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Managing Common Pool Resources: Local Environmental Knowledge and Power Dynamics in Mopane Worms and Mopane Woodlands Management: The Case of Bulilima District, South-Western Matabeleland, Zimbabwe.

Mkhokheli Sithole

Doctoral thesis submitted in fulfilment of the requirements for the Degree of Doctor of Philosophy to the Department of Development Studies, Faculty of Humanities at the University of the Witwatersrand, Johannesburg, South Africa, 2016.



Supervisor: Professor Muchaparara Musemwa

Declaration

I, Mkhokheli Sithole, declare that this work is my own, that all sources used or quoted have been indicated and acknowledged by means of complete references, and that this thesis was not previously submitted by me or any other person for degree purposes at this or any other university.

Signature…… Date……..

Abstract

This study examines the dynamics of power and the significance of local environmental knowledge in natural resource management in Zimbabwe's communal areas. It uses a case study of Bulilima District, broken down into into 3 components (Wards) for manageability of the study, to analyse the power configurations and the role played by local environmental knowledge in influencing decision-making processes among actors in the district with regard to mopane worms (*Imbrasis beilina* is the scientific name while *icimbi* is the vernacular name) and mopane woodlands (Colophospermum mopane is the scientific name while *iphane* is the vernacular name). It examines the significance of local environmental knowledge, i.e. indigenous knowledge and knowledge that developed as a result of a combination of knowledges from different ethnic groups and modern science. The study further examines the dynamics of the gendered nature of mopane worms and woodlands tenure regimes by putting under the spotlight the spaces and places where men and women interact, use and exert control over mopane worms and woodlands. It places history at the centre of our understanding of contemporary power dynamics and helps us to appreciate the importance of how local environmental knowledge has changed over time. To this end, the study argues that some of the contemporary conflicts over resources have their roots in the colonial era when the colonial government appropriated land from the locals and introduced discourses and practices such as conservation. Furthermore, it argues and demonstrates that the state is a critical player in determining access, use and control of natural resources. Based on rich ethnographic data collected by means of critical observations, in-depth interviews, narratives, and archival data, as well as aided by a brief survey, the study concluded that natural resource governance is a complex phenomenon in developing states. Power and knowledge play significant roles in influencing access, use and control of mopane worms and woodlands. Furthermore, while some locals still possess indigenous knowledge, practices and belief systems related to natural resource management, these are now less significant in influencing decisions on natural resource management. Indeed, the interplay of knowledge and power in resource management sees scientific culture and outside knowledge taking precedence over local forms of knowledge in the management of natural resources in the district.

Key words: power, local environmental knowledge, indigenous knowledge, ZANU PF, natural resource management, access, mopane worms and woodlands, Bulilima, Zimbabwe

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List of Acronyms

AGRITEX	Department of Agricultural Technical and Extension Services
BSACo	British South Africa Company
CAMPFIRE	Communal Areas Management Programme for Indigenous Resources
CBNRM	Community-Based Natural Resource Management
CCJPZ	Catholic Commission for Justice and Peace in Zimbabwe
CEO	Chief Executive Officer
CPR	Common Property Resources
DA	District Administrator
DFID	Department for International Development
DNPWLM	Department of National Parks and Wildlife Management
EMA	Environmental Management Agency
ESAP	Economic Structural Adjustment Programme
FC	Forestry Commission
FGD	Focus group discussions
GoZ	Government of Zimbabwe
FHH	Female-headed household
FTLRRP	Fast Track Land Reform and Resettlement Programme
HH	Household Head
HIV/AIDS	Human Immunodeficiency Virus infection and Acquired Immune Deficiency Syndrome
IAD	Institutional Analysis and Development framework
IMF	International Monetary Fund
KII	Key informant interviews
LEK	Local Environmental Knowledge
LGPOs	Local Government Promotion Officers
MDC	Movement of Democratic Change
MHH	Male-headed household
MLGRUD	Ministry of Local Government, Rural and Urban Development
NAZ	National Archives of Zimbabwe
NGO	Non-governmental Organisation
NI	New Institutionalism
NRM	Natural Resource Management
PDC	Provincial Development Committee
PF-ZAPU	Patriotic Front Zimbabwe African People`s Union
ZANU-PF	Zimbabwe African National Union Patriotic Front
MDC-T	Movement for Democratic Change-Tsvangirai
NYS	National Youth Service
O`LEVEL	Ordinary Level
PRA	Participatory Rural Appraisal
RDC	Rural District Councils (RDCs),
RDDC	Rural District Development Committees
SES	Social Ecological Systems
TLA	Traditional Leaders Act

TLs	Traditional Leaders
VIDCO	Village Development Committee
WADCO	Ward Development Committee
ZESN	Zimbabwe Election Support Network
ZEC	Zimbabwe Electoral Commission
JC	Zimbabwe Junior Certificate
ZESA	Zimbabwe Electricity Supply Authority
ZIMSTATS	Zimbabwe National Statistical Agency

CHAPTER 1: SETTING THE RESEARCH AGENDA

1.1. Introduction

The world is increasingly facing a natural resource management (NRM) crisis in which natural resources are being harvested at unsustainable levels. Much blame has been placed on centralized state control which is so far removed from the day to day management of the resources (Eguavoen and Laube, 2010; Fabricius *et al*., 2013). There is, however, an increasing consensus that the cause of resource degradation is institutional. If the right rules and governance structures are in place and are objectively implemented, natural resources could be used wisely and conservation goals can be realized (Acheson, 2006). How to get that right seems to be an elusive goal. This situation has influenced a shift in the ideology of most post-colonial African countries with regards to the control of natural resources. For instance, there has been a 'paradigm shift' away from costly state-centred control towards more devolved models in which local people play a more active role (Murphree, 1991; Shackleton *et al*., 2001, Nemarundwe, 2003). These models are applied in the approaches of adaptive co-management, trans-disciplinary planning, community-based natural resource management, and transitions management (Kellert *et al*., 2000; Folke *et al*., 2005; Geels, 2002; 2005; Tress *et al*., 2005; Blaikie, 2006; Armitage *et al*., 2007; 2008; Berkes, 2009; Raymond *et al*., 2010). These models were influenced by the decentralisation policies enacted to facilitate the participation of local communities in resource management (Nemarundwe, 2003).

Colonial natural resource management policies had resulted in over-centralisation because they were designed within the context of conquest, disempowerment and subjugation (Appiah-Opoku and Hyma, 1999; Mandondo, 2000a; Ribot, 1999). Much of the colonial legislation was inherited piecemeal by most developing countries which nationalised their natural resources but failed to provide a comprehensive management system especially on resources that do not have high returns (Gibson, 1999; Mandondo, 2000a; Nemarundwe, 2003; Eguavoen and Laube, 2010). However, post-colonial state control over the use and management of natural resources, particularly in the communal areas, has largely been ineffective because the state lacks the resources and capacity to enforce such controls. The resources are thus left to be governed *de-facto* by the local people.

The failure by post-colonial states in governing natural resources in an effective and sustainable manner while half-heartedly adopting western models, has resulted in the dismantling of indigenous cultures, knowledge and institutions used to manage resources effectively (Fairhead and Leach, 2004, Hara *et al*., 2009). Independent African states inherited policies that assumed ignorance among rural users. The policies currently in operation are fuzzy, inchoate, and fall between local traditional governance systems which are ill-defined and state control which permeates to the lowest structures of the communities. Unlike Turner (2004) and Eguavoen and Laube (2010) who argued that state influence is usually far removed from day to day management of resources in developing states, in Zimbabwe, the state is present at local levels through both formal and informal structures that influence decision making. The National Youth Service (NYS) for example, is being used by the state to deploy youths into communities, more as ZANU PF's intimidatory machinery than anything.[1] Private and independent media and other groups have extensively documented some of the atrocities that were carried out by these youths since the beginning of Zimbabwe's Fast Track Land Reform and Resettlement Programme (FTLRRP)[2] to an extent that they are now informally referred to as the militia.[3] It should be noted, however, that the National Youth Service graduates are not involved in the management of natural resources in Bulilima. It is presence nevertheless that demonstrates the power of ZANU PF at such lower levels. Indeed the researcher came across a group of youths who boasted of being products of the National Youth Service and demanded to know the researcher's business in Bulilima despite having been cleared by the relevant authorities.

[1] Interview with one councillor from MDC-T, one of the opposition parties, who requested anonymity (22/12/2014)

[2] FTLRRP was a government initiated land redistribution programme which began in July 2000. Under this programme the government compulsorily acquired land for equitable distribution to the black majority under the 1A and A2 models. The A1 model consists of the villagised scheme and the self-contained plots. The A2 model consists of big farms for commercial production (Mabhena, 2010; Mutema, 2012; Ministry of Lands, Agriculture and Rural Resettlements, 2001).

[3] See for example `ZIMBABWE: "Green Bombers" deserting poor conditions in camps` 2004, IRIN News, 23 January http://www.irinnews.org/Report.aspx? ReportId=48241– Accessed 20 June 2014; "Hundreds of ZANU PF youths are still being trained at torture camps scattered around Mashonaland Central" 2002, The Daily News, 21 March; The Solidarity Peace Trust (2003) An overview of youth militia training and activities in Zimbabwe, October 2000–August 2003

The central concern of this thesis, therefore, is to understand power configurations and significance of local environmental knowledge (LEK) in the management of natural resources, particularly mopane worms and woodlands in Bulilima District. The mopane tree is the dominant tree species and it occasionally hosts an outbreak of mopane worms which are an important source of livelihood to the locals (see Toms *et. al*., 2003, Illgner and Nel, 2000). Interventions targeting sustainable utilisation of these resources require an in-depth understanding of how the resources are governed and how knowledge held by users influences decision making in the contemporary natural resource management system. This requires an ethnographic study that analysess contemporary power dynamics and local environmental knowledge by reflecting on how historical events influence these phenomena. Power-knowledge nexus is fundamental to our understanding of natural resource governance in this thesis.

Mopane worms and woodlands are natural resources that people have used and continue to use for their livelihoods in Bulilima District. The status of these resources, local people's access to them, their use and control have been shaped by historical and political events dating back to the pre-colonial era while some of them are the product of the post-colonial era. It is within this context that this thesis examines power configurations and LEK as variables that affect natural resource management in Bulilima District. The thesis explores roles played by various actors that include local communities, traditional authorities, government and quasi-government authorities. For instance, it has been documented that quite often national interests and strategies towards natural resources tend to be in contrast with local people's multiple livelihood strategies for using a variety of natural resources (Matose, 2009). Such contrasting dynamics reflect power relations and have a significant impact on how resources are managed. Furthermore, analysis of access, use and control of mopane worms and woodlands resources in this thesis, is done from a gendered perspective, informed by the realisation that natural resource use is inherently gendered. Indeed results discussed in Chapters 5 and 6 show that mopane worms and woodlands are gendered resources, hence men and women compete and negotiate spaces and places to access, use and control them by exercising various forms of power and applying local environmental knowledge they possess with regards to the two resources.

1.2. Decentralisation of natural resource management systems

Concepts of LEK and power dynamics in this study should be understood in a decentralisation context, a policy tool that has been adopted by many developing countries across the globe (Turyahabwe1 *et al*., 2007). Decentralisation is seen as a policy thrust where bundles of entrustments, including regulatory and executive powers, responsibility and authority in decision making, institutional infrastructure and assets, and administrative capacity, are variously transferred to local groupings (Crook and Manor, 1998; Agrawal and Ostrom, 1999; Meinzen-Dick and Knox, 1999; Pomeroy, 1999 in Mandondo, 2000a). It is however a broad and contested concept (Moyo and Ncube, 2014). For instance Rondinelli (1986) argues that different types of decentralisation can be distinguished based on the degree of responsibility for and discretion in decision making that is transferred by the central government to provincial and local government units. It is from this complexity that four main forms of decentralisation have emerged, namely, administrative, political, fiscal and market.[4] Administrative decentralisation (which includes deconcentration and delegation) refers to the transfer of limited policy making, planning and management functions (and resources) from central to local levels (with authority over decision making and use of resources remaining atthe centre) while political decentralization refers to the statutory devolution of some political, economic and local policy making powers to democratically elected local governments.On the other hand, fiscal decentralisation includes efforts to change the distribution and sources of resources available to local governments while market decentralis ation involves attempts to transfer substantive control over resource allocation to non-State actors (Moyo and Ncube, 2014, pp 291-292).

Zimbabwe, like many other sub-Saharan countries, have pursued the administrative type of decentralisation either by transferring selected public functions to sub-regional entities or field office units supervised by central government (deconcentration) or by transferring defined authority, responsibility and financial resources to semi-autonomous

[4] See works by Rondinelli D A "Administrative decentralisation and economic development: the Sudan's experiment with devolution" (1981) 19(4) The Journal of Modern African Studies 595; Friedman, H. (1983). Local political alternatives for decentralized development. Decentralization and development: policy implementation in developing countries; Harris R "Centralization and decentralization in Latin America" in Cheem a & Rondinelli (1983) at 1839 and Leonard D "Inter-organizational linkages for decentralized ruraldevelopment: overcoming administrative weaknesses" in Cheema & Rondinelli (Eds) (1983) at 271.

sub-regional entities that are ultimately accountable to the central office (delegation) (World Bank, 2001; Moyo and Ncube, 2014).

With regards to natural resource use, some scholars concur that the idea behind decentralisation is to increase resource user participation in natural resource management (NRM) decisions and benefits by restructuring the power relations between central state and communities through the transfer of management authority to local-level organisations (Shackleton *et al*., 2002; Ribot, 2003). It is widely believed that downwardly accountable authorities with meaningful discretionary powers are the basic institutional elements of decentralisation that lead to local efficiency, equity and development (Mawhood, 1983; Ribot, 1996; Agrawal and Ribot, 1999; Mandondo, 2000a; Barr, 2006; Barry *et al*., 2010).

While in theory, the advantages of devolving resource management to local governments are compelling, questions have been asked about the commitment in transferring power to local authorities. For instance, Shackleton *et al*., (2002) noted that in most Asian and African countries, local people did not believe that devolution policies had yielded many benefits to them. Indeed similar sentiments were highlighted by various scholars (Ribot, 1995; 1999a; Oyono, 2002) who noted that decentralisation in Burkina Faso, Cameroon, Guinea, Malawi, Niger and Zimbabwe are transferring decision making powers to various unaccountable local bodies, threatening local equity and environment. In a recent publication, Mfune (2013) concluded that the successes of transferring power to local natural resource authorities in Zambia depended on the prevailing political will of the authority devolving power and the capacity of local actors receiving devolved powers.

In Zimbabwe, the key decentralisation actors in the local arena who exercise powers over public resources include elected officials (councillors within the Rural District Councils (RDCs), Village Development Committee (VIDCO) and Ward Development Committee (WADCO), Non-governmental Organisations (NGOs), traditional leaders and powerful individuals within communities.[5] Communities are considered as the ideal units for

[5] The VIDCO normally consists of 100 households, with slight variations from area to area, and it is presided over by an elected chairperson while the WADCO is a body over-arching several VIDCOs, usually six per ward. The WADCO draws its membership from leaders of its constituent VIDCOs and is presided over by an elected councilor representing the ward at the district level in the (RDDC).

decentralised natural resource governance systems. This is inspired by the appeal of smallness, with identifiable groups of users sharing common interests, norms and beliefs consensus in the definition of the term community (Hillery, 1955; Cousins, 1993; Agrawal and Gibson, 1999). Contemporary arguments on the concept of community in policy development are linked to the late 19th and early 20th century thought, when rapid social and economic change became an increasing concern amongst social scientists (Agrawal and Gibson, 1999). Community may be used to describe geographical units such as village, ward or district. In some cases, community is used as an analytical category where characteristics of the group define what the community is (Madzudzo, 1997). Agrawal and Gibson (2001) noted that there is power in seeing community as small integrated units using locally evolved norms and rules to conserve natural resources. This idea however faces challenges because it erroneously views community as a unified organic whole. Quite often, there are differences within communities which might affect natural resource management outcomes, local politics and interactions (Western and Write, 1994; Warburton, 1998; Agrawal and Gibson, 1999). Sharpe (1998) for example, stresses the internal dynamics of power, class, ethnicity, gender and political allegiances that make community a complex social structure. In this study, communities are treated as complex social structures made up of actors with multiple dynamics that affect access, use and control of natural resources.

Linked to the criticism of decentralisation is the idea of community participation in natural resource management. Sanchez *et al.*, (1988) pointed out that when decentralisation was considered, often it entailed vague, poorly-theorized notions of giving power to the citizens. Similar sentiments were raised by Hussein (1995) and Mayoux (1995) who noted that the so-called participatory initiatives often failed in practice to empower community members with a genuine voice in or control over decision-making. Others argue that in some cases local elite groups capture project benefits partly because agencies have found it expedient to work with (and sometimes align interests with) existing power holders rather than the marginalized and excluded (Brohman, 1996; Desai, 1996; Goodwin, 1998 in Few, 2000). In this study, while decentralisation is understood in the context of improving participation of local people in Bulilima, the extent and efficacy of this participation is measured in terms of the power and role that different stakeholders have in the decision-making process. Discrepancies in social groups as reported in literature (see for instance Arnstein, 1969; Cornwall, 2008; Pretty, 1995) have inspired a number of typologies of participation, e.g. Cornwall, (2008), Arnstein (1969), Pretty (1995) and Agarwal (2001). Arnstein distinguished eight forms of

participation corresponding to different levels of citizens' power (Few, 2000). Pretty's typology includes manipulative and passive participation, where people are told what is to happen and act out pre-determined roles, and self-mobilisation, in which people take initiatives largely independent of external institutions (Pretty 1995). Agarwal's typology was adopted for this study as it is more relevant to the nature of participation practiced in communal areas where community management of resources is active.

Table 1.1 Typology of participation

Form/Level of participation (presented in ascending order)	Characteristics/Features
Nominal participation	Membership in the group.
Passive participation	Being informed of decisions ex-post facto; or attending meetings, listening in on decision making without speaking up.
Consultative participation	Being asked an opinion on specific matters without guarantee of influencing decisions.
Activity-specific participation	Being asked to undertake specific tasks.
Active participation	Expressing opinions whether solicited or not, or taking initiatives of other sorts.
Interactive participation (empowering)	Having influence in the group's decisions.

Adapted from Agarwal (2001)

These typologies have however, been criticised for focusing on the roles that groups or individuals play in the process rather than on who has initiated the process (Buchy and Race, 2001). Some scholars such as Kaufman (1997:154) urge researchers to look at power differences not only as inequality between groups , but as having the "capacity ... to control and dominate other social structures and natural resources". Another criticism has come from the fact that participatory approaches have failed to address the issue of "charismatic leaders" (Jewitt, 1995:1003) or the "catalistic facilitator" (Robins, 1995:84), where power is vested in individuals. Buchy and Race (2001) noted that participatory processes have the potential of giving power to individuals. In Bulilima, local actors such as traditional leaders, elected councilors and influential individuals are entrusted with ensuring

that there is local participation in natural resource management within the communities. However, the role that these special individuals play because of their socio-political or professional status, or because of their specific personalities, has not been fully explored. This thesis thus further analyzes how participatory processes have influenced power dynamics in Bulilima.

It is important to note that while the focus of the study is not so much on the Community Based Natural Resource Management (CBNRM) programme, this programme dominates natural resource management narratives in Bulilima. The Communal Areas Management Programme for Indigenous Resources (CAMPFIRE)[6] which was introduced in 1989 in Bulilima (see Madzudzo and Hawkes, 1996) has been used as a reference point when discussing natural resource management issues in Bulilima (Interview with Bulilima CEO, 14 December, 2013). As such, it would be remiss to ignore CAMPFIRE in this study. In this regard, discussions with the Bulilima RDC officials revealed that the idea of putting mopane worms under a CAMPFIRE programme was once mooted but never operationalized because it was felt that the worms were not likely to be economically viable. Mopane worms and woodlands are found in different tenure areas that include the CAMPFIRE project area. This means that their management varies depending on the tenure and this determines who has what access and control in these different tenure areas.

1.3. Objectives of the study

The main aim of this study was to explore power dynamics and the significance of LEK in the management of mopane worms and woodlands in Bulilima District situated in South-western Matabeleland, Zimbabwe. This overarching aim was further simplified into researchable objectives and questions outlined below.

[6] CAMPFIRE is a community based natural resources management (CBNRM) programme developed by the Government of Zimbabwe through the Ministry of Environment and Natural Resources Management. The programme is designed to promote the enhancement of rural livelihoods, rural development, and the conservation of biodiversity and the rich natural heritage of Zimbabwe (see Madzudzo and Hawkes, 1995; Dzingirai and Madzudzo, 1999).

1.3.1. Research Objectives and Questions:

1. **Key objective one***:* To contextualise Zimbabwe`s natural resource management history.
    - How were natural resources managed during the precolonial, colonial and post-colonial periods in Zimbabwe generally and in Bulilima, particularly?

2. **Key objective two*:*** To determine how power is configured between actors, institutions and institutional structures that use and manage mopane worms and woodlands in Bulilima.
    - How is power configured, exercised and experienced at different governance levels, places and spaces?
    - What are the institutional structures and their roles in mopane worms and woodlands management?
    - Are there areas of conflict with regards to natural resource management in Bulilima and if so, how are conflicts resolved?

3. **Key objective three:** To investigate the significance of LEK and in the management of Mopane worms and woodlands in Bulilima.
    - What local environmental knowledge exists about mopane worms and woodlands?
    - Who possesses this knowledge?
    - How significant is this knowledge in influencing natural resource management decisions compared to other types of knowledge?

4. **Key objective four**: To analyse the gendered tenure of Mopane worms and woodlands management.
    - Which are men and women's spaces and places with regard to mopane worms and woodlands in Bulilima?
    - How do gendered domains in mopane worms and woodlands affect women and men's access, use and control of mopane worms and woodlands?

The predominant postulation behind this study is that recognition of the power dynamics, knowledge systems and gender dimensions in natural resource use in communal areas will assist policy makers in proposing natural resource initiatives that ensure sustainable use of mopane worms and woodlands in order to meet human livelihood needs. To fulfil the objectives, this study uses a case study of Bulilima District, broken down into Bambadzi, Makhulela and Dombolefu wards. Bambadzi and Makhulela are old resettlements established in the 1960s while Dombolefu is relatively new, having been established in the 1980s. The three wards are known for abundant occurrence of mopane worms compared to other wards.[7]

There are a number of reasons why a case study approach was preferred. Firstly, it provided scope to move from the general to the specific as it allowed for generation of in-depth insights into the issues that were being examined. Secondly, studies that are specific to natural resource management in Bulilima have tended to focus on Communal Areas Management Programme for Indigenous Resources (CAMFIRE) with emphasis on wildlife resources without consideration of the complex resource set up within physical and social spaces (Madzudzo, 1997; Dzingirai and Madzudzo, 1999; Madzudzo and Hawkes, 1996; Magadza, 2006). In most of these writings, the debate has been about conflict of interests between social groups over access to natural resources communally managed under CAMPFIRE. This study builds on these studies but introduces a fresh historical perspective in the management of two resources in a manner that has not been done before. The study contributes towards an understanding of how power dynamics and LEKsystems influence the sustainable management of mopane woodlands and mopane worms in Bulilima. Moreover, this study raises critical theoretical debates about natural resources that are not so important to the state but are so to the locals who depend on such resources.

1.4. Problem Statement

Decentralisation of NRM to local actors and institutions in many developing states was an attempt to reduce the state's role in natural resource governance while improving efficiency in resource use. As a result, much of common pool resource literature has tended to focus on how decentralised natural resources are sustainably managed, how institutions established to manage them are coping and the general resource characteristics after decentralisation (Kadirbeyoglu and Ozertan, 2015). While numerous scholars (Ostrom *et al*., 1994;

[7] Information obtained from Bulilima CEO

Nemarundwe, 2001; Matose, 2002; 2008; 2009; Anderson, 2006) have done comprehensive research on how contextualising interactions among local actors leads to institutional outcomes shaping their actions, analysis of power dynamics and the significance of LEK on natural resource governance has generally been neglected. Kadirbeyoglu and Ozertan, (2015) noted that power asymmetry among local natural resource users can determine how a resource is managed, thus influencing access, use and control of a resource. Similarly, knowledge also has a similar effect on natural resource management.

Schneck (1987) analyzed Foucault's power/discourse essay and concluded that there is a very close link between knowledge and power. Knowledge creates and enhances power yet common pool resource (CPR) governance literature has not thoroughly analysed this dimension, particularly how LEK influences power dynamics with regards to natural resource access, use and control. Decentralization on its own therefore will not result in efficient resource use without ascertaining power dynamics that play an important role in determining who has access to what resource at a local level. Similarly, understanding the significance of LEK is crucial in determining the decision making influence of those who still possess and use this knowledge.

An analysis of CPRs in a historical context has also not been dealt with satisfactorily in CPR governance literature, yet history plays a key role in understanding expressions and sources of power asymmetries, as well as associated knowledge systems shaping contemporary resource management systems. The legacy of the colonial management of traditional leaders is still felt in contemporary management of natural resources in the rural communities of Zimbabwe. It is therefore critical that power analysis on actors and institutions that use mopane resources must necessarily include a historical dimension that would contextualise an understanding of contemporary power and LEK systems in the communities. For instance, the colonial system encouraged certain forms of power in traditional leaders and communal tenure system to support colonial states and oppress the masses (Chanock, 1991; Mamdani, 1996). Since independence, the government of Zimbabwe has faced challenges in addressing tenure laws, meaning that resource users operate in a legal limbo that places limitations on their resource autonomy. The Fast Track Land Reform and Resettlement Programme (FTLRRP) which started in 1999 ushered in a new dispensation which has seen the majority

of formerly white owned farms occupied by different classes of indigenous black people[8]. As a result, the formal administration of land in formerly white-owned areas has been replaced by an incoherent system of land management which enjoys some space in the traditional administration and political/party administration nexus. In this legal uncertainty, political and economic elites accumulate wealth and power based on tenure arrangements and management practices bequeathed to them by the departing colonial authorities.

1.5. Rationale

Utilization of natural resources in Zimbabwe's rural areas has occurred in a system that is complicated by blurry resource rights and colonial political influence (Logan and Moseley, 2002; Laerhoven and Ostrom, 2007). Two important Acts passed after 1980: the Communal Land Act of 1982 and the Traditional Leadership Act of 1998 transferred all powers for the allocation of land and natural resources to the Rural District Councils (RDCs) and further placed land administration powers in a traditional system of chiefs and headmen. This was done under the umbrella of decentralization, a system which sought to transfer natural resource management responsibilities and powers from central government to local institutions (Fisher, 1991; Dillinger, 1994; Crook and Manor, 1998; Agrawal and Ribot, 1999; World Bank, 2000). However, these institutional tools are parallel administrative systems with the potential of causing conflicts in natural resource management (Pollard and Cousins, 2008). Furthermore, the decentralization attempts in developing countries such as Burkina Faso, Cameroon, Guinea, Malawi, Niger, Zambia, the Gambia and Zimbabwe have been perceived as transferring insufficient decision-making powers to various unaccountable local bodies, threatening local equity and the environment (Schroeder, 1999; Oyono, 2002; Ribot, 2003). In some studies, it has been argued that decentralization has totally ignored indigenous knowledge and management systems to the detriment of the natural resources (Haller and Chabwela, 2009; Magole 2009a; b; Mhlanga, 2009; Matose, 2009; Büscher, 2010; Eguavoen and Laube, 2010; Burns and Stohr, 2011). In such a context, where claims to CPRs occur in a complex tenure system and where decentralisation has resulted in the local elites capturing most of the benefits (Ribot, 2000; Woodhouse *et al.*, 2000), there was a compelling need to explore power dynamics among various actors who utilise mopane worms

[8] FTLRRP is a form of land redistribution in Zimbabwe which began in July 2000 through the Land Reform and Resettlement Programme Phase 11. It envisaged acquiring 5 million hectares and resettling new farmers on all acquired land (Murombedzi, 2005; Barry, 2004; Hammar and Raftopoulos, 2003)

and woodlands in Bulilima. In this study, this is done in a broader historical, political and social context, taking into account political and social events that occurred in Bulilima in the pre-colonial, colonial and post-colonial eras.

Research on institutional change in natural resource management has attracted a lot of scholarly attention, but most of these studies concentrated on how the state dismantled local institutions in the governance of fisheries and flood plains (see for example Haller and Chabwela, 2009; Demotts *et al.*, 2009). They also rely heavily on archival data which does not lend itself to producing rich and detailed information about the lived experiences of natural resource users. Moreover, there are limited studies on the historical trajectory of natural resources in areas that have been affected by both ethnic and political struggles such as Bulilima District. This researcher was thus interested in the broader conceptual and theoretical questions prompted by knowledge systems and power dynamics in mopane worms and woodlands use. For that reason, this study aims to produce deeper insights into the phenomenon through rich, contextual, and nuanced data rarely captured in archives. It privileges an ethnographic approach, involving sustained observations, participation in the observed practices and events, archival research and in depth interviews with participants – the aim of which is to produce rich and detailed data on power relations and knowledge systems among and between resource users. This research seeks to carry out this analysis using the Institutional Analysis and Development (IAD) Framework approach and the Power Cube approach because these two can help explain different forms of power in various constellations of property and access rights. Although this study is based on a case study research, analysing power dynamics and LEK systems associated with natural resource management in Bulilima can help improve understanding of other contestations of natural resource governance in other regions of the world with similar socio-political and economic characteristics.

With regards to the study area, and the subject under discussion, the existing literature on mopane worms and woodlands is fragmented and mainly focussed on analysing livelihood issues (see for example Gondo, *et al.*, 2010; Akpalu *et al.*, 2007; Gardiner, 2006; Stack *et al.*, 2003). Most of these studies are limited to mopane worms and livelihoods. Other studies conducted in the same area (Madzudzo, 1997; Dzingirai and Madzudzo, 1999; Madzudzo and Hawkes, 1996; and Magadza, 2006) have debated among other things, human-wildlife conflict, grazing and access to resources managed under the CAMPFIRE program. For

instance, Dzingirai and Madzudzo (1999) attempted to show how social groups within a community have divergent perceptions of how resources should be managed, often resulting in conflicts while Madzudzo (1997) looked at the distribution of benefits derived from CAMPFIRE proceeds where he concluded that funds realised through the CAMPFIRE program were unequally distributed with the RDC getting a larger share than the intended beneficiaries.

Those studies that concentrated on CAMPFIRE and wildlife resources in Bulilima set the stage for power and knowledge analysis in that most of them sought to highlight power dynamics in resource management and access. This study therefore builds on these studies but introduces a fresh historical perspective, than has hitherto been the case, in order to have a better understanding of power dynamics and LEK systems at play in Bulilima. Moreover, theoretical debates on natural resources that are not important to the state but to the locals who depend on the resources are raised. This follows an observation by Heltberg (2010) that natural resources which are not of commercial value are rarely a concern for policy-makers hence little is done to conserve them.

A number of studies have also been done on the management of Mopane woodlands (see for example Gandar, 1983; Tietema, *et al.*, 1991; Mushove and Makoni, 1993; von Maltitz and Shackleton, 2004; Gardiner, 2006; Makhado *et al.*, 2012). Most of these studies have focused on the scientific aspect of management. The social aspects of management that include governance issues have not been given much emphasis and have also been analyzed on a short time-scale. This study analyses management of mopane worms and woodlands from a historical perspective stretching over three epochs – pre-colonial, colonial and post-colonial.

In order to fully comprehend the problem at hand, it is vital to situate Bulilima District as a study area within its specific historical and political context. In the last three decades, Matabeleland South region, where Bulilima is located, has experienced intense contestations of political power between the locals, various political parties, and even Non-Governmental Organisations (NGOs). The region is a restless frontier where identities (ethnic, regional and national) and politics are in a constant shift (Alexander, 1991; Phimister, 2008; Mabhena,

2010; Msindo, 2012). The history of Bulilimamangwe[9] is a history of many ethnic groups such as the Rozvi, Venda, San, Kalanga, Nambya, Tonga and the Ndebele. This region has undergone a series of political changes which can be traced back to the invasion by the Ndebele in the 1830s, invasion by the British South Africa Company (BSACo) in the 1890s, the Ndebele uprising in the early 1890s and the liberation war which culminated in Zimbabwe`s independence in 1980 (Msindo, 2012). The defeat of the Ndebele by the British colonizers in 1893 and the crafting of the Native Land Husbandry Act of 1951 resulted in a new configuration of power and new knowledge systems as Ndebele chiefs were installed to govern Kalanga people, leading to a strain in relations between the Ndebele and the Kalanga (Msindo, 2012; Dube, 2012 in Landman, 2013). However, the struggle for independence brought together the two main ethnic groups, Kalanga and Ndebele, culminating in the formation of the Patriotic Front Zimbabwe African People`s Union (PF-ZAPU) (Ranger, 1999; Mabhena, 2010; Msindo, 2012; Dube, 2012 in Landman, 2013). The struggle for independence and the ultimate victory of PF-ZAPU and Zimbabwe African National Union Patriotic Front (ZANU-PF) brought new configurations of power in Matabeleland region.[10] The new ZANU-PF led government faced stiff opposition from PF-ZAPU dominated areas such as Bulilima. The period from 1980 to 1987 witnessed a power struggle between ZANU (PF) and PF-ZAPU for the control of largely Matabeleland and parts of Midlands regions under ZAPU control.[11] During this period, the repression of the civilian population and their local and national leaders effectively denied Matabeleland a voice in decisions concerning development and land distribution (Kriger, 1988; 2006; Moore, 2005; Alexander 1991). Power meant the control of land and its natural resources. Mabhena (2010) argued that the ZANU (PF) led government had to impose new administrative structures on top of ZAPU-led administrative structures so as to control the activities of ZAPU councilors and other administrators. It is clear that this resulted in a struggle for power.

[9] Bulilima and Mangwe districts were initially part of one big district known as Bulilimamangwe. In 2002 Bulilimamangwe district was split into three districts (Bulilima, Mangwe and Plumtree) as it was considered by the government of Zimbabwe to be administratively too large. Plumtree is the only urban district (Munyati *et al*.,(Ed), 2006).

[10] PF-ZAPU and ZANU-PF were originally one party known as Zimbabwe African People's Union (ZAPU). In 1963 ZAPU split into ZANU and ZAPU on regional, ethnic and strategic differences (Chitiyo and Rupiya, 2005).

[11] For more detail on this see Alexander (1991); Phimister, (2008); Mabhena, (2010);

The Unity Accord of 1987 ushered in a new era of peace in Bulilima and other areas of Matabeleland and Midlands.[12] The people of Matabeleland however remained sceptical of the unity accord as shown by their immediate shift of allegiance when the new Movement of Democratic Change party came along in 1999 (Mabhena, 2010). As of October 2015 however, the members of parliament for Bulilima East and West constituencies (Hon. Mathias Ndlovu and Hon. Lungisani Nleya, respectively) were members of the ruling ZANU PF party. There are also more councilors representing ZANU PF (13 in total) compared to 5 from MDC-T and 1 from MDC (Zimbabwe Electoral Commission (ZEC), 2013). Of the 3 wards under study, Makhulela has a councilor from MDC-T while councilors representing other two wards are from ZANU PF. The councilor from Makhulela pointed out that his authority was being openly challenged by the District Administrator (DA) (closely linked to the ruling party) who often encouraged traditional leaders to make decisions without the councilor's knowledge. The study also found out that other structures such as war veterans and Border Gezi youths[13] often openly defied directives coming from the councilor because he represented an opposition party even though he had been democratically elected by the people.

This brief political history of Matabeleland South region, in general, and Bulilima in particular, is vital because it helps situate our understanding of the evolving power dynamics in the district. Different political regimes that attempted to control Bulilima district from 1980 also had a huge influence on how natural resources were, and still are, being exploited.

[12] The unity accord was signed by ZAPU and ZANU in 1987 resulting in an end to political hostilities that were being perpetrated by ZANU PF led government soldiers known as the 5th brigade in Matabeleland and Midlands areas. The hostilities are known as Gukurahundi in vernacular Shona language which means cleaning of the chuff after harvests (Alexander, 1991 Stiff, 2000; Phimister, 2008).

[13] Border Gezi Youth is a term given to youths who undergo National Youth Service (NYS) in Zimbabwe. Border Gezi (December 17, 1964 – April 28, 2001) was a Zimbabwean politician. He was a close ally of Robert Mugabe within ZANU-PF and served as Minister for Gender, Youth and Employment from 2000. He is widely responsible for having presided over a National Youth Service system that was responsible for serious atrocities in Zimbabwe (see for example `ZIMBABWE: "Green Bombers" deserting poor conditions in camps` 2004, IRIN News, 23 January. http://www.irinnews.org/Report.aspx?ReportId=48241. Accessed 20 June 2014; "Hundreds of ZANU PF youths are still being trained at torture camps scattered around Mashonaland Central" 2002, The Daily News, 21 March. (CISNET Zimbabwe CX63395). Accessed 20 June 2014; THE SOLIDARITY PEACE TRUST (2003). An overview of youth militia training and activities in Zimbabwe, October 2000–August 2003.

1.6. Outline of the Thesis

The thesis comprises seven chapters. After this introductory chapter, the second presents the conceptual frameworks for analysing power dynamics and LEK in common pool resources. The chapter reviews literature on Common Property Resources (CPRs), New Institutionalism (NI), power and political ecology. Issues such as struggles over power, practices, justice, knowledge, trust, social capital, accountability and ethnicity are increasingly being taken cognizant of by researchers in an attempt to understand how certain institutions influence the value placed on resources by users in order to govern resource access, use and benefits (Robbins, 2004; Collomb *et al.*, 2010). The chapter further critiques the concept of knowledge and its effect on natural resource management. Chapter 3 discusses the methodological approach adopted for the study. A predominantly qualitative approach is followed in both data collection and analysis. The chapter further discusses the challenges faced during fieldwork and how some of them were overcome. The second part of Chapter 3 provides a detailed description of the study area, Bulilima District and the three wards sampled for this study. A general overview of the district's economy, geography and population is given. Chapter 4 is a historical analysis of natural resource management in Zimbabwe and in Bulilima. This chapter is based on archival reviews, document analysis as well as narratives from purposively sampled key informants. The chapter goes back into history, chronicling major events that have shaped the management of natural resources during the pre-colonial, colonial and post-colonial eras so as to understand the key processes and mechanisms influencing the contemporary governance of natural resources.[14]

Chapters 4, 5 and 6 are devoted to presentation, analysis and discussion of results. Findings are discussed and linked to the conceptual frameworks critiqued in Chapter 2. Chapter 5 analyses patterns of interaction, power dynamics, institutional structures and the gendered nature of exploiting mopane worms and woodlands. Interactions among actors result in diverse power relations that further influence use, access and control of mopane worms and woodlands. The chapter further interrogates the role played by women in influencing

[14] In using these temporal parameters the researcher is mindful of their limitations as these are Western demarcations of time related to colonialism. They ignore African perceptions of periodisation and privilege those of European colonial settlers. The researcher is therefore using them for heuristic purposes as there is no space in this thesis to delve deeper into a critique of this issue.

decisions in the study area. Chapter 6 focuses on the significance of LEK systems on mopane worm and woodland use and management. Focus is on the type of LEK used by communities to ensure sustainable management of mopane resources. LEK faces challenges from western scientific knowledge used mainly by the state and other organizations to control natural resource management in the study area. Chapter 7 discusses and summarizes the key arguments presented in the thesis. It reflects on the arguments in all the previous chapters, linking the objectives of the study, the conceptual frameworks and methodology used. The chapter ends by giving a suitable conclusion that raises further questions on natural resource management that could be pursued as further research in another work.

CHAPTER 2: CONCEPTUAL FRAMEWORKS FOR ANALYSING POWER AND KNOWLEDGE IN COMMON POOL RESOURCE MANAGEMENT

2.1. Introduction

This chapter establishes the foundation for exploring power dynamics between and among natural resource users and the significance of local environmental knowledge in the management of common pool resources. It further discusses the reasons behind the selection of key concepts and theories that help illuminate this study. Major concepts such as power relations, LEK systems and situated practices of different actors located in specific contexts and mediated by sets of changing institutions which may lead to different outcomes, are analysed. This study is built on Hardin's (1968) 'Tragedy of the Commons' theory which argues that users of common property cannot be left to decide how to use it and that their use has to be controlled to avoid over-exploitation. It is with the objective of preventing the Hardinian 'tragedy of the commons' that governments in Africa, and other parts of the world had, until the beginning of the 1980s, assumed direct control of common pool resources such as forests, water bodies, game and wildlife at the expense of the locals who were denied the opportunity of managing their own resources. It is therefore critical that theoretical discussions anchoring this study begin with an analysis of Hardin's 'tragedy of the commons' framework. Other relevant frameworks discussed include new institutionalism (NI), common property resource (CPR), theoretical discussions on power and political ecology. The chapter also analyses formal and informal institutions governing the management of common pool resources in Southern Africa. It concludes by discussing two analytical frameworks used in understanding the dynamics of power and the significance of local environmental knowledge in mopane worms and woodlands in the Bulilima District.

2.2. Conceptual frameworks

The governance of common pool resources has come under the global spotlight given that in most cases, common pool resources are directly related to the natural environment and the sustainability of the natural environment has become a major global topic (Hardin, 1968; Wade, 1987, 1988; Ostrom, 1990, 2005; Baland and Platteau 1996; Agrawal, 2005).

Common pool resources are characterized by property rights that are either open access or distinctly common property rights. In the case of state property, it is argued that without proper enforcement, state resources may end up resembling open access resources where it is a 'free for all' (Ostrom, 2008; Musole, 2009). In his seminal paper, Hardin (1968) argued that in the case of non-private common property (absence of private property rights) the community will continue to utilise the resource aiming at individual utility maximisation without necessary investments, leading to the eventual degradation of the resource. This he termed the 'tragedy of the commons'. He argued that there was no incentive to invest in the upkeep of common property as other members are likely to benefit without sharing the investment costs, thereby benefitting unduly. This problem is attributed to the characteristics of common property resources summarized by Ostrom (2008) and Quinn *et al*. (2007) as non-excludability and rivalry in consumption. Hardin used the metaphor of common pasture users who have privately owned animals. The argument goes:

> Picture a pasture open to all. It is to be expected that each herdsman will try to keep as many cattle as possible on the commons. Ruin is the destination towards which all men rush, each pursuing his own best interest in a society that believes in the freedom of the commons. In vying with each other to benefit individually from the commons, each one of the users keeps increasing the number of animals he brings into the common pasture even if he realizes that this in the long run will lead to the destruction of the common pasture through overgrazing. Each user therefore decides upon a course that is rational from his or her individual point of view but which leads to the irrational over-exploitation of the common pool resource and its ultimate and unavoidable destruction (Hardin, 1968: 1244-45).

Hardin concludes that common ownership of pasture and private ownership of livestock breeds conflict between the group's interest and that of the individual, and it is the group's interest that is overridden. This is because an individual will often act in a selfish way. From this argument follows the conclusion that the only way out of such a conundrum lies in privatization of common resources or instituting rules and regulations backed by external coercive sanctions (ibid: 1245-47).

2.2.1. Critique of Hardin`s tragedy of the commons

Extant literature abounds with numerous examples of the 'tragedy of the commons' (Berkes, 1985; Jodha, 1987; Cordell, 1989). The solution according to Hardin (1968) was the introduction of private property rights as these would create an incentive to maintain common

property more efficiently and avoid tragedy. However, a number of scholars have criticised the idea that private property rights are a panacea to the tragedy of the commons. Challen (2000) pointed out that the definition of common property is ambiguous given that multiple rights regimes may be present for the same object. One example of such a scenario would be a case where the state owned the private property rights to land then gave demarcated parcels of land to different communities as common property (ibid). Related to the ambiguity in definition, Ostrom (1990) used the framework of property rights hierarchies to show the subordinate and superordinate nested structure of property rights regimes. The hierarchical nature further amplified the ambiguity in definition as it was clear that the state had supreme rights which it would distribute down to the lowest point as private individual rights based on the inherent transactional costs as explained in Challen (2000). Given the absence of interplanetary and intergalactic relations, Ostrom's (1990) hierarchy argument makes the air we breathe and the sunshine perhaps the only remaining common access resources.

Ostrom (2008) argued that the assumptions Hardin had used, such as zero communication within the community members amongst others, were highly unrealistic and it was only because of such assumptions that the conclusions were justifiable. In the real world, community members are known to contribute to each other's social capital and may at times work for the common good (Hanifan, 1916; Putnam, 1995; Ostrom, 2008). Therefore, it has been argued that with proper institutions and aids, common property resources may be adequately managed by the locals themselves (Steins, 2001; Gautam and Shivakoti, 2005; Quinn *et al*., 2007).

Hardin was further criticized for his failure to distinguish between 'common property' and 'open access' regimes and his positing of selfish users of the commons (Peters, 1994). Four broad categories of management regimes are delineated in the literature on common pool resource management: state, private, common property and non-property or open access (Ostrom 1990; Murphree, 1993). Nemarundwe (2003) further noted that these four property regimes are good for analysis because, in practice, resources are rarely managed under only one regime. Other scholars (Grifiths, 1986; Sowerwine, 2004; Eguavoen and Laube, 2010) advanced the same compelling arguments and stated that resource governance is not a straightforward process but consists of often inconclusive negotiations where issues of access, power, and authority are at stake. Assumptions of inherently selfish users of commons who favor short-term maximization of individual interests are not supported by evidence.

Contemporary and historical literature cites what are known as rules of exclusion and other regulatory mechanisms (Ostrom, 1990; Feeny *et al*., 1990; Peters, 1994).

Literature on resource governance systems in Zimbabwe, generally states that property regimes found in the communal areas are usually not strictly common property resource systems but mixes of state, common property and private property (Campbell *et al*., 2001; Nemarundwe, 2003). Communal lands are legally state lands under the Communal Lands Acts (1982), yet in practical terms, communities have traditional freehold tenure over residential and arable plots and usufruct rights over the surrounding commons (Nemarundwe, 2003). These resource systems also have multiple rules (state, RDC and local) with multiple legitimating bases (e.g. legal and customary) and different enforcement structures and processes, often resulting in conflicts (Mandondo, 2000a). Hara *et al.,* (2009) noted two paradoxical processes leading to the same result. On the one hand, local users experience processes of exclusion, deepening social divisions and class formation over access and use rights for natural resources. On the other, there are cases where open access to common pool resources has developed. While the exclusion of disempowered groups of users is evident in the former case, the latter situation often leads to reduced access possibilities for these actors, because more mobile and powerful resource users profit from the free access (Haller and Merten, 2008). In Chapter 5, grazing areas are described as free access areas with regards to mopane worm harvesting. As such, outsiders exploited the resource without any sanctions.

A vast body of literature on forest-based commons has been criticized for focusing primarily on how variations in institutional arrangements shape resource-related outcomes (Agrawal, 2007). This work includes principles of institutional design (Ostrom, 1999), the need for fit between institutions and their political-ecological context (Dietz *et al*., 2003; Ribot, 1999), the nature of institutional mediation (Agrawal and Yadama, 1997), the importance of local enforcement (Agrawal 2005; Gibson *et al*., 2005), possibilities of social resistance (Guha, 1989; Peluso, 1992), the necessity of broad-based participation in institutionalized governance (Ribot, 2002), the relationship between indigenous peoples and forests (Rangan and Lane, 2001), and the role of local variation in shaping resource-related outcomes (Agrawal and Chhatre, 2006). While this work contributes towards an understanding of how resources can be efficiently governed, it is rather silent on the role played by history, power and knowledge in influencing resource management.

2.2.2. New Institutionalism (NI)

Throughout this thesis, institutions and institutional frameworks are pivotal in the understanding of power dynamics and knowledge systems responsible for mopane worms and woodland management in Bulilima District. This section thus discusses institutions under the umbrella of new institutionalism, with the aim of relating knowledge and power dynamics to the institutions governing natural resource use in the district. The new institutionalism theory proposed by North (1990) and further developed by various scholars (Ostrom 1990; Becker and Ostrom 1995; Ensminger 1992; Acheson 2003) was found relevant in this study due to its emphasis on property rights, rules and regulations for the governance of common pool resources.

North (1990:3) typically defines institutions as '... the rules of the game in a society, or more formally, the humanly devised constraints that shape human interaction'. They are the set of informal and formal rules that facilitate and constrain human behaviour, or define 'the rules of the game' (Bromley, 1989; Ciriacy-Wantrup, 1971; Kiser and Ostrom, 1982; North, 1990). Institutions are considered as providing mechanisms whereby individuals can transcend social dilemmas while characteristics of social outcomes are not only explained by individual preferences and the optimisation of behaviour, but also on the basis of institutional preferences (Acheson, 1989; Bates, 1995; Ostrom, 1990). Institutions often form nested structures in which higher level institutions set limits to the procedures and alternatives that are available at lower levels. In most cases, they constitute agents in particular ways, vesting them with different powers, immunities, rights, and duties (Bromley, 1991).

At a more pragmatic level, institutions play a role both in causing and in mitigating environmental problems (Bromley, 1991; O'Riordan and Jordan, 1999; Young, 2002). They shape the perception of and professed solutions to such problems. Institutions are embedded in the specifics of culture, history, and social practices, which vary substantially across different social settings (Cleaver, 2000; Granovetter, 1985; Mosse, 1997). The impact of institutions on environmental problems and decisions, therefore, varies from one context to another. This means that generalisations from specific cases must be made with caution, giving adequate attention to their context (Edwards and Steins, 1999; Mehta *et al.*, 1999).

New institutionalism theorists argue that people have an interest in institutions because the latter reduce costs of transactions, providing clear arrangements of who is entitled to utilize a resource, when and where. The theorists believe that credible commitments with mutual monitoring and establishment of certain institutions can encourage individuals to become more involved in collective action towards the realisation of a shared goal (Ostrom, 1990). Credible commitments can be made when individuals are presented with rules that meet a number of criteria or design principles that include clearly defined boundaries, congruence between allocation and access rules and local conditions, individuals being able to modify rules, monitoring being done by accountable individuals, and non-compliance being followed by graduated sanctions (ibid). The commitment is to follow the rules as long as most similarly situated individuals adopt the same commitment and the long-term net benefits are greater than the costs. The core argument made by new institutionalism is that institutions or decision-making arrangements provide the mechanism with which individuals can transcend the tragedy of the commons (Nemarundwe, 2003).

Neo-classical institutionalists describe institutions as cognitive, normative, and regulative structures and activities that provide stability and meaning to social behaviour (Scott, 1995). They view the decision-maker as a perfectly rational individual who acts on calculated rationality. New institutionalism on the other hand, assumes a situation of bounded rationality, and that coordination of economic activities involves more than just transactions in markets in which price is the sole consideration. The two schools are relevant for this study since both are pivotal to discussing power relations amongst actors, interested groups and their values among other issues.

In this study, institutions are therefore understood as 'the prescriptions that humans use to organise all forms of repetitive and structured interactions, including institutionalised cultural values as well as formal organisations' (Ostrom, 2005:1, cited in Jones and Boyd, 2011: 1264). Holmes-Watts and Watts (2008) warn that merely focusing on institutions as formal and informal rules may provide too narrow a perspective given that there is often a mismatch between rules and what people actually do. Rules cannot easily be analysed independent of what people do (Richardson, 2004). Instead, focussing on actors, their interests, their value systems, whom and what these actors represent, what they say they do and what they actually do in practice may provide a deeper understanding of the role of different institutions in natural resource governance. This view is particularly pertinent in this study as there is a need

to analyse practices of community members to understand how issues of power manifest themselves. Understanding how knowledge pertaining to natural resource management is generated and maintained is important in ascertaining who the dominant actors are in a community. Moreover, actors are responsible for initiating or maintaining institutions at different and multiple levels including local, regional and multi-national levels (Vacarro and Norman, 2007). This implies that issues of power are manifested at different and multiple scales. Institutions are social constructs and therefore are not neutral (Vatn, 2005). Robbins (2004) notes that the power to form institutions to support one's interests may bear unequal and oppressive outcomes. It is for this reason that the analysis of power between stakeholders can be crucial in understanding the distribution of natural resources among people (Sheil and Wunder, 2002). A focus on asymmetries of power among actors provides valuable perspectives in understanding and explaining institutional performance. This means that natural resource value in rural livelihoods is realised through social and political contestations that are shaped by complex institutions at local and external levels (Kepe, 2008a; Robbins, 2004; Cousins, 1999). Therefore, different social and institutional settings at the local level can determine how different actors regard natural resources and hence influence the arrangements for governance of those resources.

Kepe (2008a) cautions that institutions responsible for natural resource governance are often characterised by conflict and ambiguity as much as by harmony and complementarity. In particular, power relations are embedded within institutional forms, making contestation over institutional practices, rules and norms always important (Scoones, 1998). Therefore, institutions are shaped in a space of interests, values, conflict and coordination. In sum, a deeper understanding of institutions (including actors), interactions and power dynamics may be the key to better inform policy for good natural resource governance and management.

Some scholars have been influenced by the NI theory to conduct empirical studies on collective action in common pool resource management contexts (see Bromley, 1992; McCay and Acheson, 1987; Ostrom, 1990) and this body of literature is now referred to as common property resource theory (CPR) (Steins, 1999). The CPR theory suggests that individuals will collectively manage common resources when the benefits from the institutional set-up (*i.e.* rules and means of enforcement) are limited to a small and stable community (Berkes, 1993; McCay and Acheson, 1987; Ostrom, 1990). However, it is critical to note that less attention has been paid to historically-based analysis of processes which trigger institutional change. A

few scholars have attempted to analyse the influence of history and politics on natural resource management. For instance Ensminger (1992) analyzed pasture use among the Orma in Kenya. She pointed out that in order to understand institutional change related to common-pool resource management, issues of power and ideology are crucial elements. In a similar vein is the more recent work of Arun Agrawal, who provides a review of anthropological research on resource management, emphasizing that in the analysis of the commons, issues about power and ideology between and within communities, need to be analyzed in historical depth (Agrawal 2001; 2003; 2005 in Haller and Merten, 2008). This study seeks to contribute towards building knowledge on this glaring gap. It analyses issues of power dynamics and local knowledge in Bulilima paying particular attention to the historic context that has shaped the current state of natural resource management in the district. The study argues, among other things, that the way natural resources were managed before shapes the current state of affairs. This study therefore contributes to debates on the relevance of history in understanding contemporary power and ideology discourses in natural resource management.

