

**UNIVERSITY OF ZIMBABWE**



**FOREST MANAGEMENT IN ZIMBABWE'S MAKONDE DISTRICT: ANALYSIS OF  
FACTORS THAT INFLUENCE DECISIONS AND PRACTICES IN FOREST USE.**

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## **DECLARATION**

I declare that this thesis is my own work, except acknowledged citations to previously published work. It is being submitted for the Master of Science Degree in Social Ecology at the Centre for Applied Social Science, Faculty of Social Studies, and University of Zimbabwe. It has not been submitted before for any degree programme or examination to any other university.

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Date.....

T. Nyikadzino

## **ABSTRACT**

*Zimbabwe, like any other country in Sub-Saharan Africa, is experiencing deforestation and environmental degradation at a rate which is believed to be not sustainable. Renewable and non-renewable natural resources are being depleted faster than they could be replaced. At the centre of the debate on deforestation are rural communities, who, as part of their livelihoods, depend on forest natural resources. This research is about understanding peasant behaviour around deforestation. The researcher carried out observations and took photographs in order to augment in-depth and key informant interviews. For findings, the study shows that: the farmers in ward six are engaging in various practices in forest use that include land clearance, cutting down of trees for fire wood for sale, domestic use and tobacco production, clearing forests for hunting using fire. They also graze their livestock in the forests. There are two models of farmers, the A1 and A2 and both engage in these practices albeit with different zeal but the same outcomes. Deforestation and degradation are a cause for concern. Policies in forest management come from the top, and traditional leaders are side lined in the formulation of policies and are thus reduced to mere implementers of state laws. If developmental interventions are to work, they should incorporate indigenous knowledge systems and decentralise decision-making to the local levels.*

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## **DEDICATION**

This Thesis is dedicated to my sons, Farai and Tatenda, who stood by me during the study period when they missed my support to their endeavours.

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## **ABBREVIATIONS AND ACCRONYMS**

CBNRM	Community Based Natural Resource Management
EMA	Environmental Management Agency
FC	Forestry Commission
RDC	Rural District Council
FLRTP	Fast Track Land Reform Programme
NRB	Natural Resources Board
FAO	World Food Organization

## **CHAPTER ONE**

### **INTRODUCTION**

#### **1.1 INTRODUCTION AND BACKGROUND**

Zimbabwe is faced with a crisis in the form of deforestation and degradation of the environment. According to the World Food Organization (1985), (FAO), the 1970's and early 1980's have seen a growing realization that the forests of the world are in crisis, and as a result the year 1985 was declared the international year of the forest. Zimbabwe's forest and woodland resources are under increasing threat from the expansion of agriculture, urbanisation, and local use for construction and fuel wood (O'Flaherty, 1998). Abuse of the natural vegetation has been the single most serious cause of ecological degeneration in Zimbabwe (The National Conservation Strategy, 1987).

The colonial tenure systems separated agricultural land management from the management of any other lands which included forest lands, and as a result, this separation of tenure regimes fuelled competition between different land uses, and farmers' rights on crop land became viewed more relatively secure than other common property rights (Whiteside, 1998). Common property rights were simply described as such but in essence these were state property rules. The colonial tenure system also increased the communal population and hence increased pressure on the forests. Colonialism saw the incorporation of international ideas in forest management and use in the world. These scientific ideas were promulgated by the World Food Organization (FAO) in 1946, (FAO, 1985). When these new ideas of the time were coined, it had been noted that forests around the world were disappearing at alarming rates (FAO, 2010), in Kalaba et al. (2013).

At independence, the post-colonial government inherited the dual system of land governance which segregated land tenure among its citizens, the lease hold and free hold for whites on one hand, and the common property regime supervised by the state on the other. Thus post-colonial land tenure in Zimbabwe became a highly emotive and complex political issue and closely linked to anti-colonial ideologies that focus on black empowerment and socioeconomic justice, and at the same time neglecting the concept of forest management.

However, the land reform programme have seen the government continuing with the dual tenure regimes, the permit for A1 resettled farmers and the 99 year lease for the A2 resettled farmers. As much as the lease hold is legally binding, according to Katerere and Guveya, (2006), it has its weaknesses; but the permit remains under state rules. Despite their importance, the current tenure system and incentives do not encourage investment in forest and woodlands (Katerere and Guveya, 2006).

The farmers in ward six, Makonde District, were resettled in 2002, although the programme is still going on. There is rampant land clearance for crop production, slash and burn agriculture; bush fires, and harvesting of wood for tobacco curing, smoking fish, timber, poles for construction, and these activities are playing a key role in the modification and transformation of the forest land (Mutanga, 2009).

Traditional institutions are side lined when it comes to decisions on natural resources, however, the Traditional Leaders' Act tried to remedy this, (Katerere,2001), by the restoration of Chiefs' powers, but issues of natural resources remain located somewhere (Chigwenya and Manatsa, 2007). Responsibility of natural resources management is retained by agencies of government, and as a result, common pool resources are turned into open access, a reflection of breakdown of traditional control systems, and policing resource use at the local level becomes very difficult. This trend has prompted policy makers, researchers,

and development agencies to promote the sustainable management of forest in an attempt to reconcile economic development and biodiversity conservation (Paumgarten and Shackleton, 2011), ushering in the new dispensation of the elusive Community Based Natural Resource Management.

## **1.2 STATEMENT OF THE PROBLEM**

Farmers in Makonde District engage in multiple practices in forest use. These farmers use the forest in ways that include grazing livestock, harvesting of timber and non-timber products. As a result of these uses, forests are depleting at an alarming rate. This study intends to investigate the factors that influence decisions and practices in forest use by the farmers. The study will help in understanding and explaining the behaviour of peasants in forest management.

## **1.3 JUSTIFICATION**

This study is significant for its practical application in forest management. It will help to inform forest management policy from a bottom –up approach.

## **1.4 OBJECTIVES**

This study aims to investigate the influence on farmers' decisions and practices in forest use.

Specific Objectives

To investigate how much the farmers understand the importance of forests in nature

To identify major factors that influence decisions and practices by farmers in forest use

To examine the effect of decisions and practices by farmers in forest use on the forest

## **1.5 RESEARCH QUESTIONS**

This study will answer the following questions:

What are the major factors that influence farmers' decisions and practices in forest use?

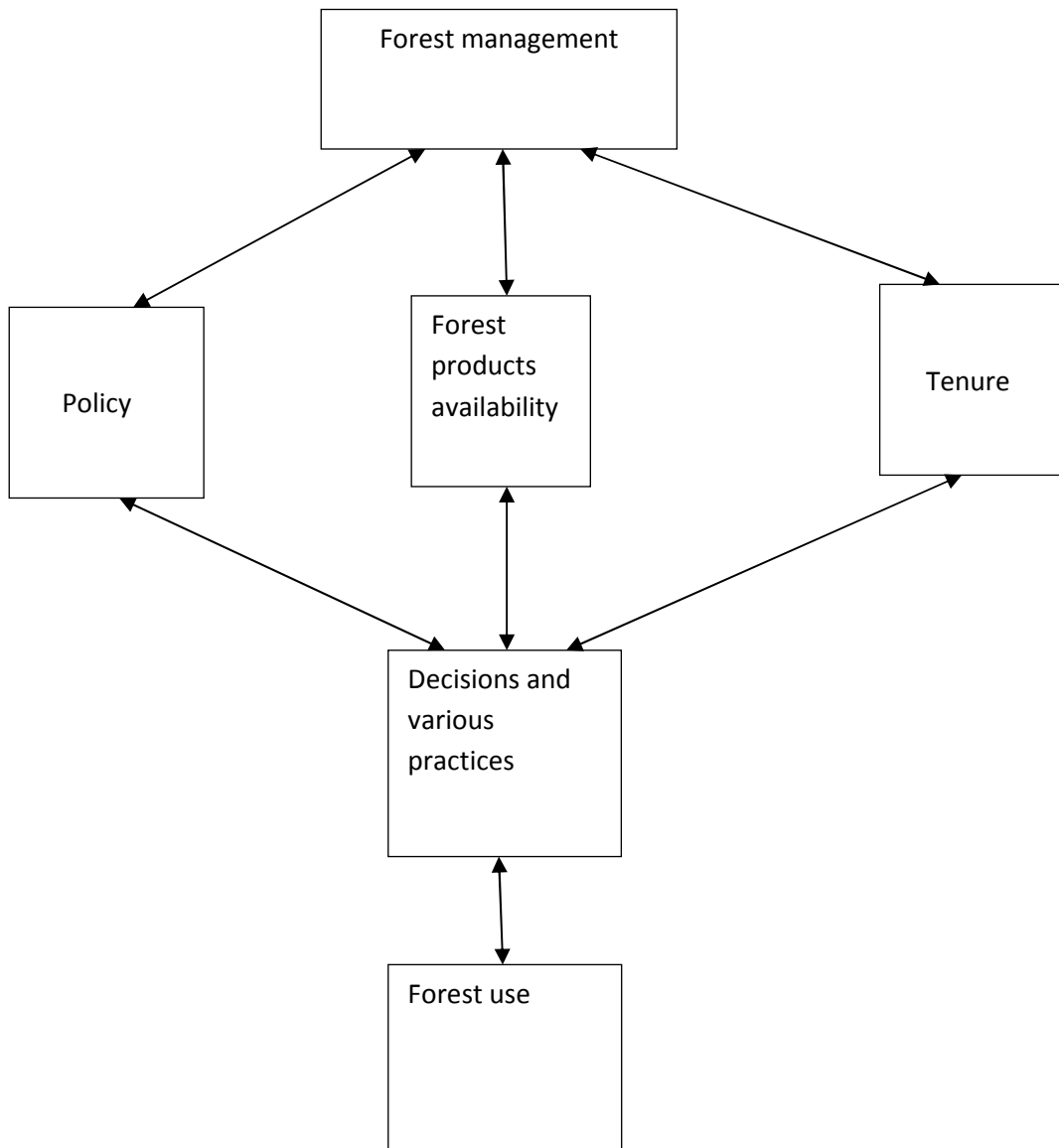
What effects do these decisions and practices by farmers have on the forest?

What knowledge do the farmers have in relation to the importance of the forest to nature?

## 1.6 CONCEPTUAL FRAMEWORK

The concepts that will guide this research are: forest management, farmers, decisions and practices, forest products, tenure, policy and forest use.

