

**GOOD GOVERNANCE PRINCIPLES AND THEIR APPLICATION AT
COMMUNAL FOREST LEVEL: THE CASE OF CROWN RANGE AREA,
CHIREZI DISTRICT IN MASVINGO PROVINCE, ZIMBABWE.**



BY

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**A dissertation submitted to the faculty of Social Sciences in partial fulfillment of the
Bachelor of Science honors degree in geography and environmental studies.**

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APPROVAL FORM



The undersigned people certify in writing that they have read and recommend a dissertation entitled, **Good governance principles and their application at communal forest level. The case of Crown Range Area, Chiredzi District, Masvingo, Zimbabwe** to Midlands State University by R125001G in partial fulfillment of Bachelor of Science Honors Degree in Geography and Environmental Studies.

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ABSTRACT

It is not yet clear which principles are being applied, how these principles are applied and what are the benefits drawn as a result of implementation of these principles, as well as the effectiveness of these principles on conservation and management of Crown Range local forest. Good governance is the order of the day in modern development circles of natural resource management. However, good governance has moved from all other areas of sustainable development to focus its main thrust on natural resource governance. This study seeks to explore the application of good forest governance principles, their effectiveness and the impacts to local people in Crown Range area, Chiredzi District in Masvingo province, Zimbabwe. The research adopted the use of interviews, questionnaires and direct observations as primary data sources while journals, books, newspaper articles and reports from Forestry Commission and Rural District Council were the secondary data sources. A sample size of 62 household representatives was selected and key informants for interviews to get a broad spectrum of information on the application of governance principles at local forest level. It emerged that Crown Range community is mainly dominated by female population who had the highest proportion of respondents from the sample as compared to the males. It also emerged that the age group of the general population have direct impact on the application of good governance. A high proportion of the respondents represented the economically active population whereas the elderly population had the least proportion of respondents. A greater proportion of the respondents revealed ignorance about the governance principles being applied at local forest level. Therefore with such information one can safely conclude that there are still loopholes in the implementation of good governance principles in local forest governance. The parties involved are recommended to integrate their actions towards mobilizing adequate resources and implementation of governance principles.

DEDICATIONS

This project is dedicated to my ever loving parents and my most generous sister who have tirelessly worked behind the scenes to the success of this piece of work.

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ACRONYMS

AECT	Archives of Environmental Contamination and Toxicology
AGRITEX	Agricultural Technical and Extension Services
CRDC	Chiredzi Rural District Council
EMA	Environmental management Agency
FAO	Food and Agriculture Organization
FC	Forestry Commission
IEF	International Environment Forum
IKS	indigenous knowledge system
IUCN	International Union for Conservation of Nature
NGO	Non-Governmental Organization
QRCA	Qualitative Research Consultants Association
REDD	Reducing Emission from Deforestation and Degradation
SAFIRE	Southern Alliance for Indigenous Resources
WWF	World Wildlife Funds

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CHAPTER ONE: INTRODUCTION

1.0 Background to the study

It is not possible to sum up the importance of forests in just a few words. Forests impact on human lives in so many ways, even in the midst of a busy, noisy, concrete city center the importance of forests is numberless. According to World Wildlife Fund[WWF](2015), looking at it beyond our narrow human, not to mention urban, perspective, forests provide habitats to diverse animal species, and they also form the source of livelihood for many different human settlements as well as for governments. They offer watershed protection, timber and non-timber products, and various recreational options. They prevent soil erosion, help in maintaining the water cycle, and check global warming by using carbon dioxide in photosynthesis. The Columbia Electronic Encyclopedia 6th ed. (2012) also adds that the chief economic product of forests is timber, but the economic benefits, in terms of climate control, pollution abatement, and wildlife maintenance, have rarely been calculated. Therefore from the above it is clear that the forest is the heritage of the local people. Treated with love and respect it will last forever and supply the people's needs. Many people have sacred ties to the trees and the forest that are part of their traditional cultures, and are still important to them today.

Despite the importance of forests as mentioned above, yet they are facing a lot of challenges that are threatening their extinction. This is due to a number of reasons that include unsustainable human interventions and also the natural, physical changes taking place on the planet. The world is facing an unprecedented combination of challenges which not only pose a grave threat to the future of the world's forests but also to ourselves. It is not yet sufficiently appreciated by non-specialists, however, that if properly managed, forests have the potential to reduce many of these problems to much more manageable levels and at a modest cost (Fenning2014). One of the challenges noted here is the lack of appreciation by locals that unsustainable use of forests is posing irreparable harm to the world hence undermining forest governance.