As scholarly debates in NI grew, distinct branches began to emerge. These included theory of collective action, new economic history, public choice and political economy, law and economics, transaction cost economics, economics of information, the legal environment and property rights, and social capital economics (Olson and Kähkönen, 2000). Of relevance to the subject matter of this study, the major branch of NI briefly discussed in this section is property rights.

a) Property rights

Understanding dynamics of power in natural resource management entails appreciation of property rights held by various actors in Bulilima. Property rights provide the basic economic incentive system that shapes resource allocation (Becker, 1977; Besley, 1995; Demsetz, 1964). For instance, when bundles of goods and services are exchanged in the market, a set of rights to those bundles is also exchanged in the process (Demsetz, 1967). As Alchian and Demsetz (1973) elaborate, what are transacted and owned are not the physical structures (bare land, bricks and mortar, gadgets and academic theories) but the associated rights. Adding to this concept, Furubotn and Richter (2000) state that in the case of a sale, what effectively happens is a transfer of a ‘bundle’ of property rights from one person to another. Furubotn and Pejovich (1972) further note that the value of any exchange depends on the

bundle of property rights implied in the transaction. Thus, it is not the resource itself that is owned but the bundle or a portion of rights (often circumscribed and frequently by the prohibition of certain actions) to use it (Musole, 2009).

The concept of property rights has been defined from a legal and economic perspective. Under continental civil law, property rights are related to physical objects or tangibles only, while the Anglo-American common law relates property rights to both tangibles and intangibles (including patents, copyrights and contract rights) (see Alchian 1965; Musole, 2009). Furubotn and Richter (2000) allege that property rights could be absolute (practiced universally towards all parties) or relative (applicable only towards certain parties). In an economic perspective, concepts regarding the difference between a right and mere use have been extensively debated (Demsetz, 1967, Heyne, 2000; Furubotn and Richter 2000; Cole and Grossman, 2000).

With reference to the concept of 'right and mere use', Cole and Grossman (2000) claim that a resource can be controlled without possessing a right. They note that in the case of a right, society, through formal law or informal social norms, enforces one's control or use without penalty for use. However, Cole and Grossman (2000) also maintain that there are numerous things one could do without penalty but that does not necessarily give one the rights (e.g. firms polluting unabated). As such, mere continued use does not mean one has the rights (Cole and Grossman, 2000). Zhu (2002) who differentiates legal (rights defined by the state and recognised by law) from economic rights (the ability of individuals to exercise their rights over an asset) gives another side to the definition of property rights. These multiple definitions show that it is essential for economists to distinguish rights from other interests (Musole, 2009).

In New Institutional theory, North (1990) defines property rights as rights individuals appropriate from their own labour and the goods and services they possess. This definition, though economic in nature, leaves the concept of possession unexplained as possession in some way relates to the fundamentals of ownership and property rights. Barzel (1989) avoided the idea of explaining the meaning of possessions by using the same word 'possessions', and opted to state what an individual who controlled property rights could do with an object. These are the rights or the power, to consume, to obtain income from, and alienate these assets (Barzel, 1989). Therefore, from an economic perspective, Musole (2009)

states that it is the ability of the individual to exercise the rights to use, obtain an income, sell, or transfer an asset that matters.

According to Roman Law, ownership consists of the right to use an asset (*usus*), the right to capture benefits from an asset (*usus fructus*), the right to change its form and substance (*abusus*), and the right to transfer all or some of the rights specified above to others at a mutually agreed price (Pejovich, 1990). This view seems to capture the economic and legal definitions of modern property rights. In addition to their complex definition, Grafton, Squires and Fox (2000) argue that it is important that rights be divisible, exclusive, transferable, durable and flexible. Libecap (1989) further emphasises that property rights institutions are determined through the political process, either involving negotiations among immediate group members or lobbying activities.

Challen (2000) outlines five major arguments for the emergence of property rights over objects valuable to humanity. These arguments were, first, the *first occupancy argument* that gave an individual the right to an object simply because she/he owned it first. This argument, however, has been criticised by, among others, Bromley (1989) for the reason that it gave an unfair advantage to those born earlier. The second is the *labor argument* which advocates for ownership of what one has produced through individual ingenuity, strength and initiative. This argument has also fallen prey to criticism in the case of ownership of children and ownership of goods produced under contractual employment by another party (Becker, 1977; Bromely, 1989). The third is the *utility argument* that advocates for the giving of property rights to one who would most increase overall social utility. The fourth is the *political liberty argument* that the ability to control and accumulate creates incentives and allows humans to express themselves fully. This argument has been strongly criticised in the recent past as it has been linked to primitive accumulation and insatiable egotist appetites that have seen the environment suffer and poverty increase as the rich got richer and the poor got poorer (Tolle, 2005). The fifth point is the argument that property rights help develop good morals and lead to better management of the object. The amount of control (absolute or partial) determines the strength of property right that the owner wields over the asset (Alchian & Demsetz, 1973). The ownership of property rights may be characterized by singular or multiple interests, thus, in the same property, more than one party can claim some ownership interest at any given time (Alchian and Demsetz, 1973; Enever & Isaac, 2002; Fraser, 1993; Musole, 2009).

In response to this quandary over rights, ownership scholars have defined the major property rights ownership structures that exist in most societies using four categories: open access, communal, private, and state property (see for example Libecap, 1986; Feeny, *at al*., 1990; Schlager and Ostrom, 1992). Musola (2009) explains the four categories showing that in the case of state ownership, the state (or extensions of the state, such as local authorities and municipalities) possesses the property rights, which it may transfer temporarily to private users or to communities. Private property ownership is characterised by exclusive rights to use resources, receipt of income generated from them and free transferability of the whole or part of the ownership rights. In an open access property rights regime, rights are not specifically assigned to any individual or group and anyone is free to use the resource at will. In the case of communal property, specific communities are assigned rights, which can exclude outsiders from using the resource and regulate use by members (Musola, 2009).

Assessing rights held by individuals or groups in Bulilima is critical to understanding whether they have access or control of mopane worms and woodlands. The ability to hold rights to a resource also determines the level of influence one has in terms of influencing decisions with regards to that resource. While most resources in communal areas of Zimbabwe are supposedly held under a common property system where locals have rights of including and excluding others, reality on the ground is complex with powerful actors often withholding most of these rights. Women for example have fewer chances of owning land and resources on it but can gain access to these resources through usufruct rights availed by customary laws (Rocheleau and Edmunds, 1997). This study thus disaggregates rights held by various actors and assesses how these rights enable them to accesses, use and control mopane worms and woodlands. The nature of rights held also determines the power relations between various actors in the district.

2.2.3. Common Property Resources (CPRs) theory

This study also draws extensively from Common Property Theory. Environmental degradation and resource depletion have stimulated lots of debate about common pool resources and common property. This discourse has focused on the notable failures of state management and market-oriented policies (see reviews in Ostrom *et al*., 2002) while promoting community management as an alternative actor to govern natural resources

(Agrawal, 2003). This has resulted in the birth of common property theory extensively discussed by scholars such as Elenor Ostrom.

Common property resources refers to natural resources to which more than one individual has access, but where each person's consumption reduces availability of the resource to others (Ostrom, 1990). While more than one individual has access under common property resources, the resources may be excludable. Ostrom's design principles highlight how common property resources could be managed without falling prey to the 'tragedy of the commons' (see Table 2.1). First, rules should clearly define who has what right to natural resource access and use. Second, adequate conflict resolution mechanisms should be in place. Third, an individual's duty to maintain the resource should roughly match the benefits. Fourth, monitoring and sanctioning should be carried out either by the resource users (local people) or by someone who is accountable to the users. Fifth, sanctions should be graduated, lenient for a first violation and stricter as violations are repeated. Sixth, governance is more successful when decision processes are democratic, in the sense that a majority of users are allowed to participate in the design and amendment of the rules. Seventh, the right of users to self-organize is clearly recognized by outside authorities. Lastly, where common property resources are part of larger systems, appropriation, provision, monitoring, enforcement, conflict resolution and governance activities can all be organized in multiple layers of nested enterprises.

Table: 2.1. Common property management design principles

Design principles derived from studies of long-enduring institutions for governing sustainable resources
1. Clearly defined boundaries The boundaries of the resource system (e.g., pasture, irrigation system, or fishery) and the individuals or households with rights to harvest resource units are clearly defined. **2. Proportional equivalence between benefits and costs** Rules specifying the amount of resource products that a user is allocated are related to local conditions and to rules requiring labour, materials, and/or money inputs. **3. Collective-choice arrangements** Many of the individuals affected by harvesting and protection rules are included in the group who can modify these rules. **4. Monitoring** Monitors, who actively audit biophysical conditions and user behavior, are at least partially accountable to the users and/or are the users themselves. **5. Graduated sanctions** Users who violate rules-in-use are likely to receive graduated sanctions (depending on the seriousness and context of the offense) from other users, from officials accountable to these users, or from both. **6. Conflict-resolution mechanisms** Users and their officials have rapid access to low-cost, local arenas 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 governmental authorities, and users have long-term tenure rights to the resource. For resources that are parts of larger systems: **8. Nested enterprises** Appropriation, provision, monitoring, enforcement, conflict resolution, and governance activities are organized in multiple layers of nested enterprises.

Source: Ostrom (1990).

The above conceptualization provides a relevant framework within which the management of mopane woodlands and worms can be understood. Ostrom's design principles, although silent on issues of power, arguably have 'power dynamics' embedded in them. When rules are defined and implemented, conflicts resolved, and sanctions imposed, there is no escaping the exercise of power. This could be individual power from community members or institutional power from the rules themselves.

2.2.4. Governance of common pool resources in Southern Africa

Past generations, particularly pre-colonial generations, had the capacity to develop relatively effective indigenous institutions for the management of their resources (Haller and Chabwela, 2009; Magole, 2009a; b; Mhlanga, 2009; Magole *et al*., 2010). As Haller and Chabwela (2009) note, power and access to natural resources were embedded in religious beliefs. In pre-colonial Zimbabwe, resource conservation was achieved through common property regimes, with precise rules of inclusion and exclusion, rights and obligations (Murphree and Cumming, 1993). Within the socio-cultural milieu that prevailed then, customary institutions, notably chiefs, headmen and spirit mediums, who were seen as the designate representatives of the ancestral spirits, had authority to sanction the manner in which the resources were used, including forests and woodlands (Ranger, 2003; Bernard and Kumalo, 2004; Mukwada, 2006). This form of common property ownership was very efficient in resource management in the sense that it was economically viable, ecologically sustainable and organizationally efficient due to the fact that compliance with the rules that regulated the use of the resources was internally generated and not externally imposed (Murphree and Cumming, 1993).

In Zambia, Haller and Chabwela (2009) have recounted the complex resource management history of the Kafue Flats wetlands. Here, resource abundance and reportedly effective governance of common pool resources by indigenous institutions had been replaced by conflict and competition between local and immigrant resource users, as well as between indigenous and state institutions. Fisheries and other resources were degraded and overused while there had been an increased vulnerability and food shortages among the poor families who suffered from loss of access to common pool resources that were taken freely by more powerful users (Merten and Haller, 2008). Haller and Chabwela (2009) argue that immigrant fishermen had more bargaining power to change the previous common property regime to open access, from which they derived more profit. According to Haller and Chabwela (2009),

the current dysfunctional situation obtaining in Zambia is because the state is both present and absent. It is present in its ideological claims of resource ownership and management authority, but is largely absent in terms of effective, competent resource management. This study resonates with other studies on common pool resource management that were done in Zimbabwe (see for example Mandondo, 2000a, Mapedza, 2007, Mhlanga, 2009). However, most of these studies tend to be biased towards analysing resources that have more economic value to the state. In Zambia, it is the fish while in Zimbabwe it is mainly commercial forests and wildlife. Furthermore, most of these studies are silent on ethnic relations and how they affect power dynamics in the management of resources. In Bulilima, the relationship between the Ndebele and the Kalanga is very crucial in the understanding of power dynamics and natural resource management. As was discussed in Chapter 1, the installation of Ndebele chiefs to preside over Kalanga communities created conflicts that still exist in the post-colonial Zimbabwe (Msindo, 2012).

Common pool resource literature is also silent on post-colonial political conflicts that have a potential of influencing power configurations in resource management. Studies that focus on natural resource management in Zimbabwe (see for example Mukamuri, 1995; Sithole, 1997; Mandondo, 2000a; Matose, 2002; 2008; Nemarundwe, 2001; 2003; 2005) omit the potential influence Gukurahundi had on power and knowledge configurations in Matabeleland region where Bulilima District is. They are nonetheless pivotal to this research as they lay a firm foundation for the understanding of power configurations between the state and local people (see historical analysis of Zimbabwe's natural resource management in Chapter 4).

A study by DeMotts *et al*., (2009) conducted in Botswana on the dynamics of common pool resources in the management of Okavango Delta came up with interesting counter-examples to what literature in the previous paragraphs postulates. Common pool resources were generally not found to be under any stress because local people were not entirely dependent on them. The diamond revenues which have resulted in a strong economic base seem to have trickled down to the people in this study area.[15] This scenario, however, is not universal to all communities in Botswana. Magole's research on 'shrinking commons' in Lake Ngami grasslands in Botswana is consistent with literature that sees disintegration in traditional management systems of common pool resources (Magole, 2009a). DeMotts *et al.,'s* (2009)

[15] Botswana has developed a relatively strong economic base due to income from diamonds and tourism (see Parson, 1984; Mbaiwa, 2003).

study is important however because it helps us understand that limited livelihood alternatives in an environment where natural resource management institutions are either weak or fragmented usually result in the degradation of common pool resources. This is usually the case when communities depended heavily on a resource. In Bulilima, mopane woodlands constitute a major resource hence they are under enormous stress from locals and other people coming from outside the district.

2.2.5. Theoretical Discussions of Power

While Common Property Resources Theories (CPRs) and New Institutionalism (NI) theories are useful in providing frameworks for the analysis of property rights and institutions, which are crucial in the understanding of power configurations, they however lack a coherent view about specific mechanisms of power and how these mechanisms work to shape the fields of power in which mopane worms and woodlands resource systems are embedded. Literature on social power provides a useful theoretical framework for analysing these specific mechanisms used by various actors to access, use and control mopane worms and woodland resources in Bulilima.

There has been a tendency amongst scholars to focus on sustainable management of natural resources and successful institutions while ignoring the possibility that all successful enforcement institutions are also coercive and that the burden of coercion tends to fall unequally on those who are less powerful (Agrawal, 2003). Agrawal proposes a useful angle of analysis in strongly suggesting that issues of power dynamics need to be at the core of institutional analysis if scholars are to come up with relevant and effective conclusions on natural resource management. If institutions are the product of conscious decisions of specific individuals and groups, as many commons theorists argue, then it may also be reasonable to suppose that institutional choices by powerful groups deliberately aim to disadvantage marginal and less powerful groups (ibid). The other side of the coin of institutional sustainability then turns out to be unequal allocation of benefits from commonly managed resources; not as a by-product but as a necessary consequence.

a) What is Power?

Power has become one of the most contentious concepts in sociology (Law, 1991; Scott 1994). Lukes (1986) refers to it as an ability to make a difference to the world while Giddens (1985: 7) defines it as 'transformative capacity' or 'the capability to intervene in a given set of events so as in some way to alter them'. Power has also been said to involve the capacity to mobilize 'resources' such as technical knowledge, rhetorical skills, the possession of authority or the tools of force (Giddens, 1993). The general consensus among some scholars (Clegg, 1989; Nelson and Wright 1995; Latour, 1986 among others) is that power is a description of a relation, not a thing which people have. It is widely accepted in literature that Michel Foucault influenced much thinking of power as a relational concept. For instance Foucault (1979) proposes what he calls an 'analytics of power' where power should be understood in terms of relations. Power relations are non-egalitarian and mobile. Foucault further notes that power is not a commodity, a position, a prize, or a plot; it is the operation of the political technologies throughout the social body. The functioning of these political rituals of power is exactly what sets up the non-egalitarian, asymmetrical relations (Dreyfus and Rabinow, 1983). It is the spread of these technologies and their everyday operation, localized spatially and temporally, that Foucault is referring to when he describes them as 'mobile.' If power is not a thing, or the control of a set of institutions, or the hidden rationality to history, then the task for the analyst is to identify how it operates (ibid). The aim, for Foucault, 'is to move less toward a theory of power than toward an analytics of power: that is, toward a definition of a specific domain formed by power relations and toward a determination of the instruments that will make possible its analysis'. Power is thus exercised rather than possessed and is constituted in social relationships such as networks, alliances and conflicts. Foucault thus sees individuals as always simultaneously exercising power and undergoing the effects of power: they are constituted by power and at the same time are the vehicles of power (Few, 2000). As Clegg (1989) notes, power is not a thing nor is it something that people have in a proprietorial sense. People possess power only in so far as they are relationally constituted as doing so (ibid: 207). Thus power is a relational concept, shaped by the different types of relationships that actors engage in and negotiate around each other.

b) What exercises social power?

While the majority of 'power scholars' agree that power is exercised than possessed, there are complications in explaining what exactly exercises this power. Few (2000: 76) asked whether it was human agents alone (acting either as individuals or as collectives) or structures within society (ideological, cultural, social, economic, administrative) that exercise power. It is for such complications that this study analyses both human agents and structures in an attempt to establish what exercises power with regards to mopane worms and woodlands management in Bulilima. Burns and Stohr (2011) note that power is central to governance systems – both in their functioning and also in establishing or changing them. At its core, there is an understanding of power as the application of action, knowledge, and resources to resolve problems and to further interests (Lukes, 1974; Few 2002). Few (2002) cited in Adger *et al*. (2005) makes a key distinction between, on the one hand, sociological aspects of power relating to tactical exercises of power through mechanisms of social interaction and, on the other hand, structural implications of power that are manifested through the distribution of resources and influence. Thus, power may be exercised through different mechanisms at different temporal and spatial scales. Peterson (2000) advocates a simple hierarchy: the exercise of power at local levels is overt and power at higher temporal and spatial scales is always covert or structural. Lukes (1974) goes further in explaining what exactly exercises social power by developing a 'three dimensional' view of power, which broadly sees people using power for their own selfish ends (see Table 2.2 below).

Table 2.2 Luke's three dimensions of power

Dimension	Form of power	Power of actor A over actor B
First Dimension	power mobilized through resources	A and B have conflicting interests on an issue. A is better able to use power effectively in the decision-making arena.
Second Dimension	power mobilized through decision processes	A controls the decision-making process by limiting access and agendas. B is aware of the issue but unable to get access to the decision arena.
Third Dimension	power mobilized to prevent conflict	A controls the political agenda. B is unaware of the issue and has no will to contest it. Conflict fails to materialize in the first place.

Source: Luke (1974).

The model assumes power is exercised when there are conflicts of interest (overt, covert or latent). The third dimension acknowledges structural mechanisms that serve to hide actors' consciousness of issues (hegemony) as well as direct management of meaning by more powerful actors (Hardy & Leiba-O'Sullivan, 1998). Luke's three dimensions of power model are relevant to this study because all the three dimensions were revealed in this study. For instance, the conflict around access to resources in the CAMPFIRE project area between cattle owners and Bulilima RDC (see Chapter 5, pp. 117-120) can be classified as first dimension. Under the CAMPFIRE project, RDCs have Appropriate Authority status granted in 1991 (SI 12/ 1991 and 61/1991) which they use to dominate decision making in the arena (Frost and Ivan 2005; Murphree, 1997). Second and third dimensions were also found to be operational in the study area whereby local government formal and informal institutional structures such as VIDCO, WADCO, War Veterans, ZANU PF youths and even traditional authorities under the control of the ruling government deliberately controlled decision making by consciously or unconsciously excluding some groups, especially those perceived to be in opposition to ZANU PF.

c) Power/knowledge nexus

The link between power and knowledge lies at the heart of the analyses of how social power operates. This link was well developed by Foucault's (1980) assertion that the constant inter-play between the 'exercise of power' and the production of knowledge leads to the continual expansion of both sources of power and new disciplines of knowledge. This was emphasized by Umans (1998:27) who saw "knowledge as both a mental and social construction which emerges as a product of interaction between actors", and that therefore "knowledge processes are embedded in relations of power, authority and legitimacy". He argues that scientists, for example, try to establish a "hegemonic knowledge" by using "power techniques such as claiming universality, objectivity and neutrality" (Umans 1998: 27).

Through rhetoric statements that are taken as absolute truths, unparalleled knowledge systems are developed and they become powerful discourses used by experts to entrench hegemonic knowledge within societies (McLain, 2000). Foucault gives an example of expert knowledge in various disciplines of conservation and scientific forestry which should be considered as a product of environmental discourse (Foucault, 1980). McLain (2000) explains the strategic importance of discourse in understanding how power works in the expansion of expert knowledge as follows:

> Discourse . . . connects thoughts with practice and thus can be used strategically to influence existing fields of power. And while knowledge is not identical with power, it is so intimately linked with power that knowledge production processes, the acceptance of certain kinds of knowledge over others, and the ways in which different types of knowledge are and can be used, form an integral part of any understanding of power (McLain, 2000, pp. 40- 41).

This therefore implies that power is implicit in the creation of discourses, and discourses themselves can also act as power resources (Few, 2000).

Scholarship on the effects of knowledge in furthering social and political control by the State (Peet and Watts, 1996; Singh and van Houtum, 2002) has largely drawn from Foucault's 'governmentalisation of the state' and subject formation, with the main emphasis placed on understanding how science, scientific disciplines and knowledge influence governance through the exercise of power (Foucault, 1982:221). To illustrate this argument, Hill (1996) in Matose (2009), traces the development of conservation policy in Zimbabwe and how it led

to the consolidation of state power, through the expropriation of community-owned lands to make them protected areas (national parks and forests) and, in the post-colonial period, through decentralised natural resources management programmes. Hill (1996:106) contends that 'the state uses conservation policies in much the same way it uses taxation, investment, interest rate or land resettlement policies: to establish and extend its own interests'. In a similar context, the Bulilima case is selected to debate how different actors since the 1980s have transformed the management of natural resources in the area through various institutions and technical practices such as new technologies.

It is important to point out that knowledge has political as well as technical meanings (Hara *et al.*, 2009). Various scholars have argued that the politics of environmental knowledge in the colonial era have continued through decades of technocracy in independent African governments (Turner, 2004; Hara, *et al*., 2009; Eguavoen and Laube, 2010). In many of the cases, it was found that a colonial legacy which was later inherited by post-colonial governments set up a governance system which ignored indigenous knowledge and commons practice (Haller and Chabwela 2009; Magole 2009a; b; Mhlanga, 2009). In some instances, it was found that indigenous management regimes were replaced by sectoral or fragmented systems that focused on technical, 'anti-political' rationales (Büscher, 2010). In yet others, it was found that unequal power relations were less and less counter balanced by traditional Common Property Resources (CPR) rules and institutions, making it ever more difficult for so-called 'stakeholders' to negotiate their 'stake'. Overally, however, and in line with Brockington *et al.*'s (2008) argument related to protected areas, new institutional arrangements for natural resources management were found to empower some and disempower others; hence distributing fortunes and misfortunes unevenly.

The dismantling of local institutions came with a complete disregard of indigenous knowledge (Hara *et al*., 2009). Independent African states inherited policies that assumed ignorance among rural users. Natural Resource Management (NRM) policy therefore imposed exogenous principles and procedures without consulting the resource users who were meant to apply these principles, sometimes at major cost to their own livelihoods. It is no surprise that the knowledge systems on which most NRM policy has been based typically failed to recognise the tenure regimes under which local resources exist in different ecologies of many African environments – arrangements that local users understood (Hara, *et al*, 2009). Only more recently have researchers, and some governments and development workers,

come to accept the paradigm shift that is necessary in order to optimise the sustainable use of natural resources in southern Africa. They have begun to recognise the value of indigenous environmental and technical knowledge in natural resource use and management (ibid). There is an emerging literature on the potential of using the ecological knowledge of the resource users themselves and their local institutions as a complement to scientific knowledge, thereby expanding the sources of information for ecosystem management (Johannes, 1978; 1998; Becker and Ostrom 1995; Berkes, *et al*., 1995; Scoones 1999; Olsson and Folke, 2001). There are many examples of local, community-based resource management systems that have proven to be advantageous for natural resource use (McCay and Acheson, 1987; Berkes, 1989; Feeney, *et al*., 1990; Ostrom, 1990). In a classic study, Acheson (1988) described the formal and informal institutional structure surrounding the lobster fisheries in Maine. Hanna (2000) also analysed the soft-shell clam fishery in Maine, where local ecological knowledge was included in resource plans to complement scientific knowledge and then applied in resource management institutions nested across scales (Olsson and Folke, 2001).

Hara *et al.* (2009) further argue that common pool resources in Southern Africa have been viewed by outsiders as zones of open access whose users have no knowledge or system of governance, a belief that is far from the truth. Most common pool resources in Africa have been managed by local institutions that controlled access through membership and the regulation of timing, technology, opening and closing times, and so on (ibid). While indigenous systems are certainly not perfect, they do coordinate the use of common pool resources under common property regimes. Indigenous local institutions often include different types of resources within one tenure system, as in the Kafue Flats (Haller, 2007).

The concepts of conservation and sustainable use have been another arena of contestation between knowledge systems in the governance of the southern African commons. Colonial and early independent administrations failed to recognise the provisions for sustainable use that were integral to indigenous NRM, often imposing their own regulatory frameworks based on alien legal systems. Partly because of the depredations of colonial hunters, they also found it necessary to excise large areas from existing uses and dedicate them entirely to conservation (Murphree and Hulme, 2001; Haller and Merten, 2006; Galvin and Haller, 2008). This kind of sector-specific approach to NRM often imposed major livelihood costs on local people, whose own management approach – integrated with cultural and religious dimensions of their world view – only needed to preserve specific areas as conservation

zones. In this indigenous approach, conservation was an integral part of NRM. In the exogenous knowledge system, conservation and use were disaggregated and spatially segregated – with inevitably disruptive, divisive results (Hara, *et al.*, 2009).

Hara *et al*., (2009) make an important observation by noting that there is no simple contrast or clash between imported and indigenous knowledge systems in the governance of the southern African commons. Instead, there are uncertain, variable and contested blends of the two, with each society's dispensation reflecting the politics of both kinds of knowledge. As one seeks to understand the current condition of mopane worms and woodlands management in Bulilima, one must identify, describe and unravel the webs of knowledge that locals and outsiders apply in their use and management of these natural resources.

Quite often the phrase 'indigenous knowledge' is used interchangeably with 'local knowledge'. However, this study asserts that 'indigenous knowledge' creates difficulties in analysis because it implies knowledge held by original indigenous societies whose culture has not been tempered with (Beinart and Brown, 2013). The communities which participated in this study could hardly be called indigenous. For instance, the environmental landscape in Bulilima was found to have been shaped and transformed by various events and trajectories which included the invasion by the Ndebele and the British South African Company in the 1860s and 1890s respectively (Msindo, 2012) and migration patterns which have continued since then. The term local knowledge is therefore appropriate for this study because of its pluralism. Be that as it may, Beinart and Brown (2013) further caution that the idea of 'local' is often offset against global influences. For instance, rural communities can be seen as participants in the modern world through trade, colonialism, education and social media. In Bulilima, the impact of such processes is very evident within communities: many people use cell phones; many have been to school, while some own vehicles. However, this does not imply that indigenous knowledge has been completely wiped out in this area. Indeed, there were some sections of the communities, who remained strongly committed to inherited forms of indigenous knowledge. For instance, the San people have remained on the margins of civilization where their interaction with global knowledge systems has been minimal.

In most African countries, the transfer of powers to local authorities is fraught with inconsistencies (Ribot, 2003). This is more glaring in forests where most of the powers are centralised (Fairhead and Leach, 1996; Conyers, 2001). The influence of Hardin's ideas on

resource management is still alive today as forests are being privatised without concern for ecological or social implications (Ribot, 2003). In India for instance, forests which were once the *de-facto* common property of local communities were taken over by the national government. The state restricted access to and management of the forests by traditional users (Guha, 1990; Peluso, 1992). This however failed, resulting in severe forest degradation. Forest services across Africa transfer non-commercially valuable use rights while retaining central control over the lucrative aspects of the sector (Ribot, 2002). There is a general disregard of local institutions and knowledge. The current forms of management seem to have been inherited from colonial governments which instituted customary law and communal tenure not to support local management but to promote the interests of the colonial state and the European settlers (Mamdani, 1996; Eguavoen and Laube, 2010). Chiefs were given power over resources partly to collect tax for government. At the same time, colonial powers started to fragment originally integrated resource systems into different formal legal settings, which clashed with traditional approaches to overlapping claims and resource use coordination (Basset and Crummey 2003; Hara *et al*., 2009).

In rural communities village elites such as traditional leaders and government representatives are usually perceived as powerful. These may be individuals who own larger pieces of land, more livestock, have broader networks and have better access to a diversity of income sources or can be those who hold leadership positions in the village (Nemarundwe, 2003). Bulilima District is generally a livestock rich area where cattle ownership is associated with riches and power. Power is contested between individuals who own large herds of cattle and those who do not own much within the community. The district has witnessed massive movement of people to neighbouring Botswana and South Africa mainly because of economic and ecological pressures (see Maphosa, 2005; 2007; 2011; Matsa and Simphiwe, 2010). These migrants could be economically and politically influential in decision-making back in their villages. Their social identity is not only constructed through their position in the kinship hierarchy, but also through social and economic achievement and networks that may be used to gain access to key natural resources (ibid) such as land, mopane worms and woodlands. With the introduction of formal education in colonial times, followed by modernisation and economic transformation, access to land and other natural resources can no longer be seen as the *only* important source of power. More often than not when wealth ranking is done in the communal areas context of Zimbabwe, traditional leaders, who often have bigger land holdings than most ordinary villagers, are ranked in the below average to

poor categories. This reflects that land is not the only source of power, yet historically, land was the most important source of power for those who had it. In addition to having access to land and other key natural resources such as woodlands and water, access to capital, labour and non-material goods such as information, knowledge and education are increasingly becoming more important in influencing power relations in a given community.

The concept of power is thus a useful analytical tool for understanding leadership and conflicts between community members and outsiders as well as conflicts among community members themselves. This study revealed struggles between groups who migrate to Bulilima District to harvest mopane worms and groups endogenous to the areas, struggles between cattle owners and the Rural District Council (RDC), and finally, struggles between formal and informal institutions. Understanding and unsettling processes of power and exclusion that disadvantage some groups of actors in relation to others required that attention be paid to struggles over meaning as much as struggles over mopane worms and woodlands in Bulilima.

The investigation of the nature of power and resistance also possesses significant inherent theoretical and practical merit (Scott, 1985). Attention to strategies followed by actors who are outside the hegemony of power in relation to resource useis critical to understanding how attempts at control and regulation are always challenged by those who are subjected to control (Agrawal, 2003). As such, focus on how power works within communities of Bulilima and in the management of common-pool resources such as mopane worms and woodlands can help strengthen scholarship on common property (ibid). This is likely to facilitate a better understanding of how power and status are related to access and use of resources such as mopane woodlands and worms in Bulilima District. Moreover, power is not just what planning and management attempt to exclude but rather, power and politics inspire the process of management thoroughly and unavoidably (Agrawal, 2003). Management is not just about providing technical solutions to objective problems of development and environmental conservation. It may be important to consider that these problems and their solutions may themselves be part of a political process. Without attention to the politics that generate underdevelopment and environmental degradation as universal problems, it may be impossible to address poverty, underdevelopment, and environmental degradation effectively. This last point resonates well with this study. It has been stated in chapter one that part of the interest in this study lies in the historical context of Bulilima District in view of the political dynamics that transpired since Zimbabwe obtained its independence in 1980. An analysis of

how political dynamics shaped current power relations will go a long way in ascertaining the nature and specificities of natural resource management in Bulilima District.

While the conceptual frame work of power helps understand various dimensions in which power is exercised through institutions to achieve certain goals, it however does not clearly specify how women in gendered natural resource systems gain access, use and control resources. It has been noted in literature that despite the pressure of decentralization policies, women's access to many natural resource management institutions has not increased because the institutions have been heavily dominated by men, especially in patrilineal societies (Meinzen-Dick *et al*., 1997; Nemarundwe, 2005). Because of unequal power relationships between women and men in most societies (Rocheleau and Edmunds, 1997), this study analyzed the gendered nature of the management of mopane worms and woodlands and women's involvement in local formal and informal institutions that govern access, use and control of natural resources (see also Nemarundwe's (2005) study on Women, decision-making, and resource management in Zimbabwe).

One way of analyzing women`s involvement in natural resource management is to adopt the idea of gendered spaces and places, a conceptual framework for the analysis of women's role in natural resource management institutions (Fortmann, 1995; Leach, 1994; Rocheleau and Edmunds, 1997). Focus is on the separation of women's and men's activities and authority in space (Rocheleau and Edmunds 1997). For instance, women's role in natural resource management in Bulilima must be understood in terms of opportunities and spaces created by the actions of men. Having said that, this does not mean that women have no access to some of the resources in the District. Their ability to access these resources is found in between spaces not so important to men. This framework thus becomes crucial in analyzing the kinds of spaces created and how women and other less powerful groups use them to influence decision making in mopane worm and woodland management in the district.

2.2.6. Political Ecology: linking power and the environment

The Political Ecology approach was found relevant to this study because it incorporates power and politics in the understanding of socio-environmental relationships in Bulilima. According to Bryant (1997:10):

> At the heart of a political ecology reading of the Third World's environmental problems is the idea that the relationship between actors (i.e. states, businesses, non-governmental organizations, farmers, etc.), and the links between actors and the physical environment, are conditioned by power relations.

Decentralization policies (see discussion in Chapter 1) mean that the state is significantly involved in natural resource governance by ensuring that certain rights are devolved to the locals. However, reality on the ground in Zimbabwe reveals that the central state still withholds key discretionary powers leading to conflicts with local users (see Mandondo, 2000a for example). Political ecology theory therefore becomes pertinent in providing the framework for understanding the struggles between these actors and the political role of the state in defining and supporting local resource management systems in Bulilima.

Human-environment interaction is certainly political and usually results in conflicts. The third-world political ecology developed as a result of the perceived apolitical nature of existing environmental research (Peet and Watts, 1996a; Bryant and Bailey, 1997; Billon, 2001). An understanding of the Third World's politicized environment is to be found in the analysis of how unequal power relations are often linked to conflicts over access to, and the use of, diverse environmental resources (Bryant, 1998; Logan and Moseley, 2002). Few (2000) notes that tensions can exist both between external actors (state, businesses and NGOs) and local resource users, and also between the members of user communities. Actors can exert power over the environment of other actors by attempting to control their access to environmental resources but also through influencing the priorities of environmental projects and state management agencies (Bryant, 1997). Few (2000) notes that such attempts often run into counter-measures from weaker actors, both via passive forms of resistance and from more active resistance such as acts of sabotage. Furthermore, powerful state and non-state actors may seek to legitimize their actions in the eyes of the public, justifying them in terms of the common good (Bryant, 1997). For example in Bulilima, the state through the RDC justifies the existence of the CAMPFIRE project by arguing that it is an effective way of conserving wildlife while contributing to economic development of the district (Murphree, 1997; Frost and Ivan, 2005). Chapters 5 and 7 analyse and discuss ongoing conflict between local cattle owners and the RDC. Cattle owners constantly defy council regulations and allow their cattle to graze in the CAMPFIRE project area.

The main task of political ecologists is to reveal how power relations operating at multiple scales shape environmental use and management behavior (Mayer, 1996; Moore, 1993; Peluso, 1992; Grossman, 1993; Bryant, 1997 cited in MacLain, 2000). There are various strategies that political ecologists use to analyze power relations (MacLain, 200) (see Box 1 below).

Box 1: Strategies that political ecologists use to analyze power relations

1. Focusing first on the land user or household level and working up to national, regional and global scales through the construction of chains of explanation of the factors that influence site-specific resource use and management patterns (Blaikie and Brookfield, 1987; Black 1990; Grossman, 1993);
2. Demonstrating linkages between social, economic, political and environmental factors that affect site-specific resource use and management patterns (Grossman, 1993; Bryant and Bailey, 1997, Peet and Waats, 1996; Rocheleau et al., 1996);
3. Incorporating historical depth to demonstrate the dynamic nature of the links between power relations and resource use and management (Neumann, 1998; Bryant and Bailey, 1997, Peet and Waats, 1996);
4. Deconstructing categories of social actors as a way to demonstrate the complexities of social interactions involved in resource use and management (Neumann, 1998; Bryant and Bailey, 1997, Peet and Waats, 1996);
5. Focusing attention on an interactive, two-way relationship between social and economic structures and human agency (Rocheleau et al., 1996; Peet and Waats, 1996; Bryant and Bailey, 1997)

Source: McLain (2000)

McLain further argues that political ecology analysis basically has two critical themes. One is scale and the other is structure and agency. With regards to scale, political ecology insists that locale matters in understanding human environmental interactions. Political ecology thus examines different ways in which socio-ecological processes and structures at a variety of spatial and temporal scales link together and also explores how articulations of social, economic, environmental and political factors affect land use management and socio-economic conditions (McLain, 2000). In Bulilima, political ecology analysis thus creates a

framework for understanding various factors at various scales that affect local management of natural resources. For instance, interests in commercialization of mopane worms as a response to global economic changes that influence national strategies (case of structural adjustment programs that resulted in loss of employment hence income to many people), has an effect on the institutions that control mopane worm use in the local communities.

Political ecology is also relevant in analyzing social structures and human agency. Structure and agency exist in a two-way relationship that is critical to the understanding of environmental and social change (ibid). In this study, there is evidence of agency being constrained or constraining social structures. For instance, political structures were found to play a significant role in determining the set of rights some locals can have with regards to mopane worm and woodland access. Evidence on the field revealed for example, that alignment to ZANU PF usually improved one's access to local resources, whether they were male or female.

Political ecology has however, until recently contained limited politics; meaning there was no serious treatment of the means of resource control and access, nor of their definition, negotiation and contestation within political arenas (Peet and Watts, 1996; Billon, 2001). The politics of colonial intervention in the Third World is crucial in understanding contemporary patterns of the human-environment interaction and associated power relations. As discussed in Chapter 1 of this study, the BSACo installed Ndebele chiefs to preside over Kalanga communities, a practice that strained relations between the Ndebele and the Kalanga speaking communities. In some of the interviews conducted with elderly Kalanga-speaking people, the Ndebele-speaking people were constantly referred to in derogatory terms as *Mapotoho* (meaning foreigners). Walker (2005) noted that environmental actions of rural land users in developing countries are shaped by economic, ecological and political marginalization. Some of the reasons for limited success of CAMPFIRE in Zimbabwe for example are attributed to its failure to engage historical and political realities surrounding natural resource governance (ibid).

a) Critique of political ecology literature

Political ecology literature has been criticized for paying inadequate attention given to power relations and environmental use and management (McLain, 2000). Another criticism is

directed towards political ecology's treatment of politics. Several scholars argue that political ecology has very little politics in it (see Moore, 1993; Peet and Watts 1996; Bryant and Bailey, 1997). Peet and Watts (1996) in particular, observe that there is no serious attempt at treating the means by which control and access of resources or property rights are defined, negotiated and contested within the political arenas of the household, the workplace and the state (Peet and Watts, 1996). From other quarters, there have been some arguments that there is less attention put on the 'ecology' part. Perhaps the issue has been a semantic one. For instance, ecology is often used interchangeably with 'environment' and 'nature' hence it becomes primarily a question of power, struggle and representation, while the connections of these struggles to the biophysical environment remain unexamined. Vayda (1999) for example, notes that political ecology is mostly about natural resource politics where most political ecologists do an inadequate job of considering non-political and economic factors in their analysis of environmental change.

In this study, political ecology is used to understand the intertwined nature of politics and ecology. In a study of CAMPFIRE in Nkayi and Lupane for example, Logan and Moseley (2002) note that the Government of Zimbabwe (GoZ) has since independence, failed to address the issue of tenure laws meaning that the CAMPFIRE programme operates in a legal limbo that places limitations on its objectives. One key objective of the CAMPFIRE project is to enable local users to have complete access and use of resources within their communities. In this legal limbo, political and economic elites accumulate wealth and power based on tenure arrangements and management practices bequeathed to them by the departing colonial authorities (Bryant *et al*., 1993). Political ecology would thus posit that unequal relations of power tend to undermine land users' keen localized environmental knowledge and histories of successful adaptation leading to a 'situational rationality' that results in land users degrading their environments in acts of 'desperate ecocide' (Blaikie and Brookfield, 1987 in Walker, 2005).

In order to minimize weaknesses in the political ecology theory and power theory according to Foucault, this study combines the two theories because they complement each other. This study adopts McLain's (2000) list of areas of overlap between political ecology and power theories in its conceptualization of power configurations in the study area (see box 2 below).

Box 2. List of areas of overlap between political ecology and power theories

1. A concern for analyzing the workings of power from the bottom up, starting with studying the politics of everyday life;
2. A concern for understanding the historical processes which underlie current power dynamics;
3. A view of social actors as heterogeneous, multidimensional and culturally embedded;
4. A view that social structure and human agency exist in an interactive two way relationship with each other, and
5. The view that discourse and knowledge systems constitute an integral part of politics and thus need to be included in any analysis of the workings of power.

Source: McLain (2000)

Combining Foucault`s conception of power with the political ecology frame work provides a platform for clarifying the nexus between discourse and knowledge and how this linkage can become effective in enhancing state control of management regimes over natural resources (ibid). One of the themes in this study involves the significance of local environmental knowledge in mopane worms and woodlands management. The effect of local knowledge is thus analyzed in comparison to the influence of other forms of knowledge, particularly scientific knowledge. Political ecology thus provides the framework for understanding the link between politics, power, and knowledge.

2.3. Frameworks for analyzing natural resource governance

2.3.1. The Institutional Analysis and Development (IAD) framework

In analysing power and knowledge systems, this study adopted an Institutional Analysis and Development approach (IAD) adapted from earlier works of scholars such as Ostrom (1994) and Anderson (2002). This approach set the foundation for exploring the nature of interaction between diverse actors in the management of mopane worms and woodlands. Power relations and situated knowledge practices of different resource users such as women, men, rich and poor, people from different ethnic backgrounds, local political administrative structures and other local and national interest groups, located in specific contexts and mediated by sets of

changing institutions and circumstances, which may lead to different outcomes, were analysed using the IAD approach.

IAD framework focuses on the examination of how institutions affect human incentives, actions and outcomes (Ostrom and Cox, 2010). The specific form of this framework has varied over time (see for example work by Kiser and Ostrom, 1982; Ostrom, 1986; 1990; 2005; 2007b). Building on this foundation, the Social Ecological Systems (SES) framework has recently enabled researchers to begin the development of a common language that crosses social and ecological disciplines to analyse how interactions among a variety of factors affect outcomes (see Anderies *et al.*, 2004; Ostrom and Cox, 2010; McGinnis, 2011 among others). However, for the purposes of this study, the SES was not applied because this study did not focus on ecological variables.

IAD introduces the context in which local actors interact to create the institutional arrangements that shape their collective decisions and individual actions (Anderson, 2006). It places actors at the centre of the natural resource management discourse, with some recognition that there is a diversity of actors. Ostrom (2011) considers an IAD framework as a multi-tier conceptual map because resource policies made at the regional, national, or international levels have their effects filtering through to the local context. Anderson (2006) further notes that the local actors—which may include resource users and their communities, municipal-government officials, central-government representatives who work in the locality, private firms, and Non-Governmental Organisation (NGO) representatives—will interpret these policy changes according to the specific institutional context as shaped by biophysical and socio-economic attributes. In this study, the actions of actors were analysed within a context shaped by history, socio-economic and political attributes in Bulilima. Figure 2.1 shows an IAD framework which constitutes of external variables, action arena and patterns of interactions.

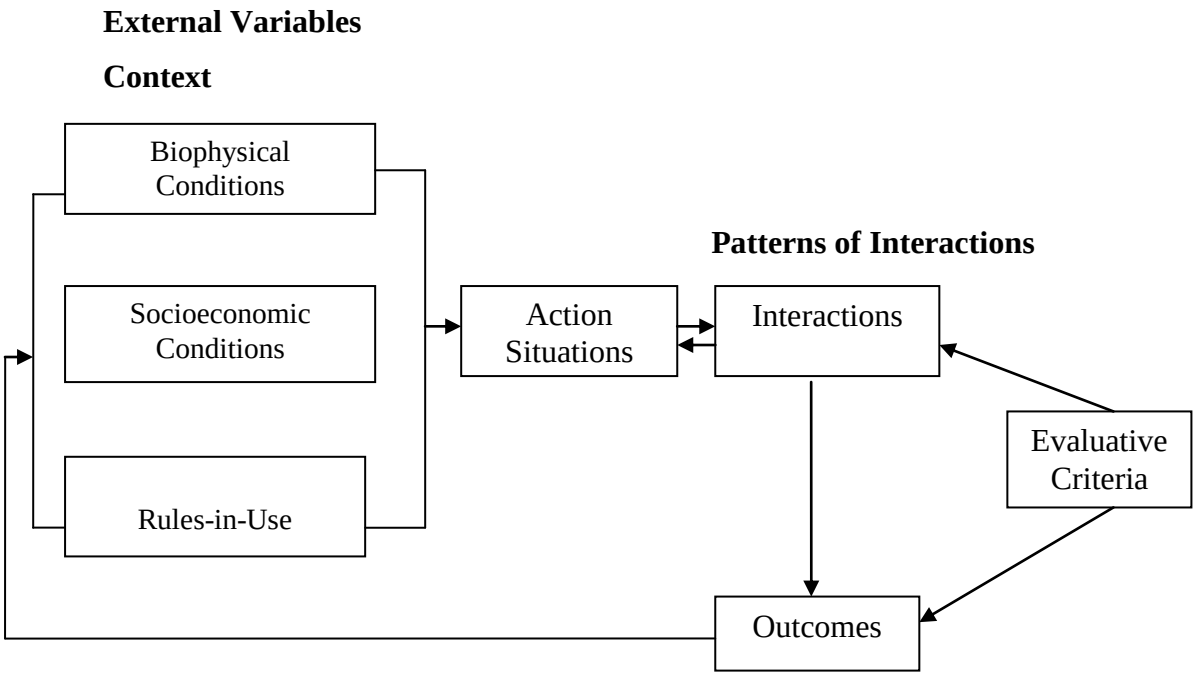


Figure 2.1 Basic components of the IAD Framework. *Source:* Ostrom (2010:646).

The external variables constitute the biophysical conditions, socio-economic conditions and the rules-in-use. Biophysical conditions pertain to the nature of the resource under study, in this case mopane worms and woodlands. Socio-economic conditions relate to how actors interact within and between clusters of other actors. Issues considered in this study include historical background, culture, religion, values, beliefs, knowledge, skills, the politics and history of violence in Bulilima since Zimbabwe's independence (for example post-colonial conflicts such as Gukurahundi, FTLRRP and other conflicts related to elections). The rules-in-use refer to the norms that are actually respected by the actors participating in an action situation (Anderson, 2006; Ostrom, 2011). In this study, actors included the local people of different ethnic origins who live in Bulilima, traditional and local government authorities. The IAD framework analyses the rules and norms that individuals and groups use in making decisions on the utilisation of mopane worms and woodlands.

Action situation is where policy choices are made. This is a social space where actors interact, exchange goods and services, solve problems, dominate one another, or fight (Ostrom, 2011). It is important to note that an institutional analysis can take two additional steps after examining an action situation (ibid). One step examines factors that affect the structure of the situation (Kiser and Ostrom, 1982 cited in Ostrom, 2011) while the other

explores how an action situation changes over time in light of how historic outcomes affect perceptions and strategies over time (Ostrom and Cox, 2010). A second step that this study took was an analysis of how the impacts of historical events and outcomes affected power relations and knowledge systems in the contemporary Bulilima District. Outcomes in IAD framework result from the conjuncture of the outputs of a given action situation and exogenous influences (McGinnis, 2011).

One of the complexities underlying the use of the IAD framework relates to some types of rules that people might make and follow in their respective environments. Ostrom (2011) for example, argues that humans have a capacity to use complex cognitive systems to order their own behaviour, making it difficult for empirical researchers to ascertain the kind of working rules underlying an ongoing action situation. One way of solving this problem in this study was to use an ethnographic approach in which the researcher spent as much time as possible with the people under study and developed the art of asking non-threatening and context-specific questions.

2.3.2. Analysing power using 'Power Cube' framework

While the IAD provided a theoretical framework useful for analyzing specific mechanisms and processes by which various actors and institutional structures were able to influence mopane worms and woodlands management, it was found inadequate in explaining power dynamics in the study area. As such, a relevant framework for analysing power had to be found. The Power Cube approach developed by Gaventa (2005) was thus adopted.

The Power Cube framework considers three dimensions of power: spaces of participation, forms of power, and levels of decision-making (see Figure 2.2). Spaces of participation represent three potential arenas for involvement and action – closed, invited and claimed spaces (Rabé and Kamazi, 2012). According to Gaventa (2005), invited spaces are opportunities, moments and channels where citizens can act to potentially affect policies, discourses, decisions and relationships that affect their lives and interests. In this study, invited spaces were considered as local fora where community members met to discuss community issues. It is in such meetings that community members participated in social debates. Closed spaces on the other hand are institutions, customs, laws, places, and so on, that have an impact on people's lives but which are considered off-limits for public

participation (Rabé and Kamazi, 2012). In closed spaces, locals are usually excluded from decision making on issues that affect their wellbeing. In this study, institutions such as the Provincial Development Committee (PDC) or the Rural District Development Committees (RDDC) were found to be closed spaces for the locals yet important decisions that affected livelihoods of local people were passed through these institutions. For instance, the RDDC was said to have made and supported some by-laws with regards to mopane worm harvesting without consulting the communities that utilised this resource. Gaventa (2005) thus noted that closed spaces were normally created and utilized by the ruling elite, bureaucrats, experts or elected representatives who decided alone and provided services to the people without the need for broader consultation or ordinary citizen involvement. The claimed spaces were said to be created and owned by people at the grassroots level who were normally relatively powerless (Gaventa, 2005; Rabé and Kamazi, 2012; IDS, 2009).

In addition to the broad questions mentioned in Chapter 1, this study sought to find out who created and owned participatory spaces in mopane worms and woodlands use. How did the existing power relations influence the creation and ownership of participatory spaces? Related to this question, what were the implications of space ownership to community participation in natural resource management in Bulilima?

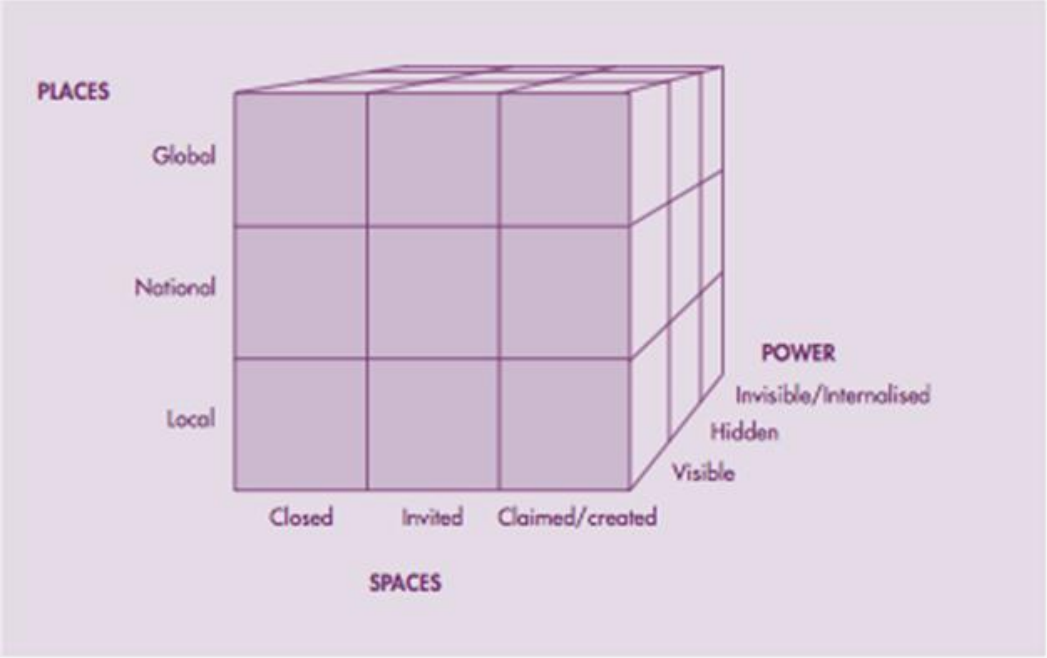


Figure 2.2 'Power Cube': Power in Spaces and Places of Participation by Gaventa (2005)

Power, as analysed in the Power Cube framework, was found to manifest itself in three different forms namely visible, hidden and invisible (see box 3 below).

Box 3. Forms of Power

Visible Power: Observable Decision making

This level includes the visible and definable aspects of political power – the formal rules, structures, authorities, institutions, and procedures of decision-making. Strategies that target this level usually try to change the 'who, how and what' of policy-making so that the policy process is more democratic and accountable, and serves the needs and rights of people and the survival of the planet.

Hidden Power: Setting the Political Agenda

Certain powerful people and institutions maintain their influence by controlling who gets to the decision-making table and what gets on the agenda. These dynamics operate on many levels to exclude and devalue the concerns and representation of other less powerful groups. Empowering advocacy strategies that focus on strengthening organizations and movements of the poor can build the collective power of numbers and new leadership to influence the way the political agenda is shaped and increase the visibility and legitimacy of their issues, voice and demands.

Invisible Power: Shaping Meaning and what is Acceptable

Probably the most insidious of the three dimensions of power, invisible power shapes the psychological and ideological boundaries of participation. Significant problems and issues are not only kept from the decision-making table, but also from the minds and consciousness of the different players involved, even those directly affected by the problem. By influencing how individuals think about their place in the world, this level of power shapes people' s beliefs, sense of self, and acceptance of the status quo – even their own superiority or inferiority. Processes of socialization, culture and ideology perpetuate exclusion and inequality by defining what is normal, acceptable and safe. Change strategies in this area target social and political culture as well as individual consciousness to transform the way people perceive themselves and those around them, and how they envision future possibilities and alternatives.

Source: Gaventa (2005)

The Power Cube analysis frame work further contends that different levels of decision-making exist and they involve the contestation between local, national and global arenas as locations of power. In this study, the spotlight was on national government level and sub-national level as arenas that significantly influence decision-making with regards to Mopane worms and woodlands management. The sub-national level for example, was found to be an arena where local communities accessed services and political representation which affected power configurations and consequently decisions on natural resource use. It is important to note that the three dimensions of power are intertwined and in most cases will affect the complex dynamics of citizen engagement in any given context. This allowed for a comprehensive and holistic analysis of power in mopane worms and woodlands management in Bulilima.

2.4. Summary

This chapter discussed the theoretical and analytical frameworks guiding this study. Hardin's (1968) 'Tragedy of the Commons' theory set the tone for theoretical discussions on natural resource management. For deeper analysis of power dynamics and significance of LEK, the chapter identified and explored other relevant approaches. These are the Common Property Resources (CPRs) theory, the New Institutionalism (NI) theory, Social Power and Political Ecology. All these approaches were found relevant to this study as they help explain the concept of power and how it affects natural resource management. The chapter went on to discuss analytical frameworks that were used in the analysis of power and knowledge in common pool resource management. The next chapter discusses the methodological framework used for this study and also describes the study area, Bulilima District.