Diagrammatic representation of the conceptual framework:



In this research forest management is the system through which natural woodlands are regulated in their access and use by cultural means, education and /or extension services under the Forestry Commission. The regulation of the forest, which is the control of access and use of forest products, is informed from policies, formal and informal, those crafted by the state through different ministries, and those passed from generation to generation by elders, and are reflected within the framework of forest governance. Thus policy informs the formal management of forests. Farmers are the people who have offer letters and permanently reside in the ward in which the research is to be carried out and engage in various decisions and practices in forest use. Decisions are reflected in the practices, which are the behaviours that the farmers exhibit during their interaction with the forest, and these result in compliance or non-compliance. As a result, other factors which may include; land productivity, rural industry, politics and economy, interact with farmers in the context of forest management. Thus all the concepts affect and relate to each other in forest management and use.

## **1.8 SUMMARY**

In this chapter a brief introduction and background to the study were given. The chapter also introduced the problem statement, research objectives and questions, as well as the conceptual framework that is informing the study. The next chapter gives the literature review in detail.

## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.0 INTRODUCTION**

Zimbabwe's forest and woodland resources are under increasing threat from the expansion of agriculture, and local use for construction and fuel wood as well as urbanization. Agriculture expansion has seen clearance of land for crop production leaving vast land areas without protection from runoff, wind and organic cover. Construction in rural areas is basically done using timber products. Energy and lighting are also provided by wood. Mutanga (2009), define a forest as an open system with naturally occurring flora and fauna species which are interrelated and depends on one another for their survival.

#### **2.1 TENURE SYSTEM**

Zimbabwe inherited a dual land tenure system from the colonial government. Land tenure categories are distributed unevenly between agro-ecological zones reflecting the historical inheritance of colonial land allocation. The categories include large scale and small scale commercial farming areas, communal areas, resettlement areas and state land, (The World Bank, 1993). These tenure regimes influence how a resource is managed as suggested by Schreckenberg and Marshal, (2006), (Mutanga, 2009), for an example, whether it is common property or private property. Thus the tenure system influences the behaviour of farmers in forest use. This same dual tenure system still operates under the fast track land reform programme.

##### **2.1.1 COLONIAL PERIOD**

The elements of earlier policy and scholarly writings about local communities viewed people as obstacles to efficient and rational organization of resource use (Agrawal and Gibson,

1999), and thus the previous governments of the settler regimes downplayed local knowledge systems which earlier people used in conserving their natural resources (Makanyisa et al., 2012). A convincing logic undergirded the belief that the goals of conservation and the interests of local communities were in opposition (Agrawal and Gibson, 1999). The environmental damages that occurred in this period were a result of laws that segregated land between settlers and the local African people. This segregation of the black African people resulted not only in their physical environment being tampered with but also their socioeconomic and religious environments were affected. According to Palmer (1997), the above reveals that tenure includes all that which has to do with resources, renewable or non-renewable (Makanyisa et al. 2012). Segregatory policies were used to reduce access rights to natural resources, infringing on the locals' socio-economic and religious environments (Makanyisa et al. 2012). The above policy thus tended to also affect the degree of the locals' conservation efforts since they no longer controlled forest activities themselves.

Makanyisa et al. (2012) asserts that the Land Apportionment Act of 1930 was actually meant to enhance settler supremacy, and had nothing to do with protecting the environment. Animal culling was only theoretical since the locals could outwit the system by loaning their livestock to those who did not have, and as a result overgrazing became a perennial problem, (Makanyisa et al.2012). Land allocation powers were transferred from chiefs and centralized it in the state, which is still the case with independent Zimbabwe, although in some instances locals do allocate themselves land. According to Chigwenya and Manatsa, (2007), despite the conception of the Parks and Wildlife Act 1949, Parks and Wildlife Act 1975, the Natural Resource Act 1942, and Forest Act 1948, the problem of sustainable resource utilization remained problematic and unresolved, (Chigwenya and Manatsa, 2007). Natural resource management initiatives were imposed in a top-to-down fashion. This approach to NRM had a lot of structural defects as it wrongly specified the problem, mistakenly explains the causes

and therefore the results that flow were inappropriate and had wrong emphasis (Cliffe, 1986) in Chigwenya and Manatsa, (2007).

### **2.1.2 POST-COLONIAL PERIOD**

The post-colonial government did little to change the frame of thinking in natural resource management policy. The government of independent Zimbabwe inherited the colonial government structures of natural resource management with minimum changes despite the divergent general ideological differences (Chigwenya and Manatsa, 2007); where the colonial government put more emphasis on the protection of the threatened resources: wildlife, pastures, forests and so on, while local communities rely on these resources for their fodder, fuel wood, water and food and thus exploit them without restraint (Agrawal and Gibson, 1999).

The early resettlement programme was well coordinated and minimal environmental damage occurred, and all the other environments, that is, the socio-economic and religious environments, remained intact (Makanyisa et al. 2012). Traditional institutions that had a record in management of natural resources continued to be side-lined when decisions on natural resources were made (Chigwenya and Manatsa, 2007). The Traditional Leaders Act claimed to restore the Chiefs' powers; which had been neutralised by the inception of Ward and Village Development Committees, political institutions which had no legal basis to manage natural resources, but issues of natural resources management remain located elsewhere in the government and its agencies such as the government departments, ministries and local authorities (Katerere, 2001) in Chigwenya and Manatsa, (2007).

### **2.1.3 THE LAND REFORM AND BEYOND**

The Zimbabwean government embarked on the fast track land reform programme in 2000, which was aimed at decongesting the over populated rural areas. However, while the speedy relocation was a noble idea, the way it was done produced serious environmental challenges that have never been part of the traditional African heritage (Makanyisa et al.2012). The same disorder that marred the FTLRP was transferred to the environment, completely ignoring the importance of the environment. There was wanton destruction of forests and its products through hunting, cutting down of trees and burning. The independence euphoria had gripped the nation such that access to natural resources was a competition of destructive tendencies. The chaos was also linked to the economic decline that was experienced during this period.

### **2.2 LEGISLATION**

Legislation is informed from western scientific knowledge and ignores the indigenous knowledge systems. The legislation as regards natural resource management imply that even though the people had successfully managed resources in some friendly ways in the past, that past was long gone (Agrawal and Gibson, 1999). Hlongwana et al. (2010), argues that colonial legislation, such as the Land husbandry Act (1951) could not offer solutions that are practical to problems caused by earlier legislation. Recent scholarly work in development have seen a shift from state managed forests to local communities, through devolution of power and authority to manage the forests (Mutanga, 2009), as espoused by the Kyoto Protocol and Agenda 21 fundamentals to which the government of Zimbabwe is a signatory. In Zimbabwe traditional leadership has assumed control of natural resources through the Traditional Leaders Act and have the power to preside over natural resource management issues in their areas. However, full commitment and implementation on the ground has shown that in some areas, the national will has yet to be fully realised to reinforce and strengthen these institutions (Mutanga, 2009). A piece of legislation regarding natural

resources within a country represents the ability of a community to utilize its resources without depleting the resource base. Laws that regard the community as poachers of resource encourage degradation as was witnessed during the colonial period in Zimbabwe (Mutanga, 2009), and still persist today. The decentralization of resource management is ending with the Rural District Council since it alone can make by-laws that govern resource utilization, while the traditional leaders help in the implementation, thus side-lining local communities' decisions and practices.

### **2.2.1 POLICY**

The failure by successive governments in Zimbabwe to initiate sound environmental policies on land tenure system led to continued land degradation (Makanyisa et al, 2012). However, successive droughts and the state of the economy remain contributing factors to degradation. The colonial legacy of environmental degradation was carried over at independence into the newly independent Zimbabwe (Makanyisa et al. 2012). The land policy today is still dualistic in nature. Tenure systems between A1 and A2 resettled farmers is somehow different in terms of area and livestock herds which the farmers can keep on their farms, and is also still differentiated by ecological region.

### **2.2.3 PROPERTY RIGHTS**

Local authorities' powers over these new lands were suspended and chiefs had no jurisdiction over these new areas since they were formerly occupied by white farmers, resulting in the destabilization of the ecological balance (Makanyisa et al. 2012). People might be reckless with the new environment due to the fact that they have no titles or leases over the land and thus government should take steps to rectify this situation, otherwise the environmental legacy inherited from colonialism will continue. Very few governments in the developing countries are aware of the importance of forest products, especially the non-timber products, in their economies; for example, Botswana recently realised that the value of timber exports

was exceeded by the value of non-timber forest products such as *Uapaca kirkiana* (Mazhanje) and *Gonimbrosia belina* (Mopane worm), (Mutanga, 2009). The United Nations-sponsored Commission on the legal empowerment of the poor defines ‘legal empowerment’ as ‘the process by which the poor are protected and enabled to use the law to advance their rights in the face of claims by both the public and the private sector’ (CLEP, 2008). However, in the rural areas, communities are usually poor and of low educational standards and thus they always find themselves on the receiving end because they do not have legal representation.

### **2.3 FOREST MANAGEMENT POLICY**

The Environmental Management Agency enforces the Forestry Act and the Environmental Management Act in the management of forest land, suggesting that forest management is embedded in the statutes of the state. However, if people are not informed and empowered through community programmes, about the essence of environmental conservation, environmental degradation may continue (Makanyisa et al. 2012). Forest management have largely been ignored in economies of scale when compared to agriculture (Mutanga, 2009). Even at continental level in Africa forestry has remained side-lined by agriculture in the debates about poverty alleviation and the subsequent poverty reduction strategies (Mutanga, 2009). It is only recently that debates on development are incorporating forests because some scholars have realised the importance of forests to rural livelihoods. Agriculture managed to demonstrate tangible benefits able to meet house hold economies of scale (Mutanga, 2009). Forest products availability, both timber and non-timber products, determines the need for types of management regimes as well as the products’ abundance and market value. However, the communities’ legal status is very vulnerable because their practices and by-laws are not recognized by the operative legal system. Traditional values and practices had been denied chances to inform the operative legal provisions so that they reflect and

accommodate these local practices (Chigwenya and Manatsa, 2007). The role of the locals has been relegated to that of just initiating project plans while the state and its agencies retain the responsibility of approval, implementation and fiscal control. This is rather a continuation of the defective top-down approach to resource management, which is likely to use some level of coercive power (Chigwenya and Manatsa, 2007). Therefore, forest management in the concept of Community Based Natural Resource Management (CBNRM), should incorporate indigenous knowledge systems and traditional institutions so as to achieve a holistic management regime. As rightly pointed out by Sadomba (2010), indigenous systems of conservation resulted from the respect accorded nature by the communities, thus wronging either nature or the spirit world can cause punishment to be suffered by the individual or the community in revenge. Thus, this respect accorded to nature becomes a cornerstone in the management regime.

