analysis were used to organize the qualitative data by creating and applying codes to the data (Boyatzis 1998). According to Braun and Clarke (2006), thematic analysis is a method of identifying, analysing and reporting patterns or themes

within data, and also interprets different aspects of the research under investigation (Boyatzis 1998). The development of the coding protocol was informed by the common pool resource theories and the Institution Analysis and Development (IAD) framework Ostrom et al. (1994) – chapter 2. Basit (2003) defines codes or categories as labels for allocating elements of meaning to the descriptive information compiled during a study.

The process of creating higher level themes or codes was therefore theory driven (Boyatzis 1998; Braun and Clarke 2006), and dependent on the concepts of common-pool resource theory that the research is based. Some sub-categories (called child nodes) were created under some of the high level themes. While viewing data through the theoretical framework helped the researcher to situate the results in the theory, reviewing the research questions was important as it provided the lens through which data could be viewed to answer the questions posed within the study. In addition, other themes or codes (called free nodes) were created as they were identified from the data collected.

Based on the theoretical framework and the research questions, six main 'operational' themes or codes were created, several of which included two or more sub-codes (table 3). The main six themes identified included the following: (1) community characteristics, (2) rules in use, (3) rule enforcement, (4) support, (5) conflicts, and (6) interactions (see table 4-2 for the sub-codes associated with these themes).

Table 4-2: Initial thematic record showing the six main themes

Main Theme	Sub-themes
Community attributes	Livelihood activities Collective activities Culture
Rules in use	Constitutional Collective Operational
Rule enforcement	Monitoring Sanctioning Compliance
Support	Financial Technical Training
Conflicts	Land and tribal Rules Benefit sharing
Interactions	Collaboration/ partnerships communication

Once the themes were created and data typed in word, files were imported into NVIVO 10. The process of coding started by reading through all the transcripts and coding them to the broader pre-determined themes or as free nodes (for the data that did not fit into any of the pre-determined themes). Coding was carried out by selecting segments of text in the document and placing them under one (or sometimes more) relevant themes or sub-themes. During this process attention was also given, as it was possible to create new themes (free nodes or child nodes) as additional categories were identified.

4.4.2 Quantitative data analysis

The quantitative data (questionnaire) were analysed using SPSS (version 21). In order to determine wealth categories, a cluster analysis was run on all the 455 households, each corresponding to items on asset ownership and housing condition. A two-step cluster analysis was chosen over other cluster analysis methods because of its ability to create a cluster model simultaneously based on both categorical and continuous variables. Four variables (land size, house wall type, number of cattle owned and car ownership) were selected as the most important determinants of wealth and were used in the analysis. Results from the cluster analysis were compared with local classifications of wealth.

Socio-demographic data of households such as age, education, gender, and wealth class were included in the ordinal regression to identify factors that influence level of household participation in natural resource management activities in conservancies and community forests. Chi square tests were used to test for significant differences in socio-economic characteristics between the three study sites. Further details of the statistical analyses performed are included in each data chapter (chapters 7, 8 and 9).

Chapter 5: Policy, Legislative and Organizational context of Community-based Natural Resource Management in Namibia: The Formal Rules of the Game

5.1 Introduction

This chapter describes how natural resource rights are defined and acquired in the natural resources property regimes in Namibia. The chapter starts by describing the structures of government ministries as far as they are pertinent to natural resource management. A brief description of one prominent non-governmental organization (NGO) will also be provided because NGOs sometimes perform the role of government in conservancies. Next, I review the national policies and legislative mechanisms of CBNRM. The major policies particularly those concerned with conservancies (wildlife resources), community forests (forest resources) and land are identified and reviewed. The main purpose of this review is to compare the legal and policy frameworks that guide operations in conservancies and community forests, and to identify key differences and similarities, inconsistencies and gaps in the legal frameworks. Third, a detailed analysis of the degree to which various types of rights related to CBNRM have been transferred to local communities is provided. The chapter concludes by an assessment of whether or not the existing legislative and institutional environment is conducive for the efficient use and management of natural resources on Namibia's communal land.

Influences on the Namibian CBNRM approach are partly local, but also include experiences from neighbouring countries that had similar approaches to natural resource management. Of the neighbouring countries' experiences, Zimbabwe's Communal Areas Programme for Indigenous Resource Management (CAMPFIRE) programme had the most profound influence (Jones 1999). The difference in the Namibian CBNRM approach is the fact that power has been devolved to the community level. The CAMPFIRE experience had shown that management authority and rights to benefit needed to be devolved to the lowest possible unit to have the maximum impact on peoples' behaviour. However, devolving authority to the community level does not automatically lead to efficient use and management of natural resources, as will be shown later in this thesis.

It seems appropriate to start by re-emphasizing that the common property regime (in particular, the Namibian CBNRM programme) does not mean 'open access for all' as was previously (mis)understood and usually refers to property owned by a community or by a state. This misunderstanding needs to be cleared up because it can result in inappropriate policy recommendations (Schlager and Ostrom 1992) and decisions about

the resource in question. Common property regimes are in fact structured institutional arrangements within which rules are made and sanctions applied to ensure compliance (Bromley and Cernea 1989). A resource regime can be described as a structure of rights and duties relating individuals to one another regarding a particular resource.

Next it is important to briefly elaborate on rules and rights as this chapter focuses on the rights and regulations contained in policies for natural resource management in conservancies and community forests. According to Ostrom 1976 (mentioned in Schlager and Ostrom 1992), rights in this context refer to particular actions that are authorized, while rules refer to the prescriptions that create authorizations. Therefore, every right comes with rules that authorize a particular action. In this chapter the focus is mainly on rights. Rules that come with the devolution of natural resource management authority to communities will be the focus of chapter 9 of this thesis.

5.2 Government structures for the implementation of forest and wildlife policies

Land, wildlife and forestry are legally considered as three distinct entities and as a result are under the responsibility of three distinct ministries at the national level. While wildlife management is under the responsibility of the Ministry of Environment and Tourism (MET), forest management is under the responsibility of the Ministry of Agriculture, Water and Forestry (MAWF), and land management is under the responsibility of the Ministry of Lands and Resettlement (MLR). The relevant responsibilities of each of these ministries are summarized in Table 5. Another Ministry that has some input into land management is the Ministry of Regional, Local Government and Housing and Rural Development (MRLGHRD).

The Directorate of Forestry (DoF) has been within the Ministry of Environment and Tourism (MET) since independence until the re-organization of ministries in 2005. Under the new structure, DoF was moved to the then Ministry of Agriculture, Water and Rural Development (MAWRD), now known as MAWF. This means that the Forest Act of 2001 was developed while the DoF was still part of the MET. The Forestry Act having been developed by the MET (a conservation based ministry), might contain clauses that are not necessarily priorities of its current implementers (MAWF). This in turn may affect the overall implementation of the Forest Act. Further, since wildlife management is directly associated with forest management, the MET may still have to lobby with MAWF to ensure proper management of wildlife. Therefore, the transfer of DoF to MAWF meant

that MET had to establish links with MAWF in order to structure its future support of DoF (Jones 2007).

During this study, effort was made to understand the reason for this creation of overlapping institutions for wildlife and forest resources (i.e. movement of DoF from MET to MAWF). No clear explanation could be obtained from officials of the two ministries, except that it was the president's prerogative to do so. However, officials from both ministries felt that in the Namibian context it would have been ideal to have DoF within MET as explained by one official:

'…we are being led by politicians and not by technocrats; we don't have big plantations or big forests here. The forest we have is natural, actually more for subsistence which is more about sustainable utilization, it is not commercial to fall under agriculture…'

Within the MET, two directorates are responsible for wildlife issues and therefore have some input into conservancies: Regional Services and Parks Management Directorate (DRSPM) and Natural Resource Management Directorate (DNRM). Under the DRSPM, the director is directly assisted by five deputy directors who are responsible for a cluster of regions and are based in the different regions of the country. The deputy directors have the responsibility to facilitate and oversee the establishment of conservancies in their regions of responsibility, among other things. Deputy Directors are assisted by wardens, rangers and scouts in the regions, and their specific conservancy responsibilities include:

1) development and improvement of conservancy management plans;
2) support enterprise developments such as community based tourism;
3) facilitate capacity building regarding financial management and accountability at community level;
4) determine and monitor wildlife utilization options and
5) support and oversee conservancy benefit distribution plans.

In conjunction with DNRM, DRSPM regulate hunting, which represents a valuable economic activity for most conservancies. Professional hunters (PH) guiding clients (trophy hunters) are required to obtain trophy permits on behalf of their clients from MET. The DNRM is the scientific branch of the MET, responsible for providing scientific support for the decision making process. The directorate is headed by a Director who is assisted by two deputy directors with distinct responsibilities; one responsible for wildlife

utilization issues (permit system) and the other for research and monitoring. This directorate is equipped with scientists that provide scientific and technical information and support for conservation and resource management programmes throughout the country. They are also responsible for the capture and translocation of wildlife into conservancies and other areas.

Within the MAWF, two divisions within the Directorate of forestry are responsible for forestry issues: Forest Research Division and Forest Management Division. The directorate is headed by a director who is assisted by two deputy directors responsible for each division. The division Forest Management is further supported by foresters and forestry technicians based in the regions. Community forestry is one of the core programmes of the Directorate of Forestry. The core function of the DoF is to manage, utilise and conserve forest for human benefit; and implementation of the Forest Act. Other activities include forest inventories, issuing of harvesting permits and assisting communities to establish community forests.

The overall mandate of the MLR is to manage, administer and ensure equitable access to Namibia's land resources. Within the MLR, the Department of Land Reform and Resettlement (DLRR) is responsible for land issues. The department is headed by a Deputy Permanent Secretary who is assisted by two directors, three deputy directors (at national level) and six regional deputy directors responsible for regional programme implementation. The DLRR's functions include but are not limited to:

1) develop and update Integrated Regional Land Use Plans,
2) ensure an effective development and sustainable utilization of communal land,
3) implement the Communal Land Reform Act,
4) facilitate the allocation of customary land rights
5) assess the natural resource potential, make alternatives for land use and select the best land use options and,
6) coordinate inter-sectoral land use activities.

Table 5-1 gives an overview of the major actors in charge of implementing wildlife, forestry and land policies, and their core functions. The national level directorates delegate most implementation of policies to regional authorities, but they tend to coordinate and control their actions.

Table 5-1: Actors involved in the implementation of wildlife (conservancies), forestry (community forests) and land policies and their functions

Ministry	Directorate/Division	Function specific to CC/ CF/ Land
MET	Regional Services and Parks Management (RSPM)	Regulation of wildlife and tourism outside protected areas, including in conservancies Establishment and support to conservancies Development of zoning and wildlife management plans in conservancies (but no legal power to enforce the zoning plans)
	Natural Resource Management (NRM)	Survey and monitoring of wildlife in the country, including in conservancies Issuing of wildlife utilization permits in conservancies
MAWF Department of Forestry (DoF)	Forest Research	Provide scientific support to manage and develop the potential of Namibia's plant resources (e.g. forest inventories, maps)
	Forest Management	Create, manage, utilize and conserve forests for human benefits (e.g. through issuing of permits) Establishment of community forests and development of forest management plans
MLR	Land Reform & Resettlement (DLRR)	Administer communal land policies and legislation through the Communal Land Boards & Traditional Authority and to ensure an effective development and sustainable utilization of communal land. Assess natural resource potentials, make alternatives for land use in order to select the best land use options Develop land use plans and coordinate inter-sectoral land use activities.

Source: Government ministries websites

Other organizations

In addition to government ministries, other organizations have been instrumental in conservancies and community forests because they have in some cases taken on roles of the state to compensate for weaknesses in capacity of the relevant ministries. Several donor agencies and NGOs have significantly contributed to the development of the CBNRM programme in Namibia, by providing financial and technical assistance. This section focuses on one prominent NGO supporting conservancies in the Zambezi region, Integrated Rural Development and Nature Conservation (IRDNC). The majority of IRDNC's activities coincide with those of MET because there is lack of resources (personnel and finances) within MET. For instance, at the time of the research there was

only one CBNRM warden assisted by one ranger responsible for twelve registered and five emerging conservancies in the Zambezi region. IRDNC, therefore, works with communities to assist them meet the conditions that are required for registration as a conservancy including; development of constitutions, benefit distribution plans, wildlife management and utilisation plans and zonation plans, facilitate election of committees, and boundary negotiations.

IRDNC is structured into three teams:

1) the natural resource management (NRM) team,
2) the institutional development and capacity building team, and
3) the enterprise development support team.

The NRM team assist conservancies to revise wildlife utilisation plans which are a requirement from the ministry before they can get their quotas and then help them to prepare the quota setting. The NRM team also work together with conservancies during annual game counts conducted in the regions, in conjunction with MET and other support organizations. Human wildlife conflict is one of the biggest issues in the Zambezi and the NRM team works closely with farmers to develop mitigation measures.

The institutional support team ensures that the governance of conservancies is up to scratch by assisting with organizing Annual General Meetings (AGM), developing benefit distribution plans, staff policy, financial management policies, and financial management training. The financial management training has been one of their priorities in recent years because conservancies are now earning more money and there is potential for the abuse of that money. Lastly, the enterprise development team focuses on assisting communities develop tourism enterprises and generate income. They monitor income and management system for community campsites, joint ventures for tourism and hunting. Within each theme discussed above, conservancy committees and staff, and sometimes ordinary community members and the traditional authorities, receive formal training.

IRDNC depends on funding from many different donors through fundraising to carry out their activities. According to one of the organization's co-directors, the funding is drying out because Namibia is now being categorized as a middle income country and many of the donors do not fund such countries:

'Before we had two or three big donors, now we have to scramble around for funding from a multitude of donors which leads to much higher transaction costs'.

Community forestry has been financially and technically supported by several bilateral agencies - the Finnish, the Danish and then the Germans at different times. A senior management advisor (working for the German Society for International Cooperation, GIZ) to the MAWF's community forestry programme elaborated that there has been major capacity issues within the MAWF:

'Normally GIZ is supposed to offer technical advice, we are not supposed to implement, but at certain points we were actually forced to implement. That is actually going to the field and carrying out activities because there was no one in the ministry that was capable of doing those things'.

5.3 Historical development of CBNRM in Namibia.

Prior to 1960, all natural resources (including wildlife) belonged to the South African colonial government, and it was not until 1968 that freehold farmers' rights over wildlife were recognized (Weaver and Skyer 2003). This property regime was re-enforced in 1975 when rights over wildlife were recognised for white freehold farmers through the Nature Conservation Ordinance (No. 4 of 1975), resulting in major increases in wildlife numbers on commercial farms (Barnes and De Jager 1996). This could have been because of the feel of ownership by farmers and therefore controlled hunting. Landowners' rights were recognized and conditional ownership was given over certain common game species and limited use rights over other species through a permit system. None of this recognition of rights was extended to people on communal land. Therefore, before independence (1990), communities living on communal land had no legally recognised rights to use natural resources in their areas.

During the early 1980s, wildlife numbers were declining at an alarming rate as a result of severe drought and illegal hunting in Namibia (Nott and Jacobsohn 2004). At that time, local people on communal land had no power to take action against any illegal hunting in their areas. In an effort for the recovery of wildlife population on communal lands, a concerned group of conservationists then started a process of building trust with community leaders in a quest to combat this massive illegal hunting. As a result, traditional leaders started to appoint their own game guards (*ibid*), to look after the wildlife. The appointed game guards were usually known to be poachers at the time and they received incentives (financial and in kind) for patrolling and reporting cases of illegal hunting. By the late 1980s, wildlife populations had noticeably recovered and the community game

guard programme is recognized as one of the factors contributing to this recovery (Hoole 2007). This era marked the origin of CBNRM in Namibia, though it had no legal backing.

After independence, the Namibian government did not immediately change the colonial policies, but rather built upon a process that was already started in the 1980s and proceeded to find ways to redress past colonial inequalities in land distribution and rights over wildlife through legal means. Namibia saw a paradigm shift in natural resource management on communal land which is contrary to the tradition of centralized control of natural resources. This new approach was based on the premise that local communities themselves know better how to manage the resources on the land where they live. Additionally, government regulation of wildlife and forest resources proved extremely difficult to enforce due to large distances from central offices and lack of government resources (Jones 1998). In an effort to cut down on high costs involved in controlling resources on communal land, the government had to reduce centralized control by devolving natural resource management authority to users. As part of the devolution of natural resource management authority to local communities, several functions and tasks have been decentralized to regional government offices to still ensure government functioning and involvement in natural resource management.

In 1992, Namibia attended the Rio Earth Summit, where it became a signatory to Agenda 21. Since then, it has ratified several environmental or natural resource conventions. The most relevant ones are the Convention on Biological Diversity (CBD), RAMSAR, Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) and the KYOTO Protocol under the United Nations Framework Convention on Climate Change (UNFCCC). Guided by these international conventions, what followed was drafting or amendment of national conservation laws to make them more inclusive of all citizens.

5.4 Policies and legislative mechanisms affecting CBNRM in Namibia

It is important in a constitutional state to interpret any statutory provision from the constitution's point of view. After independence in 1990, Namibia included in her constitution an article that had direct relevance to forest and wildlife management, meaning environmental protection in Namibia is not only a concern but a constitutional issue. Article 95(1) of the Constitution of Namibia states that Namibia shall actively promote and maintain the welfare of the people, by adopting policies, which include: *"…the maintenance of ecosystems… and utilization of living natural resources on a*

sustainable basis for the benefit of all Namibians, both present and future." Namibia's 'Vision 2030' recognizes that secure tenure over all natural resources for communities is important in achieving sustainable development (GRN/National Planning Commission, 2004). The declaration of conservancies and community forests are some of the strategies that the Government of Namibia has adopted to fulfil its constitutional obligation as well as achieving Vision 2030.

The property rights regime over natural wildlife and forest resources in Namibia has undergone changes over time. The regulations that affect CBNRM are wide-ranging and are contained in various laws. Wildlife is critically dependent on other environmental resources such as land, water and forests. The use and management of these resources can have an effect on other resources including wildlife through dynamic interrelationships existing in the environment (Kowero et al. 2003). This means that wrong use of any of these resources can have adverse consequences on the environment.

In order to avoid adverse consequences, policies of the different sectors responsible for these resources must fit in together. This section focuses on those laws concerned with land, wildlife and forestry. Table 5-2 gives an overview of the key policies of interest for this study and actors in charge of implementing these policies. These key laws fall under four different government ministries as shown in Table 5-2, and this adds complexity into their implementation and mitigation responses to natural resource management problems.

5.4.1 Wildlife Management, Utilisation and Tourism in Communal Areas

The policy on Wildlife Management, Utilisation and Tourism in Communal Areas developed by the Ministry of Environment and Tourism (MET) in 1995 was the crucial policy framework for CBNRM in Namibia. It was an approach by which past discriminatory provisions from the Nature Conservation Ordinance (1975) were removed for communal farmers to gain the same recognition of rights and benefits over wildlife as freehold farmers. This paved the way for the formation of conservancies on communal land.

Table 5-2: Key policies pertinent to wildlife (conservancies), forest (community forests) and land management in Namibia

Sector	Responsible Ministry	Legislation	Purpose of legislation
Wildlife	Ministry of Environment and Tourism (MET)	Nature Conservation Ordinance of 1975	To consolidate and amend the laws relating to the conservation of nature; the establishment of game parks and nature reserves; the control of problem animals.
		Wildlife Management, Utilisation and Tourism in Communal Areas Policy, 1995	To remove discriminatory provisions of the Nature Conservation Ordinance No.4 of 1975, by giving conditional and limited rights over wildlife to communal area farmers that were previously only enjoyed by commercial farmers; to link conservation with rural development by enabling communal area farmers to derive financial income from the sustainable use of wildlife resources and tourism through the formation of conservancies; and to provide an incentive to rural people to conserve wildlife and other natural resources through shared decision-making and financial benefit in conservancies.
		Nature Conservation Amendment Act, 1996	To amend the Nature Conservation Ordinance of 1975, so as to provide for an economically based system of sustainable management and utilization of game in communal areas through the formation of conservancies.
Forestry	Ministry of Agriculture, Water and Forestry (MAWF)	Forest Act, 2001	To provide for the establishment of Community Forests; to consolidate the laws relating to the management and use of forests and forest produce; to provide for the protection of the environment and the control and management of forest fires in the country, including community forests.
Land	Ministry of Regional, Local Government and Housing and Rural Development (MRLGHRD)	Traditional Authority Act, 1995	To provide for the establishment of traditional authorities and the designation, election, appointment and recognition of traditional leaders; to define the powers, duties and functions of traditional authorities and traditional leaders, which includes allocation and management of land within conservancies and community forests.
	Ministry of Lands and Resettlement (MLR)	Communal Land Reform Act, 2002	To provide for the allocation of rights in respect of communal land; to establish Communal Land Boards; to provide for the powers of Chiefs and Traditional Authorities and boards in relation to communal land, including land within conservancies and community forests.

5.4.2 The Nature Conservation Amendment Act of 1996

Following the adoption of the policy on Wildlife Management, Utilisation and Tourism in Communal Areas, the legal changes required to allow for the formation of conservancies were passed in 1996 through the Amendment of the Nature Conservation Ordinance. The Nature Conservation Amendment Act (No. 5 of 1996) was adopted to recognise rights over the utilisation of wildlife. The Act uses conservancies as the means by which limited rights to manage and benefit from wildlife and tourism are recognised to a specified group of people living within communal areas. These conditional rights over wildlife are recognised for residents of communal areas upon application for such rights. This policy framework is significant for rural communities as it addressed issues of access to natural resources (particularly wildlife) and opportunities for rural communities to benefit financially from its sustainable utilisation (Corbett and Daniels 1996).

The Act recognizes the right to the consumptive and non-consumptive use and sustainable management of game in an area declared a conservancy. According to (Corbett and Jones 2000), non-consumptive use would normally take the form of tourism. In addition, a number of conditions are set which rural communities have to meet before a conservancy can be registered by the MET. Communities must organize and form themselves into a conservancy. The conservancy has to have clearly defined boundaries, a defined membership, a committee representative of the membership and a plan for the equitable distribution of benefits to members.

The conservancy approach is significant because the policy and legislation provide a framework and incentives to which communities can voluntarily respond. If a community does not choose to form a conservancy, it doesn't have to. The legislation does not try to define a community, but leaves this to communal area residents themselves. It also does not prescribe who should represent a community on the conservancy committee. This enables communities to choose their own representatives and, if desired, they can use an existing institution as their conservancy committee. In addition to the legislation, the government provides some regulations to accompany the Nature Conservation Amendment Act. These help to define certain issues regarding the formation of a conservancy (NACSO, 2006), and these should be included in the constitution of the conservancy. Among other things, the following should be clarified before a conservancy is registered:

- the objectives of the conservancy, including approaches to sustainable management

and utilization of wildlife

- the processes of equitable distribution of benefits derived from wildlife
- the powers and responsibilities of the conservancy committee, and
- the criteria and procedure for being recognized as a member of the conservancy and the rights and obligations of members of the conservancy.

Following the amendment of the Nature Conservation Ordinance in 1996, the government (through the MET) started implementing the conservancy programme by registering the first four conservancies in 1998 (Weaver and Skyer 2003). By 2013, 79 conservancies had been registered; covering 132,697 square kilometres of communal land (NACSO 2009). Three main reasons can be observed for the substantial scaling up of the conservancy programme: support from external donor agencies such as USAID, UNDP, GEF, WWF, and World Bank (and many others), support from NGOs and strong political support from the government.

5.4.3 The Forest Act, 2001

In 1994 the Namibian government acknowledged the importance of participation in forest management, and started a process of forestry development programmes that would result in a nationally adopted document (Kojwang, 2000). In 2001, the adoption of the Forest Act formed the enabling legal framework for establishing community forests, by recognizing the rights of communities over forest resources.

Like the conservancy legislation, the policy and legislation for community forestry seeks to empower communities to manage forests and forest resources, with the twin goals of CBNRM in mind (conserving biodiversity and improving rural livelihoods). The policy encourages communities to use and manage forest resources on a sustainable basis. If a community decides they want to form a community forest, they have to enter into a written forest management agreement with the government. The legislation defines the members of a community forest as the people who have traditional rights over the communal land where the community forest is being established. The community has to identify the boundaries of the proposed community forest and develop a management plan, including benefit and cost sharing arrangements to accompany the written agreement. A representative body has to be appointed to be the management authority of the community forest.

The establishment of community forests has somewhat been slow compared to conservancies, partly due to lack of funding. By 2006 only 13 community forests had been

registered, and many more were emerging. Six years after the registration of the first community forests, in 2012 another cohort of 19 community forests were registered, bringing the total number of registered community forests to 32. In 2013, at the time of my fieldwork, the Directorate of Forestry (DoF) was in the process of declaring and developing community forests (CF) in a total of 29 sites covering a total of 1.39 million hectares.

5.4.4 Communal Land Reform Act and Traditional Authority Act

Since essentially all CBNRM activities are located on communal land, it is important to examine the Communal Land Reform Act, 2002 (No. 5 of 2002) and how it affects the implementation of CBNRM activities. This Act recognizes customary law and makes provision for traditional authorities to administer, allocate and be involved in the registration of communal land rights. Although communal land is not individually owned, the Communal Land Act has made provision for the allocation and registration of customary land rights upon application for a limited period (99 years) and limited size (up to 20hectares) to individuals. These rights may be transferred to descendants of the rights-holder. The Communal Land Reform Act further makes special provisions with regard to grazing rights, in which the traditional authority is vested with powers to determine the conditions under which grazing should take place on communal land. The traditional authority may grant grazing rights to non-residents for a specified or indefinite period, but these rights may be withdrawn (Jones 2007).

The land tenure system under customary law is further modified and affected by the Nature Conservation Amendment Act and the Forest Act which makes provision for the formation of conservancies and community forests as described above. While the Nature Conservation Act does not make any reference to traditional authority or customary law, the majority of conservancies are directly linked to a traditional authority (Hinz 2008b). In fact, throughout the Zambezi region, conservancies and community forests have been formed with the support of the traditional authorities (Jones and Luipert 2002). Further, in the Zambezi region, traditional authorities are involved in the regulation of tourism enterprises and administration of conservancies and community forests (Hinz 2008a).

In contrast to the legal procedure for establishment of conservancies, the establishment of community forests is directly linked to the jurisdiction of traditional authorities as stipulated in the Forest Act. The Traditional Authority Act is relevant to CBNRM because it makes provision for traditional authorities to apply customary law, for the most part

when it comes to allocation of communal land. Further, section 16 of the Traditional Authorities Act requires that traditional authorities *'....give support to the policies of Government, regional councils and local authority councils and refrain from any act which undermines the authority of those institutions'*, including supporting conservation policies. This section is however open to various interpretations, and can be used as entry for influencing traditional authorities when resolving cases in which government has an interest (Hinz 2008a). The Traditional Authority Act describes customary law as *...norms, rules of procedure, traditions and usage of a traditional community...* These laws are usually not written, which makes them difficult to ascertain for outsiders and their rules subject to diverse interpretation (Corbett and Daniels 1996). However, diverse interpretation could mean more flexibility to adapt to local circumstances. Accordingly, their enforcement is dependent on the respect and legitimacy that the traditional authority has (*ibid*). Since the management of land and natural resources on communal land is to a large extent dependent on local communities, Traditional Authorities (TAs) thus play a central role in the establishment of community forests and conservancies.

Having discussed the various laws relevant to different natural resources, the next section attempts to analyse these laws focusing on the degree to which different rights have been transferred from the state to communities. These insights will be useful in the empirical chapters to understand the effect of formal laws on how local communities make decisions about natural resource management and use.

5.5 Degree of property right transfer

It is important to know the degree to which specific types of property rights have been devolved from the government to local communities under conservancies and community forests, before making suggestions in policy reform. This section focusses on national level formal rules that guide conservancies and community forests once they are legally recognized. First, it is crucial to establish who owns the resources in question (i.e. wildlife, land and forest resources). Article 100 of the Constitution states that "*Land, water and natural resources below and above the surface of the land and in the continental shelf and within the territorial waters and the exclusive economic zone of Namibia shall belong to the State if they are not otherwise lawfully owned".* This implies that natural resources can be legally owned as private property. However as shown under the discussion of the different policies, natural resources on communal land where conservancies and

community forests operate are not privately or individually owned, but communally owned. Further, legislation stipulate that communal land belongs to the state, however in trust for the benefit of the communities that inhabit it (section 17 of the Communal Land Reform Act, 5 of 2002).

This analysis distinguishes five types of common pool resource rights as elaborated by Schlager and Ostrom (1992): access, withdrawal, management, exclusion and alienation (Box 1). Ostrom (2003) proposes a bundle of rights approach whereby instead of focusing on one right, it is more useful to define five categories of property rights. Access and withdrawal are regarded as the most relevant operational-level property rights, granting the right to enter a defined physical property and obtaining the products of a resource. For example if a community holds rights of access to an area and also withdrawal rights, they have the authority to enter that area and withdraw the resource (e.g. hunting a wild animal in a conservancy or harvesting grass in a community forest). In the case of conservancies and community forests, members are defined as those who reside in a defined area and are required to meet certain requirements before they can be allowed to withdraw wildlife and forest resources in that area.

According to (Schlager and Ostrom 1992), individuals that have access and withdrawal rights may or may not have further rights allowing them to participate in collective-choice activities. Collective-choice rights include the authority to devise future operational-level rights, making these types of right more powerful. These include management, exclusion and alienation rights. Individuals that hold management rights have the authority to decide how, when and where harvesting of a resource may occur and how the resource can be changed. For example, in a conservancy, the management committee together with the workers may draw up zonation maps and decide which areas should be put aside as exclusive wildlife zones for hunting.

Individuals holding rights of exclusion have the authority to define the requirements that individuals must meet in order to access a resources. In most Namibian conservancies, membership is limited to individuals living in a defined area that are 18 years and older. Management committees in consultation with support organizations and the traditional authority decide the requirements for membership. Holding a right of alienation means that an individual or community can sell or lease the rights of management and exclusion or both. Once the rights are alienated, the former rights holder can no longer hold any authority over the resource. Table 5-3 make distinctions among the five classes of property rights and presents a summary of different rights that are either

transferred or not transferred from MET and MAWF to the communities living in conservancies and community forests. These will now be discussed in more detail.

Box 1: Types of property rights *(Extracted from Schlager and Ostrom 1992)*

1. Operational-level rights
Access right refers to the right to enter a defined physical property (e.g. a conservancy or community forest)
Withdrawal is the right to obtain the resource or products of the resource (e.g. wildlife or forest resources)

2. Collective-choice rights
Management right refers to the right to regulate internal use patterns and transform the resource (e.g. regulation by CC/CF committees and staff)

Exclusion is the right to determine who will have an access right and how that right may be transferred

Alienation is the right to sell or lease either or both of above collective choice rights

Property rights in conservancies and community forests are *de jure* in that government explicitly grants such rights to communities living in these areas, and are recognized by formal laws. However, land on which conservancies and community forests are located falls under customary law and is not individually owned. This means that all members of a community have rights to communal land (Hinz 2008b). Therefore, *de facto* rights also exist in these areas in that most resource users feel that they have traditional access and withdrawal rights to natural resources as stated by one elderly community member:

'I don't have to register to become a member of this conservancy, everyone knows I was born here, even my parents were born here, this is my area….. Why should I register?

5.5.1 Access and Withdrawal Rights

The Ministry of Environment and Tourism (MET) may declare an area outside of a protected area to be a conservancy, following the request of a community inhabiting such a communal area (MET, 1996, section 24A(1)). Before the minister of MET could declare an area a conservancy certain requirements need to be met. Firstly, the community must establish a conservancy committee representative of the people residing in the area. The conservancy committee must have a constitution showing commitment for sustainable management and utilization of wildlife. The committee must also show ability to manage

funds and a mechanism for the equitable distribution of benefits to members of the community. The geographic boundary of the area to which the conservancy relates has to be sufficiently identified. This is an important step because it will affect who will have management authority and benefit from the conservancy.

Similarly, section 15 of the Forest Act specifies that certain requirements must be met before an area is declared a community forest. Interested members of the community first should obtain consent from the traditional authority for an area to become a community forest. The geographical boundaries must be specified, including a management plan of the proposed community forest. A management authority representing the interests of people who have rights to the proposed community forest must be appointed. There must also be a statement of how members of the community will have equal use of the forest and equal access to the forest produce, as well as equitable distribution of revenue from the forest. Additional approval from the Communal Lands Board must be granted over the proposed communal area (MAWF, 2005). Once these requirements are met, the Minister of MAWF can declare a communal area a community forest. Section 24 (4) of the Forest Act provides that any person who resides in or near a community forest may cut and remove forest produce for household use or livestock. Therefore, any person who has traditional rights to use the forest resources is automatically a member of the community forest in question.

Under the CBNRM programme, members of conservancies and community forests have obtained the right to use several wildlife species (under the conservancy) and forest resources (under the community forest). They can keep the proceeds from the sale of wildlife and forest products, but they have to invest in the management and protection of these resources. Investment comes in different forms, including the employment of game guards or forest officers that patrol the area, preventing illegal use of the resources. However, withdrawal rights are not automatically granted to communities for all wildlife species and forest resources. In particular, conservancies and community forests are obliged to acquire permits for all hunting and forest resource harvesting from the respective government ministries (MET and MAWF). For example hunting quotas are set by the MET and not by the community, so is the annual allowable cut (block permit) for tree species which have to be approved by MAWF before any harvesting is permitted.

Table 5-3: Community rights recognized and not recognized under the CBNRM legislation

	Communal Conservancy		Community forest	
Right	Recognized	Not recognized	Recognized	Not recognized
Access &Withdrawal	CC boundaries are legally recognized by government. CC members are legally registered and their rights to use and benefit from certain wildlife resources are legally recognized.	Wildlife quotas are set by MET. Plant use rights not recognized, except for 'devil's claw' and some other high value plant species. Provision for fishing under customary law. No specific powers over grazing.	Community forest boundaries are legally recognized by government. Any person with traditional rights to the area can harvest and benefit from forest resources.	Annual allowable cut for tree species are determined by DoF. Grazing rights can be granted by government in consultation with the TA. Not allowed to use forest resources in all NPs
Management	CC management & executive committees make management decisions about wildlife. Community game guards monitor wildlife and report violation to MET. CCs may apply for permits for live capture and sale of wildlife. They can also ask for permission to reduce numbers of certain wildlife species.	MET is responsible for the enforcement of wildlife laws and sanctions. Restricted authority over elephants and other high value animal species. No rights to enforce land use planning and zoning decisions.	Management rights over a specified area are devolved to the community level. The community will share responsibility with DoF regarding the control of forest use.	While devil's claw is a forest product, it is been monitored and controlled by MET. Harvesting rates for many tree species are determined by DoF
Exclusion	The management committee's right to cancel an individual's membership. The community on which villages may be part of the CC.	No powers to control outsiders. The TA and not the CC may grant grazing rights to non-residents.	Rights to exclude outsiders from encroaching the forest is limited	The traditional authority may grant grazing rights to non-residents
Alienation	Customary land rights may be transferred to descendants of the right owner. A CC can enter into a contract with an investor to develop a tourism facility such as a lodge.	Rights to sell or lease the resources are very limited.Only the MET can dissolve the CC.	Customary land rights may be transferred to descendants of the right holder.	Rights to sell or lease the resources are very limited. Only the MAWF can dissolve the CF.
Usufruct benefits or rights would be withdrawn if the community fails to protect the wildlife and the forest as per conditions stipulated in the laws. This can be seen as exclusion rights by the state				

Conservancies are able to have contracts with private sector companies for trophy hunting or development of tourism enterprises, and income generated from these activities goes directly to the conservancies. Community forests can also have contracts with timber dealers and income generated belongs to the particular forest.

The ministries also have been determining when and how to use the resources. For example, timber harvesting was being banned by MAWF during the time of the fieldwork. MET and not MAWF has jurisdiction over high value plant species, though these are forest resources. There were also on-going negotiations between communities and the MET regarding the harvesting of 'devil's claw' (*Harpagophytum procumbens*), as this was to be banned in the Zambezi region as well due to unsustainable harvesting practices that were detected the previous harvesting season. This shows the incomplete devolution of power and implementation of legislation and policies by government which still wants to have some control over natural resources.

5.5.2 Management Rights

The right to manage wildlife and forest resources is partially transferred from the state to conservancy and community forest committees. All Conservancy committees in this study have further delegated management authority to their executive committees (manager, secretary, treasurer etc.) and employees of the conservancy. Conservancies can apply for wildlife introductions or translocation to the MET, which can happen only with MET approval. Communities can identify animals as 'problem animals' but only MET can declare these animals as such, and only MET can give approval to shoot the problem animals. Management plans detailing how the wildlife will be managed are usually prepared in consultation with NGOs and MET, but MET makes the final approval before implementation of the plan. Similarly, communities with the assistance of MAWF draw up by-laws and management plans detailing the specifics of managing different forest resources.

Conservancy employees such as community game guards (CGG) have the responsibility to protect wildlife through routine patrols, and sometimes conduct joint patrols with MET officials. Managing the conflict between wildlife and humans is the responsibility of individual farmers through the use of several mitigation measures. However, the CGG are responsible for recording damages caused by wildlife for possible offset of losses by the MET

Section 32 (1) of the Forest Act grants powers to the management authority of a community forest to dispose of any forest produce from the community forest, permit the grazing of animals and carry out any lawful activity in the community forest. The community forest management committee has the responsibility to protect vegetation through patrolling the forests.

5.5.3 Exclusion rights

Under the conservancy programme, the right to determine who has access rights is formally granted to the community itself. According to the national legislation, it is the community who should organize itself and agree on boundaries for the management and use of their wildlife. This implies that the community decides who has access to the wildlife and benefits thereof and who does not. The conservancy constitution should stipulate the criteria for membership. The forestry legislation on the other hand stipulates that any person that has traditional land rights over the communal land on which the community forest is being established is a member of that community forest. According to Jones (un-published report), the Forest Act took this approach because most forest resources are everyday resources on which rural communities depend on for their livelihoods. Therefore, no one who has traditional land rights should be excluded from the use of forest resources. However, this has potentially negative implications in that people who are not resident in a community forest can exercise control over the use and management of resources and claim financial benefits if they have traditional land rights to the area.

In areas where conservancies and community forests overlap (as in the sites considered in this study), definition of membership for the two institutions can be problematic. Some people that qualify to be members of the community forest through having traditional land rights to the land could be excluded from being conservancy members if they do not register to become members. Similarly, people residing outside conservancy boundaries who have traditional land rights to the area could be excluded from using the resources within the conservancy. The reference made in the Forest Act regarding people who have rights over the communal land could be interpreted to include people from other areas who have rights recognized by the traditional authority (Jones, unpublished report). This could mean invasion by people from areas outside the boundaries of the conservancy or community forest claiming a right to the resources in

question. The communities' and committees' ability to enforce access rights is therefore often limited.

In recognition of the need to secure tenure in communal land, the Namibian Government has been implementing the Communal Land Reform Act, 2002. Furthermore, the Constitution of the Republic of Namibia dictates freedom of movement for all Namibians and permits and entitles persons not traditionally resident in a particular area to qualify for land rights in that community provided there is unutilised land available. However, such person should commit themselves to abide by the customary laws of that traditional authority. This means people can effectively be granted rights to an area through other bodies such as the Communal Lands Board through the traditional authority and bypassing the conservancy committee in the process. These kinds of contradictory policies violate the rights of exclusion given to communities.

Another important exclusion right is the management committee's right to cancel an individual's membership. By signing up to be a conservancy member, individuals are agreeing to the objectives of the conservancy and making a promise to support them. Those individuals who do not conform to wildlife regulations of the conservancy could potentially be excluded from benefitting from the wildlife and also from membership. In view of this provision, one may ask what happens if a resident non-member of the conservancy breaks conservancy regulations and what power the conservancy committee has over such person. If the two questions were to be answered logically, the conservancy committee would have no power to take legal action against a non-member for their non-compliance to conservancy regulations. However, the state (and the traditional authority) could do so if called upon by the committee. While no one should be excluded from accessing forest resources in community forests, breaking the local rules for access and use could result in exclusion by the forest management committee.

5.5.4 Alienation rights

The right of alienation is believed to be crucial for the efficient use of natural resources, as it produces incentives for rights holders to undertake long-term investments in a resource (Schlager and Ostrom 1992). However, communities or individuals do not have to be alienation right-holders to invest in the physical structure of the resource. For instance, several individuals were observed during this study creating firebreaks in their grazing areas to prevent fire from destroying the vegetation although they could not legally alienate

the land. Under the conservancy and community forest programmes, the rights to sell or lease the resources have been transferred to communities only to a very limited degree. All communal land is still owned by the state and communities do not have secure tenure. However, customary land rights may be transferred to descendants of the rights holders.

5.6 Evaluation of the legislative and organizational environment

While Namibia presents one of the best examples of community based natural resource management in Southern Africa (Roe et al. 2009) and perhaps elsewhere, several authors and this study have identified some issues in the programme. The issues identified include but are not limited to:

1) absence of secure land tenure rights for people living in conservancies and community forests (Corbett and Daniels 1996),
2) conditional or limited rights over natural resources,
3) no legal powers to exclude unwanted/harmful outsiders (Jones and Luipert 2002),
4) lack of community control and authority over communal grazing lands (Jones 2009),
5) competing and overlapping community institutions (Jones 2012),
6) a confused process for resolving conflicting land use claims,
7) an institutional environment that imposes unnecessary costs on entrepreneurs and small businesses (Boudreaux 2007), and
8) insufficient integration and coordination of planning and implementation (this study).

The over-arching issue in the Namibian CBNRM legislation is the need to reform communal land tenure as emphasized by several authors (e.g. Jones 2012a; Boudreaux 2007; Corbett and Jones 2000; Corbett and Daniels 1996; Massyn 2007). Broadly speaking, the CBNRM programme faces challenges in that both the forestry and wildlife legislation in Namibia does not go far enough in providing rural communities with strong proprietorship and tenure over land. Rather, the rights are over natural resources and not over the land itself (Jones 1999; Jones and Weaver 2009), and these rights tend to be limited or conditional. The lack of security of tenure poses several problems to the development of the conservancy and community forest programmes. (Massyn 2007) asserts that the ability of the poor to trade in land has been constrained by the lack of formal tenure rights. Secure tenure is particularly important in conservancies due to their dependence on the tourism industry. As elucidated by Massyn (2007 p. 382): '*Tourism*

investors require secure rights to land and associated resources for periods that enable reasonable returns on the capital and expertise invested in their businesses'. Jones (2012a) proposes that community land rights should be followed by automatic rights over all other natural resources such as wildlife, forestry, grazing and water resources on that land, without requiring sectoral legislation to allocate these different rights.

In several instances when communities were questioned about particular sections contained in their documents such as management plans, constitutions, benefit distribution plans and so on, they openly indicated that the NGO or the line ministry prepared those documents. For example, during a discussion of the structure of the conservancy, it was indicated that the executive committee (EC) no longer exists in the new constitution of one conservancy. When asked the reasons for the removal of the EC in the new constitution, a management committee member stated:

'It was not us who removed it, but those that make constitutions like the NGO. They (NGO) said the only person that can attend our (Management Committee) meetings is the manager and then he brings information to the office'.

This shows that the MET, NGOs and MAWF considerably shape the degree to which conservancies and community forests structure their rules for managing wildlife and forest resources.

As Jones (1999b) indicated, the development and implementation of CBNRM approaches in several sectors such as wildlife and forestry poses problems for local communities. This could mean the development of several sector-specific committees at the community level, resulting in competing interest groups within communities. At the national level there is little effort by government departments to integrate the different approaches. This was confirmed by an NGO official who is a proponent of integrated management of natural resources during this study:

'…..on the ground yes there is some sort of collaboration but at national level there is no collaboration between all the stakeholders within CBNRM. That is why I organised this workshop about a month ago, bringing all the stakeholders working in CBNRM together. So that they sit together and chat a future together, to do integrated planning, implementation, monitoring'.

It is clear that sectoral policies and legislation have created competing and overlapping community institutions for natural resource management. Back in 1999, Jones suggested policy change through the establishment of community resource management institutions with secure rights over all natural resources on their land, including formal tenure over the

land itself. More than a decade later, the strengthening of tenure rights has not materialized. Nonetheless, Namibia has moved a step forward in the right direction by drafting an over-arching CBNRM policy, aimed at providing a framework that promotes integrated land and natural resource planning and decision making (draft CBNRM policy, 2012). Perhaps a more immediate option to address the fragmented management of natural resources on communal land would be to formalize coordination between the various stakeholders implementing the various policies and the planning of various activities.