CHAPTER 3: METHODOLOGY AND DESCRIPTION OF THE STUDY AREA

3.1. Introduction

This chapter describes the methodological framework that guided data collection, codification, synthesis and analysis. It starts by giving an in-depth explanation of the research approach, design and process, sampling procedure, methods of data collection, data analysis and background of the study area. It concludes with a detailed outline of the research phases taken. The choice of the methodology used was guided by the theoretical underpinnings of the study, the major aim and objectives, the nature of the research problem, and how data was analysed, interpreted and presented. The study is qualitative. A description is given of the research strategies adopted, methods of data collection and analysis, field procedures, experiences and the challenges faced during fieldwork. Academic literature and other relevant sources guided the method choice and design. The second part of the chapter provides a general background to the study site.

3.2. Research methodology

The two major questions that this study sought to answer were: 1) What is the significance of local environmental knowledge in mopane worms and woodland management? 2) How is power configured in mopane worms and woodlands management in Bulilima District situated in South-western Matabeleland, Zimbabwe? By answering these questions, the study hoped to contribute to the debates on the power/knowledge nexus and the role these two concepts play in natural resource management at a local level. This contribution is expected to broaden knowledge on theories that explain the management of common pool resources in developing states.

3.2.1. The study design

Qualitative research is inherently multi-method in focus (Flick, 1998; Denzin and Lincoln, 2000). The use of multiple methods, or triangulation, reflects an attempt to secure an in-depth understanding of the phenomenon in question (Nemarundwe, 2003). Objective reality can never be captured; we can know something only through its representations (Denzin and

Lincoln, 2000:5). Qualitative methods also allow the researcher to avoid the subliminal inception of ideas through confronting study participants with a pre-defined problem. Selge *et al*. (2011) argue that subliminal inception does not allow the researcher to see if the participant sees the problem in the first place. Besides avoiding inception, qualitative methods allow the researcher's conceptualization of the topic to stay in the background (Denzin and Lincoln, 2005; Schüttler *et al*., 2011).

In this study, the methodology rested significantly on participant observation, interviews, focus group discussions and 'narratives' – actions and events. The researcher had the opportunity of spending more than two months at Chief Makhulela's homestead and indirectly participated in the institutional arrangements under study. This made it easier for community members to accept him. There was an opportunity to observe the workings of institutions from within – as an 'embedded researcher' rather than the 'eternal outsider', which has been the historic fate of most social scientists (Lantham, 2005). This provided a unique and close association with the communities researched. It must be stated however that residing at the chief`s homestead had an undesirable effect of being accorded too much respect that bordered on fear. As such that might have compromised some of the data collected. Nevertheless, the researcher's close association with traditional authorities seemed to open many doors in the communities visited in the district. While the study was significantly ethnographic, the researcher used a questionnaire to collect data that gave a general descriptive nature of the villages under study. For instance, the researcher wanted and collected general demographic data to ascertain the characteristics of the population in terms of sex, marriage status, education etc. Other data collected through questionnaire survey included the tenure areas where mopane worms and woodlands were clustered in the district. This data provided a platform to conduct in-depth discussions on the reasons and effects of accessing mopane resources from different tenure areas.

3.2.2. Data requirements

Analyzing power and knowledge as institutions in natural resource management is one of the most effective ways of understanding the state of common pool resources. This however has to be understood through a historical context as history plays a key role in power dynamics surrounding common pool resource management. The colonial system gave some political power to traditional leaders as part of the overall aim of propping the colonial state through

the oppression of the masses (Chanock, 1991; Mamdani, 1996). An extensive interrogation of literature on the history of natural resource management in Zimbabwe was thus critical in understanding the basis of contemporary management practices. This was augmented by archival data from the National Archives of Zimbabwe (NAZ). Understanding the role of power and knowledge on natural resources management also entailed the understanding and appreciation of the characteristics of the actors that utilized the resources at the time. The study subjects included various actors such as women, men, youths, the rich, the poor, local government authorities, traditional authorities, Non-Governmental Organizations (NGOs) and some representatives from the central government. These actors interacted in diverse ways according to their power relations. Their actions were interrogated in the context of their history, economic activities, ethnicity, age and gender. This idea was derived from Long (1977 in Nemarundwe, 2003) who noted that action observed at a particular time at the local level was a product of and had some effect on the wider political, economic and social systems.

Institutions responsible for natural resource management in Bulilima were analyzed using qualitative methods. The terms 'institutional framework' and formal/informal were defined and explained to the respondents before the interview commenced. In assembling the method for this section, the study made use of some ideas drawn from Nyagumbo and Rurinda (2012) who appraised the policies and institutional frameworks affecting smallholder agricultural water management in Zimbabwe. The study considered environmental management frameworks currently operating. Whereas Nyagumbo and Rurinda (2012) did not interrogate the frameworks from the perspectives of the communities in question, this study did precisely that.

3.2.3. Research strategy

The study adopted a case study approach in order to produce detailed analysis of power configurations and local knowledge significance in natural resource governance in Bulilima. The idea of selecting a case study was borrowed from scholars such as Yin (1994; 2003) and Denzin and Lincoln (2000) who note that a case study research explores and depicts a setting with a view to advance an understanding of the subject at hand. It is an appropriate way of capturing context specific detail. This approach was very critical for this study because it allowed for intensive study of the subjects/actors. Analyzing power configurations requires

that one be at the study site for a long time because power issues tend to be context specific. There is thus a need for sustained observation of how people live and how they relate to each other. Local knowledge also tends to be context specific and differs from one case to another. While the bulk of the data generated from a case study approach is usually qualitative (Carr, 1986; Roe, 1995; Fortmann, 1995; Scott, 1985), a survey was done in this study to solicit data on the nature and depth of knowledge held by respondents of varying livelihood pursuits, gender, class and age. The survey also provided complementary data on how power is devolved or configured across gender, class, generational divides and institutions. The survey also yielded data on how local environmental knowledge varies with gender, class and generational divides.

The researcher conducted extensive consultative meetings with local authorities prior to the commencement of the study. In order to ensure feasibility of the entire study, a pilot study was carried out soon after the consultative meetings. Respondents came from all the wards under study. A total of 25 respondents were surveyed and 5 key informant interviews were done with selected community members. Interviews were conducted in IsiNdebele, one of the two local vernacular languages spoken in the area, and a language which is the researcher's mother-tongue. The researcher made sure that any emerging issues from the interviews as part of the pilot study were noted. The pilot study, carried out over a period of two months, revealed vital weaknesses on the researcher's assumptions about the study. For instance there was a need to find a research assistant who could speak the Kalanga language. The researcher had taken it for granted that everyone in Bulilima understood Ndebele. Some people, especially the elderly, only speak and understand the Kalanga language. As such, a Kalanga-speaking research assistant became critical in this study.

The pilot study also revealed that a structured questionnaire was inadequate for this study. It was evident that the topic would be better studied through a detailed combination of ethnographic techniques. More precisely, participatory techniques proved to be the most efficient. Spending time with the respondents in their own settings, creating rapport and networks with 'actors 'and 'brokers' in natural resource management, proved pivotal for successful completion of this study.

3.2.4. Population and sampling

The sampling frame for this study was the rural population of Bulilima District. A case study of three wards (Dombolefu, Bambadzi, and Makhulela) was used to draw a sample of respondents. The study used multistage sampling, using both probability and non-probability techniques. The district under study has 19 wards. Dombolefu, Bambadzi, and Makhulela were purposively sampled because they were reported to have large outbreaks of mopane worms compared to the other wards.[16] The selected wards had 6 villages each, of which 2 were randomly selected from each ward. The researcher decided to settle for 2 villages per ward for feasibility purposes. Studying all villages was likely to be cumbersome and yet yield the same results. Selection of households for the purposes of the survey was stratified in the sense that questionnaires were administered alternately, meaning that the researcher skipped every second household. A total of 90 households were surveyed using this technique. Selection of respondents for group discussion and individual interviews was a combination of purposive and convenience sampling (see section on Focus Group Discussion in this chapter). This form of sampling covered a cross-section of locals from a wide range of backgrounds thereby giving rich data on power dynamics and local environmental knowledge (this idea was derived from scholars such as Fischer and Young, 2007; Garcia-Llorente *et al*., 2008; Selge *et al.*, 2011).

Key informants who provided the bulk of the data were purposively sampled based on their expert knowledge of the subject under study. According to Verschuren and Doorewaard (1999), the popularity of adopting this technique by researchers is that it is time and cost effective. This is also done when the primary interest of the researcher is to understand both qualitative and quantitative problems pertaining to how, how often or to what degree a particular attribute or characteristic is distributed. To understand power and knowledge dynamics in the management of mopane worms and woodlands, specific key informants were thus required. These included traditional leaders in the form of village heads, local government representatives, WADCO and VIDCO representatives, ward councilors, and various community leaders.

[16] Information on Mopane outbreaks was supplied by the Natural Resourses Management officer in the Bulilima Rural District Council.

3.2.5. Research methods

The selection of a particular method or approach to collect data is influenced by variables such as the problem at hand, the theoretical framework/s anchoring the study, the purpose of the study, the resources available and the skills of the researcher. Moreover, the socio-demographic nature of the population under study can influence the success or failure of the entire process of data collection. Grady (1998) thus notes that in making a decision on the type of data collection method, the researcher must keep in mind the type of people he is dealing with, the nature of the social situation, the mood of the social environment and the psychology of the people.

In this study, the researcher made use of the triangulation method so as to verify data collected and thus improve on its reliability and validity. Data was thus mainly collected using participatory techniques such as focus group discussions, key informant interviews (KII), participatory rural appraisal exercises, historical narratives, case histories, participant observation, gender analysis, and secondary data review. While staying with the communities, the researcher managed to build rapport and networked with 'actors' and 'brokers' through attending various functions such as funerals, community courts, community meetings and church services. Data collection was conducted in the respondent's language of choice (predominantly in isiNdebele, TjiKalanga and English), with the help of local research assistants.

a) Key informant interviews

Key informants are individuals with special knowledge, status or communication skills, and are willing to share what they know with the researcher (Gilchrist, 1992). The Education Development Center (2004) goes further to define key informant interviews as a loosely structured conversation with people who have specialized knowledge about subjects one wishes to understand. Through purposive sampling, the key informants in this study were identified, based on their expert knowledge about the history of the study area, gender, wealth, ethnicity, age and leadership position. Through in-depth interviews, using key informant guide, the key informants provided valuable information on a variety of issues that included local environmental knowledge available in the management of mopane resources, importance of Mopane resources to local communities, and issues of ownership and access to

natural resources within the district. The specific informants interviewed comprised of the Bulilima Chief Executive Officer (CEO) whose main duty was to oversee development in the entire district through implementation of policies formulated by the council board. The CEO was important to this study because the decisions made in his office had an impact on how the communities accessed, used and controlled natural resources in the district. This study also sought to understand the power relations that existed between the office of the CEO, central government departments, local government, traditional institutions and communities. Key informants from the local government were represented by the District Administrator (DA) responsible for the welfare of chiefs, the VIDCO and the WADCO chairpersons, local chiefs, village heads (also known as *oSobhuku* in isiNdebele), councilors from each of the three wards, officials from government departments such as Forestry Commission (FC), officials from Non-governmental Organisations (NGOs) operating in the district (the two NGOs that were found relevant to this study were Amalima and SNV Netherlands Development Organisation, which had programmes aimed at improving the value chain of Mopane worms in the district) and community members selected because of their knowledge of the area, their position in the community and their status in terms of wealth. The key informant guide was designed and administered to 15 key informants. The researcher had to do several visits to interview the respondents especially the aged community members as the sessions tended to be long at any given time.

b) Focus group discussions (FGDs)

Group discussions allow for shared views to be obtained (Berg, 2009) while also allowing the researcher to remain focused on the most important issues rather than individual personal aspects (Bless *et al*., 2006). In this study, FGDs generated rich data on various issues such as access to natural resources, decisions on the use of the resources at home and within communities, conflicts that sometimes arise as community members utilize natural resources and women's involvement in decision-making within the communities. Nemarundwe (2003) in her PhD thesis on Natural Resource Access in the Romwe catchment area in Zimbabwe, commended FGDs for allowing access to research participants who find one-on-one, face-to-face interviews intimidating. FDGs therefore have the advantage of creating multiple lines of communication, offering participants a comfortable and conducive environment in which they can relatively share ideas easily (Madriz, 2000).

A total of 12 FGDs were conducted, that is, four in each ward under study. Each group was composed of between eight and twelve respondents. Groups were streamlined mainly according to gender, meaning that men and women were put in separate groups. The groups comprised of men and women in leadership positions, men and women who were in the natural resources committees, ordinary members of the communities, a group of traditional leaders (village heads and headmen) and a group of local government representatives (WADCOs and VIDCOs). Separating men from women ensured that women aired their views without being intimidated by the presence of men. The patriarchal nature of most African societies quite often results in men dominating public discussions. In the presence of men, women often agree with what men decide even if it is to their disadvantage (Limb and Dwyer, 2001; Helmore and Singh, 2002). It is important to note however that women`s silence in public fora where there are men is not a sign of weakness. It is argued in Chapter 5 of this study that at times women do not need to argue and challenge men in public because what men say in such public fora would have already been discussed at home. Nevertheless, the researcher separated the two sexes because there was a need to hear from women directly. FGD guides and visual aids (pictures, maps and other diagrams) were used to facilitate the FGDs.

It is important to note that while FGDs have been developed to occupy a well-respected position among the various data collection methods (Marvasti, 2004), they can also be arenas for contestation and may be biased by power relations in the group (Mosse, 1994; Goebel, 1998), with views of powerful members of the group being the dominant ones (Mikkelsen, 1995; Nemarundwe, 2003). To counter these challenges, measures that included separation of groups by sex and also being actively involved in the facilitation to minimize the influence of powerful members, were taken. Participation by all members was ensured through encouraging everyone to at least say their views. This needed the expert interviewing skills of the researcher.

c) Participant observation

Observation as a research technique, is appropriate for studying processes, relationships among people and events, the organisation of people and events, continuities over time and patterns as well as the immediate socio-cultural contexts in which human existence unfolds (Jorgensen, 1989). It gives access to the meanings which participants assign to social

situations (Burgess, 1984). Moreover, it is also a desirable technique when the problem concerns human interactions and the phenomenon of investigation is observable in an everyday life situation or setting. This was particularly true in this study because the problem under study involved the day-to-day interaction of people as they accessed and used natural resources within their communities. This method was thus found to be very useful. It yielded important insights into how relationships between different actors influenced resource management in Bulilima and patterns of access to mopane worms and woodlands by women and men. Other methods (surveys, FGDs and Interviews) could not provide much information on various contestations between diverse actors utilizing mopane resources. This assertion is supported by Nemarundwe (2003) who argues that power relations of actors are embedded in contested and contrasting discourses. In a similar vein, Jorgensen (1989) notes that participant observation is appropriate when the phenomenon is somehow hidden or invisible from view and there are important differences between the views of outsiders and insiders. Becker and Geer (1957:133) summarise the importance of participant observation by arguing that participant observation 'can … provide us with a yardstick against which to measure the completeness of data gathered in other ways, a model which can serve to let us know what orders of information escape us when we use other methods'.

Sustained observations were used to observe contested terrains (Moore, 1996) between and among various actors – as groups or individuals, communities versus state, women versus men and rich versus poor in Bulilima district. Analysing power dynamics amongst and between people requires that a researcher spends some time with them in order to understand how they live and socialise. Accordingly, the researcher spent at least three months in Bulilima District, socialising with communities on a daily basis and attending their social functions such as local meetings, bereavements, weddings and other functions so as to gain trust of the people and understand their structures better. Occasions such as community meetings and functions offer opportunities to observe interactions and relationships and may expose nuances which cannot be discovered through face to face questioning (Devereux and Hoddinott, 1992).

It is worth noting however that participant observation is not without its own problems and certainly the researcher experienced some of them in the field. It took time for the researcher to negotiate access and be familiar with all the goings-on in the communities. Residence at the Chief`s homestead was initially met with suspicion, fear and disapproval by some

members of the community. They were aware that they were being observed and this posed a threat to the validity of data collected (as noted by Daymon and Holloway, 2002). However, with the passage of time, community members warmed up to the researcher. It must be noted though, that the 'social distance' based on class, race, education, culture, language and power is never really closed (Cheater, 1986:22). This social differentiation makes total participation impossible, creating challenges to a researcher's ultimate objective of comprehensively understanding a particular society as a whole (Nemarundwe, 2003: 64). Another disadvantage with the participant observation technique is that the researcher could only see and observe what was in front of him yet events were also happening in other parts of the community under study. This problem was resolved by using other methods such as in-depth interviews and focus group discussions in other areas that could not be observed. This idea was borrowed from Nemarundwe's (2003) study where upon realizing that participating in community activities by itself did not yield much usable information, it was necessary to ask questions in addition to observing the various activities.

By the end of the fieldwork, the researcher had made many friends, some of whom expected the researcher to do or lend them something in order to make their lives better. It was very difficult for the researcher to explain and convince these new friends that the study was for academic purposes only. This experience is consistent with observations made by Daymon and Holloway (2002: 215) that no matter how carefully one tries not to disturb the setting, one will always make an impact, even if minimal, on those with whom one comes into contact.

d) Historical narratives

The historical conceptualization and understanding of natural resource management was pivotal to this study because it made sense to incorporate it for a nuanced understanding of the contemporary dynamics in local environmental knowledge and power relations in Bulilima District. Historical narratives were garnered from key informants such as traditional leaders and older members of the communities under study. Snowballing was used to identify the older members of these communities.

Narratives are generally understood as stories that include a temporal ordering of events in a chronological sequential manner (Stone, 1979; Abbott 1990; Griffin 1992). Narrators are

usually socially positioned to tell stories at given biographical and historical moments (Nemarundwe, 2003) and it is for this reason that the narrators chosen in this study were senior citizens who had settled in the study area as long back as the 1950s and were thus socially positioned to chronicle the history of the area. The historical narratives analysed in this study represent various arrangements and relations that existed between different groups as they accessed and utilised mopane worms and woodlands in Bulilima District. The narratives trace different management systems and how these influenced the sustainable use of these resources. They are thus critical in understanding contemporary management systems and how they have been legitimized by the current actors.

e) Questionnaire Survey

A total of ninety questionnaires were administered using a stratified random sampling method in the sampled villages to acquire relevant quantitative data. The survey was conducted over a period of twelve months, targeting the seasons during which mopane worms are in abundance on the mopane trees namely March to April, and December to January. The household survey solicited data on diverse issues that included demographics of respondents, geographic areas where most of the mopane worms and woodlands are clustered, respondents' perceptions on rights available to different kinds of people in the district and knowledge on certain local practices related to Mopane worm and woodland management. Questionnaires also helped capture data on the nature of local environmental knowledge held by respondents of varying livelihood priorities, gender, class and age. Questionnaires were translated into the two most common local languages (isiNdebele and TjiKalanga) so as to cater for those respondents who did not understand the English language. It is important to note that while questionnaires were not the main data gathering tools, they were vital in that they provided basic descriptive data which presented a clear map on some basic but important characteristics of the society of Bulilima. For instance, demographic data provided important variables such as sex and age which were later used in discussing power dynamics in the area. To a certain extent, the questionnaire data gave credibility and specificity to some generalizations made in this study.

f) Documents and archives

Historical data was also collected from official documents and archival material from the National Archives of Zimbabwe. The bulk of the data gathered through this technique included that on colonial management of forests in Zimbabwe as well as the interactions between the colonial government and traditional leaders. While this data was not specific on mopane resources, it however shed light on power relations that existed between the colonial government and the local communities with regards to natural resource governance. The treatment of traditional leaders like chiefs, which is well documented in the archives documents, is quite intriguing in the sense that it does not differ much from the contemporary treatment of chiefs by the post-colonial government (see discussions in Chapter 4 of this thesis). As such, understanding the establishment of colonial institutions, as well as the relationship between the colonial central government and the local governments (districts and administrative posts) was pivotal in this study because it aided in comprehending the contemporary relations between the post-colonial government and various local institutions in the study area. It must however be stated that besides works by Ranger (1967; 1999) and recently Msindo (2012), there is a paucity of scholarly work in the archives and various libraries on the pre-colonial and colonial history of natural resources management in Bulilima District and its surrounds. The researcher had to rely on not so credible documents like national newspapers (The Chronicle and The Herald). It is therefore likely that serious errors could be made when using archival data (Berg, 2001) or newspapers. This however, was countered by use of other different research techniques such as historical narratives and case histories that either confirmed or refuted some of the assertions made in the archival documents. Some of the documents reviewed were obtained from Bulilima Rural District Council, the office of the District Administrator, CAMPFIRE office and some of the documents in the possession of traditional leaders like chiefs

3.3. Data analysis and interpretation

The study used narratives from elderly respondents to bring out historical dimensions not captured in the archives and documents. Eastmond (2007) however, argues that narratives are not transparent renditions of reality. The stories that people tell researchers and one another have to be related to the social and political contexts that have shaped and continue shaping the circumstances of their lives and which engage their commitments. The researcher

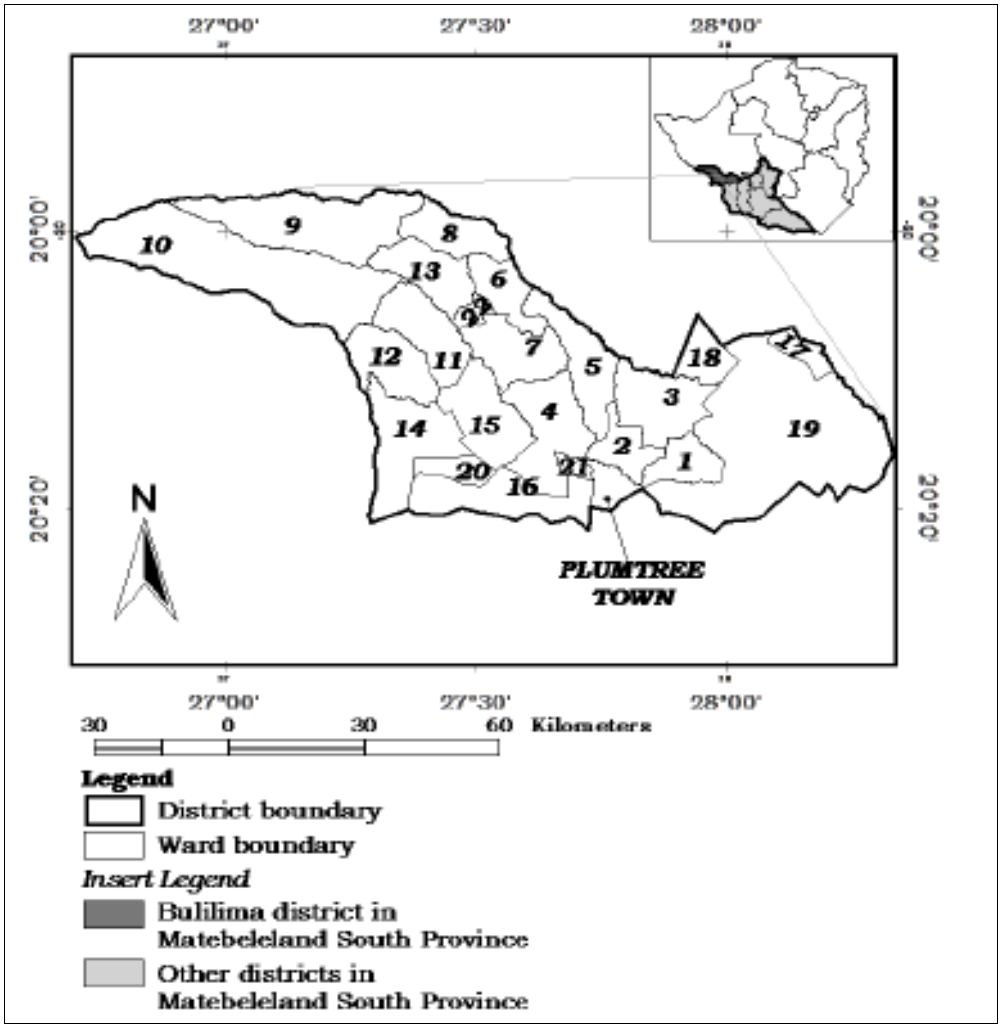
followed the selected participants to the places around which their lives revolved and where various activities took place. These included meetings they attended, political interests, their places of residence and the resources they used for their daily livelihoods.

The study also involved document analysis of key government policy documents such as the Land Apportionment Act of 1930 that segregated land on racial lines, the Land Husbandry Act in the early 1950s, the Communal Land Act of 1982 which transferred all powers for the allocation of land to the Rural District Councils (RDCs), the Traditional Leadership Act of 1998 which placed land administration powers in a traditional system of chiefs and headman overseeing 'traditional' villages. Also considered were many other post-colonial Acts and policies that have a bearing on natural resource management. CAMPFIRE is one of the post-colonial policy attempts to involve local people in natural resource governance. These documents revealed ideologies towards natural resource management and the role played by different users of the resources. An analysis of these documents therefore provided the necessary backdrop on the role played by different resource users in this region.

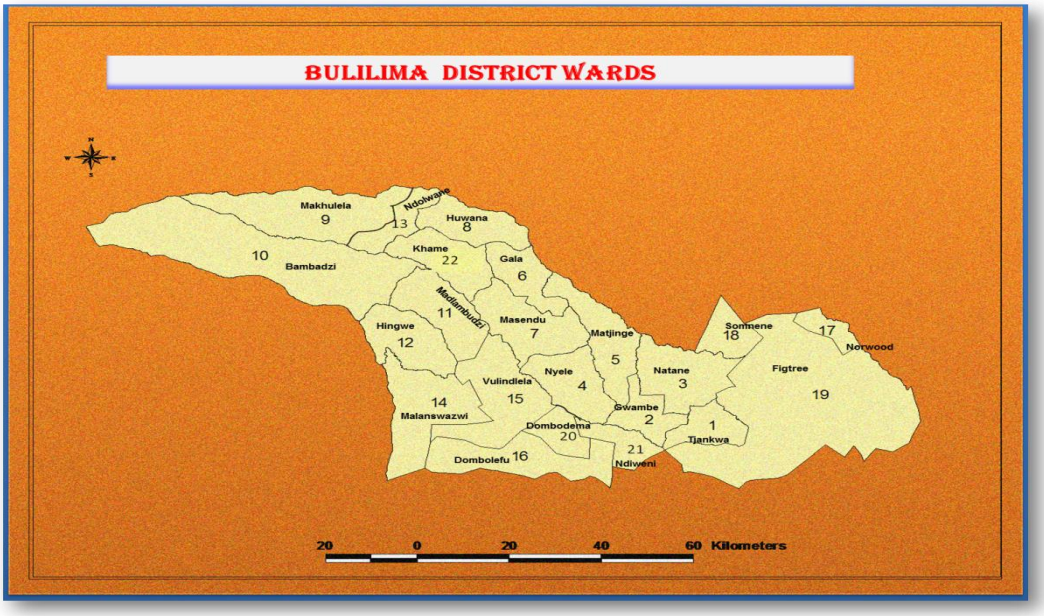
Content analysis was done on data generated through interviews and FGDs. Berg (2001) defines content analysis as a technique for making inferences through systematic and objective identification of special characteristics of messages. Messages from selected respondents were systematically developed into different themes which were relevant to the objectives of the study. One of the debates among users of content analysis is whether analysis should be quantitative or qualitative (ibid). Some scholars (see for example Berelson, 1952; Selltiz *et al*., 1959; Edmundson, *et al.*, 1993) argue that content analysis is objective, systematic, and quantitative. However, Abrahamson (1983) and Berg (2001) believe content analysis can be fruitfully employed to examine virtually any type of communication. In this study, content analysis was employed in analysing data generated from questionnaire interviews, in-depth interviews and FGDs.

3.4. Description of the study site

Bulilima District is located in the Matabeleland South province of Zimbabwe (see Maps 3.1 and 3.2).



Map 3.1: Bulilima ward map and Map of Zimbabwe showing Matabeleland South Province (insert) Source: Matsa and Simphiwe (2010)



Map 3.2 Bulilima district wards and their names.

Source: Forestry Commission, Bulilima District (Unpublished)

The district is largely rural with Plumtree town the only notable urban settlement. It has nineteen wards characterized by multiple livelihood strategies that include small businesses, communal farms, small-scale mines and irrigation schemes, amongst others (ZIMSTATS, 2012).

3.4.1. Climate

The entire district lies within Agro-ecological zones IV and V[17], which are characterised by short, variable rainfall seasons averaging generally below 400 mm per year and long dry winter periods and is subject to periodic seasonal droughts and severe dry spells during the rainy season (Vincent and Tomas, 1960; Magadza, 2006; Mahati *et al*., 2008). Rainfall is usually associated with thunderstorms, producing rainfall of short duration and high intensity.

[17] Zimbabwe is divided into 5 Agro-ecological zones based on rainfall received and thus the type of agriculture practiced. Zone 1 receives an average of 1000m rainfall. Specialized and diversified farming is practiced (tea, coffee, plantation farming, macadamia, fruits, intensive livestock production. Zone 2 receives average annual rainfall of between 750-100mm. Intensive crop and livestock production is practiced. Zone 4 receives an average of 650-800mm of rainfall. There are severe mid-summer droughts but maize, tobacco, cotton and other cash crops are grown (Vincent and Tomas, 1960; Chikodzi *et al.*, 2013).

Temperatures are as high as 40 degrees Celsius during the summer months and on average 13 degrees Celsius during winter (Magadza, 2006; Mahati *et al.*, 2008). Matabeleland South Province's semi-arid conditions are well suited to livestock production as the drier conditions reduce the susceptibility of the animals to disease and the costs associated with animal health management (Vincent and Tomas, 1960; Masocha, 2010). Notwithstanding this advantage, Bulilima is prone to disasters ranging from perennial droughts, floods, land degradation, road carnage and loss of livestock. These have contributed to the high levels of poverty in the district and the province as a whole (ZIMSTATS, 2013).

3.4.2. Vegetation

Vegetation is patchy savannah woodlands with sparse herbs and grasses (Clastworthy, 1987). The predominant tree species is Colophospermum Mopane (Dye and Walker, 1980; Dube, 2008). Soils in this region are also predominantly poor sodic soils (Dye and Walker, 1980). Grazing potential is low and intra-seasonal variation can have a considerable effect on the amount of dry matter produced. The patchy nature of vegetation renders the district very vulnerable to environmental hazards such as flooding, soil erosions, gusty winds and general environmental deterioration (ibid).

3.4.3. Agricultural potential and other economic issues

Bulilima District lies at the border of Zimbabwe and Botswana, bounded by Tsholotsho district to the North-West and Mangwe District to the South-East. The major land use pattern and tenure system is communal lands and small scale resettlement farms (Mahati *et al.*, 2008). It is considered to be one of the poorest and most marginalized regions in Zimbabwe and faces challenges of starvation, poverty, HIV and AIDS and unemployment (Magadza, 2006; Zimbabwe Election Support Network (ZESN), 2008; Mahati *et al*., 2008). Poverty is however, typical of the entire province. ZIMSTATS (2013) estimate a poverty prevalence rate of 44% in 2013 in the Matabeleland province where Bulilima District is located (see Table 3.1).

Table 3.1 Household poverty prevalence by province in Zimbabwe

Province	Prevalence of poverty	Prevalence of Extreme poverty
Bulawayo	34.5	3.4
Manicaland	43.6	5.5
Mashonaland Central	50.3	9.2
Mashonaland East	43.5	5.5
Mashonaland West	50.1	7.1
Matabeleland North	49.7	6.4
Matabeleland South	44.0	1.7
Midlands	37.7	3.0
Masvingo	21.4	0.6
Harare	35.7	3.3

Source: ZIMSTATS (2013).

Agriculture, in the form of livestock rearing and limited crop production especially in areas with irrigation, still remains the main source of livelihoods (Mahati *et al.*, 2008). The common livestock are cattle, sheep, goats and poultry. These provide among other things, manure, meat, milk, and draught power (ibid). However, because of recurrent droughts in the area under study, game ranches and natural resource harvesting also play a significant role in providing livelihoods to the people (Madzudzo and Hawkes, 1996). Remittances from relatives working in neighboring countries such as South Africa and Botswana and those working in neighboring towns such as Plumtree and Bulawayo, supplement residents' incomes (ZESN, 2008).

Harvesting of mopane worms in Bulilima takes place during the periods November to January and also in April or May, following good rains (Ghazoul, 2006). Some scholars argue that harvesting is mostly done by women and children (SAFIRE, 2002; Stack *et al*., 2003) though this study proved that this depended on the prevailing economic situation (see discussions on harvesting patterns in Chapter 5). Following harvesting, the caterpillars are eviscerated, boiled and dried in the sun, after which they can be stored for almost a year

(Ghazoul, 2006). Thus, the consumption of Mopane worms can occur over a considerably longer period than the harvest, provided processing and storage procedures are adequate to avoid spoiling.

3.4.4. The socio-cultural context

The population of Bulilima is composed of the Kalanga (also referred to as TjiKalanga) and the Ndebele as the predominant ethnic groups while the Venda, Tswana, Tonga and San constitute a smaller group (Msindo, 2012). The history of Bulilima indicates that the original ethnic groups to inhabit the area were the Rozvi, the Kalanga and scattered groups of San people (see works by Ranger, 1999; Msindo, 2012; and Dube, 2012). The Ndebele later invaded the area in the 1830s, displacing the Rozvi and pushing the Kalanga into the frontiers of Bulilima. The invasion of the Ndebele resulted in what Msindo (2012) and Dube (2012) call the creation of Kalanga ethnicity. Kalanga ethnicity was the mobilization of Kalanga-speaking communities on the basis of common language, common culture and geographical proximity so as to deal with Ndebele threat (Msindo, 2012). In Bulilima, a system of traditional authority exists with the Chief as the highest authority supported by the headman and village heads. The role played by traditional institutions in decision-making in Bulilima and indeed in other districts of Zimbabwe is discussed in detail in Chapter 5.

The entire population of the district is approximately 90 757, having gone down from 94 361 recorded in the 2002 census (Zimbabwe National Statistical Agency, 2002; 2012). The average household size is 4.6 while there are approximately 19 761 households (Zimbabwe National Statistical Agency, 2012). The population is youthful; only 6% are beyond the age of 65 with a predominance of females (48 844) over males (41 913), (Mahati *et al*., 2008; Zimbabwe National Statistical Agency, 2012). This could be due to the high rate of out-migration to urban centers like Bulawayo or to South Africa and Botswana (Munyati et al., 2006; Mahati *et al*., 2008; Magadza, 2006; Zimbabwe Election Support Network Report, 2008). It is important to note that labor migration from Zimbabwe to South Africa dates back to the 19th century when gold and diamond mines were established in South Africa (Crush, 2003; Kok *et al*., 2006). Most of the labor migrants, especially illegal migrants came from districts in Matabeleland South such as Bulilima, Mangwe, Gwanda, Beitbridge and Matobo. These districts share borders with Botswana and South Africa (Maphosa, 2005). What has always made these migrations easier for the people of Matabeleland South is that many of

them share historical, kinship and linguistic ties with some communities in South Africa and Botswana. For example, languages such as Venda, Sotho and Ndebele are spoken on both the Zimbabwean and South African sides of the Limpopo River. Tswana and Kalanga are also two languages that are spoken on both sides of the Zimbabwe-Botswana border (ibid).

3.5. Validity and reliability

Validity refers to the dependability, and reliability refers to trustworthiness of the study (Creswell and Miller, 2000). Testing for validity and reliability is critical in qualitative research (Patton, 2002). To ensure validity and reliability of the data, triangulation of various data sources was carried out to check for consistency. Moreover, questionnaires were filled in and interviews recorded in real time. End of interview summaries were used to verify accuracy of data collected in the presence of the respondents and the results were made available to participants for comments on the reliability of the findings.

3.6. Summary

The methodology upon which this thesis is founded is one of qualitative research. It emphasises on the local level but is also cognizant of the importance of scale and plurality. Particular emphasis was placed on analysing the governance of daily life within the context of local perceptions. By studying total resource use and by viewing resource management through the lens of these values, a more realistic interpretation of resource management was reached. The choice of the methodology was influenced by the manner in which the major research question was conceptualized in Chapter 2. The theories analyzed in Chapter 2, which form the bases of this study, call for a methodology that seeks to understand the world and its meanings from the respondent's point of view. Hence an ethnographic approach was taken. Data was collected from the respondents through interviews, group discussions, participant observations and historical narratives. Relevant documents were reviewed and a survey conducted to augment collected data and to triangulate the findings.

The chapter also detailed important and relevant information about the study area which contextualised the importance of natural resources such as mopane worms and woodlands in Bulilima. Chronicling the historical events helped in understanding the contemporary power relations and the importance of local environmental knowledge in natural resource

management. Archival data revealed that there was a systematic attempt to trivialize local environmental knowledge in favour of knowledge from colonial masters which was used to dominate natural resource management discourse. There was therefore a need to understand the significance of local environmental knowledge in the contemporary resource management discourse. Various data collection techniques which include narratives, focus group discussions and even a survey were thus used to gather data that would show the significance or lack thereof of local environmental knowledge in natural resource governance in Bulilima District.

CHAPTER 4: THE CASE OF ZIMBABWE'S NATURAL RESOURCE MANAGEMENT IN HISTORY

4.1. Introduction

This chapter examines the history of Zimbabwe's natural resource management. It uses evidence from archival material, literature and historical narratives acquired from interviews with some elderly members of Bulilima District. Understanding the history of natural resource management in Zimbabwe is vital as it provides a platform for analysing the dynamics of natural resource management in contemporary Zimbabwe in general, and Bulilima District in particular. It provides a basis for understanding the contemporary patterns of local people's access to, control and use of natural resources (Berry, 1989; Moore, 1993, McGregor, 1995). Matabeleland South region, where Bulilima District is located, has a unique post-colonial history owing to political disturbances that occurred soon after independence in 1980. These political disturbances resulted in the birth of administrative structures that have since influenced local development and power dynamics in the region. These structures are discussed in detail in subsequent paragraphs in this chapter.

Zimbabwe was colonised from 1890 to 1980 resulting in the appropriation of critical natural resources such as land (see Mandondo, 2000a; Msindo, 2012 and many others) by white colonialists. Much of the fertile productive land was appropriated for the ruling class while the indigenous people were pushed into the dry lands known as Tribal Trust Lands.[18] Laws passed by the colonial government were meant to protect the minority settlers who enjoyed easy access to the colony's natural resources at the expense of the local black people. It is no wonder that this resulted in a war of liberation as Zimbabweans fought to reclaim their lost resources. The majority of Zimbabweans hoped that the coming of independence would introduce policies that were more egalitarian, especially given the fact that ruling party – ZANU PF – had been espousing Marxist-Leninist socialist ideologies during and after the armed struggle. But this hope has remained a fantasy (Mashinya, 2007).

[18] Tribal Trust Land was land created for the natives during the colonial era. The Tribal Trust Land Act of 1965 as devised to change the name of the Native Reserves and create trustees for the land. The act thus devolved the allocation of land use rights to the 'tribal land authority' (see Cleghorn, 1966; Latham, 2005 and others)

4.2. Zimbabwe's natural resource management in history

In order to comprehend the dynamics of the Zimbabwean natural resource management framework, it is important to trace it from the pre-colonial era, through the colonial and to post-independent Zimbabwe. This chapter analyses the natural resource and environmental management frameworks that characterised the three above-mentioned eras. It also draws attention to the local development that occurred in Bulilima District during the three eras and how this affected mopane worms and woodlands management.

4.2.1. The pre-colonial age

Information on pre-colonial natural resource management in the sub-Saharan region is generally scarce (Murombedzi, 2003). Nevertheless, some aspects of pre-colonial resource management have been understood through some elements of pre-colonial ethnography which survived into the colonial period (Matowanyika, 1991). Literature which came out championing European discourses naturally portrayed African societies as simplistic and possessing an unsophisticated and generally 'uncivilised' approach to natural resource management. This discourse portrayed pre-colonial practices such as sacred areas and allocation of totems as undesirable because they reflected the exercise of power over people and resources by dominant clans or classes (Murombedzi, 2003).

In contrast to Eurocentric discourses, evidence coming out of contemporary African literature powerfully proves the existence of traditional African societies that had effective mechanisms to regulate resource use (Murombedzi, 2003; Mapedza, 2007; Kwashirai, 2009; 2012). In fact, African traditional methods of resource management imposed little stress on the natural environment. Wildlife, for instance, was well protected through the totem system, religious beliefs, traditional leaders and superstitious fears (Mandondo, 2000a; Hulme and Murphree 2001; Mapedza, 2007). The ritual management of the ecosystem meant that what the ecosystem produced was considered to be part of the spiritual realm. The use of natural resources was based on the unity of humanity and nature, contrary to Eurocentric beliefs that saw nature as separate from humans, hence the desire to dominate it (Murombedzi, 2003; Kwashirai, 2009).

Though land in Africa was communally owned in general, land rights were vested in traditional leadership. The traditional leader had to give consent for the harvesting of natural resources and provided a sanction mechanism (superstition, penalties and custom) for violators of custom and tradition (Wilson, 1989; Mapedza, 2007). Usufruct rights were allowed for individual families who displayed loyalty to the traditional leaders, did not migrate or commit a legal offence or violate conservation laws (Kwashirai, 2012). Power was generally centred on the rulers who were also believed to be the custodians of knowledge at the time. Traditional rulers were also responsible for distribution and allocation of land to individuals for homesteads and plots. The chiefs and village heads still retain this authority in the post-colonial governance system albeit in the distribution of small pieces of land. The traditional system operated within a system of communal resource ownership. All natural resources were de-facto communally owned and chiefs acted within this framework (see Mapedza, 2007; Kwashirai, 2012). Communal ownership of natural resources meant that there was less commoditisation as resources were mainly exploited to fulfil immediate consumption needs leading to limited ecological damage (Murombedzi, 2003). It is also highly likely that population numbers were very low during those times.

Indigenous knowledge was central to the management of natural resources in the pre-colonial era. Studies conducted by Matowanyika (1989) and Murombedzi (2003) revealed that local people developed intimate knowledge of the ecosystem that they used to manage the resources. Traditional leaders and healers were heavily involved in promoting myths and religions that generated indigenous knowledge deployed to regulate the use of resources. A good example is the development of regulations around the harvesting of medicinal plants (Murombedzi, 2003).

It is important to note though, that there are some researchers who have criticized this 'romanticisation' of communal ownership of natural resources in pre-colonial Zimbabwe.[19] They argue that there is over-emphasis on African traditional religion which tends to be

[19] See Mandondo, A. (2000a). *Situating Zimbabwe's Natural Resource Governance Systems in History*. Center for International Forestry Research Occasional Paper No. 32. CIFOR. Bogor; Mukamuri, B. (1995) Local environmental conservation strategies: Karanga religion, policies and environmental control. *Environment and History* 1:297-311; Taringa, N. (2006). How environmental is African traditional religion. *Exchange, 35*(2), 191-214.

portrayed as intrinsically environment-friendly. Taringa (2006) for example argues that some traditions like traditional Shona beliefs and practices did not necessarily support religious environmentalism, as assumed in modern environmental discourses. In fact these beliefs and practices have always been both ecologically responsible and destructive at the same time. Taringa uses an example of beliefs in sacred alien spirits which gave the perception that some aspects of nature were not so important and could be duly overexploited. It could be argued therefore, that the sacred respect accorded some aspects of nature was a religious attitude developed around political aspects of life that were controlled by traditional leaders. In essence, this arrangement privileged the traditional leaders' access to natural resources, a point also noted by Murombedzi (2003). Taringa's (2006) analysis is very critical to this study. The system of natural resource management in pre-colonial Zimbabwe was generally similar across different ethnic groups with traditional leadership key to gaining access to, and using, natural resources.

The narrative on the pre-colonial history of Bulilima, the study area, can be traced back to the known original inhabitants of the land, the Rozvi (Msindo, 2012). The Rozvi state was formed from several Shona and Kalanga states. It, however, collapsed in the late 1830s as a result of conquest by the Ndebele who later settled in the area. The traditional system of the Ndebele was very much similar to that of the Shona, with emphasis placed on sacred belief in alien spirits and shrines. Parts of Bulilima were occupied by the San people (Madzudzo and Hawkes, 1995). While the Ndebele/Kalanga economies relied on sedentary agriculture and livestock rearing, the San survived on hunting and gathering of edible fruits, roots and insects (ibid). This point is very important to this study because it reveals that mopane worms might not have been so significant to the Ndebele/Kalanga communities at the time. Indeed this resource is not mentioned anywhere in literature or archives that explain the economic or livelihood activities of the Ndebele/Kalanga communities. This however does not mean that mopane worms were not harvested by these ethnic groups, only that they might not have been so significant. On the other hand, it is highly likely that the worms constituted a significant livelihood option for the San who were hunter-gatherers. Not much has been written on how mopane worms were accessed by the San themselves or any other tribe for that matter. In spite of such missing information, it can be deduced that that the worms were part of the forest resources mainly exploited to fulfil immediate consumption needs (Murombedzi, 2003). The pattern of natural resource access however, changed with colonisation as a new power system in the form of the colonial government introduced new laws that altered

settlement patterns of the natives. The following section discusses the events that took place during the colonial era and how they affected natural resource management in the Bulilima area.

4.2.2. The colonial era

The land between the Zambezi and the Limpopo was claimed by the British crown through the British South Africa Company (BSACo) and named Rhodesia after Cecil John Rhodes who founded the territory. Occupation was triggered by the speculation of vast gold reserves which, however, proved to be limited and difficult to extract (Lebert, 2003). This disappointment led the BSACo to pursue agriculture in a bid to make the venture profitable. Thus, native populations had to make way for European settlers with farming interests and in most cases ending up laboring on European owned farms (Palmer, 1990; Moyo, 2006; Nnoma, 2008). Various laws that effectively dictated environmental governance activities were enacted during this period. To begin with, the 1894 Land Commission decrees, along with the later 1918 Privy Council decision, the Morris-Carter Commission resolutions of 1925 and the 1930 Land Apportionment Act were enacted (Nnoma, 2008). These officially divided the country into two separate societies along racial lines, European areas and Native Reserves (Nziramasanga and Lee, 2002; Lebert, 2003).

During the early years of colonisation, environmental degradation was rampant in most of Rhodesia and increasingly became a major concern for the colonial government (Mapedza, 2007). This realisation led the government to initiate the Simms Commission of Enquiry in 1910 which recommended, amongst other things, the establishment of exotic plantations such as pines in the Eastern Highlands and the appointment of a Forest Officer ultimately resulting in the Department of Forestry within the Ministry of Agriculture in 1925 and the formation of the Forestry Commission in 1954 (ibid). Fees were also levied on the commercial extraction of timber found around mining areas. This turned commercial attention towards the poorly managed African reserves, further depleting them and compromising the fragile environment (McGregor, 1995). In response, the Rhodesian government introduced the Native Reserves Forest Produce Act of 1928. Provisions of the Native Reserves Forest Produce Act were further consolidated in the Forest and Herbage Preservation Act of 1936, the Natural Resources Act of 1941, the Forest Act of 1948, the Native Land Husbandry Act of 1952 and the Parks and Wildlife Act of 1975 (ibid). The Parks and Wildlife Act provided for the

establishment of the Natural Resources Board, a national conservation watchdog, destocking, conservation of biological diversity, protection of certain plant species, watershed management and commercial hardwood extraction management (Mandondo, 2000a, Mapedza, 2007). It is significant to note that during this entire process of enacting these pieces of legislation, there was very little if any consultation of the local people. Their knowledge was considered inferior to the new scientific knowledge of the colonialists. The Rhodesian government failed to recognize the value of indigenous knowledge which had been in existence for hundreds of years (Mapedza, 2007).

In 1965, the Rhodesian Front government unilaterally declared independence from Britain resulting in international isolation. During this period, the Tribal Trust Lands Act of 1967 and the 1969 Land Tenure Act were enacted together with a community development approach for the African reserves (Mutizwa-Mangiza, 1985). This was an attempt by the colonial government to win the support of traditional leaders, particularly the chiefs who were given authority to allocate land and govern natural resources in the newly formed tribal trust lands. Despite these institutional frameworks, native reserves remained financially crippled and their management was vested in the state through a top down approach (Mandondo, 2000a; Mlambo, 2005). In table 4.1 Matose (2003) summarizes the changes and trends in tenure system since the onset of colonial forestry in the 1920s (see also McGregor, 1991; Matose, 2002).

Table 4.1 Changes and trends in tenure systems

Year	Change	Impact
1929	Land Apportionment Act	Creation of "native reserves", formal dispossession of local people to provide land to private owners. Land ownership switched from communal to private and State control.
1951	Land Husbandry Act	Further dispossessions of land and separation of communal grazing from arable fields and settlement lines. Large swathes of communal woodlands.
1969	Land Tenure Act	Privatization of white-owned commercial farmlands led to removal of black tenants to already congested communal areas. More than 50 percent of tree resources under private tenure; about 35 percent under communal tenure.
2000	FTLRRP	The 31 percent of woodlands and forests remaining in private ownership converted to State property. Usufruct rights−albeit insecure−granted to the people resettled on these lands.
2005	Constitutional Amendment No. 17	Formal proclamation that all land belongs to the State; all formerly privately owned forest resources turned into State property. From October 2006, State grants long-term leases to the occupiers of formerly private lands, starting the process to secure their tenure over resources on land they were issued or have occupied since 2000.

Source: Matose (2003)

The underlying basis of colonialism was the expropriation of power and resources (land, labour, cattle, and taxes) from customary systems to capital forms (Wekwete, 1990). The indigenous population endured one of the most extensive land alienation policies (Hill, 1996; Gore *et al*., 1992; Hulme & Murphree, 2001b; Munro, 1998). Most of these policies came through the various Acts discussed above. In his perceptive analysis, Matose (2008) argues that the era between 1920 and 1969 witnessed the legitimisation of various means of dispossessing local populations of their forest resources, which were annexed by the state and private owners. Protected forests and national parks established during this period constitute about 15 percent of the country's total land area (ibid).

In order to exert total control on the local people, colonial rule inserted itself in many dimensions of people's lives creating a more centralised state which was accountable only to itself (Mandondo, 2000a). Paradoxically, some of these characteristics were inherited by the post-colonial government at the expense of the local people it purports to serve. This has resulted in serious disempowerment of the local people as explained in ensuing chapters.

a) Role of traditional leadership during the colonial era

An analysis of the functions of traditional authorities during the colonial era is significant in this study as their colonial role contributed significantly to the way they are treated by the ZANU PF government in contemporary Zimbabwe. The status of traditional leadership can best be explained as having been fluid since the colonial era, having shifted more than once since that time. Chiefs in particular have been susceptible to abuse by successive governments. They have been constantly empowered and disempowered in accordance with the interests of the government of the time (Holleman, 1968; Weinrich 1971; Mutizwa-Mangiza, 1985; Scoones and Matose, 1993).

At the height of the colonial period, chiefs became rather unpopular to many local people as they were seen as instruments of the colonial government's control of local communities (Mutizwa-Mangiza, 1985; Scoones and Matose, 1993). The colonial government needed popular local authorities to control the local people hence the co-option of chiefs through favours such as bribes and powers to control local resources (Holleman, 1968; Weinrich, 1971; Mandondo, 2000a). In return, the chiefs were expected to be loyal by supporting the colonial government policies even though these oppressed the local people. Government

documents from the archives also confirm this point as the following remark by the Secretary of Internal Affairs (1970:34) reveals: 'Chiefs and headmen have continued to give loyal support to government and have begun to exercise more authority over their people than has been the case in the past years'.

The native commissioners almost always presided over the operations of the chiefs and always influenced them to act in accordance with the colonial interests and designs. Chiefs were mandated to collect tax on behalf of the colonial government, settle land disputes in the reserves and preserve local customs and tradition. This largely made them unpopular especially because of tax collection. Within the Matabeleland region, which is broadly the research area of this study, there were, however, chiefs who were powerful and thus resisted colonial intimidation (Berry, 1993; Mabhena, 2014). In order to deal with such chiefs, the colonial administrators introduced the concept of 'headmen'[20], a phenomenon that exists in present day Zimbabwe. The idea was to dilute the powers of chiefs and thus prevent any chances of secession. Chiefs were important leaders in Matabeleland and in some cases they became outright rulers, especially after the fall of the Ndebele Kingdom in 1893. They played a key role in championing the cause of their people in Matabeleland by making development related demands to the colonial administrators (Mabhena, 2014). As much as that was the case with some chiefs, it is because of their power and influence that they were generally used by colonial administrators to control their own people for much of the colonial period.

The colonial era presents interesting dynamics on natural resource management in Bulilima District. The arrival of the BSACo resulted in the movement of the Ndebele/Kalanga speaking people from their original areas. For instance implementation of the provision of the 1930 Land Apportionment Act led to the relocation of the isiNdebele and tjiKalanga speaking people from their land into areas occupied by the San people (Madzudzo and Hawkes, 1995). The isiNdebele and TjiKalanga speaking people were removed from prime agriculture and pasture land and settled in remote areas not good enough for farming and with poor pastures. Additionally, under the new colonial administration headed by the District Commissioner, access to resources fell under new strict regulations. For instance, the building of Maitengwe Dam in the mid-1960s on an Ndebele/Kalanga grazing area meant that the Ndebele/Kalanga

[20] The "concept" of headmen and kraal heads was an invented tradition in Matabeleland as an endeavor to exact control by the colonial administrators who felt some chiefs were disloyal and still harbored the idea to create a Matabeleland homeland (Mabhena, 2014, p 140).

had to find alternative grazing land in poor areas (ibid). The senior village head from Mbimba village further reported that the new administration criminalised the cutting down of trees while harvesting of grass required permission from the Commissioner. Through the Forest Policy, which was introduced on the Tribal Trust Land forests by the colonial government in late 1960s (see Secretary for Internal Affairs report of 1970), new regulations on the use of communal forests were introduced. Some of the main policy regulations relevant to this study are listed below:

1. Proper provision should be made for the management, regeneration and protection of forests in Tribal Trust Lands.
2. Schemes should be established and operated as necessary to provide local forest produce requirements.
3. Such schemes including those involving maintenance of existing forest resources, should be based on the principles of sustained yield management and wherever possible, multiple resource use of land concerned, on which forestry interest would be of paramount in the interests of tribesman.
4. Local initiatives should be encouraged to manage and control forestry schemes under the guidance of the staff of the Forestry Commission.
5. Forestry Commission should assume responsibility in the collaboration with Tribal Trust Land Board for the management, protection and exploitation of more extensive areas of forest (Source: Secretary for Internal Affairs report, 1970).

The post-colonial government has perpetuated the practice of placing tribal forestry under the auspicies of the Forestry Commission. The activities of the Forestry Commission are discussed at length in Chapter 5 as they influence power dynamics on mopane woodland use. The Commission was found to use scientific knowledge to determine use patterns of Mopane woodlands, just as it did during the colonial government (see discussions in Chapter 6).