### **2.3.1 INSTITUTIONS IN FOREST MANAGEMENT**

Institutions are important in determining how communities utilize and manage their resources as they act as the watch dog for resource utilization for the community. These institutions create and facilitate linkages between grassroots environmental initiatives and formal regulatory authorities at Rural District Council level (Mutanga, 2009). Therefore any attempt to manage resources at community level should take into account traditional structures and further enhance and strengthen their existence as they are the centre points for community organization (Mutanga, 2009). One of the outcomes of decentralization or devolution is to ensure that government officials give some degree of power to another group and not hinder or sabotage this realignment of responsibilities (Larson and Soto, 2008), However, decentralisation is proving to be elusive in that the group that should take up the responsibility of management, the traditional leadership and other traditional institutions, have been reduced to implementers of government legislation as opposed to taking active

roles in the governance of the resources. The chiefs and traditional beliefs formed the institutions that were responsible for management of natural resources (Chigwenya and Manatsa, 2007). The local people are not empowered by the laws of this country to manage the resources, though they apply unsanctioned power over the resources. Decentralization of power goes only as far as the district councils and not to the real users and managers of the resources (Chigwenya and Manatsa, 2007). The institutions that come with the Kyoto Protocol have the framework of sustainable resource management and hence some indicators of the ability but there seem to be a problem with the implementation of the provisions of that agreement. There is great reluctance to release power to the local communities so that they are in full control of their resources (Chigwenya and Manatsa, 2007).

### **2.3.2 GOVERNANCE**

The system of governance employed by local communities in managing natural resources is different from that used by, and is still being used today, the colonial government. Taboos are prohibitions and restrictions that forbid interaction, association with particular forest products, place or places for the moral goodness of society. Failure to observe taboos resulted in, presumably, punishment from the supernatural (Tatira, 2000). Local people viewed their environment as crucial in maintain their wellbeing.

The African views life in a tripartite form. He or she sees the relationship between the living, the living and the dead, and the relationship between the living and the yet to be born. The African sees continuity of life and realize that sustenance emanates from the environment, and all appreciate its conservation (Makanyisa et al. 2012, Sadomba, 2010). Management of resources encompass use, control of access and conservation, and or protection (Mutanga, 2009). In traditional governance systems, individuals do not randomly access natural resources; to access a local resource depends primarily on the local societal taboos and norms that govern that local community, level of societal organization and awareness on resource

management, feasibility of exclusion and the formal regulatory instruments in place for a particular area. These institutions define who can and when to access resources of a particular nature within a community (Mutanga, 2009), and thus excluding or including others.

In traditional governance, punishment for not abiding by the rules of access to natural resources is solely rested in the spiritual world than existing local governance structures (Mutanga, 2009, Sadomba, 2010). Traditional ways of management of forest resources through taboos and norms can best be understood in the context of the African world view of the relationships between the natural, human and spiritual world (Mutanga, 2009).

Although local taboos and norms address harvesting of local forest products, they do not extend further to address monitoring of resource extraction, an issue very much important on commercialised resource (Mutanga, 2009). However, monitoring is invisible and is believed to be carried out by the spiritual world that happens to be in close contact with the natural environment and humanity. Under certain conditions local people, drawing on local knowledge, create robust rules to govern the use of common pool resources, (Ostrom, 1990), in Boudreaux and Nelson, (2011). In the continued land tenure insecurity, locals see no reason why they should conserve wildlife in lands that they do not own since they cannot be granted hunting permits. Decentralization of powers to make decisions to community level, for it to succeed, need commitment from national level, political leaders and effective support from affected bureaucracy, which may lead to commitment by locals to implement projects. As the result of the Kyoto Protocol, governments are encouraged to form co-management regimes which give locals management authority over resources. This focus thus shifts from enforcement of laws to more organic institutions that evolve from the people and for the people (Chigwenya and Manatsa, 2007). In top-down approaches to forest management, it is difficult to conserve resources because the interests of the locals will not have been

considered in decisions. Traditional institutions management systems combined with centralized state functions can fashion effective resources management systems.

## **2.4 FOREST PRODUCTS AND RURAL LIVELIHOODS**

Forest products are more important to the poor than those who are not poor. Thus forest degradation and overuse will hurt the poor more (Vedeld et al, 2004; 2007). Forest products availability act as safety nets in the face of misfortune and gap filling during seasonal shortfalls as well as pathways out of poverty (Kabubo-Mariara, 2013). However, for forest products to be poverty alleviation pathways, they have to be abundant, nonetheless, non-timber forest products provide subsistence and cash income to a large number of households in many countries, (Narain et al, 2005).

The poor lack high return employment opportunities thus they resort to low return activities, and for this reason the role of forests has been seen as providing a safety net (Tesfaye et al ,2011). Common pool resources literature asserts that the poor extract more resources from the commons because of their greater reliance on natural resources and their high individual rates of time preference (Kabubo-Mariara, 2013).

Forests thus provide a number of services to members of different communities: shade, food, firewood, water and other ecosystem functions such as carbon sequestration (Mutanga, 2009). Because the value of forests to rural livelihoods is socially constructed and contested (Kepe, 2008), the direct use value of forest products in households is a key determinant of their value, both in consumption and as a source of income (Mamo et al. 2007). However, literature on forest products does not show any change in value and use of these products from pre-colonial traditional systems to present.

#### **2.4.1 KNOWLEDGE**

The local communities were and are conservers of the natural environment, and hence their knowledge base in terms of propagation of indigenous tree resources and improved, in western scientific terms, resource management is somewhat limited, (Mutanga, 2009). However, the local people are regarded to possess vital technical and environmental knowledge that can be utilized in the management of natural resources, as shown by medicine men or herbalists who treat snake bites and a variety of other ailments. They are more cognizant to the intricacies of local ecological processes and practices that put them in a better platform to sustainably manage the resources. They are also the people with greater interest than the state or any other distant corporate to sustainably manage the resources (Chigwenya and Manatsa, 2007), thus their incorporation in the decision-making processes of natural resources management can enhance the chances of rejuvenating the nation's forests.

#### **2.5 CONSERVATION**

The different backgrounds from whence resettled farmers come from make it difficult to practice agro-ecological religion in resettled areas. Conservation or protection encompasses various mechanisms put in place by resource users to safe guard their local resource base from extinction or depletion. These initiatives are collectively agreed through local management structures in a community set up (Mutanga, 2009). Conservation mechanisms do not inhibit use of a resource but helps to take appropriate measures when a resource is under threat of depletion. The above is a major departure from the state advocacy that protects resources from the people rather than protecting resources for the people. Fast Track Land Reform Programme (FTLRP) fragmentation of society resulted in people of different backgrounds being resettled together on one farm. Sacredness, which played a crucial role in conservation of natural resources. (Chigwenya and Manatsa, 2007), was disturbed by the

social upheaval of the FTLRP. New thinking in NRM, informed by the Kyoto Protocol and Agenda 21, require realignment of laws to suit the international requirements. These requirements admit that there must be creation of co-management regimes or sharing of responsibilities of management of natural resources among national governments, local governments, civic society and local communities (Leach et al. 1999). This management regime came as a realization that state and its institutions were failing to effectively manage natural resources in the wake of declining fiscal and human capital resources (Chigwenya and Manatsa, 2007). However, a closer look at the role of civic society have to be looked at closely to save guard national traditional heritage in such management regimes.

## **2.6 DEGRADATION**

Scoones et al. (2010) asserts that the FTLRP expanded the communal system and hence carried with it processes that lead to environmental degradation in Zimbabwe, although he is somewhat optimistic about the success of the programme. Fire is still used to clear land for crop production and hunting. Trees continue to be cut for firewood, clearing land for growing and processing tobacco in clear resistance to policy. The post independence state has failed to inform people living in resettlement areas on the importance of conservation. The expected benefits which poor people can get from forests are not always forthcoming because poor people are sometimes forest degraders; in a struggle to meet their subsistence or as a response to a temporary misfortune (Shively, 2004). When a forest can no longer provide the required services it is said to be degraded (Mutanga, 2009).

## **2.7 SUMMARY**

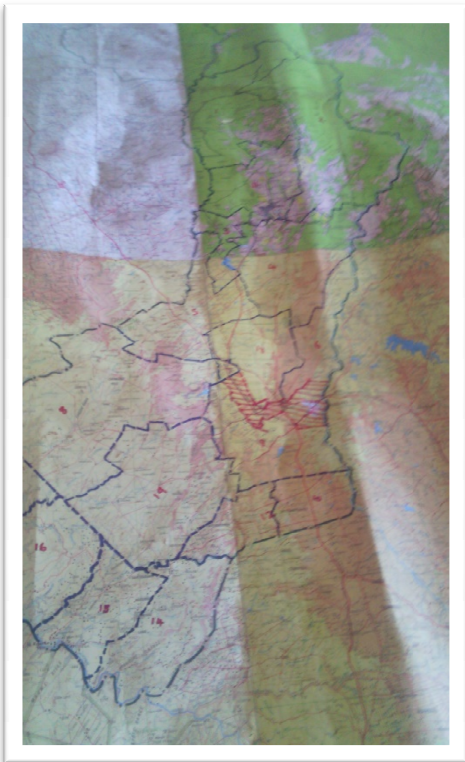
There is plenty of literature concerning the management of forest resources. It stretches from colonial times to the current issues of CBNRM. For a long time, management of forests has been rested in the hands of the state, which also seem reluctant to let go due to the attached political connotations of natural resources. In some instances, natural resources are viewed as national interests, and thus to simply devolve their governance is sort of relinquishing state security. Thus the problems of deforestation and degradation bedevilling most developing countries are yet to be over. The next chapter shows the methods which the researcher used in this study.

## CHAPTER THREE

### METHODOLOGY

#### 3.0 AREA OF STUDY AND METHODOLOGY

##### Area of study



Makonde District



Ward six (6)

Source: Adopted from Surveyor General Zimbabwe, (1992), as amended.

The research was carried out in ward 6 of Makonde District, because of its accessibility and the fact that the ward comprises resettled farmers in both the A1 and A2 models. The ward is situated in Mashonaland West Province of Zimbabwe. The district falls in natural region two (2) (The National Conservation Strategy, 1987) and has a population of 153540 (Zimbabwe 2012 Census). Ward six has a population of 5814 (Zimbabwe 2012 Census). Normally region

two enjoys reliable climatic conditions and is suitable for intensive crop and pasture production (The National Conservation Strategy, 1987).