Although the Namibian law vests considerable powers over control of natural resources to traditional authorities, the formation of conservancies and community forests has shifted away this power from traditional leaders to committees. Jones (1999a) indicates that some traditional leaders have raised concern that they have been left out from the process and are missing out on potential financial benefits from conservancies and community forests. These sentiments were voiced by a traditional leader in this study:

'The conservancy is dominating us on the law from the *khuta*. Even now we have papers from the big *khuta* saying we have to deal with issues of natural resource use. We are supposed to charge people and get money out of it but the conservancy has now taken over and dominates the *khuta*'.

Another traditional leader expressed his unhappiness about the operation of the community forest and how promises are not being kept as follows:

'When you [committee] issue permits, the *khuta* is also supposed to get part of the commission. We are not happy about this, it is a reality that was the initial arrangement, you can ask anyone in the *khuta*…'

Given that the authority of traditional authorities over land and natural resources is derived from government legislation, sharing of income from conservancies and community forests should be encouraged for continued support of these programmes by traditional authorities. According to Jones and Luipert (2002), the traditional authorities have essentially devolved responsibility for natural resource management to conservancy and community forest committees.

Rights over natural resources in conservancies and community forests are conditional and they are limited. The MET, not conservancies, sets the quota number for game animals in the lucrative trophy market, though conservancies retain the revenue from such hunts. Conservancies hold only limited powers to deal with problem animals, such as elephants, crocodiles, or leopards. Conservancies also have very few powers to exclude unwanted outsiders from conservancy land. These limitations create less-secure rights for

conservancies and their members. With less-secure rights, conservancies have reduced incentives to invest in conservation and in conservancy based entrepreneurial opportunities.

Government regards communal land as state land over which it can take decisions about the best land use options (MLR official, personal communication). Jones (2012a) illustrates this point by giving an example of plans which were developed by MLR for the establishment of small-scale commercial livestock farms in conservancies, without consultation with relevant stakeholders such as the MET or the conservancies. While conservancy members might abide by conservancy land use plans, there is little that they can do to stop outsiders from moving into their area, or stop development projects proposed by the government. If communities cannot prevent other people from using land they have zoned for wildlife and tourism activities for their benefit, then there is little motivation for them to protect wildlife. The lack of secure tenure also means that communities cannot be granted loans by financial institutions based on their land as security (Jones 2012b). It is also difficult for communities to attract investors as partners in tourism joint ventures where rights to the land are not secure because of the high investment risk (*ibid*).

A superficial analysis of Namibia's CBNRM would conclude that the new wildlife (conservancies) and forestry (community forests) policies rightly respond to the needs of local communities to make decisions about natural resources in their areas. However, a closer look at the present devolved system indicates that government officials are reluctant to give up power to communities and still play a major role in the control of natural resources on communal land. It is a few local elites (e.g. traditional leaders) that initially supported the conservancy movement; the poor had and still have little to say about how resources are controlled as will be shown later in chapter 7. Many poor users view this new movement expressed in policies and regulations as disadvantaging them by limiting them access to natural resources. It is also interesting to see how this new shift is not so much a local affair, but a national one with basic rules set up by government. Furthermore, there are also over-arching global frameworks to which Namibia's devolution policies have to adhere to, such as the UN environmental conventions (e.g. CITES).

There seem to be a difference in priorities of the two ministries responsible for the implementation of conservancy and community forestry policies. An official from the directorate of forestry expressed his opinion about the priority of the directorate by saying:

‘Our main aim is livelihood upliftment in terms of them (community) to know how to generate income from the resources available within their vicinity, and of course followed by the sustainable utilization of those resources’.

In contrast, a MET official stated ‘in my view these institutions (conservancies) serve multiple purposes in addition to conservation…’

These views seem to suggest that MET has a conservation focus while MAWF’s priority is food provision or livelihood support. The following chapter (chapter 6) will discuss the influence of the laws and organizational structures discussed in this chapter on the range of local institutional arrangements that work as incentives and constraints of effective management and use of natural resources in conservancies and community forests.

Lastly, the internal processes to build the institutions are weak in both conservancies and community forests because most of the rules are formulated in the legal framework and are driven by government and NGOs. There may be a need for communities to be given a chance to formulate their own rules. Most of the regulations are not socially accepted by communities. For example what if someone does not have money to acquire a permit to harvest forest resources for own use, should they be excluded from using the resources? There is great need to revisit the current legislation to make sure that they provide a conducive environment for the development of CBNRM in Namibia.

Chapter 6: A preliminary evaluation of decision making arrangements in conservancies and community forests: An institutional design perspective

6.1 Introduction

The management of common-pool resources (CPRs), including forests and wildlife have been examined over the past several decades. There has been considerable disagreement about the types of local institutional arrangements that are appropriate for sustainable management of these resources (e.g. Hardin 1968, Ostrom 1990). There is now growing empirical evidence that CPR users can form institutions that can protect and sustain their resources over a long period of time (Ostrom 1990, Agrawal and Gibson 1999, Gibson et al. 2000, Dolsak and Ostrom 2003, Gautam and Shivakoti 2005). In some places, this has led to the devolution of natural resource management authority from government to local communities.

The assumption of devolution of natural resource management rights to communities is that it leads to more equitable and sustainable use of natural resources. However, not all CPR users are equally successful in managing their resources sustainably, and many factors have been identified as important for the creation of successful CPR institutions. Scholarly consensus is emerging regarding conditions under which common-pool resource users will self-organize and sustainably govern their resources (e.g. Ostrom 1990, Wade 1987, Baland and Platteau 1996, Agrawal 2001, Dolsak and Ostrom 2003). Ostrom identified eight design principles (table 6-1) that characterize rules devised and used by long-enduring, self-governing common-pool resource institutions (Ostrom 1990). Ostrom's design principles include: 1) clearly defined boundaries, 2) congruence between appropriation and provision rules and local conditions, 3) collective-choice arrangements, 4) monitoring, 5) graduated sanctions, 6) conflict resolution mechanisms, 7) minimum recognition of rights to organize, and 8) nested enterprises (Ostrom 1990, p.90, also Dolsak and Ostrom 2003, 2009). These design principles overlap considerably with conditions identified by other scholars (e.g. Wade 1987; Baland and Platteuau 1996). In this chapter, Ostrom's principles for long-enduring CPR institutions are used as a starting point to assess various institutional arrangements that are currently used in conservancies and community forests. Further in this chapter, I also discuss details of other overlapping conditions for successful CPR institutions based on a more comprehensive and detailed list provided by Agrawal (2001) and Ostrom (2009), taking into account concerns or limitations raised by other scholars regarding Ostrom's (1990) principles. Agrawal's list of

conditions is based on Ostrom (1990), Baland and Platteuau (1996) and Wade (1987). Specifically, this chapter takes a qualitative in-depth analysis to assess how existing institutional arrangements in conservancies and community forests are likely to influence the performance or outcomes (chapters 7, 8 and 9) of the two programmes in the three study areas.

Table 6-1: Design principles for long-enduring and self-governing common-pool resource institutions

Design Principle	Explanation
1. Clearly defined boundaries	Individuals or households with rights to withdraw resources from the common pool resource, and the boundaries of the common-pool resource itself, are clearly defined
2. Congruence	The distribution of benefits from appropriation rules is roughly proportionate to the costs imposed by provision rules. Appropriation rules restricting time, place technology and quantity of resource units are related to local conditions.
3. Collective-choice arrangements	Most individuals affected by operational rules can participate in modifying operational rules.
4. Monitoring	Monitors of common-pool resource conditions and user behaviour are accountable to the users or are the users themselves.
5. Graduated sanctions	Violators of rules are sanctioned depending on the seriousness and context of the offence by other users, by officials accountable to these users or from both.
6. Conflict resolution mechanisms	Users and their officials have rapid access to low-cost, local means to resolve conflict among users or between users and officials.
7. Minimal recognition of rights to organize	The rights of users to devise their own institutions are not challenged by external authorities.
8. Nested enterprises (For CPRs that are part of larger systems)	Appropriation, provision, monitoring, enforcement, conflict resolution and governance activities are organized in multiple layers of nested enterprises.

Source: Ostrom 1990, p.90

The formalization of natural resource management and use rights is often the norm of the devolution process. In Namibia, this formalization involves communities organizing themselves to create formal local natural resource management institutions such as conservancies and community forests. An important feature of the Namibian Community

Based Natural Resource Management (CBNRM) programme is the freedom of choice. Although the national legislation provides a mechanism for communities to form a conservancy and/or a community forest, communities themselves choose whether to form these institutions or not (GRN 1996, GRN 2001). However, once such a choice is made, communities have to meet certain requirements and abide by certain regulations set out by government. Not all communities on communal land have formed these institutions, so it is of interest to understand why some communities choose to form conservancies and community forests. Under the law, the scope of institutions does not refer to land ownership, as the state retains tenure over the land, but refers to forest and wildlife resource management, decision-making authority over access, use, governance and benefit distribution.

The remainder of the chapter is organized as follows: Section 6.2 briefly presents the methods of data collection. Section 6.3 introduces the three case studies by describing each in terms of how the conservancy and community forest institutions were formed, why they were formed and whose idea or initiative it was. Here I also describe the two local natural resource management institutions in terms of their interface with government and other organizational structures. These community-level questions are important in understanding pattern of interactions at household level in the three case studies that will be discussed in chapters 7, 8 and 9. I focus on actors that were key in the formation of conservancies and community forests. Actors refer here to every person and/or organization that has the right to access, use or claim responsibility over the control of natural resources in the three study communities. It encompasses all members living in the studied geographical areas, government authorities in charge of implementing policies and support organizations. Section 6.4 evaluates the research findings in light of the theoretical framework. In section 6.5, I compare and contrast the three case studies and the two CPR institutions using the theoretical framework, and some preliminary evaluation and conclusions are drawn.

6.2 Methods

Interviews with government officials, NGO staff, community leaders and ordinary members as well as conservancy and community forest committee members and staff were conducted to evaluate the role of each institution in the functioning of the local CPR institutions (see details in chapter 4). Interview questions were intended to elicit

information based on the Institutional Analysis and Development Framework (Ostrom 2011). Specifically, the questions addressed the following themes regarded as important for successful common-pool resource institutions: boundaries, decision making, rules, monitoring and sanctions and conflict resolution (Ostrom 1990). These higher level themes were used to create codes for analysing the interview data (see chapter 4 for details of the coding process and scheme). The strength of each principle is evaluated qualitatively in each case study following Cox et al. (2010).

6.3 Community responses to state-led common-pool resource (CPR) institutions

The Namibian wildlife and forest policies and legislation make provision for the establishment of formal CPR institutional structures such as conservancies and community forests (GRN 1996, GRN 2001). Formalization is the means of identifying, adjudicating and registering ownership of natural resources (Meinzen-Dick and Mwangi 2007). The formal institutions may be formed by agreement by the majority of the target community. By law, communities should create management committees specifically tasked with devising and implementing management plans, monitoring compliance and enforcing rules. This committee is answerable to the respective government ministry, thereby exposing it to formal government structures and powers. The establishment of a conservancy or a community forest is a demanding process requiring NGO facilitation, intensive community participation and major time investment. This section presents findings from three case studies: Kwandu, Sobbe and Mashi. Important characteristics of the three case studies are presented in table 6-2. While the formation of conservancies and community forests has been based on similar conceptual foundations (Jones 2004), the implementation of the programmes has taken different pathways in each case study.

Within the Zambezi region, two NGOs (one local and one international) were well established and have been supporting conservancies and community forests. In all conservancies, one local NGO (IRDNC) has been prominent in consistently supporting the local communities seeking to gain access and use rights over wildlife resources. In community forests on the other hand, different projects have come and gone, with recent support from the German Society for International Cooperation (GIZ) and the German Development Service (DED). Overall, these organizations have provided important services such as advocacy, capacity building, awareness-raising and financial support.

Case study 1

Formulation of Kwandu conservancy and community forest

The Kwandu conservancy, the oldest institution to be registered among the case studies, is the smallest in size but has the highest population (see details in chapter 3). Altogether there are six districts (also referred to as *sub-khutas* or traditional district authorities) in Kwandu. The Kwandu conservancy was registered in 1999, three years from the inception of the idea. The people of Kwandu reported to have always wanted to have ownership and control over their wildlife even before government introduced the legislation on devolution of wildlife authority to local communities. This is because they always suffered wildlife damages and nothing was done about their complaints of the losses they suffered. Community leaders felt that people incurring wildlife losses deserved to benefit from the wildlife that impacted their livelihoods. According to a male committee member, devolution of natural resource management authority to local communities through the amendment of the Nature Conservation Ordinance of 1996 was in response to the community's plight:

'the cry of the community I believe was heard by the government and they sat and looked at the Act of 1975 and decided that people should manage [and benefit from] their resources'.

After the amendment of the Nature Conservation Ordinance in 1996, some people originally from the Kwandu area who worked in high government positions in the capital city (Windhoek) heard about the new ordinance and brought the idea of forming a conservancy to the community, specifically to the traditional authority. In the same year, campaigns to mobilize people to support the idea started. A local NGO (IRDNC) was also instrumental during the formation of the conservancy, as they worked closely with the traditional authorities. They went from district to district making people aware of the benefits of forming a conservancy. One of the high government officials that brought the idea to the Kwandu community went on to become the first chairperson of the conservancy. The bad relationship between the Kwandu people and the government game rangers seem to also have motivated people to want to gain control over their wildlife, as related by a village headman (*induna*) in a focus group:

…'before the conservancy, game rangers would just beat up and arrest people that were found hunting. It was not a good life, but now we were told that if we have a conservancy, we will deal with such issues and offenders will only be taken to *khutas*'.

The idea to form a community forest on the other hand was brought by DoF officials and an external forestry project after the introduction of the Forest Act in 2001. The community was quick to accept the idea because they had already gone through a similar process during the formation of the conservancy. According to some committee members, the people of Kwandu wanted to form a community forest because people from other areas, including commercial timber dealers, were coming to harvest their forest resources without their permission, and they felt that their resources were declining. They started being concerned about where these people were coming from and who granted them permission to harvest. So when the community forest concept was introduced, many people welcomed the idea with ease.

Interviewed members of the management committee reported that the community of Kwandu went through several challenges during the process of getting the conservancy and community forest registered. According to one of the initial committee members of the conservancy, the concept of a conservancy on its own was difficult for people to comprehend; therefore more time was needed to convince people to register as members (which is one of the requirements before registration of a conservancy). He further elaborated that bringing people together for a meeting was not easy because there was no transport to go around mobilizing community members. Once the committee was elected, committee members did not serve on the committee for long because there were no incentives or allowances. According to the manager of the conservancy:

'sometimes people would go on for a few days but once they realized that there were not benefitting, they left'.

Negotiating boundaries with neighbouring communities was perhaps one of the most daunting tasks because these negotiations went on for a very long time. The local NGO (IRDNC) and the Ministry of Environment and Tourism (MET) assisted the community with solving boundary issues. Once all requirements were met, the conservancy was registered and they recruited their first two game rangers that were financially supported by World Wide Fund for Nature (WWF) and IRDNC. These organizations also funded the building of a permanent conservancy office, where the conservancy affairs are administered from. The administration of community forest activities on the other hand is done in a container just outside the conservancy office.

Case study 2

Formulation of Sobbe conservancy and Masida community forest

The Sobbe conservancy, the youngest to be registered among the three studied conservancies, is the largest in size and has the smallest population (see details in chapter 3). Altogether there are six districts (also referred to as *sub-khutas*) in Sobbe. The conservancy was registered at the same time as the community forest (Masida) in 2006.

It is not clear who came up with the idea of forming the Sobbe conservancy, but interviewed community members reported that their leaders (referring to the traditional authority) started the idea. During the fieldwork, the Sobbe conservancy had a newly elected *ad hoc* committee following the firing of the old committee due to mismanagement of funds. The idea of forming a community forest was reported to have initially been introduced to the community by a local honorary forester that had met with some 'white people' and DoF officials. He was told that if the Sobbe community wanted to have control of their forest, they had to organize themselves to form a community forest. The idea was first taken to the district councillors or headmen (*silalo indunas)*, who thought that it was a good idea. Once again, negotiating boundaries with neighbouring communities proved very challenging as some communities were sceptical because they thought that boundaries that were sought were to do with tribal demarcation. It took nearly three years from when the process started to the formal registration of the community forest.

Table 6-2: Summary of prominent characteristics of the three case studies

Characteristic	**Case study1 Kwandu**	**Case Study 2 Sobbe**	**Case Study 3 Mashi**
Year registered			
Conservancy	1999	2006	2003
Community forest	2006	2006	2006*, 2013**
Size (km²)			
Conservancy	190	404	279
Community forest	212	197	171*, 122**
Population(approximate)	4300	2000	3900
Approximate distance to nearest town (km)	120	70	120
Management Committees	1	2	3
No. Committee members			
Conservancy	6♂ 7♀	9♂ 5♀	6♂ 3♀
Community forest		2♂ 1♀	6♂ 5♀*; 3♂ 2♀**
Police station	yes	no	no
Road system	Gravel/tarred	Tarred	Tarred

* and ** denote Lubuta and Sachona CFs, respectively.

♂ and ♀ denote males and females, respectively

Case Study 3

Formulation of Mashi conservancy and Lubuta and Sachona community forests

The Mashi conservancy, the second oldest institution to be registered among the three case studies, is the second biggest in size and has the second largest population (see table 6.2; details in chapter 3). Altogether there are four districts (also referred to as *sub-khutas*) in Mashi. The Mashi conservancy was registered in 2003, six years from the time the first management committee was formed. Although the Mashi conservancy was registered only in 2003, the first local management system was reported to have started around 1991/92 through a system that consisted only of community rangers that were funded by WWF.

The initial idea to create Mashi conservancy came from Chief Mayuni after attending a meeting in the capital city, Windhoek. Chief Mayuni is well known in the country for his support of community based natural resource management. After the chief got the information, he shared it with the district councillors or headmen (*silalo induna)*, who in turn took the idea to communities in their districts. The official process towards registration started in 1997, a year after the amendment of the Nature Conservation Ordinance. With the help of IRDNC (a local NGO supporting conservancies), the first management committee was elected. The Mashi community (especially the leaders) was already aware of the problem of poaching that resulted in the introduction of community rangers by an NGO even before the introduction of devolved rights in 1996. Community leaders wanted to continue protecting their wildlife through this already evolved organized structure. The fact that the community could now also benefit financially also motivated leaders to form a conservancy as related by one of the conservancy employees:

‘our main focus is on natural resource management because it is these resources that we are deriving benefits from’.

Just like in other case studies, the Mashi community experienced a chain of challenges during the conservancy formation process. Although the local leaders already had some understanding of what community conservation meant, making the larger community understand was a challenge. Boundary issues appeared as one of the biggest challenge during the formation process, taking two to three years to agree on boundaries with neighbouring communities. Another challenge that was reported was that during this whole process of negotiations the voluntary involvement in the management committee was not appropriately compensated financially as elaborated by the manager (who was also once a volunteer in the management committee):

'…the management committee that was doing all this only had a sitting allowance sometimes ranging from nothing to N$50. Just imagine someone getting only N$50 per month for doing all this work'.

This led to less commitment by committee members because they would rather spend their time on other livelihood activities. The fact that the four districts are widely spaced apart posed another challenge, some members had to walk long distances, making it difficult to mobilize the community.

The traditional authority appeared to have been instrumental in the formation of both institutions and still plays a major role even after registration. Traditional authorities have been used as advocacy agents in selling the idea of community resource management to their communities; and their role was recognized at both local and regional levels. A regional wildlife official elaborated:

'When you talk of the community, you have to put the traditional authority in front. So everything we do, all the rules we make, we don't want to contradict the traditional authority. We need them; we cannot do anything without them'.

In many cases, conservancy and community forest management committees are composed of those from the *sub-khutas* (district traditional courts) and are usually nominated by *indunas* (village headmen). In other instances, the traditional authority has been used to resolve conservancy and community forests conflicts. One such example is when a conservancy management committee wanted to fire its staff, and the Ministry of Environment and Tourism (MET) had to ask the TA to intervene. Until recently, the TA also had the authority to employ conservancy staff. Other powers that the TA had when conservancies started were to deal with poachers. However, this authority has now been transferred to MET through the conservancy staff. These changes taking place have been seen by some TA members as 'powers being taken away' from them, as will be discussed later.

6.4 Evaluating the case studies through Ostrom's design principles

In this section I evaluate the three case studies using Ostrom's design principles (Table 6-1) in order to describe and explain a set of institutional characteristics thought to influence effective functioning of common-pool resources institutions (Cox et al. 2010) such as the

ones under investigation. I use these design principles to help clarify what one might look for in CPR institutions, and to compare and contrast the three case studies in terms of how they closely match or differ from Ostrom's design principles.

6.4.1 Clearly defined boundaries

The scale of natural resource management arrangements should be appropriate to the ecology, people and level of management (Harkes 2006). This includes the size of the physical area to be managed and how many members should be included in the management arrangement. Decisions regarding the scale of management not only include the boundaries of the area to be managed, but also the nature of the resource to be managed. Boundaries should be distinct so that resource users and outsiders have accurate knowledge of them and they should fit with available local monitoring capabilities. Just as it is important to know the physical boundaries of the resource unit, it is also important to know the extent of the resource users. It is observed that small groups are more manageable than larger groups (Agrawal 2001, Fischer 2010). Harkes (2006) further elaborated that the number of resource users should not be too large so as to restrict effective communication and decision-making. This is not to say that larger groups cannot be successful in managing their CPRs, but the additional time, effort and costs for ensuring cooperation with rules can be a limiting factor (Dietz et al. 2003). Accordingly, if a large number of people are involved, it is advisable to divide them into smaller groups to facilitate control and management.

There are several important differences and similarities in features of the resource units (wildlife and plants) under investigation. Wildlife is highly mobile and cannot be stored, while plants tend to be stationary but have a limited degree of storage; thus mobility and storage have been found to affect management of CPRs (Blomquist et al. 1994). The temporal and spatial distribution of wildlife and forest resource units is heterogeneous. For conservancies, the movement of wildlife across conservancies, landscapes and even countries makes it difficult to define the resource unit and resource users. This affects monitoring and enforcement mechanisms, as will be discussed later. Here, it is clear that the extensive movement of wildlife make them less suited to local management alone, as highlighted by Agrawal (2001).

The physical boundaries of conservancies and community forests in the three communities were generally clearly defined on paper (maps), except for the boundary

between Lubuta community forest and Sobbe conservancy. Here the boundary of Lubuta CF (case study 3) encroaches into the Sobbe conservancy on the map (see map in figure 6-1). This was due to some misunderstanding between a consultant from a project that trained communities in NRM aspects and community leaders that were involved in the demarcation process. According to the Masida community forest chairperson who was involved in negotiating and signing of boundaries with neighbouring communities:

'when we went to sign for the training zones, it turned out that we were signing for the Lubuta community forest demarcation which was clearly now within our conservancy'.

The issue was later resolved and it was agreed that the Lubuta community forest borders the Sobbe conservancy boundary, though the new GPS coordinates could not be acquired at the time of the fieldwork. In most cases there were physical features for conservancies such as rivers, roads and other natural landmarks, therefore community members interviewed demonstrated a high level of awareness of conservancy and community forest boundaries. Nonetheless, these clearly marked boundaries do not necessarily prevent encroachment by outsiders, as there are no physical barriers. Although most community members were well aware of which district within the conservancy or community forest they belonged to, physical identification of district boundaries was unclear in some cases as shown by the confusion among some members of the communities. Nonetheless, district boundaries were not considered very important by most management committee members for regulatory purposes, but were important for administrative purposes such as benefit distribution.

In all three case studies, members of the conservancy were defined by their residence status within the conservancy boundaries. Appropriation rules in conservancies are such that ordinary members are not permitted to directly use or hunt game. Instead they are encouraged to protect the animals so that these animals can be sold, for instance to professional hunters (PH). The income generated benefits all members of the conservancy and the meat can also be shared among members. In this case, conservancy members can almost be considered subsidiary resource users.

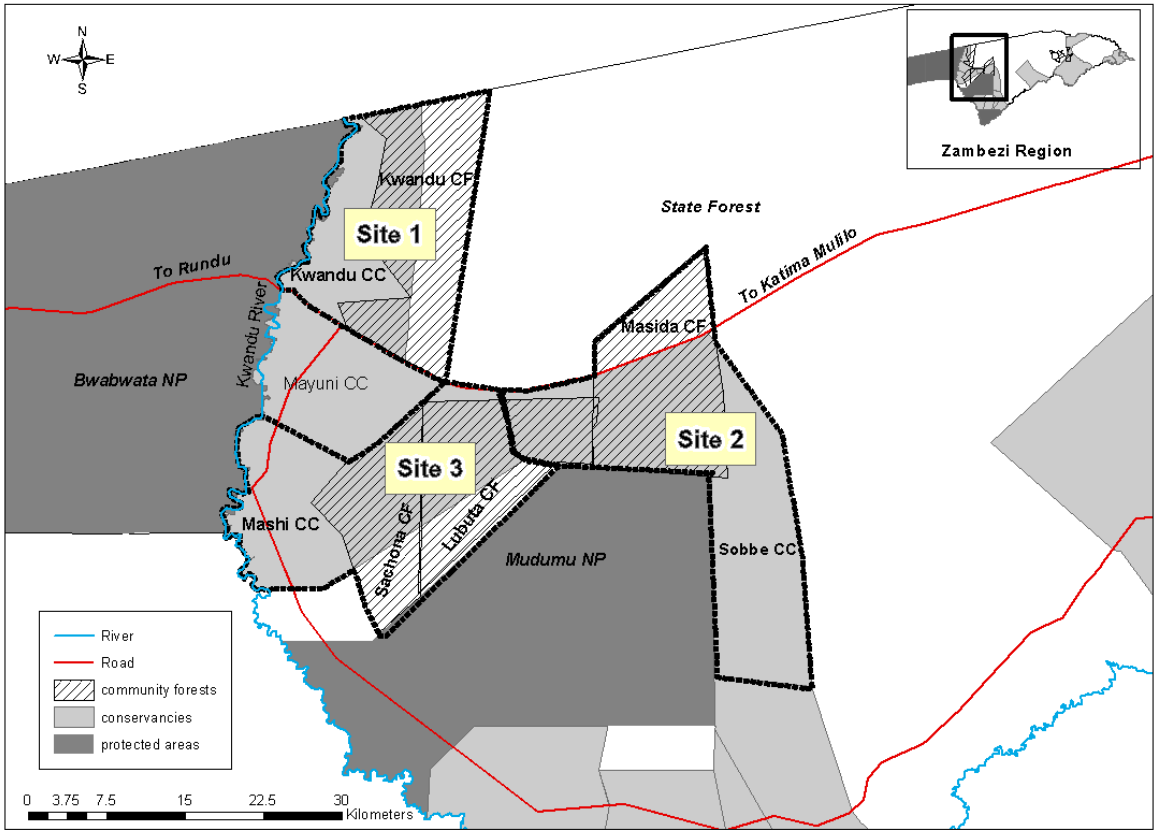

Figure 6-1: Map showing the locations and boundaries of the three case studies

According to the Kwandu constitution, a member of the conservancy is any resident with customary rights and who is 18 years and older, a spouse of a member or any person that has resided within the boundaries of Kwandu conservancy for at least 5 years. Although the law requires a conservancy to have registered membership, Kwandu was not strict on this criterion and it was not even included in their constitution. In fact, the many residents of Kwandu believe that they are legitimate members of the conservancy and do not have to register to become conservancy members.

Any individual of the Sobbe community is entitled to become a member of the conservancy if they meet the following criteria: is a Namibian citizen, is 18 years and above, is not a member of another conservancy, is a spouse of a member, has resided within the boundaries of Sobbe conservancy for at least 5 years, and has land rights within the conservancy. Any individual who meets the criteria set out above should be registered by the district representative in the conservancy register.

Any resident of Mashi community that meet the following requirements can become a member of the conservancy: has customary rights and is 18 years and above, is not a member of another conservancy, or is a Namibian that has resided within the boundaries of

Mashi conservancy for at least 5 years. Any individual who meets the criteria set out above should be registered by the district representative in the conservancy register.

A different situation exists in community forests. Membership of community forests tends to be broadly defined in all three communities. The Forestry legislation also broadly defines community forest membership as anyone who has customary land rights to the area (see chapter 5 for details). I believe that this system of defining CF membership exists because everyone benefits directly from the use of forest resources for sustaining livelihoods. Therefore, no one should be excluded. This definition of membership does not necessarily fit into Ostrom's definition for robust institutions because membership is not entirely closed to outsiders. Any person at any time can claim customary land rights or seek permission from the traditional authority to use resources within the community forest, although permission is not always guaranteed. The chief of a traditional community has the power to allocate or cancel any customary land right on communal land under his jurisdiction. Customary land rights may be allocated for farming, residential or any other form of customary tenure that may be recognized by the ministry of Lands and resettlement (GRN 2002). It is therefore almost impossible for the community forest membership to enforce the limits on resource users. By leaving the user boundaries open for negotiation, future demands may arise, putting pressure on the resources. Several cases of outsiders coming to claim land (for grazing and fields) as their ancestral land were reported. This is usually because of scarcity of grazing in other areas.

Although boundaries are well defined and understood, if not physically marked, for both conservancies and community forests, the boundary principle is usually violated as most committee members reported that most illegal harvesting of forest resources and hunting were done by outsiders. However, outsiders are sometimes blamed when insiders actually cause the damage. To the extent that this was actually the case, this demonstrates that having well defined boundaries alone does not necessarily ensure good performance in a CPR institution or system. Other principles need to be considered to have a clearer understanding of the performance of the whole system.

6.4.2. Congruence between appropriation and provision rules and local conditions

All studied conservancies had similar operational institutional arrangements. They all employ community members who are responsible for the day-to-day operation of the conservancy. On one hand this system maintains a level of proportionality between costs

incurred by members in maintaining the conservancy and benefits they receive through being paid a monthly salary. On the other hand, not every member gets the opportunity to be employed, thereby leaving some members feeling that they are not benefitting from the conservancy. Problems of equity have been found to discourage collective action (Ostrom 1990, Cox et al. 2010, also discussed in chapter 8).

Generally, all three areas have implemented appropriation rules restricting where harvesting of resources can take place through the development of land zonation plans; and what is and is not allowed within the boundaries of conservancies and community forests. According to interviewed committee members, land zonation plans are meant to reduce conflict between different land use activities. In Mashi for example, appropriation rules prevent hunting, settlements, grazing and noise within a 1.5 km radius of tourism developments such as lodges and campsites. Mashi was the only community with tourism facilities. A local NGO official stated that most tourists that visit these facilities prefer some quietness and do not want to encounter livestock during a game drive for instance. The appropriation rule in this case ensures that the tourist experience is pleasant. Another important appropriation rule that was found to be common in all areas was the prevention of settlements and farming within 1km of wildlife corridors, national parks and water points. This was a practical rule because it reduced the likelihood of crop raiding by wild animals.

Rules for hunting also somewhat tend to reflect local conditions, but not in all instances. Hunting quotas are allocated by MET based on annual population estimates of different species. Hunting is seasonal and selective, allowing mostly old bulls to be taken from the population for trophy hunting. This ensures that wildlife populations are sustained. Additionally, communities still have to request their own hunting permits (e.g. for festivals) from MET, which some committee members find to be too restrictive. However, a regional wildlife official indicated that MET is working towards having hunting permits for local use issued locally. Another hunting rule imposed by the MET that seems to not match local customs and livelihoods strategies is the total ban of subsistence hunting (unless a community member buys the animal). Many community members expressed their dissatisfaction with this rule and felt that they should be allowed to hunt birds such as guinea fowl and small animals such as spring hare. These new rules are said to contradict traditional ways of life. Moreover, the conservancy law stipulates that no person should move around in the forest with dogs. Many community members were not

satisfied with this rule because traditionally people moved around with dogs in the forest for protection against wild animal attacks.

In community forests, timber harvesting quotas are allocated by DoF based on forest inventory data, which is collected after every five years. Over-harvesting of timber is a well-known problem in most parts of the Zambezi region, and Kwandu community forest in particular showed visible sign of over-harvesting of timber by commercial dealers. The DoF rules stipulate the number of trees that can be cut, but local monitoring is a challenge because no regular patrols are conducted. Moreover, a few community members indicated that local forest monitors are prone to bribes from timber dealers. So the rules do not reflect the local monitoring capabilities. Fire was mentioned by both government and local community leaders as one of the main threats to forests in the Zambezi region. There were visible signs of severe fires, in the form of large burnt areas and trees in all three case studies, indicating communities' inability to control fires.

Harvesting of the medicinal plant *Harpagophytum procumbens* 'devil's claw' (DC) is an important example of where appropriation rules do not reflect resource conditions. The rules stipulate that a harvester should have undergone harvesting training to ensure sustainable harvesting, but there are no adequate rules limiting how much DC an individual or household should harvest. The Sobbe community is an example where in 2012 community members harvested more DC than was required by the buyer due to a lack of control of how much is harvested. Nonetheless, the problem was resolved since other communities did not harvest as much DC that year, so the buyer was able to buy all the DC from Sobbe. During household interviews, some community members reported harvesting very high quantities of DC, seemingly impossible for an individual or household to harvest in one season. Upon further inquiry, it came to light that the relatively well-off community members were hiring outside labourers (mainly Zambians) to collect plants in exchange for food and other items. This meant that people that were not trained in DC harvesting techniques were now harvesting DC, raising questions of the sustainability of the whole economy.

The cutting and selling of construction poles by cattle herders is another example where rules do not reflect local conditions. Cattle herders are usually considered outsiders by the locals in the studied areas; therefore they are usually not members of either the conservancy or community forest. This means that they usually do not attend CC and CF meetings, have no say regarding how the resources are managed, and often do not have a reliable source of information regarding resource use rules. Nonetheless, they are allowed

to use forests resources as all members and they are often allowed to acquire permits for selling forest resources such as construction poles. One community forestry committee member from Sobbe accused these 'outsiders' of causing fires since they do not know the rules.

According to most community forest by-laws, no one is allowed to harvest forest resources such as trees, thatch grass, reeds and devil's claw without permission from the community forest. Firewood for one's own use on the other hand can be collected without a permit in all case studies. This reflects well the local conditions, because firewood is a resource that is collected by almost everyone on a daily basis, and issuing permits for such a resource would be costly for community forest management.

There were no people residing within the Kwandu community forest as it was previously part of a state forest, except for a temporary grazing camp. This means that not many community members collect any forest resources from the community forest. Many community members felt that they are not benefitting from the community forest and those that own cattle have suggested to the management committee that they be allowed to graze their livestock in the CF. The idea is to fence off a communal grazing area within the CF and drill some boreholes. Members who wish to be part of the grazing project will have to contribute towards the development of the infrastructure. Some community members especially the poor households with very few cattle are against this idea because they cannot afford to contribute. Others without cattle also felt that they would not benefit from the plans for the community forest.

According to the constitutions of all three conservancies, benefits must be shared equitably. However, in Kwandu and Mashi, the distribution of benefits from the conservancy to the districts (*sub-khutas*) was not proportional to the number of beneficiaries per district. Further, in these two communities, benefits were distributed per household and not per each member. Each district (*sub-khuta*) received the same amount of money regardless of the number of households in the district. In contrast, in Sobbe every registered member of the conservancy got the same share of the benefits. Another example of non-proportional sharing of benefits comes from the Singalamwe district of Kwandu. At the time of fieldwork this district wanted to separate from the Kwandu conservancy because many members from this district felt that they should benefit more from the conservancy as most wildlife is found in their area. Since they have more animals, they suffer the most damage from wildlife (to crops, etc.) and felt that money from trophy hunting should not be shared equally with other districts.

6.4.3. Collective choice arrangements

Most individuals affected by the management arrangement should be included in the group that makes decisions and can change the arrangements (Ostrom 1990, Cox 2010, Harkes 2006). Several scholars have suggested that cooperative decision making by users of a CPR unit increases equity, adherence to rules (Ostrom 1990, Mckean 2000), and therefore increases the likelihood to sustainably managed CPR systems. Collective choice arrangements in all studied areas are almost always based on locally elected management committees. Kwandu has one committee representing both the conservancy and community forest. Each of the six districts of Kwandu is represented on the management committee by two district members. The management committee consists of 13 members, twelve district representatives plus a chairperson. The chairperson of Kwandu conservancy at the time of fieldwork worked for the NGO that support conservancies. District representatives are usually selected by *silalo indunas* (district councillors) from each district, while the chairperson is elected at the Annual General Meeting (AGM). A vice chairperson is usually elected from the 12 district representatives also at the AGM. Kwandu's AGMs should be held between 1st November and 31st December every year. The quorum for a general meeting should not be less than ten members from the six districts, three district councillors (*silalo indunas)* and five members of the management committee.

All residents that meet the membership criteria stipulated in the conservancy constitution are eligible to vote on conservancy matters such as election of chairperson, and are entitled to attend and speak at any meeting. The voting procedure at the general meeting is usually by show of hands. The Kwandu Management Committee (KMC) should meet at least quarterly, but according to the executive committee, the management committee has been having more meetings than necessary. In addition to the management committee, there is also an executive committee (EC) that comprise of the manager, secretary, enterprise officer, field officer and forest officer – who are employees. The executive committee undertakes the day-to-day implementation of conservancy activities and reports to the management committee. The EC considered themselves as first stage planners that propose plans to the management committee. The role of the EC includes implementing activities, reporting of activities by department heads to the manager, managing staff by monitoring their work and solving daily disputes encountered at the office.

Sobbe has two management committees, managing the conservancy and community forest separately. The Sobbe conservancy management committee (SMC) is comprised of fourteen (14) members: two representatives from the six districts, one representative of the Masida sub-khuta traditional authority and a chairperson voted in at the AGM. The term of office of the management committee members is one year and can be re-elected for five consecutive years. According to the constitution, Sobbe's AGMs should be held in May every year, but the 2012 meeting was held in December, the time when most conservancy AGMs are held. At least ten (10) members from each district constitute a quorum for a general meeting. Any individual that meets the criteria of membership should be registered by the district representative in the conservancy register, and are entitled to attend, speak and vote at any general meeting. The voting for management committee members is by draw. The Sobbe conservancy Management Committee (SMC) usually meets once a month. Sobbe conservancy also has an executive committee (EC) that comprise of conservancy employees, having similar roles as in the Kwandu conservancy.

Mashi has three management committees each representing the following: Mashi conservancy, Lubuta community forest and Sachona community forest. The Mashi conservancy management (MMC) is comprised of twelve (12) members: six representatives from the four districts, one member from each of the five *sub-khutas*, a chairperson voted at the AGM and a vice chairperson selected from the district representatives. The chairperson and vice chairperson can hold office for five years. The vice chairperson is not re-elected for a second term, while the chairperson and other committee members may be re-elected for two consecutive terms. Mashi's AGMs are held between 1st November and 31st December every year. Until two years ago, the AGM was open to every member of the conservancy. However, in 2010, the MMC reached a decision to invite only selected members to attend the AGM. According to the new constitution, the quorum for a general meeting should not be less than ten members from the five *sub-khutas*, five *indunas* and six members of the management committee. This was a new arrangement and the reasons for this arrangement were summarized by one conservancy management committee member as follows:

'Previously everyone was allowed to attend, but we have experienced some problems in the past. When you have 200 or more people at the AGM, you will end up not taking any decisions because some are just coming for eating. Some were coming just to interrupt the situation when reports were clear. The advice from other support organisations was to have

appropriate numbers to form a quorum for efficient decision making. So we agreed on that with the management committee, so we are working with that system for now'.

According to the constitution, any individual that meets the criteria of membership in Mashi should be registered by the district representative in the conservancy register, and they are entitled to attend, speak and vote at any general meeting. The voting procedure at the general meeting is usually by show of hands. The Mashi Management Committee (MMC) usually meets once a month or even more when the need arises. In line with the other two case studies, the Mashi conservancy also has an executive committee (EC) that is comprised of conservancy employees, having similar roles as in the other areas. The executive committee meet every fortnight.

The collective choice arrangement principle is not strictly adhered to in community forests for several reasons. First, community forest committees do not hold large and formal/regular meetings such as AGMs to bring members together to discuss CF issues. Second, the majority of community members were not aware of when CF meetings are held. In many instances the management committees took decisions in consultation with just the traditional authority.

Each conservancy and community forest is governed by a set of by-laws or a constitution. Support NGOs and respective ministries assist communities through local management committees in consultation with executive committees and members (through the traditional authority) to draft these by-laws. However these laws must be approved by the relevant line ministries. Draft conservancy constitutions are presented at Annual General Meetings (AGMs), for input by ordinary members. The major tasks at AGMs are usually rule making, budget approval and election of senior management committee members. Community forest by-laws, on the other hand, are usually presented at village meetings through the traditional authority.

As indicated before, some collective choice arrangements have been removed from local control altogether. For example the MET and DoF are responsible for allocating annual hunting and tree harvesting quotas in conservancies and community forests, respectively. So ministries make decisions on when to stop or ban harvesting or hunting because of over-use. For example, during fieldwork, timber harvesting had been banned by the ministry and CF management committees were not aware of when the ban would be lifted. A chairperson of a community forest (Masida) expressed her frustration over the ban and other decisions taken by DoF:

'They [DoF] came to stop us from cutting timber because of some other people outside the CF that were cutting timber without permits. They don't want us to find our own buyer, they want to find buyers for us, why is that'?

In this case, management committees do not have control over all the management of resources in their areas.

Although most by-laws are made at the conservancy or community forest (or community) level, individual districts (*sub-khutas*) can decide or propose collective choice arrangements. In each area, there has been some district based collective choice arrangement. The first example is that of the Mashi community where two districts decided to start community forests that would benefit only members residing in those districts. In Kwandu, one district has indicated their plan to separate from the rest of the Kwandu conservancy. A common issue that has been proposed at a similar level is how benefits should be distributed to chiefs. It was common that two groups based on the chief they are loyal to exist in each study area, and each group wanted their chief to benefit, so they proposed a new benefit distribution plan.

The power of the traditional authority was important to collective choice arrangements in all areas. For instance, conservancy funds or benefits are usually distributed to districts (*sub-khutas*) and benefit distribution arrangements to members are made at the district level. In one of Kwandu's districts, community members agreed to invest their funds in building a *khuta* office, and most members interviewed were happy with this arrangement. To the contrary, many members of one district in Mashi conservancy were not happy with such arrangements because they felt that only the *khuta* was benefitting, as no *khuta* office has been built after many years of this 'so called' investment into community/district projects. Since the traditional authority leadership is well-respected, community members are unable to question the actions of the traditional authority on how the funds are being spent. To illustrate this point, an elderly *induna* from Kwandu stated that:

'the leadership of *indunas* is not good; *indunas* should be accountable to the conservancy about how they spend conservancy money'.

In Sobbe conservancy, although conservancy funds were distributed to districts, it was clear that these funds are to be further distributed to every conservancy member. This illustrates that district level arrangements can work in some cases but not in all cases.

Apart from government ministries making some collective choice arrangements in the three areas, NGOs also play a part in this regard. For example, previously all money generated through the conservancy was put into an account that was held by management committees. The local support NGO noticed that there was mismanagement of conservancy funds by most committees and proposed a different financial governance model whereby conservancy money would be paid into what is called a trust account. Some highly respected community elders are made the trustees of that account, but they do not have rights to withdraw from the account, except for authorizing the transfer of money into the management committee account. All studied conservancies have adopted this model, and two of the conservancy managers stated that the new system has ensured better financial management. A senior NGO official referred to their role in this regard as:
'guiding conservancies to make sure they have good governance' but she was quick to admit '…we cannot pretend that we are not influencing them [conservancies]'.

In this case, the failure of previous collective choice arrangements for managing finances has led to the introduction of new arrangements by an NGO. The general limitation in the current collective choice arrangements in both institutions is that communities must comply with national laws regarding resource use. Therefore, local level rules or arrangements cannot over-rule existing national laws that protect resources. However, both conservancy and community forest committees play a very important role in collective choice arrangements. The strength of these committees together with the traditional authorities will determine the degree of local control over resources that will occur.