Colonial government reports accessed from the National Archives further revealed that some parts of the forests in the then Bulilimamangwe District were converted into government protected native reserve known as Somnene Native Purchase area in order to supply timber and firewood to the mines and farms in the area (ibid). Local people were not allowed to utilize resources in this area and trespassers were usually prosecuted in a court of law.

While government records are silent on the management of mopane worms, interviews conducted with some villagers revealed that there was less control on mopane worm harvesting as locals were allowed to access the worms even in colonial farms:

> I was a boy when we were moved from our original area, white people cordoned our original area into big farms and I remember our fathers were forbidden from cutting down trees in those farms. However, I remember my mother and other women going to those farms to collect mopane worms (senior village head from Mbimba Village, Bambadzi Ward, 15 March, 2014).

It is not clear why the colonial administration put less controls on mopane worms than they did on woodlands. However, it can be assumed that the worms were not of much value to them. While government records and literature portrayed the Ndebele/Kalanga people's livelihoods as largely dependent on farming and livestock rearing, interviews conducted with some elderly men and women from Makhulela revealed that the displacement of the isiNdebele and TjiKalanga speaking people from their original areas of settlement to remote areas might have contributed to their appreciation of mopane worms as an alternative source of food. There was no way of verifying this claim as there were no records to be consulted.

The war of independence paralysed the local government in the area, resulting in the weakening of the District Commissioner and subsequent falling away of regulations on access to resources (Madzudzo and Hawkes, 1995). The traditional system, which derived its powers from the colonial administration as it was used to suppress the locals, could also not control access to resources as it was unpopular with the locals (Mabhena, 2014). Madzudzo and Hawkes (1995) thus argue that most of the areas of Bulilima, particularly those that were strictly controlled by the government, such as grazing areas, became open access.

4.2.3. Post-colonial era

Discussion of Zimbabwe's post-independence period is divided into various sections. The first section looks at the developments that took place immediately after independence as the new government tried to redress the injustices of colonial rule. This part of the discussion basically centres on decentralization efforts proposed and implemented by the government through various institutions. The second part of the discussion attempts to review the post-colonial role of traditional leadership in Zimbabwe. The third part zeroes in on the local

government reforms and their impact on development in the Matabeleland region where Bulilima District is located. This last section also discusses the framework of land distribution and the associated political conflicts that ensued in the region between late 1981 and late 1985. It is important to discuss these political conflicts because they provide the context for understanding contemporary natural resource management practices in Matabeleland in general, and Bulilima in particular. The fact that land, as a resource, was at the heart of the political conflicts that affected the region at that time, made this piece of history very pertinent in the study of natural resource management. Access to land basically implies access to natural resources.

In April 1980, the newly independent state of Zimbabwe was formed. The new government inherited a dualistic state characterised by segregation even within the environmental management realm. Various amendments were made to inherited laws that resulted in their de-racialisation and theoretical democratisation (Murombedzi, 1994). The enactment of Communal Lands Act and the Rural District Councils Act of 1988 eliminated the colonial dualism in local government structures, effectively combining the dualistic system of rural local governance into a single system that managed natural resources within its boundaries. The underlying drive for the new government was to decentralize government institutions through reforming local government structures and creating an enabling environment for improving service delivery and ensuring that it reached the peasant communities.

In 1984, a Prime Ministerial directive re-arranged institutional structures in communal areas by transferring power from the traditional institutions to locally elected representatives (Mandondo, 2000a; Nemarundwe, 2001; Matose, 2008). This resulted in the creation of council structures such as the Village Development Committees (VIDCOs) and Ward Development Committees (WADCOs), purportedly to give a democratic orientation to the process of planning for local development. The two units are premised on popular representation (Mandondo, 2000a). The VIDCO is the lowest unit of government administration, which is expected to identify the needs of the village and articulate them through the development of a village plan that is forwarded to the WADCO. The WADCO draws its membership from the chairpersons of the VIDCOs and it is presided over by an elected councillor. The elected councillor represents the ward at district level. A WADCO receives the plans of its constituent VIDCOs and consolidates them into a ward development

plan.[21] Councillors then forward these plans to the district council where they are submitted to the Rural District Development Committee[22] (RDDC), the district's supreme planning body that bears the responsibility of consolidating the various ward plans into the district annual and five year plans. The RDDC is chaired by the District Administrator (DA) who is a government employee representing the Ministry of Local Government, Rural and Urban Development (MLGRUD). This committee includes heads of sectoral ministries, chairpersons of the Rural District Council (RDC), various subcommittees, and district heads of national security organs such as the police (Makumbe, 1998). Membership of the RDDC is predominantly made up of bureaucrats and technocrats at the expense of 'popular' representatives of grassroots structures (Mandondo, 2000a: 11). The two institutional structures of VIDCO and WADCO, while affording local communities some representation at a local level, suffered from too much political influence. The committees always reserved two positions for representatives of the ruling party's women and youth leagues. It is evident that the government's idea was to influence decisions at the lowest levels of development. Furthermore, village and ward development committees existed side by side with the traditional institutions of chief, headman and kraal head often causing tension and duplication of roles (ibid). The creation of VIDCOs and WADCOs was in fact a way of disempowering traditional institutions because of their pre-independence role as organs of colonial oppression (Makumbe, 1998).

It is important to note that in contemporary Zimbabwe, WADCOs and VIDCOs are no longer as effective as they used to be. During one of the researcher's visits to the study area, villagers in Bambadzi could not recall who the members of VIDCO were, let alone the WADCO. That knowledge seemed to lie only with the councillors. In resettlement areas, the two institutions emerge as Village Committees institutionalised through the Fast Track Land Reform and Resettlement Programme (FTLRRP) (Cliffe *et al.,* 2011; Matondi and Dekker, 2011; Mujere, 2011, Scoones *et al.,* 2010). Village committees are improvised structures set to seal the vacuum created by the defunct WADCOs and VIDCOs in land administration in

[21] Information on the structure of the Council was provided by the Bulilima CEO through an interview conducted on the 16th of November 2013. This was one of the first interviews conducted by the researcher as he sought permission to conduct the study in Bullima district.

[22] The Rural District Development Committee (RDDC) is chaired by the District Administrator who is a government employee representing the Minister of Local Government and National Housing. Members of the RDDC include district heads of sectoral ministries, chairmen of the Rural District Councilors various subcommittees, and district heads of national security (Thomas, 1991; Makumbe, 1998).

rural areas (Dekker and Kinsey, 2011). Moreover, village committees are informal political structures even though they remain accountable to formally institutionalized RDCs as their roles insinuate those of traditional leaders in terms of land allocation and dispute resolution[23]. Land administration and natural resource management at the local level is coordinated by various institutions and authorities (see Figure 4.1 below).

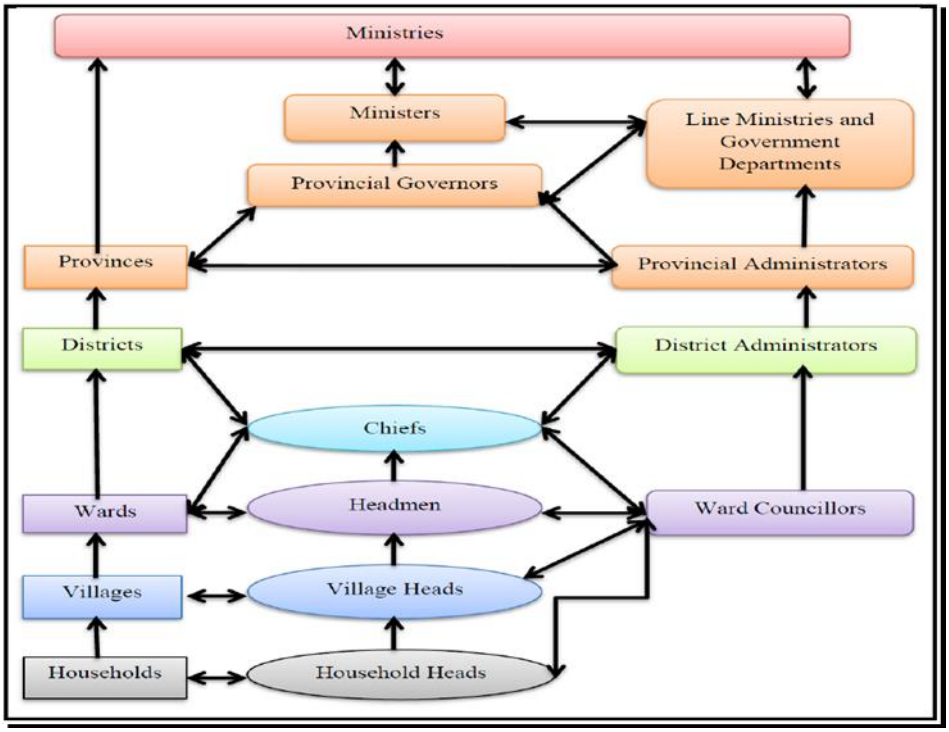


Figure 4.1: Structure of land administration in Zimbabwe.

Source: Munyuki-Hungwe and Dirwai (2010:8)

Figure 4.1 shows the multiplicity of different institutions responsible for land administration from the lowest level of development. In some cases, these institutions operate side-by side, often duplicating duties as indicated in the diagram. A number of researchers in Zimbabwe have commented on this complexity, lamenting the fact that these institutions often contradict and conflict with each other instead of working together (Anderson, 1999; Mushamba, 2010; Munyuki-Hungwe and Dirwayi, 2010). There are many overlaps in resource units, memberships and jurisdictions, user-defined interests and uses, and varying degrees of association and affection within and among them (Sithole, 1997; Frost and Mandondo, 1999).

[23] See Matondi and Dekker (2011); Mujere (2011); Scoones *et al.*, (2010)

The Communal Lands Act of 1982, meanwhile, had divested the chiefs of the land allocation powers vested in them in the 1960s (Moyo, 1996). However, after research and investigations by the Land Tenure Commission (LTC) in the early 1990s, villages were formally recognized as the smallest unit of social organisation and the Traditional Leaders Act of 1998 was enacted (Mandondo, 2000a). Under this law, chiefs were appointed by the president and charged with the responsibility of promoting cultural values, collection of Rural District Council (RDC) levies, taxes and natural resources management (Sithole, 1997). This framework of governance was criticized for, purportedly, centralising power in the state and resulted in the collection of fines imposed in a top-down approach amongst other things (Vermeulen, 1994; Mandondo, 2000a; Nemarundwe, 2003; Mapedza, 2007).

a) Traditional institutions in the post-colonial era

The status of traditional leaders in communal areas has shifted more than once during the post-colonial era. After independence, chiefs were discredited through the Communal Lands Act of 1982 which divested the chiefs of the land allocation powers vested in them in the 1960s (Mandondo, 2000a). The Communal Lands Act vested control over land in the president and devolved its administration to Rural District Councils (RDCs) and district administrators under the then Ministry of Local Government Rural and Urban Development. RDCs were ordered to have "regard to customary law and grant land only to those people who have customary rights" (Cousins, 1990: 15). According to Hungwe (2014), the Communal Lands Act ensured a system of perpetual subordination of traditional elements to the state, a practice not dissimilar to the colonial treatment of the traditional leadership. The post-colonial government centralised control of communal land and resources through a District Councils system.

No sooner had they been stripped of their powers than traditional leaders were re-empowered through the Traditional Leaders Act (TLA) of 1998. The TLA recognised the traditional village as the lowest unit of social organisation. Mandondo (2000a) notes that the TLA provided for the granting of registration titles to a village presided over by a village head appointed by the chief. The village assembly, or its headman, shares some of the following roles: custodianship and adjudication with respect to cultural matters and peoples' interests; management of local resources and their use; an electoral role in choosing members of the village development committee, and supervision with respect to consideration and approval

of plans from the village development committee before incorporation into ward plans[24] (also see Mandondo, 2000a; Matyszak, 2010).

Above the village assembly is the ward assembly consisting of all village heads of its constituent village assemblies, a cohort of headmen nominated by chiefs and endorsed by the relevant minister, and the councilor of the ward. The ward assembly is presided over by a headman elected by members of the assembly from among themselves. Ward assemblies oversee all the roles and activities of their constituent village assemblies. In addition to nominating village heads for appointment by the chief and supervising them, headmen are also charged with the enforcement of all environmental planning and conservation by-laws on behalf of the chief, the Rural District Council and the state.[25]

The TLA Chapter 29:17 of 2001 recognizes traditional leaders (TLs) as a cultural institution (Hungwe, 2014). However, it is a cultural institution without autonomous powers of allocating land. The ultimate decision on land allocation falls on the RDCs as they are the local authorities mandated to control the use and allocation of all the communal land and natural resources on it. Hungwe (2014) further notes that under the TLA Chapter 29:17 of 2001, the TLs retain their cultural position as custodians of communal land and customary tenure. TLs are thus effectively integrated into a conventional system of governing communal areas, where their powers are related to the management of their tribesman (ibid). Chiefs, in particular, are on government payroll. Their fate is in the state President's hands as they risk being removed if they become disobedient, just as they used to be treated in the pre-colonial era (Ranger, 1983; Alexander, 2006; Munzwa and Jonga, 2010; Mabhena, 2014).

The traditional institution is composed of the chief, the headmen and the kraal head. The headman (*umlisa*) reports to the chief (*induna*), and is viewed as a representative of traditional authority in the absence of a chief (Scoones, 1996; Moore 2005). Below the headman, is the village head (*usobhuku*). Traditional leaders, being presidential appointees are tasked primarily with regulating the way of life of a particular society by ensuring land and natural resources are used in accordance with national legislation, especially that

[24] See the Rural District Councils Act, Chapter 29:13
[25] See the Traditional Leaders Act Chapter 29:17 of 2001; Matyszak, D. (2010). Formal structures of power in rural Zimbabwe. *Research and Advocacy*.

prohibiting over-cultivation, over-grazing and deforestation (Mandondo, 2000a; Mabhena, 2014).

b) The politics of land redistribution in Matabeleland, 1980-1990

This section discusses the problem of access to land and its distribution in the Matabeleland region where Bulilima District is located. It is relevant to this study because it interrogates the dynamics of land reform and natural resource management which were unique to the Matabeleland region and thus helped shape the contemporary management structures.

Alexander (1991) provides a detailed discussion of land redistribution in the Matabeleland region. She argues that three features distinguished Matabeleland's experience of land redistribution from other areas of Zimbabwe. First, the land distribution method of squatter occupation was resisted in the region because local people believed that they needed more land for grazing than settlement. It is significant to note that livelihoods in Matabeleland region are centred on livestock rearing. Land allocation that emphasised on providing more pastures for grazing was likely to be ideal for them than land for farming (see Mabhena 2010). With the state adopting a one size fits all approach to resettlements, conflict with the local people was inevitable, resulting in cases where the state had to bring people from outside Matabeleland to settle in state appropriated farms in the region.

The second feature was the drought that afflicted the Matabeleland region in the early 1980s. It meant that people had to rely on the government for survival. This resulted in acute dependency on the government. Finally, political conflict meant that development issues were pushed aside in place of military endeavours. The era of conflict was characterised by mistrust between the government which was predominantly dominated by a Shona-speaking leadership and the local people who were predominantly Ndebele (see Alexander, 1991; Mabhena 2014).

Political conflict between the Zimbabwe African People`s Union (ZAPU) and Zimbabwe African National Union (ZANU) culminated in the government formally announcing that there were dissident activities in Matabeleland. Certainly, dissidents did exist and caused havoc especially on white-owned commercial farms. This resulted in the deployment of a military brigade known as the Fifth Brigade. The Fifth Brigade went on to commit untold

atrocities on civilians, activities infamously known as Gukurahundi today. Alexander *et al*. (2000), in their fieldwork in northern Matabeleland, revealed that the Fifth Brigade also directed its energies to political mobilization over and above the massacre of civilians, what Ranger and Bhebhe (1996:19) aptly described as "politicization without politics". Contextualising historical political conflicts in Matabeleland is pivotal to understanding the contemporary state's influence in the political lives of the people in this region. Mabhena (2014) notes that in conducting Gukurahundi, the state's aim was political domination not exploitation of economic resources. The state's idea was to limit the power of locals who were seemingly resistant to its policies. This resistance is shown by the state's resort to the politics of patronage in the allocation of resettlement land. For instance, resistance by people in southern Matabeleland to move to resettlement areas such as Nyandeni in 1984 resulted in the state literally transporting people from other provinces to occupy these schemes, an endeavour that has seen conflicts between these people and the locals (ibid). The control of district and local authorities by people aligned to the ruling party was viewed as necessary by the state in an effort to assert power and authority in a region that had been dominated by PF-ZAPU. When the PF-ZAPU dominated District Councils began to be perceived as a threat, the state responded by introducing new cadres at the District Administrator's office, the Local Government Promotion Officers (LGPOs) mainly drawn from Ex-ZANLA soldiers. Their mandate was to promote the establishment of VIDCOs and WADCOs as discussed in the sections above. Noteworthy is that the two institutions of VIDCO and WADCO were never warmly received especially in Matabeleland South region. In some circles they were regarded as a ZANU PF mechanism for controlling Matabeleland (Stoneman and Cliffe, 1989). It is not surprising that VIDCO members were targets of dissidents who regarded them as sell-outs. Mabhena (2014) reveals that the state succeeded in marginalising PF-ZAPU councillors and local traditional leaders while promoting VIDCOs and WADCOs as a way of ensuring total control of the local communities. Furthermore, drought relief was used to force local people into accepting state policies. Mabhena (2014) calls it a "carrot and stick" affair.

c) Post-Unity period

The use of a coercive apparatus to force people in Matabeleland to submit to state hegemony finally subsided late in 1985 as the two parties, PF-ZAPU and ZANU PF began negotiations for a unity agreement. On 22 December 1987, the agreement was signed by Joshua Nkomo representing ZAPU and Robert Mugabe for ZANU PF. This brought an end to harassment of

rural people by state agents and dissidents at the communal level. Local PF- ZAPU cadres retained their positions as District Councillors (Mabhena, 2014). Nonetheless, unity did not translate into significant participation of local people in decision-making in their communities. The central government continued with its top–down approach in development projects (Mabhena, 2014). Plans made by the Rural District Development Committees (RDDC) and Provincial Development Committees (PDC) continued to be neglected by the central government in favour of its own national plans (ibid).

Communal people in Matabeleland have largely remained unhappy about the Unity Accord because of its failure to acknowledge the atrocities committed by the Fifth Brigade and its total disregard of a resettlement model that caters for their livestock without necessarily moving them from their present location (Robins, 1994:103-4). The introduction of the FTLRRP is another resettlement model that has been foisted on Matabeleland resulting in conflicts between communal residents and those resettled (Mabhena, 2014). The FTLRRP has since failed to address problems of grazing land for livestock.

4.3. Political and economic crisis since 2000

The political and economic crisis which began in the early 1980s in the Matabeleland region and later intensified in the early 1990s in the entire country played a key role in determining the contemporary governance systems in natural resource management. This crisis has a complex history, shaped by links among residual effects of colonial rule (Mashinya, 2007; Mlambo and Raftopoulos, 2010). There is abundant literature which describes colonial inequalities that characterised the country in its ninety years of colonial rule, especially pertaining to the land question[26] that made an armed liberation struggle necessary.

[26] Literature of land appropriation by the colonial government is in abundance. See, for example, H. Moyana, *The Political Economy of Land in Zimbabwe* (Gweru: Mambo Press, 1984); S. Moyo, The Land Question in Zimbabwe (Harare: SAPES, 1995); J. Alexander, *The Unsettled Land: State-Making & the Politics of Land in Zimbabwe 1893-2003* (Harare: Weaver Press, 2006); A. S. Mlambo, "Land Grab or Taking Back Stolen Land: The Fast Track Land Reform Process in Zimbabwe in Historical Perspective", *Compass*, (July 2005); R. Palmer, *Land and Racial Domination in Rhodesia* (London: Heinemann, 1977); R. Riddell, "Zimbabwe's land problem: The central issue" in *From Rhodesia to Zimbabwe: Behind and Beyond Lancaster House*, ed. W. H. Morris-Jones (New Jersey: Frank Cass, 1980), 1-13; Rukuni, M. *et al*., *Report of the Commission of Enquiry into appropriate Agricultural Land Tenure Systems* (Harare: Government Printer, 1994).

The early 1990s witnessed a general deterioration of the once vibrant economy as the government introduced unpopular policies. The World Bank/IMF-inspired Economic Structural Adjustment Programme (ESAP) fuelled the decline as it led to rapid de-industrialization, growing unemployment and the lowering of living standards of the majority.[27] This weakened the support for ZANU PF while strengthening opposition. The situation came to a head in early 2000 when the government lost the February referendum for a new national constitution – the first time that ZANU PF had been defeated in 20 years[28]. The defeat coincided with the formation of the Movement for Democratic Change (MDC) in 1999. The existence of MDC pushed panic buttons in ZANU PF which resulted in ruthless efforts to destroy the opposition, including widespread use of violence. Fearing for its loss of power, ZANU PF responded by wild and wide scale appropriation of white-owned commercial farms with the belief among ZANU PF echelons that the MDC was just a front for white people seeking a regime change (Mlambo and Raftopoulos, 2010). White farmers were generally believed to be the funders of the MDC. The process was chaotic and violent, targeting mainly white-owned farms and ranches, and even state-owned national parks and other protected areas (Chaumba *et al*., 2003; Wolmer *et al*., 2004). Though the government claims the process ended in 2002, this is debatable because there were still reports of the remaining white farmers losing their farms in 2015. The farm invasions significantly reduced agricultural output and exports, worsening the fiscal pressures on the government and threatening the very existence of many industries which depended on the agricultural sector (Mapedza, 2007; Mlambo and Raftopoulos, 2010). Foreign capital dried as the World Bank and the IMF withdrew their support to the government while the United States and Europe imposed selective sanctions on ZANU PF individuals. The consequences of this violent land reform programme have been far reaching.

[27] There is abundant literature on the impact of ESAP on Zimbabwean Economy. See for instance, A. S. Mlambo, *The Economic Structural Adjustment Programme;* Mlambo, A., & Pangeti, E. (2001). Globalization, Structural Adjustment and the Social Dimensions Dilemma in Zimbabwe, 1990–1999. *Globalization, Democracy, and Development in Africa: Challenges and Prospects*, 163-77.

[28] For further explanation on Zimbabwe`s referendum in year 2000, see Alois Mlambo & Brian Raftopoulos. The Regional dimensions of Zimbabwe's multi-layered crisis: an Analysis. Election processes, *Liberation movements and Democratic change in Africa Conference*. Maputo 8-11 April 2010 CMI and IESE; John Makumbe, The impact of democracy in Zimbabwe Assessing political, social and economic developments since the dawn of democracy. Zimbabwe Country Report Research Report 119. *Centre for Policy Studies,* 2009.

The formation of the MDC put enormous pressure on the ruling government. Violation of citizen's rights through intimidation and violence by state agents and supporters of the ruling party increased significantly. The violation of individual constitutional rights was accompanied by the systematic militarization of the state,[29] the subversion of the judiciary and undermining of the country's courts,[30] as well as the total disregard of the rule of law and blatant abuse of individual human rights. By 2007-2008, the economy had almost collapsed (see Coltart, 2008; Munangagwa, 2009 among others). The government`s policies had worsened the situation by imposing price controls on basic commodities. This resulted in complete disappearance of most commodities from the shelves while inflation rose to new records. Unemployment at 2008 stood at 90%, and once the breadbasket of the entire region, Zimbabwe was now importing basic foodstuffs to feed its population.[31] In a nutshell, ZANU PF rule had become more authoritarian.

The period immediately after Zimbabwe`s independence, stretching up to the early 2000s is very critical to Bulilima's natural resource management. The 1984 Prime Minister's directive entrusted power on the District Councils which saw the establishment of a Communal Areas Management Programme for Indigenous Resources (CAMPFIRE) in the area. Emphasis was put on the CAMPFIRE programme as the most important Community Based Natural Resource Management Programme (CBNRM). As such, the programme received a lot of donor funds (Madzudzo and Hawkes, 1995). However, though touted as a management programme for all indigenous resources, the programme tended to focus more on wildlife with Safari hunting as the key activity under the strict management of the RDC. Other resources such as Mopane worms, Mopane woodlands and grasses, which also existed in abundance in the area, were left to be managed under a multiple management system which included the RDC, government and quasi government departments as well as traditional leadership. The establishment of the CAMPFIRE programme gave birth to conflicts between owners of large herds of cattle who wanted the range occupied by the CAMPFIRE

[29]Muzondidya, J (17 July, 2007). *The Politico-military Business Complex and the Transition in Zimbabwe*. Paper presented to the Roundtable on The Death of Quiet diplomacy and A New Chance for Zimbabwe, organised by the Human Sciences Research Council, Pretoria.

[30] Brian Raftopoulos & Alois Mlambo (Eds.) (2009). *Becoming Zimbabwe: A History of Zimbabwe from the pre-colonial period to 2008*. Harare: Weaver Press, & South Africa: Jacana Media; Robert Martin, (2006). The rule of law in Zimbabwe. *The Commonwealth Journal of International Affairs*, vol. 95, 384.

[31] Reuters, "FACTBOX – Zimbabwe's meltdown in figures" 30 March, 2008, at http://www.reuters.com

programme for their cattle to graze and the rest of the Bulilima community who viewed CAMPFIRE as key to the development of their communities (Dzingirai and Madzudzo, 1999). These conflicts, as discussed in the ensuing chapters, have persisted and there does not seem to be any solution in sight.

The Gukurahundi period leading to the signing of the Unity Accord in 1987 between PF-ZAPU and ZANU PF is also important in this study as it affected people of Matabeleland South, particularly areas around Matobo, Gwanda, Mangwe and Bulilima districts, more than any other areas in Zimbabwe (Moyo, 2012; Mabhena, 2014). The full scale of the impact is not known but Moyo (2012) argues that one of the major impacts, related to the themes of this study, is that Gukurahundi resulted in the political disempowerment of the local people which has been responsible for their failure to freely access their resources and economic opportunities. Real power has continued to be monopolized by the ruling government. This background information is important in the discussions that come in the ensuing chapters because it provides the context for understanding the unpopularity of government structures such as VIDCOs and WADCOs among the local people (Mabhena, 2014).

Absence of government records on natural resource management during the Gukurahundi era in Matabeleland region prompted the researcher to rely on interviews conducted with some elderly persons from the study area. According to one elderly village head from Bambadzi who requested anonymity, access to mopane worms during the Gukurahundi era was limited to collecting those worms that were close to one's homestead:

> I remember people could not go into the forest for months for fear of soldiers. We could not even farm our fields. We harvested worms close to our homes. The advantage is that there were still a lot of Mopane trees close to our homesteads hence we could harvest large quantities just close to home. There are some families that survived on those worms for some time because they could not get food from anywhere as the shops were closed (Interview, elderly village head from Bambadzi, 20 October, 2013).

Some people who were asked about Gukurahundi flatly refused to talk about it because they feared that they could be victimised by government security agents.

The formation of MDC, the only party to strongly challenge ZANU PF since the signing of the Unity Accord in 1987, was very significant to this study because it contributed to ZANU

PF's heavy handedness in the treatment of people in the local communities. For instance, the formation of the MDC party prompted the ruling ZANU PF government to introduce the National Youth Service, with youths being trained and used to preserve ZANU PF policies. In Bulilima, the study found out that there was a deliberate effort by the ruling party to ensure that opposition parties did not have any representation at local level. In Chapter 5, there are discussions on how some institutional structures such as the war veterans, women and youth leagues openly disregard local leaders who do not belong to or sympathise with the ruling party.

4.4. Summary

This chapter narrated natural resource management systems, from the pre-colonial to post-colonial eras in Zimbabwe. The discussion revealed that natural resources were managed by various institutions in varrying ways for different agendas. In the pre-colonial era, traditional institutions were the key players determining how resources were used in the communities. Chiefs and religious leaders used their influential positions to make decisions on use and access to resources. Power was vested in them even though natural resources belonged to everyone in the community. Traditional and religious institutions possessed knowledge that was used to manage the resources in a sustainable manner. During the colonial era, powerful European settlers used their scientifc knowledge to influence decisions on natural resource management. Traditional authorities were either undermined or used to preserve and promote colonial ideology. Discussions on the post-colonial era centred on developments that took place immediately after independence as the new government tried to redress the inequalities brought by colonial rule. The discussion also touched on the post-colonial role of traditional authorities before zeroing in on land distribution and the associated political conflicts that ensued in the Matabeleland region between 1980 and 1987. The chapter also discussed the period after 2000 which saw the MDC entering Zimbabwe's political arena. The birth of the MDC resulted in increased abuse of power by the ruling ZANU PF, leading to violence and intimidation of citizens across the country.

In the case of Matabeleland South – the focus of this study – discussions revealed that the state deliberately embarked on politics of domination. As such, it influenced local decisions through its various agents positioned in key areas within the council and local government. Development programmes came with decisions from the top, some of which were irrelevant

to the needs of the local people. For instance the issue of resettlement remains unaddressed for many locals because the state continues to ignore the need for more grazing land. Discussions in this chapter set the tone and provide the context for data analysis in the ensuing chapters.

CHAPTER 5: POWER DYNAMICS AND GENDERED TENURE SYSTEMS OF MOPANE WORMS AND WOODLANDS IN BULILIMA.

5.1. Introduction

Chapter 4 laid a foundation for the analysis of power dynamics and the gendered tenure of natural resource management in Bulilima. It chronicled, in general terms, the history of natural resource management in Zimbabwe focusing on critical political events that influenced the dynamics of power in the Matabeleland region where Bulilima District is located. It further introduced various actors and institutions that are pivotal in natural resource management in Zimbabwe. This chapter specifically explores power dynamics in gendered resource tenure systems where various actors compete to access, control and use mopane worms and woodlands in the district. The chapter contends that natural resource utilisation is influenced by the interaction between diverse actors that include men, women, the youth, local as well as non-local authorities; institutions and institutional structures derived from both customary practices and government legislations. All these shape the dynamics of power and thus consequent access, use and control of mopane worms and woodlands.

5.2. Findings from the fieldwork

Fieldwork to unearth dynamics of power in mopane worms and woodlands management followed a mixed approach in data collection. The initial stage was to conduct a questionnaire survey to solicit data on characteristics of the population under study. Understanding variables such as the demographics of the population under study was very important in this thesis because demographics were a factor in determining power dynamics and local environmental knowledge use. The survey captured data on how power and local knowledge varied with class, gender, sex and generational divides among respondents in the study area. The second stage was to carry out detailed ethnographic studies, which included observations, narratives and Participatory Rural Appraisal (PRA) studies such as in-depth interviews, narratives and wealth ranking techniques.

5.3. Analysis of demographic information

Data analysis began at the household level because power dynamics, knowledge and gender aspects can be determined at those lowest levels of organisationof social structures. A survey tool was used to get a descriptive map of demographic characteristics of the population in the three wards (Dombolefu, Makhulela and Bambadzi). Data that included sex, age, marital status and employment was captured as key variables in analysing gender dynamics, power dynamics and variation in local environmental knowledge depth.

5.3.1. Sex of household heads

From 90 questionnaires that were administered randomly in the three wards, women constituted 60% of the household heads. This was found consistent with the Zimbabwe Census report of 2012 as shown in table 5.1, where a total of 11 380 were female-headed households (FHH) while 8 306 were male-headed households (MHH).

Table 5.1 Household heads by sex in Bulilima District

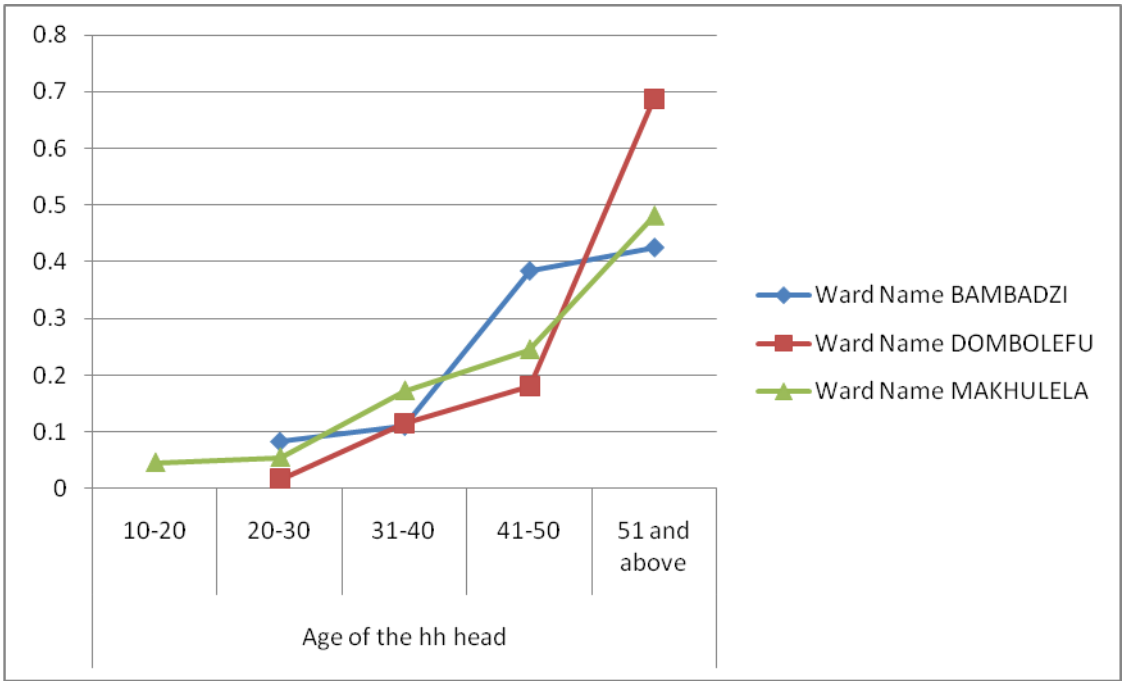
Household Size	**Number of Households Headed by:**			
	Male	**Percent**	**Female**	**Percent**
1	1511	18.2	779	6.8
2	940	11.3	1386	12.2
3	999	12.0	1971	17.3
4	1056	12.7	2061	18.1
5	1002	12.1	1780	15.6
6	881	10.6	1247	11.0
7	634	7.6	884	7.8
8+	1283	15.4	1272	11.2
Total	**8306**	**100**	**11380**	**100**

Sources: Zimbabwe National Statistical Agency (2012)

The population of women in Bulilima District was found to be higher than that of men (Zimbabwe National Statistical Agency, 2012). This has been attributed to the 'look south policy' (Maphosa, 2007; Matsa and Simphiwe, 2010) whereby most males generally emigrate to South Africa and Botswana in search of employment.

5.3.2. Age of household heads

The age distribution of household heads (HHs) varied between age groups of 10-20 and 51 years and above. Of these respondents the majority, which was above 40%, fell above the ages of 60+ (see Figure 5.1). Households headed by youths and middle-aged people were few, a phenomenon that could be attributed to outward migration (see Maphosa, 2007; Matsa and Simphiwe, 2010). Youths in particular tend to be mobile. Dombolefu Ward in particular (see Figure 5.1) had fewer young people compared to the other wards. This was attributed to the fact that this ward is closest to Plumtree town (approximately 10km away) hence it was much easier for youths and other able-bodied people to move to the town as a first destination before proceeding to Bulawayo, South Africa or Botswana. Movement of young people from rural Matabeleland areas is not a new phenomenon as this date dates back to the late 1890s (see Yoshikuni, 1999). Ndebele migrants in Bulawayo created dense networks of self- help institutions and associations that made it easy for young people from Matabeleland to move into the city unlike the situation that was obtained between Salisbury and Mashonaland rural communities (ibid). While migrants still moved to Bulawayo in search of jobs and better living conditions, Botswana and South Africa presented better destinations. Indeed Maphosa (2007) notes that migrating to the two named countries was at some point a priority for most young people from Matabeleland region in general and Bulilima in particular. Those who did not follow the trend were usually despised and perceived as *ibhare* (or unsophisticated) (ibid).



Source: Primary Field Data

Figure 5.1 Age of household heads

(n)=90

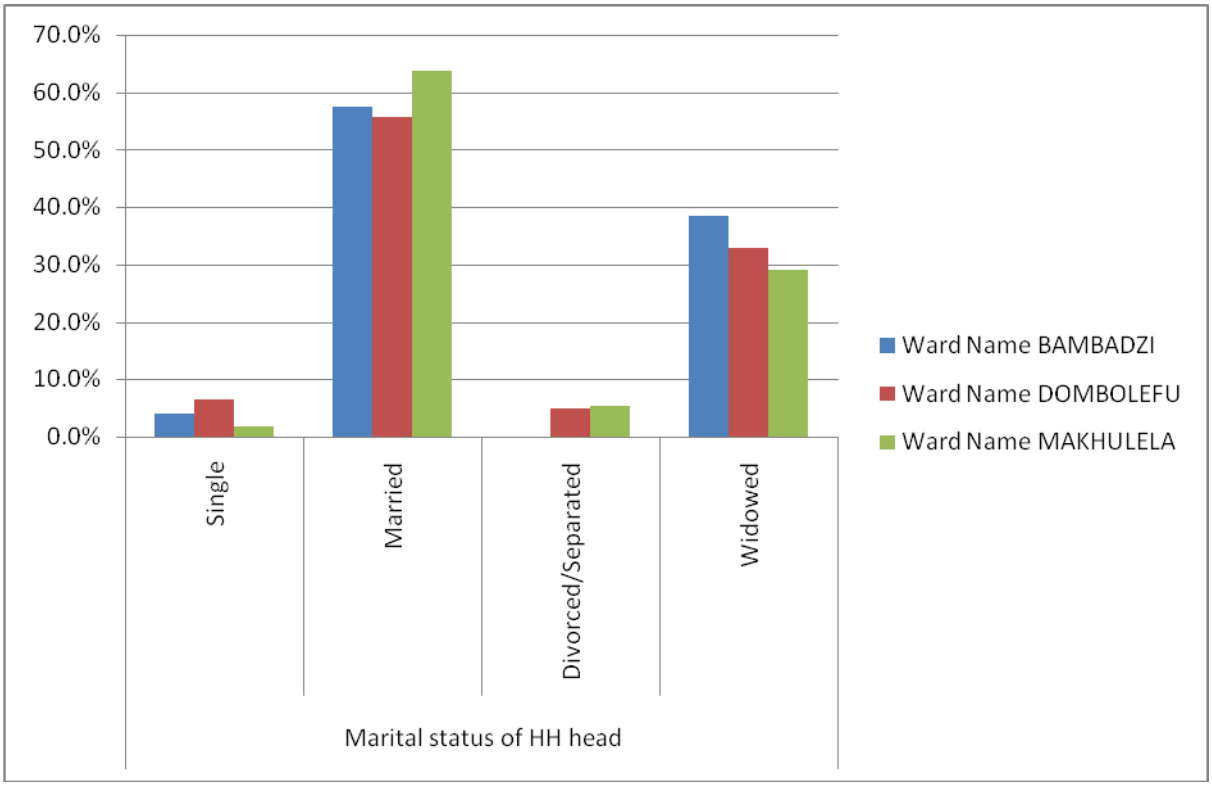
Figure 5.1 depicts that most of the survey responses came from household heads who were 40 years old and above. There were few households headed by youths in all the wards, perhaps a confirmation that most of the youths had migrated for greener pastures.[32] Those that remained seemed to lack agency to influence decisions on general development issues. This is also noted by Rasmussen (2003) who argues that in most cases, youths hardly participate in development issues chiefly because adults frequently make decisions on their behalf without seeking input from the very audience that they purport to represent.

5.3.3. Marital status of household heads

The majority of the household heads were married (more than 50%) while a great percentage was widowed (more than 30% in all the wards) (see Figure 5.2). It needs to be noted that the

[32] The researcher found it very difficult to define the concept of youth and children. While the UN refer to these two concepts in terms of fixed age terms (10-15 as children and 16-35 as youths), a definition also used by Zimbabwe, reality on the ground is very complex (Mufune, 2000). The two concepts are very fluid depending on how society wants to use them. For instance the study revealed that some of those between ages of 15 and 35 had families of their own and society referred to them as adults. On the other hand there was the issue of politics

majority of married household heads surveyed were women. Most of them had their husbands working in South Africa, Botswana or in towns and cities within Zimbabwe. Such dynamics were significant in that they influenced gender roles and power configurations in the communities under study.



Source: Primary Field Data

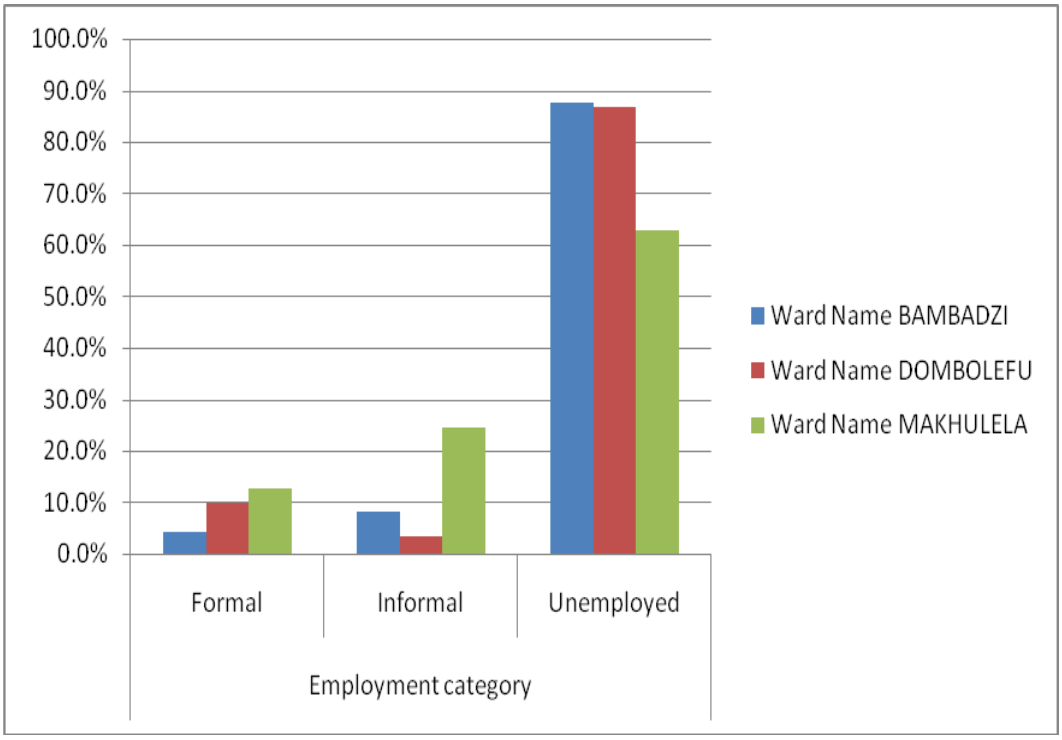
Figure 5.2 Marital statuses of household heads.

(n)=90

5.3.4. Employment status of household heads

The study further discovered that the majority of household heads were unemployed (see Figure 5.3). This was consistent in all the wards. Besides the fact that these were rural communities where securing formal employment was not easy, the majority of the respondents were over 50 years old (see Figure 5.1 on age distribution), meaning that they had either reached retirement age or they were not seeking formal employment at all. Employment was found to be a variable that influenced the dynamics of power. With employment comes remuneration, money and thus capability to make decisions. For instance the study revealed that those who were employed in the communities under study, for

example teachers and other government officials, commanded more respect which bordered on fear, from community members. Even though they rarely participated in local community meetings, they seemed to be above normal community institutions. In Bambadzi for instance, the study found out that local school teachers could hire local men to chop firewood for them even from fresh mopane trees. Their status was enough for them to circumvent some local regulations. Michel Foucault, in 'The Subject and Power' argues that power analysis must examine the 'systems of differentiations which permit one to act upon others'.[33] These differentiations could be due to one's economic status resulting from formal employment.



Source: Primary Field Data

Figure 5.3 Employment categories of household heads.

(n)=90

5.3.5. Educational levels of household heads

The majority of household heads only ended at primary level (about 45%) while an insignificant number reached tertiary education (see Table 5.2) below. There was a high

[33]See Foucault, M. (1982). The Subject and Power.*Critical Inquiry*, Vol. 8, No. 4, pp. 777-795; Dreyfus, H., & Rabinow, P. (1982). The subject and power. *Michel Foucault: beyond structuralism and hermeneutics*, 208-226

number of household heads in Makhulela who had never attended school. This was not surprising because Makhulela had a San community which did not prioritise education at all. The overall picture in all the wards was that the population under study was lowly educated. This had implications in their interaction and understanding of modern institutions and institutional structures. For instance, the study found that the majority of villagers did not understand the regulatory laws enforced by the RDC and the Forestry Commission with regards to the use of natural resources. The common sentiment from most of the respondents from the three wards was that they were being unfairly denied their rights to use their resources in ways they deemed appropriate to them.

Table 5.2 Education levels in the study areas of the district

		Education					**Total**
		Never went to school	Primary School	Secondary School	Vocational Training	Tertiary Education	
Ward Name	BAMBADZI	1.8%	15.8%	12.7%		.9%	31.1%
	DOMBOLEFU	3.5%	11.4%	6.1%		1.3%	22.4%
	MAKHULELA	19.7%	18.0%	7.9%	.9%		46.5%
Total		25.0%	45.2%	26.8%	.9%	2.2%	100.0%

Source: Primary Field Data

5.4. Power dynamics analysis

Conceptualisation of power in this chapter and indeed in the entire thesis draws significantly from the Foucauldian notion of power. Foucault posits that power is imbedded in social life so much that it is impossible to conceive of any society devoid of power relations (Foucault, 1982). This makes analysing power one of the most difficult endeavors of social science. Power is complicated since it is fluid, dynamic, and difficult to measure yet every aspect of development and natural resource management is shaped by relations of power and authority, as well as resistance to them (see Scott, 1994; Few, 2002) . When we analyse power we are

actually examining how certain actions modify actions of others. As actors (individuals and organizations) interact in a social space where they access or fail to access natural resources, they generate actions mutually impact others, thus creating relationships that benefit some while curtailing others' freedom to enjoy the same resources.

Following Foucault`s (1982) theorisation of power, this study did not understand power as a confrontation between two adversaries but as a way in which actions of individuals or groups, structure the actions of others, directing them to a particular outcome. It was also not seen as a sole province of the ostensibly 'powerful' but also excised by the weak through various tactics of resistance (Sharp *et al.*, 2000). While Foucault's understanding of power provided a theoretical approach that anchored this study, analysis of power was done using various frameworks that enabled interpretation of power dynamics in the study area. The Power Cube framework, for instance, was operationalised to explore various aspects of power and how they interact with each other by focusing on actors, relationships, forces, arena and possibilities for change (Rabe and Kamazi, 2012). Power dynamics existed at household and community levels influencing access to, and use of, mopane worms and woodlands. Various institutions and actors operating at different levels and varying capacities and scales within and outside the study area (customary rights, social norms, beliefs, statutory instruments, legal regulations and women, men, wives, husbands, boys, girls, respectively) interacted in invited, claimed and hidden spaces to influence the management of mopane worms and woodlands.

The Power Cube was, however, found not to be an ideal tool for analysis to explain the gendered nature of natural resource management. To shed light on this critical aspect, the study integrated social relational approaches articulated by Kabeer (1999), who defines gender relations as based on power, with Rocheleau and Edmunds'(1997) approach to the complexity and dynamism of gendered resource tenure regimes. Kabeer's social relational approach was used to understand the institutionalized nature of gender inequalities and the consequent power relations generated (Nnoko-Mewanu *et al*., 2015). It also focused on the relations of power within and between institutional structures. Several institutional structures (see Tables 5.3 and 5.4) were found to be pivotal in mopane worms and woodlands management in the study area. Rocheleau and Edmunds' (1997) approach to gendered spaces and places complemented the Power Cube framework in that it went beyond simply power relations by analysing the complex and fluid nature of rights regarding land ownership,

spaces and places for using mopane trees and their resources such as mopane worms, and access to these resources through nested gendered spaces.

Understanding how natural resources arrived at home and were utilised began at the household level. It was therefore important that dynamics of natural resource access at the household level be analysed to determine how various roles were played by different actors. Through a questionnaire survey, a random sample of ninety households in the three wards was done and ninety household heads were interviewed to solicit data on issues that ranged from demographic characteristics, livelihood techniques, knowledge on natural resource management institutions available in their communities, decision-making on mopane worms and woodlands harvesting and general ability to participate in community projects and membership to any organisations that dealt with natural resource management. It must be emphasised that with regards to the mopane woodlands, the questionnaire concentrated more on firewood as it was the resource widely used by local communities on a day to day basis. The survey data augmented ethnographic data collected through interviews, group discussions and observations. Spending time in some homesteads also helped in observing dynamics at household and village levels.

Matose (2002) notes that household labor and task allocation systems are central to the way natural resources are collected by household members. In rural communities, home is of primary economic, political and social importance so much that any analysis of power relations between actors should start from there (Rogers, 1975). Women's focus is traditionally domestic or home while men tend to occupy themselves with what happens in the village at large. As such, the dynamics of mopane worms and woodlands collection and how they were utilised at home helped to expose decision-making processes and power domains at home. While customary institutions such as marriage were found to greatly influence general patterns of household residence, with men being household heads and women their subordinates, there was also evidence of a significant number of households headed by women (see Table 5.1 adapted from the Zimbabwe National Statistical Agency, 2012). One major reason for such a pattern was said to be a high number of men migrating to neighboring towns and countries (see Sweetman, 1998; Zimbabwe National Statistical Agency, 2012). As mentioned earlier, migration from Matabeleland regions is not a recent phenomenon, having begun in the late 1890s when European settlers began seizing land from the ruling Ndebele and Kalanga ethnic groups, forcing young Ndebele and Kalanga men to

move to Bulawayo in search of employment (Yoshikuni, 1999; Msindo, 2012). It peaked in the 1980s as more people started fleeing Gukurahundi and in early 2000 as socio-economic conditions began to deteriorate (Mark and Winniefridah, 2011; Maphosa, 2007). As such migration has contributed to multiple family residence patterns with the most dominant being female-headed households.

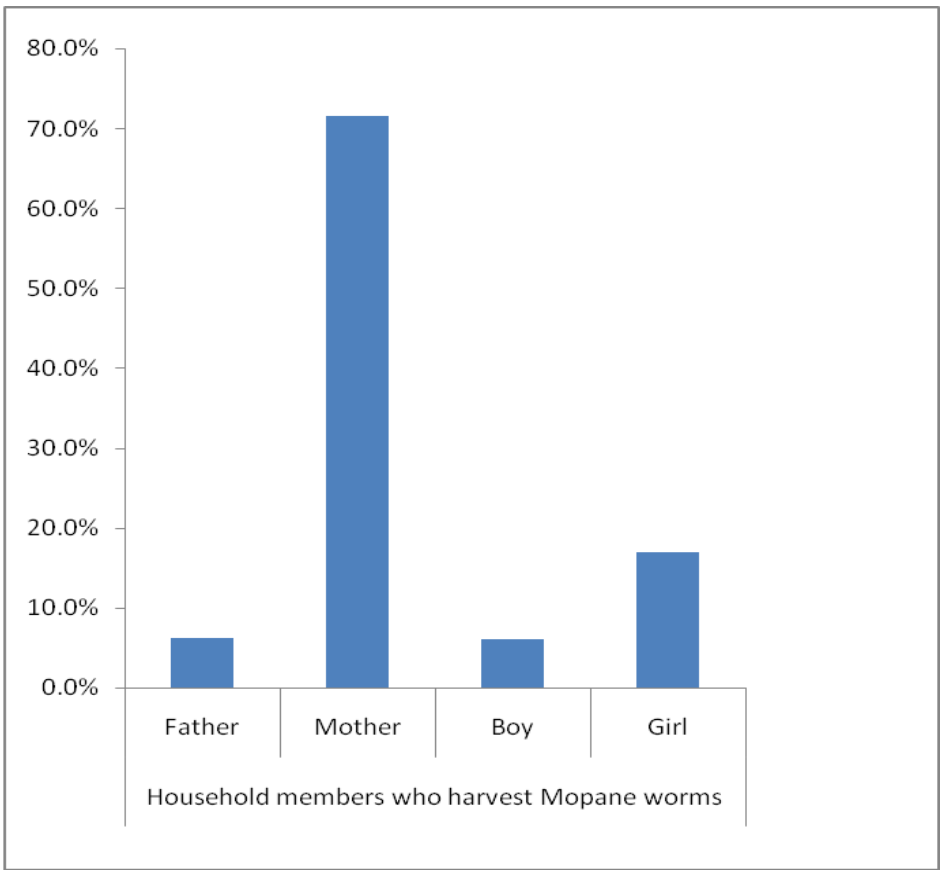
The following sections describe Mopane worms and woodlands collection patterns. These patterns are influenced by generic household chores borne out of the perceived roles of household members. They also help expose decision making processes and power dynamics with regards to who collects what and why.

5.4.1. Mopane worms and woodlands collection

Power dynamics that relate to the use of non-timber forest products such as mopane worms and firewood at a household level were analysed by noting the pattern of roles of different actors within a household. The study ascertained that almost every household and generally anyone old and strong enough participated in the collection of mopane worms. Furthermore, collectors generally made their own decisions on how they used their harvested worms, save for young children. There were however, some households that did not partake in mopane worm harvesting activity because of religious reasons. For instance those that belonged to the Seventh Day Adventist church (SDA) neither gathered nor consumed mopane worms. Other studies on mopane worms and livelihoods in the Matopo District of Matabeleland South came up with similar findings on religion and Mopane worm consumption[34] (also see Gondo and Frost, 2002; Zhou, 2003). Customarily, the collection and harvesting patterns of natural resources used to be closely related to the task and activities of different members of a household, with women tending to collect more food products and firewood in forests near their homes.[35] In most low-income households, "women's work" includes not only reproductive work (the childbearing and rearing responsibilities) required to guarantee the maintenance and reproduction of the labor force, but also productive work, often as

[34]Gondo and Frost (2002) noted that households which are not engaged in Mopane worm activities in Matopo district are from the SDA church while Zhou (2003) observed that the Zionist Church also forbids its members from engaging in any Mopane worm activities.
[35]Information derived from focus group discussions with various groups of men and women in the study areas. Same information was also gathered from 5 elderly interviewees from Makhulela and Bambadzi.

secondary income earners (Moser, 1989). This was found to be true in this study as women harvested mopane worms for home consumption and income generation. As such mopane worms afforded women an opportunity to be productive and autonomous, thus relying less on their male counterparts. It was observed that mopane worm activities (production and trade system) reflected a defined division of labor based on indigenous production and labor practices as noted by Neumann and Hirsch (2000). The study ascertained that women and girls were mainly responsible for collecting mopane worms (see Figure 5.4 where 70% of women are noted as main mopane worm collectors). These findings are consistent with those of Kozanayi and Frost (2002) and Mufandaedza *et al*. (2015) who reported that more than 70% of Mopane worm harvesting and processing was done by women and children while more than 80% of harvesters in Gonarezhou National Park were women, respectively.