Furthermore, as suggested by International Environment Forum (IEF2015), as long as the trees were just being cut for local use, the demand for wood was limited to what the local people needed and could use. Most forests grew fast enough to supply these local needs, but the export market can never be satisfied. Clearing the forest for large scale agriculture or to make pasture for livestock is the second most dangerous threat. Clearing the forest for gardens and firewood is also a major danger where the local population is growing quickly. The threats to the forest from agriculture and the growing numbers of people require careful land management programmes, and this need is already recognized by most governments.

Forest governance in itself is broad and has numerous definitions however it may be wise to start by defining “governance”. There is no universally accepted definition for governance. Sometimes people use “governance” to mean simply “government” or the things that government does. Recently, though, people have tended to use the word more broadly, covering informal as well as formal mechanisms and social and economic influences as well as official state actions (World Bank 2009, p. 9 ff.). However according to Kishor and Rosenbaum (2012), “forest governance” includes the norms, processes, instruments, people, and organizations that control how people interact with forests. Forest governance comprises all the social and economic systems that affect how people interact with forests, including bureaucracies, laws, policies, traditional norms and culture patterns of land tenure and markets.(Cowling et.al. 2014). In the past forest governance would be defined basing on these key parameters such as access to resources, equitable benefit sharing and accountability in decision making, however modern perspective suggest that forest governance is depended on the quality of information, knowledge management and the capacity to process information(Tuukka and Pillai 2011).

Over the years forest governance has evolved from centralized/protectionist governance to forest alone approach through collaborative approach and then community based adaptive governance today. Though it is not the same with all countries and places, some are still under centralized governance. According to IUCN(2013) a protected area is a clearly defined geographical space, recognized, dedicated and managed, through legal or

other effective means, to achieve long-term conservation of nature with associated ecosystem services and cultural values. In the case of Zimbabwe this definition can be expanded into management categories such as National parks, game reserves, wildlife conservancies, and protected/gazzeted forests. Furthermore, forest governance has also entered a phase of collaborative governance. Ansell and Gash,(2007) cited that this is a mode of governance that brings multiple stakeholders together in common forums with public agencies to engage in consensus oriented decision making. Lastly, community based governance came into existence as a way to mitigate the depletion of forests. According to Graham et.al.(2003) suggested that community based governance includes activities at a local level where the organizing body may not assume a legal form and where there may not be a formally constituted governing board. Additionally this is the inclusive type of governance.

Furthermore, today there is thrust on good forest governance which is recognized as the modern and effective way to protect what is left of forests in the world. According to Kofi Annan cited in Graham et.al (2003) “good governance is perhaps the single most important factor in eradicating poverty and promoting development”). Larson and Ratkova (2011) argue that the main objective of good governance is to ensure forest sustainability together with fair decision making and benefit distribution. Good forest governance can only be good when there are measurable parameters and these are good forest governance principles. Davis et.al (2013) stated that the principles of good governance provide the benchmark of quality against which each component of forest governance (actors, rules, and practices) can be assessed. These include transparency, participation, accountability, coordination and capacity. Good forest governance is fundamental to achieving positive and sustained development outcomes in the sector, including efficiency of resource management, increased contribution to economic growth and to environmental services, and equitable distribution of benefits. (Kishor and Rosebaum 2012). Therefore this study intends to focus on the application of good forest governance principles, how they are being implemented in the study area, their effectiveness and also the effects to the local community.

1.1 Statement of the problem

The topic of forest governance in Zimbabwe has not been given enough attention and not much has been done by research and environmental institutions to clearly come up with a comprehensive framework of what exactly is forest governance. It is not yet clear which principles are being applied, how these principles are applied and what are the benefits drawn as a result of implementation of these principles, as well as the effectiveness of these principles on conservation and management of Crown Range local forest. Good governance is the order of the day in modern development circles of natural resource management. There are principles which are applied in different institutions on different resources yet there are principles which specifically apply to natural resources management. However, good governance has moved from all other areas of sustainable development to focus its main thrust on natural resource governance. Good governance is achieved by application and implementation of good governance principles. Where these principles are applied badly the goods, services and benefits to the local people as well as the conservation of the natural resource is compromised. Where good governance principles are applied properly the local people benefit from goods and services as well as the resource conservation being achieved. This study therefore seeks to explore the application of good forest governance principles, their effectiveness and the impacts to local people in Crown Range area, Chiredzi District in Masvingo province, Zimbabwe.