6.4.4 Monitoring and sanctioning

Monitoring is believed to be crucial for effective management of common-pool resources (Ostrom 1990, Baland and Platteua 1996, Gibson et al. 2005, Ghate and Nagendra 2005). Monitoring includes aspects such as rule compliance, dealing with infractions and guarding the CPR against outsiders. Effective rule enforcement often depends on guards that are proactive to impose sanctions on rule violators (Ostrom et al. 1994). Nonetheless, effective monitoring is not easily achieved as it requires substantial investment in terms of manpower and funding (Ghate and Nagendra 2005).

In both conservancies and community forests, management committees are generally tasked with devising and implementing management plans, monitoring compliance and sometimes issuing sanctions. A well-organized monitoring mechanism is

being adopted in conservancies. There are two key official monitoring mechanisms in both conservancies and community forests. The first set of monitoring activities in conservancies is done by the management committees through the employment of community game guards (CGG), while CF committee members carry out monitoring activities themselves (usually on an *ad hoc* basis). Conservancy monitoring tends to be done on a regular basis, while community forest monitoring activities tend to be less regular due to lack of personnel and incentives, as expressed by a chairperson of one of the studied community forests (Sachona):

'people are not willing to work for free, that is why some committee members prefer not to be active'.

This implies that local communities managing community forests have to be compensated for their efforts in order to strengthen their management commitments. Such incentives could motivate committee members to actively participate in forest management. The second mechanism occurs through enforcement by MET, DoF and the police. By law, communities can only catch but not arrest offenders and they have to report them to the relevant ministry. If the offence is serious enough (e.g., poaching of large game species or illegal harvesting of high value timber species), the police get involved too.

Traditionally, enforcement of natural resource rules has been in the hands of the traditional authority, though not formally so at present. Regarding sanctioning, the MET and DoF are in charge of sanctioning offenders, although a few management committee members reported that the traditional authority seldom deal with small illegal harvesting issues in community forests. In both conservancies and community forests, the first step is taken when a CGG encounter a rule-breaker and confront them. The second step involves reporting the offence to the conservancy office and management committee. In conservancies, the first instance of rule breaking (illegal hunting) is dealt with relatively harsh punishment, depending on the type of animal hunted. In case of the latter, the MET will investigate the case sometimes involving the police. Cases of illegal hunting of big game species are reported directly to MET, who then decide whether to take the case to court where the rule breaker is fined or fine the rule breaker themselves. In cases where a fine is imposed by MET, DoF or in court, the fine money is not given back to the community but deposited into a national government account. Several committee members complained about this arrangement as they felt that the fine money should be given back to the community. However, some conservancy committee members felt that the money is

given back, indirectly, through a government scheme, the Game Product Trust Fund (GPTF), that contributes to conservancies an amount of up to N$60,000 per year to offset wildlife damages.

In contrast, illegal harvesting of forest resources is usually dealt with at the community level, through the community forest management committee and the traditional authority. Local violators are usually just warned and the illegally harvested product is confiscated. In case of persistent violation, the community forest committee reports the violator to their district's traditional authority where they can be fined. For instance, they could be forced to work at the khuta, for example cleaning the surroundings, or they could even be asked to pay a fine. Penalties in community forests are generally mild; unless the offence is serious (e.g. involving harvesting of high value timber species). According to community forest management committees, more serious cases especially if an outsider is involved are usually reported to DoF.

Local community game guards do not have enough power and capacities to deal with serious illegal hunting cases. However, their presence in conservancies can support external authorities such as the MET and police in their law enforcement efforts. Dealing with local illegal harvesting of forest resources is achievable at the local level because the traditional authorities are still involved in dealing with such cases, despite the presence of community forest committees. Collaboration between committees, TAs and other stakeholders such as DoF, MET and the police need to be strengthened for an effective law enforcement strategy.

6.4.5 Conflict resolution

The studied communities exhibit a similar tiered system of natural resource management (NRM) conflict resolution, with slight variations. The first step involves the conservancy or community forest committees dealing with the conflict. If the case is not solved at this level, the local traditional authority may become involved. Although all communities have solved NRM conflict locally through the traditional authority, they all recently have had conflicts that required external interventions. Communities need to be able to deal with conflict situations locally for effective management. This is because external authorities do not usually provide rapid conflict resolutions.

6.4.6 Minimum recognition of rights to organize

According to Ostrom (1990), long-enduring CPR institutions must have rights that are not challenged by external authorities. In Namibia all communal land belongs to the state, but communities that apply and register their areas as conservancies and community forests have conditional recognition of rights to manage through these institutions and benefit from the natural resources in their areas (see chapter 5). Therefore, there is enabling legislation defining and clarifying local responsibility and authority. These rights are controlled by national laws, meaning that locally designed by-laws are not able to contravene or bypass state laws even if it is in the best interests of the community. Nonetheless, these institutions are legally recognized entities that can exercise the right to organize themselves.

6.4.7 Nested CPR systems

This principle states that in long-enduring CPR systems, activities are organized in multiple layers of nested systems (Ostrom 1990). Cox et al. (2010) clarifies this principle as follows: *'the nesting may occur either between user groups and larger governmental jurisdictions, or between user groups themselves'.* Both conservancies and community forests can be characterized as complex CPR systems. Due to the mobility of wildlife, its management in conservancies is organized in a more nested fashion involving several stakeholders, when compared to the management of the more stationary forest resources such as plants.

Cases of institutional overlap were observed in all three communities and programmes. For instance, a fairly new MET 'landscape management' project had just started working in the study area and one of their activities was to develop management plans for the area. When they got there, they learnt that a local NGO and another project were already developing these plans. This case highlights lack of effective communication among stakeholders, which leads to duplication of activities and waste of resources. However, when asked what the new project was going to do about the duplication of management plans, the Project coordinator responded:

'…its either we co-finance or we do something else. Or we help the communities in implementing the management plans'.

This flexibility in project activities might be possible within this particular project, but it is usually not easy to change activities especially with donor funding based on set outputs. In fact, another official of the same project indicated that there are some outputs of the project that do not come from the local management committees, but are a requirement from the donors.

The creation of conservancy executive committees (EC - comprising of staff) in addition to the management committee (MC) seems to have created further challenges in decision making. For instance, in one conservancy the management committee did not recognize the existence of an executive committee because it was no longer included in the new constitution and they indicated that they were the main decision makers. The idea of forming executive committees seems to have been initiated by external agencies such as NGOs, as related by a member of the Kwandu management committee:

'it was not us who removed it (the EC) but those that make constitutions like IRDNC'.

The introduction and later the removal of the EC by the local NGO seems to suggest that decisions by external actors may not be effective in situations where they do not fit in with local arrangements. For wildlife systems, nested enterprises are crucial for effective management because wildlife move across conservancy boundaries. Forest resources on the other hand can be effectively managed locally to a certain extent. However, partnerships with neighbouring communities are still crucial with regards to management of fire. This is because fires originating from other areas can destroy forest resources in community forests.

6.4.8 Integration

Integrated or at the least coordinated natural resource management is needed across sectors and between different legal and administrative systems. The actions taking place in community forests affect conservancies and vice versa. In Namibia, barriers to integrated natural resource decision making stem from national governmental structures and legal frameworks governing natural resources, maintaining separate agencies to manage wildlife and forests (see chapter 5). Based on theoretical grounds, integrated resource management is far more likely to be successful than single resource management. In line with theoretical arguments, a DoF regional official supported integrated decision making:

'I don't think it is proper to give people an area to manage animals within it but they don't have the right to use and manage the trees and plants (forest resources) around them. Would one take the conservancy to court if the elephant keep on destroying the forest? Should a forester say to the conservancy your elephants are destroying my forest? This is why all resources should be inclusive and belong to one target group in a specific area'.

The process of moving towards a more integrated decision making system is complex, considering the different laws, institutional arrangements on the ground and the local context. Based on the data collected on the topic, this section discusses the possibilities and options, taking into consideration the various factors that are likely to pose challenges in designing a natural resource management system that is more coordinated in areas where conservancies and community forests overlap. In this section I highlight some of these challenges.

Officials working in the ministries responsible for implementing conservancy and community forest policies and legislation tend to make decision independently. This separation is further displayed at local level through the formation of different committees for the two resources. A classic example was encountered in one study community, where a conservancy office is built within 100 meters of the community forest office. Given the limited resources in these areas, sharing an office and using that money towards other community projects would have been more beneficial. The lack of ownership was again pointed out in s focus discussion group when members indicated that it was the donor that built the offices for them and not their decision. Other key informants raised the issue of competitions among directors and donors that support the two programmes.

Some government officials at the regional offices indicated that an integrated decision making system will be difficult to achieve at the community level if there is no cooperation among stakeholders at higher levels. In fact, one DoF official puts the blame on government officials saying:

'the communities involved were only brought these things by the officials. The officials from the director downwards are supposed to know that you do not separate people who are from the same village'.

Aspects of competition and ownership were evident at all levels during discussions. This was expressed through for example officials proudly declaring how many CCs or CFs they have registered in relation to others; or at the community level how much money the CC is making compared to the CF. Among community members, there was also the perception that having two separate committees' would mean more donor funding and creation of jobs

for more people. However, the initial idea of having one committee was to support efficient decision making.

Although some key informants from both local and external institutions thought that a more coordinated decision making system between conservancies and community forests was a good idea, they could not exactly explain how they envisaged this system. In order to have a truly coordinated system, intervention at higher level is required. This is because the separation in managing the two resources was introduced through government structures and laws.

6.4.9 Financial resources

Performing administrative functions require financial resources. Financial independence is critical to any institution that hopes to produce results. All community forests studied had no secure long-term funds for their operations. Both local and external interviewees pointed out the lack of funds in community forests as a major setback to the success of forest management. Major funding to community forests has come from the German government in recent years. This is obviously not a sustainable source of funding because projects and donor funding have short life spans. Conservancies on the other hand have been able to secure operational funds from trophy hunting and other wildlife related activities.

6.5 Discussion

This section compares the three case studies, as well at the conservancy and community forest institutions using the framework (design principles) discussed in section 6.1. A summary of how the three case studies fit into Ostrom's design principles is qualitatively presented in table 6-3. From the results presented above, five drivers can be identified as the main triggers for the formation of conservancies and community forests: 1) deriving benefit from resources, 2) previous wildlife damages without compensation, 3) uncontrolled harvesting of trees and other forest resources by outsiders, 4) harassment of community members (illegal hunters) by government officials, and 5) the need for local control over resources, instead of government control. The results seem to indicate that the formation of conservancies and community forests by communities were not only directly linked with state policies designed to increase wildlife numbers and promote forest growth

or condition, but rather resulted from the belief by communities that they would financially benefit from the formation of such institutions.

Table 6-3: Application of Ostrom's design principles to promoting local NRM decision making/governance in three areas

Design Principle	Case study 1- Kwandu	Case study 2 - Sobbe	Case study 3 - Mashi
1a. Clearly defined User boundaries	CC: Moderate CF: Moderate	CC: Strong CF: Moderate	CC: Strong CF1: Strong CF2: Strong
1b. Clearly defined Resource boundaries	CC: Moderate CF: Strong	CC: Moderate CF: Strong	CC: Moderate CF1: Strong CF2: Strong
2. Congruence with local conditions	CC: Weak/moderate CF: Moderate	CC: Weak/Moderate CF: Moderate	CC: Weak/Moderate CF1: Moderate CF2: Moderate
2b. Appropriation rules congruent with provisioning rules	CC: Moderate CF: Moderate	CC: Strong CF: Moderate	CC: Moderate CF1: Moderate CF2: Moderate
3. Collective-choice arrangements	CC: Weak CF: Weak	CC: Strong CF: Weak	CC: Weak CF1: Moderate? CF2: Moderate?
4. Monitoring	CC: Moderate CF: Weak	CC: Moderate CF: Weak	CC: Moderate CF1: Weak CF2: Weak
5. Graduated sanctions	CC: Strong CF: Strong	CC: Strong CF: Strong	CC: Strong CF1: Strong CF2: Strong
6. Conflict resolution mechanisms	CC: Moderate/ strong CF: Moderate	CC: Moderate/ strong CF: Strong	CC: Moderate/strong CF1: Not assessed CF2: Not assessed
7. Minimal recognition of rights to organize	CC: Moderate CF: moderate	CC: Moderate CF: Moderate	CC: Moderate CF1: Moderate CF2: Moderate
8. Nested enterprises (For CPRs that are part of larger systems)	CC: Strong CF: Strong	CC: Strong CF: Strong	CC: Strong CF1: Strong CF2: Strong

In all three communities, both conservancies and community forests have clear geographic boundaries, and most community members are aware of these boundaries. However, wildlife boundaries are difficult to clearly define because wildlife move across conservancy boundaries. The aspect of clearly defined legal users was met in Sobbe and

Mashi conservancies, but only partially met in Kwandu conservancy. Sobbe and Mashi conservancies keep updated registers of their members, while in Kwandu only a few members were registered though unregistered members also considered themselves conservancy members. In all communities, membership in community forests was moderately or partially defined, because by law anyone with customary land rights to an area is a member, even if they do not currently reside in the area. This makes membership in community forests open-ended because it is never known when someone will come and claim customary land rights. This however, is not open-access because any claim of rights to the land is usually reviewed by the traditional authority before access to community forest resources is permissible.

The appropriation and provision rules in conservancies did not reflect the local social conditions to some extent. Conservancies imposed strict hunting rules, preventing community members from hunting even the smallest animals for subsistence use. Community forests on the other hand did not impose strict limitations on appropriation of forest resources for subsistence use. The rate of appropriation was moderately reflected in both conservancies and community forests through quota allowances determined based on game counts and forest inventories. In terms of labour inputs, both conservancies and community forest met the appropriation and provision design principles. Here, those members that were employed or were in management committees received proportionally higher benefits than ordinary members that did not contribute to the operation of the CPR systems.

The Kwandu and Sobbe conservancy constitutions promote the participation of all members in decision making. Sobbe conservancy goes a step further in promoting participation by the wider community. According to the Sobbe management committee, in the near future the distribution of benefits to members will be linked to attendance of the conservancy annual general meeting (AGM), making it the most robust system of collective choice arrangements. In contrast, Mashi conservancy's new arrangements only allowed a few individuals affected by the operational rules to participate in decision making.

The rights of appropriators to devise their own institutions should not be challenged by external government authorities (Ostrom 1990). In this study, the ability to hunt wildlife and/or harvest forest resources in conservancies and community forests without permission could be used as an indicator of how autonomous communities managing natural resources are from external organizations. As indicated before, when permission to

hunt and harvest forest products is required, it is usually obtained from the MET, DoF and locally from the conservancy and community forest managements committees, respectively.

The results presented in this chapter indicate that decision making in conservancies and community forests overlap to some extent due to overlapping membership and boundaries. However, the results also indicate that decisions about wildlife and forest resources both at the national and local levels are made separately, although these two resources/sectors are closely interlinked. Specifically, findings show that decisions about wildlife and forest resources are managed separately in two of the three case study communities. The most important reason for the separation in decision making (shown in chapter 5) although the resources and the people overlap, is due to external interventions such as government policies and NGO support. These interventions provide a strong support for sectoral management of natural resources. However, informal and formal interactions between management groups and actors in the two sectors do exist, and there has been realization that a more holistic management system could result in more effective management decisions.

Furthermore, findings also indicate that conservancies and community forests lack a coordinated effort for the management of natural resources because they are sectoral. If these programmes are to be successful, a much wider and coordinated approach is needed, one that captures the views of different community members (Broderick 2005) and actors involved in the management of other resources. In order to deal efficiently with the complexity of managing resources in these overlapping areas, it will be necessary to reform the institutions of decision making and of access rights. This could mean that management and use rights for a target community are devolved over all natural resources (not resource specific) and should be embedded in the CPR management system.

At the local level, the first step towards a coordinated decision making system could be to form a higher level coordination committee comprising representatives from both the conservancy and the community forests. A similar committee could be formed at the landscape level to involve stakeholders from neighbouring conservancies, community forests and neighbouring communities that have not formed conservancies and community forests. Activities and decisions could then be controlled through these committees. Furthermore, a memorandum of understanding detailing the roles, tasks and resource contribution of each partner could be agreed upon. The incentive to take part in the coordinated partnership would be based on two strategic considerations. The first one

would be to coordinate and plan with other resource users. The second one would be based on the possibility of knowing other users' current and future plans regarding resource use, and act accordingly to avoid unfavourable consequences. The coordination committees would play an important role in fostering mutual understanding and trust among parties and enhance information exchange that is often hampered by the fragmented administration of natural resources at the national and regional levels. Similar opportunities would also exist at regional and national levels.

6.6 Conclusion

This analysis indicates that the design principles proposed by Ostrom and others are useful for analysing the robustness of CPR institutions such as conservancies and community forests. The thesis suggests that not all the eight design principles proposed by Ostrom (1990) are necessary for effective management of all CPR systems. The geographical boundaries of all studied conservancies and community forests are clearly defined. However, unlike Ostrom's claim that well-defined boundaries are needed, in conservancies, wildlife tend to move across conservancy boundaries, making boundary definitions context or even resource-dependent. In this case, local management of wildlife alone would appear ineffective. Therefore, based on the principle of clearly defined resource boundaries, one would expect local management of forest resources to be effective to a high degree in all studied community forests compared to conservancies. Conservancies on the other hand would require a more nested management system to ensure sustainability. Individuals with the right to use, benefit from wildlife resources and participate in management need to be clearly defined for effective management. This makes the Sobbe and Mashi conservancies the most robust institutions.

Sobbe was the only conservancy characterized by arrangements for proportional sharing of benefits (specifically cash pay-outs) among its members. Community forests in general (especially in Kwandu and Sobbe) had weak collective-choice arrangements due to lack of regular meetings that involved the wider community in decision making. In this case, opening meetings to the wider community could result in sustainable management.

Communities having to seek permission from government ministries to use natural resources in conservancies and community forests could be seen as an indication of a lower degree of autonomy compared to if members only needed permission from the local institutions. This result could suggests that there exist opportunities for further

empowerment of local communities, particularly of conservancy and community forest committees.

The presence of game guards in conservancies provides a strong monitoring mechanism. However, community game guards lack equipment and weapons to carry out their duties effectively. Additionally, by law, community game guards are not allowed to carry rifles because they are not law enforcement officials, making it difficult to deal with armed poachers. Although local enforcement of rules is supplemented by MET and DoF, the effectiveness of these institutions in enforcing rules is hampered by the fact that firstly, MET and DoF officials reside far from the areas, so they tend take too long when called or needed. Secondly, they are unable to perform regular patrols in communities due to the distance between their offices and the communities and lack of manpower. The present arrangements in community forests result in weak rule monitoring due to lack of regular patrols. However, in areas where conservancies and community forests overlap, the presence of game guards could provide opportunities for joint monitoring, thus limiting forest degradation, which in turn could support wildlife.

The current lack of a strong coordination mechanism among stakeholders seems to constrain sustainability in managing natural resources in conservancies and community forests. Formalization of the existing overlapping institutional arrangements in conservancies and community forests may be an effective policy option for effective management of natural resources within these CPR systems.

This chapter has presented a rough evaluation of institutional arrangements in conservancies and community forests. This evaluation has provided the basis on which a detailed institutional analysis using quantitative data will be conducted. Based on the policy analysis (chapter 5) and the institutional set-up (this chapter) presented here, the actual performance or outcomes of the two CPR or CBNRM institutions in the three study areas will be analysed at the household and individual level in the next three chapters (chapters 7, 8 and 9).

Chapter 7: The effect of institutional arrangements and local socio-cultural context on household participation in conservancies and community forests

7.1 Introduction

The first step in understanding how formal policy and local arrangements interact and influence local behaviour towards natural resource management was to review the major national policies and legislative mechanisms, particularly those concerned with conservancies (wildlife resources) and community forests (forest resources) – chapter 5. The second stage was to evaluate community level institutional arrangements against some institutional design principles that are being found to result in sustainable common-pool resource (CPR) institutions (chapter 6). The preceding chapter (chapter 6) showed variation in the functioning of conservancies and community forests in the three case studies, which in turn could lead to differential outcomes for conservancy and community forest communities.

The analysis now moves to the local level where I address one of the stated goals of the Namibian CBNRM programme, which is empowerment, in this study through household participation in decision making. At this level, emphasis is given to the performance of the two CPR institutions. In the IAD framework (chapter 2, figure 2-1), the information about outcomes constitutes this chapter. Additionally, this chapter addresses one of the design principles for long-enduring and self-governing common pool institutions discussed in chapter 6. This design principle states that most individuals affected by operational rules need to participate in modifying the rules or in decision-making regarding the resource in question.

One important aspect of institutional arrangements identified in conservancies and community forests is the conduction of meetings where important management decisions are taken. I analyse how a combination of institutional arrangements and local social contexts have influenced participation of local communities in natural resource decision making. Specifically, individual household's involvement in the two programmes is examined by identifying the factors of household attendance of conservancy and community forest meetings and their influence on decisions taken at these meetings. Conservancy meetings referred to here are those where important decisions are taken such as the Annual General Meeting (AGM). Community forests (CF), on the other hand, do not hold AGMs, therefore CF meetings include ordinary, emergency or planning meetings. Respondents were asked whether they have attended the most recent conservancy AGM

(2012) or any recent community forest meeting. Important issues on which decisions are taken in these meetings include:

1) approval of financial statements,
2) approval of annual budgets and work-plans,
3) amendment of constitutions,
4) election of management committees,
5) election of chairpersons,
6) setting of rules and regulations, and
7) assessing functioning of institutions.

The fact that membership to the two programmes is voluntary and is defined differently and community level institutional arrangements differ leaves a lot of room for variation in the degree of participation by community members. These variations form the basis on which policy intentions and community level arrangements are analysed and compared to household level behaviour and outcomes in order to identify institutional barriers to effective natural resource management in conservancies and community forests. Besides providing an understanding of how households are participating in natural resource decision making, comparing the results of the two programmes will allow us to draw conclusions as to the success of the programmes in including all groups' interests and needs.

7.2 The meaning of participation in conservancies and community forests

Namibia's CBNRM programme is among those regarded as successful in Southern Africa, in terms of devolution of natural resource management rights directly to rural communities. Moreover, the number of communities responding positively to this devolution process is rapidly growing (NACSO 2014). The right of local communities to participate in the management of natural resources have been included in the amended Nature Conservation Ordinance of 1996 and in the Forest Act of 2001(see chapter 5). Although the policies and regulations have brought about an increase in the number and rate of registration of conservancies and community forests, it is not clear whether people's effective participation in natural resource decision making has been achieved. The current participatory approach is not too prescriptive on how participation of community members should be brought about, but both the conservancy and community forest laws require communities to have representative management committees responsible for the

management of resources on behalf of community members. The limitation in this approach is that participation could actually mean the participation of elected committee members and not necessarily all members that have an interest in the resources. While committees are supposed to be representatives of the community, the manner in which they are elected is sometimes not fully democratic as they are usually chosen by the traditional authorities. Therefore, there is a possibility that committees do not truly represent the interests and needs of all the different community groups that exist.

How participation is defined varies. Agarwal (2001) has provided a broad typology of participation levels based on White (1996) and Pretty (1995), where she emphasizes the need to shift from lower to higher levels of participation to achieve effective participation. The lowest level of participation can be defined in terms of nominal participation, which refers to membership in a group. Being a member of a user group is, however, not sufficient for measuring the extent of users' participation, because it does not account for how the member is involved in the decision making process (Adhikari et al. 2014). Some members may be involved actively in the decision making process, while others may be passive. It is therefore important to analyse other levels of participation (table 7-1) in order to understand people's involvement in the decision making process.

According to Agarwal (2001), effective participation is not defined by how a community initiated a CPR institution, but by the extent of people's active involvement in decision-making. The Namibian Association of Community Based Natural Resource Management and Support Organization (NACSO 2013a) has emphasized the need for inclusion in decision making through its definition of community conservation: *'community conservation in Namibia means empowering individuals including women, to actively participate in decision making'* (p. 27). This definition is different from typologies where the formation of CPR institutions such as conservancies and community forests are seen as effective community participation in natural resource management. Using Agarwal's (2001) classification of participation as a base, the following levels of participation are distinguished for the purpose of this study in table 7-1.

Table 7-1: Levels of participation

Level of Participation	Explanation
Nominal	Membership in a group
Passive	Being informed of decisions, or attending meetings without speaking up
Active	Expressing opinions without guarantee of influencing decisions
Interactive	Influencing decisions in a group

Adapted from Agarwal 2001

7.3 Factors influencing household participation in conservancies and community forests

The success of any common property system is largely dependent on local people's involvement (Wade 1987, Lise 2005, Behera and Engel 2006a) and active participation in decision making by local members. This is because individual behaviour can lead to suboptimal outcomes for the group due to the potentially negative impacts of uncoordinated behaviour (Lise 2005). Exclusion of significant sections of the community in natural resource decision making can unfavourably affect equity and institutional efficiency (Agarwal 2001). For example, Lubilo (2011) found that in one Namibian conservancy, involving many conservancy members improved the governance of the conservancy in terms of benefit distribution. Pretty (1995) summarizes other benefits of including the majority of stakeholders in decision making as follows:

'participation is associated with: increased mobilization of stakeholder ownership of policies and projects; greater efficiency, understanding and social cohesion; more cost-effective services; greater transparency and accountability; increased empowering of the poor and disadvantaged; and strengthened capacity of people to learn and act' (p.1251).

Despite the many benefits of participation, involving too many people in decision making could be less controllable, which could slow down planning processes (Pretty 1995). Thus, judgements need to be made regarding the level of participation that is effective and balanced without undermining the needs of some groups within the community.

Devolution of natural resource management authority to communities living in conservancies and community forests does not automatically ensure participation by all people affected. It is argued here that differential participation of individuals is affected by rules (institutional factors), norms and awareness, in addition to benefits and socio-

demographics of those affected. Socio-economic factors such as gender, age and wealth have been shown to be key in determining the level of household participation in CPR institutions (Behera & Engel 2006b, Lise 2000, Maskey et al. 2006, Agrawal and Gupta (2005). It has been hypothesized and found that households that are wealthier and have higher education are likely to participate in decision making (Agrawal and Gupta 2005). It has been found that poor households do not benefit from community forests as much as other wealth categories in the community and are not interested in participation (Agrawal and Gupta, 2005). This is because poorer households have high opportunity costs of participation, as the time spent participating could be used as labour for cash income (Maskey et al. 2006). However, wealthier households might also have reduced incentives to participate in CPR activities, as they may participate in more attractive outside opportunities (Adhikari and Lovett 2006). This scenario leaves the medium wealth segment of the community being the most likely to participate in CPR decision making. Education can serve as an indicator of both social status and economic opportunities (Adhikari et al 2004), and has been found to stimulate participation (e.g. Lise 2000). Agarwal (2001) has shown that gender balance, specifically the lack of women's participation in natural resource decision making has both equity and efficiency implications. The influence of age on participation is mixed. While some authors found that age had no influence on participation in CPR systems, others such as Atmis et al. (2007) and Dolisca et al. (2006) found that age was important in explaining participation. They found that older women were mainly interested in collecting forest resources, while younger women were participating in the forestry decision making process. Dependency on the resource and value of the resource to the user has also been found to promote participation in CPR systems. For example, Lise (2000) found that a higher level of dependency on the forest enhanced participation because people have a high stake in the forest.

7.4 Methods and data analysis

The study was carried out in three sites in the Zambezi Region, where self-reported participation data was collected from 455 households. The field survey covered three case studies where conservancies are overlapping with four community forests; and 154, 151 and 150 households in Kwandu, Sobbe and Mashi case studies were surveyed. For a

detailed account of the institutional component of the two programmes and the characteristics of the three study communities, the reader is referred to chapters 4, 5 and 6.

Both quantitative and qualitative data were collected from the three study sites. The household surveys were the main tool for collecting data for this chapter. I collected demographic characteristics and socio-economic status of households. This included information on age, gender, education level, occupation, institutional membership, awareness of institutional activities and benefits. These variables were decided based on the literature on determinants of participation in natural resource management. This was followed by detailed questions to elicit information about household level of participation in conservancy and community forest decision making process. In addition, qualitative data were also collected in order to understand the institutional settings of the selected case studies (discussed in chapter 6). The qualitative data was meant to complement the quantitative findings with narratives of the observed patterns of participation. A feedback session to selected members of the conservancy and community forest was held in each study site. The purpose of this feedback session was to give a summary of the household survey and discuss the results further to get some understanding of what the data meant in the local context. Although I could not attend the AGMs in the study areas because they had taken place before I started fieldwork, I was able to attend a conservancy AGM outside the three case studies. This provided me an opportunity to observe and understand the dynamics of participation in conservancy meetings.

7.4.1 Data analysis

Guided by the econometric model suggested by (Agarwal 2001), and used by others (Maskey et al. 2006; Behera and Engel 2006a; Agrawal and Gupta 2005), I analysed factors that influence household participation in natural resource governance, and estimated the effect of these factors on participation at different levels using multinomial logistic models Hosmer and Lemeshow (2000). In addition to identifying households that are participating, I was also interested in differentiating households participating at low levels from those participating at high levels. This information could be used to design appropriate interventions to help give all households a voice in conservancy and community forest decision making processes.

The dependent variable in this analysis is ‘participation’. It is measured by values corresponding to four levels of participation coded 0 to 3:

0 no participation,

1 attendance of meetings,

2 expression of opinion and

3 influence of decisions in meeting (based on whether the respondent felt they influenced decisions or not).

Given the nature of the dependent variable (levels of participation), it would have been more appropriate to use the ordinal logistic model because it has more power in that it includes the ordinality of the dependent variable. However, the data violated the assumption of proportional odds when many independent variables were included in the model. In order to meet the assumption of proportional odds, each independent variable should have an identical effect at each cumulative split of the ordinal dependent variable. In this case, the multinomial model provided the best model fit for the data without violating assumptions. The levels of participation were therefore treated as unordered in the analysis. The dependent variable measured household level of participation in conservancy and community forest meetings. For the analysis, households were assigned their highest level of participation in conservancy and community forest meetings to ensure that categories are mutually exclusive. Furthermore, for the purpose of the regression analysis, the level 'expression of opinion' was omitted (see table 7.2) and the focus was on passive (attendance of meetings) and interactive (influence of decisions) participation versus 'no participation'.

7.4.2 Selection of variables for regression analysis

In order to explain the observed variations in participation in conservancies and community forests, a logistic regression is operationalized according to which participation is a function of a number of selected variables. It is not feasible to include all variables in the empirical models due to the small sample size. Two models were fitted, one for the conservancy programme and another for the community forest programme. For comparison reasons, the same predictor variables were fitted for each model. The process to select variables for inclusion in the model was theory-driven, starting with separate univariate analyses on all variables which have been found to influence participation. Although this helped to give a general idea of which variables were important, statistically insignificant variables were not dropped at this point because of their potential to be significant when combined with other variables.

Table 7-2: Variables included in the multinomial logistic regression

Variable category	Variable name	Definition
Dependent	Participation	Levels of participation 0 = No Attendance 1 = Attendance of meeting 2 = Influence decision
Socio-demographic	Gender	Gender of the household head 1 = Male 2 = Female
	Age	Age group of the household head/ respondent 1 = 16-30 2 = 31-50 3 = >50
	Occupation	Occupation of household head 1 = Formal employment 2 = Other (mostly farming) 3 = CC/CF employed
Benefits	Economic value of wildlife/ forest resources	Direct financial benefit from the CC or CF to a household 0 = no financial benefit to HH 1 = some financial benefit
	Hunt or harvest NRs/ Subsistence use	Whether a household hunted or harvested forest resources in the past 12 months for subsistence 1 =Yes 2 = No
	Benefit sharing system	Perception or feeling about the benefit sharing system 0 = Unfair 1 = Fair
	Committee member/ employed	Whether any member of the household is a management committee member or employed by the CC or CF 0 = No 1 = Yes
Awareness	Constitution formulation	Whether any member of the household was involved in formulating the constitution 0 = No 1 = Yes
	Constitution explained	Whether the constitution was ever explained to any member of the household 0 = No 1 = Yes
	Committee Roles	Whether the respondent knows the roles of the management committee 0 =No 1 =Yes

After the initial analysis, the backward elimination approach (Hosmer & Lemeshow, 2000) was then used to select variables for inclusion in the regression models. The models were fitted with all possible variables that were considered relevant based on theory and practice. Variables that were highly statistically insignificant such as education and wealth were removed from the model on the basis that they did not show a further improvement of the models. The variable 'study site' was also excluded from the model because the effect of this variable was already explored using chi square tests, and its inclusion in the model did not yield any new information. The models were re-fitted again after the removal of variables that were not statistically significant. The few selected predictor variables that are most relevant to the cases under investigation were classified into three categories according to various factors that can motivate people to participate (see Table 7-2 for explanations of variables): socio-demographic = gender, age and occupation; Benefits = fairness of benefit distribution system, financial benefit, subsistence benefit and MC membership or employment; and Awareness = involvement in constitution formulation, knowledge of the constitution, knowledge of MC roles.

7.5 Results

7.5.1 Socio-demographic characteristics of households

Community members are not homogeneous with regard to socio-demographic and socio-economic factors. In order to obtain an understanding of the composition of the 455 respondents, table 7-3 shows the distribution of respondents according to their socio-demographic features per case study. A total of 455 households were interviewed of which 177 (39%) of respondents were men and the remaining 278 (61%) were women. However, the proportions of men and women did not differ significantly between the three case studies ($\chi^2(2) = 2.262$, $p > 0.05$). Although the proportion of interviewed women was higher than that of men, 71% of households were male-headed. These figures are different from the 2011 census figures for the Zambezi region which reports only 56% male-headed households.

The marital status of interviewed respondents differed significantly between the three case studies ($\chi^2(4) = 21.584$, $p < 0.05$), with more unmarried people in Sobbe (40%) than in the other two sites. The age of respondents ranged between 16 to 91 years with the majority in Sobbe and Mashi (48% and 43% respectively) being in the middle age category (31-50), while there was near equal representation in all age groups in Kwandu. Levels of

education were similar in the three sites ($\chi^2(6) = 9.464$, $p>0.05$). The majority (80%) of interviewed respondents had at least some formal education, while 20% were illiterate.

Households derived their livelihoods from different occupations, which included farming, formal employment, conservancy or community forest employment and casual work. Farming was the predominant occupation for most people in the study area, with 78% of households reporting farming as their main occupation. The majority of farmers were involved in arable crop farming but some also kept cattle. 91% of all interviewed households were involved in farming, while only 4% of households were formally employed and another 5% employed by either the conservancy or the community forest. The percentages of households owning cattle were 34%, 55% and 47% for Kwandu, Sobbe and Mashi, respectively. Kwandu had a significantly lower proportion of households owning cattle compared to Sobbe and Mashi ($\chi^2(2) = 14.214$, $p<0.01$).

Land is the most important asset as the majority of households derived their livelihoods from farming. Land is owned through inheritance from parents and recently freehold titles are acquired through formal registration of fields by families. 93% of households owned land or fields. Overall, a very small proportion of households (8%) had fields bigger than 5ha. The majority (68%) of households had smaller fields up to 2ha. About 7% of all households had no fields, with the highest proportion of the landless found in Kwandu.

A relatively large proportion (25%) of Sobbe households had medium fields (up to 5ha) compared to Kwandu and Mashi. Wealth levels followed a similar pattern as field ownership, with Kwandu (49%) and Mashi (43%) having more poorer households compared to 29% in Sobbe ($\chi^2(4) = 29.995$, $p<0.05$). A large proportion (51%) of households in Sobbe belonged to the middle wealth class category, but this did not differ significantly from the proportion of households that belonged to the same group in Mashi ($\chi^2(4) = 29.995$, $p<0.000$). Overall, when compared to the 2011 census for the Zambezi region (49% males), our sample (39% males) seems a bit biased towards women as we have interviewed proportionally more women than men. This was mainly due to the fact that some men were not present during the interviews but also the willingness of women to be interviewed. The fact that more women were interviewed should not significantly influence our results because most questions were asked at the household level. Additionally, women were also found to be as confident in answering interview questions as the men were.

Table 7-3: Key demographic and socio-economic characteristics of sample households in each of the three case studies (N = 455)

Variable	Kwandu (n=154)	Sobbe (n=151)	Mashi (n=150)	Total N 455	χ^2	Df	P-value
Population	4300	2000	3900	-	-	-	-
Gender					2.262	2	0.323
Male	67	57	53	177			
Female	87	94	97	278			
Age					9.389	4	0.052
16 to 30	52	45	43	140			
31 to 50	50	73	64	187			
+50	52	33	43	128			
Marital status					21.584	4	0.000
Married	102	85	103	290			
Unmarried	33	61	38	132			
Widowed	19	5	9	33			
Education					9.464	6	0.149
Illiterate	30	21	38	89			
Primary	47	44	38	129			
Lower secondary	50	50	52	152			
Some higher secondary	27	36	22	85			
Field size					18.912	6	0.004
No land	16	9	6	31			
Up to 2ha	109	88	110	307			
Up to 5ha	17	38	26	81			
+5ha	12	16	8	36			
Cattle ownership					14.214	2	0.001
Yes	52	83	71	249			
No	102	68	79	206			
Wealth class					29.995	4	0.000
Poor	75	44	65	184			
Middle	37	77	65	179			
Rich	42	30	20	92			
Major Occupation					20.363	6	0.002
Farmer	107	123	126	356			
Formal	7	4	6	17			
CC/CF employment	5	10	6	21			
Other	35	14	12	61			

7.5.2 Nominal participation: Membership and residence

With a few exceptions, such as membership requirements discussed in chapter 6, everyone in each community automatically (by local standards) is a member of the conservancy. In Kwandu and Sobbe case studies, all community members belonged to both the conservancy and the community forest. In the Mashi case study, two of the four districts have formed community forests and membership was only for community members that

are residing within the boundaries of these districts. This means that only two districts in the Mashi case study belonged to both the conservancy and community forest, while the other two were only conservancy members. Out of the 455 respondents in the three study sites, 381 (84%) were common members of both the CC and CF, while 74 (16%) were not members of any CF. Although the conservancy legislation requires members to be registered, not all conservancies kept updated registers of their members. Table 7-4 shows how CC and CF membership overlaps in the three case studies.

Table 7-4: Membership in the two programmes. Number of registered members in parentheses

	Kwandu*	Sobbe*	Mashi**	Total
CC Members	154 (81)	151 (148)	150 (130)	455 (359)
CF Members	154	151	74	379
Members of Both	154	151	76	381

* All community members within the conservancy boundaries belong to the corresponding community forest, regardless of their proximity to the forest.
**Only some community members within the Mashi conservancy belong to the two community forests in the area based on their proximity to the two forests.

Membership registration in conservancies was lowest in Kwandu (81 registered members), compared to 148 and 130 registered members in Sobbe and Mashi, respectively. Kwandu conservancy was not strict on the rule of registration as benefits were distributed to even un-registered members. Additionally, community members did not see the need to register as they felt they were already members by residence. When respondents were asked why they were not registered, the most frequent reasons mentioned varied: for example, not being aware of where to register, not being told that they have to register and not finding it necessary to register, because they are members by residence.

7.5.3 Representation in management committees and employment

Community forest committees tend to be smaller ranging between three and five members (except for Lubuta CF that had eleven members), while conservancy committees ranged between twelve and fourteen members (table 7-5). As indicated in chapter 6, Kwandu has one committee managing both the conservancy and the community forest. In Sobbe and Mashi different people sit on the different committees that manage conservancies and community forests separately. Being a member of the committee puts a member in a better position to influence decisions as, according to constitutions, management committees have the responsibility to manage the conservancy or community forests. With the recent

creation of what are being termed 'conservancy executive committees' (comprising selected staff members), it is also likely for someone to have influence if they are employed by the conservancy. The executive committee make the day to day decisions about the operation of the conservancy. Table 7-5 shows that men and women have near equal representation in all community forest management committees, and in Kwandu conservancy. Regarding employment in conservancies, Kwandu and Mashi are not proportionally represented in their respective groups, while there is near equal representation in Sobbe.

Table 7-5: Representation of men and women in committees and employment
Note: community forests do not employ staff at the moment due to lack of funds.

	Case study 1		**Case study 2**				**Case study 3**					
	Kwandu		Sobbe CC		Masida CF		Mashi CC		Lubuta CF		Sachona CF	
	M	F	M	F	M	F	M	F	M	F	M	F
Committee Members	6	7	9	5	2	1	9	3	6	5	3	2
Staff	16	8	13	9	-		16	3	-		-	
Total	22	15	22	14	2	1	25	6	6	5	3	2

The letters M and F denote males (M) and females (F), respectively.

7.5.4 Levels of household participation in conservancy and community forest meetings

Chi square tests for association were conducted between the different case studies and the proportions of households participating in meetings at different levels. This was done to compare participation in meetings by the different conservancies and community forests, and also between the two institutions (CCs and CFs). Households were asked whether they have attended the most recent conservancy annual general meeting (AGM) or any community forest meeting in 2012. Those that attended meetings were then asked whether they expressed opinions during these meetings, and whether they felt that they influenced any decisions taken at the meetings. Tables 7-6 and figure 7-1 show levels of household participation in conservancy and community forest meetings.

Table 7-6: Household responses on the levels of participation in decision making in conservancy AGMs and community forest meetings (percentages of household participation in parentheses)

	Case study 1	**Case study 2**		**Case study 3**		
Level of Participation	Kwandu CC/CF N = 154	Sobbe CC N = 151	Masida CF N = 151	Mashi CC N = 150	Lubuta CF N = 37	Sachona CF N = 39
No Attendance	115 (75)	35 (23)	124 (82)	92 (61)	25 (68)	27 (69)
Chi square Tests	**CC: χ^2 (2) = 87.169; p = 0.000 and CF: χ^2 (3) = 5.702; p = 0.127**					
Number of households that attended meetings	39 (25)	116 (77)	27 (18)	58 (39)	12 (32)	12 (31)
Chi square Tests	**CC: χ^2 (2) = 87.169; p = 0.000 and CF: χ^2 (3) = 5.702; p = 0.127**					
Number of households that expressed opinion	13 (33)	39 (34)	10 (37)	16 (28)	3*	2*
Chi square Tests	**CC: χ^2 (2) = 1.643; p = 0.440 and CF: χ^2 (1) = 0.035; p = 0.533**					
Number that indicated influencing decisions	11 (28)	28 (24)	8 (30)	14 (23)	1*	2*
Chi square Tests	**CC: χ^2 (2) = 0.795; p = 0.672 and CF: χ^2 (1) = 0.007; p = 0.668**					

*CFs excluded from analysis due to low frequencies/ counts. 5% significance level.

Attendance of meetings was generally low, between 18% and 39% for all except for Sobbe conservancy. Of those who attended meetings, about a third expressed an opinion and between a quarter and a third felt that they had influenced decisions in meetings. Attendance of the most recent AGM (2012) significantly differed between the three conservancies (χ^2 (2) = 87.169; p = 0.000), with a higher proportion of households attending meetings in Sobbe (77%), followed by Mashi (39%) and lastly Kwandu (25%). Among the households that attended meetings, the proportions of those that expressed an opinion did not statistically differ among the three conservancies (χ^2 (2) = 1.643; p = 0.440). Similarly, among those that expressed an opinion, the percentage of households that felt they influenced decisions in AGMs was also not significantly different between the three conservancies (χ^2 (2) = 0.795; p = 0.672).

There was no statistical difference in attendance of community forest meetings between the different community forests (χ^2 (3) = 5.702; p = 0.127). Given the small

numbers of households attending community forest meetings and the eventual low influence of decisions in these meetings, there were cells with expected frequencies less than 5 for the active participation level (expressing opinion). For this reason, the Fisher's exact test (Agresti 2007) was used to test for differences in proportions between Kwandu and Masida community forests. The percentage of households that expressed opinions in meetings did not statistically differ between Kwandu and Masida community forests (χ^2 (1) = 0.035; p = 0.533). The number of respondents that indicated that they influenced decisions in community forest meetings did not statistically differ between the two community forests (χ^2 (1) = 0.007; p = 0.668).