### **3.1 RESEARCH DESIGN**

The researcher visited the area of study and asked questions from the farmers who are directly involved in various decisions and practices in forest use. This was done in order to establish what influence the farmers' decisions and practices in forest use and how, and the farmers' attitude and perceptions towards forest use.

### **3.2 METHODS AND TOOLS**

The researcher asked questions of varying depth from selected farmers of both sexes using an in-depth interview guide. The number of farmers asked depended on the relevant data gathered. The questions asked established forest products and uses in which the farmers engaged in; how and why they engaged in such forest uses, and their knowledge on the importance of the forest to nature. The same guide was used to interview the village head, the Councillor of ward six (6) and the environmental monitor of the same ward in relation to forest use practices. Key people in the management of forests; that is, the Forestry Commission, Environmental Management Agency, District Lands Office, and Makonde Rural District Council were interviewed using a key informant interview guide. The interview questions established the farmers' knowledge of forest use policies, and the importance of forests to the farmers and nature as well as the tenure system. The questions asked were guided by the issues raised by the objectives of the study.

The researcher also made observations of the activities of the farmers and the state of the forests. These were guided by an observation guide prepared for the study. Photographs of different activities observed in the ward were taken to compliment the other methods used in the study.

Secondary data was also used to support and/or refute the findings in the field.

The researcher used the above methods and tools in order to uncover what influenced the farmers' decisions and practices, perceptions and attitudes towards forest use; and their knowledge on the importance of forests to nature. The researcher also made observations of the state of the forest, constructions, and brick moulding industries, land clearances and garden constructions.

### **3.3 POPULATION, SAMPLE AND SAMPLING PROCEDURE**

The population of the study was drawn from the farmers of both sexes who practice their activities in ward six of Makonde District, District Forestry Commission Offices, EMA Offices, District Lands Offices, and Makonde Rural District Council.

A sample of twenty five farmers interviewed was drawn from the farmers in the ward. The researcher interviewed twenty male farmers and five female farmers. The researcher conveniently selected the sample of farmers due to availability and willingness to participate in the study. The researcher had to select those from whom to interview due to time and cost constraints. Those interviewed were presumed to give responses which reflected the perceptions, attitudes and knowledge of the rest of the farmers in the particular ward. The Ward Councillor and Village Head, in their capacity as leaders and providers of custody to natural resources, were also interviewed about forest use. The District Forestry Commission Officer, one Environmental Management Agency Officer, one District Lands Officer, and one Officer from the Rural District Council were interviewed.

The researcher probed the interviewees about attitudes, perceptions, and knowledge of the farmers in relation to forest use. The above interviews helped to establish the relationships between forest use and what influences the farmers' to practice forest use in the way they do; the effects of their decisions and practices on the forest and how much they understand

the importance of the forest to nature, since these are the people who directly use and benefit from the forest.

### **3.4 LIMITATIONS**

The researcher managed to visit two farms demarcated into A1 plots and one farm demarcated into A2 plots due to transport and time constraints. However, the data collected was enough to draw conclusions on the attitudes, perceptions and knowledge of the farmers in forest use.

### **3.5 ETHICAL CONSIDERATIONS**

Ethical issues were taken into consideration when carrying out the research. The respondents were informed that the research was purely an academic one, that names were not going to be disclosed, and that participation was voluntary. Permission to take photographs of people was first sought. Thus names used in this research are false so as to keep the respondents anonymous.

### **3.6 SUMMARY**

This chapter highlights the methods used by the researcher in gathering data to answer the objectives and research questions of the research. The next chapter presents the research findings.

## **CHAPTER FOUR**

### **RESEARCH FINDINGS**

#### **4.0 INTRODUCTION**

This chapter present the findings of the research. The findings are presented in five thematic sections which are; tenure system, policy, availability of forest products, productivity, and knowledge, in line with the issues that emerged from the study and in relation to the objectives of the study.

#### **4.1 FACTORS THAT INFLUENCE DECISIONS AND PRACTICES IN FOREST USE**

##### **4.1.1 TENURE SYSTEM**

There is uncertainty over security of tenure among farmers that were interviewed. All the farmers that were interviewed reported that ownership of land was based on offer letters. One A1 farmer in his late fifties said: *I was offered the land yes, but the offer letter says if I do not fulfil certain conditions, the offer of land may be withdrawn*, with sarcasm. The farmers indicated, with some show of dejection, that these offer letters do not give them security of ownership, since the offer letters could not provide them with access to bank loans such that they finance their farming activities. This omission, to them, suggests that they had limited rights over the land. As asserted by O’Flaherty (1998), that all the resources on the land, in Zimbabwe, are held in trust for the residents by the District Councils. This means that the farmers have usufruct rights over the forest but how they exploit this resource are guided by government statutes. The Environmental Management Agency (EMA) Officer who was interviewed reported that their duties included enforcement of the Forestry Act requirements which include permission to clear land and to trade in fire wood, as provided for by Statutory Instrument 116:2012.

Another A1 farmer who was interviewed reported that since control of access and use of forest products were vested in EMA, he was not sure what this meant for his supposed ownership of the land. The farmer said: *do you think it is proper to say I own land whilst I cannot clear the land for crop production without permission*, frowning and gesturing to the woodland nearby. Yet another A1 farmer, in his late forties, who said he made wooden stools for sale in the community, when asked about access and use of forest products, had this to say: *these forests are not ours*, implying that the farmer had no reason to properly manage the forest. An A2 farmer who was interviewed reported that although they were required to seek authority to clear land for crop production from the Forestry Commission, harvesting of products like construction timber, brick moulding industry and fencing were at the onus of the farmers. The evidence arising from this data shows that there is much control of resource use by the state; however, there is a slight difference in how the two categories of farmers view land ownership and forest use.

There are two types of resettled farmers in this ward. First, the model A1 farmer whose land amounts to 6 hectares for crop production, 1 hectare for homestead and 13 hectares graze land. Second, the model A2 farmer whose land is not zoned in relation to land use and vary in size, usually over 30 hectares. Both models of farmers have different perceptions on graze land. An A2 farmer in his sixties reported that they had the leeway to own larger herds of cattle than their counter parts in the A1 farms. The farmer had this to say: *our land is much bigger but one has to own livestock that relate to the size of one's farm*. On the other hand, the A1 farmer bemoaned the limit of livestock placed on them by the state. The farmer said that: *as much as the government limit the cattle we own, this limit will not apply because some of us do not have the cattle and after all nobody makes a follow-up*. However, both types of farmers are expected to make applications requesting authority to clear land for crop production; sell wood that result from the clearance, and transportation of such wood, as

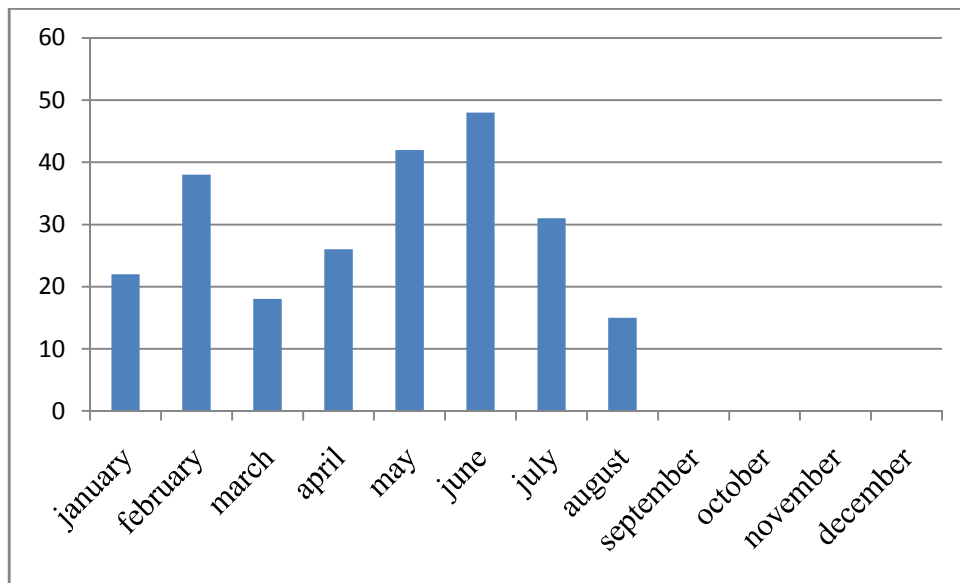
reported by the District Lands Officer who was interviewed. The District Lands Officer also reported that the farmers are informed of the above requirement on allocation of land. Failure to follow the above procedure will result in arrest. According to the Forestry Commission Officer who was interviewed, farmers in the A1 model are expected to seek permission to harvest timber products for any purposes, for example, garden construction or brick moulding for domestic construction purposes from the Headmen, who heads the village committee that controls harvest of timber products. The institution of Headmen, as reported by the Forestry Commission Officer, was being established in all A1 resettlement areas to replace chairpersons, who previously presided over community issues. However, the Officer reiterated the fact that Headmen are not allowed to allocate land, which is the prerogative of the Ministry of Lands. When asked what they do to those farmers who break the laws, which they always do, one headman had this to say: *names of those who do not abide by the rules are submitted to the Ministry of Lands, the District Administrator, the Chief and the political Party for action, which is usually not forthcoming.* The Headman, in his late seventies, said this with visible pain. The District Lands Officer who was interviewed reported that EMA retains the responsibility of management of all forest land including those under A2 farmers. On the other hand, the A2 farmers, as reported by one farmer in his late fifties, the farmers assume ownership of their land despite control of harvest of forest products by EMA, which they do not always follow. The farmer said: *we were offered this land and if we meet the required standards of operation as required by the Ministry of lands we can apply for leases, proudly.* These farmers perceive themselves as entitled to their pieces of land, because they can apply for the ninety nine year lease, as indicated by the District Lands Officer who was interviewed, unlike the A1 farmers who will be given permits.

This evidence further explains the extent of control by the state of forest products use by the local community and the variation in approach to forest products use by both the A1 and A2 farmers.