1.2 Objectives of the study

1.2.1 General objective

To evaluate good governance principles and their application at local forest level in Crown Range area, Chiredzi District.

1.2.2 Specific objects

- To identify the good governance principles being applied in communal forest conservation
- To determine how good governance principles are being applied in Crown Range communal area.
- To evaluate the resultant effectiveness of the good governance principles on management and conservation of forests in communal areas.

1.3 Justification of the study

The research seeks to help the local authorities in Crown Range Area in the assessment of good forest governance and the effectiveness of the governance principles thereof. More so the results will help the government of Zimbabwe, stakeholders and organizations interested to come up with an effective framework on the application of good forest governance at local level. This research will not only focus on the application of good forest governance principles, but will evaluate the effectiveness and come up with the condition of the current situation. According to Larson and Retkova (2011) the effectiveness of other organizations and stakeholders such as REDD+ depends on good governance of forests if it is to be efficient, effective and equitable. The research will also dwell on the effectiveness of the application of the current governance principles to identify the loopholes in the system which will be of paramount importance to the enforcers and planners.

The forest governance institutions such as Forestry Commission, local authorities, Traditional leadership and Non-governmental organizations will also benefit from this work since it will reveal some gray areas which require immediate attention if the rate of depletion is to be reduced to sustainable levels. The governance institutions are more concerned with the gazetted and protected forests, to the extent that the principles do not address the needs of the local people, when most of the country is covered with communal forests. Therefore this implies that the current system of governance has to be fine-tuned to suit the current conditions to achieve utilization sustainability standards. This research will also be of value to policy and decision makers at all levels of forest governance to address the issue of contradictory policies and equitable access to forests and also improve the economic value of forests at local level.

Therefore this study will not just be a mere extraction of truths, but will provide a platform for the Government and the authorities at local level to revise their forest governance principles and address the black-spots and bring sanity in forest resource conservation. This will be a significant study which will help the Government and even the local levels of forest management to come up with a framework of sustainable management and utilization of forest resources.

1.4 Study area characteristics

1.4.0 Physical geography of the study area

Chiredzi is a district in Zimbabwe which is found in Masvingo province. It is located 128km south-east of Masvingo city and at the 18.9167°S, 29.8167°E coordinates. The district is found in Natural Farming Region V in which the study area is also found. The study was carried out in ward 19 of Chiredzi district which is found in Buffalo Range area about 15km north-west of Chiredzi town along Chiredzi-Harare highway. The area is landmarked by the Buffalo Range airport which is located in the area.