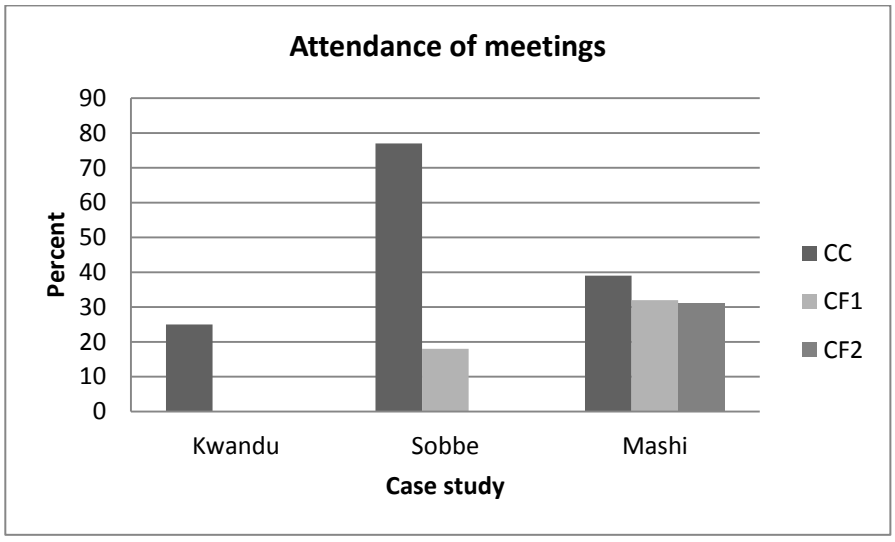

Figure 7-1: Level of attendance of conservancy and community forest meetings

Rates of participation varied not only with the case study but also with the CPR institution where participation was taking place (conservancy vs. community forest) in one case study. Here attendance of meetings was higher in the conservancy than in the community forest. Overall, more households, 47%, attended conservancy meetings, compared to only 24% attendance in CF meetings (table 7-7). About a fifth (75 households) of the sampled households attended both conservancy and community forest meetings. This represents the majority of attendance, 83%, in community forest meetings, while it represents only 42% in conservancy meetings. In Kwandu, all people that attended conservancy meetings also attended the community forest meeting because only one meeting is held for both programmes. Interestingly, the same pattern was observed in Sobbe although in this case study meetings are held separately. In this case, all households that attended the community forest meeting also attended the conservancy meeting but they only made 23% of attendance in the conservancy meeting. Thus, attendance in the conservancy meeting

was higher. In Mashi, there was no significant relationship between attendance of conservancy and community forest meetings. The number of households that attended both meetings represent a similar proportion in both conservancy and community forest.

Table 7-7: Overlap in attendance of meetings. N = 381. Percentages in parentheses.

Meeting attendance	Yes	No
Conservancy	178 (47)	203 (53)
Community Forest	90 (24)	291 (76)
Attended both meetings	75 (20)	

When respondents were asked why they did not attend conservancy and community forest meetings, they gave the following reasons: having no time, no interest, not being informed or invited and not feeling welcome to the meetings. Table 7-8 and 7-9 show percentages of respondents under each reason for not attending meetings. Overall, the most important reasons for not attending conservancy AGMs was lack of time (45%) and respondents not being informed or invited to meetings (37%).

Table 7-8 Driving forces leading to no attendance of meetings in conservancies and community forests

Reason for not attending meetings	**Conservancy** Percent of respondents	**Community forest** Percent of respondents
No time	45	27
No interest	14	9
Not informed/invited	37	63
Don't feel welcome	4	1
Total	100	100

Contrary, in community forests, the majority of respondents reported not being informed about meetings as the main reason for not attending. Although written notices about conservancy and community forest meetings are sometimes sent to *Induna silalos* (district councillors), ordinary members of the community often rely on word of mouth about meetings. The differences in the reasons for not attending meeting of the two programmes seem to suggest that the community forest management is not properly informing people about meetings (63%) when compared to conservancies (37%). In a feedback session in one community forest, the researcher informed the management committee that members were not attending meetings because they are not informed about when these meetings are held. The community forest chairperson responded by saying:

'even if people knew about the meetings they would not attend because we do not have money to buy them food like the conservancy does'.

Table 7-9: Reported driving forces leading to no attendance of meetings per case study. Percentages in parentheses.

	Case study 1	**Case study 2**		**Case study 3**			
Reason for not attending meeting	Kwandu CC/CF	Sobbe CC	Masida CF	Mashi CC	Lubuta* CF	*Sachona CF	**Total**
No time	55 (48)	21(60)	18 (15)	34 (37)	2 (8)	1 (4)	131
No interest	16 (14)	4 (11)	4 (3)	13 (14)	3 (12)	4 (15)	44
Not informed/ invited	43 (37)	3 (7)	99 (80)	44 (48)	20 (80)	22 (82)	231
Don't feel welcome	1 (1)	7 (20)	3 (2)	1 (1)	0	0	12

Chi-Square Test CC: χ^2 (6) = 43.059; p = 0.000 and CF: χ^2 (3) = 48.697; p = 0.000

*Lubuta and Sachona are excluded from the CF analysis because of low counts. Some percentages do not add up to 100 due to rounding up of figures.

Among the reasons for not attending conservancy meetings, not being informed or invited to the meeting was reported as the main reason in Kwandu and Mashi (37% and 48%, respectively) compared to Sobbe (9%). This result is consistent with the results gathered in focus groups in the two case studies, where management and executive committee members acknowledged that they only invite selected people per district to attend meetings. There seemed to be a common understanding, particularly in Mashi, that the conservancy AGM was not open to all members of the conservancy, but only to invited guests such as members from the traditional authority and other local elites. Only ten people from each of the five *sub-khutas* (district of traditional authority) of the conservancy were invited to the AGM for decision making. This was a new arrangement and the reasons for this arrangement were summarized by a conservancy management committee member of Mashi as follows:

'previously everyone was allowed to attend, but we have experienced some problems in the past. When you have 200 or more people at the AGM, you will end up not taking any decisions because some are just coming for eating. Some were coming just to interrupt the situation when reports were clear. The advice from other support organisations was to have appropriate numbers to form a quorum for efficient decision making. So we agreed on that with the management committee, so we are working with that system for now'.

In Sobbe on the other hand, all members of the conservancy were free to attend meetings, hence the high attendance. However, a higher proportion (20%) from this conservancy reported that they did not feel welcome at conservancy meetings, compared to only 1% of people in both Kwandu and Mashi conservancies. This was due to some tribal conflicts among conservancy members that had erupted a few months before this study was conducted. There were two groups in the Sobbe case study, a minority one owing allegiance to Chief Mayuni and the majority to Chief Mamili. Serious violence had erupted between the two groups over who should benefit from the money paid by the Sobbe conservancy to traditional authorities during the previous year's conservancy AGM (2011), where members of the minority group were beaten up and the police had to intervene to stop the violence. Among those that attended conservancy AGMs, respondents were asked how satisfied they were with the meetings they attended. Sobbe had the highest number of people attending meetings (table 7-10) but also the highest proportion (40%) of people being dissatisfied with the meeting.

Table 7-10: Respondents' satisfaction with meetings. Percentages in parentheses.

	Case study 1	**Case study 2**		**Case study 3**		
Satisfaction with meeting	Kwandu CC/CF	Sobbe CC	Masida CF	Mashi CC	Lubuta CF	Sachona CF
Satisfied	25 (81)	63(56)	7 (28)	48 (87)	10 (83)	6 (50)
Neutral	1 (3)	4 (4)	10 (40)	2 (4)	1 (8)	5 (42)
Dissatisfied	5 (16)	45 (40)	8 (32)	5 (9)	1 (8)	1 (8)
N	31	112	25	55	12	12

Some percentages do not add up to 100 due to rounding up of figures

The main reason raised by many members for this dissatisfaction was that the constitution was not followed with regards to the five-year work tenure of conservancy staff. On the other hand, conservancy staff also expressed dissatisfaction with the meeting saying the community does not understand the constitution because they wanted to fire them during the AGM. It was clarified by some committee members that although most of the current staff have been employed for more than five years, their tenure had not expired because the five year employment tenure constitution was only adopted two years ago (2010). Although Kwandu had lowest proportion of members attending the meeting, the majority (81%) of those that attended were satisfied with the meeting. Satisfaction with meetings

was highest in Mashi conservancy (87%) and Lubuta CF (83%), but lower in Sachona CF (50%).

7.5.5 Factors influencing household participation in conservancy and community forest meetings

In order to complement the more subjective household responses on participation discussed in earlier sections, a more objective approach is taken in this section using regression analyses. Although the sections above have highlighted some factors that were mentioned by respondents as influencing their participation in meetings, other indirect but important factors (see section 7.1.2) not mentioned by respondents could be playing a role. Data on these factors were collected independently, i.e. without directly linking them to issues of participation. For instance, respondents were not directly asked whether their gender influenced their decision to attend or not to attend meetings. These indirect factors could help us gain a deeper understanding of other issues affecting household participation and point us towards ways to improve it. Tables 7-11 and 7-13 report the results of the multinomial regression, where the dependent variable is participation at two levels: passive participation which refers to attendance of meetings and interactive participation which refers to influencing decisions. The two levels of participation were compared to 'no participation' as the reference category. The Pearson goodness-of-fit indicated that both models for conservancy and community forest participation were good fits to the observed data $\chi^2(308) = 316.170$, $p=0.362$ and $\chi^2(258) = 188.641$, $p= 1.000$, respectively. The models explained approximately 50% and 42% (Nagelkerke R^2) of the variance in levels of participation in conservancies and community forests, respectively. The models further correctly classified 68% and 81% of the cases for conservancies and community forests participation, respectively.

Table 7-11: Parameter estimates for a multinomial logit model explaining variation in attendance of conservancy AGMs and community forest meetings

			Conservancy	Community Forest	
Participation level [a]		Parameter	Odds Ratios	Odds Ratios	
Attendance of meeting	Socio-demographic	Intercept B= 2.246***		Intercept B= 0.559	
		Gender:			
		Male	0.543** (0.303, 0.974)	0.922 (0.489, 1.736)	
		Female [b]	-	-	
		Age group:			
		16-30	0.997 (0.485, 2.050)	0.706 (0.327, 1.594)	
		31-50	1.460 (0.751, 2.839)	0.519* (0.247, 1.091)	
		>50 [b]	-	-	
		Occupation:			
		Formal	0.116* (0.007, 1.867)	0.282 (0.025, 3.116)	
		Other	0.130* (0.013, 1.278)	0.654 (0.194, 2.204)	
		CC/CF [b]	-	-	
	Benefits	*Benefit System*			
		Unfair	0.526** (0.302, 0.915)	0.408 *** (0.198, 0.843)	CS
		Fair [b]	-	-	
		Economic Value:			
		No	0.226*** (0.126, 0.405)	0.855 (0.080, 9.090)	
		Yes [b]	-	-	
		Hunt or harvest NRs			
		Yes	0.419 (0.018, 9.605)	2.024** (1.048, 3.909)	
		No [b]	-	-	
		Committee/employee			
		Yes	5.391*** (1.550, 18.747)	5.143** (1.248, 21.196)	CS
		No [b]	-	-	
		Constitution Formulation			
		Yes	0.768 (0.383, 1.542)	1.513 (0.568, 4.030)	
		No [b]	-	-	
		Constitution Explained			
		No	0.327 *** (0.177, 0.604)	0.442 ** (0.223, 0.874)	CS
		Yes [b]	-	-	
	Awareness	*Committee Roles*			
		No	0.799 (0.440, 1.450)	0.452 ** (0.231, 0.887)	
		Yes [b]	-	-	

a. No Attendance is the reference outcome category. b. This parameter is set to zero because it is the reference category. CS is Common Significance, meaning variable is significant for both CC and CF; 95% Confidence Intervals in parentheses; *, ** and *** denote statistical significance at 10%, 5% and 1% levels, respectively.

The results of the multinomial regression suggest that six of the nine variables considered in the models had strong effects on the levels of household participation in both conservancy AGMs and community forest meeting, though not exactly the same variables explained participation in the two programmes. Three variables were associated with attendance of both conservancy and community forest meetings: opinion about the benefit sharing system, committee membership or employment in CC/CF and knowledge about the constitution. Contrary, more (seven) variables had effects at the influence level of participation in both conservancies and community forests. Variables that were associated with influencing decisions in both conservancies and community forests were: age, occupation, better economic benefit, fairness of benefit sharing system, management committee membership or CC/CF employment, involvement in constitution formulation and constitution knowledge.

In addition to the common variables that were associated with participation at the two levels in conservancies and community forests, other variables influenced participation in the two programmes in different ways. For example, gender, occupation and economic value only affected attendance of conservancy meetings, while age, knowledge of committee roles, and dependency on forest resources affected attendance of community forest meetings. At the decision influence level only the community forest programme showed uncommon effects compared to the conservancy programme. For example, gender, knowledge of committee roles and dependence on forest resources for subsistence was associated with decision making only in community forests and not in conservancies.

The relationships between gender and the different levels of participation are shown in table 7-12. In conservancies, men and women differed in their participation, with more women attending while more men who attended meetings participated more actively (χ^2 (2) = 17.601; p = 0.000). In community forests, however, attendance did not significantly differ between men and women, but a higher proportion of men reported influencing decisions in meetings (χ^2 (2) = 10.374; p = 0.006).

Table 7-12 Percentage distribution of gender at two levels of participation in conservancy and community forest meetings

Level of participation	Conservancy		Community forest	
	Male	Female	Male	Female
No participation	53	53	73	81
Attendance	28*	40*	17	16
Influence decision	19*	7*	10*	3*
Total	100	100	100	100

* Percentages are significantly different for men and women at the 5% level

Table 7-13: Parameter estimates for a multinomial logit model for predicting influence of decisions in conservancy AGMs and community forest meetings

			Conservancy	Community Forest	
Participation level [a]		Parameter	Odds Ratios	Odds Ratios	
Influence of decisions	Socio-demographic	Intercept B= 1.308		Intercept B= 1.279	
		Gender:			
		Male	1.711 (0.745, 3.926)	6.524*** (1.472, 28.922)	
		Female [b]	-	-	
		Age group:			
		16-30	0.331* (0.092,1.185)	0.044*** (0.004, 0.538)	CS
		31-50	1.434 (0.571, 3.602)	1.347 (0.291, 6.232)	
		>50 [b]	-	-	
		Occupation:			
		Formal	0.443 (0.022, 8.949)	3.591 (0.301, 42.902)	
		Other	0.109* (0.008, 1.437)	0.198* (0.032, 1.231)	CS
		CC/CF [b]	-	-	
	Benefits	***Benefit system***			
		Unfair	0.439* (0.181, 1.063)	0.150*** (0.033, 0.691)	CS
		Fair [b]	-	-	
		Economic Value:			
		No	0.476* (0.191,1.187)	0.018*** (0.001, 0.365)	CS
		Yes [b]	-	-	
		Hunt or harvest NRs			
		Yes	3.909 (0.180, 85.079)	10.256*** (2.057, 51.122)	
		No [b]	-	-	
		Committee/ employee			
		Yes	4.506* (0.915, 22.196)	17.495*** (2.215, 138.172)	CS
		No [b]	-	-	
	Awareness	***Constitution Formulation***			
		Yes	3.279*** (1.339, 8.030)	12.432*** (2.636, 58.628)	CS
		No [b]	-	-	
		Constitution explained			
		No	0.081*** (0.017, 0.379)	0.185* (0.029, 1.170)	CS
		Yes [b]	-	-	
		Committee Roles			
		No	0.663 (0.262, 1.680)	0.339* (0.077, 1.498)	
		Yes [b]	-	-	
		Number of Observations	381	381	
		Pseudo R^2	50%	42%	
		χ2 (Pearson)	χ2(308) =316.170, p=0.362	χ2(258) = 188.641, p=1.000	
		Cases correctly predicted	68%	81%	

a. No Attendance is the reference outcome category
b. This parameter is set to zero because it is the reference category
CS is Common Significance, meaning variable is significant for both CC and CF
95% Confidence Intervals in parentheses
*, ** and *** means statistical significance at 10%, 5% and 1% levels

Overall, data suggests that men actively and interactively participate and are less likely to be involved in low levels of participation such as attendance of meetings, while women participate passively. The results further suggest that gender affected attendance of only conservancy meetings and did not significantly influence attendance of community forest meetings (table 6-8). However, in community forests meetings, men compared to women were six times more likely to report influencing decisions in meetings, while controlling for the influence of other predictors.

Age did not seem to have a strong effect on meeting attendance. However, while controlling for the influence of other predictors and higher categories of participation, being in the middle age group compared to being in the older age group seemed to decrease the odds of attending community forest meetings, but the effect was significant only at the 10% level. The effect of age on participation was consistent at the level of influencing decisions for the two programmes, with the younger age group being less likely to report influencing decisions when compared to the older age groups. The age effect on influencing decisions seemed stronger for the community forest programme, with younger individuals compared to older individuals being 96% less likely to report influencing decisions. Therefore, increasing age seemed to be associated with an increased likelihood of influencing decisions, although the effect on the middle and older age groups was not significantly different.

The data suggest that occupation of the household head affect attendance of conservancy meeting but not community forest meetings, though this result was significant only at the 10% level. Holding all other predictors constant, household heads in formal employment and those that reported farming as their main occupation were eight times more likely not to attend conservancy meetings compared to those that were employed by the conservancy. Similarly, households where farming was the main occupation were less likely to report influencing decisions in both conservancy and community forest meetings when compared to those employed by the conservancy and community forest. Overall, being a member of the CC/CF management committee (MC) or being employed by the CC/CF seemed to increase the odds of households attending meetings and reporting

influencing decisions in meetings by 5 and 17 times for conservancies and community forest, respectively.

The effect of wealth was not included in the multinomial logit model because it was not statistically significant when combined with other predictors, and its exclusion did not affect the final model. However, when separate chi square tests were performed, there were strong associations between wealth class and attendance of conservancy meeting as well as influencing decisions in these meetings. A lower proportion of poorer and richer households attended the conservancy AGM compared to the middle wealth class, χ^2 (2) = 15.456; p = 0.000. Similarly, a lower proportion of poorer households compared to the middle class reported influencing decisions in meetings, χ^2 (2) = 6.704; p = 0.035, but the data suggests that the difference between the rich and the middle class in influencing decisions was not significant. Further, a higher proportion (64%) of middle wealth households reported receiving financial benefits from the conservancy compared to the wealthy and poor households, 41% and 53%, respectively χ^2 (2) = 13.539; p = 0.001. Wealth was, however, seemingly not associated with participation in community forest meetings and the proportion of households reporting receiving financial benefit did not seem to differ between wealth classes, with only 2% of households reporting to have received financial benefits from the community forests.

Households that reported having some knowledge of their constitutions were seemed to be more likely to attend and report influencing decisions in both conservancy and community forest meetings compared to those that reported that the constitution has never been explained to them. Similarly, being involved in constitution formulation seem to have a strong significant effect on influencing decisions in both conservancy and community forest meetings. Additionally, being aware of the roles of the management committee seem to affect participation only in community forest meetings, with those not aware of roles being less likely to attend and influence decisions in meetings compared to those that knew the roles and responsibilities of committee members.

Negative attitudes towards the benefit sharing system seem to have decreased the likelihood of households attending meetings as well as influencing decisions in both conservancy and community forest meetings. Direct financial benefits from wildlife to a household seem to have been strongly and significantly related to attendance of conservancy AGMs, with households that did not report receiving any financial benefit from wildlife being four times more likely not to attend conservancy AGMs; while the direct financial benefit from community forests did not seem to significantly affect

attendance of community forest meetings. Results also suggest that households that reported receiving some financial benefits from both the conservancy and community forests were more likely to report influencing decisions in meetings compared to those reporting not receiving benefits. Hunting for subsistence did not seem to affect participation in conservancy meetings, while on the other hand harvesting forest resources seem to have been related to participation in community forest meetings. Households that reported harvesting forest resources such as firewood, poles, and thatch grass and non-timber forest products seem to have been twice as likely to attend meetings and ten times more likely to report influencing decisions in meetings compared to those not involved in harvesting forest products.

7.6 Discussion

7.6.1 Factors determining household participation

In this chapter, we applied multinomial logistic regression models to household data to investigate under which conditions households are most likely to participate in meetings. The hypothesis was that the likelihood that a household will passively or actively participate is related to local factors such as socio-demographics, benefits and awareness variables, and local institutional arrangements. Specifically, the likelihood of a household to attend meetings of both programmes was related to whether a household received financial benefits from the programme, how they felt about the benefit sharing system, whether they were members of the management committee and whether they had some knowledge of their constitution. At a higher level of participation (desire and ability to influence decisions), similar variables were related to participation, but also, age, occupation and whether a household was involved in the formulation of their constitution was associated with higher levels of participation.

One of the most important findings of the study was that receiving financial benefits was statistically significant for attendance and high levels of participation at both conservancies and community forests. This result corresponds with the qualitative findings where several respondents reported their loss of hope and trust in conservancies and that attending meeting does not help them in any way. This could imply that providing financial benefits to households gives them the incentive to participate in meetings. However, this could be a spiral interactive process in which people go to meetings in anticipation of getting benefits. These could be immediate benefits at the meeting or just

getting information about opportunities for future benefits, for example, job opportunities. However, receiving financial benefits alone help people to participate in decision making because there are barriers (both socio-cultural and economic) that need to be overcome. For example, opinions of educated individuals or elders are more valued than other people's in the studied communities. Therefore, these other factors need to be taken into account when trying to find ways that promote effective participation by all affected actors.

The high attendance of Sobbe conservancy meetings compared to community forest meetings could be attributed to the direct financial benefits associated with this conservancy. Since conservancies generate relatively high income and employ people, members could be attending meetings with the hope to hear about job opportunities or being elected as management committee members. This reason seems to be further confirmed at the conservancy level, where the conservancy that distributed benefits to more members experienced high levels of participation in meetings. Community forests do not provide any direct monetary benefits to members and nor do they employ staff. Thus, this lack of financial benefits could discourage households from participating in community forests, which is what Lendelvo et al. (2012) also found: women that were satisfied with financial benefits from four Namibian conservancies seemed to have participated more in conservancy activities compared to those that were not satisfied. However, this does not mean that community forests do not have the potential to be an economic option for households. For instance, although sometimes not directly harvested from community forests, many households harvest and sell forest products such as poles, thatch grass, reeds and medicinal plants such as Devil's Claw (*Harpagophytum procumbens)*. Since community forests aim to promote sustainable resource use, the presence of a community forest within an area could ensure sustained benefits of these forest products. At the household level these benefits could be much higher compared to cash dividends that households receive from conservancies.

Another important aspect to take into consideration when analysing participation in conservancies and community forests is the value (both economic and subsistence) of the forest and wildlife resources. The assumption is that if there is high economic and subsistence value from these resources, it will provide incentives for households to attend meetings and participate in decision making regarding the resources (Lise 2000, Dolisca et al. 2006). Lise (2000) concluded that high dependence on the forest can result in voluntary participation. Dependence on forest and wildlife resources for subsistence use is also thought to have similar effects on households because decisions taken in meetings are

likely to affect access and use of natural resources. Indeed these assumptions hold for our study, as the results suggest that the economic value and subsistence dependency on the resources were associated with participation, with those more dependent on the resource being more likely to participate.

The age of the conservancy may also be playing a role in the levels of participation, with the newest conservancy having high levels of participation in meetings. The poor participation in Kwandu (the oldest conservancy) for instance could be linked to group disbanding due to the fact that benefit expectations have not been met after more than a decade of formation of the conservancy. Several respondents expressed their loss of hope and trust in conservancies and that attending meetings does not help them. Sobbe on the other hand, a relatively younger conservancy which has a high proportion of members receiving benefits, seem to be experiencing higher levels of participation, presumably because people there are still hopeful in getting more benefits from the programme.

Men, due to their power resulting from socio-cultural norms seem to dominate the decision-making processes in both conservancies and community forests. It appears that for men, unless there is a strong feeling that they will influence decisions, they are not likely to spend time attending meetings. This conclusion is interesting because it suggests that women still attend meetings despite their limited power to influence decisions in meetings. Lendelvo et al (2012) found similar results about women participation in conservancy activities. They found factors such as lack of interest, inadequate opportunities to participate, lack of confidence and not being elected to key positions as some of the factors that seemed to hinder women from participating. In line with these findings, the formation of a group of women within a conservancy or community forest and assigning this sub-group with decision making powers could enhance and increase their participation in natural resource governance. Further, it seems that in Kwandu and Mashi conservancies, men dominate employment positions. This could be due to the nature of wildlife-related positions such as game guards that are traditionally considered male jobs. However, some women expressed their interest and capabilities in doing such work, and Sobbe is an example that many women can indeed do such jobs.

The results of this study suggest that older people are influencing decisions in both conservancy and community forest meetings. As with gender roles above, this result is consistent with values commonly expressed in Namibian society, which is characterized by a high degree of respect for the elders. It is therefore no surprise that household heads that are older seemed more likely to influence decisions than younger household heads. The

maintenance of cultural values therefore seems to underlie the structure that guides control over natural resources, as also found by other authors (e.g. Kariuki and Place 2005).

The results also suggest that being in the management committee or being employed by the conservancy or community forest may be associated with high levels of participation, but there was no statistically significant difference between those in formal employment and those in conservancy/community forest employment or committee. This could mean that being in formal employment increases the negotiating power of a household in influencing decisions in meetings.

There seem to be an unequal distribution of decision making powers within the case study communities. The percentage of households reporting actually influencing decisions was very low in both programmes and case studies. It could be hypothesized that it is easier to conduct meetings in small communities because of the ease of coordinating small numbers. Indeed, the challenges of coordinating large groups seem to have been highlighted in the Mashi case study, a relatively large community. On the other hand, a relatively small number of people, as in Sobbe, is a characteristic believed to facilitate collective action (collective decision making) for sustainable use of natural resources (Ostrom 1990). This relative small population of Sobbe (2000), compared to Kwandu (4300) and Mashi (3900), could also be an incentive for participation as it may be advantageous in terms of benefit sharing, especially regarding cash dividends to households. Although not statistically established due to the small number of cases, the trend in our three case studies seems to suggest that participation decreases with high population and so do benefits to households. Nonetheless, the lower number of beneficiaries alone cannot explain the high frequency of participation in Sobbe conservancy, because participation in community forest meetings was much lower than in the other two case studies where conservancy participation was lower. In this case, differences in the institutional set up of conservancies and community forests as discussed in chapter 6 can better explain this differential participation.

Generally, information regarding meetings and other activities was quite poor in both programmes, but more so in community forests. Conservancies hold annual meetings that are well publicised while community forest meetings are held on an *ad hoc* basis and people are not usually aware of these meetings. Further, conservancy cash pay-outs to households are announced at the AGM, while there is no direct financial benefit associated with community forest participation in meetings. Linking attendance of meetings to benefits might be one way to encourage households to at least passively participate through

attendance of meetings. However, information about meetings does not reach households in a formalized way. This calls for a more systematic way of sharing information about conservancy and community forest activities.

7.6.2 Cost of participation

The main cost of attending meetings that has been documented (Behera and Engel 2006a; Behera and Engel 2006b) is the opportunity cost of time spent in meetings. The results of this study seem to suggest that reducing the frequency of meetings through holding one joint meeting for both the conservancy and community forest did not necessarily increase participation. This is indicated by the very low participation in the Kwandu case study, where one meeting is held for both the conservancy and the community forest. It is usually argued that the poorer members of the community do not usually get equal opportunity in natural resource decision making, and therefore their interests and needs are not addressed in many CPR systems (Kumar 2002; Lise 2000; Adhikari et al. 2014). Giving the poor a voice in natural resource decision making could have a positive impact on their livelihoods as they are more directly dependent on these resources (Pant et al. 2005). The results of this study are interesting because they are somewhat inconsistent with theoretical expectations and many results from other parts of the world. Contrary to the extremes effect that has been observed elsewhere (e.g. Adhikari and Lovett 2006, Kumar 2002), this study found a middle-class effect. That is, the middle class segment of the communities appears more likely to participate in decision-making than the rich and poorer households. Moreover, for example, education did not affect participation in either programme. The findings on the richer category of households was not consistent with many studies on devolution of natural resources that have shown that local elites dominate and influence decisions in meetings (Kumar 2002; Shackleton et al. 2002; Adhikari and Lovett 2006). As mentioned before, the main cost of attending meetings is the opportunity cost of time spent in meetings. This depends on agricultural and off-farm employment. For people that have farming or formal employment as their main occupation, the opportunity costs of attending meetings may be higher compared to those that are employed by or are members of the conservancy or community forest management committees. This could mean that the wealthy are not attending meetings because they do not need the relatively low benefits associated with participation, while the poor cannot afford to leave their livelihood activities and attend meetings. Therefore, participation in conservancy meetings works best

for the middle class. In conservancies, the effect is even stronger given that conservancy AGMs are held during the peak of the farming season, at the end of the year, when people are busiest working in the fields. The non-effect of wealth in community forests could be due to no direct financial benefit associated with attending meetings. For instance, only 2% of all households reported receiving direct financial benefits from the community forest, thus none of the wealth categories see any benefit in attending such meetings.

7.6.3 Integrated decision making

As shown in chapter 6, in conservancies and community forests, wildlife and forest resources are managed separately in two of the three case study communities. Effective decision making in CPR institutions depends on the knowledge of the whole CPR system and not only one specific resource. In this chapter, our findings show that only a fifth of households attended both conservancy and community forests meetings. This small group is knowledgeable in both conservancy and community forest issues. This group could be having more impact in community forest decisions because they are the majority in those meeting. However, people attending both meetings (i.e. those knowledgeable in both conservancy and community forest issues) are in a minority in conservancy meetings because many more other people are attending only conservancy meeting. This knowledgeable minority group could therefore have minimal impact in conservancy meetings due to their low numbers. In order to achieve effective natural resource decision making, members should be encouraged to attend both meetings so that they can be aware of issues that affect the CPR system as a whole.

Furthermore, government and NGO support are much more firmly in place in conservancies than in community forests, resulting in better-organized and more regular meetings. The lack of financial resources in community forests could be a hindrance for both the community forest leadership (not informing people about meetings with the assumption that they will not attend) and community members (expecting to be provided with food during meetings). However, the presence of a conservancy in the same area should be an opportunity for communities, as community forest issues could also be discussed during conservancy meetings. This is possible because quite often the same community members belong to both programmes in overlapping areas. Resources could potentially then be utilized sustainably if conservancies and community forests can be linked to draw up plans for appropriate use. An important recommendation, from this study

then, is that in order to strengthen people's commitment to managing resources in community forests and increase their participation in meetings and decisions being taken, community forests might need to create opportunities to increase household income or provide some financial benefits associated with participation.

7.7 Conclusion

In conclusion, although both the Conservancy Act and the Forest Act have been successful in formally recognizing community rights through granting them management and use rights, a detailed examination of factors at the household and community level suggests that existing institutional arrangements have not sufficiently empowered the majority of community members through decision making in both programmes, but more so in the community forest programme. This is because the realities on the ground are far more complex than they are usually represented in laws. For instance, policies were designed to be applied across the entire country, and so they fail to take into consideration the varied socio-economic, cultural and institutional settings of local communities. Although national level studies are important in up-scaling results (Clement et al. 2006), they are not sufficient to provide real explanations of observed trends of participation in various communities. It is therefore recommended that conservation programmes seek to better understand the communities they work with to ensure effective participation of all affected members, rather than generalizing levels of participation. Through a firm commitment, including financial from government authorities, support organizations and local CPR leaders to embrace and promote meaningful local involvement in decision making, the CBNRM programme stands a greater chance to empower local communities through participation, which in turn could promote natural resource sustainability. In the next chapter, I address the second goal of the Namibian CBNRM programme, which is 'improvement of rural livelihoods'.

Chapter 8: The role of institutions in sharing of benefits from wildlife and forest resources in conservancies and community forests

8.1 Introduction

This chapter highlights the performance of the two CPR institutions. In the IAD framework (chapter 2, figure 2-1), the information about outcomes constitutes this chapter. Additionally, the chapter is based on one of the design principles for long-enduring and self-governing common pool resource institutions (chapter 6). The design principle used here states that the distribution of benefits from appropriation rules needs to be roughly proportionate to the costs imposed by provision rules.

Sharing of benefits from natural resources has been an important strategy used by many countries to promote local support for conservation interventions (Hulme and Murphree 2001, Borrini-Feyerabend et al. 2002). Theoretically, this is based on the premise that if local people benefit economically from natural resources, they are more likely to conserve these resources (Hulme and Murphree 2001) because they know that over-use would affect future benefits. The importance of forest resources and wildlife to rural livelihoods has been recognized in developing countries by many scholars (e.g. Sunderland et al. 2014, Samuelsson and Stage 2007, Shackleton et al. 2007, Shackleton and Shackleton, 2004,). However, compared to the developed world, developing countries face more challenges in managing and distributing resources and revenues because of poverty and weaker institutional capacity (Fischer 2007). Within the Namibian CBNRM programme, economic benefits have been a strong motive for most communities to form conservancies and community forests, as revealed in chapter 6. Benefits come in different forms; they can either be collective or individual.

The literature suggests that cash distribution or direct payment to households in CPR systems ensure direct benefits to members. Other reasons in favour of cash distributions are that they force institutions to raise revenues and make them more accountable to members and also limit mismanagement of funds (Fischer 2007). In Namibia, the contribution of conservancies to wildlife conservation and income generation has been well documented at the national level. According the state of community conservation report (NACSO 2013b), *'total cash income and in-kind benefits generated in conservancies grew from less than N$ 1 million in 1998 to more than N$68 million in 2013'*. These aggregated figures show some tremendous increase in conservancy revenues over the years. However local level data in terms of CBNRM benefit implications related

to community and household participation in natural resource management remain poorly understood, despite their importance for the sustainability of the concept (Suich 2010a). The few studies conducted on benefits implications of CBNRM at the local level reveal that the success in improving rural livelihoods through CBNRM or conservancies in particular has been limited (e.g. Suich 2010b & a, Silva and Mosimane 2012, Mulonga and Murphy 2003). The limited local level studies on benefits calls for more case studies examining the economic impacts of CBNRM at the household level.

As mentioned in chapter 5, national legislation for community management including revenue sharing from tourism, hunting and other wildlife related activities was passed in 1996, and in 2001 for forest related activities. The laws require communities to have procedures for equitable benefit sharing prior to gazettment. While the formation of institutions such as conservancies and community forests ensure secure resource use rights for communities, it also brings resource use restrictions and responsibilities, which could pressure and disadvantage communities that depend on these resources. One of the most important features of the Namibian CBNRM programme is its benefit sharing mechanism. In order to balance the restricted use and management responsibilities, the Namibian laws make provision for communities that form conservancies and community forests to retain 100% of the income generated from wildlife and forests-related activities. However, communities are required to feed part of revenues generated from their activities back into conservation. In the study areas, the amount invested in running a conservancy was more than 50% of the generated revenue. This amount went towards operational costs such as salaries for the few employed community members, leaving little for community development projects or to be shared among households. An additional advantage of being in a conservancy is participation in the recently introduced government scheme that offsets wildlife losses incurred by communities living alongside high numbers of wildlife.

The Zambezi region of Namibia, where this study was undertaken, is rich in biodiversity as it receives the highest rainfall in the country. Traditionally the rural economy is predominantly subsistence in nature, and most people collect various forest resources and are dependent on the continued supply or growth of forest products for their livelihoods. Yet little research has been done to explore the importance of these resources and their role in sustaining the livelihoods of rural communities in terms of uses and income generation. According to the 2011 Population and Housing census of the Zambezi region, farming is the most important source of income among rural households, followed by non-farming business activities, old age pension and wages, respectively (NSA 2013).

In the previous chapter, I addressed one of the Namibian CBNRM programme goals; 'empowerment of local communities', and I showed that current laws and institutional arrangements have not been very successful in empowering the majority of community members in decision making. Participation levels have been shown to be associated with the type of programme, with participation in conservancy meetings comparatively higher than in community forests meetings in one study site, possibly driven by lack of visible direct financial benefits from community forests. According to several scholars, people's participation alone may not yield the desired outcomes in community conservation programmes unless issues of equitable benefit sharing are addressed (e.g. Sommerville et al. 2010, Gautum 2009, Adhikari et al. 2004, Shah 2001).

This chapter aims to address the second primary goal of the Namibian CBNRM programme, 'improvement of rural livelihoods'. Since institutions shape the processes of benefit sharing and distribution in conservancies and community forests, understanding institutional arrangements is central in this study. Using an institutional analysis approach, I investigate and contrast the contribution of conservancy and community forest benefits with other important livelihood activities in response to changes in accessibility and availability brought about by the introduction of the two institutions. This approach is used because '*…the ways in which benefits accumulate to beneficiaries are governed by a complex system of societal norms, rules and organizational processes that manifest in the form of institutions,* (Nkhata et al. 2012). The analysis is not meant to account for the full range of livelihood activities and income sources but to compare the relative contribution of wildlife-related (conservancies) and forest-related resource (community forest) cash income and subsistence to agriculture (crops and livestock), which is one of the most important source of income in the studied communities. This chapter specifically addresses the following research questions: 1) what are the institutional mechanisms that govern the distribution of revenues and other benefits generated in conservancies and community forests, 2) how substantial are these benefits in relation to households' subsistence and cash income in the household economy compared to agriculture, and 3) how do socio-economic factors and other factors influence the distribution of these benefits. Thus, this chapter first focuses on livelihood activities in the study communities and analyses data relating to types of livelihood activities and forest resources collected by households. Next, the chapter presents results on the proportional contribution of forest and wildlife related income to households, and lastly, it examines how socio-economic status of households affects the distribution of benefits.

8.2 Methods

In order to understand household livelihood activities and the role of natural resources, a systematic household survey was conducted. Prior to the household survey, focus group discussions were held to gather information on the important community and household livelihood strategies. These preliminary investigations guided us in the formulation of the livelihood survey questions. A questionnaire on household livelihood status and their relationship with conservancy and community forests was used to survey 455 households in three areas. The majority of people in these communities rely on subsistence agriculture and forest resources to sustain their livelihoods. The focus of this part of the questionnaire was to assess direct and indirect benefits that households are receiving from conservancies and community forest, and also household perception regarding access and availability of resources since the introduction of the two institutions.

Household wealth

Questions were asked to ascertain the economic status of households. Based on asset ownership, households were assigned into three wealth classes – rich, middle and poor. Important assets in assigning households into wealth classes were car ownership, size of fields, number of cattle, type of employment, type of house walls and roof. Household wealth was determined in the first instance using focus group discussions. Wealth is a key determinant of a household's livelihood strategy, and can influence natural resource use patterns (Cullen-Unsworth et al. 2011). However, household wealth was difficult to determine during the survey because there was no standard to base wealth class on and respondents were usually reluctant to self-report (also reported by Kapila and Lyon 1994). Instead, households were asked whether they owned certain assets or not.

The ownership of assets is an important indicator of social welfare, therefore households that own certain assets could be considered to be relatively wealthier than those that do not own those assets (Malleson et al. 2008). In focus group discussions, participants were asked to identify and describe characteristics of wealth in their areas. These characteristics were noted down and a classification was made for categories 'rich', 'middle' and 'poor' wealth classes (table 8-1). For example if field ownership was listed as an indicator of wealth, participants would then be asked the range of hectares of land that a household will possess if they belonged to a particular wealth class. Housing condition was also identified as an important indicator of household wealth. Participants

discussed the different indicators until they came to an agreement. The top six indicators were then chosen to be the most important indicators for wealth. Information about the types of housing (e.g. type of roof and walls) and household assets that key informants used as proxy indicators for wealth was then used to draw up specific questions on asset ownership and housing condition for the household survey. This information was then used to differentiate households by wealth status for more in-depth analyses.

There was agreement across all three sites that relatively rich households own cars, have bigger fields, own more cattle, are formally employed, have brick and zinc roofed houses. The poorer households on the other hand would have no possession of the mentioned assets. For example, the poorer households would have no fields at all or have very small fields because they have no resources like cattle and money to use in the fields.

Table 8-1: Summary characteristics of key wealth class indicators by participatory methods

Asset ownership	Rich	Middle	Poor
Cattle	Many, >50	Few, <50 or none	None
Field size	>5ha	Up to 5ha	<1ha or no field
Car	Own	None	None
House Walls	Brick	Mud	Mud or reeds/grass
House roof	Zinc	Zinc/thatch	Thatch
Occupation	Government employee	Local employment in CC/CF	Sell natural resources like thatch grass, poles, wild fruits

Through a method adapted from Ghirotti (1992), which scores housing conditions and assets as a proxy for wealth status, answers to different questions in the household questionnaire were weighted by the relative importance of the answers (Malleson et al. 2008). Scores were allocated to different household assets as shown in table 8-2, on the assumption that each extra point means a relatively asset rich household (*ibid*). For example, in ranking field ownership, a field more than 10ha scores three points, a field up to 5ha scores two points, a field up to 2ha scores one point, while no field scores zero. Car ownership was regarded as a very important indicator of wealth in the studied communities, therefore car ownership was given a relatively high score of 4, while a zero score was given to households that did not own a car. Asset scores were combined for each household to give a total household assets score. The higher the total scores of asset

ownership and housing condition, the wealthier the household. This classification was used in all three study sites.

Verifying participatory wealth indicators

The three studied communities tended to be fairly similar in socio-economic characteristics of households, so data from all areas was pooled for wealth class categorisation. Based on ownership of assets and housing condition, a two-step cluster analysis was performed to compare the categories identified in focus group discussions with the independent quantitative wealth proxies (see section 4.4.2 for details of cluster analysis). The cluster analysis created clusters that are well separated and corresponded to the classes suggested in the focus groups. The cluster analysis however indicated some variation of benchmarks in wealth assessments compared to the participatory indicators. For example, the relatively rich class was thought to own more than fifty cattle in focus groups, while the cluster analysis showed that the average number of cattle in the rich class category is about fifteen, which was highest for the clusters created. Overall, there was agreement between the categories created by the cluster analysis and those identified by the community in focus groups.

Table 8-2: Scores allocated to different household assets for grouping households into wealth classes

Item	**Score**	**Item**	**Score**
Roof:		Walls:	
Thatch	0	*Reeds/thatch*	0
Zinc	1	*Mud*	1
		Bricks	2
Field ownership:			
No field	0	Car ownership	
Up to 2ha	1	*None*	0
Up to 5ha	2	*Own*	4
More than 5ha	3		
Plough	1	Bicycle	1
TV	1	Mobile phone	1
Radio	1		

Livelihood activities

Households were asked to rate the importance of each livelihood activity in terms of their contribution to subsistence and cash income. The rating scale ranged from 0 to 3, with 0 meaning not important and 3 meaning very important. Thus, a higher rating means that the activity is very important to the household. In order to get the average importance of an activity, the ratings of all households for that activity were added and divided by the number of households. This was calculated for each activity for both subsistence and cash income sources. This was done to determine the relative importance of different activities for subsistence and cash income.

Income sources

Income sources of households were disaggregated into crops, livestock, forest-based and wildlife-based. Formal employment was not included in the analysis although 19% get income from it. Firstly, this is because only 4% of all sampled households reported formal employment as their main occupation; and secondly, in most cases members that were in formal employment worked away from home and were usually not present during the survey. Therefore, income of these employed members could not be reliably obtained from other household members that were present during the survey. Although nearly half of households made cash income from occasional local work, gathering income data from these jobs proved impossible due to the haphazard occurrence and high number of different such jobs that households are involved in. For each livelihood activity, only gross cash income was calculated because the total costs of all inputs could not be accurately obtained. All cash income results presented is based on gross cash income.

The gross cash income for each crop was calculated by multiplying the total product by its unit price for each crop grown and sold by a household. Actual prices were used depending on whether the crop was sold locally or at the formal market. Gross livestock income is the sum of the total income from all livestock sales, whether live or slaughtered. So, the total gross income of livestock is the sum of the sale of the different types of livestock and livestock products (cattle, goats, chicken, milk, eggs).

In this thesis, forest-based cash income refers to cash income from the sale of forest resources and products such as firewood, timber/poles, thatch grass and other NTFPs (e.g. medicinal herbs). The gross cash income is calculated by multiplying the total quantity of

the product by its unit price. Wildlife-based income refers to income directly received by households from conservancies and is the sum received by each household member. Community forests in all study areas did not give out cash to households. The contribution of each of the selected livelihoods activities was analysed using descriptive statistics (total income, mean income and relative contribution).

8.3 Results

8.3.1 Livelihood activities

Communities in the three case studies rely on various activities for subsistence and cash income, for which crop farming is the most important for most households. The results indicate that households produce crops and collect various forest resources for subsistence. The collection of forest resources range from firewood for domestic energy requirements, poles and thatch grass for house construction, reeds for fence construction, grazing for livestock, other non-timber forest products (NTFPs) for different uses such as food and medicines. Although most crops, livestock and forest resources are used for subsistence, more than half of the surveyed households reported selling crops and forest resources for cash income, while nearly one fifth of respondents were involved in livestock sales. Figure 8-1 shows households involved in various activities for subsistence and cash income.