#### **4.1.2 Policy**

The Forestry Act, (1949) as amended, and the Environmental Management Act, (2002) as amended, are the basis for forest management in Zimbabwe. The EMA Officer interviewed reported that administration of these Acts was the same in the A1 and A2 resettlement areas, access and use of forest products was controlled by EMA. The District Lands Officer also reported that on allocation of land, the farmers are informed of the requirement to seek permission from Forestry Commission to clear land, and *before permission is granted, an inspection team first visit the land in question to ascertain whether the land is suitable for crop production*. Asked on the level of compliance by the farmers, the EMA Officer indicated that the Agency has made several arrests this year, 2014, but their statistics were at district level, figure 1 below, and those arrested were said to have contravened sections of the above Acts.

## ARRESTS CHART



**Figure 1: Arrests - Makonde District**

Source: EMA District Office Statistics for Makonde District

The District Lands Officer who was interviewed reported that when they go out to allocate land they involve EMA, Forest Commission, the RDC, and other government departments and each department will be looking at issues directly related to its operations, and as a result duplication of roles sometimes occur. The District Lands Officer, a woman in her late thirties, said boastfully: *we go out there in full force, and every department is represented*. This scenario is substantiated by the World Bank's Zimbabwe National Policy Review for Forests and Trees of (1993), that the FC has regulatory and extension roles which are sometimes conflicting due to the way enforcement of the provisions of the legislation are concerned (The World Bank, 1993).

In its role of forest governance, EMA is said to have visited once this year in ward six, as reported by the majority of the respondents. The visit coincides with the period which forest

fires are expected, that is, the period between April and June. They indicated that EMA was carrying out an awareness campaign on the protection of forests by avoiding cutting down of trees, which they said was causing deforestation, and burning of forest fires. And if a forest fire started, everyone was expected to be involved in putting out of the fire. A young farmer in his late twenties said: *if a fire burn and destroy the forest, anyone who is reported not to have taken part in putting out of the fire and part of his or her land is burnt he or she is fined.* The EMA Officer interviewed also reported that fire guards around the farms were a must as a measure to prevent the spread of forest fires. The majority of the respondents were agreeable to the measures raised by EMA in relation to forest protection. One female respondent in her early thirties had this to say: *if the rules were not enforced, all trees may be cut and our forests may deplete*, although the statement was said without much conviction. The system of governance in forests reflects a top –down approach in terms of policy formulation and implementation and as a result, compliance with such requirements is due to coercive natural resource management.

The EMA Officer interviewed highlighted that many farmers behaved as if they are still ignorant of the value of forests to their well-being. The Officer reported that: *forest depletion affected the farmers more than anyone else, so these forests were theirs and needed their protection.* This notion by authorities is however revealed by the World Bank (1993) in that the conventional methods of national accounting underestimate the many indirect ways in which indigenous woodlands and trees contribute to the improvement of food security, rural subsistence, and generation of income, agricultural productivity and to the protection of the environment (The World Bank, 1993), there showing the importance and value obviously put on forests by the farmers.

Traditional leaders' authority in resettlement areas has been eroded through disrespect by the political and religious institutions. This was emphatically reiterated by one Headman in his mid-sixties who said: *those of the church disrespect burial sites which we deem sacred and they gather firewood from there and even clear the land for crop production*, thus undermining the authority of the Headman. However, the Traditional Leaders Act of (1988) gives Headmen powers to manage natural resources at local level, but in practice, traditional leaders find themselves reporting issues of violation of the Forest Act or Council By-Laws, to EMA for action. Nhira et al. (1998) asserts that many natural resource statutes assign duties and responsibilities to local authorities, with the intention to allow matters to be resolved locally, yet all the statutes omit to establish the means by which local authorities should exercise their decision-making powers. The authority of the traditional leaders is augmented by working together with the FC, EMA, Lands Office, and Office of the DA and the institution of politics. This was said by the FC Officer who said, *when traditional leaders(headmen) work together with EMA, FC, Agritex, Lands Office, it increases their authority and legitimacy in the eyes of their subjects.*

The above evidence shows that despite the arrests made by EMA of farmers who flout the environmental laws, deforestation is taking place unabated, fires always burn the forests. Most areas do not have fireguards; and this can be viewed as a form of resistance of laws associated with colonial systems of governance, not that the farmers do not have knowledge of forest management, and hence farmers are influenced to decide whether to comply or not.

#### **4.1.3 Forest products availability**

Forest products are an important source of livelihoods for the rural folk. All the respondents interviewed acknowledged the use of wood fuel for domestic purposes, that is, for cooking

and lighting, and that some farmers do sell the product for various reasons that included economic and as a means of disposal when one clear land for crop production. An A1 farmer in his mid-twenties indicated that: *oh yes, we do use the indigenous trees for fire wood for cooking and sometimes lighting, that is our source of energy.* On the issue of construction timber, the majority of the respondents indicated that they used wood for construction of houses, gardens, kraals for livestock, figure 2 below, and fences, among other uses.



**Figure 2: Livestock pen under construction**

Source: Field work data, 2014

Asked about industry, one A1 farmer said they moulded bricks for sale in Chinhoyi, Figure 3 below shows that brick moulding can be a lucrative business. Further probed on how they produced the bricks, the farmers who engaged in brick moulding industry said they use wood for burning and they do not seek permission from anyone. These revelations reveal what the EMA Officer highlighted in the interview that the proximity of markets entice the farmers to harvest and produce from the forest for sale in Chinhoyi. The Officer said that: *because of*

*easy access to the market, the farmers are lured by cash to engage in these dealings that end up affecting the environment negatively.*



**Figure 3: Brick moulding Industry**

Source: Field work data, 2014

Thus wood is used for burning bricks as well as tobacco curing. Most of the farmers who were interviewed reported that they are into production of tobacco. All the farmers interviewed in the A1 category used wood from the indigenous forest for tobacco curing, and they indicated that they had not planted a tree to replace those being used in tobacco production. An A2 farmer, who was interviewed, and happened to be the Environmental Monitor of ward six, reported that: *I harvest wood for tobacco curing from a woodlot I inherited on the plot.* However he supplemented with wood from the indigenous woodland whenever he fail to raise enough cash for the supply of electricity such that he can use coal.

Those in craft said they had not planted an indigenous tree, trees which they use in craft since resettlement in 2002 and that the indigenous trees they use are in abundance. One of the farmers come carpenter, strongly indicated that there was no need to plant indigenous trees

because by the time it would be harvested, he would be long dead. The farmer retorted: *why should I plant a tree that I can possibly use in my life time.*

The respondents indicated that; there was consensus among the respondents, wild fruits and vegetables were seasonal and that these were not in abundance such that they only managed to harvest quantities enough for domestic consumption. A woman respondent in her late thirties reported that: *wild fruits and vegetables are surely seasonal and when in season sometimes we fail even to gather enough for sale thus we just eat with our children.* Time and distance from where these were harvested were constraining factors to quantities harvested. She went on to say: *we walk long distances into those mountains*, pointing to a mountain range in the western direction, *and thus the time we would spend harvesting is reduced because we need to go back home in time.* Mazhanje (Uapaca Kirkiana) fruit was said to be the most affected by forest fires. One other female respondent said that: *when muzhanje tree is burnt, it does not bear fruit the following season.*

The majority of the respondents indicated that they use draught power for tillage, thus there is continuous need for yokes and this translate into cutting down of specific types of trees for the production of the yokes. One male farmer said that: *we use that muchecheni tree for making yokes because it is strong.* Availability of honey is now reduced. One respondent indicated that: *the white commercial farmers who used to cultivate flowers are no more, as a result bees tended to migrate out of the area.*

Wildlife was now scarce in ward six such that farmers are resorting to snares and burning of forests to catch and flash out wildlife, lamented one A2 farmer. The farmer visibly disapproved of the use of snares and fire as hunting tools. He said: *there are no more kudus in these areas, but there used to be many of them. This means that children growing these days may have to be content with seeing a kudu in books.* Thatching grass is reducing in

quality and availability due to these forest fires. The majority of the respondents use thatching grass to roof their houses, and only one interviewee reported that she harvested thatching grass for sale to customers in Chinhoyi. This trade in thatch, the woman said, cushioned her since she could not produce enough cash crops due to lack of inputs. The elderly woman had this to say: *This product comes handy in providing for school fees for my kids because I do not produce enough crops for sale due to lack of inputs.* Figure 4. below shows a man completing thatching a gazebo in Chinhoyi, and this is believed to a lucrative business in areas where thatching grass is in short supply.



**Figure 4: Thatching industry in Chinhoyi**

Source: field work data, 2014

However, the reason for not engaging into selling of thatching grass was because fires burn forests before farmers harvest enough thatch, since the farmers will be busy with crop production which tend to provide farmers with much of their income, than from forest products like thatching grass. *We cannot have time for harvesting thatching grass*, said an elderly woman, *because by the time we finish harvesting our maize crop, the forests would be black with smoke*. One female respondent, in her late thirties and widowed, indicated that fire wood was being fetched further and further from their homestead. This meant that more time was needed for fuel wood gathering thereby reducing time for other chores. According to Barnes et al. (1984), women collect fire wood from the closest suitable place first, and if they go further and further, this makes fire wood scarcity linked to food problems in many countries; deforestation and the diversion of manures to use as fuel thereby sabotaging the land's ability to produce food, ( Munck and O'Hearn, 1999).

The above data show how much the farmers engage in use of forest products. Therefore, forest products availability becomes a key issue in decisions and practices that negatively or positively affect the forest resource. Compliance or non-compliance with forestry laws is also determined in part by forest products availability.

#### **4.2.0. EFFECTS OF DECISIONS AND PRACTICES ON THE FOREST**

##### **4.2.1. Productivity**

When crop land does not produce enough food and extra for sale, farmers tend to overexploit forest products and clear more land as they try to meet their daily requirements of food and income. The majority of the respondents reported that land clearance is a measure to mitigate shortage of inputs since most of them cannot afford due to high costs. Thus if they cleared new land, the farmers said, this usually resulted in increased yields for periods of two to three years. One A2 farmer in his early sixties had this to say convincingly: *last year I cleared two hectares, this year I intend to clear one hectare so that I may increase maize production by using virgin land or at least the land has been rested for a long period.* Nhira et al. (1998) asserts that with such low levels of support, it is estimated that resettled farmers may need periods of twenty to twenty five years to achieve stable farm production levels. Thus the accelerated deforestation is resulting from a combination of factors that include clearing of land for cultivation due to production levels, (The National Conservation Strategy, 1987). These data show that when farmers are faced with reduced land productivity they tend to clear more land, as a strategy to meet their needs.