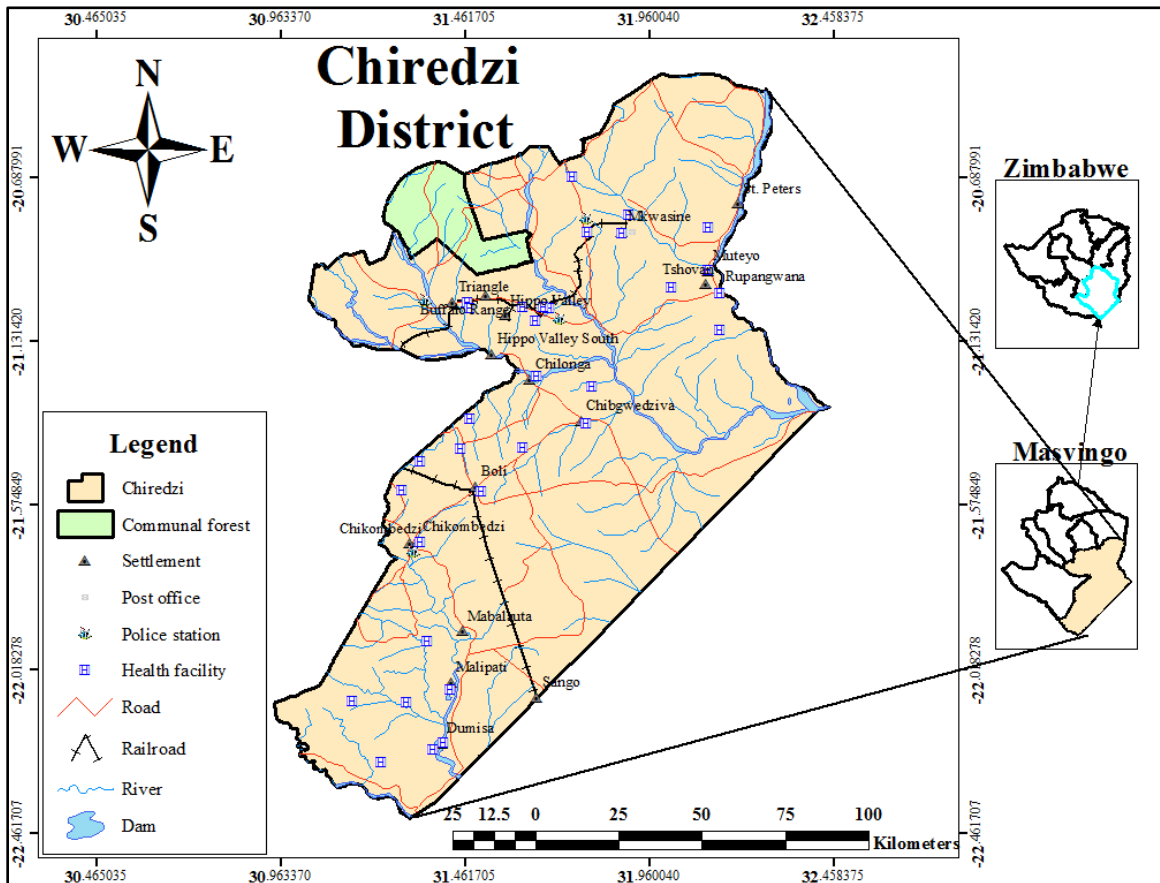


Figure 1.1: Study area map

1.4.1 Climate of the study area

Crown Range area lies in agro-ecological Region V which is characterized by low rainfall, poor soils with low agricultural potential and high temperatures. Annual rainfall for the region ranges from between 450mm to 650mm per annum, while the climate is generally classified as hot and dry. The drought years of 1991/1992 and 2000/2002 were characterized by long hot and dry spells with day maximum temperatures exceeding 40 degrees Celsius (SAFIRE, 2004). Agricultural production is characterized by high risk and uncertainty.. As a result of the hot and dry conditions in the area there is no meaningful crop production in the area in the absence of irrigation development. The diversity of the rural livelihoods in this area is largely a function of the climatic conditions

1.4.2 Vegetation of the study area

Generally the vegetation of Crown Range area is typical semi-arid, with the resettled area dominated by *mopane* and *combretum* woodland. Along the Save and Chiredzi rivers dense riverine forest occurs supporting a broad range of floral and avian species. Crown Range is mostly covered by *mopane* due to the nature of the soils and climatic conditions that are favourable. The *mopane* population has greatly been affected over time by increase in population and regular fires caused by resettled farmers and illegal poachers. Before the settlement was established, communities were restricted to harvesting firewood in the area but of late indications are that the *mopane* wood has been greatly affected by the increase in population. Furthermore, the occupation of the area by over to eight hundred people who solely rely on firewood for cooking greatly affected the vegetation of the area. Under the Fast Track land resettlement programme, close to three thousand hectares of the total area has been cleared of vegetation for agriculture and housing plot (Marongwe 2004). The people of the area are practicing unsustainable logging of forests for firewood but mainly for income generation as the transport *mopane* firewood as far as Harare. Vegetation species composition and variance is mostly determined by rainfall. In this case the area is dominated by drought tolerant Mopane (*Colophospermum mopane*) species which is also an important tree for fencing, roofing and as a major source of fuel wood. Forests in the area are also a source of food to the local as the extract *madora* from the mopane trees.