Source: Primary Field Data

Figure 5.4 Household members who collect mopane worms (Responses were collated for all the three wards)

(n)=90

Women were also found to be the main actors in processing the collected worms because of their knowledge while men became significant in selling (see Table 5.3). Most local men interviewed pointed out that they preferred women to process the worms because they did that very well. Most collected worms were processed at home where women had significant input about decisions regarding how the worms were to be used. In her insightful article, Rogers (1975) notes that in rural areas, households are domains of women where they have control over allocation of family resources. While men remain the heads of their respective families, women still retain decision-making powers at home. In situations where men got involved in the marketing of mopane worms in urban markets further away from Bulilima, the study established that they (men) carried out this mandate with the blessings of the family because men were perceived to be tough negotiators for good prices.

Table 5.3 Proportion of members involved in Mopane worm activities by gender and age composition in the three Bulilima wards under study, Zimbabwe, 2013/2014

Mopane Worm activity	**Adults Over 40yrs**		**Adults 18-39yrs**		**Youth 12-17yrs**		**Children 5-11yrs**	
	M N=15	**F** N=30	**M** N=10	**F** N=21	**M** N=15	**F** N=28	**M** N=12	**F** N=26
Collection only	40	5.1	5.6	4.5	86.7	5.6	33.2	2.1
Collection & processing	3.2	95	45	86.5	58.7	88.4	21.3	45.4
Selling	55	76.5	31.2	85.9	66.6	73.5	0	0
Buying	3.2	33	5.8	33.3	0	8.3	0	0
Consuming	96	98	95	85	100	100	100	100

Source: Primary Field Data

It is however intriguing to note from Table 5.3 that the percentage of men who did the selling of worms was quite high (55%) compared to other activities. This was nevertheless consistent with literature where men were identified as a group that tended to involve itself towards the end of a resource value chain (see Kajumulo-Tibaijuka, 1984; Chimedza, 1988; Rocheleau

and Edmunds, 1997). Even though women have substantial labour and management responsibilities for particular resources, men tend to control the marketing of the resource. Letsie (1996) and Moruakgomo (1996) further add that traditionally, men are said to prefer trading in mopane worms in areas further away from their villages compared to women who prefer traders to come to them.

In a group discussion with women from Makhulela, the following sentiments in support of men were raised: 'Men are the ones who market the worms in town because they are able to negotiate better prices. Women can easily get cheated' (FGD for women in Makhulela, 16 March 2014). While it seemed that men chose to involve themselves at the final stage of the value chain, it is also clear that women gave them this space because of their social belief that men would negotiate for better prices. Women did not trust themselves that much. Perhaps this explains why they tended to concentrate on the local market, which was within their villages. Moreover, the bulk of their trade involved barter exchange while men generally traded in hard cash. The researcher had the opportunity of following some men to urban areas where they sold the worms. After selling the worms the men took the money back to their wives where they were given their share. It could therefore be argued that 'some' women maintained their dominance over men with regards to family resources. This pattern should not lead to overgeneralisation as it is based on a few incidences that the researcher observed within the time scale of the study. It is possible that some men did not give their wives the money after selling the worms in urban areas. Such cases could have been few though as group discussions with women from Dombolefu revealed: 'they can't afford to eat our hard earned money…otherwise there will be hell at home' (Group discussions with women from Dombolefu, 22 May 2014). Further interrogation by the researcher on the meaning of 'hell at home' resulted in giggles and whisperings, while some women looked down. The researcher later learnt that some of the 'hell' revolved around withholding of sex. Thus, women used this strategy to be heard by their men. These findings are consistent with Nemarundwe's (2005) findings on women from Romwe catchment in Chivi District, Zimbabwe.

Literature search revealed that involvement of men in significant harvesting of mopane worms began in the 1960s when an outbreak of a cattle disease (probably Foot and Mouth) resulted in the culling of diseased cattle and confiscation of healthy cattle in the Matabeleland region (Ghazoul, 2006). Many people turned to other resources such as mopane worms which provided safety nets. The realization that significant income could be generated from the sale

of mopane worms encouraged more men to get involved in collecting the product. By 1970 a bucket (20 litres) of Mopane worms was sold for between 1 and 3 Rhodesian dollars[36] in urban markets (ibid). Interviews conducted with most male household heads pointed to the fact that while the focus was on cattle, mopane worms provided an opportunity to make easy income. They, however, made it clear that this was an activity they did in times of crisis such as drought. Indeed, observations revealed that fewer men collected the worms compared to women. The activity seemed embarrassing to local men: 'collecting worms is a woman's job. I can't be seen moving around mopane trees picking those things. It's degrading to a man' (Interview with a village head from Mbimba village, Bambadzi Ward, 12 April 2014). By referring to mopane worms as 'things', the village head showed that the worms were probably too inferior for men to spend time on. However, the village head could have been making a false conclusion that the process of picking worms was demeaning to all men as the study revealed that some men, especially those coming from other areas, saw the worms as a valuable resource for domestic and commercial purposes. For instance, a certain Mr. Dube (not his real name to maintain confidentiality) from Mbimba village commented:

> Naturally I would not bother with collecting or harvesting mopane worms because that activity is for old women. However, the fact that we have lost most of our cattle over the years due to Gukurahundi and frequent droughts, I have also joined those who harvest because I can sell them and get some income. However, I am only doing this because my cattle are now few so I cannot sell them now and again (Interview with Mr. Dube from Mbimba Village, Bambadzi, 20 April, 2014).

In another interview with a non-local harvester[37] who was a man, the sentiment was that there was profit in mopane worms: 'Mopane worms are good business. I have to harvest as much as possible before they disappear' (Interview with Mr Mabika (not his real name) Makhulela, 20 April, 2014). The researcher had the opportunity of observing these men at work and they did not show signs of embarrassment compared to some Bulilima men.

[36]One Rhodesian dollar was approximately 0.67 United States dollar in the late 1970s (Department Of The Treasury, Fiscal Service, Bureau of Government Financial Operations, 1980)

[37] Non –local harvesters were men and women who came from other areas to harvest mopane worms in Bulilima District

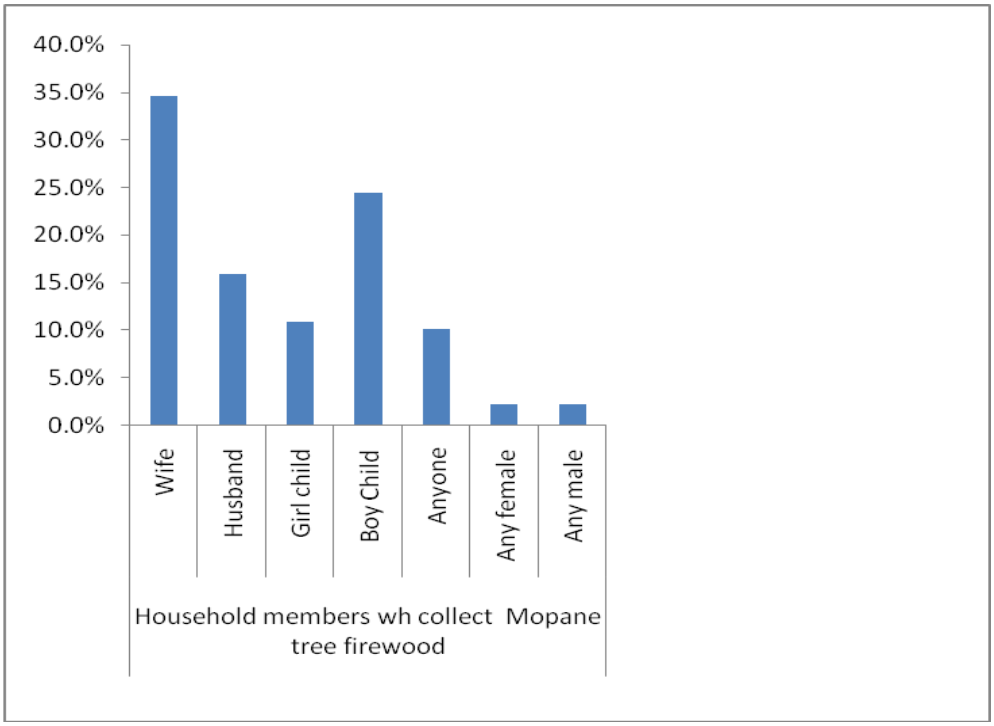
Box 4: Processing of Mopane worms

Once collected or picked from the ground or mopane trees, the undigested insides in the gut are removed by squeezing the worm between the thumb and fingers. Fully grown larvae usually have less amounts of gut content compared to younger larvae hence the former are preferred (Akpalu *et al.,* 2009). After removing the gut content the larvae are then charcoal roasted (*known in Shona language as kungora*) or boiled and then dried to enable preservation (a process common in Bulilima) (Kozanayi and Frost, 2002). Once processed and dried, mopane worms can be stored for over a year hence can be found on sale in rural and urban markets and shops (Ghazoul, 2006; Stack *et al*., 2003; Akpalu *et al.,* 2009). The ease in processing and the fact that worms can be stored for a long time makes them a vital alternative source of food in dry-land areas such as Bulilima. They are also in demand in urban areas as they provide low cost protein especially to the urban poor (Stack *et al*., 2003).

However, Bulilima men only shunned mopane worm harvesting when the rains were good and the fields were productive. During periods of drought (which are now very frequent) the same men were observed picking and trading in mopane worms. The need for survival necessitated pragmatism and a temporary abandonment of patriarchal considerations. Moreover, these dynamics revealed the geographic situatedness of some of the beliefs and practices. For instance, local men were embarrassed of harvesting worms as they perceived the activity as demeaning. Non-local men on the other hand were not affected by such social stigma. Furthermore, the claim that Mopane worms harvesting was a woman's chore did not hold anymore. With men also partaking in the activity, it could be concluded that this role was clearly culturally constructed rather than embedded in any economic rationality.

Women also dominated in the collection of mopane firewood, with wives and boys said to constitute more than 20% of the collectors while husbands constituted just above 16% (see Figure 5.5). While traditionally firewood collection was a woman`s responsibility (see Dianzinga & Yambo, 1992; van Dijk, 1999; Dkamela, 2001; Tiani, 2001; Timko *et al.,* 2010; Tobith and Cuny, 2006), the study found out that a significant number of men were also getting involved. This could be explained by various dynamics that were observed in some households in the study area. For example, issues such as distance to the nearest forest where firewood was collected and presence of technologies such as axes, wheel barrows, and scotch carts seemed to have played a pivotal role in transforming the traditional roles in firewood

collection. These observations are similar to those made by Frank Matose in a study on 'How institutions mediate values placed on different forest resources by forest users in Zimbabwe' (Matose, 2002).



Source: Primary Field Data

Figure 5.5 Household members who collect mopane firewood (Responses were collated for all the three wards)

(n)=90

Matose (2002) observes that distances play a key role in women's access to firewood. In relatively well-to-do families in this study, boys took the responsibility of fetching firewood as they used scotch carts, which made the activity a lot easier than for women to carry the firewood on their heads. In some female-headed households where husbands worked outside the country, women used remittances to hire labor for services that included firewood and water collection among other things. Some households were observed to have alternative technologies and sources of energy such as solar panels, gas and primus stoves hence they had less need for firewood. While remittances are not a recent phenomenon in rural communities of Zimbabwe, their significance and impact on the Bulilima rural economy has

grown steadily post- 2000, as the country's economy deteriorated rapidly.[38] Recipients of these remittances have mostly been women whose husbands and sons have migrated. The effect therefore has been the empowering of these women in a largely patriarchal society. This is evidenced by the hiring of male labor to do chores that men would normally not do. Kandiyoti (1984) notes that money can bring economic power that destroys the patriarchal system. In this case, women with husbands, sons or daughters working elsewhere and sending remittances used the money to exert power on those who did not have it, including some men in the community. Correspondingly, the study found that in very poor households where men did not have much property of their own, their authority tended to be low and in some cases non-existent. In such households influence and authority belonged to anyone who brought food home. As such, anyone who brought mopane worms in large quantities or young men who got hired by other people and then brought money at home were respected by almost everyone and were observed to have authority to make decisions in their homes.

5.4.2. Gendered spaces and places associated with access to mopane worms and mopane woodland

Having established the dynamics of mopane worms and woodlands access and analysed complex decision patterns on their use at home, this section examines the complexity and dynamism of the gendered nature of the two resource tenure regimes by highlighting spaces and places where men and women used and exerted control over the management of Mopane worms and woodlands. Several scholars (Fortmann and Bruce, 1988; Rocheleau, 1988; Leach, 1992 among others) have argued that women's spaces are difficult to find because they are 'in between spaces' that are not so useful to men but yet useful to women because they use them for their survival. Identification of such spaces and places can help illuminate the type of rights that women enjoy and whether such rights afford them decision-making powers with regards to mopane worms and woodland use. Kabeer's (1999) 'gender relations-based on power approach' and Rocheleau and Edmunds' (1997) approach to the complexity and dynamism of gendered resource tenure regimes are used to analyse access, use and control of Mopane worms and woodlands within gendered spaces and places in the study area.

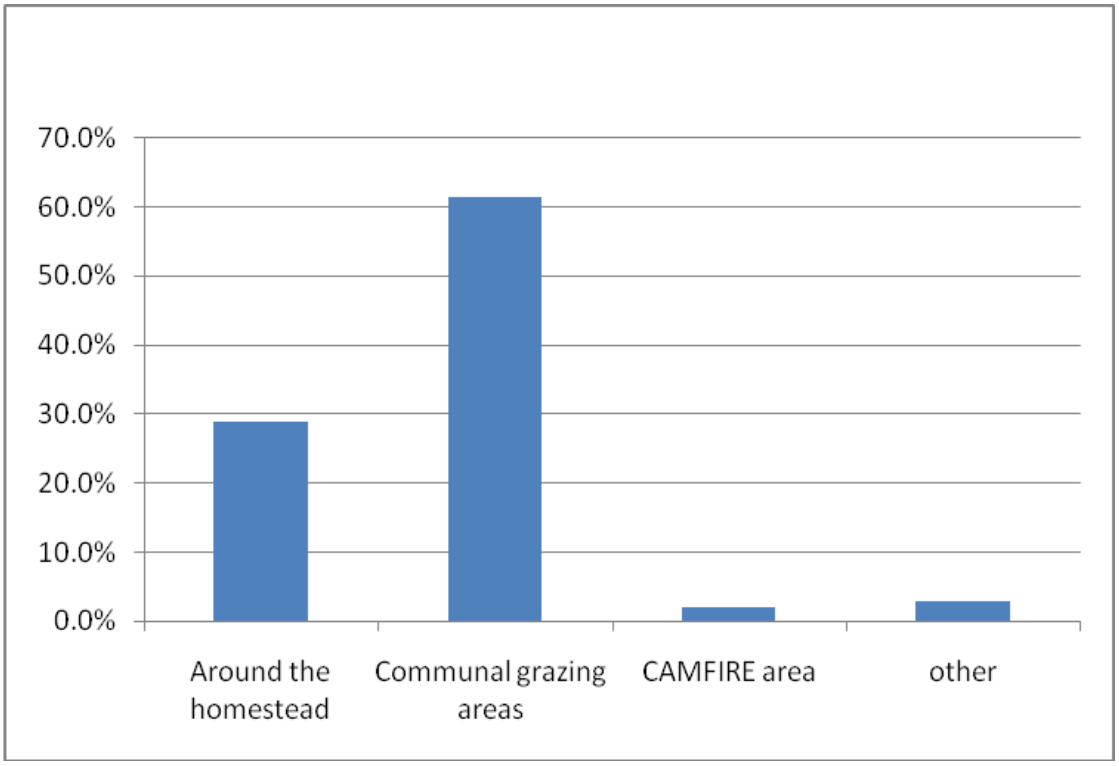
[38]Interview with Bulilima CEO and observations made by villagers during group discussions in all the wards under study.

The study found out that the main tenure categories where mopane worms and woodland are collected were areas around homesteads, communal grazing areas and areas in and around the CAMPFIRE project. It is crucial to note that access to natural resources in most rural communities in sub-Saharan Africa is closely linked to land tenure systems. Communal land titling is dually governed by informal and formal institutions in Zimbabwe. Informally, there is customary law which is enforced by traditional rulers such as chiefs, headman and the village heads. Under this law, men and women seldom have identical claims to land. In most cases, men assume control of land and its associated resources meaning that women have to negotiate access through spaces not deeply coveted by men. This study found out that men generally enjoyed more *de-facto* control of all the land in the area while women generally used usufruct rights to access the resources found on the land. Their access to Mopane worms and other resources was found to be as a result of complex negotiations and renegotiations over spaces that were not so significant to men. Although formally restored by the Traditional Leaders Act of 1999, after being removed by the Communal Land Act of 1982, the Rural District Council (RDC) continues to disregard traditional leaders when it suits them (Profile, USAID Country, 2005). Formally, communal land is governed through the Communal Land Act which has transformed through the following Acts: Acts 20/1982, 8/1985, 21/1985, 8/1988, 18/1989 (s. 32), 3/1992, 25/1998, 22/2001, 13/2002.[39]Under the Communal Land Act, the ultimate control of the land is vested in the country's President while the RDC , with the approval of the Minister of Local Government, Rural and Urban Development, may authorize any person or class of persons to occupy and use, any portion of Communal Land within the area of such rural district council.[40]

The study established that while collection of mopane worms and woodlands was done in more than one tenure category, there were prominent areas where the bulk of these worms were collected. More than 60% of household heads noted that mopane worms were mostly collected from grazing areas while about 29% noted areas around homesteads as source areas (see Figure 5.6 below). The CAMPFIRE area, because of its long distance from most communities (approximately 30km from the last homesteads), is not a major mopane worm collection source particularly for women. Women tended to concentrate on areas around homesteads and grazing areas while men could be found in the areas in and around the CAMPFIRE project where they herd their cattle and also collect resources. Discussions with

[39]Communal Land Act, Chapter 20:04
[40]Communal Land Act, r Chapter 20:04

men in all the wards revealed that such preferences were influenced by societal perceptions on manhood. Being seen around homesteads was perceived as a sign of weakness and timidity. Such beliefs are consistent with studies done by scholars such as Dianzinga and Yambo (1992); van Dijk (1999); Dkamela (2001); Tiani (2001); Timko *et al*. (2010), and Tobith and Cuny (2006) who argue that women prefer using resources from areas close to home while men prefer areas further from home. Such preferences could be influenced by the fact that women have other roles that confine them to their homes, such as taking care of children and other home chores. The 'Other' part in Figure 5.6 was said to be areas within communities such as farming fields and neighboring commercial farms. Farming fields, like areas around homesteads, were also found to be controlled by respective households and *de-facto* owned by men through inheritance. Commercial farms were quite far from the communal areas hence less accessible for most communal members. As such, fewer resources were collected from there.

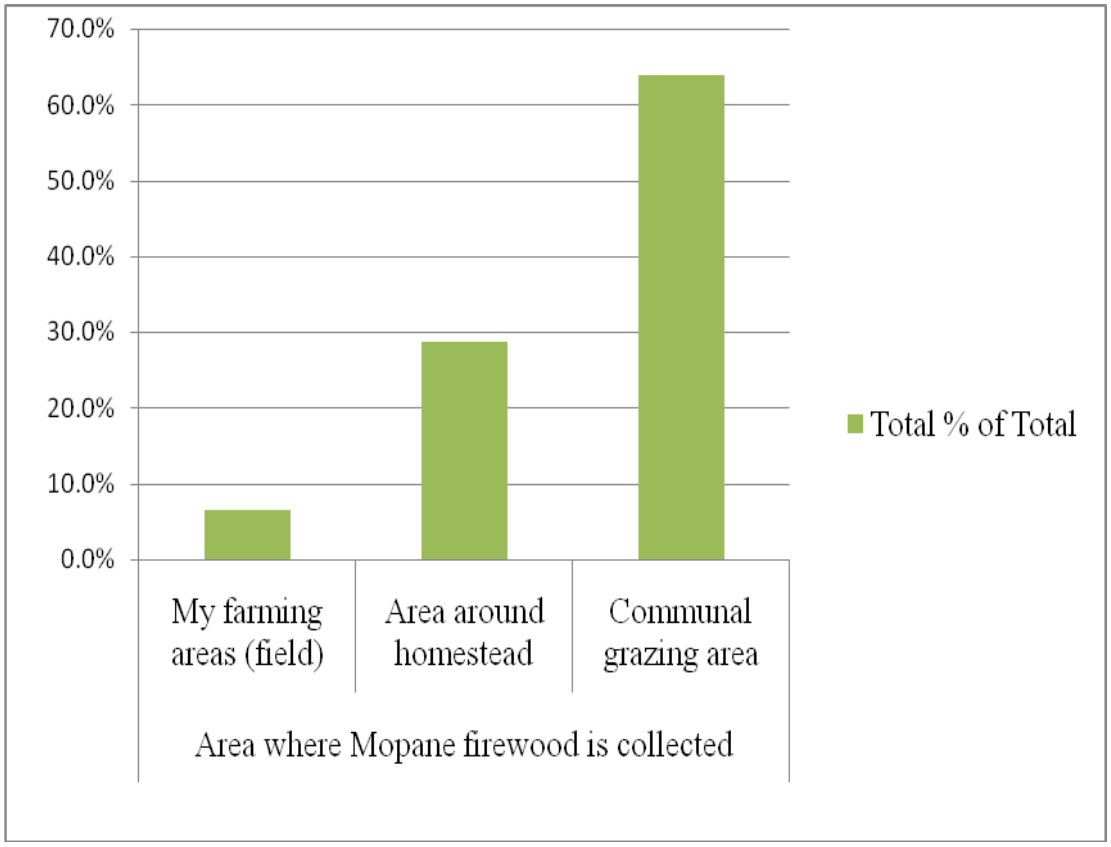


Source: Primary Field Data

Figure 5.6 Land tenure arrangements where Mopane worms are collected (Responses were collated for all the three wards)

(n)=90

Just as was the case with mopane worm collection, firewood was also collected in all land tenure areas available to the communities (see Figure 5.7 which shows collated responses from all the wards). More than 60% of the households pointed out that the bulk of firewood was collected from communal grazing areas while about 30% highlighted the area around the homestead as another major source. The grazing areas were situated further away from homesteads, an average distance of more than 6 km and 8 km according to the ward councilor of Bambadzi and Makhulela councilors respectively. The ward councilor of Dombolefu could not tell the specific average distance but estimated that it was also some distance away from homesteads. Firewood is bulky, hence difficult to carry over long distances for many women. As such, boys also contributed in the collection of firewood as noted in Figure 5.4.



Source: Primary Field Data

Figure 5.7 Land tenure arrangements where mopane firewood is collected (Responses were collated for all the three wards)

(n)=90

It is important to note that while communal grazing areas were said to be far for women to collect firewood, the same group had no challenge accessing mopane worms from those faraway places. This could be explained by the fact that mopane worms are a more valuable and easy to gather source of income and livelihood for women than firewood. Women were thus prepared to walk long distances in search of the worms.

While Figures 5.6 and 5.7 indicate places where Mopane worms and woodlands are clustered, they however do not reveal the gendered nature of these places. The fact that customary law and other social prescriptions influenced by community norms, beliefs and institutions put more control of communal land and its associated resources under the control of men, albeit in a *de-facto* scenario, meant that women had to negotiate their access to resources. Part of this negotiation included identification of those landscapes considered undesirable by men. For instance, areas around homesteads were found to constitute such landscapes. While women did not have exclusive rights in these areas, they however had established user rights to access resources found there including mopane worms and firewood. Decisions on access, use and control of live mopane trees remained the preserve of men. The trees provided men with poles for various uses that included fencing, building and construction of cattle kraals. Women were found to have rights to collect resources such as mopane worms and dry branches for firewood from 'men's trees'. They gained these rights through social norms and institutions such as marriage or some other male relationship. Their general lack of customary rights meant that they could not be allocated land in their own right. Areas around homesteads are examples of in-between spaces that are not deeply coveted by men as noted from a discussion with local men from Mbimba village, Bambadzi Ward:

> It is embarrassing for a man to be seen loitering around homesteads, worse if he is seen amongst women collecting mopane worms close to homesteads. In our society that is unmanly. Areas around homesteads are reserved for women and children (FGD with local men at Mbimba village, Bambadzi ward. 22 April, 2014).

While social beliefs and practices around 'manhood' ensured that men utilised resources from grazing areas or other areas further away from their homesteads, they still retained control over decisions on all key resources whether close or further away from home. For instance, the study found out that households had a tendency of privatising land around their homesteads as a management technique and such decisions were generally made more by men than women. In a focus group discussion with men from Dombolefu Ward, Village 29, it

was revealed that one way of ensuring sustainability of Mopane woodlands within the community was to privatise areas around individual homesteads through fencing. Similarly, another voice from Bambadzi Ward confirmed this: 'every homestead needs a man to protect its trees otherwise people will cut them' (FGD for men in Mbimba Village, Bambadzi, 20 December, 2013). A similar view was expressed at Makhulela: 'people tend to respect a home with a man or husband that's why they would not dare cut trees around such homes or even pick firewood. However households headed by women at times face challenges of people not respecting boundaries' (FGD with women, Makhulela 1 Village, 2 January 2015).

The quotations above are very critical in that they demonstrate entrenched culturally-constructed belief systems in society. Most communal areas in sub-Saharan Africa have fundamental beliefs regarding leadership structure, patriarchal and power relations. As Nnoko-Mewanu *et al.* (2015) point out, there is a coherent and unified belief about the nature of power and who wields it within rural communities. These belief systems result in the general exclusion of women from decision-making processes. Consequently, some women may not believe that questioning their own exclusion is a viable option (ibid).The quotations thus demonstrate forms of internalised disempowerment embedded in norms and beliefs which play on women's sense of self-confidence and are oblivious to their right to influence decision-making.

Privatisation of land around homesteads, nevertheless, ensured exclusion of other people from accessing mopane worms and woodland resources near homesteads that did not belong to them. This benefitted women in that it helped protect big mopane trees that are good hosts to mopane worms ensuring a constant supply of this livelihood resource around their homesteads. In the words of one woman: 'trees around our homesteads are safe because we monitor them. At least we are assured of Mopane worms almost every year because of those trees' (FGD with women from Makhulela 1 Village, Makhulela Ward, 27 July, 2014). These findings were consistent with other studies done in Zimbabwe. For instance Katerere *et al*., (1999), in a study of forest resource management in Chihota and Seke communal areas in Zimbabwe, concluded that communities were active agents in monitoring their woodland and forest resources in the absence of clearly defined rights over forest use and control.

While privatisation of land around homesteads was a common practice in all the wards under study, it should be pointed out that boundaries were decided arbitrarily and those who had

influence could privatise large areas around their homesteads. Conflicts were therefore inevitable:

> Each household controls areas around it but it is very difficult to draw boundaries for each and every household. We have had numerous cases of conflicts as people unknowingly either cut trees; collect firewood or mopane worms in areas that are beyond their boundaries. They are not really serious conflicts but the fact that these boundaries are not defined means that we will forever have these misunderstandings (Chief village head, Village 29, Dombolefu Ward, 10 February, 2014).

Most conflicts related to extraction of resources from someone's 'private land' were easily resolved by the village heads through dialogue. However, some biases in passing judgements were observed in some cases. For instance in two conflict resolution meetings attended by the researcher in Bambadzi and Makhulela, it was observed that one's political affiliation played a key role in winning or losing the dispute. From the two meetings, judgments favoured ZANU PF sympathizers despite both having been caught cutting wood in other people`s 'private' land. It was argued in Makhulela for example, that land belonged to the state hence every Zimbabwean was entitled to it. Such an argument had the effect of paralyzing the opposition because a counter argument was usually treated as a challenge to the ZANU PF party and the consequences were always dire. The extent of ZANU PF's power was therefore reflected in these two meetings. Furthermore, conflict resolutions tended to exclude women from participating:

> Whenever there are boundary conflicts between households, the chief village head calls for a meeting that involves other village heads and local villagers. In such meetings it is usually men who talk and decide on how the boundaries should be like. It is difficult for us women to have a say in such matters because we are considered people who came to marry hence cannot argue with those who were originally there (referring to men) (FGD with women from Mbimba Village, Bambadzi Ward, 23 May, 2014).

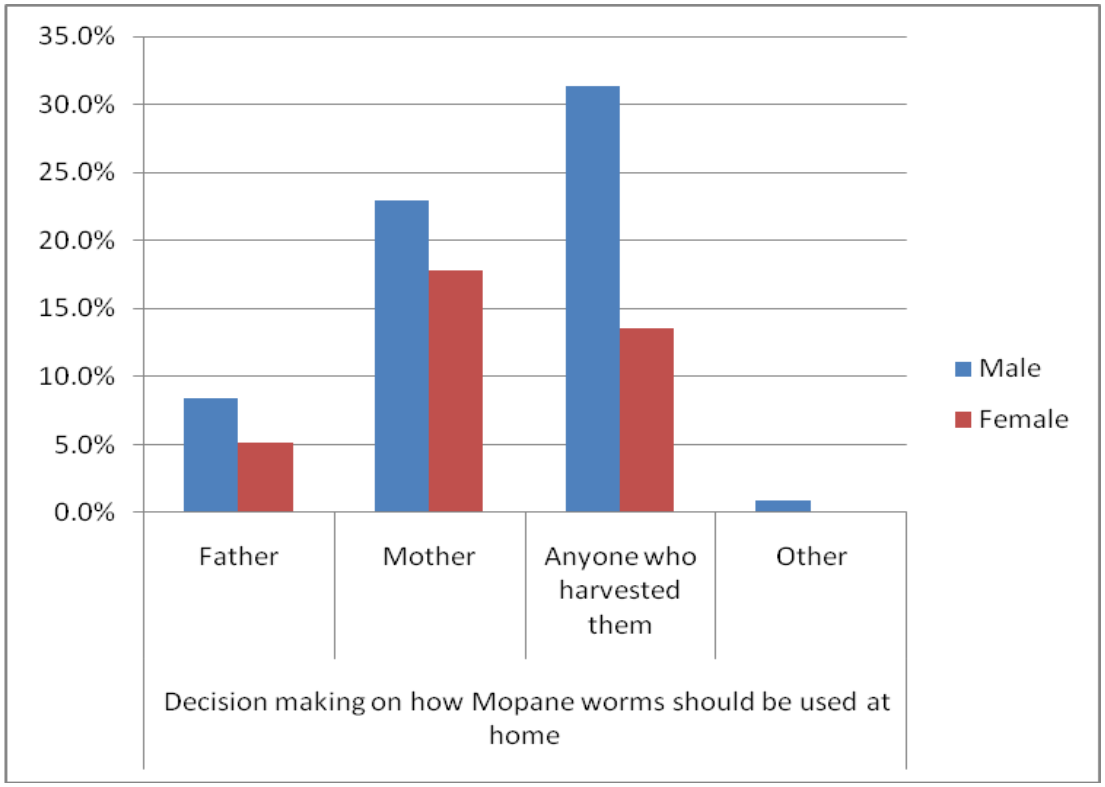
Customary practices and beliefs were used to exclude women from actively participating in conflict resolutions yet decisions passed impacted on them directly. For instance, the fact that women coveted areas around homesteads more than any other group meant that any conflict resolution decisions passed on such areas had a direct effect on their access to resources in those areas. For instance, resolutions passed in Makhulela and Bambadzi, that all resources belonged to every Zimbabwean, was not favorable to women because it meant increased competition for resources such as mopane worms.

Institutions inhibiting privatisation of areas around homesteads were either weak or non-existent. Wealthy households tended to privatise large pieces of land around their homesteads compared to other households. Perhaps their wealth gave them agency to grab as much land as they could. This however is not to claim that the poor had no agency at all. For instance, the study discovered that in Dombolefu Ward, the poor played a key role in the collection of mopane wood from the grazing area. The long distances from homesteads to grazing areas where most of the wood was collected created positive agency for the poor who were usually hired to collect wood from those areas. One villager commented: 'good firewood can be accessed from a grazing area which is very far. We often hire some other villagers but at times they refuse hence one has to pay them more to convince them to go' (Interview with maNcube (not her real name), a woman from Dombolefu Ward, 22 March, 2014). Grazing areas were also said to be frequented by elephants making them dangerous places. As such, hired labor was at times very expensive. In Makhulela, wealthy cattle owners often had to pay more in order to secure services of cattle herders.

The point stands that privatisation of land around homesteads was an informal tenure system based on acceptable social norms and beliefs. Customary law around land ownership and distribution still applied when, for instance, there was a need to create space for a new homestead.[41] The councillor for Makhulela stressed this point when he highlighted that local authorities such as chiefs and the RDC still reserved the right to use land because it belonged to the community. The councillor's understanding of community as a homogenous group living in harmony was superficial in that some community members seemed to be more equal than others. For instance, women's access, use and control of resources in privatised spaces were at the mercy of men and community institutions. Men decided whether to privatise or not. Moreover, women had access to resources in such places provided local institutions allowed them to. Their user rights could be usurped at a moment's notice.

Nevertheless, while men made decisions on the control of woodlands around homesteads, decisions on how Mopane worms should be used at home revealed that men had less influence compared to women or any other person who harvested worms (see Figure 5.8 below).

[41]Customary law in this case includes parcelling out of land by village heads, headman and in some cases chiefs, for construction of homesteads.



Source: Primary Field Data

Figure 5.8 Decision-making on how Mopane worms should be used at home

(n)=90

Mopane worm activities at home could therefore be said to be claimed spaces for women where they exercised their influence in decision-making. The following comment demonstrates women's perception of their ability to make their own decisions about mopane worm activities:

> When it comes to Mopane worms, nobody tells us what to do with them at home. If the harvest is good we sell some and keep some for family consumption. The money we realise from these sales is used for purchasing foodstuffs or subscriptions to our social clubs. We make all these decisions by ourselves and this makes us feel important at home (FGD for women from Mbimba Village in Bambadzi Ward 23 May, 2014).

While households and places around homesteads were found to be predominantly women`s spaces, as discussed in the preceding paragraphs, communal grazing areas were found to be places dominated mostly by men and boys. This is where boys herded cattle while men used the area to harvest mopane poles and in some cases mopane worms: 'grazing areas are places

where men can harvest worms, meet other men and discuss issues pertaining to cattle politics and other community issues away from women' (FGD for men from Dombolefu, 30 May 2014). It was evident from the group discussions that a man earned respect from other man by getting his resources (mopane worms, woodlands, medicine, etc.) in areas further away from home and one regarded as homosocial. In all the three wards, the grazing areas were found to be further from the homesteads and characterised by thick forests. Distance and the thickness of the forest in the grazing areas were highlighted by men as deterrents for most women except during times when mopane worms were in abundance. During such times, women invaded the grazing areas in groups (observations made by the researcher during the course of the study period).

Distinct men and women's spaces were identified in the grazing areas. Men were found to hold primary rights on resources found in this area through customary laws which vested powers of decision-making and control of grazing lands on them. Bulilima is generally a cattle district with most of them owned by men. Cattle are a symbol of wealth and power hence the importance of grazing areas. This therefore meant that men had absolute decision-making powers when it came to the use of grazing lands. They had the power to exclude or include users depending on the nature of the resources being exploited or used. Those women who owned cattle were found not to have much influence on grazing issues. Men were however prepared to let women access mopane worms and firewood as long as they did not interfere with grazing issues.

In Bambadzi ward, the ward councilor confirmed that the communal grazing area known as *Esidakeni*[42] was exclusively meant for cattle from Bambadzi area (Interview with Bambadzi Ward councilor, 23 May 2014). Conflicts however, often arose as cattle from other wards were said to frequent this grazing area. The perception among local leaders from Bambadzi (village heads and the councilor) was that villagers from other wards deliberately let their cattle onto their grazing land because of the good pastures they had. Solving grazing conflicts was found to be very complicated because it depended on the status of the owner of the cattle found grazing. For instance, the study established that being a member of the War Veterans Association (WVA) provided immunity to one's cattle. They could graze anywhere in the district. The councilor for Bambadzi even commented that, 'it will be bad to remove cattle of

[42] Esidakeni is an area set aside for grazing in Bambadzi. The local vernacular name is Ndebele and refers to areas with lot mud (Bambandzi councillor, 23 May, 2014).

those comrades who fought to liberate the same grazing areas that we enjoy today'. The situation was found to be the same in Makhulela where local villagers, mostly men, complained that their grazing areas were being ravaged by cattle from other wards yet there was nothing they could do because those people were connected to the ruling elite.

There were, however, few complaints from men with regards to outsiders collecting mopane worms in the same grazing areas. In fact, community institutions (both traditional and modern) were found to be weak in monitoring access to mopane worms and firewood in the grazing area. Mopane worms, for example, were harvested by people coming from all corners of the country. The researcher had an opportunity of observing these harvesters who deliberately set up camps in the forest. Further enquiries by the researcher confirmed that monitoring of natural resources depended on the will of men in the communities: 'anyone can harvest mopane worms *Esidakeni*, it's a free area. There are no rules preventing anyone from doing that' (FGD ordinary men from Bambadzi Ward, 23 May 2014). Yet the same men had pointed out that there were restrictions in grazing of cattle at *Esidakeni*. Local village heads had a different view, arguing that all resources were managed and protected by a traditional system through customary law that prevented outsiders from exploiting local resources.

These contrasting views underscore the inequalities perpetuated by local institutions in the study area. Village heads, who were mostly men, believed that by excluding outsiders from grazing their cattle in the local grazing land, they would have protected all resources found in the grazing area. However, they only applied the customary law to suit the interest of men while those resources vital to women (mopane worms and firewood) were left as open access. Local women had to compete with outsiders for these resources. Grazing areas therefore, assumed multiple tenure arrangement systems that included open access and common property. The customary law, for instance, was operationalised to exclude outsiders from grazing their cattle in the community grazing areas but was relaxed when it came to the access of other resources such as mopane worms and firewood. What emerges from this analysis therefore is that institutions such as customary law and marriage tend to influence the exclusion of women from participating in key decision-making forums. Their lack of primary rights with regards to resources in the grazing areas compromised their decision-making abilities.

The CAMPFIRE project area was also identified as a place where access to natural resources was gendered. Various actors contested and negotiated for spaces to access and control the resources. The CAMPFIRE itself was run by the RDC through its conservation committee which had sub-CAMPFIRE committees in all wards that benefited from the project. As a community based natural resource management programme (CBNRM), CAMPFIRE sought to demonstrate that communities that exist with or live close to wildlife can benefit through everyday management of use and access to wildlife resources (see for example DNPWLM, 1984; Madzudzo, 1997). This implied that those communities had equal access to wildlife and other resources found in the CAMPFIRE project area. The study, however, established that not only were there inequalities in benefits from CAMPFIRE outputs but also that there diverse claims and power dynamics that affected access and use of resources. For instance, the project area was found to be contested and claimed by various groups for various reasons. The Kalanga/Ndebele communities claimed the area as part of their traditional grazing place. Group discussions with men from Bambadzi and Makhulela established that Kalanga/Ndebele communities had grazed their cattle in the area since the pre-colonial era. This is where they sent their cattle for *lagisa.*[43] The area had also been occupied by the San people who claimed to have been the indigenous dwellers. Indeed, literature revealed that they were moved from the area during the inception of the CAMPFIRE project in the late 1980s (see Madzudzo and Hawkes, 1995).

These contestations over the ownership of the area point to the fact that it has undergone various management systems under different groups (the original Rozvi, the San, the Kalanga/Ndebele, the colonial government and the post-colonial government) (ibid). It was inevitable that conflicts would emerge because of the value attached to that area. The most prominent conflict that has persisted into the post-colonial period is that of cattle owners and the Bulilima RDC over access to the CAMPFIRE area. Interviews with selected cattle owners revealed feelings of animosity towards the CAMPFIRE project itself. Cattle owners saw the

[43] "*Lagisa* is a form of transhumance practised by people in the communal areas of Matabeleland. It involves the seasonal movement of cattle from one area to the other, in order to extend the grazing range. Cattle ownersor employees move into the *lagisa* and make a temporary shelter, *umlaga*, which they abandon at the end of the season. In the Bulilimamangwe *lagisa* area, some of these shelters are almost permanent. Owners return to these shelters each year. In conversation, people refer to these shelters by the name of the owner. However, in the ideal model, no individual owns any part of the *lagisa* area which belongs to the community as a whole" (Madzudzo and Hawkes, 1996: p 6).

project as a violation of their rights to a grazing area they considered to be traditionally theirs. In contrast, the RDC saw CAMPFIRE project as a significant development initiative in the district. The CEO argued:

> People who have large herds of cattle are very selfish because they are not considering other poor villagers who are benefiting from that CAMPFIRE project. They are thinking about themselves and they have convinced some politicians that their cattle are better than the CAMPFIRE programme. Now the project is slowly dying. But as council we have made a decision to evict them because the law is clear they must leave. We will go there with the police (Interview with Bulilima CEO at Plumtree, 15 May, 2014).

While men claimed the CAMPFIRE area mainly for grazing, women claimed the same place for mopane worms and thatch grass. Thatch grass harvesting was found to be an old activity for women in Bulilima, dating back to the colonial era (Madzudzo and Hawkes, 1996; Dzingirai and Madzudzo, 1999). The activity continued under the CAMPFIRE project where women were allowed to harvest mopane worms and thatch grass. There were no restrictions on the amount they could collect. However, conflict between cattle owners and the RDC has compromised women's access to thatch grass. As a way of fighting the RDC, for instance, cattle owners now allow their cattle to graze in the area all year round thus finishing all the grass. According to Madzudzo and Hawkes (1996), before the establishment of the CAMPFIRE project, grazing in the *lagisa* area used to follow a known pattern that allowed for women to also have access to the grass. The pattern was that between November and April, cattle would normally graze locally and around homesteads especially when the rains were good. Between May and July, the cattle were turned into the fields after the harvest to eat crop residue. They were only taken to the *lagisa* grazing area between August and October. Grass would have dried and nearly grazed off around homesteads.

Significant to note as well, is that women's access to resources in and around the CAMPFIRE area depended on the values attached to particular resources. A good example is that women easily accessed Mopane worms because men and the RDC did not attach much importance in the resource. However, it was different with thatch grass because it constituted part of pastures. Men assumed control of the resource and allowed their cattle to graze all year round. They drew legitimacy from customary law which gave them decision-making powers over the grazing area. Women were excluded from participating in any decision-making that had to do with the *lagisa* grazing area. The RDC, on the other hand, was found to be

interested more in management of wildlife, perhaps because of the economic benefits that accrued to the council through safari hunting. The ongoing conflict between cattle owners and RDC over use and control of the CAMPFIRE area thus resulted in complete disregard of women's participation in the CAMPFIRE project.

The San people resident in Makhulela constituted an interesting group that could not be ignored in the analysis of natural resource management in and around the CAMPFIRE area. They claimed the CAMPFIRE area as their homeland and wished to be returned there. Their village head summarized their sentiments this way: 'We were better off where we were because we could hunt and there were plenty of resources such as mopane worms. We lived a good life with no one telling us what to do' (Village head representing the San community, 25 May 2014). They still frequented the area in search of resources such as mopane worms and wild fruits though they were no longer allowed to hunt any wild animals.

The gendered spaces and places concept needs to be put into perspective in relation to the decision making and resultant power dynamics in those spaces and places. The data gathered revealed distinct tenure areas where actors extracted mopane worms and wood. Women were found to concentrate more on areas around their homesteads while men preferred areas further away from their homes. Moreover, the study found that women tended to use informal institutions to access resources while men called upon formal ones. These dynamics can be more explicitly understood through the integration of Roger's (1975) conceptualisation of 'Female forms of power and the myth of male dominance.' According to Rogers, men occupy themselves with work that is further away from the domestic sphere[44] while women centre their activities in and on their homesteads. This study has also proved this to be true. Rogers further postulates that men's control of decisions outside the domestic sphere is problematic in that there are other powerful forces which make real decisions. For instance, while men were said to be in charge of the grazing areas or areas around the CAMPFIRE project, the study demonstrated that institutions such as the RDC and other government departments such as the Forestry Commission (FC) made crucial decisions on resource use and access. The cutting down of Mopane trees, for example, was an offence punishable by a fine or prosecution by the FC officers. The RDC controlled the *lagisa* grazing area and had legislative powers to prosecute cattle owners who insisted on grazing their livestock there.

[44]Domestic sphere in this study is referred to as the homestead and areas immediately around the homestead where women exert some form of control.

The RDC rarely exercised those powers because some of the cattle owners were backed by powerful political actors such as war veterans. As such, conflicts between the RDC and the cattle owners were rarely taken to a court of law. Men's general lack of influence at village level was also demonstrated by their failure to exclude outsiders from grazing their livestock on local grazing. Such outsiders tended to be those with links with the ruling ZANU PF. A case in point was the war veterans group which proved to be more powerful than most local institutions. In contrast, women were found to have real decision making powers within their households. It was also noted that areas around the homesteads were sometimes privatised at the instigation of women. This demonstrated women's hidden power, their ability to convince their men to privatise land so that they (women) could easily access resources that they could also monitor.

Despite their lack of real power at the village level, men still retained authority and prestige as heads of families. It was questionable though whether prestige and authority equated to actual power for decision-making. Evidence from the study revealed that decisions on the use of resources at home lay largely with women while areas outside home were largely controlled by external forces such as the RDC, organisations linked to the ruling party such as War Veterans Association, Women's League, Youth League and state departments such as the FC. This however, did not mean that men completely lacked agency within their communities. Cattle owners, for example, used collective action to challenge the RDC for a space to graze their cattle in areas set aside for the CAMPFIRE project. Moreover, the fact that some cattle owners were also war veterans further strengthened their bargaining power. As such, the RDC could not take the matter to a court of law even though it was within its rights to do so.

5.4.3. Key institutional structures on Mopane worms and woodlands management

The main institutional structures identified as responsible for the management of natural resources in the study area can be divided into formal and informal structures. Formal structures included government and quasi-government organisations such as the VIDCO, the WADCO, the DA, the RDC and its natural resource management committees, and technical government departments such as the FC. Informal structures were mainly those associated with traditional leadership (chieftainship, headmen, village heads, and spiritual religion) and

various social groups such as burial societies, church groups and other women's informal groups. Christianity was also found to be significant in influencing decision-making on natural resource management issues especially among women. The institutional structures are presented in Tables 5.4 and 5.5 below.

As noted in Table 5.4, the study established a complex network of institutional structures at a village level that influenced access, use and control of natural resources. Analysing the role played by each structure was crucial to understanding how institutions shaped the outcome of resource management and how the structures affected men and women's roles in natural resource management in the area. Decentralization policies in Zimbabwe and other sub-Saharan countries sought to transfer decision-making powers to low level institutions such as the ones presented in Table 5.4 below. It was pertinent therefore that the study establishes the pattern in which natural resource management decision-making powers were decentralised and into which institutional structures.

In order to understand the influence of institutional structures on mopane worms and woodlands management, household heads were asked to rank institutional structures in a scale of 1 to 10 with 1 being the least visible and 10 being the most visible. The results are shown in Table 5.5 below.

Table 5.4 Village level institutional structures involved in mopane worm and woodland management in Bulilima District

Category	Structure	Constitution	Status	Mandate
Traditional structures (informal)	Chief	Lineage, nominee, and State confirmation	Active	Custodian of local culture, enforce resource use rules.
	Headman	Lineage nominee by chief, appointed by Minister of Local Government and Urban Development	Active	Mediate in disputes and allocate communal land
	Village heads *(Sobhuku)*	Lineage nominee by headman, appointed by chief.	Active	Custodians of the land, Spiritual guidance
	Spiritual religion (*Manyangwa)*	Spiritual Censure	Active	Protect people from disasters
Social groups	Church (Christianity)	Voluntary	Active	Spiritual and moral support
	Burial societies	Voluntary, Subscriptions	Active	Moral and material support
Government & quasi-government statutory structures (formal)	VIDCOs	Elected	Active when called upon	Legal mandate for land Allocation
	WADCOs	Elected	Active when called upon	Spearhead development Link community to RDC
	District Administrator (DA)	Appointed and statutory	Active	Legal mandate to manage traditional systems
	RDC (Councilors)	Elected and Statutory	Active at ward level	Legal local authority in the district.
Committees (Committees are run by the RDC)	Conservation Committee (has a conservation department which oversees all CAMPFIRE activities)	5 Elected councilors plus the council chair. Government departments such as EMA, Forestry, Agritex, Health etc. are ex-officious	Active	Monitor use of natural resources
	Village Conservation Committees	Elected	Dormant	Monitor use of natural resources in the villages

Idea adapted from Nemarundwe (2003).

Table 5.5 Institutional structures ranked according to their visibility in the study area (total possible score is 10)

Institutional structures	Ranking
Traditional structures, mostly village heads	5.6
Councilors	5.5
Social Groups	5.47
Forestry Commission	2.75
Department of Agricultural, Technical and Extension Services (AGRITEX)	2.23
RDC committees (conservation committee, village committees, CAMPFIRE committees)	2.3
VIDCO	1.1
WADCO	1.1

Source: Primary Field Data

Local traditional structures, councilors and social groups were mentioned as being more visible and active (see Table 5.5). State organisations such as the FC and AGRITEX and other quasi-government institutional structures such as the RDC and its conservation committees were said to be less visible and active and thus ranked lower (see Table 5.5). Being visible or active in the communities, however, did not imply power in decision-making processes. For instance, the study revealed that some lowly-ranked structures had more decision-making powers compared to those that were ranked highly. The most significant institutional structures are discussed below showing how they influenced management of natural resources in Bulilima.

a) Traditional institutional structures

The study affirmed that the traditional institutional structure played a significant role in controlling access and use of natural resources. However, the structure did not have autonomous natural resource management decision-making powers. It made use of delegated powers mainly from the RDC and other government departments such as the FC. Nevertheless, village heads were the most visible structures and were perceived by locals as

influential in natural resource governance in communities. They were deemed to be the first level of authority in the villages. For instance, the researcher was strongly advised by the Bulilima CEO of the importance of village heads because they were the eyes and ears in their villages.

Ordinary villagers also pointed out that village heads were very active in the dissemination of information and organising villagers for development related programmes. They were also said to play a significant role in mediating conflicts related to livestock and grazing. However, village heads did not have power to sanction use of natural resources in the study area. A case in point is that village heads interviewed argued that the best they could do was to encourage people to use resources sustainably. They did not have decision-making powers to either include or exclude people from accessing mopane worms or woodlands. One of the village heads from Makhulela Ward lamented this lack of influence: 'If people break local rules related to use of natural resources we just talk to them and advise them against that. We have not been given any powers to punish such people' (Interview village head, Makhulela Ward, 25 November 2014). He further noted that most village heads operated through directives from the RDC or FC. This was quite intriguing because under the Traditional Leaders Act, there is a clear structure of reporting with village heads getting their orders from the headman. In this case, instructions were said to come from multiple authorities indicating complexities in resource management in the area. Moreover, the utterance by the chief village head of Makhulela demonstrates the powerlessness of village heads as they expect to receive powers from other institutional structures in order to effectively monitor resources in their villages.

The ineffectiveness of village heads in sanctioning and controlling use of natural resources was acknowledged by the locals in all the wards. Councillors were singled out as the most powerful local leaders in monitoring natural resource use. They had the capacity to exclude or include people in natural resource access: 'In our village, our councillor has been in the forefront in ensuring that people who come to harvest Mopane worms in our village get permits before doing so. Our village heads only talk but rarely do anything about these people' (FGD with women from Mbimba Village, 10 January, 2015).

The researcher had an opportunity to attend some of the meetings where village heads interacted with councillors. Councillors often dominated decision-making processes and

generally influenced the flow of discussions. There are several explanations for this scenario. First, most traditional authorities did not have much education, with the most educated having done a Zimbabwe Junior Certificate (ZJC). Councillors on the other hand were more literate, having completed Ordinary Levels (O'level). As such councillors tended to dominate public discussions. The chairman of council, who represented all councillors in Bulilima, explained this situation in the following words: 'Most traditional leaders are not educated to be able to interpret by-laws in the Traditional Leaders Act. Chiefs, for example, abuse their powers because of this ignorance prompting councilors to intervene so that villagers can get correct information and leadership' (Chairman of council, 22 December 2013).

The quotation above demonstrates entrenched conflicts between traditional and council leadership. Furthermore, the chairman of council made it clear that effective leadership could only come about if directed by councillors who were democratically elected compared to traditional leaders who had inherited their positions. The fact that traditional leaders were uneducated was regarded by the chairman as a weakness which could only be solved by allowing councillors to have total authority in their rural communities. It was also revealed that some traditional authorities did not have the confidence to fully apply their powers because of the treatment they received from the colonial government and liberation movements (ZANU and ZAPU) during the war of liberation and from the new government during the Gukurahundi period. This point is fully explained by Mandondo (2000a) and is also discussed in Chapter 4 of this thesis.

It is also important to note that headmen and chiefs were found to be less involved in the day to day management of natural resources in the area. Headmen in particular were absent in the three wards. In Makhulela the headmen was said to have died and the community was still waiting for the Minister to appoint someone else. In Bambadzi the headman did not reside within the community. He was said to be employed somewhere in Plumtree town and there was someone acting on his behalf. In Dombolefu, the headman was non-existent because the Minister had not appointed one since the death of the one in the early 2000s. The absence of headmen in the study area created a leadership vacuum allowing councillors to take advantage. Commenting on this issue, the councillor of Bambadzi argued that 'headman Mbimba is always absent and that creates administrative problems as village heads do not know where to report hence they end up coming to me'.