Traditionally, study communities collect various forest products and are dependent on the continued growth of forest resources for their livelihoods as mentioned earlier. During fieldwork households were asked to list the six most important forest resources collected by their household for subsistence and income generation. The data found that firewood, timber (poles), thatch grass, wild fruits and vegetables, medicine/ herbs and reeds were considered to be the most important resources collected by households. For simplicity, wild fruits, vegetables and medicinal herbs are referred to as NTFPs in this thesis. Firewood and building poles were collected by nearly all sampled households (99%). While 17% of households did not harvest NTFPs, 83% of households rated NTFP as important in their households.

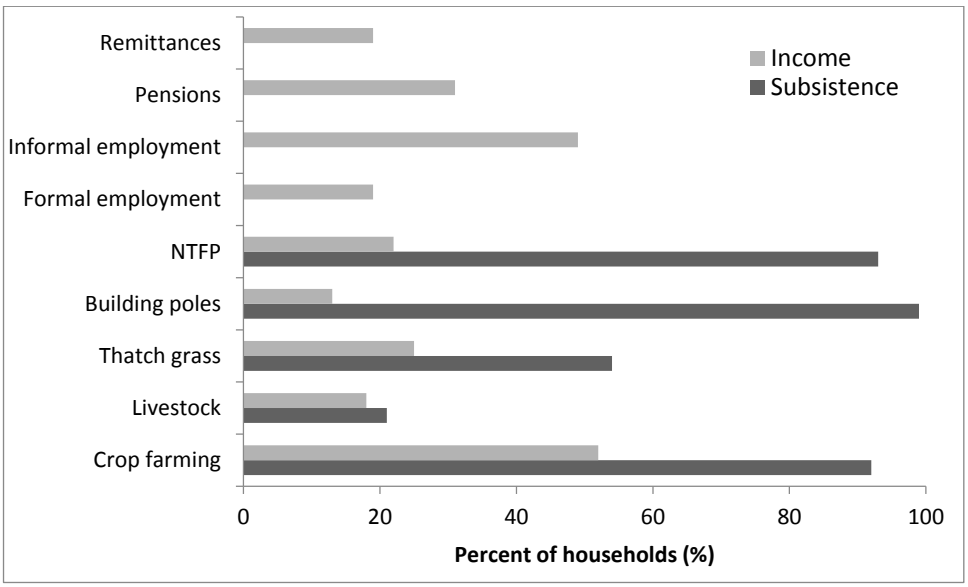

Figure 8-1: Percentage of households declaring participating in selected livelihood activities for subsistence and cash income. (N=455).

Households rated the three most important subsistence activities as crop farming, livestock and forest resources. These activities were also rated among the seven most important sources for income, alongside pensions, formal and informal employment. Despite a small proportion of households being dependent on formal employment for income, this income source had a higher rating because of the way the data were compiled (see section 8.2). Here, importance meant the relative dependency of a household on a particular activity for subsistence and cash income.

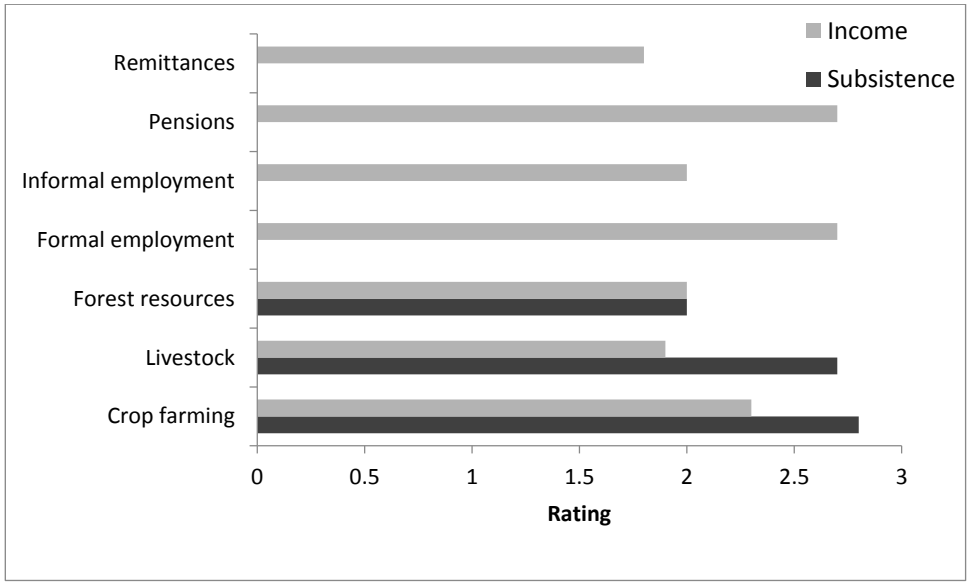

Figure 8-2: Average declared importance rating of livelihood activities for subsistence and income by households. Note: Higher average rating means high importance. (N= 455)

8.3.2 Source of benefits in conservancies and community forests

Tourism and trophy hunting have been promoted as the most lucrative options for Namibian conservancies (NACSO 2013a), and are the dominant revenue generation activities in conservancies. Trophy hunting involves hunting safaris that bring international clients to conservancies. Tourism joint venture arrangements involve communities (conservancies) entering into an agreement with a tourism operator where they hold a stake in the company. In addition, the traditional authorities, as the land managers, receive royalty payments from the tourism company. These agreements also usually contain preferential employment opportunities for the local people. Trophy hunting is the main sources of cash income in the studied conservancies, accounting for between 70 and 99% of the total conservancy income. Other sources of income reported include: sale of live animals, joint ventures with tourism operators and camp sites. Two of the three conservancies (Kwandu and Sobbe) had nearly all their income come from trophy hunting. Being heavily reliant on tourism and trophy hunting is risky because these are 'fickle' industries that depend strongly on the economic conditions in major tourism source markets and the impulse of international tourists. Data from the United Nations World Tourism Organization (UNWTO, 2015) shows that international tourist arrivals declined drastically in 2009 following the onset of the global financial and economic recession. This dependency on a single or few sources of income contrasts strongly with the underlying principles of sustainable development, that of encouraging diversification of the local economy.

Harvesting of high value timber species remain the dominant revenue generation activity in community forests. However in 2012, timber harvesting was banned due to illegal harvesting that had led to low timber abundance. The ban has in recent years resulted in devil's claw (*Harpagophytum procumbens*) harvesting being the most important income generation activity in community forests. It was not clear at the time of the fieldwork when the ban would be lifted. This has left many community forests with very few options for generating collective revenues. Other less lucrative income generating activities in community forests include nursery sales, issuing of harvesting permits to community members and devil's claw commissions from the buyer.

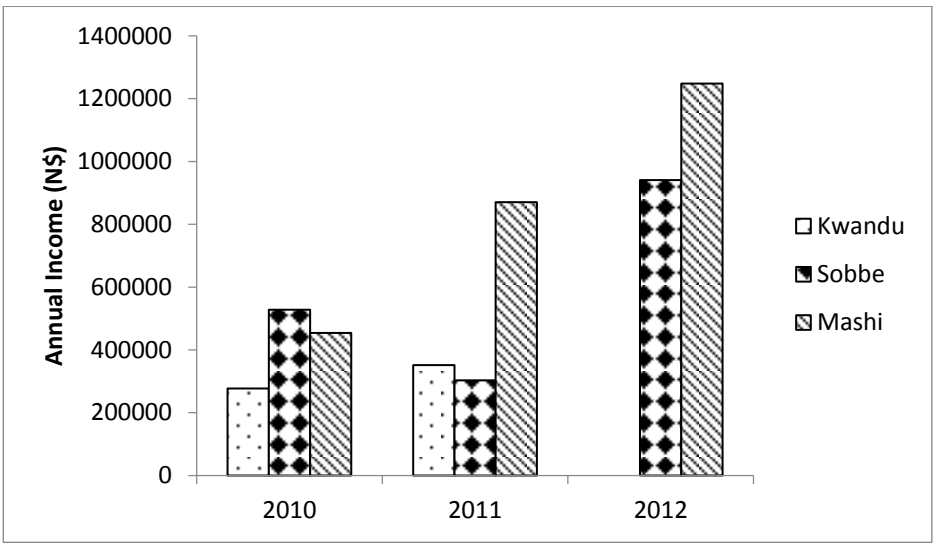

Figure 8-3: Income generated over a period of three years per conservancy

The data shows that conservancy income varied between years and conservancies (figure 8-3). Mashi conservancy has had a steady increase in income over the three years under consideration, while Kwandu and Sobbe conservancies show no clear patterns. This could be because Mashi has many different sources of income, including joint ventures, while the other two conservancies rely on trophy hunting as their main source of income. Although constitutions of all conservancies clearly stipulate that benefits will be equitably shared, the provision for cash distribution has not been clearly elaborated. The management and executive committees usually decide on how the generated income is allocated and used. This has resulted in variations on how income is allocated and distributed to conservancy members in the three case studies.

8.3.3 Institutional arrangements for benefit sharing

The allocation of funds towards different activities depends on the management and executive committees. The revenues generated from conservancies through various activities go to the conservancy account where the operational budget is allocated. The interview results revealed that most households in the three study communities seem to lack awareness of the criteria used for sharing benefits from community forests, while this was relatively clear for conservancies (see figure 8-4). The main mechanism for sharing conservancy benefits was that every resident of a particular conservancy is supposed to benefit from the conservancy. Apart from this general criterion, there were other established procedures that were followed in each case study such as those of meeting membership requirements (discussed in chapter 6). Moreover, each conservancy had

additional local arrangements. Three cash distribution methods have been identified in the three case studies. In Sobbe conservancy, every registered member in a household received an equal share of the cash benefit. In Kwandu conservancy, cash dividends were equally distributed to district councillors (*silalo indunas*) who then decided (sometimes in consultation with district members) how funds would be used. In Mashi on the other hand, funds were equally distributed to district councillors, who further equally distribute the funds to villages. The village headmen then decided on the final distribution of the funds to households (usually distributed equally per household). In some cases, district members are asked to use the funds for community projects, such as building a *khuta*, where the final decision is made based on majority vote. This usually happens where the cash amount is small and the number of beneficiaries large. When respondent were asked about the benefit distribution systems, a significantly high proportion (67%) of households in Sobbe conservancy reported that the system was fair, compared to only 38% of households in Kwandu and Mashi conservancies ($\chi^2(4) = 69.291$; p=0.000),

Community forests on the other hand do not distribute monetary benefits to community members. Instead, most of the benefits are through priority access to forest resources and provision of markets for members. For example, community harvesters can be granted permission to sell their Devil's Claw to an external buyer through community forests. In such an arrangement, the buyer pays the community forest a commission which is usually used by the management committee to run the institution. In addition to this, community members also benefit from casual labour paid by the MAWF, such as maintaining cut-lines or firebreaks in community forests.

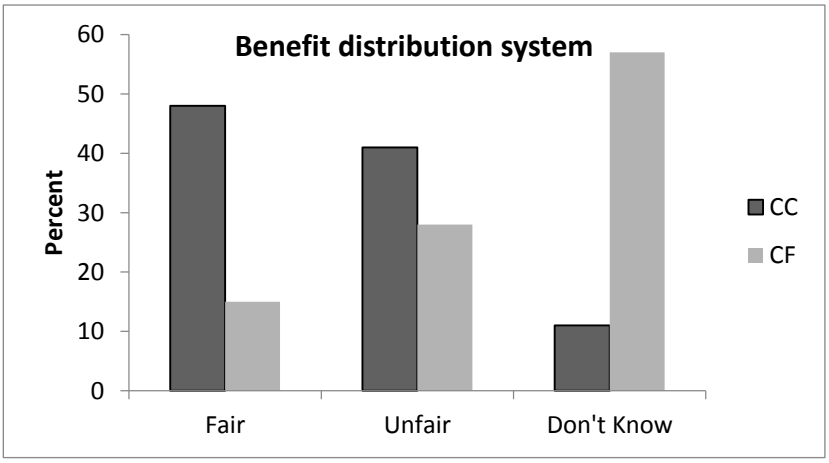

Figure 8-4: Members' declared feelings about the benefit sharing mechanism in conservancies and community forests (N= 455 for CCs and N= 381 for CFs)

The amount of funds allocated for conservancy salaries and management committee allowances ranged between 25 and 88% of the total income generated (table 8-4). These

proportions exclude other conservancy operational costs such as field allowances, transport, equipment, communication, office costs, food for meetings and other activities. Although cash distribution ensures direct benefits for households, the amount that is allocated and the large number of beneficiaries involved result in very minimal household benefits. Only between 7 and 19% of the total conservancy income generated in the past three years was distributed to communities. It is this amount that is either used for district projects, distributed to villages and/or further to households. Some districts (especially where there are high numbers of beneficiaries) have opted to use these funds only for communal development projects because the funds are too low to contribute meaningfully to households' livelihoods. The common types of social communal projects supported include: building of district or *khuta* offices, sports such as football tournaments, and Christmas and New Year celebrations. While constitutions require that the allocation of funds to different activities is democratically approved by community members at AGMs, generally participation in these meetings has been very low, as shown in chapter 7. Therefore, it is no surprise that more than 90% of respondents in all communities reported that they did not know the amount of funds in the conservancy account.

Table 8-3: Annual income and proportion of income allocated for salaries and management committee allowances and cash distribution

Conservancy	**Kwandu**	**Sobbe**	**Mashi**
Annual income (N$)			
2010	277 124	527 665	454 017
2011	351 606	303 116	870 565
2012	ND	940 793	1.247 949
Salaries & management committee allowances as proportion of total annual income (%)			
2010	82	35	71
2011	88	73	46
2012	ND	25	37
Proportion of cash distribution to districts and individuals (%)			
2010	ND	13	19
2011	ND	10	7
2012	ND	10	8

ND = No data. £1 was equivalent to N$14 at the time of fieldwork. Percentages do not add up to 100 because other expenses such as transport, office expenses, food during meetings etc. are not included in this analysis.

8.3.4 Type of benefits and contribution to the household economy

Although the focus of this chapter is on sharing of visible and direct (cash, meat, jobs) benefits to individuals and households, conservancies and community forests offer many other types of benefits to local communities. These include: secured resource access and use rights, improvement of local skills through training in various aspects of resource management, and opportunities for small scale enterprises. These institutions have also become catalysts for other things that are not related to natural resources. For instance, because all the three conservancies and one of the community forests have relatively well established offices, they have become centres of community meetings and entry points for many government services. One example is the HIV programme, which received funding through USAID. Since there were already structures and people with capacities within the local NGO (IRDNC) and in areas where there were conservancies, they agreed to add the component of doing HIV awareness to their responsibilities. When the HIV funding dried up, they were still able to continue with some of the HIV activities even though there was no money allocated specifically for that. This illustrates how formal structures such as conservancies and community forests can support other useful activities.

Income to households is one of the most visible benefits. Assessing incomes from different sources is important in assessing the wellbeing of households, the value of different sources and impacts of policies and institutional arrangements on households.

Household income data shows that the main sources of income are crop production, livestock sales, sales of forest resources and wildlife (table 8-2). Forest resources provide both subsistence and cash income to households. Although most of the resources are used for subsistence, about 60% of surveyed households reported selling and generating income from forest products. Construction poles, thatch grass and devil's claw (DC, a medicinal plant) were among the top three most important products sold by households, with DC having the highest value and yielding the highest income.

In order to understand the extent to which households are dependent on natural resources, it is important to focus our analysis on the relative contributions of different income sources to the households' economy. The contribution of the different activities to total income varied between the three case studies (table 8-3). If we consider annual total household cash income as the income from our four sources, total forest cash income (excluding wildlife or game) constitutes 23% of total household income, making it the second highest contributor after crop income (51%). Further, in comparison to the 4%

wildlife cash income contribution to households, forest resources contribute nearly seven times more to total household cash income than income from wildlife.

Although the data suggest that a mixed economy prevails in all study areas, Kwandu depended mostly on crop farming and livestock keeping compared to the other two places where forest resources were almost equally or more important than livestock. Mashi had the greatest forest income contribution (33%), followed by Sobbe (22%) and then Kwandu (13%). Wildlife income contribution was highest in Sobbe (7%) compared to only 1% in Kwandu and Mashi.

Table 8-4: Annual household cash incomes and income contribution from various sources in 2012

Source of income	Absolute Cash Income (N$)				Mean Cash income (N$)	Relative cash income (% of total income)			
	All	Kwandu	Sobbe	Mashi		All	Kwandu	Sobbe	Mashi
Crops	554134 (3333)	159152 (4962)	221970 (2697)	173012 (2682)	2963 (244)	51	55	48	50
Livestock	248766 (4296)	87864 (6005)	104720 (3836)	56182 (2309)	2618 (440)	22	31	23	16
Forest resources	252546 (1816)	36358 (1445)	102494 (2266)	113694 (1500)	1380 (134)	23	13	22	33
Wildlife/ CC*	39589 (129)	4484 (170)	29862 (104)	5243 (62)	140 (7.7)	4	1	7	1
Total **	1095035	287858	459046	348131		100	100	100	100

£1 = N$14 at the time of fieldwork
Standard errors and deviations in parentheses
** Wildlife income only includes cash pay-outs to households, and excludes income that went towards community projects and salaries.
* Total income is sum of crop, livestock, forest resources and wildlife cash income

8.3.5 Factors influencing benefit distribution

The role of the different livelihood activities in the household economies can be explained by many factors at both the community and household level that influence benefit distribution to households. Chi square tests for association indicated that socio-demographic characteristics such as age of household head (χ^2 (2) = 0.508; p=0.776), gender of household head (χ^2 (1) = 3.198; p=0.074) and education (χ^2 (3) = 1.517; p=0.678) did not significantly influence benefits received from conservancies by households. However, the analysis shows that the wealth class of a household was associated with most

of the benefits received from both the conservancy and community forest (table 8-3). Overall, significantly more households in the middle wealth category were involved in the sale of forest resources (χ^2 (2) = 17.759; p=0.000), with fewer rich households making income from this livelihood activity. Similarly, more middle wealth households received cash and meat from conservancies compared to the poor and rich households.

Table 8-5: Percentage distribution of benefits per wealth category. 5% significance level

Benefit	Poor	Rich	Middle	χ^2	Df	P-value
Cash from sale of forest resources (excluding wildlife	39	24	50	17.759	2	0.000
Conservancy cash pay-out	58	55	72	10.047	2	0.007
Meat	59	57	73	10.448	2	0.005
Human-wildlife conflict payment	19	17	17	0.183	2	0.913
Project	7	4	11	3.579	2	0.167

The number of households that were paid for wildlife-related damages and having a project sponsored by the conservancy did not significantly differ between households in the different wealth categories (table 8-4), although chi square tests suggest significant differences in the distribution of conservancy cash among wealth categories, when data was disaggregated per study area. There was no significant difference in conservancy cash pay-out among different wealth categories in Sobbe (χ^2 (2) = 1.213; p=0.545) and Mashi (χ^2 (2) = 2.189; p=0.335), while in Kwandu more middle wealth households indeed received cash compared to the other wealth classes (χ^2 (2) = 6.723; p=0.035).

Further, the results also indicate that rich households seem to earn significantly more forest income compared to the poor groups, but there was no statistically significant difference in mean income between the rich and the middle wealth group (figure 8-5). Despite that relatively fewer (24%) richer households made forest income compared to the poor (39%) and the middle (50%) wealth groups, their mean forest income was relatively higher than the middle wealth class and significantly higher than the poor group (figure 8-4).

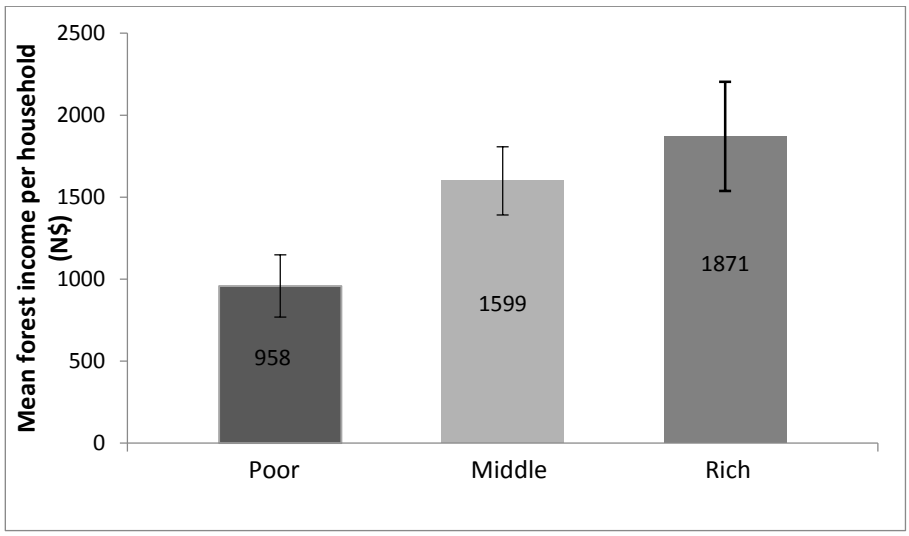

Figure 8-5: Comparison of mean annual household forest cash income among wealth groups. £1 was equivalent to N$14 at the time of fieldwork

The number of households receiving benefits significantly differed between the three case studies (table 8-5). Mashi had the highest proportion of households selling forest resources and making the highest average cash income from the sale of forest resources compared to Kwandu (χ^2 (2) = 34.740; p=0.000), while the difference with Sobbe was not significant. In terms of cash and meat distribution, Sobbe distributed these benefits to more households, while in Kwandu conservancy significantly fewer households received these benefits. Mashi conservancy was more involved in sponsoring projects and also paid for more (27%) wildlife-related damages compared to Kwandu (12%) and Sobbe (13%) conservancies (χ^2 (2) = 8.711; p=0.013).

Figure 8-6 suggests that the difference in the average conservancy cash income between conservancies is significant, with Sobbe households receiving the highest average income compared to Kwandu and Mashi.

Table 8-6: Percentage of households receiving various benefits per case study. 5% significance level

Benefit	Kwandu N=154	Sobbe N=151	Mashi N=150	χ^2	Df	P-value
Cash from sale of forest resources (excluding wildlife)	22	46	54	34.740	2	0.000
Conservancy cash pay-out	36	97	55	127.248	2	0.000
Meat	31	87	75	114.584	2	0.000
Employment*	24	22	19	-	-	-
Human-wildlife conflict payment	12	13	27	8.711	2	0.013
Project	7	1	16	22.886	2	0.000

* Actual numbers of conservancy employees

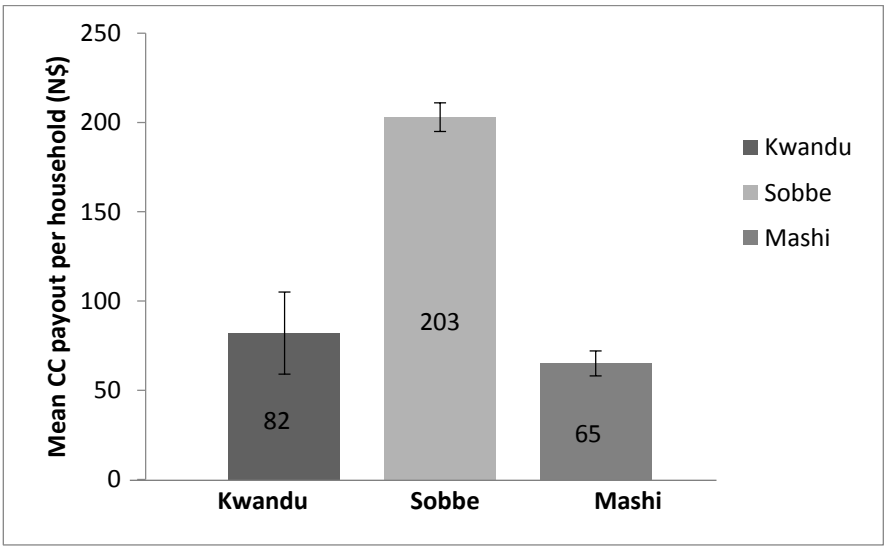

Figure 8-6: Mean cash amount received from the conservancy per household per year. £1 was equivalent to N$14 at the time of fieldwork

Apart from socio demographic factors such as wealth status influencing the distribution of benefits to households, institutional factors such as membership to the institutions and attendance at conservancy and community forest meetings (chapter 7) have also been considered. As indicated in chapters 5 and 6; unlike in community forests where membership is automatic for all individuals with customary land rights to the area designated a community forest; membership in conservancies is voluntary and requires individuals to register. All three conservancy constitutions state that benefits from wildlife

will be equitably distributed to all members of the conservancy. However, the membership policy situation together with community level institutional arrangements results in variations in ways benefits are shared in the three case studies.

Overall, conservancy membership registration was associated with direct financial benefits to households. Overall, about two thirds of registered members received cash pay-outs, while only about a third of non-registered members received cash from the conservancy. However, when data was disaggregated per conservancy, in Mashi the distribution of cash seems to be not associated with membership as the proportion of households receiving cash did not significantly differ between registered and non-registered members (χ^2 (1) = 2.163; p=0.141). In Kwandu on the other hand, more registered members (25%) received cash compared to only 7% of non-registered members receiving benefits despite the fact that only about half of members were registered (see chapter 7). The Sobbe conservancy did not distribute cash to any non-registered member compared to 91% distribution of registered members.

Table 8-7: Percentages of households attending conservancy meetings and receiving benefits

	Kwandu	Sobbe	Mashi
Cash	62***	100***	60
Meat	51***	90***	93***
Project	17***	2	22

*, ** and *** means significance difference in receiving of benefits between conservancies at 10%, 5% and 1%

Chi square tests for association indicated that attendance of meetings was related to the distribution of meat to households in all conservancies and related to the distribution of cash in Kwandu and Sobbe conservancies (table 8-7). While 62% of households that attended the Kwandu conservancy AGM received cash compared to 28% non-attendees, all AGM attendees in Sobbe received cash pay-outs compared to 89% non-attendees receiving cash. The proportion of households receiving cash in Mashi conservancy did not differ between AGM attendees and non-attendees (χ^2 (1) = 1.230; p=0.267). Further, a high proportion of households that attended the AGM in Kwandu had projects sponsored by the conservancy (χ^2 (1) = 11.287; p=0.001).

8.4 Discussion

The contribution of wildlife and forest resources to the livelihoods of communities living in conservancies and community forests is affected by many factors. The differences in the roles of these resources are related to the legal frameworks and local institutional arrangements that govern the two resources. First, access to and use of wildlife and forest resources is different as stipulated by law. While conservancies can generate revenues only from wildlife-related activities, community forests can benefits from a large range of forest resources. Second, trophy hunting which is the main source of conservancy income takes place only during the hunting season, while the harvest and use of many forest products such as firewood and poles take place throughout the year. This allows households to collect and sell forest products opportunistically compared to the sale of trophy animals that is dependent on season and very formal markets. Additionally, it is easier to sell forest resources locally or in informal markets, compared to wildlife, when the need for cash income arises.

Generally, Sobbe conservancy seems to be more successful and equitable in the way they distribute conservancy funds to households, with Kwandu conservancy having the least successful income sharing mechanism. The results indicate that on average Sobbe conservancy has the highest mean conservancy income per household and members are getting more than double the cash received by households in the other two conservancies. The Sobbe conservancy has also had the highest number of households receiving cash pay-outs and meat from the conservancy. This may partly be due to the low number of beneficiaries in Sobbe compared to the other conservancies. Additionally, the benefit distribution arrangements in Sobbe have contributed to high average cash per household because cash is given to every registered member (including absent members that live and work outside the conservancy). This is in contrast with arrangements in Kwandu and Mashi where payments are made per household and sometimes per village. The benefit distribution arrangements in Kwandu and Mashi conservancies show that benefits are not distributed equitably and this has resulted in dissatisfaction by many households who felt that funds should be given according to the number of members per household. However, most district councillors were satisfied by the equal distribution of funds to districts and some committee members also expressed that this ensured equality among district councillors. The results suggest that internal institutional arrangements are contributing to inequitable benefit distribution. Moreover, the problem with the current benefit distribution systems in Kwandu and Mashi is that the conservancies make payments to community

leaders such as district councillors. In both cases, community members felt that the councillors were diverting funds for personal use. This could mean that certain conservancy tasks or activities such as benefit distribution would better not be the responsibility of people with higher authority such as the traditional authority (district councillors). In order to ensure accountability, conservancy funds to communities could be distributed by conservancy district representatives, or officials of a similar level, that are answerable to higher authorities. There is no clear benefit distribution system in community forests, resulting in members feeling that they are not benefitting from forests at all. Despite that community forests are not generating high collective revenues; committees could still report the financial status of their community forests to communities to ensure accountability.

The relative monetary contribution of forest resources to households compared to other livelihood activities indicates the extent of their importance. Households that use forest resources such as firewood on a daily basis are by far the majority compared to involvement in other important activities such as farming. The contribution of forest resources to rural livelihoods found in this study is in agreement with recent studies on the role of forests in developing countries. The 13% to 33% contribution to household income is comparable with the contribution of 21% of forest resources reported for Africa by Angelsen et al. (2014). It is also comparable to values of 20% to 30% for gum and resin sales in Ethiopia reported by Tesfaye (2011), while Yemuri et al. (2010) found that forest income contributes between 24% and 52% of the household income in Southern Ethiopia.

Whilst there are variations across case studies, overall the results of this study indicate that benefits from both conservancies and community forests have not been equitably shared with the poor, although two of the case studies show that conservancy benefits were uniformly distributed irrespective of a household's economic status. Common pool resource theory stresses the importance of financial incentives in promoting the participation of CPR users in the management of these resources (Ostrom 1990, Silva and Mosimane 2012). Therefore, it is urged that people attend conservancy and community forest meetings in anticipation of receiving benefits. Despite the substantial dependency of households on forest resources, the participation of the poor in both conservancy and community forest decision making is generally lacking, as shown in the previous chapter (chapter 7). The poor are often the primary resource users of forests resources, being most affected by any decisions regarding resource use, yet they are excluded in decision making processes. The poor often depend on forest resources for subsistence, but also for income

through selling forest products such as firewood, building poles, reeds and thatch grass. It is clear that households depend more on forest resources compared to wildlife to meet their daily subsistence needs. Our data also reveal that richer households were involved in the harvesting of devil's claw (DC) because of its high returns. Harvesting devil's claw is labour intensive; however, richer households do not do the job themselves, but usually rely on hired labour for harvesting, which the poor households have no access to. The rich group can therefore afford to harvest more DC and so have higher average forest incomes.

With regards to conservancy benefits such as cash and meat, the middle wealth group is again benefitting more than the other wealth groups. Given the relatively low conservancy cash received by households, this might not affect the richer group but could be important for the poor households who do not have many income generating opportunities. These results are consistent with the results of the previous chapter that showed that more middle income households were attending conservancy meetings and together with the richer group were more likely to influence decisions. Therefore, revenue sharing generally seems to be associated with active involvement in conservancy activities such as attending meetings. Yitbarek et al. (2013) also found similar results and concluded that those that have greater responsibility in revenue sharing are more likely to influence how the money is used.

Furthermore, the results from two of the three study areas (Kwandu and Sobbe conservancies) are in agreement with Silva and Mosimane (2012), suggesting that registered members receive some financial benefit from the conservancy, though relatively smaller compared to benefits from other income sources discussed in this study. The results for Kwandu are surprising because according to key informant interviews, benefits were distributed to all residents despite their registration status and also many members did not find it necessary to register as they felt they were members by residence (see chapter 6 and 7). Sobbe conservancy, on the other hand, distributed benefits according to the membership register; hence no cash was distributed to any non-registered member.

Findings of this study also suggest that other factors have shaped benefit sharing in the three case studies and that the issue of equitable benefit sharing is complex. In all three study areas, there were conflicts regarding benefit sharing, which were in most cases fuelled by tribal tensions. In one case study, one district wanted to enter into a joint venture with a tourism operator but not with the whole conservancy. However, legally it was not possible for the operator because a district is not a legal body, thus it had to be done with the conservancy. In this case the support NGO advised the district to use the conservancy

but perhaps in the agreement include a clause stating that the particular district is the primary beneficiary of the agreement because they were the ones giving up their land for the operator. A similar situation was reported in another case study where one district felt that most wildlife were found in their area and so they should benefit more from trophy hunting revenues because they suffer the most wildlife damages. In this case the district had decided to separate all together from the conservancy to form their own conservancy. At the time of the fieldwork the issue had been taken to higher authorities, such as the MET, because no agreement could be reached locally. According to MET officials, if an amicable solution is not found, the conservancy would have to be de-gazetted to make it possible for the formation of new conservancies by the divided communities. These few examples among the many encountered in the field illustrate that there is not a 'one size fits all' model when it comes to equitable sharing of benefits. Equity does not mean everyone gets the same share as understood by some conservancy members, including some committee members. In some instances there has to be recognition that some people should benefit more than others.

Two major issues have been raised regarding revenue distribution in conservancies. First, the overall income that is generated in conservancies is considered insufficient due to the high numbers of beneficiaries. In two case studies (Kwandu and Mashi) only some households have ever received direct financial benefits from the conservancy. Second, our results are contrary to the situation reported by Mulonga and Murphy (2003a) where during early years of formation, conservancy committees were reluctant to spend funds for the first time. This was attributed to committees being scared to waste the money or not knowing what to spend it on. Mismanagement of funds by committee members has been widespread in recent years, leaving even less funds to be shared with ordinary members of conservancies. At the moment, meaningful financial benefits are received mainly by those directly employed by the conservancy. This has created conflict among members instead of bringing them together over a common cause. Many community members suggested that employees should be replaced regularly to ensure benefits for all and two of the studied conservancies have in fact adjusted their employment tenure to five years, after which staff have to leave office. While this might seem to be the most feasible option, it leads to institutional memory loss and ineffectiveness. The current replacement of employees has already been seen as a burden by the local support NGO, as they have to re-train new staff all the time. Furthermore, the short duration of employment, especially in influential positions could result in rent-seeking behaviour while in a position of power (Krause et al.

2013). In order to ensure effectiveness, management positions could be retained for a longer period and trained community members would have to train new members that take over office positions.

Another important issue that was raised by many key informants from communities, NGOs and government officials alike is the imbalanced manner in which joint venture agreements are negotiated between communities and the private sector. Due to their large investment in these ventures, the private sector or investors tend to be the main beneficiaries of such developments. Here, government may have to play a more crucial role by providing investment funds to communities and monitoring and moderating the operations of such developments and agreements. According to a senior NGO official there are plans to support communities so that they get the right deals with the private sector, thus getting the correct payment for the resources that match the actual value in the market. This moves beyond tourism joint ventures, to include adding value such as organic certification so that the value of the resource increases. Further, whilst tourism joint ventures provide jobs, the majority of local members usually take the low paying positions such as cleaners and cooks, probably due to lack of management capacities. Thus, tourism developments show a clear pyramid of benefits and beneficiaries, with the tourism investor benefitting most, followed by those employed by the conservancy and tourism development, and the ordinary community members getting the least benefits. These kinds of hierarchies in benefit sharing have also been observed in participatory watershed management where they are usually treated as structurally determined instead of being a concern for the participatory process (e.g. Shah 2001). There is the need to negotiate better deals for all stakeholder categories similar to what is discussed above regarding communities getting right deals for the resources.

Many household respondents stated that the conservancy is a threat to their livelihoods due to the perceived increase in crop damages caused by increase in wildlife numbers attributed to the formation of conservancies. The results of these three case studies are contrary to the generally perceived view that the formation of conservancies and associated benefits has changed people's attitudes towards wildlife. For example, Weaver et al (2011) states that the ability of conservancies to provide significant benefits has fostered change in people's attitudes towards wildlife. However, as presented in this chapter, conservancy benefits have not been substantial for many households living in conservancies. Increased wildlife numbers could mean increased damages to crops by wildlife species such as elephants, buffalo, bush pigs and many others. Given the

dependence of many households on crop farming, crop damage by wildlife is an immediate issue of concern. Although there is a human-wildlife self-reliance scheme subsidized by government in place which is meant to offset wildlife damages, the amount paid for losses is not nearly enough compared to the losses that households are incurring. Further, there are certain limitations regarding requirements that need to be met before payment is made, which are not consistent with local conditions. For instance, for payment to be made, at least a quarter of a hectare has to be damaged. However, many poorer households tend to have smaller fields, which means they cannot be paid for damage caused by wildlife to their small fields, although the loss of their crops could probably have a more devastating impact on their livelihoods. Further, payments are only made for damages caused by high value wildlife species, while most crop damages are caused by low value species such as bush pigs as reported by many household respondents. These damages go unreported and unpaid for. Many households also reported that some damages are not paid for despite reporting them to the conservancy. In these cases, damages are either not assessed at all or assessments are made but no payment is made. In order to change people's attitudes towards wildlife and deal with the damages caused by wildlife, the issues discussed above regarding the requirements for payment of damages need to be reviewed.

Contrary to conservancy collective benefits, community forests have generated very little collective income through community forest activities. While forest benefits in general have had a more positive impact by benefitting more households through subsistence use of forest resources and income generation through the sale of forest resources, conservancies have also definitely improved the economic situation of a few households by providing jobs. While most households use forest resources throughout the year, the use of game meat for subsistence is only during the hunting season and the meat is usually not sufficient for all households. Many households have expressed their dissatisfaction with the quantity and frequency of meat they have received, saying the meat usually lasts them only one meal. Many community members suggested that provision of game meat to members has to be throughout the year and not only during the trophy hunting season. While conservancies have been able to create jobs, the manner in which positions are filled has been described by many community members as unfair. Benefits from forests in general have been seen as immediate and substantial by many households, while benefits from conservancies are not substantial for most households. As indicated previously, the Mashi case study had some members that were not part of the community forest. The results from this case study indicate that households that were part of the two

community forests made significantly high average income from the sale of forest resources compared to households outside the community forests. Based on this case study alone, one can conclude that net returns from forests have increased due to the formation of community forests. In overlapping cases such as the ones under investigation, it might be better to have more integrated natural resource governance institutions. This would reduce the gap between benefits emerging from the two institutions and the benefits would be seen as complementary, instead of competing against each other.

The current situation is that the majority of sampled households indicated that they do not directly and substantially benefit from either the conservancy or community forest. In the case of community forests, most respondents indicated that they were not directly benefitting from community forest. Thus, communities fail to link individual or household subsistence and financial benefits from forests to community forestry, an argument also brought forward by Yitbarek et al. (2013). These scholars suggest that beneficiaries have to be able to associate benefits to their sources (in this case community forestry) in order for them to have the intended incentivizing impacts. There seems to be a need for greater awareness among community members that benefits are not only monetary. In this situation, communities could be presented with scenarios of what could happen for instance if the forest disappeared, the costs they would incur in terms of energy needs, building material and even food. All these costs are reduced because people have an alternative of using their forest resources with secured use rights. Communicating such information to community members could help make them realize the value of forests more widely, as a DoF official expressed:

'I have a dream that one fine day communities will take care of their forest the same way they take care of their livestock, because they will see the same value in forest resources'.

Given that conservancies and community forests overlap in our case studies, once the majority of households not receiving tangible or large benefits from conservancies start to link subsistence and financial benefits from forests to community forestry, they may see the direct benefits from other natural resources in their areas. Once communities recognize this link, they may be supportive of the conservation programmes. Once the value of forests is realized by community members, protection of wildlife habitats could also follow.

8.5 Conclusion

It seems from this study that forests are contributing more to rural livelihoods through both subsistence use and sale of forest resources. While conservancies have collectively generated high revenues, equity in benefit distribution has not currently been achieved and benefits reach only a few households. The challenge faced by both conservancies and community forests lies in their potential to make the economic benefits visible and tangible. Although conservancies are definitely improving the economic situation of some households, the overall impacts remain small, resulting in frustration among community members, especially those that suffer damages from wildlife. Benefits need to be felt at the household and individual levels in order for communities to support conservancies and community forests. However, the high number of beneficiaries presents real challenges in ensuring economic benefits for all. This could be a problem in the long-term as those that do not benefit might not have any motive to support conservation efforts. This points out the need for measures to further improve capacities of committees and communities in general so that they can find ways to generate more funds and use them in ways that may benefit members meaningfully. For instance, instead of giving cash pay-outs to households, funds could be invested in community projects that could create more jobs and generate more revenues. The majority of members benefit could benefit through such projects. Moreover, the livelihood system of the studied communities shows that the majority of people depend on farming. It is therefore important that conservancies and community forests are carefully incorporated into this existing livelihood system and make them a way of diversifying the local economy. In fact, one of the weaknesses in the Namibian CBNRM approach, demonstrated in this study by numerous reports from respondents, is that it has not adequately addressed farming as an integral component of conservation. Failure to assist communities to protect their crops from wildlife and increase yields could compromise their support for conservation efforts.

Furthermore, it has been shown that equitable benefit sharing is shaped by local institutional arrangements including arguments over the meaning of equity, rather than being a result of rules set in laws. The issue of equity, therefore, needs to be clearly addressed in local laws and operational plans to ensure the benefit of the poor segments of communities. In order for conservancies and community forests to work as development strategies and not only as conservation strategies, there have to be mechanisms to enhance the amount of benefits and its distribution to a larger number of households.

Chapter 9: The Influence of Rules on Local Use of Natural Resources in Conservancies and Community Forests

9.1 Introduction

In chapter 6, I assessed the decision making arrangements in our case studies based on numerous conditions identified by scholars and thought to result in effective long-enduring common-pool resource (CPR) institutions (Ostrom 1990, Wade 1987, Baland and Platteau 1996). Three such conditions or design principles as presented by Ostrom (1990) are of relevance to this chapter. Ostrom states that (1) 'individuals affected by operational rules [need to] participate in modifying operational rules', (2) 'monitors of CPR conditions and user behaviour [need to be] accountable to the users or are the users themselves' and (3) 'violators of rules [need to be] sanctioned depending on the seriousness and context of the offence'.

Since natural resource governance institutions and use of resources have changed over time, I examine the role of changing rules on local use of natural resources using an institutional perspective. Specifically, I use the Institutional Analysis and Development (IAD) framework, combined with a historical perspective (Clement and Amezaga, 2008) in this chapter. The IAD framework links local level and higher level rules. As discussed in chapter 2, there are three levels of rules which are closely linked that affect all governance actions taken and outcomes in CPR systems (Ostrom et al. 1994): (i) operational level, (ii) collective-choice level and (iii) constitutional level. This chapter focuses on the operational rules. *Operational rules* directly affect the day to day decisions that govern and regulate resource use (e.g. hunting wildlife and harvesting of forest resources). Their purpose is to regulate behaviour in order to maintain the resource system. Operational rules might comprise for example definition of users such as a register of people entitled to access the commons and details of their rights, rules concerning the manner in which the commons may be used and details of how the different rules will be enforced (Edwards & Stein 1999). It is clear here that coordination of the use of the commons is facilitated if all users have knowledge of the operational rules relating to resource use.

The problems in collective governance of natural resources as indicated in the literature (e.g. Fleischman 2009, Gibson et al. 2005, Chhatre and Agrawal 2008) arise from the following issues. First, problems arise when rules for the use and management of natural resources are set in the community versus when the rules are set externally by government departments. An important question to ask here is, who sets the rules for

access and use within communities? How effective are these rules? The second problem arises over monitoring and enforcement of rules in the community. How effectively are the rules monitored and enforced? Hence it is imperative to assess the extent to which people are involved in rule-making decisions for wildlife and forest resources in conservancies and community forests, if we want to understand how this affects compliance with these rules.

As discussed in chapter 6, monitoring of rules and sanctioning (rule enforcement) is necessary for successful management of natural resources (Gibson et al. 2005). It is usually assumed that rules on paper are automatically used in practice, though rules used in practice may or may not closely resemble the formal laws stated in legislation (Ostrom et al. 1994). Sometimes practices on the ground may differ considerably and at times contradict the formal rules and vice versa. In order to understand how national policies (rules on paper) are performing on the ground, it is imperative that we investigate how communities living in conservancies and community forests actually respond to some of these rules. This chapter analyses fieldwork data to determine how the formal and informal mechanisms regulating resource use in conservancies and community forests affect household compliance with these rules.