1.4.3 Soils of the study area

The soils in Crown Range Area are of distinct types with fertile basaltic soils predominating in the resettled area. These soils are loose grained, shallow, medium to heavy texture and are dark brown in colour. They are sometimes characterized as ‘cotton soils’. They contain a high proportion of clay particles that expand considerably on wetting. The soils are lighter and reddish rather than brown in colour compared to the flat area along the major highway road to Harare. The fluctuation in the nature of the soils affect the root trees and leading to stunted growth of *mopane*. These soils support a wide variety of crops namely cotton, sorghum and millet. However, due to the limited and erratic rainfall, dry land agriculture is not highly recommended, leaving irrigation agriculture as the only viable option in the area. The high cost of setting up irrigation schemes has meant that the majority of farmers in the area still depend on rain-fed production.

1.4.4 Drainage of the study area

There are no major rivers that run through Crown Range but the area is hedged between Mutirikwi River to the west and Chiredzi River to the east. Small streams that pass through Crown Range drain into the Chiredzi River catchment. Currently boreholes are the major source of drinking water to the local people.

1.5 Human Geography of the area

1.5.0 Demography of the study area

The total population of Crown Range area in ward 19 is approximately one thousand with most of the families female dominated. Generally the population is characterized by woman and children. This is as a result of rural-urban migration by males to the nearby towns that are Chiredzi and Masvingo for employment.(Central Statistical Office 2012). The area is about 15 km away from Chiredzi town along Harare road. The area is linked to major towns by road network where Chiredzi-Harare passes through the area. As a result it makes it easy for the males to migrate to nearby towns to seek employment. Since most households are female and children dominated they cannot entirely rely on farming for their livelihoods hence they have ventured in selling of firewood on the highway.

1.5.1 Livelihood Activities of the study area

1.5.1. Agriculture

Despite the low and erratic rainfall patterns the heavy basaltic soils found on Crown Range are able to support a large variety of crops such as maize, cotton, sorghum, groundnuts, millet, and *rapoko*. The soils are also good for both dry land and irrigation agriculture although the area is prone to intermittent droughts. Because of the risk and climatic uncertainties of the area crop farmers have adopted short season varieties that mature early in order to counter the unreliability of rainfall and recurrent droughts. (SAFIRE, 2004 and Mtisi et al 2001). Despite the low and erratic rainfall patterns dryland agriculture remains the mainstay of the people's livelihoods in both resettlement and the communal areas

1.5.1.1 Firewood trading

Crown Range area has vast thickets of Mopane woodlands which expand over 100 hectares though it is depleting due to increase in population and agriculture activities. From this woodland many individuals have illegal access to exploit wood fuel from the forest. Mopane is the dominant species in the woodland and is well known for its efficiency in burning and it is in demand in the nearby town (Chiredzi) for fuel aggravated by the limited supply of electricity in the town. Some wood fuel is traded as far as Harare in form of hardwood or chuckle. Despite the illegal trading in firewood there are a few individuals who abide by the rule and regulations of the local authorities and follow the procedures. Therefore to a lesser extent illegal logging is controlled.

1.5.1.2 Brick Molding

Due to the fact that wood fuel is abundantly available from clearing of land for crop farming, some have resorted to brick molding as a way of generating income at household level. Since the settlement is expanding, more land is cleared and people are evolving from temporary shelters of pole and dagga to more permanent brick and mortar houses hence more demand of brick. Therefore this has become a livelihood activity for some individuals in Crown Range area.

1.5.1.3 Trading in Non-timber forest products

Non-timber forest products such *Imbresia belina* (mopane worms) provide a wide range of benefits to the rural dwellers in the semi-arid areas of the South East lowveld of Zimbabwe (Mufandayedza et al. 2013). Some inhabitants in Crown Range area have derived their livelihoods from gathering the mopane worms (madora) and trading them along major highways and in the nearby town. This resulted in the generation of income to meet the basic needs at household level.