According to the DA of Bulilima, there were five chiefs in the district (Masendu, Madlambudzi, Mphini, Kandana and Sithole). Discussions with the CEO revealed that while chiefs were custodians of all natural resources in areas they presided over, they were not actively involved in management of the resources. They delegated most of the duties to non-existent headmen and to the village heads. Their influence on access, use and control of resources was said to be minimal, being reduced to mere custodianship of the resources.[45] Their decision-making autonomy was curtailed by the fact that they were made a subsidiary of the council where they were said to be ex-officio members who did not vote. The implications are that decisions made by traditional authorities are subject to approval by other structures such as the council, government departments like FC or other government linked structures.

b) Social group structures

Social groups existed for both men and women. For women, the groups were said to provide a strong social capital and support system. While men's groups were mostly formed along kin and age lines, women's were much more diverse, involving women of different age groups and kinships. The study established that all men's groups did not have any names while women`s groups included some associational names. In Bambadzi, the researcher was introduced to *Masakhane* (Lets build each other) group which was prominent because it was headed by the councillor's wife. In Makhulela, the group visited was known as *Vukuzenzele* (Wake up and work for yourself) while in Dombolefu the researcher was introduced to a group known as *Masiyephambili* (Let us go forward). One similarity between these groups was that they all had monthly subscriptions which were accumulated to be shared at the end of the year. Subscriptions varied between 10 and 15 United States dollars. The names given to the groups were instructive. They symbolised some form of activity, action or development. This nomenclature showed that women were not a dormant group. The names suggested the championing of self-development. It was revealed in one of the discussions in Makhulela that such groups together with other social gatherings such as churches and burial societies, created platforms for discussing a range of social and economic issues. Rogers (1975) notes that women's informal groups often provide a strong power base from which to operate in society. In this study, they acted as information centre, creating new opportunities

[45]See Traditional Leaders ActChapter 29:17 of 2001

for women. One woman remarked: 'Last year I exchanged my two 50kgs of mopane worms for very durable pots and plates from a relative of one of our church members who lives in Bulawayo' (Interview with a woman from Makhulela who traded in mopane worms, 22 November, 2014).Women`s groups thus provided a strong support system and an economic net that helped create spaces for their autonomy. The subscription groups for example empowered women economically at the end of the year because they could purchase Christmas goodies without bothering their husbands.[46] The above immediate points are supported by various scholars (see Chimedza, 1988; Rocheleau, 1991; Agarwal, 1994) who noted those women's groups created new spaces where women could gain access to natural resources. In this study, these groups improved women's social capital which they also exploited for economic gains such as new markets for mopane worms. Groups relying on subscriptions however, faced challenges as members did not always have funds. The majority of women pointed out that their major source of money was remittances which was subject to their husbands or relatives' continued employment wherever they resided. Mopane worms were also highlighted as a source of money though this was heavily dependent on the seasonality of the resource.

c) Spiritual religious structures

Traditional religious beliefs practiced through sacred shrines were found to exist in the communal areas of Bulilima. The most revered of them all was the Manyangwa cult which historically represented the Kalangas' spiritual beliefs. It survived the onslaught of colonization when Ian Smith's party, the Rhodesian Front, attempted to control people from Bulilimamangwe through deposing Kalanga chiefs and imposing Ndebele ones as custodians of traditional beliefs (Msindo, 2012). At the time of conducting this study, the cult represented different ethnic groups (Kalanga, Ndebele, San) residing in Bulilima and Mangwe Districts.

One of the important roles of spiritual religion in Africa was to protect natural resources through traditional religious beliefs enforced through community norms by traditional leaders (Fortmann and Nhira, 1993; Matowanyika, 1991). The Manyangwa religious cult was found to be an example of a spiritual religion that protected natural resources and communities in

[46]Discussion with women from Masiyephambili group in Dombolefu.

Bulilima and Mangwe areas. The shrine was visited every year by a group of villagers to perform religious practices closely related to rain-making. It was believed to be responsible for bringing good rains that ensured abundance in ecological products such as mopane worms and woodlands. Indeed the abundance of mopane worms was closely linked to the happiness of the Manyangwa cult.[47] For instance, the poor outbreak in 2013 was attributed to the punishment being meted on the people of Bulilima for a number of reasons that included failure to honour the 'Gods' or failure to respect sacred days[48] (also see Box 5).

The general perception among villagers interviewed was that Manyangwa's influence on natural resource management was waning. Indeed there have been some studies that concluded that the migration of people with different religious beliefs has weakened the power of sacred areas around Zimbabwe and other African countries (see Nemarundwe, 2003). Similar observations were made in Bulilima where Christian influence has contributed to the weakening of ancestral beliefs. Among the villagers interviewed, only a few people still believed in Manyangwa spiritual cult. Observations revealed that going to Manyangwa had degenerated into a practice of fulfilling a cultural role. This was not helped by the fact that some traditional leaders who were custodians of spiritual beliefs were themselves Christians. For instance, the late headman Mbimba from Bambadzi Ward was reported to have once told his people that those who performed rain-making ceremonies at Manyangwa cult should make sure that it rained only in their fields because he himself believed in Jesus Christ not traditional spiritual religion. The study also established that there were notable tensions between spiritual religious believers, who happened to be mostly older people, and Christian believers who were of the younger generation. The infrequency in Mopane worm outbreak and recurrent droughts were being blamed on Christians who were said not to respect spiritual beliefs and religion. It was noted by village heads in all the wards under study that the sacred day of Wednesday, when everyone was not supposed to be engaged in any physical work was no longer respected by some people, especially Christians. Box 5 below explains how the practice of observing the sacred day works.

[47]Interview with traditional leaders and other elders in the study area. Similar sentiments were also raised by Phathisa Nyathi, a well-known historian in Zimbabwe who has done extensive research on Kalanga and Ndebele ethnic groups in Matabeleland region.

[48] Focus group discussions for village heads in Makhulela and Dombolefu, 22 and 23 December respectively.

Box 5 Sacred day in Zimbabwe`s rural communities

African rural communities have a traditional day of rest. In Zimbabwe isiNdebele speaking people call it *usukulwezilo* meaning a "sacred day" while Shona speaking people call it *chisi,* meaning "holy day" (see Bakare, 1997; Bourdillon 1987; Mtapuri and Mazengwa, 2013). Bakare (1997) notes that this day has been observed by rural peasant farmers as part of their religious beliefs and as a way of showing respect to the ancestors. Such a day (akin to the Sabbath) was one that was sacred and violation had serious consequences ranging from being struck by lightning or suffering some serious misfortune emanating from the wrath of the ancestors. It was believed that their anger was expressed through violent misfortunes and for atonement; one had to pay a heavy material price.

The failure to observe the designated sacred day in the week is not only causing tensions in Bulilima but also in other local communities around Zimbabwe. For instance the Member of Parliament for Chirumanzu District of Zimbabwe, the Honorable Auxilliar Mnangagwa, wife of one of the two Vice-presidents of Zimbabwe, Emmerson Mnangagwa, castigated Apostolic and Pentecostal churches for disrespecting chief Chirumanzu and the local traditional culture by working on a sacred day of *Chisi*.[49] While the chiefs are empowered to enforce customary laws in their communities through the Traditional Leaders Act, the Constitution of Zimbabwe, which represents the supreme law of the land, has a provision that permits freedom of worship, meaning that Christians or any Zimbabwean for that matter can worship anytime they want. With an increase in the number of churches and people converting to Christianity compared to ancestral spiritual beliefs, evidenced by mushrooming of Christian churches all over Zimbabwe, it is not surprising therefore that customary influence is diminishing in many rural communities in Zimbabwe. The CEO of Bulilima further argued that spiritual religion and spiritual shrines also faced challenges from the state which disregards local knowledge on the management of spiritual shrines:

> Religious shrines such as Manyangwa still exist though its leadership has been seriously weakened over the years. The problem is that people confuse traditional chieftaincy with knowledge of religious shrines or sacred areas. Some people believe

[49]The sacred day of *Chisi* (in Shona tradition) has to do with a day set aside for recognizing the spiritual power that brings blessings to people. On this day, no member of the community may work in the fields (https://www.newsday.co.zw/2015/09/07/mnangagwa-berates-church-leaders/). In Ndebele/Kalanga the same day is referred to as *usukulwezilo (day of rituals).*

> the chiefs by virtue of being traditional leaders are custodians of Manyangwa. Chiefs know nothing about religious shrines because it was never their preserve to control them. There were always religious people with powers believed by the community. The government in its promotion of traditional leadership has failed to support religious leaders (Interview with Bulilima CEO, RDC offices, Plumtree, 20 January, 2014).

Phathisa Nyathi, one of the most renowned historians and cultural commentators in Zimbabwe lamented the disappearance of spiritual religion in Africa:

> The rightful people to preserve spiritual religion or spiritual shrines have either been pushed away by those who claim to know yet they don't or they have converted into Christianity for fear of being ridiculed in society. Either way one cannot rule out the State's deliberate effort to weaken the spiritual belief system because it is aware of its power and influence. During the liberation war, spiritual religion contributed to the successes of liberation fighters and the state is aware of that. It would rather control it than let it be controlled by other people. I am not surprised that chiefs have been made custodians of these shrines yet most of them know nothing about spiritual religion (Interview with Phathisa Nyathi, a historian and cultural commentator in Zimbabwe, 25 November, 2015).

The quotations above demonstrate a case of the state imposing its influence by purporting to know how spiritual religious shrines should be managed. This is also a case of disregarding local knowledge in favour of state knowledge which helps it achieve its goals. By making chiefs custodians of spiritual beliefs and shrines, the state absolves itself of any blame. For example, Kalanga communities in Bulilima blamed chiefs for interfering with the Manyangwa cult and some of them even commented that the government should look into that issue and perhaps restore Manyangwa cult to its rightful custodians. As demonstrated in the utterance by the Bulilima CEO, conflict is now between the chiefs and local people. It has been demonstrated in literature (see Mandodo, 2000a; Holleman, 1968; Weinrich 1971; Mutizwa-Mangiza, 1985; Scoones and Matose, 1993) that the relationship between chiefs and villagers they preside over has not always been smooth owing to the way chiefs have been used by successive governments to oppress the locals. In Bulilima, the study revealed that there was friction between Ndebele speaking chiefs and Kalanga speaking villagers. For instance the ongoing conflict on Manyangwa leadership as noted by the CEO emanates from the fact that the presiding chief Madlambuzi is Ndebele while Manyangwa spiritual cult is said to belong to the Kalanga ethnic group.

d) Government and quasi-government institutional structures

The VIDCO, WADCO, FC, AGRITEX, RDC and the CAMPFIRE committees were identified as the government or quasi government structures operating in Bulilima. The DA's office, which oversaw local governance development in the district was not mentioned, yet it played a critical role in influencing decisions, especially those made by traditional authorities. The RDC and its associated technical structures, such as the VIDCOs, WADCOs, RDDC, assumed prominence following Zimbabwe's post-independence policy framework on decentralisation of decision-making powers. They were developed following the 1984 Prime Minister's directive which resulted in a restructuring of local governance institutional structures (see discussion in Chapter 4). Powers of traditional authorities were reduced and their traditional roles of resource control re-assigned. The major reasons behind this restructuring was to re-dress imbalances caused by colonial neglect through transferring decision making powers to institutional structures that operated closely to communities and empowered them (Helmsing, 1991; Mandondo, 2000a).

Villagers commented that VIDCOs and WADCOs did not play a significant role in influencing mopane worms and woodland access, use and control (see the rankings in Table 5.4). The general perception was that the committees were active in protecting the interests of ZANU PF than those of the locals they were supposed to serve. One interviewee was quoted on condition of anonymity saying, 'please do not quote me I might get into trouble. To me, VIDCOs and WADCOs only represent the locals towards national elections. That is when you see them moving around mobilising people to vote for ZANU PF' (Interview with a man from village 29 Dombolefu Ward, 24 May, 2014). Indeed there are studies that confirm such perceptions and sentiments by villagers from Bulilima (see for example Mabhena 2010; Dekker and Kinsey, 2011 among others). These scholars argue that VIDCOs and WADCOs were defunct structures as they had served their duty of ensuring that ZANU PF had total control of rural communities, particularly those in Matabeleland region. It did not come as a surprise to the researcher, therefore, that these structures were resurrected by ZANU PF when the need arose. Ironically, some local leaders (CEO and some councilors) had positive views about the VIDCOs and WADCOs structures, seeing them as vital to the development of communities in Bulilima: 'I believe participation in decision making in the district has been improved by local structures such as VIDCO and WADCO because these are close to the people' (CEO, Bulilima District, 22 February, 2014). Such contradictions were found to be

quite significant in the understanding of power dynamics in the area. The CEO and councillors, most of whom belonged to the ruling party, ZANU PF, could have been influenced by their political alignment. The researcher could not envisage a situation where these actors could contradict their party as the likely consequence could be one of losing their jobs.

In addition to literature (Mabhena 2010; Dekker and Kinsey, 2011 among others) group discussions also revealed that VIDCOs and WADCOs were very active prior to the signing of Zimbabwe`s Unity Accord in 1987.[50] They then became passive until about mid-2000s. This coincided with the ruling ZANU PF's, first ever loss at the polls in a nationwide referendum on a new constitution. Matyszak (2012) notes that this loss forced ZANU PF to re-strategise by re-invigorating local government structures such as VIDCOs and WADCOs so that they uphold and defend ZANU PF's ideology. Mabhena (2010) further notes that the initial establishment of these structures in Matabeleland region was political and aimed to control grassroots decisions on development issues. The dissident problem in Matabeleland region in the early 1980s needed to be contained by the government, hence the re-orientation of the VIDCO structures.[51]

VIDCOs and WADCOs demonstrate the invisible power of the state at a local level. While these structures do not seem to serve the locals on day-to-day local development issues, they are however present and active when they have to promote the interests of ZANU PF. Their direct link with the central government gives them power and makes them feared at the local level. The constitution of the two committees also raises critical issues. The VIDCO, for example, has five positions for elected village members, of which two are reserved for women and the youth. It is has developed into a norm that those two positions are taken by those linked to ZANU PF. The chair of the VIDCO is the village head, and most village

[50]The Unity Accord was signed on 22 December 1987 by Cde Joshua Nkomo, leader of the Patriotic Front ZAPU and Cde Robert Mugabe, representing ZANU PF. It resulted in the cessation of hostilities that had seen thousands of people in Matabeleland and Midland regions being killed by a military wing known as the 5th brigade (see Catholic Commission for Justice, Peace in Zimbabwe, & Legal Resources Foundation (Zimbabwe),(1997); Mashangaidze, (2005).

[51] Governor Mark Dube who noted in the Herald of 2nd September 1983 "The menace of dissidents is going to be destroyed. With the introduction of the new VIDCO system we will know each other at village level. Strangers will be required to produce letters of introduction. This will help root out robbers who steal from us and kill us".

heads in the study area were either sympathetic or outright card-carrying members of the party. As the chief village head in Bambadzi pointed out: 'how can one become a village head and lead development if they are opposed to government policies? It is impossible and such village heads should be removed from our area' (Interview with the chief village head from Bambadzi Ward, 15 May 2014).

i) The RDC

While the VIDCO and WADCO are bureaucratic technical structures, the RDC is supposed to be an autonomous organisation with democratically appointed councillors and an executive CEO. It is the main organisation mandated with the management of natural resources through its natural resources committee. The committee is composed of five elected councillors, and a council chair. Government departments such Environmental Management Agency (EMA), Forestry, Parks and Wildlife, AGRITEX, health and various security departments are ex-officio members of the committee. This implies that central government already has influence on how natural resources are managed in the communities even though the departments do not vote at this level. The natural resources committee has a conservation department which manages the CAMPFIRE project and other natural resources in Bulilima. Each village in the district has a conservation committee which constituted members from respective villages as a way of ensuring participation at various levels.

Though responsible for overall management of natural resources in the district, the RDC, through its conservation department and committees was reported to be less active (see rankings in Table 5.4). The study revealed that while the conservation committees existed in all villages under study, they were essentially ineffective in influencing access, use and control of mopane worms and woodlands or any natural resource for that matter. It was intriguing and ironic to find out during group discussions that most villagers generally did not know about these conservation committees. In Bambadzi, one village head had this to say:

> Conservation committees in our villages do not have the capacity to monitor and control use of resources within communities. The people who constitute these committees either are too scared to convene meetings to discuss issues related to natural resource use or they just do not see the purpose of such meetings. A case in point is the harvesting of mopane worms by people who come from outside our communities. These committees are expected to report these people either to us or the

> councillor but they have never done that (Village head, Mbimba Village, 22 October, 2014).

In village 29 in Dombolefu Ward, members of the conservation committee alluded to the challenges the committee faced:

> The committee lacks adequate support from local leaders such as the village heads and councillor. When the committee was formed we were told by an RDC representative that we will have powers to issue permits to those who want to extract our resources. However, the reality is that we only issue permits to people who want to collect firewood for special occasions such as funerals or weddings. Those permits are for free. The council does not permit us to issue permits for commercial purposes such as selling firewood. We have lots of firewood from mopane trees that are felled by elephants. Council reserve the right to issue such permits and we know they charge a certain amount which accrues to them yet the resources are extracted from our communities (FGD for Village Natural Resource Management Committee, Village 29 Dombolefu Ward, 14 December, 2013).

The two utterances above reveal that conservation committees lack capacity to influence decisions on natural resource use in the district. The committees do not have powers to exclude outsiders from exploiting local resources. In Makhulela for instance, several group discussions with women affirmed that mopane firewood was being exploited and carried away in truckloads by strangers. Ironically, these people always had letters of permission with an RDC or DA stamp. This was enough to discourage locals from asking too many questions.

Below is a narrative from one elderly villager from Village 29 Dombolefu Ward, which summarises how local resources continue to be exploited by people from other areas:

> Natural resources in this community belong to people who live here. However, our resources are being accessed by people from other areas and we feel powerless to stop them. People who steal our resources have the backing of powerful institutions. We believe these people are supported by the government and the RDC. For instance, there are people who come to harvest river sand and when we ask them where they got the permission they produce letters with council stamps. We are not sure whether these letters would be genuine or not. Even if we catch them without any document permitting them to extract resources and take them to the council or police, nothing is done to them because in an hour's time you see the same people moving around and threatening those who would have reported to the police. At times when we report to the police they tell us that we have to go to the council. The council usually does nothing besides telling us to go back and monitor resources ourselves. Our traditional leaders also cannot do anything because they do not have any powers to punish those

> caught illegally extracting natural resources (Interview with an elderly man in Dombolefu, 14 December, 2013).

The narrative exposes the ineptitude within the conservation committees. They are mere nominal structures. They are not known by many local people and yet are expected to work amongst them. The study also manifested some confusion on the reporting structure of the committees. For instance, the councillor of Bambadzi argued that all village conservation committees had to report to their traditional leaders while conservation committee members from Dombolefu were under instructions to report directly to the RDC. Such contradictions demonstrated lack of coordination between local leadership structures and also exposed conflicting power dynamics.

The conservation department of the RDC was found to be active in the CAMPFIRE project area. It was noted that the CAMPFIRE was well monitored. Hunting in the area was prohibited and transgressors faced a jail term. The CAMPFIRE project had rangers employed to protect wildlife from poachers. However, villagers of Makhulela and Bambadzi, the closest wards to the CAMPFIRE project area, perceived the monitoring system as anti-human in that wildlife welfare was promoted at the expense of people living adjacent to the project area. The fact that people were not allowed to kill elephants that occasionally destroyed their crops, was ample evidence that wildlife was made superior to ordinary villagers. Furthermore, an interview with a Bulilima conservation committee officer revealed that the council prioritised monitoring of wildlife at the expense of any other resource. This could have been influenced by the fact that economic returns realised through wildlife management in the CAMPFIRE project were much higher than those of any other resource (see Madzudzo and Dzingirai, 1995; Madzudzo and Hawkes, 1995). Indeed Bond and Frost (2005) reported that RDCs earned a total of US$ 20.29 million from wildlife-based activities between 1989 and 2001. According to the Bulilima CEO, CAMPFIRE funds were used to develop local infrastructure such as roads, clinics and schools. Information on the average annual income generated from CAMPFIRE was difficult to obtain as it was regarded as confidential. Local leaders in the form of village heads and councillors were also in agreement with the need to keep CAMPFIRE monitoring and conservation standards high because of the benefits realised. This was however in contrast to ordinary villagers who argued that they did not enjoy any benefits from CAMPFIRE. Cattle owners in particular argued that the CAMPFIRE project was taking away pastures for their cattle yet it benefitted a few people.

ii) The Forestry Commission

The FC, an ex-officio member of the RDC natural resource committee, was also found to play a significant role in the management of mopane woodlands in the study area. Even though most villagers ranked the department lowly in terms of visibility and influence, the study ascertained that the Commission reserved some rights to exercise decisions on mopane woodland use. It regulates forest use in all communal areas of Zimbabwe through the Communal Land Forest Produce Act of 1987. The Act gives the Commission the power to arrest those who break forest exploitation rules in communal areas. It defines forest produce as: 'all vegetation dead or alive, in a plantation, woodland or forest and any part whether alive or dead of any such vegetation including wood, bark, seed, fruit, gum, resin or sap.' The Act distinguishes major from minor forest produce. Major forest produce is defined as trees, palms and bamboos, while minor forest produce could be flowers, leaves, fruit and seed. Both are subject to a strict access and control regime. For instance, the Act gives rights to inhabitants of any communal land to exploit forest resources for their own use. They are, however, not permitted to commercialize the produce or to give it to persons who are not part of that community. The Act, though, allows for the Minister of Environment to issue permits to anyone to exploit forest resources from any communal area.

Under the Communal Land Forest Produce Act (1987) the FC permitted villagers to harvest and utilise mopane resources for domestic use. However, observations and discussions with villagers revealed that the FC lacked capacity to enforce the regulations of this Act. For instance, villagers from Dombolefu and Makhulela claimed that outsiders were frequently exploiting their firewood and river sand yet no arrests were being done. Furthermore, the entire district was serviced by one officer whose mobility was curtailed by shortage of vehicles. As such, the FC could only effectively monitor Dombolefu and other areas close to Plumtree Town where its offices are located. The study established that the Commission was generally more concerned with timber based forest products because that is where most of its revenue comes from.[52] Mopane woodland, despite its abundance in Bulilima District, is not known for commercial timber. In most cases, income from Mopane woodland is generated through selling of firewood, an activity which is not done on large commercial scales.

[52]Interview with Forestry Commission officer, Plumtree Town 16/10/2014

However, with increased frequency of power cuts in Zimbabwe[53], the value of woodland is likely to increase significantly.

5.4.4. Gender management of institutional structure

Analysis of composition of membership in natural resource management structures revealed that representation varied from one structure to another (see table 5.6).

The majority of traditional leadership positions were occupied by men with only 3 village heads out of a possible 24 being women. Two were found to be from Dombolefu Ward while 1 was from Makhulela, representing the San people. While appointment of members into traditional positions was based on lineage which favours males to females, two village heads from Dombolefu were however appointed through the instigation of the Ministry of Local Government in 2012.[54] It was rather suspicious that that these two were appointed prior to the 2013 harmonised elections in Zimbabwe. Some village heads perceived such appointments as politically motivated.[55] The two women were not traditionally linked to any lineage that once held village head positions. As such, they commanded little respect from other village heads and even community members.

The position of women in terms of leadership in institutional structures was different in Dombolefu compared to other two wards. Further research revealed that Dombolefu`s relatively recent establishment (1987) compared to the other two wards which have been in existence since the early 1950s contributed to the settlers' liberal attitude towards women's assumption of leadership positions.[56] Additionally, the council chairman pointed out that families in Dombolefu were of relatively younger generation compared to the other wards and hence were more tolerant to the idea of women in leadership positions.

[53]See reports from: Commercial Farmers Union of Zimbabwe, Zimbabwe power cuts to persist for 10 years: official, 02/12/2015; NewsDay, Power cuts no longer laughing matter, September 23, 2015; Commercial Farmers Union of Zimbabwe, Zimbabwe Electricity Supply Authority (ZESA) raises Hwange closure alarm, November 30, 2015.
[54] Interview with male village heads from Dombolefu, 22 May, 2014.
[55]This was an interview with male village heads from Dombolefu ward, 22 May, 2014. Their perception was that the ruling party wanted to ensure support from women by elevating some of them to leadership positions.
[56] Information obtained from the Bulilima Council records, 23 May, 2014.

Table 5.6 Membership in institutional structures representing three villages under study

Institutional structure		Total members	Number of men	Number of women	Comments
Traditional leadership	Village heads (Sobhukus)	24	20	3	The three women inherited positions from their husbands
	Headman	3	3	0	This position is traditionally meant for men and is inherited
	Chiefs	2	2	0	Customary law ensures that chieftainship is usually inherited by a man unless the president decides to appoint a woman.
VIDCO*		21	7	14	Women were found to be only committee members.
WADCO*		33	20	13	WADCO constitutes of chairpersons and Secretaries of all the VIDCOs hence the number of men is higher because chairpersons of all VIDCOs are men while secretaries are women.
Conservation committees in the villages		15	5	10	It was very difficult to establish the figures of village natural resource committee members. These figures are based on estimates given by village heads who agreed that women dominated these committees.
Conservation committee of the RDC		5	5	0	The Conservation committee of the RDC is comprised of five councilors who are elected from councilors in the district. All members of this committee are men. The ex-officio government departments (AGRITEX, Forest Commission, Parks and Wildlife etc.,) were all represented by men.

Source: Primary Field Data

**WADCO committees include all VIDCOs of the three wards meaning all villages in all wards are represented. VIDCO committees on the other hand have 7 members each hence the total of 21 in three villages under study.*

It must be noted however, that even though women occupied leadership positions, they were still considered weak by their male counterparts. In one of the group discussions which combined men and women, men accused women of being very soft and too accommodative to strangers who exploited their resources (FGD of combined men and women from Dombolefu Ward, 15 April 2014). Such accusations were however not substantiated because even in communities where men were in leadership positions, resources were still exploited by outsiders.

The combined number of women in all VIDCOs from the three wards was double that of men (14 to 7 see Table 5.6). At face value, it indicated significant participation of women in leadership positions. The reality on the ground was different. VIDCOs were found to be less active. In some villages, members of the VIDCO were not even aware that they were part of this committee. The study also revealed that the general public was not aware of who constituted the committee. Only VIDCO chairs[57] were found active, carrying out decisions on behalf of the VIDCO committees. Decisions made by VIDCO chairs often benefitted leaders at the top than villagers below. For instance, VIDCO chairs were found to be involved in politics, constantly encouraging other villagers to promote ZANU PF policies and programs and shun anything from opposition parties, particularly the MDC.[58]

Women's lack of representation in leadership positions resulted in men making decisions on their behalf. In all the three wards, women argued that their views in local forums were rarely considered while those 'in charge of the community' always made final decisions. Societal norms were stacked against them. To illustrate this, one woman from Mbimba Village in Bambadzi said, 'If you are a woman and you indicate intentions of challenging a man to a certain post, people look at you in an accusing manner as if you have suddenly turned into a rebellious woman' (FGD for women from Mbimba, 10 May 2014).The study further noted

[57] A VIDCO chair is a chief village head who reports to the headmen and councillor.
[58]FGD with village heads from Makhulela and Mbimba. Village heads, some of who are war veterans clearly supported government policies often arguing that there was no room for people who supported opposition parties in their villages.

that women were excluded from leadership positions in some institutional structures because of lower educational status compared to their male counterparts. A case in point was the councillor of Bambadzi who was very clear that leadership positions in his ward should be reserved for those who had at least completed O' Level. In a study on the Causes of Non-Retention of Masendu Ward Girls at Secondary School, Nxumalo *et al.* (2010) noted that rate of school drop-outs was significantly higher for girls than boys. Some of the reasons identified included financial constraints which forced families to choose to send boys to school over girls, early pregnancies which forced girls to leave school, long distances to the schools which discouraged a lot of girls and many other challenges. While education does not really translate to good leadership, the study found that it was being used as a way of discriminating against women. The councillor of Bambadzi was even blunt enough to say, 'There is nothing they can tell me with regards to leadership because they did not even finish primary level. I managed to complete O' Levels hence I am more knowledgeable than them' (Interview with Bambadzi Councilor, 22 April, 2014). Such comments by the councilor however require unpacking because of the assumption that completing O` Level studies equates to being knowledgeable. There are different types of knowledge which include local knowledge and modern scientific knowledge. Part of aim of this study was to analyse the significance of local environmental knowledge regarding natural resource management. Local environmental knowledge was conceptualized as a combination of various forms of knowledge and did not necessarily depend on one's education (see Chapter 1). As such, women's lack of formal education was not directly correlated to their lack of natural resource management knowledge. For instance, analysis in Chapter 6 reveals that women had more knowledge on the processing of mopane worms compared to men. They knew at which size mopane worms should be picked and how they should be cooked in order not to violate cultural beliefs and norms. The councilor's comment could therefore be viewed as a problem of perception. He could have been more educated than his sisters, but not more knowledgeable than them.

There were more men than women in the WADCOs. Moreover, all chairpersons of the WADCOs were found to be men while women became members of the group by virtue of being secretaries in their VIDCOs.[59] As a result, women became less represented near the apex of the leadership structure. Most important decisions were carried out at the RDC level

[59] Ward councillors are chairpersons of WADCOs and these represent the wards at RDC level.

where most leaders were male. Resolution of conflict over use and control of resources in the CAMPFIRE area was found to be negotiated at the RDC level between cattle owners, who were predominantly male, and the council. Women's rights to access thatch grass, for example, were ignored because women lacked representation at such high levels.

The RDC conservation committee which constituted five elected councillors, council chair and sector ministries was found to be composed of men only. In contrast, conservation committees selected within villages had more women than men (see Table 5.6). The village committees were found to be generally weak in influencing decisions on natural resource management. Part of the weakness could be explained by the fact that these committees were led by women who were culturally viewed as inferior to men by their society, hence less likely to make decisions that could be taken seriously.[60]

While there was generally a significant number of women participating in institutional structures, their absence from leadership positions should not be viewed literally as a sign of weakness. Rogers (1975) argues that women in communal areas are comfortable with men taking leadership positions in the public domain. Much as that is the case, this should not be interpreted as a sign of weakness but an index of conformation to social and cultural norms. It has been reported in literature that in most societies, modern or traditional, men tend to monopolise positions of authority and are more involved in formal political institutions compared to women (see for example Stephens, 1963; Rogers, 1975). Rogers further argues that analysis that considers the formal level of political processes as the most significant element misses the point because it only sees things in binary terms, that is, men as the most powerful and women powerless. The reality is that women too have power which is sourced through informal processes as already demonstrated in some sections of this chapter. The question which arises therefore is: which of these two forms of power is the most influential in natural resource management in Bulilima? It has been demonstrated in this chapter that men preferred domains external to their households yet these were domains coveted by other powerful forces. Women on the other hand preferred their households, small in nature but being domains where they exercised absolute control. Formal leadership positions held by men in all the wards were of significance in that they were decision making positions but there was general lack of autonomy among those leaders. Despite the rhetoric of

[60]Information derived from an interview with the chief village head of Makhulela, 10 February 2014.

decentralisation and devolution, the Zimbabwean government remains extremely centralised with local leaders constrained in their decision-making powers.

Discussions with women in all the wards revealed an interesting common trend concerning their perception of leadership. Age seemed to play a critical role in their view of leadership in traditional structures. While the older women saw leadership positions in traditional structures as a preserve for men, younger women viewed that as just another way of institutionalising oppression of women. They argued that since most men were moving to Bulawayo, South Africa or Botswana, women should be allowed to occupy some leadership positions. They also stated that the installation of some women as village heads signified that culture was no longer an impediment. Indeed in-depth literature search revealed that the exclusion of women from leadership positions in traditional structures had nothing to do with culture or tradition but rather colonial policies that sought to disempower women by removing them from public and political administration (see Schmidt, 1966; Makahamadze *et al*., 2013). The young women who challenged the set up in the communities were not actually violating any traditional norms even though it was highly unlikely that they had knowledge of the pre-colonial era traditional leadership set up.

5.4.5. Using the power cube framework to analyse spaces of participation

a) Findings on spaces of participation

This section used the Power Cube framework to analyse physical spaces of participation available to community members. The study considered participation as an approach that took many forms, occurring along a continuum from active consultation to complete transfer of authority and responsibility to stakeholders (Borrini-Feyerabend, 1996:17). It was also considered as an approach that could increase economic and managerial efficiency of natural resources in the following ways; allowing local populations who bear the cost of natural resource management to make decisions, rather than leave them in the hands of outsiders or unaccountable locals; reducing administrative and management transaction costs via the proximity of local participants; using local knowledge, values and aspirations in project design, implementation, management and evaluation (Murphree, 1999; Katerere & Mohamed-Katerere 1996; Matowanyika,1997; Mohamed Katerere, 1996).The study adopted Agarwal's (2001) 'typology of participation' (see Table 1.1). The Power Cube analysis

framework describes three spaces of participation as closed, invited and claimed spaces (Rabe & Kamanzi, 2012). In the IAD framework, these spaces are found in the action situation where actors and institutions interact shaping the outcome of mopane worms and woodland management.

The study identified several invited spaces of participation that influenced decision-making practices in natural resource access, use and control at household and village levels. Households, for instance, provided an action situation where various individuals, especially within the domain of the household (father, mother, and children) interacted as they accessed mopane worms and woodlands. Patterns of access varied amongst these individuals as has been discussed in the sections above. It was established that the institution of marriage made home an invited space for women (wives) who came to marry into a particular family. Both men and women concurred that women's decision making abilities at home should be limited because they were an invited group. One man had this to say: 'Women come to our homes because of marriage hence cannot make decisions when men are there. In our culture women are like children who stand to be guided by their husbands or male partners' (Interview with a man from Mbimba Village, 22 February 2015). This line of thinking also argued that the cultural naming of households after men meant that ultimate decisions were to be made by them.

Similar sentiments were expressed by a yet another man from Makhulela:

> In this homestead I make decisions because I am the father and husband. Land and cattle belong to me. My wife came here because of marriage otherwise she does not own these things. When there is a drought, I am the one who looks for money through piece jobs to buy foodstuffs. Women can't do that (Interview with an elderly man from Makhulela, 22 February, 2014).

While home could have been an invited space for women, as argued in the preceding paragraphs, it has already been noted in this study and with the support of various scholars (Stephens, 1963; Rogers, 1975 and others) that most decisions made within households were in fact influenced by women. It is perhaps understandable that men would not publicly declare that at home power lay with their women as that would be against social construction of man and his manhood. Home could indeed be an invited space for women but who dominates in that space is subject to serious debate.

At community level, 'invited spaces' for participation were found to be public forums such as village meetings. As an example, the village assembly provided an opportunity for all villagers to attend village meetings and influence decisions regarding development issues that included natural resource use and management in their villages.[61] However, such public fora rarely discussed Mopane worms or woodlands yet these worms were said to be significant to the livelihoods of local people, especially the poor:

> Even though mopane worms are very important for us as women, the last meeting we had that discussed this resource was about 4 years ago when the Rural District Council and ORAP wanted to build a market center for selling the worms. Other than that, mopane worms are never discussed even though we have complained that people from outside come and harvest without our approval (FGD with women from Makhulela 1 Village, 20 April, 2014).

> During the course of the research, the researcher managed to attend at least 11 village meetings (4 in Mbimba village, Bambadzi Ward, 3 in Village 29, Dombolefu Ward and 4 in Makhulela 1 Village, Makhulela Ward). In all of these meetings, only 3 discussed anything close to natural resource use. Most of them discussed CAMPFIRE related issues, particularly the conflict between elephants and communities. While such gatherings created spaces for local participation, the researcher observed that very few villagers, mostly men, actively participated in the discussions. Further observation and inquiry revealed that men who tended to be vocal were those owning large heads of cattle. Most meetings discussing CAMPFIRE related issues often degenerated into verbal tirades as local leaders and cattle owners argued. Institutional structures such as the RDC and sometimes Parks and Wildlife often threw their weight behind the CAMPFIRE project. It was thus evident that most of the CAMPFIRE meetings were not for village engagement but for passing on information to the villagers regarding what to do and how to behave when faced with the problem of elephants. For instance, one CAMPFIRE officer said: The problem of elephants is caused by the villagers themselves as they let their cattle with noisy bells into the CAMPFIRE area thereby disturbing the elephants. Now they are complaining and want us to shoot the elephants. That we will not do and we will not allow anyone to touch those elephants. In fact CAMPFIRE is much more important than what the villagers gain from their fields (Bulilima CAMPFIRE officer, Bulilima RDC, 26 April, 2014).

Similar sentiments were echoed by the Bulilima CEO:

> The problem of elephants is not new and is directly caused by villagers who think because they have lots of cattle then they can do as they please. They send their cattle to the CAMPFIRE area in defiance of council regulations. However, we have since decided not to entertain them anymore. We are soon going to inform them to either

[61]Village assembly comprises all members of a village over the age of 18 and is presided by a Village Head (Sub-sections 14(2) and (3) of the Traditional Leaders Act).

> respect the council decision or risk being charged (Interview with CEO Bulilima District, 26 April, 2014).

Meetings arranged by the FC official to discuss the state of Mopane woodlands in the study area were usually reduced to platforms for passing on information instead of engaging the villagers. In one of the meetings attended by the researcher in Makhulela, the Forestry Commission official threatened villagers with arrest if they were found selling firewood. Villagers argued that there was plenty of firewood as a result of elephants felling large mopane trees. The youth in particular, felt that they could exploit this resource and earn a livelihood through selling it.

Local leaders (village heads, councilors, the CEO) disputed that passive participation of villagers in public fora was a sign of disempowerment. They saw these village meetings as decision-making forums where decisions were made after a democratic discussion. Reality however was that most of the decisions were reached because the public seemed scared of publicly challenging the status quo. Having resided in the study area for over four months, the researcher observed that villagers generally exhibited some form of fear towards their local leaders. They rarely challenged these leaders for fear of victimization. One woman interviewed summed the relationship between villagers and their leaders in the following comment:

> It is very dangerous not to attend 'their' meetings because you will be singled out and accused of pushing certain political agendas. Almost everything here is linked to politics and most of our leaders are part of ZANU PF. It is best to just go to the meetings and listen than to be singled out and victimised (Woman interviewee, Mbimba Village, Bambadzi Ward, 22 April, 2014).

The above quotation is very important and deserves further analysis. ZANU PF as a political party was fingered as a hidden force. It acted as a source of power for many local leaders associated with it. It was therefore inconceivable that these local leaders could make any decisions that contradicted the objectives of ZANU PF. As such, some villagers indicated that they attended local meetings not to positively participate but to avoid victimisation. If local leaders were viewed as acting on behalf of the ruling party, then this gives credence to the point already raised in this chapter that men's perceived power in the village could be a myth. Their decisions were thus subject to approval by the party. Those that did not belong to the

party, for example MDC councilors, found it very difficult to make decisions that were respected within their communities.

The influence of ZANU-PF was further observed at the local level through an institutional structure of war veterans which had since become a *de-facto* custodian of party principles and agendas. In a group discussion with war veterans from Dombolefu, it was made plain that war veterans championed the ideology of nationalism where natural resources occurring locally could be accessed by any citizen of Zimbabwe. Such an ideology, however, had the tendency of disadvantaging the locals as powerful outsiders exploited local resources without paying for them. This was found to be the case in Dombolefu where it was reported that people extracted river sand and firewood without sanction because they were powerful individuals.

While meetings were regarded as forums of decision-making where every member of the village could air their views, the youths were usually conspicuous by their absence. They felt that attending such meetings was a waste of time because their views were rarely considered. Youths from Dombolefu for example, argued that their wish to sell mopane firewood from Mopane trees felled by elephants was met with ridicule by their councilor. Youths from Makhulela, particularly young men out of school, felt that they were always victimised by the RDC rangers who accused them of hunting in the CAMPFIRE project area. As such village forums can be considered closed spaces because they were found to be unpopular with the youths.

The analysis on decision-making practices in village forums showed that the quality of participation was generally of a low standard in Bulilima. One interesting finding was the contradiction between local leaders and local villagers with regards to what constitutes participation. Local leaders felt that being physically present in meetings was enough participation while villagers argued that involvement in what was being discussed was better participation. Decisions were thus made by a few for many. Village meetings and forums were also found to be closed spaces for the San community in Makhulela (See case study of the San community in box 6).

Box 6 Case study of the San community in Makhulela.

An analysis of the San community as a case study was found appropriate in this study because the San constitute a unique community within the predominant Kalanga/Ndebele communities. They follow a distinct way of life and respond uniquely to various institutions affecting them. The San community, now presently located on the fringes of Makhulela originates from an area known as Mabhongane/Maitengwe, presently a CAMPFIRE project area. This area is bounded by Makhulela Ward, Bambadzi Ward, Hwange National Park boundary fence, Ward 7 in Tsholotsho across the Nata (Manzamnyama) River and the Botswana/Zimbabwe border. The area was inhabited by the San from the pre-colonial era to the early colonial period (Madzudzo and Hawkes, 1995). The original San were a hunting and gathering people who did not practice any agricultural activities. This area therefore was blessed with wildlife. The same area was also used as grazing land by the Ndebele/Kalanga speaking communities. The colonial period ushered in government control and through the 1930 Land Apportionment Act, Maitengwe fell into the hands of the District Commissioner resulting in the construction of the Maitengwe Dam in the mid-1960s[62]. Part of the area was turned into productive agricultural land where wheat was grown under irrigation (ibid). Ranching and safari hunting schemes were also developed for the District Commissioner while remaining available land was reserved as grazing for Kalanga cattle. The original inhabitants of the area, the San, were never considered. The influx of people into the San's habitat resulted in the disappearance of wildlife. The San had to adapt or die. Most of them began to supplement the little meat they were still getting by working for the Ndebele/Kalanga as cattle herders. [63] The introduction of CAMPFIRE in the late 1980s resulted in the complete relocation of the San people from Mabhongane to a small village called Sibasa in Makhulela. An organisation known as the Redd-Barna was responsible for the relocation of the San people to their present location (Interview with Makhulela Councillor, 20 December 2014).

The study found that the San in Makhulela were living under extreme poverty. An interview with their village head revealed that their present location had made them

[62]Interview with Councillor of Bambadzi, Mr Nyathi (28 April, 2014).

[63]Interview with the Village Head representing the San people in Makhulela. Her name is MamareeKwenga Moyo also known as NaZangule. She does not know her age though she is thought to be around 90 years now.

more vulnerable to food insecurity compared to where they used to live before relocation: 'Since arrival in this area, we have gotten poorer and poorer. We do not have money or livestock. We now depend on work we get from the Kalangas' (Village head representing the San, *gogo* Mamaree Kwenga Moyoat, Makhulela, 19 June 2014). Relocation was meant to assimilate them to the Kalanga and Ndebele/Kalanaga communities so as to improve their lives. Even though most of the San now speak Kalanga and a bit of Ndebele, they are still regarded as outsiders. They have very limited spaces for participation hence decisions are often made for them. They rarely attend any local meetings nor do they hold their own meetings. There is therefore a serious lack of agency among the San which is exploited by other people, especially the neighbouring Ndebele/Kalanga groups.

In a group discussion with the San people, it was revealed that while the San would like to participate in local meetings convened by local leaders, they found it difficult because of the treatment they received from Kalangas or Ndebeles. Of the four local meetings I attended in Makhulela during fieldwork, I only met a group of four San men who attended one meeting after the councilor had sent people to fetch them. It was said that the women flatly refused to attend. It is thus significant to note that while local leaders in Makhulela (Councilor and other village heads, besides the one representing the San) felt that village forums were open to the San people, the San themselves felt that these forums discriminated against them. According to the San, it was impossible for them to influence any decision even those that directly affect them.

b) Quality of participation in invited spaces

The quality of participation in invited spaces tended to vary between spaces created at home and those created in the village. While men boasted of being the overall decision-makers, discussions with various groups of women from the three wards revealed that women played crucial roles in giving valuable advice to their men. At village level, the quality of participation was very low. Observations by the researcher revealed that most of the villagers, especially women, participated passively during meetings. Those villagers that seemed to participate actively had a unique characteristic that empowered them. For instance, villagers who owned large herds of cattle were usually vocal and tended to argue in unison. There

were also those villagers who were active ZANU PF members and believed that they had the right to make decisions for others. Noteworthy, and in relation to the topic of this study, very few of the village meetings really discussed mopane worms or woodlands management. The only resources that were ever discussed in all the meetings I attended related to the CAMPFIRE programme, with a focus on wildlife management. This is very central to this study as it shows the lack of importance that the authorities attached to mopane worms and woodlands, yet such resources were found to be vital for local people's livelihoods.

In two separate group discussions with village heads in Bambadzi and Makhulela, it was revealed that the reason why mopane worm management issues were rarely on the agenda in village meetings was that the outbreak of mopane worms was infrequent hence not worth discussing. This however was in contradiction to what different groups of women in different villages thought:

> In CAMPFIRE meetings we have raised the issue of people coming from outside our district to harvest mopane worms but we are always told that those issues will be dealt with in the next outbreak. When the outbreak comes nothing happens and we see the same people from as far as Bulawayo coming to camp here harvesting and finishing worms while we are in the fields…maybe the problem is that men do not see the importance of Mopane worms as much as women do (FGD with women from Mbimba Village, 23 July, 2014).

Yet another group remarked: 'We heard there was a marketing area that the council was building so we can sell our worms at a profit. Every time we raise this in a meeting we are told it will be looked into but it never does…we have since decided to keep quiet' (Discussion with women from village 29 at Dombolefu Ward, 1 August 2014).

What can be deduced from the two statements above is that while women see the value in mopane worms and would like to contribute to the management of worm production and marketing, they are finding that space closed particularly by men who, it would appear, do not see much value in the worms. It should be noted though, that decisions on the management of the resource were made even with less involvement of local men of Bulilima. As an illustration, a decision was taken in 2011 by Bulilima RDC and an unnamed NGO to construct a marketing area for mopane worms in Bulilima district without consulting the villagers who harvest and sell the worms. When asked about this project, most villagers indicated having heard of the project as a report from their village heads. It was not clear why

the RDC decided to exclude the local villagers from deciding on the processing factory. The CEO however gave an unsatisfactory response that time was of essence when donors offer to sponsor a project hence; consultations can become laborious and time consuming.

It was also learnt that village forums that discussed management of mopane woodlands were mainly called and chaired by the FC official. Such meetings were very few and far apart in Makhulela and Bambadzi (only 1 in Makhulela and 2 in Bambadzi, the entire 2014) because these wards are quite far from FC offices in Plumtree town (approximately 120km and 80km respectively). More meetings were conducted in Dombolefu. Locals reported attending more than 5 meetings in 2014. Dombolefu is about 10km from Plumtree town. The researcher had an opportunity of attending 3 meetings, 2 in Dombolefu and 1 in Bambadzi. In all the meetings, participation was of a passive nature as villagers just listened to what the FC officer was telling them. The contents of the agenda in all the meetings were the same: reminding villagers of the illegality of cutting trees and selling firewood. The researcher interpreted passive participation as some form of passive resistance. This was confirmed in a group discussion in Dombolefu:

> When people from Forestry Commission come here they threaten us with arrests and fines if we cut down mopane trees because they say it is now endangered species. But they don't seem to understand that we use this tree for many purposes here so it is inevitable that we will cut it down…. Of course it is very difficult to argue with the Forestry commission official because he uses technical scientific language that we don't understand and always mentions the law so we are afraid we might get arrested (Discussion with men from Village 29, at Dombolefu, 5 August, 2014).

A similar sentiment was expresses by one old man from Makhulela:

> I have attended 2 meetings called by Forestry Commission in the last 5 years. They were teaching us about conservation issues. They told us not to cut down trees especially big mopane trees because that was illegal. We just sat and listened because at times they were using threatening language, talking about arrests if one is found cutting down trees. But it is impossible not to cut down Mopane trees because that is the only tree we have and we need to use. As far as I know, we have our own regulatory ways of managing the tree but now the Forestry guys are telling us to follow their ways because they are from government (Interview with an elderly man in Makhulela 1 Village, 7 July, 2014).

What we learn from the two statements above is that the FC creates spaces through meetings to discuss mopane woodland management issues in Bulilima. However, it lacks the capacity

to hold such meetings more frequently. Moreover, participation in these meetings is mostly of a passive nature as the Forestry official often engages locals to lecture to them than discuss with them. The use of technical scientific language carries some form of power that scares the villagers into passive participation. The influence and power of the Forestry commission is also portrayed through legal threats to punish those who might break forestry law. While the FC has regulatory powers (through the Communal Land Forest Produce Act, 1987) officials working in Bulilima either chose to abuse these regulations or they do not understand the Act. According to the Act, inhabitants of the communal areas have the right to exploit any forest produce for their own use (Katerere *et al.*, 1999). This means that the locals in Bulilima have the right to utilise their Mopani woodland to their satisfaction. The locals are not supposed to be threatened or denied access to their mopane woodland resources.

Claimed spaces in the study were identified in the form of social groups that villagers created for themselves. Although that was the case, the study revealed that it was very difficult for local villagers to organize their own forums that excluded local leadership because of the polarized nature of the political environment in the study area and in the country in general. Self-organization for self-governance was likely to be viewed as a way of opposing established local structures which to ZANU PF could be viewed as a direct challenge to its power. It was understandable why local villagers would avoid alienating their local leaders: 'Why would we form forums different from the ones our leaders provide? We do not want people who go against what our government wants here in Makhulela. If there are people like that then they should leave this area' (focus group discussion with war veterans from Makhulela Ward, 27 July, 2014). As a ZANU-PF dominated area, the researcher could not find any apparent dissenting voices. The assumption was that they were there as indicated by an MDC councilor in Makhulela, but were afraid to come out in the open.

5.4. Summary

This chapter analysed the power dynamics that influenced decision-making processes governing the access to, use and control of, mopane worms and woodland access in the study area. The predominant finding was that resource access, use and control was gendered. Power relations should therefore be understood within the context of different gender roles performed by different actors. Men, women and the youth accessed mopane resources in places and spaces created by institutions and institutional structures operating in the study

area. The study revealed that women's spaces were not easy to identify and in most cases were located 'in–between' spaces not deeply coveted by men. Such spaces included forests around homesteads and grazing areas where women harvested mopane worms and firewood to meet their personal, household and community responsibilities. While women enjoyed resources 'in-between' spaces, they however did not have control rights over those spaces. They only had user rights allowing them to simply extract and use the resources. Men retained control rights which gave them decision-making powers. For instance, the study revealed that men controlled areas around homesteads and grazing. Men made decisions about the size of the area their homestead could privatise, hence control. In the grazing areas, they made decisions on who to exclude, and when, from utilising resources in the area. Women from the 3 villages under study argued that men tended to enforce customary laws to suit their own ulterior motives.. For example, customary laws were enforced to exclude cattle owners from other wards from grazing their cattle in the grazing areas of the communities under study. However, the same laws were relaxed when it came to mopane worm harvesting resulting in people from other areas competing for the resource with the locals.

The chapter also analysed institutional structures that influence natural resource management at local level. Several structures were identified and classified into traditional and modern structures. While the villagers perceived traditional structure as being more influential in decision making at the local level, the study found that actual decision making powers lay with the modern structures which included the VIDCO, WADCO and RDC through their conservation committee. Traditional structures used delegated powers to enforce rules. Reality on the ground revealed a multiplicity of players with various decision-making powers that operated concurrently. The RDC for instance had the mandate to ensure that resources were managed in a sustainable manner. Traditional authorities, through the Traditional Leadership Act, also had the mandate of ensuring proper use of natural resources. Government structures such as Forestry Commission also had a legal mandate to sanction use of forest resources. The study revealed that conflicts were often inevitable. The Chairman of councillors for example, accused chiefs of being ignorant of the Traditional Leaders Act which is clear on natural resource control. Chiefs' powers on natural resource use were delegated from the council. However, the Council Chair felt that some chiefs in the district acted as if they had sovereign decision powers to sanction natural resource use, even against council decisions. Decisions that related to land allocation or exclusion of some people from harvesting mopane worms for example, were said to rest with the councils not the traditional

authorities. The Council Chair cited an example where some chiefs discouraged their people from taking part in the construction of a trading area where people from the district could sell their mopane worms. The project subsequently collapsed because of lack of support. Another example of contestations and conflicts in decision making were revealed by chief village head and councillor of Makhulela. The two leaders argued during separate interviews that people who came from other areas to harvest mopane worms needed to get permission from them. The councillor argued that he had more authority to issue a permit because he had a stamp that made his permit official compared to village heads who only gave verbal consent. The chief village head argued that as traditional leaders, those in his position were in charge of what happened within their villages; hence they were the ones who should give permission to outsiders to harvest the worms.

The chapter ended by analysing spaces of participation using the Power Cube analytical frame work. The framework identifies three spaces of participation – closed, invited and claimed. The study revealed that spaces of participation for the villagers were public forums, particularly public meetings. It was in these meetings where some important decisions with regards to natural resource access, use and control were made. However, participation in public forums was found to be influenced by varying power dynamics. For instance, women tended to participate passively compared to men. This was found to be caused by fundamental social belief systems that attribute power and leadership to men, while weakening women`s confidence to contribute actively to public forums. The study also revealed power dynamics amongst men, where respect was accorded to those who had more cattle. Such men were observed to be fearless in meetings, especially when the discussion was on grazing in the CAMPFIRE area.

CHAPTER 6: THE SIGNIFICANCE OF LOCAL ENVIRONMENTAL KNOWLEDGE IN MOPANE WORMS AND WOODLANDS MANAGEMENT

6.1. Introduction

Chapter 5 analysed power relations that affected decision-making processes in access to, use and control of mopane worms and woodlands. It revealed that natural resource access in Bulilima was gendered and that any understanding of natural resource management should consider streamlining gender roles played by men and women. This chapter assesses the significance of local environmental knowledge in the management of mopane resources in the study area. It analyses the condition of this knowledge in the context of a dynamic society in which external actors have employed external scientific knowledge to justify control over decision-making processes pertaining to local natural resources. Knowledge in this study is integrated into the operation of power. For instance, this study has conceptualized power as constituting practices, techniques, and procedures that various actors engage in as they relate to one another. Such activities can be viewed as knowledge in themselves. The chapter adopts Beinart and Brown's (2013) conceptualisation of local environmental knowledge as knowledge that emphasizes pluralism in African environmental landscapes and one that is shaped by particular environmental influences and resources and by specific histories. The chapter adopted the term 'local' rather than 'indigenous' knowledge because the communities under study had been highly mobile and thus more incorporated into national or global networks. Indigenous knowledge implies communities which have been less integrated into global activities (ibid). The environmental landscape in Bulilima was found to have been shaped and transformed by various events and trajectories which included the invasion by the Ndebele and the British South African Company in the 1860s and 1890s respectively (Msindo, 2012) and migration patterns which have continued since then. The chapter thus assesses local environmental knowledge that exists among various actors and institutional structures and how this knowledge shapes power dynamics in the management of mopane worms and woodlands in the study area.

6.2. Condition of local environmental knowledge on mopane worms and woodlands.

The study discovered that local environmental knowledge influencing management of mopane worms and woodlands was interwoven into the social fabric of local people in the area. It is knowledge that has been passed from one generation to another through social activities and practices. Observations revealed that while belief systems and practices still existed in the study area, they now faced challenges from Western-science related knowledge systems. The analysis revealed that various actors or institutional structures appealed to both these knowledge systems in a bid to influence decisions on natural resource management. Levels of local environmental knowledge awareness and use were found to vary mostly by age, gender, ethnicity, occupation, education and religious beliefs. The state, on the other hand, was found to play a significant role in promoting Western aligned scientific knowledge at the expense of local environmental knowledge. Western scientific knowledge gave the state absolute power to control local resource as discussed further below.