9.2 Methods

The interviews included questions about attitudes and perceptions about forest and wildlife use rules. Questions were asked about the household's use of permits to harvest certain products. Since questions about compliance with rules are sensitive, great care was taken to increase the likelihood of honest responses. For instance, the researcher had learned from a key informant interview that individuals tend to keep copies of permits issued for harvesting various forest products. Thus, when a respondent said they acquired a permit to harvest certain products, they were asked if the interviewer could see the permit. This follow up request almost always led to an honest answer from the respondent. In other cases, respondents were not aware that they needed permits to harvest certain products and therefore gave honest responses regarding their use of permits. This further increased the accuracy of the data collected.

On the other hand, honest data on illegal hunting proved more difficult to obtain due to the perceived high severity of sanctions associated with illegal hunting. Additionally, almost every community member was aware that hunting without permission

in the conservancy is illegal. For this reason self-reporting of rule breaking was uncommon, since respondents were asked directly whether they have hunted or not. This is a limitation in the methodology used, as literature recommends more indirect methods for gathering information about rule breaking. Other sources of data such as key informant interviews with local and external actors involved in monitoring and enforcing rules were conducted to supplement household data. Further, secondary data such as local reports on rule breaking were also analysed. The initial idea was to perform regression analysis to predict the use of permits by households. However, the regression analysis is omitted due to the very low explanatory power of the selected variables on predicting the use of permits for various forests products. These included explanatory variables such as awareness of rules, satisfaction with rules, and involvement in rule formulation attendance of meetings, among others. This lack of explanatory power could mean that the issue of rule compliance is much more complex than can be explained by these few selected variables. Qualitative methods could perhaps be more suited in explaining the variation in compliance in this area.

9.3 Results

9.3.1 A local historical overview of natural resource governance

This section briefly describes how access, use and control of wildlife and forest resources in the three case studies have changed over time from the pre-colonial era (before 1884) through to the formation of conservancies and community forests (after 1996) as narrated by local community members during fieldwork. All three case studies have had similar systems governing natural resources during the different eras. The way wildlife and forest resources are used and governed has significantly changed over time. According to community elders, in the pre-colonial era the traditional authority controlled wildlife and other forest resources, including land. During this era, only a few animals were hunted at once because one animal could last a village a long time since it was only for own consumption. The traditional authority was exercised through the village headmen who were responsible for making sure that only few animals were killed. Further, there were no rifles at that time, but bows and arrows and other traditional hunting methods were used, making it difficult to kill many animals. For instance, hunters dug deep holes, covering the top with twigs and a bit of soil to trap animals. Usually the animal in front would fall into the hole while the other animals got a chance to avoid the trap. Poaching was rare during

the pre-colonial era possibly because there were no markets to trade the wildlife and forest products.

Centralized management of natural resources (especially wildlife) started during the colonial era (1884-1990). According to several elderly members of the communities, although sanctions were severe when people were caught hunting high value wildlife species such as elephants and rhinos, the centralized colonial system was not very effective in enforcing natural resource laws because the officers lived away from communities. The limited enforcement of laws coupled with the introduction of rifles (to both local and external individuals) during the colonial era led to mass killing of wildlife. Government authorities also killed high value wildlife species and transported others alive in helicopters to other areas, as recounted by several elderly community members. Although formal rules had been introduced, (informal) local arrangements still existed during this period and in most areas the traditional authority still had a mandate over wildlife. For example, the area within the three case studies had only one hunter appointed by the traditional authority who would hunt for everyone. According to an elderly man from Kwandu:

‘the *indunas* would get upset if just anyone went into the forest to hunt because he would not know how to be discreet and hide away [from authorities], so he would bring problems to the community if caught. They had this special person or poacher who was good at it [hunting]’.

Some species such as hippo, eland, lion, leopard and wildebeest were considered special as they belonged to the chiefs and were only hunted for them. The tail of a wildebeest for example only belonged to the chief because it was and is still considered a symbol of royalty. Up to today when a leopard is killed the skin is donated to the chief. Therefore, leopards and lions could only be hunted when there was a need for the chief.

The centralized government did not care much about control of forest resources such as thatch grass, reeds and trees, perhaps because of their low economic value at the time. Thus, the traditional authority had near full control over these resources. For example, when a woman married into a community, the *khuta* would call her and tell her about grass harvesting rules such as the harvesting season. Nonetheless, many of the interviewed members were quick to acknowledge that rules on forest resource use were not strictly enforced by the traditional authority and that members used these resources as they wished, resulting in near open-access systems.

Post-independence (1990) saw a continuation of centralized control of natural resources by government. In 1996 and 2001, the government put into place new wildlife

and forest resource laws, respectively, that spelled out procedures for communities to be granted right to access and use these resources. This led to formalized local institutional structures such as conservancies and community forests. Once a conservancy or community forest is registered through the Nature Conservation Act of 1996 and the Forest Act of 2001, a new natural resource governance structure is introduced through which authority is shifted from traditional leaders to formally elected management committees, which then introduced new rules regarding resource use.

The sections that follow present these rules and how they are being implemented in the three case studies.

9.3.2 The wildlife hunting quota system and timber block permit system

The wildlife quota and timbers block permit systems are the main strategies for achieving conservation in conservancies and community forests. As mentioned in earlier chapters, according to laws, conservancies and community forests are obliged to apply for use permits from the MET and MAWF, respectively. These government ministries allocate wildlife quotas and block timber permits to conservancies and community forests, respectively. Annual wildlife quotas are allocated after the annual game counts while annual block permits for timber are based on forest inventories that are conducted every five years. The three communities have always shared wildlife species found in what is now termed the Mudumu North Complex (NMC). Therefore, the number of animals allocated for hunting is based on the number of animals within the Mudumu North Complex (MNC) because animals tend to move within this landscape (see chapter 3).

Both the quota and block permits systems are selective in nature, thereby ensuring that for instance only bulls that have grown beyond the reproductive stage are hunted. In the case of timber, only trees that have reached a certain diameter are harvested to ensure recruitment of younger trees. During fieldwork timber harvesting was banned by MAWF due to over-harvesting. While this may be good for conservation, it has left many community forests with very little opportunities for generating revenues. The permits issued by ministries indicate for instance quantities of each species allowed to be used and the purpose it is going to be used for. Once a block permit is issued, the community forest committee issues permits to individual community members based on the block permit. Once a permit is issued, permit holders are required to pay for the permit based on the type of permit and quantities of the product that is harvested. Once an annual wildlife quota is

issued, the conservancy committee makes sure that animals are hunted according to quantities and the purposes stipulated on the permit, for example trophy hunting. Hunting permission is rarely granted to individuals because many community members cannot afford to pay for animals, according to many respondents. Own use hunting is usually done collectively for activities such as traditional festivals. The sections that follow describe the involvement of members in rule making and the main hunting and harvesting rules and regulations that operate within conservancies and community forests.

9.3.3 Formulation, awareness and understanding of rules

Figure 9-1 shows the level of household involvement in rule making, awareness and understanding of rules. The majority of respondents were not involved in rule formulation, with Kwandu and Mashi having significantly low involvement in conservancy rule formulation than Sobbe (χ^2 (2) = 38.047; p=0.000). Involvement in formulating community forest rules was similarly low in all areas, with more than 80% of respondents not involved. However, respondents were generally aware of the conservancy and community forest general rules (between 86% and 95%). The most common general rules stated by respondents were: 'no hunting by individuals without permission is allowed in a conservancy and individuals need to acquire permits for harvesting forest products for sale'.

When respondents were asked about how well they understood these rules, more than a third of respondents stated that the rules are easily understood in Kwandu and Mashi, and nearly two thirds in Sobbe. About another third of respondents expressed that rules could be understood they are explained to them, while between 7% and 12% of respondents stated that rules were difficult to understand. This perception was especially related to rules regarding the harvesting of Devil's Claw, which in addition to acquiring a permit involves a lot of harvesting techniques. Here, the respondents indicated that the rules become easier to understand as they gain experience in the harvesting techniques.

The majority of respondents were satisfied with conservancy rules, with the least satisfaction in Kwandu (64%) compared to Sobbe (79%) and Mashi (80%). Similarly, the majority of respondents were satisfied with community forest rules, although nearly a fifth of respondents in Kwandu expressed dissatisfaction with rules.

Table 9-1: Percentage of respondents' awareness, understanding and satisfaction with rules

	Case study 1	**Case study 2**		**Case study 3**		
Rule Aspect	Kwandu CC/CF	Sobbe CC	Masida CF	Mashi CC	Lubuta CF	Sachona CF
General awareness:						
Yes	86	95		87		
No	14	5		13		
Chi square Tests	$\chi2$ (2) = 7.988; p = 0.018					
Understanding:						
Difficult	12	12		7		
Can be learnt	32	21		39		
Easy	44	62		42		
N/A	12	5		12		
Chi square Tests	$\chi2$ (6) = 23.087; p = 0.001					
Satisfaction:						
Satisfied	CC:64, CF:67	79	79	80	88	
Neutral	CC:14, CF:15	12	12	5	3	
Dissatisfied	CC:22,CF:19	10	9	15	10	
Chi square Tests	CC: $\chi2$ (4) = 15.258; p = 0.004 and CF: $\chi2$ (4) = 15.520; p = 0.004					
Involvement in rule formulation:						
Yes	CC:12, CF:11	40	11	17	14	13
No	CC:88, CF:89	60	89	83	86	87
Chi square Tests	CC: $\chi2$ (2) = 38.047; p = 0.000 and CF: $\chi2$ (3) = 0.253; p = 0.969					

9.3.4 Community forest rules

A summary of selected rules and regulations that are shared by all community forests are presented in table 9-2. Members of all community forests have first priority in using forest resources, though membership in community forests is defined differently in the three case studies, as discussed in chapter 6. While in Kwandu and Sobbe all people that live within the conservancy boundaries are also members of the respective community forests, membership in Sachona and Lubuta forests is based on proximity to the forest. In the latter cases, only people living within the boundaries of the forest are members. The general harvesting rule in community forests is that members should obtain permission from forest management committees to harvest forest products. Harvesting and issuing of permits should be done only when a block permit is obtained from DoF. Generally, people who live in the vicinity of the community forest, but are not part of the conservancy or community forest projects, are not allowed to obtain any forest products unless they conform to the forest by-laws. There are four types of forest permits that are locally issued

and charged for separately: own use harvesting permit, commercial harvesting permit, marketing permit and a transport permit. A transport permit is needed when one wants to transport the product to another area, even to a neighbouring area. The transport permit is only valid for one day. Harvesting permits are also only valid for a period of time to avoid harvesting more than is indicated on the permit. The total number of days granted on the permit is determined by the quantity of forest products the permit holder is going to harvest. Fees for permits and products are subject to recommendations by the management committees, sub-khuta and DoF and based on Namibian law. Currently a permit costs N$15. Although people are required to obtain permits for own use, harvesting of certain products such as poles, reeds, thatch grass is free of charge for members. Local members do not need permits for collecting product such as firewood and most NTFPs for their own use.

There are variations in how the different forests have applied or implemented these rules. While some forests such as Kwandu and Sachona do not issue their own use permits to outsiders, others like Masida allow outsiders to harvest resources for own use, but they charge for such products. In all forests, use of forest resources for commercial purposes by both locals and outsiders requires a permit and payment according to the value of the extracted resources. Kwandu community forest is an interesting case because it is integrated with the conservancy and has no people residing within the community forest boundaries. As shown in chapter 3, the boundaries of Kwandu conservancy and community forest do not entirely overlap. However, due to the integrated management structure, Kwandu tends to apply community forest rules across the whole area, including areas outside the boundaries of the community forest but inside the conservancy boundaries. This means that members are required to obtain permits even when harvesting outside the community forest. Further, resource access for own use purposes is restricted in the Kwandu community forest.

Table 9-2: Selected shared rules and regulations operating in community forests

Rule and sanction	Source/ Reference
1. DoF (or MET in case DC) shall determine the quantity of forest produce for which a block licence will be issued to the CF committee	Forest Act of 2001
2. Starting fire, except for prescribed burning, is prohibited and offenders will be reported to the traditional authority. **Fine: N$4000 and or up to 1 year in jail**	By-laws Forest Act of 2001
3. Permission should be obtained from the management committee for harvesting all forest products, except for firewood and NTFP for own use	Forest Act of 2001 By-laws
4. Harvesting of forest products is free for own use except paying N$15 for the permit, but products will be paid for when intending to sell	By-laws
5. A community member found harvesting products for non-members without a permit will be fined N$500	By-laws
6. An outsider found harvesting product without a permit will be reported to the traditional authority, who will decide on the course of action to take	By-laws
7. Anyone constructing huts for income purposes is to pay N$15 to the community account for every house constructed	By- laws
8. Trees planted and/or managed next to somebody's field or household belong to them and are controlled by them	By-laws
9. No person shall allow livestock to enter into the CF, unless authorized	By-laws Forest Act of 2001
10. A licence held by the offender can be cancelled	Forest Act of 2001
11. The forest produce in respect of which the offence has been committed and anything which was used in the commission of the offence may be forfeited and paid to the CF management committee	Forest Act of 2001
12. Harvesting of timber trees shall only be done for commercial purposes	By-laws
13. Harvesting of thatch grass will be done when the grass is ripe and harvesting period will be announced by the sub-khutas and CF management committees	By-laws
14. Only trained harvesters are allowed to harvest Devil's claw (key informant interviews)	

According to the local forester, people are allowed to graze livestock in the community forest but they are not allowed to cut any trees unless they get a permit and pay for the products. People that are interested in grazing animals in the community forests should seek permission from the management committee and traditional authority. They have to pay a certain amount and sign an agreement specifying the number of years they seek grazing permission for.

Another difference is with regard to how outsiders can access resources in community forests. In Kwandu, an outsider who is interested in harvesting resources in the Kwandu area should consult the *induna* (district councillor) of the area where they want to harvest the resource. Once approval is obtained from the area *induna*, the intended harvester goes to the conservancy office or local forester to obtain a permit. A community game guard (CGG) or local forester will need to escort the harvester to the forest to make sure that they adhere to the quantities on the permit. Once they are done, they have to leave the conservancy and/or community forest. However, in Sachona forest, outsiders are not allowed to go in the forest and harvest products. Instead, they are only allowed to buy already harvested products. This means a resident has to harvest the products and sell to the outsider.

9.3.5 Conservancy rules

The main conservancy regulation is contained in the Nature Conservation Amendment Act of 1996. The Act states that no person is allowed to hunt any wild animal or game, including birds, without permission. Hunting is only permitted within the boundaries of conservancies and is usually done in allocated hunting zones. Hunting laws tend to be applied uniformly across all conservancies. As discussed earlier, permission needs to be obtained in the first instance from MET through approval of an annual hunting quota and hunting methods have to be followed as prescribed in the Act. For example, it is an offence to kill or hunt a wild animal by any other means than shooting it with prescribed bullet sizes. Although the conservation law says that conservancies may hunt '*huntable'* game without a permit provided that own use hunting is included in the hunting quota, in the past MET required that conservancies seek approval for own use hunting, despite it being already approved in the annual quota. According to several conservancy committee members and MET officials, the MET has now made provision to delegate more power to committees by letting them issue own use hunting permits within conservancies. Conservancies no longer need to apply for this permit from

MET for smaller wildlife species, provided they have an approved quota. All that is needed is for the conservancy manager and/or field officer to write a letter to the management committee to recommend the interested person to hunt and they have to pay for the animal. The letter needs to be signed by the conservancy chairperson. Nonetheless, the community member is not allowed to just go and hunt an animal on their own because they have a permit. They have to be accompanied by someone from the conservancy office and usually someone is appointed by the conservancy to hunt for them.

In addition to the regulations contained in the Act, all conservancies have rules contained in their wildlife management and utilization plans. All conservancies are zoned into various land use areas, stipulating what is allowed and not allowed in the specific zones. Table 9-3 presents an example of conservancy zones with associated rules. Similar to community forests, starting fires in conservancies except for prescribed burning done by a recognised fire management team is prohibited.

In the following sections I present quantitative household data regarding how local people have reacted and responded to the laws and rules discussed above.

9.3.6 Access to natural resources after registration of conservancy and community forest

As indicated in earlier chapters, the conservancy and community forest involve and benefit local people in similar but different ways. In community forests, the use of forest resources is mostly at the household and individual levels, while in conservancies benefits from wildlife are collective (chapter 8). Once a conservancy or community forest is registered, harvesting of most forest resources and hunting without permission is considered illegal. Table 9-4 presents data on people's perception of access to natural resources after the introduction of conservancies and community forests.

Table 9-3: Conservancy management zones and associated rules

Zone	Allowed	Not Allowed
Settlement & Cropping	Settlements & infrastructure Cropping Livestock Forest resource harvesting Cultural tourism	All hunting except problem animal control (PAC) Tourism development Wildlife – predators Wildlife translocations/ introductions
Multiple Use – Livestock Priority	Livestock Forest resource harvesting Tourism activities	All hunting except PAC Tourism development Wildlife – predators Wildlife translocations/ introductions Settlements Cropping
Exclusive Wildlife – All Wildlife Utilisation	All hunting Tourism activities BUT with agreements between stakeholders Forest resource harvesting Wildlife corridors, which means farming & settlements are not allowed in known wildlife routes	Settlements Cropping Livestock Tourism development Wildlife translocations/ introductions
Exclusive Wildlife – Tourism Only	Tourism development Tourism activities	Livestock Settlements Forest resource harvesting Cropping All hunting
Exclusive Wildlife - Corridor	All hunting BUT under controlled conditions as per contract Tourism activities Forest resource harvesting (at own risk)	Livestock Cropping Settlements Tourism development
Exclusive Wildlife – No Disturbance (Breeding)	Wildlife translocations/ introductions Tourism activities (controlled)	Livestock Cropping Settlements Tourism development All hunting Forest resource harvesting

Source: Sobbe conservancy wildlife management and utilization plan

Table 9-4: Percentage of households that declared perceptions about access to natural resources since CCs and CFs were established

Access to:	Kwandu	Sobbe	Mashi	χ2	DF	P-value
Trees						
Remained the same	19	9	36			
Increased	25	34	22	41.147	6	0.000
Decreased	51	56	41			
Don't know	5	1	1			
Thatch Grass						
Remained the same	20	11	35			
Increased	25	31	22	30.343	6	0.000
Decreased	49	56	42			
Don't know	6	2	1			
Wildlife						
Remained the same	9	2	1			
Increased	14	27	16	26.746	6	0.000
Decreased	71	70	81			
Don't know	5	2	1			
Firewood						
Remained the same	79	85	83			
Increased	7	6	5	5.385	6	0.495
Decreased	9	7	11			
Don't know	5	2	1			
Farmland						
Remained the same	61	65	75			
Increased	5	3	1	20.918	6	0.002
Decreased	27	31	23			
Don't know	8	1	1			

In order to understand the effects of formation of conservancies and community forests on local use of natural resources, household respondents were asked about how access to resources has changed over time. Perceptions about access to various products as a result of the formation of conservancies and community forest differed among case studies for some products (table 9-4). Remarkably, results show that the majority (between 41% and 56%) of households felt that access to trees or construction poles has decreased as a result of the formation of community forests, while up to a third of households stated that access has increased. Between 7% and 36% of households stated that access to trees or construction poles has remained the same despite the creation of community forests. This perception differed among case studies, with Mashi having the highest proportion of households and Sobbe having the lowest proportion ($\chi^2(6) = 41.147$; p=0.000) stating that there has not been a change in accessing trees.

A similar trend was reported regarding access to thatching grass. However, when it comes to access to wildlife, there was consensus among case studies. The majority of

households (between 71% and 81%) felt that access to wildlife has decreased since the formation of conservancies, with Mashi having the highest proportion of households reporting this perception (χ^2 (6) = 26.746; p=0.000). Similarly, there was agreement among the three case studies regarding access to firewood. Between 79% and 85% of households reported that access to firewood has remained the same despite the formation of community forests (χ^2 (6) = 5.385; p=0.495). Further, about a third of respondents felt that access to farmland has decreased since the formation of conservancies, while between 61% and 75% thought that access to farmland has remained the same.

9.3.7 Availability of resources

Generally, respondents thought that trees and wildlife have increased in the last ten years, while thatch grass and firewood are thought to have decreased (table 9-5). The perception of increased trees varied among the three case studies, with most households in Sobbe having that perception and the lowest proportion in Kwandu (χ^2 (6) = 47.046; p=0.000). However, more than a fifth of respondents thought that trees have decreased. Between 47 and 57% of respondents reported they thought thatch grass has decreased over the past ten years, while between a sixth and a third reported an increase in grass availability. There was general consensus regarding the availability of wildlife over the last ten years, with the majority of respondents (between 61 and 87%) reporting that wildlife has increased. This perception was attributed by respondents to the frequency of sightings of wildlife in their areas. The perception of the availability of firewood differed between case studies, with a high proportion of respondents (46%) in Kwandu reporting a decrease, while a high proportion (57%) in Sobbe reported that availability of firewood has remained the same.

9.3.8 Compliance with hunting and harvesting rules

This section present qualitative and quantitative data collected during fieldwork regarding rule compliance in conservancies and community forests. The enforcement of hunting and harvesting regulations and rules is similar in all three case studies as discussed in chapter 6. When asked if anyone had hunted (with or without a permit) any wild animal in 2012, there was no affirmation of hunting from respondents in any of the three conservancies. Most

respondents stated that they would not hunt wild animals because they feared the heavy penalties associated with illegal hunting. Although the data found that no respondent admitted to hunting wildlife (with or without a permit) in any of the three conservancies, conservancy reports about illegal hunting (table 9-6) show a different story. While reported poaching incidents are low over a four year period, the number of snares and traps recovered suggests that there have been considerable attempts to hunt small animals in all three conservancies, with Mashi having the highest incidents.

Table 9-5: Percent of households' declared perception of the availability of selected natural resources in the last ten years prior to the study

	Kwandu	**Sobbe**	**Mashi**	**$\chi 2$**	**DF**	**P-value**
Trees						
Remained the same	26	5	9			
Increased	40	68	55	47.046	6	0.000
Decreased	25	25	29			
Don't know	9	2	7			
Thatch Grass						
Remained the same	19	11	10			
Increased	16	28	39	26.209	6	0.000
Decreased	56	57	47			
Don't know	9	3	4			
Wildlife						
Remained the same	13	4	1			
Increased	61	87	87	60.506	6	0.000
Decreased	13	2	1			
Don't know	13	7	11			
Firewood						
Remained the same	35	52	38			
Increased	14	26	38	48.292	6	0.000
Decreased	46	21	21			
Don't know	5	1	3			

Although Kwandu had the least number of illegal activities reported over the four year period, they have been able to make relatively more arrests compared to the other two conservancies. Generally, most illegal hunting involved smaller animals such as duiker, spring hare and warthog, but also kudu. However, two of the poaching incidents reported in Mashi involved two elephants which were killed in the first half of 2013.

Table 9-6: Number of illegal activities in conservancies over a four year period (2009 – 2012/3)

	Kwandu	Sobbe	Mashi
No. of poaching incidents	3	9	5
No. of snares and traps	55	62	125
No. of arrests	10	7	6

Source: Conservancy event books

Records of illegal activities in community forests could not be obtained from some forests. Records were either unavailable or were misplaced and could not be found. Table 9-8 presents some cases of illegal activities detected and recorded in Kwandu, Masida and Lubuta community forests. While Masida kept more detailed records, Lubuta could only provide records on the number of illegal activities. Cutting trees without a permit appears to be the most common offense as shown in table 9-8. According to community informants illegal setting of bush fires is also a common offense in all three case studies.

Table 9-7: Proportion (%) of households acquiring permits for harvesting various forest products

	Sobbe	Mashi	$\chi 2$	DF	P-value
Poles	23	19	0.461	1	0.497
Devil's claw	84	76	1.943	1	0.163
Thatch grass	15	26	5.221	1	0.022
Firewood	6	1	6.621	1	0.010

The Kwandu case study is excluded from the statistical analysis because information on acquiring permits for various forest products was not obtained at the household level due to the initial design of the questionnaire. However qualitative information regarding the use of permits was collected in all case studies. The most frequent violation of community forest rules is the harvesting of forest products without permits. The use of permits was generally low, at between 1 and 26% for all, except for devil's claw harvesting. The proportion of households that acquired permits for harvesting thatch grass and firewood significantly

differed between the two case studies (table 9-7). Respondents that did not acquire permits for harvesting forest products were further asked why they did not get permits. The most common reason stated was because the product was for their own use and not for selling. The main reason for not acquiring permits among households that harvested products for selling was that they did not have money to pay for the permit. Although the majority of households did acquire permits for harvesting devil's claw, between a sixth and a fifth of households harvested devil's claw without permits. When households were asked whether they observe rule breakers in their areas, between 57 and 63% of respondents stated that they don't. Although there was a considerable proportion of respondents that reported observing rule breakers (between 40 and 42%), the majority stated that they did not do anything about the issue because it was not their responsibility to monitor and enforce rules.

Table 9-8: Cases of recorded illegal activities in community forests

Case	Action taken
Masida CF:	fine of $800 given, only $300 has been paid to khuta
2006: 157 mopane poles confiscated	only warning given
2008: 2 bags of DC confiscated	-
250 poles also confiscated	only warning was given because violators were local members
2010: 43 poles confiscated	No action had been taken yet
2012: a large number of poles confiscated	No detail about the cases or action taken could be obtained
Lubuta CF:	Poles were confiscated, will be given back when the offender pay N$4000. Otherwise CC/CF will sell them
2009/2010: 8 cases are recorded	
Kwandu CF	
Poles worth N$4000	

Generally, all community forests follow similar procedures in dealing with illegal harvesting of resources. The procedure is when someone is caught harvesting forest resources without a permit; the person is first warned and then reported to the *khuta* in their respective area. The khuta is supposed to decide the course of action against the offender. If the offender is fined a record is sent to the community forest/conservancy office, which in turn sends a report to DoF. Some community forests such as Sachona indicated that before reporting the case to DoF, they report it to the *khuta* headquarters at Chinchimane. In case of harvesting beyond allowable quantities indicated on the permit, according to the law, the product should be confiscated and the offender is reported to the *khuta*. However, according to some committee members in Kwandu, *khutas* have not been effective in sanctioning offenders as expressed by one member:

‘we have realised that there is nepotism there [in *khutas*], that is why most cases or issues are referred to the office [CC/CF office]’.

9.4 Discussion

9.4.1 Conflicts over control of natural resources

This study found that changes in authority over natural resources from traditional authorities to committees have brought conflicts between the two institutions. As shown earlier, once a conservancy or community forest is formed, most management responsibilities are shifted to committees and ministries. For instance, in community forests, DoF determines how much forest material can be harvested and committees issue permits to people based on these quantities. Although the same applies to people living on communal land outside community forests, there customary law will determine who can harvest and how much can be harvested. This has led many traditional authority members feeling that the conservancy and community forest laws are dominating them. This was especially expressed by the traditional authority in Kwandu. In Sobbe on the other hand, the traditional authority worked closely with the conservancy to the extent that some community members felt that the conservancy was run by the traditional authority. In Mashi there was some balance on how the traditional authority and conservancy worked, but some conservancy workers felt that the traditional authority was interfering with their operations. According to a member of the Kwandu traditional authority, they have a list of fines from the *‘big’ khuta* (traditional court headquarters). When the conservancy was introduced, another set of rules were introduced and are now used instead of the already existing rules from the big *khuta*. Although conservancy and community forest rules were signed and approved by all *khutas,* some members of the traditional authority claim that initial agreements of them having control over natural resources have not been adhered to. For instance, a member of the Kwandu traditional authority stated:

‘when you issue permits, the *khuta* is also supposed to get part of the commission. We are not happy about this, it is a reality - that was the initial arrangement you can ask anyone in the *khuta*. We know this but we just leave it’.

Another example mentioned by some traditional authority members regarding agreements not being adhered to was when the conservancy concept was first introduced by MET and the supporting NGO, the traditional authority was told that when someone poaches an animal the conservancy should report the poacher to the *induna*. According to an executive member of Kwandu conservancy, this was a strategic approach on the part of government and support NGOs because if poaching cases had to be reported to MET, people would not have accepted the conservancy as they would not want their people to go to jail. Once the conservancy or community forest is gazetted, things started to change and the *indunas* are saying this is not what you told us would happen at the beginning.

Other aspects of access and control that have changed involve issues of where to harvest resources and who grants permission for such harvesting. Previously, *induna silalo (*district headmen) were the only people who had power over who should harvest in their district. Normally only those district members were supposed to harvest in that area. But now people from any district can go anywhere in the conservancy/community forest provided they have obtained own use permits, but they have to let the district authority know about their presence in the area.

Confusion regarding authority over devil's claw (DC) was reported in some case studies. As indicated before, by law although DC is a forest resource, it is controlled by the MET and not DoF. In one case study both the conservancy and community forest were issuing DC permits and there was confusion about who has the mandate to issue such permits. There was competition between the conservancy and community forest for issuing DC permits as related by the CF chairperson. However, according to the CF vice chairperson, the support NGO explained that DC is not an animal but a forest resource though it is under MET and it was agreed that the community forest take up the responsibility of issuing permits. He further elaborated that the community forest already had a DC buyer while the conservancy had no buyer, making a harvester working through the conservancy not having guaranteed sale of their DC. This illustrates some of the problems resulting from the current overlapping institutional arrangements and policies.

9.4.2 Conflicts over benefits from natural resources

According to Gibson et al. (2005), communities with high levels of social capital are more likely to use resources in a sustainable way because they are likely to find it easier to sustain the regular monitoring of rule conformance. In all three cases studied, there were tribal tensions or conflicts in conservancies. In all cases, there was division in terms of traditional authority allegiance. People were members of two chiefs, Mamili and Mayuni, with more members belonging to Chief Mamili in all cases. The conflict was usually about sharing of conservancy benefits between the two traditional authorities. While the minority group stated that conservancy benefits should be shared equally between the two traditional authorities, the majority group stated that their traditional authority should be the only beneficiary because they signed for the conservancy. It should be mentioned that when most conservancies were formed in this area only Chief Mamili was the recognized chief. When Chief Mayuni was also recognized in 2007, some members changed and paid their allegiance to him. This has left the Chief Mayuni group feeling that they are being discriminated based on their loyalty to chief Mayuni. Clearly, this can work against conservation because now there are community group feeling that they are not part of the conservancy.

9.4.3 Access to natural resources

Based on the stated objectives of national policies: to recognize communities' natural resource use rights, one could presume that the formation of conservancies and community forests has increased local access to natural resources. Ironically, results of this study suggest that the majority of households felt that access to natural resources, especially wildlife has significantly decreased as a result of the formation of conservancies. Access to resources has changed in several ways since the introduction of conservancies and community forests. For instance, before the creation of conservancies and community forests, people were able to go to neighbouring communities if that is where the resource was abundant. But now if someone goes to another area and harvests, and they are caught, they will be fined. In the past, resource harvesting was almost free for anyone as the traditional authority was not strict.

Although the permit system does not deny people to harvest and use forest resources, it was mentioned as one of the main reasons people felt access to resources has decreased. While own-use permits are cheap (N$15), use of natural resources was entirely free before the formation of conservancies and community forests. The biggest impact is probably felt by people who harvest forest resources for selling because they may have to pay for several permits and also pay for the product they have harvested, depending on the quantity. When people are intending to sell forest products they have to pay for three different permits at N$15 per permit, plus the price of the product. For example, the following are charged for separately: the commercial harvesting permit, marketing permit and transport permit. The reason behind paying for the product when harvesting for commercial purposes is that the individual harvester is benefiting personally and therefore has to give something back to the community that owns the resources.

There are several reasons as to why people said that access to natural resources has decreased. First, before the creation of community forests it was easier for people to just go in the forest and harvest the resources they wanted without worrying about formal rules. The introduction of the permit system and payment of product when harvesting for commercial purposes has left people feeling that they are no longer allowed to harvest resources for free. Regarding access to game meat, in most cases people only eat game meat legally when a trophy hunter has hunted, whereas previously people could eat game meat any time. It is these things that people are finding difficult compared to the past when there were no strict rules.

The few people that perceived increased access to wildlife and forest resources were mainly committee members and conservancy employees. This could be attributed to the increased benefits that these members are receiving, which could have not been there if they did not form conservancies and community forests. Nonetheless, some committee members were supportive of what ordinary members felt about decreased access to natural resources. The fact that many people feel that access to resources has decreased as a result of rules introduced by conservancies and community forests does not mean that people do not want rules to control harvesting of resources. In fact more than two thirds of respondent reported that they were satisfied with both conservancy and community forest rules because these rules ensured sustainable use of resources.

One way to improve access to resources in case a member does not have money for the permit and product they intend to harvest would be to have an agreement to issue them a

permit and allow them to harvest without paying for the product upfront. Once they have sold the product, they can then make payment to the community forest. Since committees know their own people, it will be easy to know when the person has sold the product and demand payment.

The cases in this study could be used to illustrate that some forests may be more prone to over-use because of ease of access to the forest by community members. In cases where people indicated that resources such as firewood, poles and thatch grass have become scarce, they also indicated that their strategy to cope with this scarcity was to walk longer distances to get the resource. Based on these explanations, Kwandu community forest could be the most advantaged because of being the farthest away from villages and only allowing commercial use in the forest. Masida community forest also has advantage over Sachona and Lubuta forest because part of it is not inhabited and is farther away from villages. One could therefore think that the farther away the forest is from villages the less prone it to over-use by local members. However, it could also mean that forests farther away are more prone to invasion by outsiders because their detection is unlikely, especially given the low frequency of patrols in community forests. This was especially observed in Kwandu and Masida community forests where the whole or parts of the community forests are not inhabited.

9.4.4 Availability of natural resources

The results show that according to local perception, firewood in Mashi and Sobbe has either remained the same or increased in the last ten years, making people think that this resource is not scarce yet. In Kwandu, however, 46% of respondents think that firewood has decreased in the last ten years and they have to travel long distances to get it. This could mean that, members might have to travel longer distances and use the community forest in the future to meet their energy demands. Although there is general consensus that trees are increasing in all areas based on respondents' perceptions, community forest leaders expressed common concerns over the future of trees in community forests. First, lack of law enforcement due to lack of personnel can undermine the sustainability of forest resources in general. A second factor that has been mentioned in all community forest is clearing of the forest for fields. The problem with farmers clearing trees for field is that they burn the trees cleared from the fields. Later, they start cutting more trees for using for other purposes such as construction. The

concern with this group is that they do not find the need to get permits because they feel that they are cutting from their own fields, and it becomes very easy for them to also extend their cutting outside the fields. People need to be encouraged to change local practices like burning trees cut from field and to use them for other purposes. None of the studied communities had any tree planting projects. Tree planting campaigns could also help to increase the number of trees in the areas. Uncontrolled and frequent fires were also mentioned as one of the main factors reducing trees because saplings are not able to grow to adult size with frequent fires. One of the problems is that most cut-lines (fire-breaks) are not maintained, making it difficult to control fires. Fires originating from other areas can easily enter the conservancy and/or the community forest.

The decrease in thatch grass has been attributed by many local foresters to unsustainable harvesting practices by local users. For instance, harvesters were accused by local foresters of harvesting grass before it matures which affects germination. Some harvesters admitted that they indeed harvested grass before the harvesting season because they feared that other harvesters would harvest all the grass before them. This was mainly because the grass had become scarce and the demand is high. Other community members in Kwandu attributed the decrease in thatch grass to floods that have been experienced in the area, stating that *Terminalia* trees and shrubs have taken over areas that were previously grass plains. However, there is no scientific evidence to support these hypotheses.

9.4.5 Enforcement of rules

The importance of rule enforcement in determining compliance by resource users has been emphasized by several scholars (e.g. Ostrom 1990, Agrawal 1992, Agrawal 2001, Gibson et al. 2005 and Pandey 2008). As already discussed in chapter 6, the main actors involved in monitoring forest resource use rules and the sanctioning of offenders is the DoF within the MAWF and community forest committees working closely with the traditional authority. In the case of conservancies, committees at all conservancies indicated that monitoring illegal hunting and sanctioning is the responsibility of MET and conservancy game guards (CGG). The committees at each case study further stated that they had also asked community members to report any observed illegal harvesting or hunting to the community forest committees and conservancy offices, respectively.

Rule enforcement could be regarded as effective if it is done by way of regular and consistent monitoring and sanctioning (Gibson et al. 2005, Horning 2000). In this study, effectiveness of rule enforcement varied between conservancies and community forests. Conservancies clearly have more enforcement capacity through regular patrols conducted by community game guards compared to community forests. According to conservancy committee members, in most cases if someone is caught hunting a large animal without permission, they are reported to MET, who will decide on the sanction depending on the species hunted. If MET considers the violation severe, violator may be tried in the court of law. If found guilty, the accused can be instructed to pay a fine and/ or serve a jail term. Despite the capacity of community game guards to monitor rule violations, issues such as lack of transportation, equipment and limited powers sometimes undermine their capabilities. By law, community game guards are not allowed to arrest rule violators because they are not formal law enforcement officers. All they can do when they encounter rule violation is to alert the MET who have the mandate to arrest (but they can sometimes apprehend the offender). This means that sometimes by the time the MET official arrives, the rule breaker might have escaped or hidden the hunted animal. Other limitations also exist within the MET. Although MET officials have been going through law enforcement training (rifle handling and so on), a MET regional official expressed some concerns about the security of officers. According to him, some poaching incidents are a real threat to MET officials because sometimes poachers can be very advanced, involving former trained soldiers that use automatic rifles, while MET officials can only use semi-automatic rifles. In such cases, more trained officials such as the police and the defence force need to be involved.

In contrast, community forests lack the necessary manpower and transport to conduct regular patrols in the forest on their own. There was acknowledgement in all three case studies that the traditional authorities still hold some power to deal with rule breaking issues especially those involving harvesting of forest resources such as thatch grass and hunting small animals such as birds without permission. The procedures for handling cases of rule breaking depend on the severity of the case, but severity was defined differently between actors and case studies. For example, a regional MET official considered illegal hunting involving protected and high values species as severe cases, while some conservancy committees regarded all hunting including possession of game meat without permission as severe. In one conservancy for instance, a community member stole the head of a kudu that

was hunted for collective use and he was reported directly to MET. MET referred the case back to the community stating that it was not a serious case because the community member did not kill the animal but only stole part of the carcass. Similarly, a regional DoF official considered illegal harvesting involving high value timber species and large quantities of any other forest product as severe. While some committees regarded hunting of small animals as a minor case, others considered all illegal hunting cases as severe offenses. Another factor that was mentioned by several MET officials as undermining the enforcement of rules was the light sanctions associated with wildlife crimes. According to a regional MET official:

'….we do not have environmental lawyers here [in Namibia], they [prosecutors] will see it [the case] as just a 'buffalo' case'.

This perception within the judiciary system and limited capacity to bring about successful prosecutions were also identified as some of the challenges of enforcement at the recent 'Beyond Enforcement' Symposium (Roe 2015).

The general procedure of rule enforcement in community forests is that the rule violator is reported to the *khuta*, where a course of action is taken. Three stages of dealing with minor cases are common in all three case studies. First, when a rule violator is caught, they are normally just warned. If they repeat the offence, the product could be confiscated and a fine is imposed by the *khuta*. If the person continues to break the rules MET and DoF are called to intervene. In this case a minor case can be considered severe with repeated violation. When the *khuta* fine a rule violator the fine usually goes to the *khuta.* Fines imposed by MET for illegal hunting offenses usually go to the state account. Despite acknowledging the powers of *khutas* in imposing sanctions, some members of both the management and the executive committee in Kwandu reported that the *khutas* were not sanctioning rule breakers accordingly, leading to non-compliance. According to a committee member:

'if the community game guard catches someone and take them to the *khuta* and the *khuta* fines the person, then people would be learning a lesson knowing that if they break the rule they would be sanctioned. But nothing happens here and people then don't follow rules if nobody enforces them'.

Another limitation in rule enforcement is the current arrangement regarding who patrols the areas. Although the conservancy rules make provision for all guards to work or patrol in any area, most guards patrol their home territories. While there is good justification, such as lack of transport for guards to go to other areas, it undermines the effectiveness of rule

enforcement. This means that in most cases, close family members and friends are involved, making it difficult to maintain transparency in reporting illegal cases. It was clear that reporting offenders to the authority is not common because of social cohesion among community members. Although there are good arguments for involving local resource users in rule monitoring and enforcement, our results question whether communities can be effective monitors that can enforce natural resource rules on their own. The weaknesses identified within local enforcement systems could mean that external intervention through regular enforcement by ministries is necessary to ensure rule compliance in these communities. Additionally, MET could also focus on monitoring and ensuring that committees through community game guards are doing their work (monitoring rule breakers) well. The focus in community forests could be different. As stated by Gibson et al. (2005): *'No one should be expected to engage in monitoring and rule enforcement unless they are paid to do so*'. Rule enforcement in community forests is hard to sustain because of lack of incentives due to lack of funds. Linkie et al. (2014) has also identified the allocation of sufficient funding for law enforcement as a prerequisite for compliance and greater effectiveness. DoF might need to focus on securing funds and assist communities to engage in more income generating activities in community forests so that there is money to pay people that can carry out regular monitoring activities.

9.4.6 Compliance with rules

Knowledge about rules is an important factor in influencing compliance. Although the majority of households were aware of the general conservancy and community forest rules, knowledge about specific hunting and harvesting rules was limited. The results of this study show that community members acknowledge the existence of state and local rules about hunting and commercial harvesting of forest resources. While respondents seemed to have better knowledge about hunting rules compared to knowledge about specific harvesting rules, they often misinterpreted the general hunting rule. For instance, when asked what the general hunting rule was, most respondents stated that hunting by individuals is not allowed in the conservancy. But hunting rules actually make provision for hunting by individuals for own use provided that permission is obtained and the animal is paid for. Many respondent were in fact surprised to learn that they can buy animals for own use, but many were quick to dismiss the

idea of own use hunting when they were made aware of the cost of certain species, stating that it was unaffordable for them to engage in this kind of hunting.

Overall, results indicate that compliance with new rules introduced by conservancy and community forests is low. To safeguard forest resources (especially timber) in the northern regions of the country, the government has put a ban on timber trading in 2012, which remains in place today (2015). Although household data about the use of permits were not collected for the Kwandu case study, it was clear from focus group discussions and key informant interviews with the local forester that the use of permits by community members was very rare, except for Devil's Claw. According to the local forester in Kwandu:

'we know that our communities are harvesting illegally because they don't come to the office to get permits despite knowing that we have a permitting system'.

While all three communities used forest resources that were governed by a set of rules, the context in which they utilized their community forests was different. For instance, the proximity to the forests varied. In Kwandu and Sobbe, most parts of the community forests are away from villages, while in Mashi villages are found within the community forests. In the case of Kwandu, community members are not allowed to use the community forest for subsistence, unless it is for commercial purposes, while the use of the community forest in Masida is permissible for both subsistence and commercial purposes. The distance to the community forest in these two case studies makes it difficult for community members to go and use the protected forest. Instead, they use the forest closer to villages and in some cases outside the formally designated community forest.

As shown in the previous chapter, people in all three case studies rely heavily on forest resources for subsistence, compared to wildlife. Respondents were very open about breaking community forest rules, which is harvesting without permits. This could be because people's livelihoods depend on forests resources; therefore they felt that it is their right to harvest resources with or without permission. The expression *'forest resources belong to God, so why should we pay for them'* was often used when respondents were asked why they did not get permits for harvesting resources.

The current membership requirements to access benefits from the conservancy and community forest create an environment in which some resource users are not closely attached to the resources. Although the Forest Act states that anyone that has traditional rights to the

land can be a member of the community forest, resource users such as cattle herders are still made to feel like outsiders, and in fact they are considered outsiders by the locals. Therefore their chance of attending conservancy and community forest meetings where resource use rules are discussed is very low. In addition, most illegal activities are attributed to outsiders by local community members. This problem of not involving all resource users in managing the resources is recognized even at the local level. A community forest committee member expressed the problem as follows:

'The reasons why we have more fires now despite the laws are the herders of cattle. If it were just for the community members, we would not have a lot of fires. These cattle herders don't usually come to meetings where we give people awareness of burning fires'.

Some participants in focus groups perceived conservancy rules as being stricter than community forest rules. The reason for not acquiring harvesting permits by local members has also been attributed by others to lack of rule enforcement and less severe sanctions in community forest compared to conservancies. Although community members seem to take hunting rules more seriously, illegal hunting still takes place as shown by the number of snares and traps recovered in all three conservancies. While illegal hunting of large wildlife species has decreased, people still hunt or at least attempt to hunt small animals. This is because hunting has been an integral part of life in the studied communities for a long time. Many respondents expressed their desire to be allowed to hunt small animals for their own use for free as they did in the past. The new hunting restrictions brought about by conservancies are an indication that the formal hunting rules are not compatible with local traditional ways of life.