Population increase and joblessness are other factors also leading to more land clearance. *Most former farm workers are yet to be allocated land,* said one male A2 farmer, indicating that they offered those willing to pay a small rental fee pieces of land to clear and cultivate. As a result, these former farm workers negotiate for small pieces of land from the resettled

farmers so that they can make a living out of it. In doing so, more and more forests are cleared for crop production. Thus land clearance is viewed as a measure that can help improve the productivity of the land. Figure 5 below show land clearance by a farmer in an A2 plot:



**Figure 5: Land clearance for crop production**

Source: Field work data, 2014

#### **4.2.2. Population**

Besides increased land clearance, population growth and redundancies in the ward are leading to uncontrolled harvest of forest products such as timber for wood fuel and tobacco curing. Because they have nothing that generate income for them, most farmers resort to cutting down of trees for sale as wood fuel. They also sell this fire wood to farmers who are into tobacco production. Said one A1 farmer, *I have no option but to sell fire wood to those who are into tobacco production*. One headman interviewed reported that there was need for intensive education about forest products to most of these farmers, *most of these farmers need*

*intensive education on use of forest products*, said the Headman with emphasis. The headman also bemoaned the proximity of Chinhoyi to the ward saying wood poachers from the city come into the area and flash cash enticing the framers to engage in cutting trees for wood fuel. This scenario was also emphasised by the EMA Officer who was interviewed who had this to say: *although the farmers need income for school fees and many other domestic requirements, the proximity of the market for fire wood to ward six is too tempting for the farmers*. Figure 6 below show how the farmers are engaging in cutting down of trees:



**Figure 6: Harvesting of timber products**

Source: Field work data, 2014

#### 4.2.1.2 Risk Avoidance

The majority of the farmers also reported that if wild fruits and vegetables were in abundance they would sell what they harvest but because of distance and availability of the products, they only manage to harvest for domestic consumption. One A2 farmer reported that: *these wild fruits and vegetables are not plenty thus we can only manage to harvest what we eat.* The farmers indicated that the products are always affected by forest fires which burn every season. Thus, as reported by one elderly woman, gardens become an alternative for income generation and supply of fresh vegetables. The respondent had this to say: *we really need these gardens because they provide us with fresh vegetables and cash.* The woman said they use thorny bushes for fence since they cannot afford to put up gardens protected by fence throughout. She indicated that *it is the sure way of keeping livestock out of the garden since they are attracted by the green vegetables because there is no brush or foliage for the animals due to uncontrolled forest fires.* The picture below, figure 7, shows a thriving garden:



**Figure 7: A thriving garden in A1 resettlement area**

Source: Field work data, 2014

#### **4.2.2 Observations**

The researcher observed that many activities in forest use were taking place. Land was being cleared but the researcher could not locate the owners of the land being cleared to ascertain whether they had obtained permission to clear the land from the Forestry Commission. The farmer who previously indicated that he wanted to increase maize production reported that he had been authorised to do so. Land clearance is leaving the landscape not protected from runoff and wind. There were no signs of contours for prevention of soil erosion visible. The picture below, figure 8, show land clearance in progress:



**Figure 8: Land clearance in progress**

Source: Field work data, 2014

The researcher also noted that brick moulding is a thriving enterprise in the ward. Many sites where brick moulding had taken place were observed by the researcher, and these sites were seen to have cleared much of the trees around them, suggesting that the trees were used to burn the bricks. Nobody was seen around the sites to ascertain whether they had authority to mould the bricks burning with fire wood. The headman at east range farm once highlighted that he had allocated one anthill for the purpose of brick moulding so as to build the required classroom blocks at the local primary school. Farmers who recently resettled in this ward intended to venture into tobacco production and hence needed bricks for barn construction. As the farmers mould the bricks, they do not rehabilitate the gullies they create but leave them to natural recovery which is sometimes far-fetched. The picture below, figure 9, show a donga left from a brick moulding site:



**Figure 9: Dongas from brick moulding industry**

Source: Field work data, 2014

The researcher observed that the purported acceptance of EMA as an institution representing the state in regulating access to and use of forest products, could have been a case of weapons of the weak, as espoused by Scott, (1985). After having spent three days moving around the ward interviewing the farmers, one respondent confessed to the fact that farmers were whispering to each other that an unknown man from EMA was patrolling their area so people should watch out. This revelation may help to explain why the researcher could hardly find anyone cutting down trees, although evidence of such is abound.

Limited productivity, coupled with population growth, joblessness, and deprivation is seen to lead to overexploitation of resources by farmers. This over exploitation of forest products lead to destruction of forests and loss of wildlife habitat and consequently loss of biodiversity.

### **4.3.0 KNOWLEDGE OF OTHER USES OF THE FOREST**

#### **4.3.1 Conservation**

The importance of the forest to nature is a crucial factor in the management of forests. The majority of the respondents interviewed reported that forests were good for improving the rain cycle, purification of the air we breathe, act as a wind break, and prevention of runoff and soil erosion. One A1 male farmer in his early thirties had this to say: *if we do not cut down trees and avoid burning fires, our forests will maintain humus and also avoid the washing away of top soil.* However, only a few respondents reported that forests had further uses that included acting as habitat for wild life, water source protection, and ritual purposes.

The respondents professed ignorance of any other institution outside EMA that is involved in forest management.

There is one public woodland of the indigenous muchakata (*Parinari curatellifolia*) fruit trees in ward six and the management regime is a mixture of common pool and open access, as indicated by the ward councillor. The councillor indicated that when the fruit trees are in season, anybody can access the woodland at any time to harvest fruits but however, cutting down of the trees for firewood is forbidden by EMA. A few wood lots are in A2 areas, and these were planted by former commercial farmers and are managed privately by the owners of the A2 plots. Thus the majority of the farmers, as much as they understand the need to have wood lots since they are into tobacco production, were yet to plant any. This was lamented by the ward six Councillor, who had this to say: *most of the farmers feared that gum plantations can make their area drier than it currently is, with only three streams flowing through it.*

The respondents were in agreement that forests needed their protection for the continued benefit for the farmers. All the respondents reported the fact that nobody was allowed to cut

down trees or cultivate the area where the local stream, which is perennial, flows from, a sign of catchment area conservation; but because of lack of agricultural inputs, the farmers always found themselves clearing more land for crop production, as indicated by one A2 farmer, *we cannot stop clearing land when actually we need virgin land that is productive*. According to the National Conservation Strategy, (1987), experience has shown that ecological problems are often rooted in socioeconomic causes. However, evidence of land clearance and cutting down of trees is everywhere to be seen. Most of the respondents said that they had not been involved in tree planting and neither had they been taught how to plant trees, despite the Forestry Commission Officer saying that they were involved in tree planting campaigns every year. Furthermore, as much as they know where they could buy the seedlings they had no money to do so. *We do not have the money to buy the seedlings*, said one A1 farmer. The two farmers who had been involved in tree planting were one Headman and the Environmental Monitor. These two were also involved in campaigns to protect forests from fires, *I am always called to attend different workshops where we are taught different skills which we impart to our colleagues here in farms*.

The majority of the farmers interviewed were in agreement that graze lands should be protected from fires to serve livestock and wildlife, but despite the farmers' agreement on protection of graze lands, much of the forests were black with suit form fires, as observed by the researcher. One female respondent said she had no livestock and thus she saw no reason to protect wildlife instead of killing them for food; *I do not have cattle or goats so I need mice and the hares to provide my family with the much needed protein*, she said without any concern at all. There was no limit of the size of herd of cattle in the A2 farms where the farmers said they were limited by the size of their plots, *your graze land is the limit*, said one A2 farmer proudly, unlike in the A1 plots where the size of the herd was limited to eight cattle. However, the farmers said that they do not limit their cattle since some of the farmers

do not have, *we do not limit our herds as required by law because many farmers have nothing*. This was also highlighted by the District Lands Officer who was interviewed, *those are just mere paper rules, on the ground it is different*, referring to the size of herds of livestock permitted to A1 farmers.

All the respondents were in agreement that fires reduce the chances of regeneration of cut trees and retarded the growth of shrubs. They saw fires as a danger due to its destruction of thatching grass, which every homestead uses for roofs of houses and kraals for goats, and also for sale; *ohh yes that is very true, we need to protect our forests from fires because fires destroy trees and grass for thatching and our cattle*, said one young farmer. Thus in such circumstances, it was the responsibility of all farmers to prevent fires.

#### **4.3.2 Methods of harvest**

Methods used by the farmers to harvest forest products are not consistent and neither are they systematic or conservative. In most instances it was observed that harvest of timber is reckless. The cutting of trees was indiscriminate, with those big trees being axed for production of bricks and tobacco curing, as well as small ones for the construction of cattle pens, gardens and roofs. A male respondent in his fifties reported that *these big trees are most ideal for brick production and for tobacco curing since they produce more embers and last longer than the small trees*. This clearing of forests, coupled with forest fires, has led to loss of habitat for animals and some bird species. One interviewee bemoaned the now scarce wildlife. He had this to say: *Other farmers burn forests so that they hunt without difficulty, even to dig for mice. Our children no longer know animals like the kudu, other than seeing it in books*.

Fire is also used to clear land for crop production by first burning the woodland then cutting down the trees. Figure 10 below show the establishment of a homestead and land clearance by using fire:



**Figure 10: Land clearance by fire and building structures**

Source: Field work data, 2014

Honey harvesting, as reported by another respondent, was done using fire thereby destroying the bees in the process; *that is right because we avoid being bitten by the bees, and that is what has been done since long ago*, showing no sense of guilt. The majority of the respondents indicated that it was necessary to educate the farmers on the issues of harvesting forest products. One of the headmen indicated that there was also need to establish demonstration woodlots so that the farmers can appreciate the need for conservation and realisation of monetary benefits from such.

#### **4.4 SUMMARY**

The findings reflect that the farmers in ward six, although they are aware of institutional laws that regulate forest access and harvest of products, they still circumvate these laws and continue to use the forest in deplorable ways that are leaving the forests degraded. This shows the resistance that was given to the same laws during the colonial period. However, socioeconomic issues are at the core of such uses. Examples include lack of resources for agricultural production, breakdown of the traditional sharing practices due to different backgrounds from whence the farmers are coming from, and different religious practices.

## **CHAPTER FIVE**

### **DISCUSSION OF FINDINGS**

#### **5.0 INTRODUCTION**

This chapter discusses the findings of the research. The discussion is centred on themes that arose from the findings and which help explain social phenomena in the ward the research was carried out. These themes include class struggles due to land tenure systems, power dynamics, centralized state power, gender relations, local politics, knowledge and social change.