6.2.1. Local environmental knowledge on mopane woodlands

Most of the local environmental knowledge used in the management of woodlands was generated through traditional belief systems and practices. While the study could not establish any 'sacred belief systems' associated with mopane woodlands, there were other practices which were employed to ensure that the woodland was used in a sustainable manner. For instance, there was a practice of personating big trees by naming them after local totems. While the practice was fast disappearing[64], the researcher was shown some big trees at Mbimba village named after the Mbimba totem (*izihlahla zako Mbimba: Mbimba's trees*). Illustrating this practice and its efficacy is the remark below:

> There are some big trees named after certain totems and associated with certain religious spirits more like some domestic animals. Such trees are usually left alone because people are afraid of cutting them. We do not know who gave those names but that has kept those trees alive (Interview with senior village head from Mbimba Village, 22nd of April, 2014).

A group discussion with men from Mbimba Village revealed that naming trees was also done for referral purposes:

[64] Interview with senior village head from Mbimba village.

> Our grazing area is very thick with Mopane shrubs and bushes so much that it is easy for one to get lost. We have been using big trees as referral points so that we are able to locate our cattle or refer someone to a particular point. As such people have generally tended to respect such big trees. Some of the big trees within our community are used as meeting points for traditional ceremonies such as rain seeking ceremonies (FGD with men from Mbimba Village, 22 April, 2014).

The two quotations above demonstrate that trees, especially mopane trees, because they were the dominant species, had multiple social functions. They needed to be protected through local management practices. Giving big trees names was a conservation measure that ensured respect from community members thereby minimizing chances of the trees being wantonly cut down. Headmen Mbimba of Mbimba Village noted that while the majority of people, especially those of the younger generation or immigrants, did not know why trees were given names, the mystery surrounding that practice served to protect a lot of big mopane trees in his area. He also noted that the social functions of big trees as referral points was part of local environmental knowledge which helped protect some big tress in the grazing area. One elderly man from Dombolefu gave the following quote to illustrate the importance of conserving big trees in areas where people live:

> Big trees do not only provide cool shades when it is hot but they also protect people and livestock during thunderstorms. Areas that do not have big trees are very dangerous when there is thunder because lightning goes directly to anything moving on the ground. Moreover, big mopane trees provide a good habitat for bees to settle and make honey which we enjoy a lot in this area (Interview with an elderly man from Dombolefu, 21 April, 2014).

Other local environmental knowledge practices related to management of forests involved selective harvesting techniques. To illuminate this point, discussions with a group of elderly men from Makhulela 1 and Bambadzi revealed that it was a social norm in their areas that big live trees were harvested only to construct homes or cattle pens or when there was a need to limit tree growth for one reason or another. It was noted by most villagers that the duty of enforcing such practices rested on the village heads. The senior village head from Mbimba thus noted that:

> People here know that they shouldn't just cut down big mopane trees. That knowledge is part of our social norms, our way of life. However, there are some people who defy such norms and take advantage of the fact that nothing will be done to them even if they cut big trees. Many of them are doing that though they know it is not allowed (Interview with senior village head, Mbimba Village, 24 April, 2014).

Mopane forests were found to be very important as sanctuaries for some religious spiritual ceremonies such as those related to the Manyangwa spiritual cult. As such, these forests were protected from depletion because people deeply revered them, especially those of the older generation who firmly believed in the Manyangwa spiritual cult. Young people from the three wards generally did not know much, nor were they concerned about the Manyangwa cult. They respected the forests where the ceremonies were being performed more out of fear than belief. A youth from Makhulela remarked: 'We have heard of Manyangwa spiritual cult and we are told if you get to that forest you can disappear for days just wandering up and down until you die. We have never been there so we really do not know where it is neither do we want to get there' (FGD with youths from Makhulela, 26 of April 2014).

While the youths reported that they feared what might befall them if they tempered with forests where Manyangwa ceremonies were practiced, this fear cannot be expected to last long. That most people no longer believed in traditional spiritual religion[65], and the growing trend of adopting Christianity meant that the fear of Manyangwa was likely to be eroded. There was therefore, a growing risk of mopane forests being harvested in an unsustainable manner as traditional spiritual religion that protected them became less relevant.

6.2.2. Local environmental knowledge on mopane worms

Local environmental knowledge used in the management of mopane worms was also found to be influenced by local norms and belief systems. Harvesting techniques included picking of big mature larvae either on trees or on the ground. Worms feeding high on tall trees were said to be inaccessible and thus usually left alone. The maturity of the worms was determined by the size of the worm. It was said that a mature worm could be as big as the middle finger of an average adult human being.[66] Harvesting of big mature worms ensured a prolonged period of Mopane worm availability hence it meant locals had food for a long time.[67] Knowledge of identifying the maturity of worms was not recorded anywhere in the communities. It was found to be acquired through observations as young men and women harvested with their parents or other elders. In one of the harvesting activities the researcher experienced, young girls were scolded by one old woman for picking very small worms: 'If

[65] Group discussion with village heads from Makhulela, 22 April, 2014
[66] Interview with women observed harvesting worms at Makhulela, 22 April, 2014.
[67] Interview with an elderly woman from Dombolefu, 20 April, 2014.

you pick these small worms they will all disappear and might not come (*sic* back) for years.' (Interview with an elderly woman from Dombolefu ward on the 21 April, 2014).

Based on cultural and spiritual beliefs, picking of small mopane worms could have dire consequences such as the entire resource disappearing, something which local people could not afford to countenance. However, the practicality of such knowledge could not be verified though it ensured conservation of the worms and guaranteed future outbreaks as some would escape and complete the reproduction cycle. The study also discovered that the big mature worms, especially those picked from the ground just before pupating, generally had little digested food in their guts and were said to be easier to process.

Bare hands were used to pick up most of the worms. Few collectors were observed using gloves and these were found to be people coming mostly from the city of Bulawayo and other areas outside Bulilima. Mature mopane worms have hard thorns that can damage soft hands. People from urban areas reported that they felt uncomfortable using their bare hands. In contrast, the locals did not use gloves. In any case, the study established that spiritual leaders strongly recommended the collection of worms with bare hands, as the use of gloves was regarded as one of the reasons why the worms were disappearing. It is possible that the spiritual leaders recommended use of bare hands as a conservation mechanism as technologies by their very nature can quickly exhaust a resource in no time whereas using bare hands tends to ensure that it lasts longer.

The indigenous San, as the researcher observed, seemed to prefer picking worms that were already on the ground to ones on trees. They collected enough for local trade with Kalanga and Ndebele communities. During the period of the study, few San people were seen trading directly with people from outside the district. In most cases, Kalanga and Ndebele would buy or do batter exchange with the San, meaning that the San did not benefit as much as the Kalanga and the Ndebele did. In short, the San were observed to be more resource conscious than the Kalanga and Ndebele. They ensured that there was minimal disturbance of the mopane tree. Besides picking worms on the surface, the San also dug those worms that had burrowed into the ground and pupated. Kalanga/Ndebele communities perceived this harvesting technique as barbaric. The language used to describe such activity was therefore meant to demean and discourage the San. As one woman said at a Focus Group Discussion, '*Amasili* (referring to the San people) eat disgusting things. They dig up mopane worms that

are in the ground and already changing to another form. Don't know how they eat that because it's disgusting' (FGD with women in Makhulela, 22 April, 2014).

Criticism by the Kalanga/Ndebele communities embarrassed the San communities who were forced to desist from the activity of digging up burrowing mopane worms even though it was part of their livelihood strategy. Digging up of the worms ensured that the San continued accessing mopane worms even long after they were finished on the surface and on trees. This practice by the San deserves further analysis. Unlike other people whose harvesting methods included breaking off tree branches (see Figure 6.1), the San's local environmental practice was found to be less damaging. They preferred to let the worms come down the trees and then pick them. However, because of their low status in their communities, the San's local knowledge was despised and considered archaic while that of the Ndebele/Kalanga communities was upheld.



Figure 6.1 Mpokuhle Ncube hangs from a mopane tree while harvesting Mopane worms in Bulilima (source, The Associated Press, Friday, January 25, 2013).

The processing of mopane worms was also found to be steeped in traditional conventions. The worms were degutted using bare hands, and then rinsed in water before being boiled. Boiling pots were supposed to be kept open all the time. The belief was that closing the pots would chase away the worms. Group discussions with local men, women and the youth in all villages under study revealed that this piece of knowledge was well entrenched amongst the locals. Management of mopane worms involved taking some of the worms to Manyangwa spiritual cult, for every outbreak, to thank the spirits for the worms. The belief amongst some locals was that Manyangwa played a part in ensuring the outbreak of mopane worms. Traditional leaders always led in this activity by organizing the collection of worms and selecting people to take the worms to Manyangwa. The chief village head from Mbimba pointed out that woman in particular performed the task of taking mopane worms to Manyangwa. He, however, could not give the reasons why women were always chosen.

6.2.3. The waning influence of local environmental knowledge

Much as traditional norms and beliefs played a key role in influencing knowledge on use of mopane resources, awareness and implementation, such traditional activities were found to be diminishing. In a survey conducted to gauge the level of awareness of local environmental knowledge, the study found out that there were more household heads who indicated ignorance of traditional practices regarding governance of mopane worms and woodlands in the study area (see tables 6.1 and 6.2). Traditional practices sought by the researcher included supernatural powers of religious spirits such as the Manyangwa spiritual cult. It was ironic to find out that there were more people who indicated lack of awareness of traditional practices governing mopane worm and woodland management in the 41-50 and 51 and above age groups. These are the age groups expected to have more knowledge on traditional practices than younger age groups.

Table 6.1 Awareness of traditional practices governing mopane worms by age

Age	Are you aware of any traditional practices governing mopane worms?			Total
	Non Reponses	Yes	No	
10-20			2.7%	2.7%
20-30		.9%	7.3%	8.2%
31-40		2.7%	13.6%	16.4%
41-50	.9%	8.2%	19.1%	28.2%
51 and above		13.6%	30.9%	44.5%
Total	.9%	25.5%	73.6%	100.0%

Source: Primary Field Data

Table 6.2 Awareness of traditional beliefs governing mopane woodlands use by age

Sex	Are you aware of any traditional beliefs governing Mopane woodlands?			Total
	Non Reponses	Yes	No	
10-20		-	2.9%	2.9%
20-30		-	7.7%	7.7%
31-40	1.0%	-	16.3%	17.3%
41-50	2.9%	3.8%	21.2%	27.9%
51 and above	1.9%	4.8%	37.5%	44.2%
Total	5.8%	8.7%	85.6%	100.0%

Source: Primary Field Data

Analysis of customary awareness practices by sex/gender revealed a similar trend as that of age presented in Tables 6.1 and 6.2. For instance, there were more people who indicated lack of awareness of traditional practices governing both mopane worms and woodlands than those who indicated awareness (see Tables 6.3 and 6.4).

Table 6.3 Awareness of traditional practices governing mopane worms by sex

Sex	Are you aware of any traditional practices governing mopane worms?			Total
	None responses	Yes	No	
Male	.9%	16.4%	50.0%	67.3%
Female		9.1%	23.6%	32.7%
Total	.9%	25.5%	73.6%	100.0%

Source: Primary Field Data

Table 6.4 Awareness of traditional practices governing Mopane woodlands by sex

Sex	Are you aware of any traditional functions governing mopane woodlands?			Total
	None responses	Yes	No	
Male	5.8%	4.8%	56.7%	67.3%
Female		3.8%	28.8%	32.7%
Total	5.8%	8.7%	85.6%	100.0%

Source: Primary Field Data

Perceptions on the effectiveness of local knowledge in conserving mopane resources revealed that the majority of respondents did not have much faith in that knowledge. While they highlighted that local environmental knowledge was still important in conserving mopane worms and woodlands, the Likert scale shows that there were few who gave the 'yes very much' answer to the question on the importance of local environmental knowledge about mopane woodland and worm conservation (see Tables 6.5 and 6.6). This could be an indication that the importance of local environmental knowledge is waning. The proportion of those who did not know was quite high especially in the 51 and above age group in both tables, indicating that even the elderly had doubts about the usefulness of local knowledge.

Table 6.5 Perceptions on local knowledge use and conservation of mopane worms by age

Age	Do you think local knowledge use can help conserve mopane worms?					Total
	Non responses	Yes	Yes very much	Not at all	Don't know	
10-20		2.1%			1.0%	3.1%
20-30		5.2%			3.1%	8.2%
31-40	1.0%	9.3%	2.1%	1.0%	4.1%	17.5%
41-50	1.0%	14.4%	3.1%	2.1%	8.2%	28.9%
51 and above	1.0%	13.4%	6.2%	6.2%	15.5%	42.3%
Total	3.1%	44.3%	11.3%	9.3%	32.0%	100.0%

Source: Primary Field Data

Table 6.6 Perceptions on local knowledge and conservation of mopane woodlands by age

Age	Do you think local knowledge use can help conserve mopane woodlands?					Total
	Non responses	Yes	Yes very much	Not at all	Don't know	
10-20	1.1%	2.1%				3.2%
20-30		5.3%			2.1%	7.4%
31-40	2.1%	9.6%	2.1%	1.1%	3.2%	18.1%
41-50	3.2%	12.8%	4.3%	1.1%	7.4%	28.7%
51 and above	2.1%	14.9%	3.2%	6.4%	16.0%	42.6%
Total	8.5%	44.7%	9.6%	8.5%	28.7%	100.0%

Source: Primary Field Data

While survey data portrayed a significant proportion of older citizens (41 years and above) as ignorant of traditional beliefs and practices influencing management of mopane resources, in-

depth discussions with the same group revealed different dynamics. For instance, focus group discussions showed that most adults actually knew about some traditional norms but did not want to reveal that because of their Christian beliefs. One woman from Makhulela succinctly summarized this collective view: 'Because many people are Christians now, especially women, they do not want to be associated with spirits such as Manyangwa. In most cases they will just tell you that they know about it but do not know what it means' (Woman from Makhulela in a FGD, 24 May, 2014).

The researcher further observed that most middle-aged adults did not want to be associated with the Manyangwa spiritual cult. The majority claimed to have heard of the spiritual cult but did not even know where it was. Their language and gestures showed that they did not believe in the tradition: 'We have been told that we have to participate in Manyangwa ceremonies but some of us don't believe in those traditional things. We are Christians and we believe in Jesus Christ' (FGD with women from Mbimba, 27 June, 2014). The Manyangwa spiritual cult faces a number of challenges and its influence has been greatly reduced in the district. The councilor of Bambadzi summarized the situation in the following narrative:

> People still go to Manyangwa but the practice is no longer the same as it was in the 80s and 90s. Back then people used to believe in a voice that came from Manyangwa shrine. Today we go there just for the sake of it. Some of us believe that the Manyangwa who is there is not the rightful person. We believe the man who is now there does not have the powers to do spiritual work as the former Manyangwa did. The advent of different religions, especially Christianity has also affected the belief in traditional religious spirits. Most Christians in the community do not believe in Manyangwa hence they do not partake in the practices of appeasing the 'gods'. It is now a challenge to collect contributions such as maize meal, sorghum, mopane worms and so on, to take to Manyangwa. Those who do not believe in Manyangwa do not contribute. This has resulted in some conflicts between village heads and some Christians who argue that it is against their religion to contribute to what they do not believe in. There are also cases where those who are supposed to be custodians of traditional practices are also Christians at the same time. The late Headmen Mbimba, a traditional leader who was expected to promote such traditional beliefs did not believe in them because he was a Christian. There is a well-known story from Mbimba village that the Headmen once told people who were going to Manyangwa they should make sure that rainfall that comes as a result of their rain making ceremonies should fall only in their fields because he does not believe in traditional practices (Interview with Bambadzi Ward councilor, 22 September, 2014).

This view was supported by one elderly man from Makhulela:

> We used to fear and respect Manyangwa in this area. People used to follow every directive that came from there. But things have changed a lot now. Very few of us still believe in Manyangwa. Many people, especially the young ones and those who come from other areas do not believe in the spiritual cult. It is now very difficult to arrange ceremonies because people will tell you that they are Christians or simply that they don't believe in evil spirits. The influence of Manyangwa is dying and we are now even ashamed of passing on the knowledge to our children (Interview with an elderly man from Makhulela, 22 April, 2014).

The narratives in both quotations above clearly demonstrate the growth and strength of Christian beliefs in influencing knowledge about natural resource management in the area. It was evident from the study that the influence of traditional practices was diminishing and traditional authorities who were expected to be custodians of these practices did not have considerable influence to ensure their perpetuation. In a forestry policy study of Mafungautsi Forest Reserve, traditional authorities lamented the erosion of their authority due to young people who were no longer following traditional culture owing mostly to Christianity in the form of the Seventh Day Adventist (SDA) church (Mapedza, 2007). Most youths in this study commented that while they still applied local knowledge in their use of mopane resources, they did not know much about indigenous practices. They attributed their ignorance to their parents and other elderly people who kept this knowledge to themselves instead of passing it on to them.

Other factors found to influence the increased undermining of traditional beliefs and practices included the commercialization of natural resources and the power of Western education. The Chief Executive Officer of the district noted that the return to the community of educated people – ex-teachers, nurses and soldiers – had fundamentally swayed the opinions of most communities with regard to the importance of indigenous knowledge and traditional practices. He pointed out that those with academic qualifications predominantly hold influential positions in the community. This has created an environment where Western management practices were seen as superior to local traditional ones:

> When we were growing up there used to be many big trees which had names. They were almost treated like humans. We used to have a few in our fields named after our great grandfathers. Such trees provided good shades and would host lots of Mopane worms. But they were also scary hence we did not cut them. However, with increase in the number of educated people and the influence of whites, people started cutting down those trees because they had been told that traditional religious spirits would not harm them. Such trees are almost finished in our area. What you see are these small trees now (Interview with an old man from Mbimba Village, 23 May, 2014).

In a focus group discussion with men from Mbimba Village, it emerged that local traditional knowledge related to the management of natural resources was the preserve of a few elderly people in the village. For instance, most men did not know much about indigenous knowledge associated with the use and management of mopane trees. The chief village head, who was turning 85 at the time, pointed out that the Mopane tree was used to predict rainfall, to the amazement of other men in the group. The chief village head argued that when mopane trees gave a lot of green leaves and seeds it usually portended drought.

Commercialization had resulted in a rush to collect as much worms as possible. As such, harvesters tended to violate local norms of collection and processing of the worms. For instance, some harvesters were said to be collecting larvae that had not matured and also closing their pots while cooking to ensure that the worms came to a boil quickly. Some were said to roast the worms over a bed of hot coals (process known as *ukungora*, which is a Shona practice). There was widespread belief among the local traditional leaders and even other ordinary elderly villagers that the infrequency in the outbreak of mopane worms could be partly blamed on current harvesting and processing practices. They argued that picking of immature larvae angered the 'Gods' who reacted by punishing the people for these transgressions. It must be pointed out that only some old people believed in this phenomenon, thus highlighting the fact that only a few people were still steeped in traditional knowledge and beliefs. Commercialization had also resulted in an influx of people who descended on the district every time there was an outbreak. The researcher observed that some of the harvesters broke off tree branches in their attempt to speed collection or reach worms that were high up a tree. Similar observations were also made by SAFIRE (2002) in their study of Mopane worm management in Bulilimamangwe. It was difficult to ascertain where the external harvesters were from.

6.2.4. The State's perceptions of local knowledge

Literature on post-colonial conservation posits that most developing states inherited and promoted a science driven natural resource management approach from colonial nature conservation at the expense of local knowledge driven approaches (see for example Finnemore, 1996; Singh and Houtum, 2002; Mapedza, 2007 among others). Singh and Houtum (2002) argue that scientific disciplines have continued to create scientific

knowledges that have influenced contemporary governance of natural resources in the developing world. Scientific knowledge has been identified as a source of power used by the state to control natural resource use at local levels. Foucault (1980) refers to this form of power as 'disciplinary power'. This was found to be the case in the study area where indigenous knowledge and authority were subsumed under formal state governance. An analysis of traditional governance structures revealed that they had become instruments of the state. These structures were accountable to those at the top than community members they were supposed to serve. As such, indigenous practices and local knowledge were only recognized as far as they served the interests of the state.

An illustration of the last point above is that while legislations such as Communal Land Forest Produce Act (1987) allowed for traditional authorities to control local use of natural resources, it also opened local resources to state control by giving most powers to the Minister of Environment. Under the Act, the Minister could issue permits to anyone to exploit forest resources from any communal area. This means that local traditional practices could easily be overlooked. Discussions with the locals from the three wards revealed that the issue of permits was quite prevalent in the district. They reported seeing many people from outside the district with RDC or DA permits to harvest mopane worms, firewood and river sand from local rivers. Permits were reportedly more powerful than the authority of local traditional leaders:

> People from other areas come here with permits to harvest Mopane worms. Most of these do not know our local cultures and practices. They break branches from the trees and they harvest larvae when they are immature. Some even roast the worms on open fires, a practice that is rarely done in this area (FGD with women from Dombolefu, 12 February, 2014).

The study also revealed that there were other state functionaries that indirectly contributed to the weakening of local knowledge systems. An instructive incident was an interview with war veterans from Mbimba and Makhulela Villages, during which it was reiterated that local resources exploitation should be driven by the idea of nationalism, meaning that resources should be made available to all Zimbabweans. This meant that outsiders could come into the district and harvest as much resources as they could as long as they were *bona fide* Zimbabweans. Such a discourse should be understood in the context that war veterans were seen as a powerful institution which often challenged local leadership in the area. They drew

their power and influence from having participated in the war of liberation, something which has become a prerequisite for one to earn the ruling party's respect in the country. The study revealed that they had literally become a *de facto* institution in charge of resource control as their decisions were normally final: 'We fought the liberation war so that all Zimbabweans can benefit from all natural resources in the country. As long as you are Zimbabwean from any corner of the country you can harvest mopane worms in Bulilima' (FGD with war veterans from Makhulela, 18 April 2014). The fact that outsiders could exploit local resources in an unsustainable manner but do face any form of punishment demonstrated the weakness of local institutions, and by extension, the weakness of local knowledge systems.

The study also found that situating natural resource management in the domains of rural district councils (RDC) and technical institutions such as Forestry Commission marginalized non-western knowledge systems. This observation is supported by DuBois (1991) who argues that quite often in such situations 'other knowledges' are rendered suspect, discredited, excluded, and 'disqualified'. For instance, the Forestry Commission officer of Bulilima district highlighted that the Commission was closely monitoring the cutting down of the Mopane tree which had become endangered. This, however, was in contrast to local practices which encouraged managing the tree through pruning and removal especially in grazing areas because it had grown too thick and was thus hindering the growth of pastures. The commission either failed to see or overlooked the local people's priorities. Pastures were preferred to thick Mopane forests because of the importance given to livestock in the district:

> The forest in the grazing area is too thick and we wish most of those mopane trees could be cut so that grasses can grow. We are however afraid of doing so because the forestry people can arrest us. Even our local leaders are not saying anything because they are saying they are waiting for authority from the offices (Focus group discussion with villagers from Mbimba Village, 11 February, 2014).

In this context, the FC provided expertise knowledge that could not be questioned by the locals. According to the FC, cutting down mopane trees in the grazing area would likely result in degradation of grazing areas through soil erosion. Such scientific facts were seen as ultimate truths and thus had the tendency of scaring the local leaders into prohibiting any cutting down of Mopane trees. Moreover, the scientific knowledge had the support of statutory powers held by the Commission hence any contravention could result in prosecution. This brings in other powerful state institution such as the police and the judiciary

that enforce state regulations. As such, scientific knowledge as given by technical institutions such as the FC, further empowered the state to control structures at a local level. As already stated in Chapter 4 of this thesis, Zimbabwe, like other former colonized countries, inherited some colonial policies that sought to disempower traditional leadership by trivializing local indigenous knowledge while valorizing scientific knowledge (see also Chanock, 1991; Mamdani, 1996; Finnemore, 1996; Singh and Houtum, 2002; Mapedza, 2007). The state thus became powerful and could extend its control to the lowest structures. The same can be said to be happening in the post-colonial Zimbabwe where despite the rhetoric of decentralisation, the state is still much centralised. It is necessary however, to point out that though the FC provided expert knowledge on the use of mopane woodlands, this knowledge did not differ much to what the locals already knew. To this end, locals were discouraged from cutting down big trees because such trees were associated with spiritual beliefs regarding rainfall and lightning. The objective was the same as that of the FC – to conserve big trees.

The interplay between the 'exercise of power' and the production of knowledge, results in continual expansion of both sources of power and knowledge, resulting in 'disciplinary power' (Foucault, 1980). While Foucault's statement holds water in this study in that the government, through its various structures such as the FC and AGRITEX, constantly produced scientific knowledge with absolute truths and powers, traditional authorities still played a key role in controlling the lives of the locals through local and indigenous knowledge. Notwithstanding that Zimbabwe has gone through 'institutional engineering' episodes during the colonial and post-colonial times, co-opting or distorting the presence of traditional authority, the traditional institution has survived the onslaught (Chigwata, 2015). Villagers, for example, reported that the most visible institutional structure was the traditional institution in the form of village heads. As such, while the study established that the state had entrenched its power through scientific knowledge, it also ascertained that village heads still commanded respect among the multitude of villagers meaning that local environmental knowledge still played a big role in the lives of the villagers.

The study also revealed that the government sought to control local knowledge by interfering with the functioning of spiritual cults such as Manyangwa cult. A case in point is that some traditional leaders from the three wards argued that the religious institution of the Manyangwa cult had been weakened by government's policy of putting the custodianship of the cult under local chiefs:

> There is a lot of confusion with regards to ownership of the Manyangwa spiritual cult. The government confuses chieftaincy with knowledge of religious shrines. Chiefs now believe they can give advice on Manyangwa spiritual cult yet they know nothing about spiritual religion. Traditionally, spiritual cults advised chiefs and generally influenced beliefs and practices. It was never the preserve of chiefs to control shrines. There were always people who were religious leaders who had the powers believed by the communities (FGD with village heads at Dombolefu, 12 February, 2014).

The CEO of Bulilima District weighed in by arguing that the government seemed to have prioritized chiefs at the expense of spiritual leaders who were the owners of the shrines. The ultimate consequence of disempowering spiritual leaders was the weakening of traditional practices and beliefs, consequently weakening local traditional knowledge. Spiritual religious cults represent autonomous institutions independent of government influence. Traditionally, they have been powerful institutions influencing society's opinions and knowledge but, 'Today you find a religious leader consulting a chief as is the case with Manyangwa. This never used to happen. Chiefs consulted religious leaders who had the knowledge and authority on religious matters' (Interview with Bulilima CEO, 12 February, 2014).

6.3. Summary

This chapter analysed how local knowledge influences the management of mopane worm and woodland use in the study area. Local knowledge systems accommodated various knowledges used at local level. The analysis revealed that some of the knowledge systems used were of an indigenous nature emanating from spiritual belief systems while some were developed as a result of social interactions in the area. Predominant findings were that customary laws, traditional beliefs and practices which generated indigenous knowledge systems, were still in existence, though there was no longer any uniformity in their following. Traditional leaders pointed out several factors that played key roles in the weakening of traditional beliefs. They highlighted the growth of different religious groups where Christians for example argued against and contested sacred practices of locals. Discussions on the Manyangwa cult revealed that a growing number of young to middle-aged people either did not know about it or did not believe in it at all. Most of the people in this group mentioned their Christian beliefs as being against partaking or believing in the Manyangwa spiritual religion.

The movement of people, outsiders coming into the district to harvest worms or locals moving in and out of the district as a result of migration to and from neighbouring countries like South Africa and Botswana, was also mentioned as a significant factor that had affected traditional belief systems. Outsiders coming into the district were said to be breaking traditional norms of natural resource use because of their ethnicity. Group discussions with women revealed that processing of mopane worms through roasting over an open fire, a process known as *ukungora* in Shona, was foreign to them and they attributed the infrequency of mopane worm outbreak to the activity.

The analysis further revealed that local knowledge competed with Western scientific knowledge in the management of natural resources. The Forestry Commission, for example, used scientific knowledge to explain the dangers in cutting down of mopane trees. The Rural District Council also drew from Western scientific narratives of conservation in the development of the CAMPFIRE project. Such knowledge was accepted as undisputed facts hence anyone going against it faced prosecution. It became more dominant than local knowledge. As such, through technical institutions such as FC and other state bureaucracies such as the RDC, the state was able to control natural resource use at lower levels. It is necessary though, to note that local knowledge was still recognised by the state albeit as a strategy to ensure that it (state) gains total control of the people. For instance the state through various Acts such as the Traditional Leaders Act or the RDC Act talks of the need to respect local traditions and in some cases gives local leaders some powers to sanction use of natural resources. However, this study revealed that this was just a means to an end for the state since it still retained ultimate control. Promotion of traditional leaders through the Traditional Leaders Act emerged as nothing more than a way of gaining approval among local people. Nygren (1999) makes the same conclusion that there are some development agents in developing states who paid lip service to local knowledge in order to achieve their goals.

The idea of Western scientific knowledge creating hegemonic power over local knowledge has been criticized by a number of scholars (see Nygren, 1999; Scoones, 1996; Escobar, 1995 and others). Western knowledge has been criticised for its marginalisation and disqualification of non-Western knowledge systems yet the complexities of reality, the multiple perspectives of people involved and the contextualisation of knowledge in time and space requires that local knowledge plays a significant role (Escobar, 1995; Briggs, 2005).

CHAPTER 7: DISCUSSION AND CONCLUSION

7.1. Introduction

In chapters 4-6, the empirical results from the study area have been presented in light of the research questions outlined in Chapter 1, following the theoretical and methodological

perspectives presented in Chapters 2 and 3. This chapter is dedicated to discussing the general results in view of the theoretical arguments and approaches advanced for the study of power dynamics and local knowledge in the management of mopane worms and woodlands. Mopane resources are important sources of livelihood in Southern Africa as demonstrated in much of the literature used in this study. The thesis examined the events that affected natural resource management in Zimbabwe in general and Bulilima in particular, during the pre-colonial, colonial and post-colonial eras. This contextualization was critical as it laid ground for understanding contemporary power and knowledge dynamics in mopane worm and woodland management in Bulilima district. The core of the thesis was thus to determine power configurations and assess the nature and significance of local knowledge used in the management of mopane worms and woodlands. In addition, the study explored the role of women in resource management institutional structures and decision-making processes. Emphasis was laid on gendered spaces and places associated with mopane worms and mopane woodland collection. The study adopted several complementary analytical frameworks for studying the power and knowledge nexus and how these influence general decision-making processes in natural resource access. This chapter also reflects on the methodological and theoretical frameworks adopted for the study.

Sources of livelihoods in Bulilima district range from livestock rearing – mopane worm harvesting, collection of woodland products such as mopane timber for construction, poles, firewood and thatch grass – to crop production. This study has demonstrated how access to, and control over, these resources was mediated by the power/knowledge nexus embedded in the political and social life of the area. The study focused on Bambadzi, Makhulela and Dombolefu wards after recommendations from the Natural Resources Department of Bulilima District indicated that the three wards experienced higher mopane worm outbreaks and had thicker mopane woodland cover compared to other wards. Location of the three wards is geographically unique in that Dombolefu is close to Plumtree Town, approximately 10km; Bambadzi is approximately halfway between Dombolefu and Makhulela, while Makhulela is the furthest and is unique in that it has San communities which provided a different dimension on natural resource access, use and control. The researcher had therefore hoped that differences in geographical location would result in varying dynamics in power relations and local knowledge in each ward. However, fieldwork revealed similar characteristics in terms of social set up, power dynamics and the local knowledge generated and used. To illustrate, while Dombolefu's close proximity to Plumtree Town resulted in

high frequency of interaction with institutions such as NGOs, government and quasi government departments, such as the Forestry Commission and the Rural District Council, decision making patterns with regards to Mopane worms and woodlands access tended to be similar to other wards. Furthermore, its proximity to law enforcement institutions from Plumtree Town did not protect its natural resources from being exploited by outsiders. The villagers reported that resources such as river sand and firewood were being extracted by external people and the security agents were well aware of that. Bambadzi and Makhulela also faced similar challenges indicating that distance from Plumtree Town was not a deterrent factor to resource exploitation. There were also similarities in the role played by traditional authorities in natural resource management.

While the San people were only found in Makhulela Ward, their existence did not alter natural resource management patterns. The only difference is that the San people seemed to operate outside Ndebele/Kalanga social system and did not usually conform to the prevailing rules and regulations. For instance while there were restrictions on Ndebele/Kalanga speaking people from entering the CAMPFIRE programme area, the San seemed to transcend such restrictions. One of the reasons could be that the San did minimal damage to the natural environment compared to the Ndebele/Kalanga communities. The similarities in the nature in which institutions, institutional structures and individual actors affected power dynamics and local knowledge in all the three wards point to the fact that ward boundaries do not really mean much in terms of social fabric of the people of Bulilima.

7.2. Reflections on power dynamics in natural resource governance

Chapter 4 proffered a detailed conceptualization of Zimbabwe`s natural resource management in history. This conceptualization was critical to this thesis because it laid a foundation for situating contemporary patterns of access to, control and use of natural resources within a deeper historical perspective as is typical of other studies such as Berry (1989), McGregor (1995), Mandondo (2000a) and many others. Natural resource governance was considered within the framework of power and knowledge and how these shaped a community's access to, control and use of natural resources. Chapter 5 provided an analysis of power relations as they affected mopane worms and woodland use in the study area. Findings from the study revealed that contemporary natural governance systems could be

better appreciated when contextualized within historical trajectories of natural resource governance in Zimbabwe. It is well documented in literature (see Matowanyika, 1991; Murombedzi, 2003; Mapedza, 2007, Kwashirai, 2009; 2012) that pre-colonial natural resource governance structures that largely relied on traditional religious systems, influencing knowledge creation and decision-making practices on natural resource access, use and control, were dismantled during the colonial era. The colonial state centralized power by developing governance systems that were more accountable to it than to the people they purported to serve. The post-colonial government, while managing to de-racialise natural resource use in the communities, has however been implicit in the perpetuation of central state control of natural resource governance through a local governance system that is top-down and a traditional system designed to implement decisions that suit the central state.

A discussion on contemporary power dynamics influencing post-colonial natural resource governance in Zimbabwe and, indeed, other developing states, will be far from complete if not contextualized within the framework of decentralization policies which have influenced governance reforms since the early 1980s. There is abundant literature on how developing states sought to redress colonial governance systems through reforms that were intended to transfer management responsibilities and powers from the central government to a variety of local institutions (see Fisher, 1991; World Bank, 2000; Mandondo, 2000a; Ribot, 2003; Meynen and Doornbos, 2004; Mfune, 2013). Such reforms were driven by the belief that local governments were the best institutions at promoting broad-based participation in local public decision-making. Decisions that reflect local needs were seen as a vehicle towards ensuring equitable, efficient, accountable and participatory governance that would give marginalised groups greater access to power and resources (see Anderson and Ostrom, 2007; Larson *et al.*, 2010). In Zimbabwe, the Prime Minister`s directive, already discussed in the previous chapters, gave peasant communities a system of representation in the process of local planning (Mandondo, 2000a). Such reforms meant that natural resource management systems also had to be decentralised to lower institutions by transferring natural resource decision-making powers to them, hence the birth and growth of Community Based Natural Resource Management (CBNRM). Such a move was envisaged as a fulcrum for democratic change (Ribot, 2003).

Despite rhetoric implying decentralised structures and merits of decentralised natural resource management in Zimbabwe and other developing states, scant attention has been

given to the fact that formal and systematic transfer of entrustments may have little to do with where influence and power lie at community level (Nemarundwe, 2004). This thesis thus contributes to the closing of a knowledge lacuna by focusing on power dynamics amongst actors and institutions where entrustments have been decentralized as well.

Findings from Bulilima revealed that there was, indeed, a huge gap between decentralization as a theory and what was actually decentralised. For instance, insignificant discretionary powers were found to be transferred to local authorities. Most of the decision-making powers were centralized around central government structures such as the RDC, quasi-government departments such as the Forestry Commission and local government structures such as VIDCO and WADCO. While several scholars have demonstrated that many governments in developing countries rarely devolve powers to local democratic institutions in the practical sense (see Ribot, 2003; Mfune, 2013 among others), Zimbabwe's situation is even more intriguing in that decentralization of natural resource management powers is determined by prevailing political will.

The Bulilima RDC, mandated by the state to control natural resource access and use, is basically a bureaucratic state institution with elected councilors sympathetic to the ruling government. The study revealed that councilors were the most powerful actors at the local level in the study area. While this might ideally seem appropriate for ensuring that there is democratic governance of resources as councilors are democratically elected entities, reality on the ground was different. Of the 19 elected councilors, 13 were from ZANU PF while only 6 were from the opposition (divided between MDCT, MDC and ZAPU). This makes it easy for the central government to influence decisions in council forums since its councilors constitute the majority. In most council meetings that the researcher attended at Bulilima RDC offices, ZANU PF councilors always seemed to rubber stamp items that came from the central government without really giving them much scrutiny. There seemed to be some element of fear to oppose government directives, especially amongst ZANU PF councilors. Even the language they used implied 'political correctness'. As such, even though they were democratically elected, they seemed too eager to please their party rather than be accountable to the people they served. Various natural resource management committees operating within villages were found to be either too weak to make any meaningful decisions or made decisions that suited the council than the locals within the villages. The RDC itself was found to be ineffective in enforcing by-laws for the management of natural resources. For instance,

the council chair highlighted that a by-law enacted by the RDC to prevent outsiders taking mopane worms out of the district had not been enforced. Some scholars have concluded that most RDC by-laws, although well-articulated at council level, lack knowledge and enforcement will in the communal areas (see Nemarundwe, 2004).

The CAMPFIRE project, a classic example of a CBNRM programme in Bulilima, demonstrates a case where community participation in natural resource management is very low. Field results indicate that the RDC had failed to devolve proprietorship to lower levels in the bureaucratic hierarchy because of financial benefits associated with CAMPFIRE (see for example Madzudzo and Dzingai, 1995; Murphree, 1990; 1993). Communities, on the other hand, had to endure the dangers of wildlife. Elephants in particular were a problem because they invaded fields and destroyed crops yet the CAMPFIRE law prohibited anyone from harming them. Communities were not involved in decisions on how financial resources should be dispersed. Such decisions were usually made by the council and in the council offices where ordinary communities were less represented. This has alienated the project from the locals who see it as yet another government programme than a CBNRM programme (Campbell *et al*, 2001).

As such, conflicts arose as cattle owners, who happened to be in the majority in Bulilima communities, argued that their cattle should be allowed to graze in the CAMPFIRE area. Such conflicts resulted in some community members getting arrested because the RDC, which ran the project, had legal authority. Councilors, who were elected by the people to represent them, were found to be aligning with the council, a classic case of them being accountable to other bodies which were not part of the local communities. This left local communities without any accountable forms of representation, a disempowering process in itself (Mandondo, 2000a).

Discretionary powers over natural resource use in Bulilima were thus found to be centralized around the RDC, an unaccountable local body. The RDC claimed ownership of land and trees under its jurisdiction through the Communal Lands Act (1982) and the Forest Produce Act (1987) (Nemarundwe, 2004). The 1988 RDCs Act further decentralised natural resource management authority to RDCs to enact by-laws for management of natural resources under their jurisdiction. Mandondo (2000a), Matondi (2001), Ribot (2003) and other scholars of decentralization have noted that this tendency of over-centralization of power and decision-

making through regulatory frameworks such as the Acts mentioned above is not peculiar to Zimbabwe. It also happens in other developing countries such as Zambia (Mfune, 2013), West African states (Ribot, 2003) and even Asian countries such as India (see Poffenberger and McGean, 1996; Sinha *et al*., 1997).

In Bulilima and, indeed, other districts in Zimbabwe, most key development decisions were made in the RDDC where the language used was alienating and visions of lower constituencies were often disregarded in favor of elite visions (also noted by Mandondo, 2000a). Being a powerful arm of the council and presided over by the District Administrator, a government appointee, while also consisting of district heads of the government ministries, chairpersons of RDCs, other committees and district heads of national security organs, the RDDC was accountable more to the central government than to local communities. Mandondo (2001) argued that the way this committee was constituted was such that it operated through central government directives and as such sidelined community plans and visions. The functioning of RDCs in Zimbabwe has been likened to the Panchayats of India (Campbell *et al*., 2001). Panchayats are local government structures which failed in their mandate of representing the interests of local communities. In fact they are said to have sought control of local resources hence their rejection by the local people (Fisher, 1995).

The study found that local government administrative structures such as the VIDCO and WADCO were institutions used by the central government to ensure that it had total control at the lowest levels. While they were supposed to be democratically elected entities, with candidates chosen from the community, reality on the ground however was that ZANU PF had a significant influence on who was chosen to stand for such elections. Some villagers who requested anonymity pointed out that the councilors politically influenced the nomination of candidates by using language that alienated those opposed to ZANU PF. For instance, in Bambadzi, villagers were told to vote for people who appreciated central government policies, implying that people should vote for those who supported ZANU PF. While these two institutions have a legal mandate, their lack of legitimacy and ability to enforce natural resource management rules and regulations made them rather invisible to the communities. Their invisibility did not imply lack of influence. The study revealed that the state often used these institutions to ensure that its programmes were accepted by the locals. To this end, it was mentioned by various groups in the study areas that VIDCOs and WADCOs became very active towards election time. Because their roles were not clearly

spelt out, they were vulnerable to abuse by government structures. In her study of Chivi District in Zimbabwe, Nemarundwe (2004) concluded that the role of VIDCO in woodland resource management was very obscure and village heads had a better relationship with communities compared to the VIDCOs. The implications for such an arrangement is that villagers remain disempowered since the lowest democratic institutions either do not know their roles or do not have enough autonomy to exercise their discretionary powers.

While conflicts between traditional structures and locally elected democratic structures have been well documented by several authors (Mukamuri, 1995, Mamdani, 1996, Mandondo, 2000a; Nemarundwe, 2004; Kwashirai, 2009) it is worth noting that such conflicts play into the hands of the central government. It is the state that sets unclear jurisdictions which result in duplication of duties especially between VIDCOs, WADCOs and traditional authorities. For instance, VIDCO chairs in some of the villages that this study focused on argued that people coming from outside to harvest mopane worms should get permission from them. The same VIDCO chairs also claimed authority with regards to enforcing fines on people who cut down big Mopane trees. Village heads also claimed authority on the same matter. The study found that local people continued to give more allegiance to traditional authorities than VIDCO and WADCO structures. It is worth noting that while the VIDCO and WADCO structures were accepted in other regions of Zimbabwe; in Matabeleland the locals viewed the structures with suspicion because they smacked of being instruments for exercising party political power in the first place. Some scholars regarded the formation of VIDCOs as a ZANU PF mechanism for politically and socially controlling Matabeleland (Stoneman and Cliffe, 1989; Mabhena, 2014). Mabhena (2014) further adds that the establishment of VIDCOs in Matabeleland involved political re-orientation of VIDCO members who were expected to be loyal to the state and the party. It is not surprising therefore why many locals developed negative attitudes towards both VIDCO and WADCO structures considering the fact that many of them supported PF ZAPU, a direct rival of the then ZANU.

Other quasi-government departments identified as having an influence on natural resource management in the study area included the Forestry Commission and AGRITEX. The Forestry Commission in particular acted as an overseer of how local communities utilized mopane woodlands. While the Communal Land Forest Produce Act (1987) gives rights to inhabitants of any communal land to exploit forest resources for their own use, it however does not permit commercialization of the produce or to give it to persons who are not part of that community. Moreover, the Act allows for the direct involvement of the central

government with a provision for the Minister of environment to issue permits to anyone to exploit forest resources from any communal area. This provision disempowers local democratic institutions such as the council. Similar findings on the state's failure to devolve adequate discretionary powers to lower democratic bodies have been documented for Zambia (Mfune, 2013) and other West African countries (Meynen and Doornbos, 2004). In Zambia for instance, the Parliamentary Committee on local governance noted that:

> ... despite decentralisation being an initiative of the government, there is not enough political will to implement it. Your committee is of the view that if government has difficulties implementing the national decentralisation policy, they should provide another policy direction instead of leaving the local government system in its current state... (Zambia National Assembly, 2008:2 in Mfune, 2013).

While the Forest Commission could also issue commercial permits, the bureaucratic nature and cost of acquiring such permits tended to deter many Bulilima locals. In addition, decisions to issue permits were found to have been polarized by the prevailing political situation in the country. Discussions with locals revealed that outsiders who came to exploit firewood resources always boasted of their links with the ruling ZANU PF party. The ruling party's insistence on the ideology of nationalising natural resources had a detrimental effect on local people's access to local natural resources. For instance, a group of war veterans interviewed in Bambadzi and Makhulela insisted that every Zimbabwean should have access to mopane worms and woodlands in the district. Similar sentiments were expressed by some councilors indicating their tendency to serve their master (ZANU PF) at the expense of their people. As such, outsiders, who were well connected to authorities, easily got permits to extract local resources (Campbell *et al*., 2001).

Various studies (see Ribot, 2003; Bazaara, 2002 and others) noted that many commercial decisions that have been centralized by a number of developing states were more political rather than technical. In Bulilima, for instance, the study revealed that issuing of permits to commercialise mopane firewood was political. ZANU PF councilors made it clear that those with divergent views from the ruling party should not be allowed to benefit from local resources. It seemed the local authority would rather have outsiders exploiting local resources as long as they were sympathetic to the ruling party. This study demonstrated in Chapter 5 that outsiders had been accessing Mopane woodlands from Dombolefu and Makhulela wards for commercial purposes while locals could only use the resource for domestic purposes.

It emerged in this study that traditional institutions had also been used to legitimize state agendas, further weakening local people's control of their own natural resources. In Bulilima and indeed in Zimbabwe as a whole, there is clear state interference with the functioning of traditional institutions. The functions of chiefs for example are not so different to their colonial function. The fact that the president appoints chiefs creates a patronage scenario where chiefs become accountable to the president than their people. The same goes for headmen who are appointed by the Minister of Local Government and village heads appointed by chiefs. This arrangement enables the state to have total control of the traditional institutions, hence control of local people. According to the Catholic Commission for Justice and Peace in Zimbabwe (CCJPZ) (2013), it was common practice to see war veterans working closely with chiefs, headmen and village heads to threaten those who were opposed to ZANU PF.

Through the Traditional Leaders Act, traditional leaders now have more power and influence in their communities. While all land belongs to the state, chiefs and village heads are allowed, through delegated privileges (Ribot, 2003), to informally control the distribution and use of land and its resources ensuring that communities stay loyal to them (CCJPZ, 2013). The problem with this form of arrangement is that privileges are open to state abuse as it often gives and withdraws them. This explains why traditional authorities in Zimbabwe merely act for those who delegate authority, mainly the RDC and the state. According to Ribot (2003) they become subjects to the higher authorities and have little discretion of their own. For instance, the Traditional Leaders Act empowers the traditional leaders to enforce rules and exact fines which however accrue to the RDC. Mandondo (2000a) has argued that there has not been much change in the way the state treats traditional authorities in the colonial and post-colonial Zimbabwean state. In both eras, traditional authorities have been used to entrench central governments' interests while disempowering the locals.

The study also revealed that the state had managed to infiltrate and dilute the influence of spiritual religious institutions, traditionally very influential in natural resource governance. It has argued and demonstrated that the transferring of the Manyangwa spiritual cult's management to the chiefs severely weakened it. Spiritual religious cults had their own spiritual leaders who advised chiefs and not the other way round. The influence of chiefs, who are ignorant of spiritual religious issues for that matter, has resulted in conflicts over the

leadership of the Manyangwa cult as chiefs have their own leader whom they want to install even though the Bulilima communities dispute the legitimacy of that person.[68] It is important to note, however, that even though traditional institutions have been weakened, a range of controls linked to tradition still exist. For example, there is still more compliance with cultural norms and beliefs than formal institutions (Campbell *et al*., 2001). While a significant number of women interviewed indicated that they were Christians, the same women also highlighted that they knew about the existence of the Manyangwa spiritual cult and still complied with some of the traditional norms.

Some scholars (see Mandondo, 2000a; Ribot, 2003 and others) note that central governments in developing countries support customary authorities for selfish ends. Customary authorities are seen as vote banks for national elections (Ribot, 2003) while they are also easier to integrate into patronage as they are appointed directly through government linked structures, in the case of Zimbabwe. The discussion above has centered on institutional power dynamics affecting Mopane worm and woodland management in Bulilima. The dynamics of power were also analysed amongst and between actors involved in natural resource use in the study area.

7.2.1. Reflections on actor power, gender, spaces and places in mopane worm and woodland management

The analysis of gendered spaces and places revealed complex internal differentiations within the communities of Bulilima. The study found out that there were huge differences among community members in the way they influenced decisions in natural resource use and access. Community members were found not to be as homogenous as the term would suggest. Indeed, the homogeneity of communities has been questioned by various scholars (Agrawal and Gibson, 1999; Nemarundwe, 2001; 2005), for example. Agrawal and Gibson (1999:63) noted that the conception of 'community' as a unified organic whole, fails to attend to differences within communities and these differences affect resource management outcomes. Apart from the gendered nature of the community in Bulilima, there were other attributes that differentiated these members and thus affected their access, use and control of resources in the study area. For instance, the community of Makhulela had multiple ethnic groups:

[68] Interview with Bulilima CEO

Kalanga, Ndebele and the San. The Kalanga/Ndebele groups are traditionally farmers and cattle herders while the San are hunter-gatherers. This difference has a significant impact on who controls what resources. The study found that generally the Kalanga/Ndebele communities were more concerned about grazing areas and cattle while the San wished they could be allowed to go back to the forest where they could easily access wildlife and other natural resources. Another significant attribute between these groups was that the population of the San was very low and according to the RDC statistical documents, households were less than one hundred. As such, it was clear that in the absence of strong democratic institutions, the San were always going to be at a disadvantage when it came to formal decision-making processes.

The study therefore revealed that spaces created in the formal structures for the San people were very few. In fact, they were not represented in any formal structure in the district. This meant that crucial decisions were passed on their behalf. For instance, they had no say in their re-location from the current CAMPFIRE project area to where they were at the moment of carrying out this study. They were given a flimsy explanation that they had to be integrated into a 'normal' social system, a polite way of saying they needed to integrate into the Ndebele/Kalanga way of life. Needless to say that has failed so far and has further alienated the San people from other ethnic groups which regard them as an inferior group.

Spaces for participation in public forums were limited for the San people mainly because of the stereotype that they are inferior to other ethnic groups. They lacked representation in formal structures yet they were still considered part of the Makhulela community – the 'other' but within. This, however, does not imply that the San are a hopeless group. They have remained united in their resistance from being integrated into Khalanga/Ndebele communities and that has caught the attention of the authorities. For instance, the CEO of Bulilima lamented the impact of some of the development initiatives imposed on the San arguing that they had instead worsened the plight of the San. NGOs, in particular, have been accused of imposing development programs that are not in sync with the San people's way of life. They have also remained resolute in their demand to be returned to Mabhongwane Game Park, where they originally came from. The study also revealed that the San, unlike other ethnic groups, were prepared to walk long distances to access resources such as wildlife and mopane worms. Their lifestyle allowed them to camp in the forest for periods of up to two months before they could return home. Such strategies enable them to exploit resources

in places that are seemingly inaccessible to other groups. The San also highlighted that their harvesting of mopane worms involved the digging up of those that would have burrowed into the ground. The Khalanga/Ndebele groups expressed disgust at such practices.

Deficiencies in the concept of community as a homogenous entity can also be exposed by reflecting on the diversity within the Khalanga/Ndebele groups. Attributes such as sex, class, age and wealth played a role in an individual's ability to influence decisions in public forums. The same attributes thus influenced access, use and control of natural resources in the study area. Wealthy cattle owners tended to have more influence on public decisions that impacted natural resource use compared to those with few or no cattle at all. While mopane worms and to a certain extent mopane woodlands were a major source of livelihood for the poor, wealthy cattle owners did not put much emphasis on these resources. They were more concerned with grazing land. Hence, they would ensure that institutions that excluded other people from grazing their cattle on their land were enforced. On the other hand, institutions that are meant to guard against outsiders from competing with locals in harvesting mopane worms and woodland were weak and rarely enforced. The less wealthy suffered from the double tragedy of being poor powerless to influence institutions that could protect local resources they depended on.

When faced with more powerful institutions such as the RDC, some cattle owners realized that they stood to gain a lot when they appealed to ZANU PF organs for support. In their ongoing struggle to access grazing in the CAMPFIRE project area, they sometimes used language and text synonymous with the ruling party rhetoric. For example, the researcher overhead this utterance:

> Raising cattle is part of indigenization policy so they should be allowed to graze their animals in areas with good pastures such as the CAMPFIRE area. Some we heard arguing that: CAMPFIRE project is there to benefit a few people who are connected to these white people who come to hunt. They must be MDC people because ZANU PF would not prioritise whites over blacks (Focus group discussions with cattle owners from Makhulela, 22 August, 2014).

There are times when they appealed to their member of parliament (MP) who happened to be from ZANU PF party. The MP used his power to convince RDC officials to allow some community members to graze their cattle in the project area much to the frustration of the Rural District Council CEO. While the MP had no jurisdiction or power to make decisions

about the operations of CAMPFIRE, the fact that he belonged to the ruling party tipped the balance of power towards him. RDC officials argued that one had to be very cautious when ZANU PF got involved in such matters because there was a risk of victimization. Cattle owners thus used collective action as well as political links to bargain powerfully in order to access grazing land. The fact that some local leaders (the CEO, councilors, chiefs, village heads and other influential villagers) were cattle owners made this group politically powerful. While conflicts between cattle owners and RDC over the CAMPFIRE project area use raged on, it is also important to note that cattle owners periodically gained access to the area. For instance, they renegotiated terms of access during droughts and famine. During the severe droughts of 1992 and 2002, they were allowed to graze their cattle in the CAMPFIRE area. Behnke and Scoones (1992) have observed similar arrangements among pastoral groups in Botswana.

Age was found to influence decision-making in a complex way, especially amongst women. While it has been extensively documented in literature that men often dominate decision-making in community based natural resource management (see for example Peluso, 1992; Nemarundwe, 2001), it is important to note that this literature overlooks the diversity that exists among women. In Bulilima, the study found that older women had as much respect and influence as men. They certainly had greater decision-making powers than most of the young women, save for those married to powerful leaders within the communities. In the meetings the researcher attended, older women participated actively, arguing with their male counterparts while other women participated passively and rarely made their opinions heard. A similar study conducted by Bradley (1991) supports findings of this research. Bradley observed that among the Luhya in Kakamega in Kenya, older widows had significantly greater decision making powers than younger widows with regards to planting, care and disposal of woodlot and fencerow trees.