CHAPTER TWO: LITERATURE REVIEW

2.1 The concept of good forest governance

According to Kishor and Rosenbaum (2012), “forest governance” includes the norms, processes, instruments, people, and organizations that control how people interact with forests. Forest governance comprises all the social and economic systems that affect how people interact with forests, including bureaucracies, laws, policies, traditional norms and culture patterns of land tenure and markets (Cowling et.al. 2014). In the case of Crown Range area forest governance is based on the norms and culture patterns of the local people which are mainly characterized by culture dilution hence the control of exploitation of forests is undermined. Tuukka and Pillai (2011) also defined forest governance as a comparison of the past and present day situation. In the past forest governance would be defined basing on these key parameters such as access to resources, equitable benefit sharing and accountability in decision making, however modern perspective suggest that forest governance is depended on the quality of information, knowledge management and the capacity to process information. Therefore the letter definition tend to marginalize the contribution of the local people to forest governance since it is depended on quality and access to modern knowledge and the capacity to process the knowledge. This act as a hindrance to the participation of local people in good forest governance. Cowling, Phil, Kristin DeValue and Rosenbaum,(2014) also added that the concept of “forest governance” is often difficult to grasp because many laws, rules, policies, actions, and interactions shape forests. This also makes it difficult to be clear about what the major governance impediments are and what to do about them. Therefore technical knowledge alone as eluded by Tuukka and Pillai can insufficiently address the issues of forest governance at local level because there core people on local forest governance are marginalized.

2.2 Governance principles in forest management.

In the forest policy domain, the concept of good governance basically refers to “the integrity of institutions and processes that govern forests in different countries and it is linked with the promotion of policy and institutional reforms in accordance with a number of basic principles (GFI, 2009). Kaufman et. al (2010) advocate that, even if good governance has different contents and meanings depending on historical,

institutional and cultural contexts, its basic principles are very similar worldwide :effectiveness, efficiency, coherence and appropriateness, transparency, accountability, legitimacy, participation ,equality, coordination and environmental sustainability. Therefore given the light that governance principles depend on historical, institutional and cultural contexts hence it has to be narrowed down to principles relevant to the management of local forests. Kishor and Rosebaum (2012) argue that there are six common principles of good governance which are universally applicable and these include accountability, effectiveness, efficiency, fairness, participation and transparency.

Furthermore, apart from the above, Forestry Commission(FC) (2014) advocate that as a regulatory organization they have an overriding commitment to sustainable utilization and management of forest resources through cherishing the governance principles that include participation, professionalism, efficiency, transparency , accountability and integrity. Environmental Management Agency (EMA) (2016) added that the organization regulate, monitor and promote sustainable management of natural resources and protection of the environment under the guidance of the core principles that include transparency, professionalism, timeous response, participation and team work. Therefore as these organizations among others are the major environmental watchdogs of Crown Range Area, the common principles (participation, accountability, transparency, efficiency, effectiveness) are applied respectively. However this chapter seeks to review the principles of good forest governance, how they are applied and how their effectiveness can be determined.

2.2.1 Governance principles applied in the study area

Among other governance principles which are being applied in the study area, participation, accountability, effectiveness, efficiency, and transparency are the ones which were significant to the study. This study focused on these principles because of their relevance to local forest governance in Crown Range area. Due to the increased demand of wood fuel in nearby towns as a result frequent power cuts, illegal trade in firewood has raised alarm in Chiredzi district. However the issue revolves around application of good governance principles in the area. Graham et al. (2003) stated that good governance has become a hot topic as evidence mounts on the critical role it plays

in determining societal well-being. Participation was investigated since according to Graham et al. (2003), it involves all men and woman to have a voice in decision making concerning the resources available in the community. Good governance mediates the differing interests of the group.

Transparency which is built on the free flow of information to all levels was relevant to this study since according to Lockwood et al. (2010), governance of public resources require concrete knowledge of how the resources are monitored and how the local people will benefit from the resources. Hence this is relevant to Crown Range area where its application is investigated.

Accountability is another principle which was investigated in this study. Lockwood et al. (2010) stated that it refers to the allocation and acceptance of responsibility for decisions and actions. In local forest governance accountability is relevant since acceptance of responsibility must be a two way process, upward and downward process where the local people should accept responsibility as well as governance organizations. Effectiveness and efficiency are the other principles that are investigated in this study in which processes and institutions produce results that meet the needs of people while making the best use of resources. Therefore these principles were investigated basing on their applicability to the study area.

2.2.2 Participation in local forest governance

Moore et.al. (2010) define participation in governance as playing an effective part in decision, either directly or through legitimately appointed representatives. Participation is even more than this, Graham et.al. (2003) for example argues that participation means all man and woman should have voice in decision making, either directly or through legitimate institutions that represent their intention ,however, such broad participation is built on freedom of association and speech, as well as capacities to participate constructively. Despite the common issue covered by the two views, the later authority addresses the issue of Gender parity which is common in circles of decision making. The phrase “all men and women” means that the issue of gender and age is of not lesser importance in decision making. However, it is based on capacities to participate

constructively therefore this will draw a line between those who participate and those who do not.