Based on discussions with various local informants, fear of being fined and/ or jailed appears to motivate people to comply with conservancy rules. However, the severity of the offense needs to also be taken into consideration. While illegal cases involving small animals such as spring hares, birds or duikers could be resolved locally, cases involving large animals such as kudu, elephants and other high value species were directly dealt with by MET and the police. In one of the studied conservancies, two elephants had already been poached in the first five months of the year. It is suspected that some local people are in some business involving elephant tusks because in both cases the elephant tusks had been removed. According to the conservancy manager, local poachers are known, but they are part of the 'untouchable' (respected either because they are elite or they practice witchcraft). The

involvement of local elites in conservancies is limited because of the current low individual benefits associated with them. If not involved in conservancies, the local elites can pose a danger by working with organized poachers in order to yield higher benefits. This group of people could be encouraged to participate and invest in tourism developments so that they have a strong connection with wildlife and other natural resources. A model similar to joint ventures between conservancies and the private sector could be introduced; where local individuals can form partnerships with the conservancy or community forest. Government and other funders would have to make available some funding to support local investors.

9.5 Conclusion

The fact that rules regulating access and use of natural resources in conservancies and community forests are designed to protect these resources against over-use reveals important findings from this study. This chapter suggests that at present the formation of conservancies and community forests has not achieved the intended outcomes. First, it has not directly resulted in increased local access to natural resources as stipulated in policies but rather has resulted in decreased access as perceived by many local people. Second, rule compliance is low possibly due to lack of enforcement especially in community forests. Monitoring and sanctioning of offenders that harvest forest resources illegally or hunt illegally are ineffective. Therefore, monitoring and sanctioning need to be strengthened through strengthening both local sanctioning systems and the criminal justice system. However, increasing law enforcement is only one strategy for tackling illegal activities in conservancies and community forests. Other strategies as suggested by Biggs et al. (2015) need to be employed to deal with the complexity and dynamics of illegal behaviour.

Most of the enforcement effort in our case studies is through routine patrols by game guards. Encouraging ordinary community members to report illegal activities could help reduce such incidents. However, as shown in this study, ordinary members of the community are reluctant to report illegal activities as they feel it is not their responsibility, or they are socially too close to be able to report them. In order to encourage ordinary members to observe and report rule breaking, reporting of incidents could be incentivized and anonymised. The responsibilities of members in reporting incidents of illegal activities need to be strengthened. As highlighted in the ‘Beyond enforcement Symposium (Roe et al. 2015) report:

‘if local communities have a collective sense of ownership over their wildlife and view poaching as stealing from them, they are highly motivated to help combat illegal wildlife trade’. Linkie et al. (2015) further highlights the need for establishing a network of reliable informants to ensure an effective law enforcement strategy. They found that the likelihood of detecting snare traps was higher when patrol teams were tipped-off by local informants than during routine patrols. Additionally, game guards could patrol areas outside their home territories instead of the current situation where they patrol their home territories. This could increase transparency in reporting illegal cases. The presence of game guards in the studied conservancies is an advantage for community forests because game guards can deal with illegal forest activities encountered during patrols.

Lastly, our results suggest that management committees are still weak and there is limited funding and coordination of activities at all levels - from national to local. This means more coordinated efforts in monitoring and sanctioning rule breakers among all different stakeholders need to be enhanced. More training in governance issues need to be provided to committees as strong leadership has been identified as essential for prompting a strong law enforcement response (e.g. Linkie et al. 2014). The presence of an active local NGO (IRDNC) in conservancies is also an advantage because they have staffs that are field-based. Although an NGO might not be able to provide enough monitoring because of their dependence on donor funding, formal collaboration with government law enforcement agencies could be useful. This collaboration could require government to channel part of the law enforcement funding to local NGOs working in conservancies and community forests. Overall, there is potential for sustainable use of resources within the studied communities because many community members understand that the rules have been introduced to ensure sustainability of the resources for their benefit.

Chapter 10: A Synthesis of Research Findings and Implications

10.1 Introduction

Increasing over-use of natural resources such as forest and wildlife resources calls for the need to find institutional arrangements that can result in sustainable use of these limited resources. This thesis explored and analysed the governance of common pool resource (or CBNRM) institutions such as conservancies and community forests in Namibia. The overall objective of the research was to understand the formal and informal institutional mechanisms that govern access to, control and use of natural resources in conservancies and community forests. By comparing the institutional performance of the two CBNRM programmes using case studies, the research aimed to improve our understanding of how formal policy and local arrangements interact to influence the outcomes of the two programmes. Assessing whether the two programmes have fulfilled their goals or not, further helps us understand the causes of gaps between conservation policy and outcomes. It also improves our understanding of the conditions under which such programmes are likely to fail or succeed. The research used several concepts and theories to achieve the stated objective. In particular, the thesis is based on the Institutional analysis and Development (IAD) framework and on Ostrom's institutional design principles that characterize rules devised and used by long-enduring, self-governing common-pool resource institutions. In view of the general research objective and specific objectives set out in chapter 1, this chapter synthesizes the key findings of the study and explores their implications in light of existing theories, policies and practices. The thesis highlights the importance of understanding local institutional arrangements in evaluating the outcomes of common pool resource institutions.

The remainder of the chapter is divided into three sections. In section two, the key findings of the research are synthesized and related to the three stated goals or outcomes of the two CBNRM programmes. The desired outcomes of the policy and institutional environment in this thesis include 1) empowerment of local communities through participation in decision making (chapter 7), 2) improvement of livelihoods through equitable sharing of benefits from wildlife and forest resources (chapter 8), and 3) biodiversity conservation through compliance with conservancy and community forest rules (chapter 9). Specifically, a comparison between

the institutional arrangements and their outcomes across the three study areas is provided. A similar comparison is also provided for the conservancy and community forest arrangements.

In section three, the results are discussed in light of the concepts and analytical frameworks used. Lastly, I make overall conclusions about the main research objective and suggest areas for future research based on findings of the research.

10.2 The influence of institutional arrangements on the performance of conservancies and community forests

The conservancy and community forest concepts or models may be good for effective participatory management of wildlife and forest resources in areas where the resources are declining. However, their implementation in the studied areas faced many problems. In this section, I highlight some of these key challenges. There are important similarities between the policies that guide conservancies and community forests, particularly relating to their objectives and the degree of community property rights that are recognised. Previous studies of CBNRM in Namibia have highlighted some issues, both with policy and with the outcomes. Some of the main issues with CBNRM policy in Namibia is absence of secure land tenure rights for people living in conservancies and community forests (Corbett and Daniels 1996), conditional or limited rights over natural resources, competing and overlapping community institutions (Jones 2012), an institutional environment that imposes unnecessary costs on entrepreneurs and small businesses (Boudreaux 2007), and insufficient integration and coordination of planning and implementation (this study). The main issues identified in the outcomes of CBNRM programmes include: lack of effective community participation in natural resource decision-making (e.g. Lendelvo et al. 2012; and this study), failure of the benefit-sharing systems in distributing tangible benefits and equitably (e.g. Mosimane and Silva 2015), lack of effective rule enforcement and decreased access to natural resources. This thesis explored these issues in more depth and attempted to understand the processes and institutional arrangements underlying them. Now I will draw insights from the empirical chapters to address some of the over-arching objectives in chapter 1. This is done through the examination of the three outcomes of the two CBNRM programmes in relation to the institutional arrangements observed across the study areas.

10.2.1 Effects of institutional arrangements on empowerment of local communities and benefit sharing

With respect to empowering local communities, the findings of this study indicate that AGMs are important platforms for community participation in natural resource decision-making. These platforms play a critical role in ensuring that ordinary members of conservancies participate in the governance of natural resources. The study suggests that smaller conservancies in terms of population size (e.g. Sobbe) perform better in organising these meetings, resulting in high attendance. Conservancies with high population sizes (e.g. Kwandu and Mashi) on the other hand, seemed to have had more representational form of governance, where only a few individuals from the districts were invited to meetings. Mupeta-Muyamwa (2012) found similar results in Zambia and Botswana when she compared performance of single-village communities to multi-village communities. Further, conservancies such as Kwandu and Mashi that had a more representational form of governance reported being satisfied with meetings compared to Sobbe where the majority attended meeting. This highlights the importance of one of Ostrom's design principles which state that most individuals that are affected by operational rules should participate in modifying these rules to ensure long-enduring CPR institutions.

One of the most important findings of the study was that participation in meetings seemed largely dependent on financial benefits. However, this could be an iterative process, whereby participation increases the likelihood of receiving benefits, which increases the likelihood of future participation. This could mean high inequality in benefit sharing for those conservancies and community forest with more representational governance systems, as only those few representatives that attend meetings would benefit. But, it would ensure equality in benefit distribution in conservancies where the majority attend meetings as shown in the Sobbe conservancy. Providing financial benefits to households could then be an incentive for them to participate in meetings. However, there are barriers (both socio-cultural and economic) that need to be overcome first. For example, opinions of educated individuals or elders are more valued than other members in the studied communities.

Assuming that our data are representative, results suggest that men and the elderly, due to their power resulting from socio-cultural norms dominate the decision-making processes in both conservancies and community forests. It appears that for men, unless there is a strong

feeling that they will influence decisions, they are not likely to spend time attending meetings. Women on the other hand, seem to be satisfied with passive participation (i.e. attending meetings without necessarily having to influence decisions). Factors such as lack of interest, inadequate opportunities to participate, lack of confidence and not being elected to key positions (e.g. Lendelvo et al. 2012) are some of the factors that hinder women from participating actively.

The results of this study are interesting because they are somewhat inconsistent with theoretical expectations and many results from other parts of the world. Contrary to the extremes effect that has been observed elsewhere (e.g. Adhikari and Lovett 2006, Kumar 2002), this study found a middle-class effect. That is, the middle class segment of the communities appears more likely to participate in decision-making than the rich and poorer households. The findings on the richer category of households was not consistent with many studies on devolution of natural resources that have shown that local elites dominate and influence decisions in meetings (e.g. Kumar 2002; Shackleton et al. 2002; Adhikari and Lovett 2006). As mentioned in chapter 7, the main cost of attending meetings is the opportunity cost of time spent in meetings. This depends on agricultural and off-farm employment. For people that have farming or formal employment as their main occupation, the opportunity costs of attending meetings may be higher compared to those that are employed by or are members of the conservancy or community forest management committees. This could mean that the wealthy are not attending meetings because they do not need the relatively low benefits associated with participation, while the poor cannot afford to leave their livelihood activities and attend meetings. Therefore, participation in conservancy meetings works best for the middle class. In conservancies, the effect is even stronger given that conservancy AGMs are held during the peak of the farming season, at the end of the year, when people are busiest working in the fields. The non-effect of wealth in community forests could be due to no direct financial benefit associated with attending meetings.

The low participation observed in community forests compared to conservancies (for the conservancy that provided relatively higher benefits) could further confirm that financial benefits are indeed an incentive for participation, due to the fact that there is no direct financial benefits from community forests. However, this does not mean that community forests do not have the potential to be an economic option for households. For instance, although sometimes not directly harvested from community forests, many households harvest

and sell forest products. Since community forests aim to promote sustainable resource use, the presence of a community forest within an area could ensure sustained benefits of these forest products. Furthermore, the relatively high participation in conservancies could be attributed to the fact that government and NGO support are much more firmly in place in conservancies than in community forests, resulting in better-organized and more regular meetings.

The contribution of wildlife and forest resources in the livelihoods of communities living in conservancies and community forests is affected by many factors, including the legal frameworks and local institutional arrangements that govern the two resources. While conservancies can generate large collective revenues from wildlife-related activities (mainly trophy hunting), community forests can benefit individual households from a large range of forest resources. The results indicate that households depend more on forest resources compared to wildlife, to meet their daily subsistence needs. Forest resources constitute an important part of the household economy, contributing between 13 and 33% to the household income in the studied areas. Benefits from forests in general have been seen as immediate and substantial by many households, while benefits from conservancies are not substantial for most households. This highlights the important role played by forest in rural livelihoods and the need to involve the majority of people in sustainable management through community forestry. Disregarding benefits coming directly from community forests, general benefits from forests seem more equitably shared compared with conservancy benefits. In the case of conservancies, benefits are tied to membership and contribution made by the member, whereas community forest membership is loosely defined and anyone in the vicinity of the forest can benefit from it.

Although there is acknowledgement among community members that wildlife can be an asset through tourism, our results indicate that many community members feel that conservancies are a threat to their livelihoods due to the increased damaged caused by wildlife. The livelihood system of the studied communities shows that the majority of people depend on farming; and one of the weaknesses in the Namibian CBNRM approach is that it has not adequately addressed farming as an integral component of conservation. Failure to assist communities to protect their crops from wildlife and increase yields could compromise their support for conservation. Unless issues of human-wildlife conflicts are dealt with, people's attitudes towards wildlife could remain negative and conservation efforts might be undermined.

10.2.2 Effects of institutional arrangements on biodiversity conservation through rule compliance.

Based on the stated objectives of national policies: to recognize communities' natural resource use rights, one would presume that the formation of conservancies and community forests has increased local access to natural resources. However, results of this study indicate that the majority of households reported that access to natural resources, especially wildlife has significantly decreased as a result of the formation of conservancies. Access to resources has changed in several ways since the introduction of conservancies and community forests. For instance, before the creation of conservancies and community forests, people were able to go to neighbouring communities if that is where the resource was abundant. But now if one goes to another area and harvests, and they are caught, they will be fined. In the past, resource harvesting was almost free for everyone, possibly because the traditional authority was not strict compared to now where communities have to pay if they want to hunt wildlife.

The effectiveness of rule enforcement varied between conservancies and community forests. Conservancies seem to have more enforcement capacity through regular patrols conducted by community game guards compared to community forests. Despite the capacity of community game guards to monitor rule violations, issues such as lack of transportation, equipment and limited powers sometimes undermine their capabilities. Another factor that was mentioned by several MET officials as undermining the enforcement of rules was the light sanctions associated with wildlife crimes in Namibia. This perception within the judiciary system and limited capacity to bring about successful prosecutions were also identified as some of the challenges of enforcement at the recent 'Beyond Enforcement' Symposium (Roe, 2015).

10.3 Implications for policy and practice

In this section I discuss the implications of the findings from the empirical chapters. I have attempted to contribute to the debate on the governance of common-pool resources or CBNRM in Namibia and elsewhere, by comparing the institutional performance or outcomes

of two CBNRM programmes. This was aimed to improve our understanding of how policy and local arrangements in different situations influence the outcomes of the programmes.

The Namibian CBNRM programme (particularly the conservancy model) discussed in this thesis is among the well-regarded examples of CBNRM in Africa and perhaps elsewhere in the world. The programme has been successful in many ways: it has partially devolved natural resource management authority to the lowest level (community); it has been in operation for nearly two decades; the number of communities forming conservancies have rapidly increased over the years; wildlife numbers have increased; all revenues generated are retained by communities; the programme as a whole has generated substantial revenues; and some conservancies are generating enough revenue to be self-sufficient and are no longer depended on donor funding. Despite all these achievements, the research has identified a number of issues that need addressing in discourse, policy and in practice. A number of challenges can be identified regarding the performance of CBNRM institutions in our study. Without addressing these challenges, at least in the developing world, could result in undesirable and unintended outcomes in CPR systems. Based on the findings summarized in this chapter, I recommend broad courses of action that could improve the governance of CPRs. It is hoped that these recommendations will have wider relevance in other CPR systems in the country and elsewhere that share similar contexts.

One of the main challenges is the shortcomings in the legal framework of community based conservation, especially the absence of secure land tenure rights. The present devolved system indicates that government officials still play a major role in the control of natural resources in conservancies and community forests. The internal processes to build the institutions are still weak in both conservancies and community forests because most of the rules are formulated in the legal framework and are driven by government and NGOs. There may be a need for communities to be given a chance to formulate their own rules. There is therefore great need to revisit the current legislation to make sure that they provide a favourable environment for the development of CBNRM in Namibia.

With regards to empowering communities, findings suggest that the likelihood that a household will participate in decision making is related to local factors such as socio-demographics, benefits and awareness variables, and local institutional arrangements. As highlighted by Child and Barnes (2010), most CBNRM initiatives rely on representational governance, in the name of efficiency. This promotes top-down governance by few

individuals, and is ineffective for achieving equitable participation and benefit sharing. In line with the finding that socio-cultural factors hinder women from participating, the formation of a group of women within a conservancy or community forest and assigning this sub-group with decision making powers could enhance and increase their participation in natural resource governance. It is therefore recommended that conservation programmes seek to understand the communities they work with to ensure effective participation of all affected members.

Compared to conservancies, community forests lack financial resources to carry out activities. The lack of financial resources in community forests could be a hindrance for both the community forest leadership and community members. However, the presence of a conservancy in the same area could be an opportunity for communities, as community forest issues could also be discussed during conservancy meetings. This is possible because quite often the same community members belong to both programmes in overlapping areas. The benefit of discussing conservancy and community forest issues together is that it raises awareness among members. Members will come to know better their rights and stakes in the different resources and their interactions, hence can actively participate to ensure the success of the two institutions. Resources could potentially then be utilized sustainably if conservancies and community forests can be linked to draw up plans for appropriate use.

Generally, the challenge faced by both conservancies and community forests lies in their potential to make the economic benefits visible and tangible. Although conservancies are definitely improving the economic situation of some households, the overall impacts remain narrow, resulting in frustration among community members that suffer damages from wildlife. Benefits need to be felt at the household and individual levels in order for communities to support conservancies and community forests. An important recommendation, from this study, is that in order to strengthen people's commitment to managing resources in community forests and increase their participation in meetings and decisions being taken, community forests should create opportunities to increase household income or provide some financial benefits associated with participation. However, the high number of beneficiaries presents real challenges in ensuring economic benefits for all. This could be a problem in the long-term as those that do not benefit might not have any reason to support conservation efforts. This points out the need for measures to further improve capacities of committees and communities in general so that they can find ways to generate more funds and use them in ways that may

benefit members meaningfully. For instance, instead of giving cash pay-outs to households, funds could be invested in community projects that could create more jobs and generate more revenues. Given the reliance of households on crop farming, crop damage by wildlife is an immediate issue that needs intervention. It is therefore important that conservancies and community forests are carefully incorporated into this existing livelihood system and make them a way of diversifying the local economy rather than replace farming.

Due to their large investment into tourism joint ventures, the private sector or investors tend to be the main beneficiaries of such developments. Here, government may have to play a more crucial role by providing investment funds to communities and moderating the operations of such developments and agreements. Additionally, communities need to be assisted so that they get the right deals with the private sector, thus getting the correct payment for the resources that are matching the actual value in the market.

The fact that rules regulating access and use of natural resources in conservancies and community forests are designed to protect these resources against over-use reveals important findings from this study. The results show that at present the formation of conservancies and community forests has not achieved the intended outcomes. First, it has not directly resulted in increased local access to natural resources as stipulated in policies but rather has resulted in decreased access as perceived by many local people. One way to improve access to resources in case a member does not have money for the permit and product they intend to harvest would be to have an agreement to issue them a permit and allow them to harvest without paying for the product upfront. Once they have sold the product, they can then make payment to the community forest. Since committees know their own people, it will be easy to know when the person has sold the product and demand payment.

Rule compliance is low possibly due to lack of enforcement especially in community forests. Monitoring and sanctioning of offenders that harvest forest resources illegally or hunt illegally are ineffective. Therefore, monitoring and sanctioning need to be strengthened through strengthening both local sanctioning systems and the criminal justice system. Although there are good arguments for involving local resource users in rule monitoring and enforcement, our results question whether communities can be effective monitors who can enforce natural resource rules on their own as shown by their reluctance in reporting rule breakers and lack of capacities to deal with natural resource crimes. The weaknesses identified within local enforcement systems could mean that external intervention through regular

enforcement by ministries is probably necessary to ensure rule compliance in these communities.

Additionally, MET could also focus on monitoring and ensuring that committees through community game guards are doing their work (monitoring rule breakers) well. The focus in community forests could be different. As stated by Gibson et al. (2005): *'No one should be expected to engage in monitoring and rule enforcement unless they are paid to do so*'. Rule enforcement in community forests is hard to sustain because of lack of incentives due to lack of funds. Linkie et al. (2014) has also identified allocating sufficient funding for law enforcement as a prerequisite to compliance and greater effectiveness. DoF might need to focus on securing funds and assist communities to engage in more income generating activities in community forests so that there are funds to pay people that can carry out regular monitoring activities.

Although our results indicate that rule enforcement is ineffective, the presence of an active local NGO (IRDNC) in conservancies is an advantage because they have staff that are field-based. Although an NGO might not be able to provide enough monitoring because of their dependence on donor funding, formal collaboration with government law enforcement agencies could be useful. This collaboration could require government to channel part of the law enforcement funding to local NGOs working in conservancies and community forests.

The current lack of a strong coordination mechanism among stakeholders seems to constrain sustainable governance of natural resources in conservancies and community forests. Formalization of the existing overlapping institutional arrangements in conservancies and community forests may be an effective policy option for effective governance of natural resources within these CPR systems. Perhaps a more immediate option to address the fragmented management of natural resources in conservancies and community forests would be to formalize coordination between the various stakeholders implementing the various policies and the planning of various activities.

The Namibia CBNRM programme could better be explained by the concept of co-management because of the involvement of multiple actors such as government, communities and NGOs. However, the role of the traditional authorities and other local-level management systems need to be clearly defined, recognised and strengthened. Although trainings in different aspects of natural resource management has been provided by government and NGOs, such trainings have mostly targeted conservancy and community forest committees

and employees, thereby excluding the majority of community members. Therefore, there is a need for government to increase the capacity of communities involved in the co-management arrangements. Although government plays a major role in decision making, all responsibility for the day-to-day management of natural resources in conservancies and community forests lies with the committees. This could mean high burden on the committees and more pressure on the already limited financial resources in the studied areas. As highlighted by Fischer et al. (2014), the right balance of responsibilities needs to be struck in co-management arrangements.

Benjaminsen and Svarstand (2010) argue that many conservation practices in co-management arrangements in Africa tend to diverge from discourse. Particularly, many conservation practices do not fit the win-win discourse; in which local people participate in management of natural resources and benefit from conservation. Unlike the case studies described by Benjaminsen and Svarstand (2010) in which conservation areas presented within the framework of the win-win discourse practice fortress conservation, the Namibian case seem to be consistent with the win-win practice. For example, communities in conservancies and community forests keep all revenues generated from wildlife and forest-related activities; although they have to invest part of the revenues in conservation-related activities. The inequality in benefit distribution observed in this study seems not to be a result of lack of substantial benefit sharing mechanism between government and local communities, but stems from local institutional arrangements. There seem to be a lack of downward accountability of committees to community members, and this needs to be addressed.

Furthermore, communities having to seek permission from government ministries to use natural resources in conservancies and community forests could be seen as communities having a lower degree of autonomy compared to if members only needed permission from the local institutions. This seems to violate the principle 'external recognition of the right to organise'. However, in our case, the current role that government plays in assisting communities to manage resources in conservancies and community forests should not be viewed as an external top-down intervention, but rather, as crucial in providing enabling environment and capacity for communities. In the past, communities could have been more able to manage resources sustainably on their own because of the low population sizes (hence, fewer people using the resources), primitive methods of hunting (for example, fewer animals could be killed using bows and arrows), and probably no markets to sell the resources. Since

communities were directly responsible for managing their resources, it is possible that they had the capacity to manage sustainably. Currently, communities appear not to have the capacity to manage natural resources on their own due to the time that has passed without them directly managing the resources, and therefore, indigenous knowledge of managing resources could have been lost. One could say that the centralised management of resources during the colonial and partly during post- colonial eras contributed to the loss of indigenous knowledge for conserving resources. Therefore, before all rights to manage resources could be transferred to communities, government needs to invest in building capacities of these communities.

10.4 Contribution of the thesis and future research

This thesis used several concepts and theories to understand conditions under which CPR institutions would perform better. By doing so, it has contributed to existing theories and concepts associated with the governance of common pool resources such as wildlife and forest resources by providing new empirical evidence from Namibia. The results have relevant implications for the design of common pool resource institutions worldwide. The selected case studies were analysed based on the Institutional Analysis and Development (IAD) framework (Ostrom 2011). Theories and concepts mainly used included institutional design principles (Ostrom 1990). However, limitations in the existing concepts and theories are highlighted using our case studies. In the Namibian context, the two institutions (conservancies and community forests) have often been studied in isolation. This is because perhaps, the two institutions are sector-specific, but this study attempted a more integrated approach. This study has therefore, further contributed to the literature on integrated natural resource governance, focusing on wildlife and forest resources.

The design principles proposed by Ostrom and others seem useful for analysing the robustness of CPR institutions such as conservancies and community forests, and the case studies met these principles at varying degrees. The thesis suggests that not all the eight design principles proposed by Ostrom (1990) are necessary for effective governance of all CPR systems. For example, we found that the resource boundaries for wildlife are unclear as wildlife tend to move across conservancy boundaries. In this case, what seems more important in ensuring effective governance is institutional nesting through a strong coordination

mechanism among stakeholders. Due to their mobility, appropriation of wildlife resources would lead to potential conflict between conservancy and outside conservancy users. Conservancy users would require the cooperation of communities surrounding them. However, this could be complex, especially, if the adjacent communities are not in a conservancy. The lack of rights and sense of ownership over wildlife resources by non-conservancy communities could potentially discourage them to cooperate in managing the resource. The conservancy model in particular highlights the difficulties of crafting institutions that can coordinate activities to effectively manage mobile resources such as wildlife. The thesis demonstrates the need to link conservancy level management of wildlife to larger scale initiatives.

This study extends Ostrom's (1990) work by adding one more condition to the 'design principles': 'financial independence'. Financial resources become very important in CPR systems that struggle to generate collective revenues like in community forests as these are needed to perform administrative functions require by CPR institutions. The lack of funds has been pointed out in community forests as a major setback to the success of forest management. Financial independence is crucial because dependence on donor funding is obviously not sustainable as projects and donor funding have short life spans.

The multi-level and multi-site approach used gave general and comprehensive insights into the governance of natural resources in conservancies and community forests. However, because of the large scope of the analysis, the thesis left some gaps which deserve attention for further research. More specific policy recommendations could be developed on how to improve the implementation and performance of the two CBNRM programmes. This could involve a more in-depth institutional analysis, systematically reviewing the rules which govern conservancies and community forests.

Although the study analysed multi-level data (i.e. national, regional and local), more attention was given to understanding institutional arrangements at the local level. A more in-depth and systematic analysis of institutional arrangements could be done at regional and national levels. Further, this research was conducted in the Zambezi region and only investigated three case studies. Similar work could be conducted in other regions of the country to include a larger sample in order to identify factors that could results in effective CPR governance under different settings.

One of the ways that conservancies benefit from wildlife is through tourism joint ventures, whereby an investor develops a lodge or campsite in a conservancy. In return, the conservancy gets a certain proportion of the tourism revenue from these establishments. However, since there is no open information about the total revenue generated, it is difficult to verify that the joint-venture partner actually pays the proportion agreed upon. Politics and conflicts that may emerge through such agreements may have profound impacts on benefit sharing. The role of government in monitoring joint ventures is yet to be explored.

In order to have successful CPR or CBNRM institutions, an understanding of the local natural resource management context is needed. This would require investment in research to identify existing institutional arrangements and understand their strengths and weaknesses as was done by this study. This could also include an investigation to find out how much conservation indigenous knowledge still exists in these communities. Based on this understanding, strategies can be developed to strengthen the positive aspects of the existing institutions, while trying to minimise the negative aspects such as gender inequality and power over natural resource decision making.

Notably, as a result of this work, further research might well be conducted to focus on the biophysical elements of the studied areas, which this study did not thoroughly and directly investigate. However, findings of this study regarding rule compliance and recorded and observed cases of rule breaking give some indication of expected conservation outcomes.

The topics highlighted here present interesting avenues for future research that can further deepen our understanding of the dynamics of governing natural resources in Namibian conservancies and community forests.

In conclusion, the Conservancy Act and the Forest Act have been successful in formally recognizing community rights through granting them management and use rights. However, the shortcomings in the designs of these institutions limit their full potential to be realized. The existing institutional arrangements are too simple and broad, and the realities on the ground are far more complex than they are usually represented in laws. They do not take into account the diverse contexts of communities. In order to realize their goals, institutional arrangements need to be re-designed on a site by site basis to reflect the varied socio-economic, cultural and institutional settings of local communities. It is also recommended that more attention is given to the design of natural resource policies and programmes to ensure that they are congruent with the needs of local people.

Both conservancies and community forests seem to have been designed as uniform conservation strategies across the country under the goals of empowering and improving livelihoods of communities and conserving biodiversity. However, little attention has been given to the actual impacts of these programmes on local people and biodiversity. Given the diverse socio-ecological systems in Namibia, uniform conservation programmes are poorly suited to identify locations where conservancies and community forests would best work to improve livelihoods and protect wildlife and forest resources.

It has been indicated in this study that equitable benefit sharing is shaped by local institutional arrangements including arguments over the meaning of equity. The issue of equity, therefore, needs to be clearly addressed in local laws and operational plans to ensure the benefit of the poor segments of communities. In order for conservancies and community forests to work as development strategies and not only as conservation strategies, there have to be mechanisms to enhance the amount of benefits and its distribution to a larger number of households. Through a firm commitment, including financial from government authorities, support organizations and local CPR leaders to embrace and promote meaningful local involvement in decision making, the CBNRM programme stands a greater chance to empower local communities through participation, and benefits, which in turn could promote natural resource sustainability. Overall, there is potential for sustainable governance of resources within the studied areas because communities understand that the rules have been introduced to ensure sustainability of the resources for their benefit.

References

Adhikari, B. and Lovett, J. C. (2006). Institutions and collective action: does heterogeneity matter in community-based resource management? *The Journal of Development Studies*, 42(03), 426-445.

Adhikari, B., Di Falco, S. and Lovett, J. C. (2004). Household characteristics and forest dependency: evidence from common property forest management in Nepal. *Ecological Economics*, 48(2), 245-257.

Adhikari, S., Kingi, T. and Ganesh, S. (2014). Incentives for community participation in the governance and management of common property resources: the case of community forest management in Nepal. *Forest Policy and Economics*, 44, 1-9.

Agarwal, B. (2001). Participatory exclusions, community forestry, and gender: An analysis for South Asia and a conceptual framework. *World Development*, 29(10), 1623-1648.

Agrawal, A. (2001). Common property institutions and sustainable governance of resources. *World Development*, 29(10), 1649-1672.

Agrawal, A. and Gibson, C. C. (1999). Enchantment and disenchantment: the role of community in natural resource conservation. *World Development*, 27(4), 629-649.

Agrawal, A. and Gupta, K. (2005). Decentralization and participation: the governance of common pool resources in Nepal's Terai. *World Development*, 33(7), 1101-1114.

Angelsen, A., Jagger, P., Babigumira, R., Belcher, B., Hogarth, N. J., Bauch, S., and Wunder, S. (2014). Environmental income and rural livelihoods: a global-comparative analysis. *World Development, 64*, S12-S28.

Atmiş, E., Daşdemir, İ., Lise, W., and Yıldıran, Ö. (2007). Factors affecting women's participation in forestry in Turkey. *Ecological Economics*, 60(4), 787-796.

Audet, J. and d'Amboise, G. (2001). The multi-site study: An innovative research methodology. *The Qualitative Report*, 6(2), 1-18.

Baland, J.M. and Platteau, J.P. (1996). *Halting Degradation of Natural Resources. Is there a Role for Rural Communities?* Oxford: Clarendon Press.

Bandyopadhyay, S., Shyamsundar, P., Wang, L. and Humavindu, M.N. (2004). Do households gain from community-based natural resource management? An evaluation of community conservancies in Namibia. *DEA Research Discussion Paper*, 68.

Barnes, J. I. and De Jager, J. (1996). Economic and financial incentives for wildlife use on private land in Namibia and the implications for policy. *South African Journal of Wildlife Research*, 26(2), 37-46.

Basit, T. (2003). Manual or electronic? The role of coding in qualitative data analysis. *Educational Research*, 45(2), 143-154.

Baxter, P. and Jack, S. (2008). Qualitative case study methodology: Study design and implementation for novice researchers. *The Qualitative Report*, 13(4), 544-559.

Behera, B., and Engel, S. (2006a). Who forms local institutions? Levels of household participation in India's Joint Forest Management Program. *ZEF discussion papers on development policy*, 103.

Behera, B. and Engel, S. (2006b). Institutional analysis of evolution of joint forest management in India: A new institutional economics approach. *Forest Policy and Economics*, 8(4), 350-362.

Benjaminsen, T. A., and Svarstad, H. (2010). The death of an elephant: Conservation discourses versus practices in Africa. *In Forum for development studies*, 37(3), 385-408. Routledge.

Blomquist, W., Schlager, E., Tang, S. Y., and Ostrom, E. (1994). Regularities from the field and possible explanations. In: Ostrom, E., Gardner, R. and Walker, J. eds. *Rules, Games, and Common-Pool Resources*. University of Michigan Press, pp. 301-316.

Borrini-Feyerabend, G., Banuri, T., Farvar, T., Miller, K., and Phillips, A. (2002). Indigenous and local communities and protected areas: rethinking the relationship. *Parks*, 12(2), 5-15

Boudreaux, L. (2007). Community-Based Natural Resource Management and Poverty Alleviation in Namibia: A Case Study. *Mercatus Policy Series, Policy comment* 10.

Boyatzis, R. E. (1998). *Transforming Qualitative Information: Thematic Analysis and Code Development.* Sage.

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

Bromley, D. W. and Cernea, M. M. (1989). *The Management of Common Property Natural Resources: Some Conceptual and Operational Fallacies.* Vol. 57. World Bank Publications.

Buckland, S. T., Anderson, D. R., Burnham, K. P. and Laake, J.L. (1993). *Distance sampling: estimating abundance of biological populations.*Vol.1. London: Chapman and hall

Centre for Disease Control and Prevention. (2008). *A guide to conducting household surveys for Water Safety Plans.* [Online]. Available from: http://www.cdc.gov/nceh/ehs/gwash/Publications/Guide_Conducting_Household_Surveys_for_Water_Safety_Plans.pdf [Accessed 5 September 2014].

Chhatre, A. and Agrawal, A. (2008). Forest Commons and Local Enforcement. *Proceedings of the National Academy of Sciences.* 105(36), 13286-13291.

Child, B., and 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.

Clement, F., Amezaga, J. M., Orange, D., Tran Duc, T., Large, A. R., and Calder, I. R. (2006). Reforestation policies and upland allocation in Northern Vietnam: an institutional approach for understanding farmer strategies and land use change. In: *Proceedings of the international symposium towards sustainable livelihoods and ecosystems in mountainous regions, 7-9 March, 2006.* Chiang Mai, Thailand, pp. 7-9.

Clement, F., and Amezaga, J. M. (2008). Linking reforestation policies with land use change in northern Vietnam: why local factors matter. *Geoforum*, 39(1), 265-277.

Community Forestry Working Group (2005). *Community Forestry Guidelines*. Windhoek: Ministry of Agriculture, Water and Forestry.

Corbett, A. and Daniels, C. (1996). *Legislation and Policies Affecting Community-Based Natural Resources Management in Namibia.* Windhoek: University of Namibia.

Corbett, A. and Jones, B. T. (2000). *The Legal Aspects of Governance in CBNRM in Namibia.* Windhoek: Ministry of Environment and Tourism.

Cox, M., Arnold, G. and Tomás, S. V. (2010). A review of design principles for community-based natural resource management. *Ecology and Society*, 15(4), 38.

Creswell, J. W. and Clark, V. L. P. (2007). *Designing and Conducting Mixed Methods Research.* Thousand Oaks, Calif: Sage Publications.

Creswell, J. W. and Zhang, W. (2009). The application of mixed methods designs to trauma research. *Journal of Traumatic Stress*, 22(6), 612-621.

Cullen-Unsworth, L. C., Pretty, J. and Smith, D. J. (2011). Developing community-derived indicators of economic status in the coral triangle: A management support tool. *Ocean & Coastal Management*, 54(6), 446-454.

Daniel, J. (2011). *Sampling Essentials: Practical Guidelines for Making Sampling Choices.* Sage Publications.

Dietz, T., Ostrom, O. and Stern, P.C. (2003). The Struggle to Govern the Commons. *Science,* 302(5652), 1907-1912.

Dolisca, F., Carter, D. R., McDaniel, J. M., Shannon, D. A., and Jolly, C. M. (2006). Factors influencing farmers' participation in forestry management programs: A case study from Haiti. *Forest ecology and management*, 236(2), 324-331.

Dolsak, N. and Ostrom, E. (2003). The challenges of the commons. In: Ostrom, E. ed. *The Commons in the New Millennium: Challenges and adaptations*. Cambridge: MIT Press, pp. 3-34.

Edwards, V. and Steins, N. (1999). A Framework for Analysing Contextual factors in Common Pool Research. *Journal of Environmental Policy & Planning*. 1(3), 205-221.

Ellis, F. (1993). *Peasant Economics: Farm Households in Agrarian Development.* Vol. 23. Cambridge University Press.

Fabricius, C. (2004). The fundamentals of community-based natural resource management. In: Fabricius C., Koch E., Magome H., and Turner, S. eds. *Rights, resources and rural development: community-based natural resource management in southern Africa.* London, UK: Earthscan, pp. 3-43

Feeny, D., Berkes, F., McCay, B.J. and Acheson, J.M. (1990). The tragedy of the commons: twenty-two years later. *Human Ecology,* 18, 1-19.

Fischer, A. (2010). On the role of ideas of human nature in shaping attitudes towards environmental governance. *Human Ecology*, 38(1), 123-135.

Fischer, C. (2007). *International experience with benefit-sharing instruments for extractive resources.* Washington DC: World Bank Resources for the Future.

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

Fleischman, F. (2009). Informal Institutions and Enforcement of Forest Rules. *Networks and Institutions,* POLS Y673.

Gautam, A. P. (2009). Equity and livelihoods in Nepal's community forestry. *International Journal of Social Forestry*, 2(2), 101-122.

Gautam, A. P. and Shivakoti, G. P. (2005). Conditions for successful local collective action in forestry: some evidence from the hills of Nepal. *Society and Natural Resources*, 18(2), 153-171.

Ghate, R. and Nagendra, H. (2005). Role of monitoring in institutional performance: forest management in Maharashtra, India. *Conservation and Society*, 3(2), 509.

Ghirotti, M. (1992). A simple method for scoring housing conditions as income proxy in Ethiopia. *RRA Notes,* 15, 273-284.

Gibson, C. William, J. and Ostrom, E. (2005). Local Enforcement and Better Forests. *World Development.* 33 (2), 273-284.

Gibson, C. C., McKean, M. A. and Ostrom, E. (2000). Explaining deforestation: the role of local institutions. In: Gibson, C. C., McKean, M. A. and Ostrom, E. eds. *People and Forests: Communities, Institutions, and Governance*. MIT Press, pp. 1-26.

Hardin, G. (1968). The tragedy of the commons. *Science,* 162(3859), 1243-1248.

Harkes, I. H. (2006). *Fisheries Co-Management, the Role of Local Institutions and Decentralisation in Southeast Asia: With Specific Reference to Marine Sasi in Central Maluku, Indonesia.* Centre of Environmental Sciences (CML), Faculty of Social and Behavioural Sciences, Leiden University.

Hinz, M. O. (2008a). Traditional courts in Namibia–part of the judiciary? Jurisprudential challenges of traditional justice. In: Horn, N. and Bosl, A. eds. *The Independence of the Judiciary in Namibia.* Windhoek: Macmillan Education, pp. 149-176.

Hinz, M. O. (2008b). Traditional governance and African customary law: Comparative observations from a Namibian perspective. In: Horn, N. and Bosl, A. eds. *Human Rights and the Rule of Law in Namibia.* Windhoek: Macmillan, pp. 59-86.

Hoole, A. (2007). *Lessons from the equator initiative: common property perspectives for community-based conservation in Southern Africa and Namibia.* Centre for Community-Based Resource Management, Natural Resources Institute, University of Manitoba.

Horning, N. R. (2000). Explaining compliance with rules governing common-pool forest resource use and conservation: dynamics in Bara country, southwestern Madagascar. In: *Eighth Conference of the International Association for the Study of Common Property, May 31 – June 4 2000.* Bloomington: Indiana University.

Hosmer, D. W. and Lemeshow, S. (2000). *Applied Logistic Regression,* 2nd edn. John Wiley and Sons.

Hulme, D. and Murphree, M. (2001). *African Wildlife and Livelihoods: The Promise and Performance of Community Conservation*. James Currey Ltd.

IFRI. (2008). *International Forestry Resources and Institutions Research Program: Field Manual.* Indiana University: Centre for the Study of Institutions, Population and Environmental Change.

Ivankova, N. V., Creswell, J. W. and Stick, S. L. (2006). Using mixed-methods sequential explanatory design: From theory to practice. *Field Methods*, 18(1), 3-20.

Johnson, R. B. and Onwuegbuzie, A. J. (2004). Mixed methods research: A research paradigm whose time has come. *Educational Researcher*, 33(7), 14-26.

Jones, T.B. (1998). *Namibia's Approach to Community-based Natural resource Management (CBNRM): Towards sustainable development in communal areas.* Scandinavian Seminar College: African Perspectives of Policies and Practices Supporting Sustainable Development in Sub-Saharan Africa. Windhoek, Namibia.

Jones, B. T. (1999a). *Rights, revenue and resources: The problems and potential of conservancies as community wildlife management institutions in Namibia*. London: International Institute for Environment and Development (IIED).

Jones, B.T. (1999b). *Community management of natural resources in Namibia*. Issue Paper Number 90. London: IIED.

Jones, B. T. (2007). *Synthesis of the CBNRM Policy and Legislation in Botswana, Malawi, Mozambique, Namibia, Zambia, and Zimbabwe.* SARPO Occasional Paper Series Number 16. Harare: WWF-SARPO.

Jones, B. T. (2009). Community benefits from safari hunting and related activities in Southern Africa. *Recreational hunting, conservation and rural livelihoods: science and practice*, 158-177.

Jones, B. (2012a). Recognition and Support of ICCAs in Namibia. In: Kothari, A. Corrigan, C., Jonas, H., Neumann, A., and Shrumm, H. eds. *Recognising and Supporting Territories and Areas Conserved By Indigenous Peoples And Local Communities: Global Overview and National Case Studies.* Secretariat of the Convention on Biological Diversity, ICCA Consortium, Kalpavriksh, and Natural Justice, Montreal, Canada. Technical Series 64. pp.

Jones, T.B. (2012b). *An analysis of international law, national legislation, judgements and institutions as they interrelate with territories and areas conserved by indigenous peoples and local communities.* Natural Justice in Bangalore and Kalpavriksh in Pune and Dheli. Report No. 4.

Jones, B.T. and Luipert S, (2002). Best practices for the CBNRM programme to work with Regional and Local Authorities, Traditional Authorities and line ministries to facilitate integrated and collaborative support to community-based CBOs working on common property natural resource management. *A consultancy Report to the Namibian Association of Community Based Natural Resource Management Support Organisations (NACSO).*Windhoek: NACSO

Kajembe, G. C., Monela, G. C., and Mvena, Z. S. (2003). Making community-based forest management work: a case study from Duru-Haitemba village forest reserve, Babati, Arusha, the United Republic of Tanzania. In: *Proceedings of the Second international workshop on participatory forestry in Africa. Defining the way forward: sustainable livelihoods and sustainable forest management through participatory forestry.* Rome: FAO. pp. 169-172.

Kapila, S. and Lyon, F. (1994). *Expedition Field Techniques: People Oriented Research.* London: Geography Outdoors: the centre supporting field research, exploration and outdoor learning. Expedition Advisory Centre.

Kariuki, G. and Place, F. (2005). *Initiatives for Rural Development through Collective Action: The Case of Household Participation in Group Activities in the Highlands of Central Kenya.* [Online]. CAPRi Working Paper Number 43. Washington, DC: CGIAR System wide Program on Collective Action and Property Rights. Available from: https://dlc.dlib.indiana.edu/dlc/bitstream/handle/10535/4088/CAPRIWP43.pdf?sequence=1 [Accessed 20 October 2014].