#### **5.1 CLASS AND CLASS STRUGGLES**

In Zimbabwe, the post-colonial government inherited the colonial government structures of natural resource management with minimum changes despite general ideological differences (Chigwenya and Manatsa, 2007). Thus competing claims over forest resources between various stake holders is a consequence of poorly defined ownership rights and the difficulty of exclusion from such resources under the state property regime; insecurity arising from this inability to exclude, undermines local incentives to manage resources in the commons (Katerere et al. 1998). This tenure system has led to differentiated classes among the resettled farmers; with model A1 farmers on one hand and model A2 farmers on the other. There is also another class of the landless, the former farm workers who are yet to be allocated pieces of land but they reside in the resettled areas' compounds. According to Whiteside (1998) security to common land resources like crop land is relatively secure, unlike grazing and other land on which common property rights is the tenure system. This put the forest on the insecure management regime. The tenure regime on land use and hence forest use is controlled by the state. Land and its forests are thus owned by the state and the farmers have use rights only and this affect how the farmers decide on how to use the forest. The A1 farmers, because they have common graze land which is not fenced, usually let loose their

livestock, especially cattle, during periods after harvest of crops. Thus their cattle stray into A2 plots breaking fences in search of foliage and brush since fires would have destroyed pastures in the former's graze lands. The A1 farmers also go into A2 plots to poach for fire wood for sale. The yet to be resettled farmers also encroach on both A1 and A2 plots to harvest whatever they can get their hands on, fire wood, wildlife and wild fruits and vegetables. These forest products are viewed as gifts from the Almighty and nature thus they belonged to everyone. These struggles always bring forth conflict between the three different classes of farmers, and because farmers' security on land is not certain, these three types of farmers continue to sling mud at one another leading to forest unfriendly practices.

The current scenario is that in the small-scale commercial farming areas, the Model A2 resettlements, and the A1 resettlement areas, forests are under the jurisdiction of the RDCs, but are co-managed together with other government arms like the FC, EMA and the Ministry of Lands, as explained by the District Lands Officer, the Forestry Commission Officer, and the EMA Officer who were interviewed in this research. Thus, on allocation of land, farmers are informed of all the requirements they should meet as pre-requisites for resettlement without reprisals from the laws of the country as represented by the said institutions involved in the management of the land and hence forests. As such, these procedures tend to be burdensome to the farmers who sometimes do not seek permission to clear land but encroach slowly into the forest by clearing small portions at a time and which seem negligible but in the long run vast areas are cleared. Usually those who are landless are offered pieces of land where there is need for clearance so that they do the clearing for the one who was offered the land. This creates the master and servant relationship between the two farmers and deepens the class struggles. Thus under such a tenure system, the farmers, not being sure of their security over the pieces of land allocated to them, tend to neglect the need for observance of good management practices. As a result of this uncertainty, farmers engage in forest use

practices that do not consider effects on the forest and result in deforestation and degradation. The A2 model farmers' tenure though being offer letters, tend to have more freedom in access and use of forest products. However, according to the National Conservation Strategy of (1987), the Natural Resources Board remains the public trustee of all natural resources and the national coordinator of the local conservation activities and the Forestry Commission extended to promote good management of practices for all indigenous wood lands (The National Conservation Strategy, 1987). This shows that the state is responsible for forest management in Zimbabwe.

The politics of the land issues is very complex and thus it needs a complete overhaul of the laws that govern such. The forestry Officer who was interviewed indicated that farmers do not come to meetings that are not political. The Officer hinted that political meetings were attended just to show political allegiances only. This was echoed by the Environmental Management Officer who had this to say: *we also have problems with some of these Councillors. May be it is because they do not understand their roles we are yet to establish. If we call for a workshop they do not attend. Out of the nineteen wards sometimes we get as few as five or six.* Land tenure is an issue which is politically sensitive which the Zimbabwean Government has to deal with (O'Flaherty. 1998).

This means that farmers do not control their access and use of forest products. As such, the tenure system has a direct bearing on decisions and practices taken by farmers in forest use. The majority of the farmers interviewed, viewed such ownership as token since they could not choose what to harvest and how they would do it. Indigenous woodlands are seen as commonly belonging to everybody whereas gum plantations are seen as more of individualistic. However, gum plantations are isolated and are mostly in A2 farms only, and

these were planted by former commercial farmers and as such, other farmers claim that it is their right also to harvest from such woodlots since the new owners found them in place, exacerbating the struggles of the farmers.

## **5.2 CENTRALISED POWER AND ITS DYNAMICS**

Forest management approach in Zimbabwe is top to down, with locals still viewed as incapable of forest management. Zimbabwe's policies continue to view local people as destructive users of forests and other resources (Mapedza, 2007). Decision-making power in natural resources management is centralised in the state and it is decentralised as far as RDCs, which are still viewed as the central government because they are answerable to it and not to the communities they police.

Management of forests is characterised by contradictions between traditional rules and practices; on one hand, and the general law on the other, that is, the powers vested in the formal bodies of the FC, NRB, RDCs, undermines the authority of traditional leadership structures as well as management measures initiated by local communities (Barnes et al. 1984). Traditional institutions have been reduced to mere implementers of government policies without a say in the formulation of the policies and also without local consultations. Forestry policies, with their neglect of local knowledge, tend to uphold the prestige of science which is used to legitimise the existing forestry practices by the state which in many instances has been intended to manipulate and control labour processes and labour in the service of commercial timber production during colonialism, and to maximise timber production and pre-empt any protest by the locals (Moyo and Katerere, 1991). Thus the state arm in forest management is more powerful such that the traditional institutions rely on the weapons of the weak to weave their way in use of forest products by the locals. EMA controls access to forests and use of forest products. This control is usually dependent on the abundance of the resource, as echoed by the Forestry Commission Officer interviewed, who

indicated that use of a forest product was dependent on its availability and hence creation of woodland resource inventory maps, to enable good governance of the resource. This suggests that the state's approach to natural resource management is paternalistic. The government seem to say it knows all that is good for its people without even consulting the very people who are affected by the policies, bringing out the concept of a welfare state.

Decentralization is stopping at the Rural District Council level and Traditional Leaders, who are mostly side-lined in policy formulation but needed on implementation. EMA is the most active institution in forest management and thus it assumes the role of manager, although the traditional institution is present but appears to be invisible. The farmers are expected to follow the forest management laws without question. As much as the regulations are in place, adherence to these is not forthcoming from the farmers who are not following the stipulated requirements.

Farmers and the authorities are always on a collision course and those found wanting are arrested and made to pay a fine. Despite the arrests, deforestation is taking place and fires always burn the forest. Most areas do not have fireguards; and this can be viewed as a form of resistance of laws associated with colonial systems of governance; or to create convenience for illegal hunting, not that the people do not have knowledge of forest management.

The farmers are not always forthcoming in following rules, as expressed by the FC Officer, who indicated that maybe the value of the forest and products there from, is not known to the farmers. But in essence, evidence from the research indicates that the farmers are quite aware of the benefits that are derived from the forests. Another respondent said that sometimes they followed rules from EMA but they sometimes apply their own rules. This has a bearing on the power dynamics at the local level among the members of the community. If they cannot

be heard, and do not have power to change a situation, then they tend to manipulate the system so that it suits their needs, as a survival strategy.

However, although EMA forces farmers to put up fireguards as preventive measures to forest fires, nobody is seen to enforce EMA rules at the local level. This is so despite having an environmental monitor who assists EMA with submission of reports on the goings on in the ward with regards to forest fires and trading in fire wood. The EMA Officer indicated that an environmental committee is yet to be established in ward 6, though it is expected to be in place, in terms of the Rural Districts Councils Act. Enforcement of statutes by government agencies is not effective due to lack of resources and the collapse of traditional resource sharing practices and controls over resource use (Moyo and Katerere, 1991), has led to an open access regime to forest resources and thus leading to deforestation and degradation. This is a revelation of the power dynamics in the ward.

### **5.3 GENDER RELATIONS**

Nine out of ten of the people in most poor countries today depend on firewood as their chief source of fuel (Eckholm, 1976). As much as this assertion seem decades ago, in Zimbabwe's rural areas, of which Makonde District is one of the areas, the majority of the people depend on firewood for their energy and lighting. Harvesting of fire wood is one of the activities that is biased towards women. Among forest products used by ward six communities, harvesting of non-timber products is wholly done by women with the exception of when young boys are taken aboard by their mothers. The women engage in harvesting of thatching grass, fire wood, wild fruits and vegetables. This shows that this community is still very patriarchal in nature. Labour is divided along gender lines.

Various activities by the farmers affect woodlands. The women, besides harvesting non-timber products, they engage in gardening. The women do the construction of the gardens by themselves using thorny brushes and small poles. Sometimes they use spaced fence since they cannot afford to use fence alone. This set up show that society still expects their female members to be proactive in the provision of most domestic chores. The seriously accelerating deforestation of Zimbabwe is resulting from: land clearance for crop production due to different reasons including population growth, increasing demands for firewood without enough replacement, increasing demands for building materials and fences by mostly rural people, although urban people also need these materials, and damage caused to tree communities by forest fires (The National Conservation Strategy, 1987). Overgrazing by livestock and rural industries such as brick moulding, also increase the rate of deforestation

Forest products' value and contribution to livelihoods is underestimated (The Wolrd Bank, 1993), consequently, the conservation and management of these resources is neglected.

Harvest of forest products, as shown by evidence from the research, is individualistic and haphazard, and thus the contribution of these products to the economy should be acknowledged as espoused by The National Conservation Strategy on Zimbabwe, (1987).

#### **5.4 POLITICS**

Politics at the local level takes centre stage when it comes to the productivity of the land and the need for more land and inputs. The politics build from the class struggles and as a result spill into the domain of exclusion and inclusion. Access to forests for fire wood for sale is very difficult for others who are not well connected. Wood for fuel, land clearance for agriculture, and wood for tobacco curing, are the three major causes of deforestation and degradation in this ward. But due to the politics of exclusion, some farmers find themselves not included in the supply of coal for tobacco curing, although they do not like to use coal because they do not have electricity to run electric fans.

Degradation is usually seen when it has already set in. Thus its effects; reduced land productivity, leading to further land clearances, accelerated soil erosion, and declining land fertility, make the farmers realise that their land need rehabilitation; which they sometimes neglect at their disadvantage. However, the blame game set in because those who feel to be the rightful owners tend to blame the others, those excluded; that is, either the A1 or the former farm workers.