There are issues involved in participation as one of the principles of local forest governance. According to Kumar (2002), advocate that the absence of indigenous and traditional systems of control, forest guards are unable to protect the forests from indiscriminate felling. In other words discrimination of local people in decision making have detrimental results as also alluded by Moore, et. al (2010), these problems are rooted in the fact that government and private sector tend to dominate decision making at the expense of civil society. Opportunities for participation are unequally distributed, favoring public authorities and disadvantaging forest dependent communities. Graiber (2010) hypothesized that Ghana's forest policy provides for participation but the policy has not been translated into enforceable law. This is one of the characteristic that undermine participation not only in Ghana but in most African countries such as Zimbabwe. Ansell and Gash (2015) argued that given the largely voluntary nature of participation, it is critical to understand the incentives that the stakeholders have to engage in governance. This includes analysis of incentive for locals to support forest governance. For example Ebrahim (2004) compares the different incentives local forest communities and national parks beneficiary communities face and shows how positive financial incentives are critical to the success of natural resource governance. Therefore community members of government stakeholders are willing to participate provided they are benefiting from the resource.

2.2.3 Accountability in local forest governance

The concept of accountability involves two dimensions: answerability and enforcement. Answerability refers to the obligation to provide information about decisions and actions and justify them to stakeholders and other overseeing entities. Enforcement requires sanction and redress when the actor fails to meet its obligations. Many types of accountability relationships are relevant to forests. The accountability relationship between public officials and citizens is often particularly important (Davis, et al 2002). Accountability is the requirement to accept responsibility and answer for one's actions both for individuals and institutions (Moore, et al 2010). Patlis (2004) also added that

institutional accountability for a government agency means it is accountable for decisions made on its behalf by government agency. However, the controversy is that some decisions made at national level are not flexible to meet the needs of different communities as far as accountability is concerned. Turner and Hulme (1997) comment that accountability is the weakest aspect of forest governance at this point where the country's customary hierarchy, for example makes traditional leaders accountable to each other but not to the members of the community. Moore, et al. (2010) also cites that customary mechanisms tend to work well, but leaders are undermined by the fact that government does not recognize their authority. Also lacking are customary mechanisms to account for the funds they receive on behalf of their communities (Reilly 2001). Therefore the utility of these provisions in improving local forest governance is still unclear. This is why Rosenau (2000) suggested that where accountability is unrealizable through direct democratic involvement and is more informal, citizens need proper access to information for meaningful consultation and for enhanced opportunities for active participation become more significant.

2.2.4 Transparency in local forest governance.

According to Davis, et al. (2002) transparency is the process of revealing actions so that outsiders can scrutinize them. Facilitating access to information is critical in order to inform and engage public constituents. Attributes of transparency include the comprehensiveness, timeliness, availability, and comprehensibility of information, as well as the pro-activeness of efforts to inform affected groups. Lockwood et al (2010) is of the view that transparency is the visibility of decision-making processes; the clarity with which the reasoning behind decisions is communicated; and the ready availability of relevant information about governance and performance in an organization. The similarities in these definitions shows that forest governance which have transparency as its principle is accessible to both the community members as well as other stakeholders. For it to be accessible, some stakeholders may require information to be made available in particular forms. For example, some stakeholders in predominantly English-speaking countries may require materials to be available in languages other than English; some landholders may attend a field day in preference to reading a publication or accessing the

Internet; and some indigenous community groups may prefer to access information via verbal communication rather than in written form (Davidson and Stratford 2000).

Furthermore, there are controversial issues involved with transparency, desirability of it, the inevitability of it or the danger of it is increasingly the subject of scrutiny in social sciences. Gupta (2008) agree that transparency is linked to most politically charged databases of our times: those relating to due process and good governance, human rights global scrutiny and oversight of markets in an era of globalization. At the same time it is implicated in the pursuit of substantive environmental improvements such as reduce emissions, sustainable resource of risk mitigation. Even as these concepts are subject of much analysis whether transparency indeed furthers such goals and whether such expectations of transparency are widely shared hence they are under scrutinized. In contrast Haufler's (2006) contribution analyses the role of complementary rather than conflicting global norms and agendas shaping embrace of transparency. In explaining why transparency has come to be the preferred policy tools voluntary public-private extractive sector governance, she illustrates how diverse global agendas relating to combating corruption, improving accountability and reducing conflicts and to ensure this outcome.