Findings from the study reveal that the youths constituted a group that generally lacked representation in both formal and informal institutions. Programs that targeted the youths were very few. One explanation given by the RDC CEO was that most of the youths were only interested in migrating to South Africa and Botswana hence the challenges of implementing long term development programs targeting them. The study also found that the youths were generally not organized, in that they lacked their own associations that could give them bargaining power. They rarely attended community meetings and even when they

did, their participation tended to be passive. As such, most of the decisions were made on their behalf. For instance, while they harvested Mopane worms for commercial purposes, they got exploited by the buyers who determined the price. Selling as individuals made them vulnerable to the buyers. Moreover, the youths competed for the same market with other mopane worm harvesters in the communities. The market seemed to prefer trading in commodities such as kitchen utensils, food stuffs and second hand clothes while most youths preferred trading for cash. As such, they did not get much. Youths from Dombolefu also pointed out that they were missing out from potentially benefiting from abundant mopane firewood which became available after big mopane trees were felled by elephants. This was because they could not bargain as a group.

Also important is to point out that in their lack of agency; youths from Bulilima were not a homogenous group. Like women, some had devised strategies to influence decision-making practices in their communities. The most notable strategy was the joining of the ZANU PF sponsored youth league. While this league was a formal ZANU PF institution, it however operated in an informal manner, with its youths secretly terrorizing community members perceived as belonging to the opposition. These youths were feared in the community as they got their power from the ruling party structures. It was an open secret that some of these youths were in the government's payroll though representing interests of a party. Such youths were found to be powerful in influencing decisions in the study area. Speaking on condition of anonymity, some members of the community pointed out that selling of mopane firewood depended on one's identity and political links. Those linked to the ruling party (referring to young men who were always seen with scotch carts full of fresh firewood going to Plumtree town) were untouchable.

Power dynamics were also analyzed through an examination of the complexity and dynamism in gendered mopane worms and woodland tenure regimes. This was done by way of highlighting spaces and places where men and women used and exerted control over mopane worms and woodlands in Bulilima. In all natural resource management landscapes, relationships among tenures generally depended on the fluidity of social and ecological conditions, forcing men and women to renegotiate their terms of access to specific resources (Rocheleau and Edmunds, 1997). The tenure categories where mopane worms and woodlands were clustered represented spaces and places in which men and women used mopane worms and woodlands and in which they exercised control over these resources. What emerges from

the analysis is that the three tenure regimes were very complex and yet negotiable. Women largely accessed natural resources through usufruct rights derived from social relationships such as marriage. For instance, virtually all land was *de-facto* owned by men in the communities while women had to negotiate access to mopane worms and woodlands by taking advantage of their relationships with men. Men informally privatized land around their households and then claimed ownership. Women, on the other hand, were not afforded that opportunity because of cultural bottle necks which entrusted control of land to men. Women did however, gain access to mopane worms and firewood from mopane trees by virtue of being wives or daughters of the husbands or fathers respectively, and who headed the household. Moreover, it was reported by some men in the study areas that mopane worms in particular were culturally women's business. This created a space for women to exploit the resource freely.

Grazing and CAMPFIRE areas were considered men's spaces where cattle were grazed and men occasionally picked mopane worms. Women however also had customary rights in this area. Rocheleau and Edmunds (1997) point out that it is important to disaggregate rights of access to specific resources to determine which products are controlled by women and which by men. In the case of Bulilima, women had rights to collect mopane worms and deadwood from trees in the grazing area but customary practices forbade them from harvesting fresh mopane wood. Fresh mopane wood was used by men to fulfill some of their responsibilities such as home or kraal construction. Such wood was thus seen as a men's resource. It is important to note however that the commercial appeal of mopane worms and woodlands put women's rights over these resources at risk. Findings from the study revealed that during periods such as droughts, a significant number of men also competed with women in harvesting the worms for sale. It was also reported that there was generally a growing number of men who were harvesting mopane worms for commercial use than before. Unemployment was also mentioned as the reason why many young men were venturing into firewood selling, even though it was illegal. Such changes have a potential of redefining the status of these resources from being women's resources to being men's. Rocheleau and Edmunds (1997) thus note that factors such as commercialization have a potential effect of precipitating a radical redefinition and valuation of resources and subsequent reconfiguration of gendered spaces. Women in Bulilima will have to renegotiate their right to access mopane worms and dead wood, especially in places like grazing areas and CAMPFIRE project area. It is also most likely that as resources are redefined and spaces reconfigured, institutions that prevent

outsiders from harvesting mopane worms and firewood from the CAMPFIRE project area and communal grazing lands, will be enforced as men get involved in controlling these resources.

While women's rights and freedoms in accessing mopane worms and woodlands lay in-between spaces not deeply coveted by men (see Rocheleau, 1988; 1997; Nemarundwe, 2005), this does not imply that women lacked agency. Groups such as burial societies or church organizations provided them with platforms to discuss social and development issues. For example, some argued that they used church links to open up markets in areas far away from their communities. At household level, some women claimed responsibility for privatising trees around homesteads arguing that they had influenced their spouses to do so.

7.3. Reflections on LEK

Knowledge in this thesis was analyzed in the context of its link to power; the power/knowledge nexus (Foucault, 1980). It has been argued that 'while knowledge is not identical with power, it is so intimately linked with power that knowledge production processes, the acceptance of certain kinds of knowledge over others, and the ways in which different types of knowledge are and can be used, form an integral part of any understanding of power, (McLain, 2000: 40-41). With regard to Bulilima, the emphasis on examining the significance of local environmental knowledge in the governance of mopane worms and woodlands. Local environmental knowledge is conceptualized in this study as that knowledge used by the locals in their day-to-day interaction with the natural environment. While some authors do not separate local knowledge from indigenous knowledge (see works by Maila and Loubser, 2003; Phuthego and Chanda, 2004; Uprety *et al*., 2012), this study finds it prudent to do so because of various reasons. Indigenous knowledge depicts a body of knowledge and beliefs, evolving through adaptive processes and handed down through generations by cultural transmission (Berkes, 1999; Ogungbure, 2013). This knowledge has connotations of conservative communities whose cultures are stagnant. Communities in Bulilima were found to be less conservative than those implied by scholars such as Berkes (1999) and Ogungbure (2013)and had been affected by various historical events that had transformed some of their knowledge systems and beliefs. While indigenous knowledge systems, beliefs and practices could still be identified amongst the villagers, they had been

diluted in most cases and field evidence suggested that only certain groups such as the elderly and perhaps the San community upheld these beliefs and practices. Other groups applied knowledge that showed dynamism in culture. Scientific knowledge, usually held by technocrats, was also referred to as local knowledge by some scholars (see Olsson and Folke, 2001). In this study, scientific knowledge emerged as a stand-alone knowledge system that had significant influence on the governance of natural resources in Bulilima.

Enclaves of indigenous beliefs and practices used in the management of mopane worms and woodlands still existed in the district, albeit among a few elderly people. Traditional leaders still referred to various practices which they tried to enforce even though it was evident that the forces against such enforcement were too strong. Elderly men, for example, still knew some of the beliefs and practices associated with the conservation of the mopane tree. Naming of big mopane trees was one practice meant to protect the trees from being cut down at unsustainable rates. Women had more knowledge about traditional harvesting and preparation of mopane worms. The indigenous knowledge that older women and men had did not seem to improve their influence in terms of decision-making in mopane worm and woodland management in the district. Other powerful forces such as Christianity and the state, through scientific knowledge, had more significant influence in the governance of these resources. For instance, the influence of Christianity, which has been growing steadily since missionaries set foot in Zimbabwe, was very visible. Field evidence revealed that most people, especially women, did not want to associate with traditional practices. Young women in particular argued that some traditional norms and beliefs were contrary to their Christian beliefs. They did not believe that trees for example, should be given names and be used as spiritual meeting points, even in an effort to conserve big trees. In Bulilima, Wednesday was traditionally set aside as a sacred day for spiritual religious ceremonies. All community members were expected not to do any work on Wednesdays. A few old people still observed this day while the Christian majority did not. The Manyangwa spiritual cult also represents a traditional practice that is slowly but surely losing its relevance as Christian beliefs and practices become stronger and entrenched. In some of the focus group discussions conducted in Bulilima, women argued that the bible did not allow them to associate with cults such as the Manyangwa. This is a classic example of knowledge being created through a religious discourse which later influences power dynamics. McLain (2000) in Singh and Houtum (2002: 22) explains the strategic importance of discourse in understanding power as influenced by expert knowledge: ‘Discourse . . . connects thoughts with practice and thus can

be used strategically to influence existing fields of power.' Christianity therefore was emerging as a strong and powerful force competing with traditional practices in the communities.

The influence of scientific knowledge on the governance of natural resources in Bulilima cannot be ignored. This refers to expert knowledge applied by state linked institutions such as Forestry Commission and the RDC. The Forestry Commission argued for the conservation of mopane woodlands by stressing that mopane trees should not be cut down. The Commission used scientific forestry knowledge which owes its origin from colonial objectives of consolidating territory, resources and people (Drinkwater, 1989). RDC on the other hand used expert knowledge associated with CBNRM. The CAMPFIRE project, for example, was seen as key to the development of the district hence the efforts to protect the project area from cattle owners who are keen on grazing their cattle there. The knowledge that locals had on sustaining their livelihoods through cattle rearing was not seen as significant to the overall development of the district. Instead, the CAMPFIRE project was seen as having a better potential of ensuring development in the district.[69]

The state benefitted mostly from the influence of scientific knowledge in natural resource governance in the study area. Having inherited colonial systems of natural resource conservation, institutions such as the Forestry Commission and the RDC ensured that the state had direct control of resources at a local level. Fischer (2000: 29) notes that expert knowledge produces 'truths' that 'supply systematic procedures' for generation, regulation and production of policies that empower states. It would seem however, from this study, that expert knowledge was applied to those resources that were perceived to be of significance to the state (forests, wildlife). There was a gap when it came to non-timber forest products that were not so significant to the state. Mopane worms, for example, can be effectively managed through other knowledge systems and thus be controlled by those who utilize them the most – women.

7.4. Reflections on theoretical frameworks

7.4.1. Common Property Resource (CPR)

[69] Interview with Bulilima CEO

Common Property Resource (CPR) theory was found to be critical in understanding management systems for mopane worms and woodlands in Bulilima. It provided a framework for analyzing decentralized natural resource governance structures. For instance, CPR management is thought to be one of the institutional vehicles to ensure efficient devolution of natural resource management (Campbell *et al.,* 2001). Literature on CPR management has been very optimistic on the possibility of locals to design, operate, monitor and enforce their own institutional arrangements with regards to self-governance and local resources (see DFID, 1999; Fisher, 1995, Ostrom, 1994 and others). Agrawal and Yadama (1997: 458) further note that according to researchers, "local communities can create and sustain local institutions to manage their collectively owned resources quite successfully, often in the face of adverse pressures from the state, demographic changes and market forces." Findings from this study, however, revealed that implementation of CPR management was not as simple and straight forward in the case of common pool resources like mopane worms and woodlands in Bulilima. For instance, there was an array of rules that applied to different tenure areas (see Chapter 5 on tenure categories for Mopane worm and woodland collection) in the district. As noted by Mandondo (1997) and Nhira and Fortmann (1993), these rules range from national to local and from formal to informal. While optimism about CPR management is derived from a focus on formal rule based systems (Campbell *et al*., 2001), there was a myriad management systems currently in operation in Bulilima. Mandondo (2001) notes that systems currently at play in most communal areas of Zimbabwe are built on controls derived from traditions, culture and norms. However, evidence from the field in Bulilima suggests that while tradition, culture and norms still played a significant role, other controls such as politics, and modern religion were coming into play.

In Bulilima, the complexities in the controls at play made it very difficult to implement CPR management systems. This was evident even for CBNRM programmes such as CAMPFIRE which are meant to be managed under formal rule based systems. The study found out that there were diverse claims of management in the CAMPFIRE area which ranged from national to local and formal to informal. For instance, while the RDC was formally in charge of managing the CAMPFIRE program, cattle owners still felt that they had legitimate customary rights to access and use the project area. Evidence suggests that, indeed, cattle owners often negotiated their way into the CAMPFIRE project area, especially during drought seasons. As noted in Chapter 5, tenure categories where mopane worms and woodlands occurred were managed through complex controls. Forests close to homesteads,

while formally controlled through Communal Lands Forest Product Act, had also been privatised as households responded to their socio-economic needs. The same applied to the grazing areas which exhibited multiple management controls. It was highlighted in Chapter 5 that grazing areas had common property-like and open access-like scenarios. The resource under exploitation determined how it was controlled. For example, mopane worms were exploited more under open access because the institutions that enforced common property were not active because those with power to enforce (men, traditional or elected authorities) did not put much value on the resource. However, forests and pastures in the same grazing areas were governed under common property arrangements which were enforced through local and customary institutions. Trees and grasses were coveted by men, hence had a different management system to mopane worms. It is thus difficult to implement CPR in most communal areas in developing countries as they are constantly contested, changeably and individually interpreted (Campbell *et al.*, 2001).

While CPR is an ideal theory for explaining the management of common pool resources such as mopane worms and woodlands, analysis should go beyond simplistic classifications (e.g., common property, private property, open access, state property) to an in-depth understanding of each landscape unit or resource, in terms of such characteristics as excludability, comprehensiveness, use destination, duration of use, allotment type, size, transferability, fees, operational control, operational requirements and security (Kundhlande and Luckert, 1998 in Campbell *et al.*, 2001). In Bulilima for example, these characteristics were very significant in determining access, use and control of mopane worms and woodlands. Mopane worms for instance, were more of an open access resource in the grazing area but rules of excludability applied in areas around households. CAMPFIRE on the other hand was based on a resource with a very high economic value (Campbell *et al*., 1999) that provided powerful incentives to Bulilima RDC not to devolve proprietorship to lower levels in the bureaucratic hierarchy (Murphree, 1990; 1993; Dzingai, 1995).

7.4.2. Political ecology and power

The concept of power is at the centre of this thesis. Theories of power were used to explain how different actors related to each other as they utilised mopane worm and woodland resources. One of the objectives in this study was to find out how power was configured in Bulilima by asking questions such as: 1. How does history influence contemporary resource

governance? 2. How is power configured between actors and institutions that manage mopane woodlands and mopane worms in Bulilima? 3. What is the significance of local knowledge in the management of mopane woodlands and mopane worms in Bulilima district? 4. What role do women play within the local level institutional framework for mopane worms and woodland use and what impact does this have on sustainable use of these resources? All these questions require that one understands how different actors in the district related to each other as they went about their daily business. It is this relation that configured natural resource governance as it affected access, use and control of resources. This study largely adopted Michel Foucault's postulations about power not as a commodity that can be 'appropriated' but as something more fluid and ubiquitous (Foucault, 1986). Individuals are always simultaneously exercising power and undergoing the effects of power; they are constituted by power and at the same time are the vehicles of power. Power in this sense is "embedded in the very fabric" of the social system and "resides in every perception, judgement and act" of every individual (Hardy and Leiba-O'Sullivan, 1998:459-460). The study applied the Institutional Analysis and Development approach (IAD) adapted from earlier efforts by researchers such as Ostrom (1994) and Anderson (2002) and the Power Cube framework by Gaventa (2005) to operationalise power analysis in Bulilima. Relations of power are analysed within a social space where actors interact, exchange goods and services, solve problems, dominate one another, or fight (Ostrom, 2011). Within that social space, this study utilised the power cube to explore three dimensions of power: spaces of participation, forms of power and levels of decision making that were manifested as actors related to each other.

Analysis of power began at the household level where gender roles were explored. The study found that an institution such as marriage shapes both men and women at home. For instance, the control of resources such as land and trees around the household fell under the jurisdiction of men. Customary laws also recognise men as the head of households hence they are *de-facto* owners of resources around homesteads. Indeed, Lastarria-Cornhiel (1995) cited in Rocheleau and Edmunds (1997) notes that throughout Africa, women are less likely to hold formal title to land than men. Men exercised control of trees around their homesteads and in their fields by privatising them. This behaviour seemed to be influenced by the perceived failure of local institutions in protecting natural resources managed through common property arrangements. Grazing areas, for example, have an array of rules that apply to them (Campbell, *et al*., 2001) and that is the basis of the weakness in management. It has

been reported in the analysis chapters that grazing areas became open access at times depending on the resource being exploited. In focus group discussions held in Mbimba and Makhulela, villagers were unanimous in observing that controls on the chopping down of big mopane trees were very weak even though the Forestry Commission threatened people with arrests once in a while. As such, villagers were responding to the weaknesses in the institutions by privatising trees around their homesteads. In the IAD framework, Acheson (2006) notes that local actors act according to specific institutional context as shaped by biophysical and socio-economic attributes. While decisions to privatise trees around homesteads were taken by men, women tended to benefit from such arrangements because it meant less competition for mopane worms and firewood from neighbours and outsiders. It was also revealed from the study that women actually played a significant role in ensuring that trees around their homesteads were privatised. This was revealed in group discussions with women who indicated that some of the decisions taken by their husbands were as a result of their persuasion. The marriage institution therefore also worked to women's advantage as they exercised their power by encouraging their husbands to act.

The knowledge that women possessed on mopane worm processing gave them an advantage over the control of worms that had been harvested. While men had an idea of how worms should be processed, their knowledge could not be compared to that of women. Moreover, the fact that most men in the district did not put much value in mopane worm harvesting created spaces for women to make decisions on the use of the resource at home. It must be noted though that women still remained with the challenge of access to the worms because the worms occurred on trees that belonged to men. This challenge was clearly manifested at community level where women's access to mopane worms and woodlands in the grazing areas had to be intricately negotiated. As highlighted in Chapter 5, grazing areas were *de-facto* male areas where they grazed their cattle. Management of these areas was complex and depended on factors such as the nature of the resource found in the area as well as political influence of individuals with access to the area. As an illustration, institutions controlling the harvesting of mopane worms in grazing areas were so weak that the resource became open access. It was a common practice to find people from as far as Bulawayo and other places camped and collecting mopane worms in communal grazing areas around Bulilima. Women and other worm collectors like the youth, had to compete with these 'outsiders' for the worms. Local authorities interviewed (councillors and village heads) did not show any enthusiasm for rules that could exclude outsiders who came to harvest worms. However,

when the issue of grazing was raised, the same authorities were very passionate about rules that should exclude non-community members from accessing the grazing areas. It is interesting to note that when it came to grazing areas, both traditional and modern institutions tended to find common ground. Access to grazing areas was also found to depend on one's political affiliation. In Mbimba and Makhulela wards, it was reported that some of the cattle that grazed there belonged to some war veterans from other wards. Nobody dared touch their cattle because they were a feared group due to their role in the Fast Track Land Reform and Resettlement Programme and their association with the ruling ZANU PF party.

While analysing power in terms of power relations makes us understand how different actors in Bulilima influenced decision making in the social arena, political ecology helps us understand how power relations operating at multiple scales shape natural resource management. It also provides a framework for analyzing natural resource conflicts as quite often human-environment interaction is certainly political and results in conflicts. In Bulilima, the study revealed that social actors were heterogeneous, multidimensional and culturally embedded. As such, conflicts over natural resource use were inevitable. It has already been demonstrated in some parts of this study that social actors in Bulilima were diverse and behaved differently towards natural resources. Men and women's interests in natural resources tended to differ and that had an effect on how a resource was managed. For instance, men indicated that mopane worms were largely a 'by the way' resource especially when their livestock were doing well. As expected, men did not put much effort in monitoring the utilisation of mopane worms. Thatch grass harvested mainly in the CAMPFIRE area was a resource that provided interesting dynamics. To women and other poor households, these grasses were a source of income while to cattle owners they were a form of pasture. While women were allowed by the RDC to cut the grass for free, cattle owners had to negotiate access to the same grass. In most cases, when they did get this access, they had no regard for the women who also needed the grass for other uses. Evidence from the field suggests that women always lost in such conflicts as the cattle usually grazed all the grass. Their predicament was made worse by the fact that local leaders, be they traditional or modern, were all cattle owners, hence they temporarily united for the cause of their cattle.

The heterogeneity of social actors was also reflected in ethnic diversity which had a significant impact on natural resource access, use and control. The San people found only in

Makhulela Ward in Bulilima were generally despised by the Ndebele and Kalanga ethnic groups. They lacked agency and their participation in community programs was generally poor. Accordingly, they did not have much influence in decision-making matters pertaining to a range of development issues in their community. There were times when they had been used by the ruling party just to garner more votes. In the run up to the country's 2013 harmonised elections, the ruling party ran a programme of ensuring that all the San people who were eligible had national registration cards and were also registered to vote. In exchange they were given food and ZANU PF regalia.[70] It is important to note, however, that the San used their aloofness to get on with their lives with less interruption from the authorities or other ethnic groups. Discussions with their village head, Gogo Mamaree Kwenga Moyo, revealed that the San appreciated this minimal interaction. Moreover, they were considered less of a political threat by the government hence the limited control on them. They enjoyed free access to natural resources in the CAMPFIRE area while some even went as far as Hwange National Park. The actions of the San demonstrate the underlying subtleties of negotiation and manoeuvre that are in operation within power arenas (see Arce, 1992). They employed conscious or tacit tactics to alter their power relations in the arena and hence were able to influence the course of planning in Bulilima. The fact that the Kalanga/Ndebele communities often left them out of their plans was an advantage for the San who wanted autonomy in the first place.

Political ecology was also used in this study to understand historical processes which underlay current power dynamics in natural resource governance. The 1984 Prime Minister's directive that reformed local government, created multiple institutional structures that altered and reconfigured power dynamics at the local level. While the post-colonial government had inherited a politicised environment, restructuring of local government effectively worsened that and brought the influence of central government more into local resource governance. The creation of VIDCO and WADCO structures, for example, while weakening traditional institutions, created conflicts between the two institutions. There was a duplication of duties resulting in administrative confusion. The study discovered that multiple institutional structures (councillors, village heads, VIDCO and WADCO) claimed responsibility for issuing licences to outsiders who wanted to collect mopane worms. Ultimately, no institution did so and this resulted in mopane worms being exploited as open access resource.

[70] Focus group discussion with a group of San women from Makhulela (22 June, 2014).

The traditional chiefly institutions were founded on the undemocratic principle of the fusion of legislative, executive and judiciary powers (Mandondo, 2000a). This arrangement enhanced colonial domination in what scholars referred to as decentralised despotism (see Chapter 4 and works from scholars such as Holleman, 1968; Weinrich, 1971; Mandondo, 2000a and Mashinya, 2007). Traditional institutions have over the years been used to legitimise state influence. In Bulilima, traditional institutions were largely accountable to the ruling party than local people. Their autonomy was very limited as they had to make decisions that were always in line with central government agendas. It was not uncommon for local meetings chaired by village heads or chiefs to have agendas biased towards discussing ZANU PF issues. Chiefs in the study area were very clear on which party they supported and they openly encouraged their subordinates to support ZANU PF policies. In Bulilima, and indeed other regions across Zimbabwe, local authorities were structured in such a way that they entrench government thinking on communities. This has served to centralise power and decision-making regarding natural resource management in the central government and other bureaucracies such as the RDC. There were strong similarities between the contemporary local government natural resource management system and the colonial system.

Political ecology and power theories have also been used in this study to analyse how discourse and knowledge systems are used to legitimise decisions taken by some actors with regards to the utilisation of natural resources. For instance, the government, through the Forest Commission, ensured that it maintained control over the utilisation of mopane woodland resources by using science to explain efficient and sustainable management techniques. The study revealed that communities were discouraged from cutting down trees because that might lead to undesirable environmental problems such as soil erosion or climate change. Local traditional knowledge that existed within communities was considered inefficient. There was a very close link between knowledge and power. Umans (1998) expresses the same idea, that knowledge processes are embedded in relations of power, authority and legitimacy. Scientists, for example, try to establish a "hegemonic knowledge" by using power techniques such as claiming universality, objectivity and neutrality. Rhetoric statements such as "deforestation leading to erosion and climate change" are universally accepted as absolute truths. Institutions or individuals that preach such statements become authorities. The effect of knowledge on power is best understood through Foucault's 'governmentalisation of the state' and subject formation. He argues that scientific disciplines

and knowledge influence governance through the exercise of power (Foucault, 1982). Conservation policy in Zimbabwe is premised on expert knowledge and this has the effect of consolidating state power with regards to natural resources. In Bulilima, the CAMPFIRE project was implemented following scientific advice that conservation can be effective through improvement of human – animal interactions.

In this study, the influence of knowledge on power could be noticed among community members themselves. While indigenous knowledge was no longer as significant as it used to be, those who possessed it still commanded some respect in the community. During focus group meetings, it was revealed that communities often turned to traditional leaders or other elderly people in times of crisis. For example, in 2014, the year when fieldwork for this thesis was done, Mbimba and Makhulela wards experienced excessive floods last seen in the 1960s.[71] The logical explanation amongst many villagers was that the 'gods' were not happy and they needed to be appeased. Traditional leaders and elderly people led propitiation ceremonies. The implications are that while scientific knowledge had influence on how resources were utilised in Bulilima, local traditional knowledge was still called upon in times of crisis and those perceived to know more about cultural practices assumed control at that particular time. Women used their local knowledge on mopane worm harvesting and processing to control the resource. Most men pointed out that while they had an idea of how the worms were supposed to be processed, their knowledge could not match that of women. Some Mopane worms buyers interviewed in the field also claimed that they preferred getting worms from women than young men because women knew how to process the resource.

7.5. Conclusion

The objective of this study was to examine the role of local environmental knowledge and explore power dynamics in the management of mopane worms and woodlands in the communal areas of Bulilima District, in the Southern region of Zimbabwe. The study's results show that natural resource governance is a complex phenomenon in developing states. Institutions, power and knowledge played significant roles in influencing access, use and control of mopane worms and woodlands. The study analyzed the influence of elite capture of CPR governance by drawing on the historical context and politico-economic structure on

[71] Interview with Headman Mbimba from Mbimba ward (14 April, 2014)

rules in use and user decisions. A combination of theories related to New Institutionalism, common property, political ecology and power facilitated a thorough examination of power relations and knowledge significance in natural resource management in the district. These theories also made it possible to establish a link between natural resources, local decision-making and inequalities that stemmed from the social, political and economic spheres in Bulilima.

By drawing on the historical context of natural resource management in Zimbabwe, the study demonstrated that the state was a key player in determining access to, use and control of natural resources. From the colonial to the post-colonial state, the central government, through various processes, had sought to control the management of natural resources in the communal areas. Traditional institutions that put control of resource use on traditional leaders and the community had been weakened by deliberately taking away the powers of chiefs or pursuing and promoting environmental discourse and knowledge that privileged science over any other knowledge. The interplay of knowledge and power in resource management discussed in this thesis revealed that scientific culture and outside knowledge took precedence over local forms of knowledge in the management of the forests and wildlife resources in Bulilima. Mandondo (2000a) notes that this culture is inherently top-down, domineering and conditional while offering limited opportunities for alternative forms of empowering local communities.

This arrangement was clearly seen in the development of conservation areas and later, the CAMPFIRE project area. The colonial state used the discourse of conservation, using scientific knowledge to justify its act while taking control of natural resource management from traditional institutions and actors. The post-colonial government adopted the same disempowering policies which have seen local practices, norms and cultures playing second fiddle to scientific methods. Results from the study revealed that the CAMPFIRE programme, though touted as an effective CBNRM program, was a discourse used to control natural resource use. Significant income that accrued from the CAMPFIRE project in Bulilima tended to benefit more those institutional structures linked to the state than the communities that bore the brunt of wildlife invasion. The traditional institution, which was once accountable to the locals in the pre-colonial era, was transformed to serve the state controlled institutions in the colonial and post-colonial era. In a similar study in Dwesa-Cwebe Nature Reserve in South Africa, Matose (2009) observed that there had been

continuity in the subjugation of local people's way of managing resources from the moment the area was made a reserve. Like in Bulilima, local people's management practices had always been treated as inferior and inappropriate.

The first objective of contextualizing Zimbabwe's natural resource governance thus showed that history was key to understanding contemporary power dynamics in Bulilima. The study showed that some of the contemporary conflicts over resources had their roots in the colonial era when the colonial government appropriated land from the locals and introduced discourses such as conservation. The CAMPFIRE area was previously a community grazing area (*lagisa* area) before the colonial government decided to privatise it. Cattle owners had been battling for access to this area for quite some time. Msindo (2012) demonstrated that the installation of Ndebele chiefs in Bulilima and Mangwe areas, which are predominantly Kalanga communities, resulted in the dislike of Ndebele chiefs. The study revealed that the animosities still existed. For instance, one of the arguments raised by Bulilima CEO and other local Kalanga elders was that the Manyangwa spiritual cult had been weakened by the influence of Ndebele chiefs who did not have the knowledge nor mandate to control it. There was an ongoing conflict between chiefs and those who were supposed to be in charge of the Manyangwa spiritual cult. It is important to note that chiefs, through the Traditional Leaders Act, had the support of the state just as they had the support of the state during the colonial era. Another example of a historical event affecting contemporary natural resource governance issues in Bulilima relates to the movement of the San people from their native land, Mabhungwane area (currently CAMPFIRE area) to Makhulela Ward. The study showed that the San were treated as second class citizens in Makhulela, partly because the Ndebele/Khalanga people had stereotyped them as barbaric. This had implications for the San people's participation in community activities. Their relationship with other ethnic groups was akin to the boss-servant relationship as they were made to work for other groups. They generally lacked decision-making powers with regards to resources around them as evidenced by individuals from the Ndebele/Kalanga groups cutting down trees just around their homesteads.

The study concludes by identifying four themes that require further research. The first theme pertains to decentralisation policies that have failed to devolve power to communities at a local level. The second is about political influence in every aspect of decision-making in the communal areas of Bulilima. ZANU PF, in particular, is both a hidden and visible power

permeating almost every aspect of life in the communities. Those linked or sympathetic to the party are likely to get their way no matter what position they hold in the community. There is also a theme on women's access to natural resources within men's domains. The fourth theme pertains to the competition between local knowledge and other development knowledges in Bulilima District. For instance, science and Christian religion are domains that were seriously challenging the relevance of local environmental knowledge to the extent that dominant knowledge was now a combination of various knowledges. What was contextualised as local environmental knowledge in this study was possessed by a few people, the majority of them elderly citizens.

The post-colonial state's decentralization policy as a way of transferring power to the local people has been heavily criticized in literature (see Mandondo, 2000a; Nemarundwe, 2004 and others) as a smoke screen. In Bulilima, power and knowledge dynamics were studied in a decentralized resource use context. Power was analyzed at multiple governance levels to understand its effect on Mopane worm and woodland access, use and control. There were multiple institutional structures and actors competing and negotiating access, use and control of Mopane worms and woodlands at a local level. Natural resource management was being decentralised to local structures in the hope that more local people would participate in decision making with regards to natural resource use. However, evidence from this study and other similar studies on natural resource governance (see for example Murphree, 1990; Murombedzi, 1992; Mandondo, 2001, Ribot, 2003) revealed that central governments did not devolve much decision making powers to local institutions. State controlled institutional structures such as the RDC, Forestry Commission, VIDCO and WADCO still made most of the decisions especially with regarding the control of mopane woodlands. Traditional institutions were also part of a local governance system which was accountable to the central government than the locals. The planning arm of the RDC, the RDDC, either made plans that suited those at the top or implemented plans that came from the top. The study also concluded that decision-making powers were held by those who were either sympathetic or linked to ZANU PF ruling party. It did not really matter whether one held a position or not in the community. A link to the party often gave one enough freedom to participate in decision making.

Much as that was the case in Bulilima, local participation can still be salvaged if there is a will to do so from the central state. For instance, strategies that target advocacy and

transparency could re-vamp these structures (Mandondo, 2000a). The RDC is already a democratic institution with councillors elected by the people through a ballot box. What is missing, therefore, is effective participation of the people which could be made efficacious if councillors genuinely consult people and not on political grounds. The situation in Bulilima and indeed other parts of Zimbabwe was such that the consultation process was very selective, with those belonging to the opposition rarely consulted.

Traditional institutions, though having been weakened by successive governments and restructured to protect state interests, can still play a significant role in resource management as communities in Bulilima still lived by the norms, beliefs and local cultures. Unlike other government institutions that remotely influence activities, traditional institutions and practices were embedded in people's way of life in Bulilima. To a large extent, people still followed local norms, practices and beliefs. The study showed that modern formal institutions tended to be activated when it came to resources that were of significant economic value such as wildlife and forests. CAMPFIRE was managed by the RDC with rangers monitoring activities of villagers who entered the area. Hunting or killing of wildlife was strictly prohibited and offenders faced jail term. On the other hand, Mopane woodlands, which were not part of the CAMPFIRE project, were not subjected to similar institutional control. Every day practices, norms and beliefs played a significant role in the management of mopane worms and woodlands. Elderly people still commanded much respect because of the knowledge they possessed. In focus group discussions, there was a tendency to refer issues to community elders to offer their advice or wisdom. Their environmental knowledge for example, gave them an elevated status in the community. Decisions related to traditional ceremonies were usually made by this exclusive group of people.

Analysis of power also considered the role played by women in institutional structures responsible for mopane worm and woodland resource management. Results showed that women in Bulilima occupied less influential positions in both formal and informal institutional structures. Their numbers in these structures were also very low as indicated in Table 5.6 in Chapter 5. In committees where they held pole positions, for example, village natural resource committees, the study found that these committees were weak because they had women as leaders. Their influence on natural resource access, use and control was minimal. In a patriarchal society like Bulilima, this did not seem unusual.

The study results also show that women's role in decision-making needs to be understood in terms of spaces available for women to access these resources. For instance, marriage and other customary institutions ensured that men had control over land belonging to the household while women had to negotiate ways of accessing resources found on this land. There were uneven relations of power between men and women. For instance, while women had access to mopane trees and worms around their households as a result of their relationship with their husbands or spouses through marriage, they however did not have control over mopane trees. Trees were seen and accepted as a male domain. Women and the youths had to gain access to mopane worms by negotiating for a space on men's mopane trees. The study also revealed that men's lack of interest in harvesting the worm created spaces for women and the youth to access and control the processing and marketing of the worm. However, it should be noted that such spaces are dynamic and their continued existence depends on men's interest in mopane worms or lack thereof. The study revealed that factors such as economic hardships were transforming gender roles. For instance, men argued that their involvement in mopane worm harvesting was determined by drought, meaning that when rains were good they would rather concentrate on their cattle. When rains were bad, men also competed with women and the youth in accessing and processing the worms. Some men were willing to remain with their children at home while their wives went out to harvest the worms.

Women's dependency on natural resource spaces left behind by men made them subordinates and hence less influential in decision-making. Current formal and informal natural institutions were not really favorable to them. It has been argued for instance that women's inability to obtain formal land titles puts them in a position of extreme dependence on men with respect to tree resource access (Rocheleau and Edmunds, 1997). Their rights to resources depend on those with ownership rights. In Bulilima, Mopane trees were *de-facto* owned by men and *de-jure* owned by women. Any interventions aimed at improving women's access to these trees should first address the complexity and diversity of existing land use systems, property regimes and gender division of labour. Women's rights to resources need to be improved from usufruct to ownership rights. This however requires interventions or programs that target embedded institutions and this is not easy. Perhaps one way of doing this is to formalise complex codes of multiple uses which recognize, reconcile and perhaps reform gendered rights to use forests, trees and their products.

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APPENDICES

Appendix 1: Household survey

Date: January 2014 to December 2014

Place: Bulilima District (Bambadzi, Makhulela and Dombolefu wards)

DEMOGRAPHIC DATA

A1	What is the sex of the Household Head? 1 = Male 2 = Female	A2	What is the marital status of the household head? 1 = Single 3 = Divorced/Separated 2 = Married 4 = Widowed 5= Other (specify
A3	What is the age of the household head in years (Number)? 1=10-20 2=20-30 3=31-40 4=41-50 5=51 and above	A4	What employment category do you fall under? 1 = Formal, 2 = Informal 3 = Unemployed
A5	Household size (No of People)_____		

A6 Household composition

Sex	Family position	Age	Education

Key

Sex Male= 1; Female= 2	Family position Father= 1; Mother=2; Child=3; Relative=4; Non relative=5
Age 1= Under 5, 2=5-18; 3=19-35; 4=45-65; 5=>65	

Highest educational qualification of the household head
1 = Never went to school, 2 = Primary School, 3 = Secondary School, 4 = Vocational Training, 5 = Tertiary Education; 6=Other (specify)

B1	Do you use mopane for firewood? 1=Yes 2=No	C16	Where? 1=In my piece of land; 2=Around my homestead; 3=Anywhere in the community; 4=Other (Specify)
B2	Who collects the mopane tree firewood? 1=Wife; 2=Husband; 3=Girl child; 4=Boy child; 5= Anyone at home; 6=Any female member of the household; 7=Any male member of the household		

B3	Frequency of collection 1=Daily(D); 2=Weekly(W); 3=Monthly(M); 4=Other	C18	Does your household now spend more or less time on getting mopane firewood than you did 5 years ago? 1= more; 2=about the same; 3=less
B4	How has availability of mopane firewood changed over the past 5 years? 1=declined; 2=about the same; 3=increased; 4=Don't know		
B5	What are the other uses of mopane woodland besides firewood? List in order of importance. 1._____ 2. _____3. _____ 4. _____ 5. _____		
B6	Would you use mopane wood for above mentioned uses over other wood species? 1=Yes 2=No If Y explain why_____ _____		
B7	Do you collect/harvest mopane worms? 1= Yes; 2=No		
B8	If you collect mopane worms, where do you do this? 1=Around homestead; 2=Within the village; 3=Within the district; 4=Other (specify)_____ _____	C24	If Yes, who is mostly involved in collection of mopane worms? 1= Father ; 2=Mother; 3=Boy child; 4=Girl child; 5=other (specify)
B9	What do you mostly use mopane worms for? 1=Home consumption 2=Selling 3=Both 4=Other (specify)	C26	What are the demand trends of mopane worms in recent years 1. Decreasing 2= increasing 3. No change 4. Don't know
B10	Explain your answer to C26:_____ __ _____ _____		

B11 *Please fill in the table below if you harvest mopane worms*

Season/month harvested	Used at home *(quantity)*	Sell *(quantity)*	Price/kg

B12 How do you use proceeds from the sales of mopane worms?
1. Buying of food; 2. School fees and health; 3.Buying farming equipment; 4=Other

C30 How would you rate the outbreak of mopane worm in recent years
1= increasing; 2=decreasing; 3= no change; 4= Don't know

B13 If answer is 2 what has been the effect of the decrease to your household's livelihood
1=Severe effect on livelihood;
2=Mild effect on livelihood
3=No effect at all; 4=Other

B14 How much time do you allocate to the following activities?

Activity	Months/ year	Day/ week	Family members involved
Dry land cropping			
Mopane worm harvesting			
Mopane woodland harvesting			
Livestock			
Social activities			

C: NATURAL RESOURCE MANAGEMENT INSTITUTIONS

C1 Give the following a score out of 10 based on community visibility in natural resource management of Mopane worms and woodlands

Institution	Score
EMA	
Local traditional leadership	
NGOs	
The forestry commission	
Other	

C2 What are the major contributions and let-downs of the institutions identified in D1 in managing mopane worms and woodlands?

Institution	Contributions	Let downs
EMA		
Local traditional leadership		
NGOs		
The forestry commission		
Other		

C3 What common village practices and norms govern mopane worm and woodland access in your village?

	Common village practice
Mopane worms	1
	2
	3
Mopane woodland	1
	2
	3

C4 Do you think these common village practices and norms have positively contributed to the sustainable management of mopane worms and woodlands?

1=Yes very much; 2=Yes but minimally; 3=No; 4=Don't know

C5 What are the major contributions and let downs of these common village practices and norms in mopane worm and woodland sustainable?

	Common village practices and norm	Contributions	Let downs
Mopane worm	1		
	2		
	3		
Mopane woodland	1		
	2		

C6 Do you think the formulation of the common village practices and norms was adequately undertaken regarding participation and relevance?
1=Yes very much; 2=Yes but minimally; 3=No; 4=Don't know

	E: PERCEPTIONS,ACCESS AND RIGHTS		NB. *Rights= Ngamalungelo*
	(a) *Rights to harvest*		
D1	Are you aware of any rights to harvest mopane worms and woodland resources in your area? 1= Yes; 2= No	D2	If Yes, do you think these rights are necessary? 1=yes; 2=No
D3	Who is allowed to harvest mopane worms within your community? 1=Any household members (HH); 2= Only kraal members (KM); 3=Adjoining kraals (AK); 4=Open access (OA); 5=Other (O): explain.	D4	Who is allowed to harvest mopane woodlands within your community? 1=Any household members (HH); 2=Only kraal members (KM); 3=Adjoining kraals (AK); 4=Open access (OA); 5= Other (O): explain
D5	Is access to mopane worms 1=Rights based; 2=Permit system?; 3=-Other (specify)	D6	Is access to mopane woodlands 1=Rights based; 2=Permit system?;3=-Other (specify)
D7	If access to mopane worms is rights based who gives people the rights? 1=Traditional leadership; 2=Statutory systems (Government Acts); 3=No one; 4=Other (specify)	D8	If access to mopane worms is permit based who gives people the permits? 1=Traditional leadership; 2=Statutory systems (Government Acts); 3=No one; 4=Other (specify
D9	If access to mopane woodlands is rights based who gives people the rights? 1=Traditional leadership; 2=Statutory systems (Government Acts); 3=No one; 4=Other (specify	D10	If access to mopane woodlands is permit based who gives people the permits? 1=Traditional leadership; 2=Statutory systems (Government Acts); 3=No one; 4=Other (specify
D11	Do men and women have similar rights to harvest mopane worms? 1=Yes; 2=No; 3=Don't know	D12	Can men and women hold similar permits to harvest mopane worms? 1=Yes; 2=No; 3=Don't know
D13	Can men and women hold similar permits to harvest mopane woodlands? 1=Yes; 2=No; 3=Don't know	D14	Can men and women hold similar permits to harvest mopane woodlands? 1=Yes; 2=No; 3=Don't know
D15	Do men and women have similar rights to harvest mopane woodlands? 1=Yes; 2=No; 3=Don't know	D16	Are there designated time endings on rights held in mopane worms (harvesting rights) 1=Yes; 2=No; 3=Don't know
D17	*If Y to E16*, indicate how long)	D18	Are there designated time endings on rights held in mopane woodlands (harvesting rights) 1=Yes; 2=No; 3=Don't know
D19	*If Y to E18*, indicate how long?_____		
D20	May rights be leased for a specific period of time in mopane worms? 1=Yes; 2=No; 3=Don't know		

D21	*If Y* to E20, indicate typical lease period_____		
D22	*Allotment Type*: Are rights 1=area based (AB), 2=volume based (VB) or3= both (B)?	D23	*Transferability: Of Rights:* Can the rights be 1=sold (S) ;2= leased (L); 3=Don't know?
D24	*Payment* Are there required payments for rights to harvest mopane worms? 1=Yes; 2=No; 3=Don't know	D25	Are there required payments for rights to harvest mopane woodlands? 1=Yes; 2=No; 3=Don't know
E1	(F) Power dynamics Who makes decisions on how mopane worms should be used at home? 1= Father ; 2=Mother; 3=Anyone who harvested them 4=other (Specify)	E2	Who makes decisions on how mopane worms should be harvested within the village? 1=Women of the village; 2=Men of the village 3=Committee for natural resources; 4= Traditional leaders; 5=Government instruments 6=Other (Specify)_____
E3	Who makes decisions on how mopane woodlands should be used within the village? 1=Women of the village; 2=Men of the village 3=Committee for natural resources; 4= Traditional leaders; 5=Government instruments 6=Other (Specify)_____	E4	Are you aware of any rules governing the harvesting of mopane worms? 1=Yes; 2=No
E5	If YES, what are those rules?	E6	Who enforces those rules? 1=Traditional institutions (Chiefs, Village heads); 2=Statutory institutions (RDCs, VIDCOS); 3=Local community institutions; 4=Other (Specify)_____
E7	Are there people who break these rules? 1=Yes; 2=No; 3=Don't know	E8	If Yes to F8, Who often breaks these rules? 1=Men; 2=Women; 3=Anyone in the community; 4=People from outside the community; 5=Other
E9	What happens to people who break these rules? 1=Cautioned by the traditional authorities; 2=Cautioned using the statutory Instruments; 3=Nothing is done to them; 4=Other	E10	Do you think those rules are helping in the conservation of mopane worms? 1=Yes; 2=No; 3=Don't know
E11	If No, what do you think should be done to harvest Mopane worms sustainably?_____ _____		
E12	Are you aware of any rules governing the USE of mopane woodlands? 1=Yes; 2=No		

E13	If YES, what are those rules?		
E14	Are these rules followed? 1=Yes; 2=No; 3=Don't know		
E15	Are there people who break these rules? 1=Yes; 2=No; 3=Don't know	E16	If Yes to F15, is the breaking of these rules a common thing in your community? 1=Yes; 2=No; 3=Don't know
E17	Who often breaks these rules? 1=Men; 2=Women; 3=Anyone in the community; 4=People from outside the community; 5=Other	E18	What happens to people who break these rules? 1=Cautioned by the traditional authorities; 2=Cautioned using the statutory Instruments; 3=Nothing is done to them; 4=Other
E19	Who/What enforces these rules? 1=Traditional institutions (Chiefs, Village heads); 2=Statutory institutions (RDCs, VIDCOS); 3=Local community institutions; 4=Other (Specify)___	E20	Do you think those rules are helping in the conservation of Mopane woodlands? 1=Yes; 2=No; 3=Don't know
E21	If No, what do you think should be done to manage mopane woodlands sustainably? 1._____ 2._____ 3._____		
	PARTICIPATION		
F1	Are there any organizations governing access to mopane worms in your community? 1=Yes; 2=No; 3=Don't know	F2	If Y to G1Are you or any member of your household a member of any organisation that is involved with governance of mopane worms in your community? 1=Yes; 2=No
F3	Are there any organizations governing access to mopane woodland resources in your community? 1=Yes; 2=No; 3=Don't know	F4	If Y to G1Are you or any member of your household a member of any organisation that is involved with governance of mopane woodland in your community? 1=Yes; 2=No
F5	IF YOU ARE IN ANY ORGANISATION do you participate in decision making about use of Mopane worm and woodland resources in your community? 1=Yes; 2=No		

F6

	Organisation	Function	Participation (Yes/No)
Mopane worms	1		
	2		

	Mopane woodlands	1		
		2		

F7 If you are involved, does someone in your household attend the meetings?
1=Yes; 2=No

F8 If 'Yes to G7': who normally attends the meetings and participates in other organisation's activities?
Tick

Only the wife	
Both, but mainly the wife	
Both participate about equally	
Both, but mainly the husband	
Mainly sons	
Husbands only	
Mainly daughters	
Mainly husbands & sons	
Mainly wife & daughters	
Other; specify	

F9 What are your reasons for joining the named organisation?

Reason	Name of Organisation			
	1	2	3	4
Increased access to natural resources products				
Better natural resources management and more benefits in future				
Access to other benefits, e.g., government support or donor programmes				
My duty to protect the natural resources for the community and the future				
Better quality of natural resource product				
Higher price for natural resource product				

Makes harvest of natural resources products more efficient					
Know natural resource better					
Reduce conflicts over natural resource Use					
More secure land title					
Being respected and regarded as a responsible person in village					
Social aspect (meeting people, working Together, fear of exclusion, etc.)|					
Learn new skills/information					
Forced by Government/local leaders/neighbours					
Other, specify:					

F10	Have you ever raised any views/comments to the organisations you participate in about mopane worm or woodland management? 1=Yes; 2=No	G11	If Y, do you think your views are taken seriously by the leaders of the organisations? 1=Yes; 2=Yes very much;3=Not at all

F12 If N, why are they not taken seriously?
Explain_____

F13 What are your general comments about access to mopane resources in Bulilima district?_____
_

F14 If you do NOT participate in any of the organisations that are involved with governance of mopane worm and woodland resources what is stopping you? Explain

Reason	Tick
No organisation exists in the village	
I'm new in the village	
Organisation members generally belong to a particular family group (s)	
Cannot afford to contribute the time	
Cannot afford to contribute the required cash payment	
Membership will restrict my use of the resources, and I want to use the resources as I need	
I don't believe organisations are very	

	effective in managing the natural Resources	
	Lack of natural resources	
	Not interested in the activities undertaken by organisations	
	Corruption in previous organisations	
	Interested in joining but need more information	
	Organisations exist in village, but household is unaware of their presence	
	Other, specify:	

KNOWLEDGE AND PRACTICES

G1	Are you aware of any traditional functions governing the use of mopane worms? 1=Yes; 2=No	G2	If YES, please explain any that you know
G3	Are you aware of any traditional functions governing the use of mopane woodlands 1=Yes; 2=No	G4	If YES, please explain any that you know
G5	Are you aware of any supernatural powers of the ancestral spirits associated with mopane worms 1=Yes; 2=No	G6	If YES, please explain any that you know
G7	Are you aware of any supernatural powers of the ancestral spirits associated with mopane woodlands 1=Yes; 2=No	G8	If YES, please explain any that you know
H9	Do you think Indigenous Knowledge use can help conserve mopane worms? 1=Yes; 2=Yes very much;3=Not at all;4=Don't know	G10	Do you think Indigenous Knowledge use can help conserve mopane woodlands? 1=Yes; 2=Yes very much;3=Not at all;4=Don't know
G11	Do you know how to harvest opane worms in a sustainable manner? 1=Yes; 2=No	G12	Who taught you this knowledge? 1=My parents; 2=Community members; 3=Traditional leaders; 4=Government organisations; 5=Other (specify)
G13	Do people in this community know how to harvest mopane worms in a sustainable manner? 1=Yes; 2=No; 3=Don't know	G14	If Y to H5, how did they get this knowledge? 1=Traditional institutions; 2=Interacting with other community members; 3=Government institutions; 4=Other, (specify)_____
G16	Do you think people need further education in order to manage mopane worms and woodlands in a more sustainable way? 1=Yes; 2=No; 3=Don't know	G17	If YES to H17, where do you think they should get this knowledge? 1=Traditional leaders; 2=Government organisations; 3=NGOs; 4=Community members; 5=Other (specify)

G18	Is there a monitoring mechanism to ensure that worms are harvested at a correct stage? 1=Yes; 2=No; 3=Don't know	G10	If Y to H7, who does the monitoring? 1=Traditional institutions; 2=Community members; 3=Government institutions; 4=Other, (specify)_____
G19	If Yes, why? Explain		

Gendered access to and control over Mopane resources

esources	Who has Access?				Who has Control?				Comments
	M	W	B	C	M	W	B	C	
Mopane worms									
Mopane woodlands									

Codes: M=Men; W=Women; B= Both; C=Community

I2. How do women achieve power within the institutional frameworks governing mopane resources in the community?

Appendix 2: Standardised qualitative questions for key informant interviews

1. Traditional Leaders

Background Information

a) Can you tell me about the history of your chieftaincy? (Only applies to chiefs)
b) What is your understanding of 'community' in Bulilima since 1980? (Probe further on ethnicity, geographic boundaries and other ways community has been explained)
c) What is the main source of livelihood for people in this area? Has it always been the main source since 1980? What type of natural resources do you have in Bulilima?

Configurations of Power

a) Who owns mopane woodlands and mopane worms in this community? And how?
b) What role do you play in natural resource management? Do you make decisions on Mopane woodlands and Mopane worms ownership, use, access and benefit sharing? Do you have powers to punish those who break the rules?
c) Are there any rules or regulations governing the use of these resources? (Probe further on the nature of rules. Are they fair to everyone, men, women, and children? Who stands to benefit from these rules and regulations?)
d) Are there areas of conflict in the use of mopane woodlands and mopane worms? If so, are there any mechanisms in place for resolving conflicts?
e) Do men and women have equal opportunity to own or inherit land? How?
f) What is the process of decision making and how do women participate in this process?
g) Do you think politics influences the functioning of traditional leaders in this area? (Probe further)

Knowledge

a) Are you aware of any traditional functions governing the use of mopane resources? Are you aware of any supernatural powers of the ancestral spirits?
b) Do people have knowledge pertaining to mopane woodland and mopane worm management in the community? What kind of knowledge is this? (Indigenous, modern ...etc) Where did they get it? What role do you play in knowledge transfer?

Gender roles

a) What role do women play within the local level institutional framework for mopane woodlands and worm use and what impact does this have on sustainable use of these resources?
b) Are there any rules or regulations governing the use of mopane resources? (Probe further on the nature of rules. Are they fair to everyone, men, women, and children? Who stands to benefit from these rules and regulations?)

2. Technocrats

Management institutions

a) What role do you play in mopane resource management in Bulilima District?
(What relationships exist with other institutions such as traditional authorities, VIDCOs, WADCOs etc. (who has power to make decisions? Where do they get this power?) Do they give any rights/permits to people? Does politics influence natural resource management? How? Any conflicts and how do you deal with that?
b) Do you make any decisions on how mopane worms and woodlands should be accessed and used in this community?

c) How do people get access to mopane worms and woodlands? Are there people who are excluded? By who? Where do they get the power to exclude others?
d) Are there other institutions that deal with Mopane Resource Management in Bulilima? (What is the relationship with RDC?) e.g. traditional institutions
e) Do you think community management is very effective in mopane resource management?...if not, what do you propose?
f) Are there any conflicts that arise as a result of mopane resource use? How do you solve these if they are there?

Knowledge, Attitude and Practice

a) Do you think people have adequate knowledge to manage mopane resources sustainably? (Do men and women have similar knowledge?)
b) What kind of knowledge is this? (Indigenous, modern ...etc.)
c) How useful is the knowledge in the sustainable use of mopane woodland and mopane worms?
d) Does everyone have access to this knowledge?
e) What are people's attitudes towards sustainable use of natural resources in Bulilima?
f) What do you think could be influencing this attitude?

Gender roles

A. Are women involved in local level decision making with regards to natural resource use? (mopane woodlands and worms)
B. Do you think the rules/institutions (formal and informal) governing the use of mopane resources is fair to everyone, men, women, and children?
C. Who stands to benefit from these rules and regulations?)

Appendix 3: Question guide for FGDs

Power

1. Who monitors use of natural resources in your community?
2. How do they do this?
3. Are your views considered when it comes to decisions about natural resource use in this area?
4. Where are most of the decisions about natural resource use made? In the community or somewhere else?
5. How do women participate in community activities?
6. Do women have access to any natural resource that they might want to use?
7. If there are restrictions who restricts them and why?
8. Who allocates land for building homes and for farming in the community? Do women enjoy similar privileges as men?

Knowledge

1. What is the state of local environmental knowledge with regards to managing natural resources in this community?
2. Is such knowledge still available? Who has it? Does having it imply respect or power to make decisions in the community?
3. Are traditional authorities doing enough to preserve and promote indigenous knowledge in this community?
4. Do you think scientific knowledge is more efficient than indigenous knowledge in managing natural resources?

Manyangwa spiritual cult

1. What is the significance of Manyangwa spiritual cult to the lives of people in this community?
2. Is Manyangwa spiritual cult still respected by people in the community? By authorities from the state?

Appendix 4: Gendered access to Mopane resources

Products	Major Users	Who controls	Rules governing access and management practices	Comments on rule adherence
Mopane woodland				
Mopane firewood				
Grazing area				
Mopane worms				
Thatch grass				