There should be a balance in planning by the policy makers between the people and the state needs such that the needs of the people for such products as fodder, food, fuel and environmental protection are met; while the state needs to fulfil its international obligations in terms of unwanted emissions, the laws should protect the woody biomass for the people rather than from them and should stress more the social rather than purely commercial aspects as is evidenced by the forestry institutions inherited at independence (Moyo and

Katerere, 1991), and increasing the political dynamics of the community. If managed from a bottom-up approach, incorporating the cosmology of the indigenous people's agro-ecological religion, the indigenous woodland has the potential to integrate grazing, fuel and food production (Moyo and Katerere, 1991), and hence reduce the politics to a level playing field.

## **5.5 KNOWLEDGE**

Forests are being depleted at a devastating rate, with little or no reforestation (Mujaju and Zinanga, 2006), despite the knowledge about conservation abound among the farmers. Traditional ways of conservation have been replaced by scientific methods which are being advocated by the government of the day. These new methods which are a result of the Kyoto Protocol and Agenda 21, reflect the thinking of Western ideologies in environmental management, which are contradictory to the local ways of conservation which view people as a part of the environment. The cosmologies of the indigenous peoples in their relationship to nature is characterised by respect and humility and in this their world view is closer to that of the deep ecologists (Munck and O'Hearn, 1999).

The crucial roles of forests, as viewed by the scientific knowledge, are less visible to most than their social and economic services (Eckholm, 1976). Forests influence the wind, temperature, humidity, soil, and water in ways often discovered only after the trees are cut, and these functions, usually beneficial to people, oxygen, carbon and nitrogen, and without any expenditure of irreplaceable fossil fuels (Eckholm, 1976). Rainwater falling on tree covered land tends to soak into the ground rather than to rush off, erosion and flooding are thus reduced, and more water is likely to seep into underground pools and springs (Eckholm, 1976).

## **5.6 SOCIAL STRUCTURE, SOCIAL CHANGE and SOCIAL MEANING**

Segmentation of social structures, resulting in resettlement of farmers from different backgrounds, affects individual socio-cultural bearings on agro-ecological religion. The Forestry Commission Officer interviewed reported that it was difficult to merge these farmers into one cooperative entity in terms of forest management due to the different backgrounds of the farmers. The breakdown of traditional control systems, due to the inception and enforcement of the scientific knowledge by the state, common pool resources are becoming open access (Whiteside, 1998), and as a result the farmers tend to be individualistic in their approach to forest products use. Thus these new property regimes have set the community into new social structures arising from different needs of the community members. Social change and different social meaning becomes inevitable when members of a community have different reference points, due to different backgrounds.

Scott (1985) in Munck and O'Hearn (1999), shows how everyday forms of resistance can constitute a culture of resistance and can make an utter shambles of policies drawn up by the masters of capital or the state. These forms of resistance are reflected in the behaviour of the farmers interviewed in the study. As much as others comply with the requirements of the statutes in terms of forest management, the majority of the farmers pay lip service to what is asked of them.

This is not just a struggle in the domain of production but a struggle over meaning and symbols; it is a cultural struggle in the domain of the life world (Munck and O'Hearn, 1999).

Nhira et al. (1998) posits that redundancies in the formal employment sectors are likely to increase the numbers of people relying on agriculture for survival and/or turning to forest resources for subsistence and sale; and as a matter of fact, the people who returned to their

rural areas after being laid off got resettled and went with their newly acquired urban cultures to the resettlement areas, and thus this fusion resulted in new cultural beliefs emanating.

## **5.7 SUMMARY**

The tenure system is that land and all resources therein, is held in trust for the locals by the Rural District Council. Farmers do not control their access to and use of forest products. The Environmental Management Agency has the mandate to manage forests, as indicated by the EMA Officer interviewed and reported that their responsibility is to enforce The Forestry Act. The forestry policy is informed from the top, that is, issues to do with forestry management are designed and implemented from the different Ministries. The majority of the people depend on forest products for their livelihoods. However forests are being depleted at an alarming rate despite policies to improve on resource extraction and conservation. Land clearance is going on unabated due to the continued need for productive land. Local knowledge systems not recognized in the management of forests. Indigenous people have the knowhow in forest conservation. Community structures are built on fragmented cultural backgrounds of its members. As literature points out; poverty, tenure, agricultural productivity, collapse of traditional resource-sharing practices and controls over resource use, are critical in decisions (Moyo and Katerere, 1991). Thus the ultimate goal of forestry programmes is not the development of trees, but the development of people (FAO, 1985). However, forest clearance, can compromise the genetic diversity of tree crops (FAO, 1985). The last chapter gives the summary, conclusion and recommendations of the study.

## **CHAPTER SIX**

### **SUMMARY, CONCLUSION AND RECOMMENDATIONS**

#### **6.0 INTRODUCTION**

This chapter summarises the research, give concluding remarks and recommendations for policy makers.

#### **6.1 SUMMARY**

It can be deduced from the study that farmers' decisions and practices in forest use are affected by a number of factors. Tenure regimes, policies, land productivity, availability of forest products, knowledge of other uses of the forest, and a host of other issues determine forest use practices of the farmers in ward six. However, the traditional knowledge systems are not given due recognition, and hence the reliance on top-down policies that are informed from the international arena of conservation, based on scientific knowledge systems. The post-independent government inherited policies that did not give equal emphasis on non-agricultural activities and thus forest use and management was relegated to something that could be done separately and hence development of laws that did not incorporate the local people's ideas. The laws were intended to protect the forest from the people rather than to protect the forest for the people.

However, the current development theory is focussing on the involvement of locals in the management of forests since these people are the ones who are directly involved in the use of the forest and its products. Thus the birth of Community Based Natural Resource Management (CBNRM) philosophy, if adopted in its totality, can provide a holistic understanding of the underpinnings of the traditional knowledge systems in forest management; although there is disenchantment about the philosophy from some quarters. If the local people are allowed to make decisions on how to use their natural resources then they

may be incentivised to conserve the resources. The traditional leadership institution is also a viable avenue through which natural resources can be managed. Natural resource commercialization is the diversification of livelihood options by rural households through sale of products for revenue generation (Chidhakwa et al 2005) in Mutanga, (2009). Arnold (2004) suggests that commercialization of non-timber forest products presents an incentive for natural resources management, but may result in serious ecological damage if not properly managed (Mutanga, 2009). Other researches also point to the fact that to improve on the management of forests, policies should incorporate indigenous knowledge systems and as well the local communities in the crafting of the policies so that they feel to be part of the whole conservation process.

## **6.2 CONCLUSION**

The evidence that has emanated from this study show those farmers in ward six of Makonde District engages in various forest uses that include grazing livestock, harvest of timber and non-timber forest products. It is further shown that the tenure system influence the farmers to make decisions that manifest in different practices in forest use. Because the tenure system is uncertain, the farmers tend to neglect issues of conservation and the idea of common pool resources regime are easily turned into open access, and as a result, deforestation and degradation sets in.

Policies reflect a top- down approach. This approach was inherited from the colonial system of governance and it presume that local knowledge is not suitable for natural resource management since it is informed from the international arena through various conventions on natural resource management. In scientific knowledge there is no room for sacredness and spirituality, which happen to guide local natural resource management through traditional institutions. These traditional institutions are also side-lined in the formulation of these policies and are reduced to implementers of such policies using the Traditional Leaders Act,

which sought to re-establish the authority of these institutions after realisation of their importance in the governance of natural resources. As a result, there is conflicting interests between the several institutions mandated to manage forests. This is reflected in duplication of roles by the Forestry Act, Natural Resources Act, Environmental Management Act, and other institutions created there from like the Natural Resources Board, and the Forestry Commission. However, there is resistance of these policies by the farmers since they continue to engage in practices that are not friendly to the environment.

Forest products availability influences farmers to engage in trade of abundant products, or deplete those which are scarce, or to use whatever is available to meet their daily requirements. This is also exacerbated by the land's productivity. It was established beyond doubt that the farmers have knowledge of the economic value of the forests and that given the opportunity they can effectively manage their forest in a conservative way.

### **6.3 RECOMMENDATIONS**

The researcher makes the following recommendations:

That the local communities should be incorporated into the structures of natural resources governance at the local level; that traditional institutions should be made part of the policy formulation task force, decision-making powers in natural resource governance be decentralised to the local level and that the concept of Community Based Natural Resource Management is revisited and that it is informed from the locals' perspective so that it suits local conditions.

The tenure system should also be revisited, and that there must be strict observance of property rights and title to land.

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## **IN-DEPTH INTERVIEW GUIDE**

What products do you harvest from the forest?

In what ways do you use these products?

What are the traditional means through which harvest of forest products is regulated?(Probe: how these regulations are applied, what the farmers think about these, if they abide, what sanctions are in place and if these can be effected, who effects them and farmers' view on their legitimacy)

Who are other institutions involved in forest management and governance? (Probe: what the farmers feel about these institutions, are they agreeable to the methods of regulation, control of access and use of the forest products)

Which method/regulation do the farmers follow when harvesting forest products? (Probe: pathways....why they follow particular regulations, influence from government institutions involved in forest management, traditional methods and why)

How often do the farmers clear new land for crop production? (Probe: why and what methods are used)

What is the tenure system? (Probe: issues of inheritance, security of tenure, access and use of forest products)

How do the farmers reach decisions to harvest forest products? (Probe: socio-economic, natural, demographic and political issues)

Do the farmers get information on how to use the forest? (Probe: how and when to harvest, planting of trees, use of fire and participation in training programmes)

Which are the products that are no longer available which you used to harvest? (Probe: continuous and careless harvesting, effects of methods on products and forest)

Any other uses of the forest

Should forests be protected? (Probe: by whom and why)

### **KEY INFORMANT INTERVIEW GUIDE**

What is your view of farmers' attitudes towards harvesting of forest products?

Are the farmers aware of what is expected of them by your organisation? (Probe: compatibility of practices with natural resource laws, council by-laws, knowledge of other forest uses)

What is the tenure system? (Probe: control, access, governance, sanctions for breaching laws, punishment and effectiveness, responsible authority)

What motivates farmers' decisions and practices in forest use? (Probe: pathways through which decisions are made, effect of practices on forests, incentives for farmers to cooperate with government officials)

## **OBSERVATION GUIDE**

To observe the state of the forest (degradation, conservation)

To observe how harvesting of both timber and non-timber products is done

To observe any visible forms of governance

Taking photographs