Katila, M. (2005). *Community forestry Guidelines. Ministry of Agriculture, Water and forestry.* Windhoek: Directorate of Forestry.

Kiser, L.L. and Ostrom, E. (1982). The three worlds of action: a metatheoretical synthesis of institutional approaches. In: Ostrom, E. ed. *Strategies of Political Inquiry*. Beverley Hills, CA: Sage Publications. pp. 179–222.

Kojwang, H.O. (2000). *Experience of implementing national forest programmes in Namibia.* In: Sustainable Forest Management Programme in African ACP Countries. Working Document. Accra: FAO

Koontz, T.M. (2003). An Introduction to the Institutional Analysis and Development (IAD) Framework for Forest Management Research. [Online]. Paper Prepared for the *First Nations and Sustainable Forestry: Institutional Conditions for Success, workshop*, University of British Columbia Faculty of Forestry, Vancouver. Available from: http://www.forestry.ubc.ca/fnconditions/_documents/TomKoontzPaper.pdf [Accessed 10 May 2011].

Kowero, G. S., Campbell, B. M. and Sumaila, U. R. eds. (2003). *Policies and Governance Structures in Woodlands of Southern Africa.* Indonesia: CIFOR.

Krause, T., Collen, W. and Nicholas, K. A. (2013). Evaluating safeguards in a conservation incentive program: participation, consent, and benefit sharing in indigenous communities of the Ecuadorian Amazon. *Ecology and Society*, 18(4), 1.

Krishna, A. and Shrader, E. (1999). *Social capital assessment tool*. Social Capital Initiative Working Paper Number 22. Washington, DC: The World Bank.

Krott, M. and Stefanov, M. (2008). Comprehensive comparison of state forest institutions by a causative benchmark model. *Allg Forst Jagdztg*, Heft 4, 57-64.

Kumar, S. (2002). Does Participation in Common Pool Resource Management Help the Poor? A Social Cost-benefit Analysis of Joint Forest Management in Jharkhand, India. *World Development*, 30(5), 763-782.

Kuusi, S (2009). *Aspect of Local Self-Government: Tanzania, Kenya, Namibia, South Africa, Swaziland and Ghana.* Helsinki: The Association of Finnish Local and Regional Authorities.

Larson, A. M., and Ribot, J. C. (2004). Democratic decentralisation through a natural resource lens: an introduction. *The European Journal of Development Research*, 16(1), 1-25.

Lendelvo, S., Munyebvu, F. and Suich, H. (2012). Linking Women's Participation and Benefits within the Namibian Community Based Natural Resource Management Program. *Journal of Sustainable Development*, 5(12), 27-39.

Linkie, M., Sloan, S., Kasia, R., Kiswayadi, D. and Azmi, W. (2014). Breaking the Vicious Circle of Illegal Logging in Indonesia. *Conservation Biology*, 28(4), 1023-1033.

Linkie, M., Martyr, D. J., Harihar, A., Risdianto, D., Nugraha, R. T., Leader-Williams, N., and Wong, W. M. (2015). Safeguarding Sumatran tigers: evaluating effectiveness of law enforcement patrols and local informant networks. *Journal of Applied Ecology*, 52(4), 851-860.

Lise, W. (2005). A game model of people's participation in forest management in Northern India. *Environment and Development Economics*, 10(02), 217-240.

Lise, W. (2000). Factors influencing people's participation in forest management in India. *Ecological Economics*, 34(3), 379-392.

Long, S.A. ed. (2004). *Livelihoods and CBNRM in Namibia; the findings of the WILD projects.* Windhoek: Ministry of Environment and Tourism.

Lubilo, R. (2011). *An Assessment of the Impact on Devolved Governance in Natural Resource Management: A case study of Wuparo Conservancy, Namibia*. School of Anthropology and Conservation. Canterbury: University of Kent. MSc. Dissertation.

MA, Millennium Ecosystem Assessment. (2005). *Ecosystems and human well-being: Synthesis.* Washington, DC: Island Press.

Malleson, R., Asaha, S., Sunderland, T., Burnham, P., Egot, M., Obeng-Okrah, K. and Miles, W. (2008). A methodology for assessing rural livelihood strategies in West/Central Africa: lessons from the field. *Ecological and Environmental Anthropology*, 4(1), 1-12.

Martin, R. (2006). *The Mudumu North complex: Wildlife Co-management in the Kwando Area of the Caprivi.* Windhoek: Ministry of Environment and Tourism.

Maskey, V., Gebremedhin, T. G., and Dalton, T. J. (2003). A Survey Analysis of Participation in a Community Forest Management in Nepal. Presented at the *North-eastern Agricultural Resource Economics Association, 8-10 June, 2003.* Portsmouth, New Hampshire: North-eastern Agricultural Resource Economics Association.

Maskey, V., Gebremedhin, T. G. and Dalton, T. J. (2006). Social and cultural determinants of collective management of community forest in Nepal. *Journal of Forest Economics*, 11(4), 261-274.

Massyn, P. (2007). Communal land reform and tourism investment in Namibia's communal areas: a question of unfinished business. *Development Southern Africa*, 24(3), 381-392.

MAWF (2001). *Forest Act, 2001*. Windhoek: Government of the Republic of Namibia.

MAWF (2005). *Community forestry guidelines.* Windhoek, Namibia: MAWF.

McKean, M. A. (2000). Common property: What is it, what is it good for, and what makes it work. In: Gibson, C. C., McKean, M. A., and Ostrom, E. eds. *People and forests: Communities, institutions, and governance*. MIT Press, pp. 27-55.

Meijs, M. and Kapitango, D. (2010). *Communal Land Registration.* Windhoek, Ministry of Lands and Resettlement.

Meinzen-Dick, R. and Mwangi, E. (2007). Cutting the web of interests: Pitfalls of formalizing property rights. *Land use Policy*, 26(1), 36-43.

Mendelsohn, J., Jarvis, A., Roberts, C. and Robertson, T. (2002). *Atlas of Namibia: A portrait of a land and its people.* Cape Town: David Philip Publishers.

Mendelsohn, J., Robets, C. and Hines, C. (1997). *An environmental profile and atlas of Caprivi.* Windhoek, Namibia: Directorate of Environmental Affairs.

Meshack, C. (2003). *Transaction Costs of Community Based Forest Management: Empirical evidence from Tanzania.* Department of Biology. Heslington: York University. Masters Thesis.

MET (1995). *Wildlife Management, Utilization and Tourism in Communal Areas. Policy Document.* Windhoek: Government of the Republic of Namibia.

MET (1996). *Nature Conservation Amendment Act, 1996.* Windhoek: Government of the Republic of Namibia.

MET (2010). *State of protected areas in Namibia: A review of progress and challenges.* Windhoek, Namibia: MET.

Ministry of Regional, Local Government and Housing (2003). *Manual for local authority councillors in Namibia.* Windhoek, Namibia: MRLGH.

Mosimane, A. W., and Silva, J. A. (2015). Local governance institutions, CBNRM, and benefit-sharing systems in Namibian conservancies. *Journal of Sustainable Development*, 8(2), 99-112.

Mulonga, S. and Murphy, C. A. (2003). *Spending the Money: The Experience of Conservancy Benefit Distribution in Namibia Up to Mid-2003.* DEA Research Discussion Paper Number 63. Windhoek: DEA, Ministry of Environment and Tourism.

Mupeta-Muyamwa, P. C. (2012). *Democratization of wildlife management: A comparative study of the Community Based Natural Resource Management (CBNRM) Programs in Botswana and Zambia.* Gainesville: University of Florida. PhD Thesis

Murombedzi, J. (2010). Agrarian Social Change and Post-colonial Nature Resource Management Interventions in Southern Africa's Communal Tenure Regimes. In: Nelson, F. ed. *Community Rights, Conservation and Contested Land: The Politics of Natural Resource Governance in Africa*. London: Earthscan

Murphree, M. W. (1993). *Communities as Resource Management Institutions. Sustainable Agriculture Programme.* London: International Institute for Environment and Development

NACSO (2006). *Namibia's Communal Conservancies. A Review of Progress and Challenges.* Windhoek, Namibia: NACSO.

NACSO (2009). *Namibia's Communal Conservancies. A Review of Progress and Challenges.* Windhoek, Namibia: NACSO.

NACSO (2012). *Living with wildlife –the story of Mudumu North Complex.* Windhoek, Namibia: NACSO.

NACSO (2013a). *The state of community conservation in Namibia: A review of communal conservancies, community forests and other CBNRM initiatives (2012 Annual Report).* Windhoek, Namibia: NACSO.

NACSO (2013b*). Namibia's Communal Conservancies. A Review of Progress and Challenges.* Windhoek, Namibia: NACSO.

NACSO (2014). *Namibia's Communal Conservancies. A Review of Progress and Challenges.* Windhoek, Namibia: NACSO.

Namibia Forest Amendment Act 2005. No. 13. Windhoek: Government of the Republic of Namibia.

Namibia Nature Foundation (2009). *Conservancies in the Mudumu North Complex.* Windhoek, Namibia: NNF.

Namibia Statistics Agency (NSA) (2012a), *The Namibia Labour Force Survey Report.* Windhoek, Namibia: NSA.

Namibia Statistics Agency (NSA) (2012b*). Poverty Dynamics in Namibia: A comparative study using the 1993/94, 2003/04 and the 2009/10 NHIES surveys.* Windhoek, Namibia: NSA.

Namibia Statistics Agency (NSA) (2013). *Zambezi Census Regional Profile.* Windhoek, Namibia: NSA.

National Planning Commission (2004). *Namibia Vision 2030.* Windhoek: Office of the President.

National Planning Commission (2012a). *Annual Economic Development Report.* Windhoek, Namibia: NPC

National Planning Commission (2012b). *Fourth National Development Plan.* Windhoek, Namibia: NPC

Nelson, F. ed. (2010). *Community Rights, Conservation and Contested Land: The Politics of Natural Resource Governance in Africa.* London and New York: Earthscan.

Newing, H., Eagle, C. M., Puri, R. K. and Watson, C. W. (2011). *Conducting Research in Conservation: A Social Science Perspective.* London and New York: Routledge.

Nkhata, B. A., Breen, C. and Mosimane, A. (2012). Engaging common property theory: implications for benefit sharing research in developing countries. *International Journal of the Commons*, 6(1), 52-69.

North, D. C. (1990). *Institutions, institutional change and economic performance*. Cambridge: Cambridge university press.

Nott, C. and Jacobsohn, M. (2004). Key issues in Namibia's communal conservancy movement. In: Fabricius, C., Koch, E., Magome, H. and Turner, S. eds. *Rights, Resources and Rural Development: Community-Based Natural Resource Management in Southern Africa*. London: Earthscan, pp. 194-199.

Oakerson, R. J. (1992). Analysing the Commons: A Framework. In: Bromely, D.W. ed. *Making the Commons Work: Theory, Practice and Policy*. San Francisco: Institute for Contemporary Studies Press, pp. 41-59.

Okitsu, S. (2005). Factors controlling geographical distribution in savanna vegetation in Namibia. *African Study Monographs,* 30, 135-151.

Olson, M. (1965). *The logic of Collective Action: Public Goods and the Theory of Groups*. Cambridge. Massachusetts: Harvard University Press.

Onwuegbuzie, A. J. and Leech, N. L. (2007). Sampling Designs in Qualitative Research: Making the Sampling Process More Public. *The Qualitative Report,* 12(2), 238-254.

Ostrom, E. (1990). *Governing the Commons: The Evolution of Institutions for Collective Action.* Cambridge: Cambridge University Press.

Ostrom, E. (1998). A Behavioural Approach to the Rational Choice Theory of Collective Action: Presidential Address. *American Political Science Review,* 92, 1-22.

Ostrom, E. (2003). How types of goods and property rights jointly affect collective action. *Journal of Theoretical Politics*, 15(3), 239-270.

Ostrom, E. (2009). Design principles of robust property-rights institutions: what have we learned? In: Ingram, G. K. and Hong, Y. H. eds. *Property Rights and Land Policies.* Cambridge: Lincoln Institute of Land Policy, pp. 25-51.

Ostrom, E. (2011). Background on the institutional analysis and development framework. *Policy Studies Journal*, 39(1), 7-27.

Ostrom, E., Gardner, R. and Walker, J. (1994). *Rules, Games and Common-Pool Resources.* Ann Arbor, Michigan. University of Michigan Press.

Pandey, D. N. (2008). Local monitoring and enforcement as critical drivers for sustainability of forests and protected areas. [Online]. *Paper prepared for the Local Monitoring and Enforcement for Sustainability of Arid Forests Conference, 25-26 September, 2008.* Rajasthan, India: Arid Forest Training Centre. Available from: http://dlc.dlib.indiana.edu/dlc/handle/10535/1291 [Accessed 2 July 2012].

Pant, D., Thapa S., Singh, A., Bhattarai, M. and Molden, D. (2005). *Integrated management of water, forest and land resources in Nepal: Opportunities for improved livelihood.* CA Discussion Paper 2. Colombo, Sri Lanka: Comprehensive Assessment Secretariat.

Parviainen, T. (2012). *Role of Community Forestry in Rural Livelihood and Poverty Alleviation in Ohangwena and Caprivi Regions in Namibia.* Department of Economics and Management. Helsinki, Finland: University of Helsinki. Doctoral Dissertation.

Platteau, J.P. (2000). *Institutions, Social Norms, and Economic Development*. Milton Park: Routledge.

Pokharel, R. K., and Suvedi, M. (2007). Indicators for measuring the success of Nepal's community forestry program: A local perspective. *Human Ecology Review*, 14(1), 68-75.

Pomeroy, R. S. and Berkes, F. (1997). Two to tango: the role of government in fisheries co-management. *Marine policy*, 21(5), 465-480.

Poteete, A. R. and Ostrom, E. (2004). In pursuit of comparable concepts and data about collective action. *Agricultural Systems*, 82, 215–232

Pretty, J. N. (1995). Participatory learning for sustainable agriculture. *World Development*, 23(8), 1247-1263.

Pretty, J. and Smith, D. (2004). Social Capital in Biodiversity Conservation and Management. *Conservation Biology*, 18(3), 631-638.

Republic of Namibia (2002). *Communal Land Reform Act, No.5 of 2002*. Windhoek, Namibia: Republic of Namibia.

Rodwell, C.E., Rodwell, T., Rice, M. and Hart, L.A. (2000). Living with the modern conservation paradigm: can agricultureal communities co-exist with elephants? A five-year case study in East Caprivi, Namibia. *Biological Conservation,* 93: 381-391.

Roe, D. ed. (2015) *Conservation, crime and communities: case studies of efforts to engage local communities in tackling illegal wildlife trade*. London: IIED.

Roe, D., Cooney, R., Dublin, H., Challender, D., Biggs, D., Skinner, D., Abensperg-Traun, M., Ahlers, N., Melisch, R. and Murphree, M. (2015). *Beyond enforcement: engaging communities in tackling wildlife crime.* IIED Briefing Paper. London: IIED.

Roe, D., Nelson, F. and Sandbrook, C. (2009). *Community Management of Natural Resources in Africa: Impacts, Experiences and Future Directions.* London: IIED.

Russell, D. and Harshbarger, C. (2003). *Groundwork for Community-Based Conservation: Strategies for Social Research.* Walnut Creek, CA: AltaMira Press.

Rust, N. A. and Marker, L. L. (2013). Attitudes toward predators and conservancies among Namibian farmers. *Human Dimensions of Wildlife*, 18(6), 463-468.

Samuelsson, E. and Stage, J. (2007). The size and distribution of the economic impacts of Namibian hunting tourism. *South African Journal of Wildlife Research*, 37(1), 41-52.

Schlager, E. and Ostrom, E. (1992). Property-rights regimes and natural resources: A conceptual analysis. *Land Economics*, 68(3), 249-262.

Schneider, H. and Anthem, H. (2011). *Integrating Conservation, Livelihoods and Governance: Learning from Experiences.* [Online]. Fauna & Flora International. Available from: http://www.fauna-flora.org/wp-content/uploads/Integrating-Livelihoods-and-Governance-with-Conservation-Learning-from-Experience.pdf [Accessed 29 April 2012].

Scoones, I. (1998). *Sustainable rural livelihoods: a framework for analysis*. IDS Working Paper 72. Brighton: IDS.

Shackleton, S., Campbell, B., Wollenberg, E. and Edmunds, D. (2002*). Devolution and Community-Based Natural Resource Management: Creating Space for Local People to Participate and Benefit.* Natural Resource perspectives Number 76. London: Overseas Development Institute.

Shackleton, C. and Shackleton, S. (2004). The importance of non-timber forest products in rural livelihood security and as safety nets: a review of evidence from South Africa. *South African Journal of Science*, 100(11 & 12), 658-664.

Shackleton, C. M., Shackleton, S. E., Buiten, E., and Bird, N. (2007). The importance of dry woodlands and forests in rural livelihoods and poverty alleviation in South Africa. *Forest Policy and Economics*, 9(5), 558-577.

Shah, A. (2001). *Who Benefits from Participatory Watershed Development? Lessons from Gujarat, India.* Gatekeeper Series Number 97. London: International Institute for Environment and Development (IIED).

Silva, J. A. and Mosimane, A. W. (2012). Conservation-based rural development in Namibia: A mixed-methods assessment of economic benefits. *The Journal of Environment & Development*, 22(1), 25–50.

Sommerville, M., Jones, J. P., Rahajaharison, M. and Milner-Gulland, E. J. (2010). The role of fairness and benefit distribution in community-based Payment for Environmental Services interventions: A case study from Menabe, Madagascar. *Ecological Economics*, 69(6), 1262-1271.

Suich, H. C. (2010a). *The Elephant in the Room: The Impacts on Poverty of Wildlife-focussed Community Based Natural Resource Management*. Australian National University. PhD Thesis.

Suich, H. (2010b). The livelihood impacts of the Namibian community based natural resource management programme: a meta-synthesis. *Environmental Conservation*, 37(1), 45-53.

Sunderland, T., Achdiawan, R., Angelsen, A., Babigumira, R., Ickowitz, A., Paumgarten, F. and Shively, G. (2014). Challenging perceptions about men, women, and forest product use: a global comparative study. *World Development*, 64, S56-S66.

Teddlie, C. and Yu, F. (2007). Mixed methods sampling a typology with examples. *Journal of Mixed Methods Research*, 1(1), 77-100.

Tesfaye, Y. (2011). *Participatory Forest Management for Sustainable Livelihoods in the Bale Mountains, Southern Ethiopia.* Department of Forest Products. Uppsala: Swedish University of Agricultural Sciences. Doctoral Thesis.

The Republic of Namibia (1990). *The Constitution of the Republic of Namibia*. Windhoek: Government of the Republic of Namibia.

Thomas, L., Buckland, S. T., Rexstad, E. A., Laake, J. L., Strindberg, S., Hedley, S. L. and Burnham, K. P. (2010). Distance software: design and analysis of distance sampling surveys for estimating population size. *Journal of Applied Ecology*, 47(1), 5-14.

UNWTO (2015). *World Tourism Barometer*. [Online]. Vol. 13. Madrid, Spain: WTO. Available from: http://cf.cdn.unwto.org/sites/all/files/pdf/unwto_barom15_03_june_excerpt.pdf [Accessed 15 August 2015].

Uphoff, N. and Wijayaratna C.M. (2000). Demonstrated Benefits from Social Capital: The Productivity of Farmer Organizations in Gal Oya, Sri Lanka. *World Development*, 28(11), 1875-1890.

Wade, R. (1987). The management of common property resources: collective action as an alternative to privatisation or state regulation. *Cambridge Journal of Economics*, 11(2), 95-106.

Weaver, L.C. and Skyer, P. (2003). Conservancies: Integrating Wildlife Land-use Options into the Livelihood, Development and Conservation Strategies of Namibian Communities. *A Paper Presented at the Vth World Parks Congress to the Animal Health and Development (AHEAD) Forum, 8-17 September, 2003*. Durban, South Africa.

Weaver, C., Petersen, T., Diggle R., and Matongo, G. (2011). Hunting in Namibia's communal conservancies – A decade of wildlife utilization. [Online]. *Conservation and the Environment in Namibia*, 2010/2011 Edition. Available from: http://www.travelnewsnamibia.com/news/hunting-in-namibias-communal-conservancies-a-decade-of-wildlife-utilisation/ [Accessed 17 April 2015].

Werner, M. (2005). Caprivi treason trial up and running again. *The Namibian Newspaper* [Online], 2 November. Available from: http://www.namibian.com.na/index.php?id=16759&page=archive-read# [Accessed 10 March 2015].

Westoby, J. (1989). *Introduction to World Forestry: People and their Trees.* Oxford: Blackwell.

Williamson, O. E. (2000). The new institutional economics: taking stock, looking ahead. *Journal of Economic Literature*, 38(3), 595-613.

Yee, S. and Rolfe, J. (2007). Can Regional NRM arrangements reduce net transaction costs by increasing social capital? *A Paper Prepared for the 51st Annual Conference of the Australian Agricultural and Resource Economics Society Conference, 13-16 February 2007*. Queenstown, New Zealand: Australian Agricultural and Resource Economics Society.

Yemiru, T., Roos, A., Campbell, B. M., and Bohlin, F. (2010). Forest incomes and poverty alleviation under participatory forest management in the Bale Highlands, Southern Ethiopia. *International Forestry Review*, 12(1), 66-77.

Yin, R. K. (2003). *Case Study Research: Design and Methods.* Vol. 5. 3rd edn. Thousand Oaks, CA: Sage Publications.

Yitbarek, T. W., Tadie, D., Timer, G. and Fischer, A. (2013). Evaluating governance processes in the sharing of revenues from wildlife tourism and hunting in Ethiopia. *Environmental Conservation*, 40(03), 253-265.

Appendix 1: List of people (by role) who were interviewed from organizations

Position	Department/ level
Ministry of Environment and Tourism	
Deputy Director	Scientific Services (HQ)
Director	Env. Affairs (HQ)
Director	Parks (HQ)
CBNRM Warden	Regional services
Ministry of Agriculture, Water and Forestry	
Forester	DoF Regional office
Senior Forestry Technician	DoF Regional office
CF Technician	DoF Regional office
CF Regional Manager	DoF/ DED
Former CFN officer	DED
Senior Management Advisor	GIZ, MAWF, CFN Programme
NAMPLACE	
Manager/ Coordinator	National
Landscape specialist	Regional
IRDNC	
Assistant Director	IRDNC, Zambezi Region
Co-Director	IRDNC (HQ)
Liaison Officer	KAZA & Former CBNRM Warden
Deputy Director	Ministry of Lands and Resettlement
Chief Regional Officer	Zambezi Region
Acting CC Manger	Sobbe CC
Senior Community Resource Monitor	Sobbe CC
Chairperson	Kwandu CC
Manager	Kwandu CC
Field Officer	Kwandu CC
District Councillor/ Induna	Kwandu Traditional Authority
Chairperson	Mashi CC
Manager	Mashi CC
Chairperson	Sachona CF
Chairperson	Masida CF
Vice chairperson	Masida CF
Honorary Forester	Kwandu CF
Chairperson	Lubuta CF

Appendix 2: Interview guide for key informants from organizations

The purpose of this interview is to capture data about the range of management arrangements that influence the implementation of Conservancies and Community Forests. This information captures the complexity of actors involved in the management of natural resources in conservancies and community forests, their rights, roles and functions in relation to communities, and the level of influence they have in the implementation of CCs and CFs.

A. General information about the organisation

1. Can you please briefly describe this organisation in terms of the following?
    - History and origins of the organisation.
    - How many years has this organisation been involved in the management of (this) conservancy or community forest?
    - Where is the organisation office located in relation with the CC or CF? (not relevant for HQ offices)
2. Trace back the reasons for the creation of parallel institutions (of this organisation) for example; wildlife management and plant management in terms of:
    - Institutional interests
    - Effort to build power bases
    - Access to international funding
3. What are the major financial sources for this organisation?
4. What resources does your organisation bring to bear on the management of the CC/CF?
5. Who do you perceive as being directly affected by the management of NR in CCs and CFs?

B. Roles, Functions and Activities

1. What are the expectations or interests of this organisation from CCs and CFs?
2. What organisational/ institutional responsibilities does your organisation have in CC/CF?
3. What activities has this organization carried out in this CF or CC? (For local organisations)
4. Please mention your most important activities in CF or CC. Please explain them briefly and how they have been managed. (For national organisations)

5. What types of activities are undertaken by your organisation? E.g. operational activities (day to day activities - protecting forests & wildlife), collective action activities. (For local organisation)

6. Does your organisation provide for CC/CF activities in their plans and budgets?

7. Who has decision-making power / budgetary power at which level for which things?

8. How independent is this organisation at each level of mainstream government departments such as the Ministry Finance?

NRM

1. What do you think are the main drivers of deforestation/ land degradation/ decrease in wildlife population?

2. Do the management plans and budgets of this organisation address the main drivers of land degradation?

C. Rights and Rules

1. Who should benefit from the management of natural resources in CCs and CFs?

2. Has this organisation created any rules in CC or CF? If yes, please briefly explain these rules.

3. How do you ensure compliance with the rules you created?

4. What strategies do you have to address NR crime?

5. Do you think that the sanctions for NR offences are large enough and graduated to fit the offence?

6. How does the NR law enforcement strategy include effective measures for prevention, detection and suppression of NR crimes?

7. What incentives do you have for officers to enforce NR laws, including investigation and prosecution?

8. Do you have adequate capacity to address NR related crimes and illegal activities? People, training, skills, equipment.

9. Do efforts against NR crime cover the whole NR supply chain, including transport, processing and trade?

10. What are the rights of this organisation in CCs and CF?

12. To what extent do you think the legal framework recognize customary and traditional rights of local people? For example, access to grazing, protection of sacred forests, collection of honey

13. Are you aware of laws/policies of other sectors that directly affect forestry/wildlife resources?

To what extent do forest/wildlife laws support livelihoods of local communities?

D. Information and Communication

1. How do community members express their needs and concerns about the CC or CF to officials of this organisation?

2. Does this organisation provide information to members of the CC or CF on a regular basis? What type of information?

3. Does the legal framework support public access to information about forestry or wildlife?

4. How do you exchange or share information with other organisations involved in the management of natural resources in CCs and CFs?

Kinds of Support Offered by Organisation

Funding, Training, Technical etc.

E. Coordination, Collaboration and Interactions

1. Which organisations does this organisation interact with regards to CC or CF?

2. Can you please discuss the kinds of interactions that exist?

3. To what extent are NR related activities of national and regional governments coordinated & mutually supportive? Also between government agencies and NGOs?

4. Is there any coordination and collaboration between your organisation and other organisations that manage this CC/CF? (Coordinate resources, personnel or information about any activities). If yes, please describe.

5. How effective do you think this collaboration is?

6. Based on your experience and collaboration with other stakeholders, who are the most important ones to you and why?

7. Are there any mechanisms to address cross-sectoral NR-related policy, planning or practice issues?

F. Conflict and Conflict Resolution

1. Are there any conflicts/ tensions between this organisation and other NRM groups working in this CC/ CF e.g. conflict between the rules you created and those of other institutions? Can you please describe these conflicts?

2. Are there any conflicts between the policies of this organisation and those of others involved in the management of wildlife and forestry resources in CCs and CFs? If yes, please explain.

3. What are the mechanisms to resolve disputes related to land tenure, ownership and use rights? Any legal provision?

4. Are there conflicts between government and stakeholders that interfere with NR use? What are the conflicts? And how are they resolved?

5. Do private sector operators in CCs and CFs have a reputation for being honest and trustworthy?

6. Are regular audits undertaken and is action taken on the findings?

G. Conclusion: Challenges and Constraints

1. What challenges or constraints does your organisation/ institution face in the implementation of CCs and CFs?

2. Is there anything else you would like to say about this organisation OR NRM in CCs and CFs?

Appendix 3: Survey instrument for households in three study areas

HOUSEHOLD SURVEY QUESTIONNAIRE | No.

My name is Meed Mbidzo, a PhD student at the University of Kent, UK. I am carrying out this survey in surrounding areas where a conservancy and a community forest overlap. The purpose is to get an understanding of the relationships between and among conservancy and community forestry actors, and how these affect your household. The questionnaire is divided into two main parts (A & B). In part A, I am trying to get an understanding of the socio-economic status, awareness of the CC/CF and your level of participation in the two programmes. In part B, I am trying to get an understanding of how your household use and benefit from wildlife and forest resources, your awareness of the CC/CF rules and your level of interaction with other members of the community. So, you will be requested to answer questions about the conservancy and the community forest. Your participation in this survey is voluntary, and the information you provide is confidential and anonymous.

Interviewer:……. **Date……/……/…….....**
Conservancy/Community Forest:…… **Village.....**
Area…… **Sub-khuta…….**
Start time:..... **End time:.....**
GPS Coordinates: …… **Distance to CC office……**

PART A: DEMOGRAPHIC & SOCIO-ECONOMIC STATUS, PARTICIPATION & AWARENESS

1. HH Head/ Respondent Details
Name of HH Head (Optional).....
Gender: 1..... Male 2.....Female
Age:.....
Education: 1...Illiterate 2...Primary 3...Secondary 4...Higher Secondary 5... University
Marital Status: 1.....Married 2.....Unmarried 3.....Widowed 4..... Other).....
Main Occupation (as below):.....

2. Family member details

Relationship to HH Head	Gender	Age	Highest Education	In School	Main Occupation	Secondary Occupation	Total Annual income

Education: 1 Illiterate 2 Primary **Gender:** 1 Male 2 Female **Occupation:** 1 formal government job 2 Own enterprise

3 Secondary
4 Higher secondary
5 University

3 Working for enterprise
4 Livestock Keeping
5 Crop farming

Annual Income (N$)

1 < 500
2 501-1000
3 1001-2500
4 2501-5000
5 5001-7000
6 7001-10000
7 10001-25000
8 25001- 40000
9 >40000

6 CC/CF committee member
7 Game guard
8 Job at campsite/lodge
9 Pension
10 Unemployed
11 Other (specify)

3. What would you consider to be your household's main sources of living? Please indicate the most important sources of livelihood, by rating the various activities that your household is involved in to make a living on a scale of 0 to 3. Not important 0-1-2-3 Very important

Activity	Contribution to livelihood (Rank in order)	Contribution to cash income (Rank in order)
Crop farming (own use)		
Crop farming (cash)		
Livestock (own use)		
Livestock (sales)		
Reed/Thatch grass harvesting		
Building pole cutting		
Fishing		
Craft making		
NTFPs (medicinal, wild fruit & veg)		
Use of wildlife		
Formal employment		
Informal employment		
Own small business		
Pension		
Remittances		
Conservancy payment		
CF payment		
Other		

Assets Ownership

4. Which of the following assets does your household own?

Asset	Access Note: Just observe the first four items, do not ask respondent!		
Zinc or Thatch roof			
Mud or Brick walls			
Wooden, Zinc or Cloth Door			
Size of lapa (big or small)			
	Own	Hire	Borrow
TV/Radio			
Cellphone			

Plough			
Tractor			
Tillers			
Land (specify size in ha)			
Livestock (specify number): Cattle Goats Chicken			
Bicycle			
Car			
Other (specify)			

5. If your HH own livestock, please mention the annual income from the sale of the following livestock and livestock products in the past 12 months.

Livestock/ livestock Product	**Unit**	**Total production**	**Unit sold**	**Unit price (N$)**	**Total income (N$)**
Cattle					
Goat					
Chicken					
Milk					
Meat					
Eggs					
Other (specify					

6. What are the major crops your HH has produced in the past 12 months?

Crop	**Unit (bags)**	**Total production**	**Unit sold**	**Unit price (N$)**	**Total income (N$)**
Maize					
Millet					
Sorghum					
Beans					

7. How long did your HH own crop production meet your household food demand in the past 12 months?

1:……. less than 3months
2:……..3-6 months
3:……..7-10 months
4:……..More than 11 months

For how long did your HH have food shortage in the past year?

1…….have food throughout the year
2…….less than a month
3…….1-3 months
4…….more than 3 months

PARTICIPATION AND AWARENESS

8. Are you or any members of your household members of the CC and CF?
CC: 1……Yes 2……..No
CF: 1……Yes 2……..No

9. If not a member, please give reasons.
.....
.....
.....
10. How many people in this household are members?
CC.....
CF.....

11. Are you or any member of your family a member of the CC and CF management committee?
CC: 1……Yes 2……..No
CF: 1……Yes 2……..No

If not a member of management committee, please give reasons.
.....
.....
12. Have you or any member of your household attended any CC or CF meeting (AGM) in the past 12 months?
CC: 1……Yes 2……..No
CF: 1……Yes 2……..No

13. If you did not attend meeting, please give reasons. (go to 18)

Reason for not attending	Conservancy	Community Forest
1 No time/Busy		
2 No interest		
3 Was not invited		
4 Do not feel welcome		
5 Other (specify)		

14. Have you or any member of your household expressed opinions during the CC or CF meeting AGM in the past 12 months?
CC: 1……Yes 2……..No
CF: 1……Yes 2……..No

15. Do you feel that you or any member of your household has influenced decisions taken at the AGM in the past 12 months?
CC: 1……Yes 2……..No
CF: 1……Yes 2……..No

16. If you attended AGM, how satisfied were you with the meeting?

Satisfaction	Conservancy	Community forest
1 Satisfied		
2 Neutral		
3 Unsatisfied		

17. Explain reasons for your response in the question above……
.....

Awareness

18. Does your CC/CF have a constitution?
CC: 1……Yes 2……..No
CF: 1……Yes 2……..No
3.....Don't know

19. If yes, were you or any member of your household involved in the process of formation of the constitution of the CC of CF?
CC: 1……Yes 2……..No
CF: 1……Yes 2……..No

20. Has your CC and CF constitutions ever been explained to you during any AGM?
CC: 1……Yes 2……..No
CF: 1……Yes 2……..No

21. Do you know the roles and responsibilities of the CC/CF management committees?
CC: 1……Yes 2……..No
CF: 1……Yes 2……..No

22. Is there a fund in your CC or CF?
CC: 1……Yes 2……..No
CF: 1……Yes 2……..No

23. Do you know the approximate amount accumulated in your CC or CF fund in the past 12 months?
CC: 1……N$ 2……..Don't know
CF: 1……N$ 2……..Don't know

24. Who makes major decisions (e.g. Budgeting, JV negotiations) within your CC and CF?

Who	Conservancy	Community Forest
1 Chairperson decides		
2 Majority decide		
3 By consensus		
4 Influenced by elites		

5 By Committee		
6 MET/MAWF staff		
7 Other		
8 Don't know		

25. In your opinion, what have been the likely effects of creation of CC and CF?

Impact	Conservancy			Community Forest		
	Agree	Neutral	Disagree	Agree	Neutral	Disagree
Increased and equal access to resources						
Threat to alternative livelihood						
Unnecessary restriction						
Help reduce poverty						

26. In your opinion, do you think that MET and DoF have a dominant role than the local communities in CCs and CF?

CC: 1……Yes 2……..No

CF: 1……Yes 2……..No

Don't know……3

Training and communication

27. Have you or any member of your household undertaken any training from any organisation since the CC/CF was created?

CC: 1……Yes 2……..No

CF: 1……Yes 2……..No

28. If yes, please specify the subject of training and the name of the organisation that provided the training.

.....

.....

29. Have you or any member of your household participated in any CC/CF activity in the past 12 months?

CC: 1……Yes 2……..No

CF: 1……Yes 2……..No

30. If yes, please specify the activity: …….

……

……

31. How do you normally get information about CC or CF activities?

Activity	CC	CF
Meetings		
Benefit distribution		
Financial reports		
Others (specify)		

32. Which of the following information have been provided by the CC/CF Committee in the past 12 months?

Activity	CC	CF
Financial Report		
Hunting Quota info.		
Number of animals hunted		
Trends in illegal activities/Poaching		
HWC incidents		
Others (specify)		

PART B: RESOURCE UTILISATION, BENEFITS, RULES & INTERACTIONS

Wildlife and Forest Resource Utilisation

1. What are the most important forest and wildlife products being harvested and utilized by this household? Please rate importance next to the product between 1 and 3, with 3 being highest importance.

1..... 2..... 3.....
4..... 5..... 6.....
7..... 8..... 9.....

2. Please indicate in order of importance/ the top 5 products used by your households using a scale of 1 to 3. Least important 1 - 2 - 3 Most important

Product	Rank
Firewood	
Trees/Poles	
Reeds	
Grass	

3. Has the **availability** of the most important products/resources and other indicators changed since the CC/CC were created? (May use list of products from above question)

Product	Density			Reason for change
	Remained the same	Has increased	Has decreased	
Trees				
Grass				
Reeds				
Wild animals				

Other NTFP				
Firewood				
Time to collect firewood				
Crop production				

Reasons for increase
1 Regional, national enforcement
2 Local enforcement
3 other (Specify)

Reasons for decrease
1 Over-use by local communities
2 Clearing of land for agriculture
3 Other (Specify)

4. Has **accessibility** to the most important products/resources and other indicators changed in the past five years (alternatively since the CC/CC were created)? (May use list of products from above question)

Product	**Accessibility**			**Reason for change**
	Remained the same	Has increased	Has decreased	
Trees				
Grass				
Reeds				
Wild animals				
Other NTFP				
Firewood				
Farmland				

5. Have you or any member of your household collected firewood in the past 1 month?
1 Yes
2 No

6. If so, how many times?----------(trips)

7. Have you or any member of your household harvested any other forest products in the past 12 months?
1 Yes
2 No

What are the products?.....
……
……

8. Have you or any member of your household been hunting in the past 12 months?
1 Yes
2 No

9. If yes, how many times?.....
10. What animals did you hunt? ……

11. If availability of the most important products (e.g. firewood) has declined, how has your household responded to the decline? Please rate the most important responses, maximum 3. Least important 1-2-3 Most important.

Product	Response (at least 3 &rank them)
Firewood	
Trees/Poles	
Grass	
Reeds	

Possible options for firewood

Increased collection time (further away from house)
More conservative use of firewood or replacements
Use of non-wood wild products
Buying firewood
Reduce number of cooked meals
Conserving standing trees for future

12. What has changed most in respect to the use of wildlife and forest resources since the introduction of CC and CF?

……

……

13. What would be most important to increase the benefits from the most important products? Please rank the most important actions for each product, maximum 3. Least important 1-2-3 Most important

Action	Product (Rank 1-3)				
	1Firewood	2Trees	3Grass	4Reeds	5
Better access –more use rights					
Better protection –avoid overuse					
Better skills & knowledge on how to collect and use					
Better access to markets					
Collective action in collection					
Other (specify)					

14. How much time do you spend in collecting a unit of the following forest products?

Product	Unit	Approximate Time spent
Firewood		
Poles		
Thatching grass		
Medicinal plants (DC)		
Fruits		
Water lilies		
Wild veggies		

Benefits

15. Are you aware of the system for sharing benefits in your CC and CF?
CC: 1……Yes 2……..No
CF: 1……Yes 2……..No

16. What are your feelings about the distribution of benefits?

	Conservancy	Community Forest
Fair		
Unfair		
Don't know /Neutral		

17. If you think the distribution of benefits is unfair, what should be done to make it fair?
……
……

18. Did you or any member of your household get the following benefits from the CC and the CF in the last 12 months?

Benefit	Conservancy	Community Forest
1 Cash pay-outs (indicate total amount received) N$		
2 Projects		
3 Job		
4 Other (Specify)4.1 Meat (kg) 4.2 4.3 4.4		

19. Did you or any of your family members sell any forest or wildlife products from the CC and CF in the past 12 months? If so, which ones?

Product	Quantity	Annual Income
Fuel Wood		
Construction poles		
Reeds		
Herbs/Medicinal plants (DC)		
Wild fruits		
Thatch grass		
Other products (specify)		

20. While selling products, do you feel that you get the appropriate market price?

Product	Yes/No	Reason for inappropriate price
Fuel Wood		
Construction poles		
Reeds		

Herbs/Medicinal plants (DC)		
Wild fruits		
Thatch grass		
Other products (specify)		

21. Which resources does your household benefit most from? Rank on a scale of 0-3. 0=not important, 3=very important

	Wildlife	Forest Products
1 Economic Benefit		
2 Source for subsistence use		

Rules, Monitoring and Maintenance

22. Are you aware of rules related to the utilisation of wildlife and forest resource?

Resource	Yes	No	Rule
General utilisation rule			
Firewood			
Construction Poles			
Reeds			
Herbs/Medicinal plants (Devil's Claw)			
Thatch grass			
Other products (specify)			

24. If yes, are the rules easy to understand?

	Conservancy	Community forest
1 No, very complex, difficult to understand		
2 Relatively complex, but can be understood through learning and experience		
3 Yes, easily understood		

26. How satisfied are you regarding the rules and regulations made to regulate forest and wildlife use in your CC/CF?

Satisfaction	Conservancy	Community forest
1 Satisfied		
2 Neutral		
3 Unsatisfied		

27. How satisfied are you with your rights to participate in CC and CF activities?

Satisfaction	Conservancy	Community forest
1 Satisfied		

2 Neutral		
3 Unsatisfied		

28. Does your household get permits for harvesting/ collecting the following products?

Product	Own use	Sale	Reason for not getting permit
Firewood			
Construction Poles			
Reeds			
Herbs/Medicinal plants (DC)			
Thatch grass			
Other products (specify)			

28. When harvesting products do you observe what other harvesters are doing (i.e. whether they are breaking harvesting rules?

1 Yes.....

2 No.....

Costs

29. How much time do you need to spend annually doing CC or CF obligatory and voluntary activities?

CC Activity	Time spent (days)	CF activity	Time spent (Days)
Protection (monitoring)		CF protection	
Meetings		Meetings	
Travelling		Travelling	
Communication		Communication	
Hunting		Fire breaks	

30. Is there any direct cash incurred to your household annually for communicating, information gathering and travelling for CC and CF related activities?

CC: 1…N$……Yes 2……..No

CF: 1…N$……Yes 2……..No

Human-Wildlife Conflict

31. Do the following animals visit your area?

Animal	Yes	No	Don't know
Elephant			
Hippo			
Lions			
Leopard			

Hyena			
Other (specify)			

32. How has the number of times that these animals visit your area changed in the last 5 years?

Animal	Increased	Decreased	Remained the same	Don't know	Reason
Elephant					
Hippo					
Lions					
Leopard					
Hyena					
Other (specify)					

33. Do the animals cause damage when they visit?

Animal	Always	Occasionally	No	Don't know
Elephant				
Hippo				
Lions				
Leopard				
Hyena				
Other (specify)				

34. Has your household experience any of the following damages or losses due to wildlife in the past 12 months?

Damage	Cost (N$)
Crop damage (ha)	
Livestock loss	
Damage to property	
Human injury	
Threat to human life	

35. Did you report the damage?
1.....yes
2.....No

36. If no, why not?
……

37. If yes, who did you report to?
.....

38. Did it cost you to travel and report the incident (s)?
1.N$.....Yes
2.....No

39. Was any action taken?
1.....yes
2.....No

40. If yes, what was the action and the timeframe?
.....
.....

Interactions and Cooperation

41. When and how does your household interact with other members of the community in wildlife and forestry management activities?

When / How	Wildlife management activities				Forest management activities			
	1 Year round	2 Seasonally	3 Occasion -ally	4 Never	1 Year round	2 Seasonally	3 Occasion -ally	4 Never
1 Cooperative harvesting or hunting								
2 cooperative processing								
3 Cooperative marketing/ sales								
4 Monitoring / Sanctioning								
5 Maintenance								

42. What is the level of cooperation in this community?
1 .....High
2 .....Medium
3 .....Low
4……Don't know

Leadership

43. What do you think of how the CC or CF Committees manage the affairs of the conservancy or Community Forest?

	Conservancy	Community Forest
1 Very well managed		
2 Managed reasonably well		
3 Neutral		
4 Managed poorly		

45. Do you trust the CC or CF Committees to manage and account for your finances?

	Conservancy	Community Forest
1 Trust them		
2 Neutral		

3 Don't trust them		

Conflict management and negotiations

46. Are you aware of any problems or conflicts that the CC and CF have faced in the past 12 months?
CC: 1……Yes 2……..No
CF: 1……Yes 2……..No

47. If yes, please explain……
……

48. Has the problem been resolved? How and by who?
……
……
……

49. How has the CC and CF affected your life?

	Positive effects	Negative effects
CC		
CF		

50. Is there anything else you would like to say or comment on?……
……
……
……