2.2.5 Efficiency in local forest governance

Efficiency in forest governance refers to the process and institutions that produce results that meet the needs while making the best use of resources (Graham, et al. 2010). Larson and Petkova (2011) argue that the main objective of good forest governance is to ensure sustainability, together with fair decision making and benefit distribution. But ecological, economic and social sustainability cannot be achieved through good forest governance alone. For example, if agricultural uses of forests provide higher economic returns, efficient markets may still drive deforestation. Attention only to market efficiency and effectiveness will also fail to achieve resource sustainability (FAO 2010). This means good forest governance alone does not inherently address the drivers of forest governance hence good governance has to cut across all sectors affecting forests to achieve sustainability therefore efficiency is practiced. According to Evans (2014) a study was carried out in Democratic Republic of Congo to assess the efficiency of the

implementation of the REDD+ initiative to keep their forests standing. However there were controversies raised by the local people on the question that whether REDD+ was prioritizing efficiency (highest impact on mitigating climate change) or equity (ensuring that the benefits of REDD+ do not exacerbate existing inequalities). Skutsch (2015) comment that there is a fundamental tension and perhaps even a contradiction between dual goals of efficiency and equity under REDD+. However the results of the survey which was carried out showed that most people agreed on benefit sharing even with the sectors outside the forestry, hence efficiency was seen being undermined.

In contrast to the above another method of governance was implemented in Nepal to ensure efficiency in forest governance. Mohan et al. (2003) cited that the dynamic nature of forest resources makes it difficult to manage them in an efficient and sustainable way. In order to ensure efficient management of forests Nepal instituted a drastic change in forest policy from centralized government control to a decentralized forest management system by promoting local institution system. Gilmore and Fisher (1991) added that there are many reasons that necessitate the involvement of local level institutions in forest management and these include balancing individual, public and group interests. Therefore if this principle was to be implemented in the area of study there would have been resounding results as far as the application of good forest governance is concerned.

2.3 Assessing effectiveness on local forest governance

Forestry, like other sectors dealing with natural resources management, is stimulated by the debate on new forms of governance that is on new ways for mutual interactions of public and private actors in taking and implementing policy decisions regarding collective problems (Bodin and Crona 2009). Battoud (2006) allude that in the last 10–15 years, innovative forest governance modes focused on decentralization, market-related tools and participatory approaches have been introduced at various levels, from international to local, with the aim of promoting the sustainable management of forests in a globally changing scenario. However this does not guarantee that good forest governance have been successful as argued by Arts and Buizer (2009) that, the governance concept is far from being sufficiently clarified and is “just as contested as sustainable development.” GFI (2009) also comment that in the forest policy domain, the

concept of good governance basically refers to “the integrity of institutions and processes that govern forests in their countries and it is linked with the promotion of policy and institutional reforms in accordance with a number of basic principles. It is these principles that require assessment of their effectiveness so as to determine whether good governance or not.

Despite the fact that there are basic principles which are widely accepted as discussed above, Young (2002) refute that as he advocated that the basic good governance principles are not universally accepted and have so far been typically used for referring to global, regional or country levels of forest governance arrangements, he argued that the most common ones can (and should) be also used as guiding ideas for governance arrangements at single lower levels (sub-national, local), as well as for the multi-level governance system as a whole, with its multiple interlinks among institutions and levels. However according to Hawlett et al., (2010) assessing good forest governance is based on the assumption that forest institutions and policy reforms can continuously improve their performances through being inspired/informed by the most common good governance principles (participation, accountability, transparency) starting from baseline and measuring changes over time in order to assess whether they are (or not) progressing towards a better quality of governance arrangements and related outcomes.

Contrary to that, Birnbaum and Mickwitz,(2009) believe that proper judgment tools are needed in order to assess the quality of governance implemented by any forest organization, either private, public or mixed, at any level. Some of them can be taken from instruments or procedures initially developed and implemented by international and regional organizations for economic development, which have also later been applied to the environmental sector. In support of this proposition (EC, 2004) also added that an evaluation is based on a systematic and objective assessment of an ongoing or completed policy, program or project, included in its conception, formulation, implementation and results

2.4 Application of good governance principles at local forest level.

The application of good governance principles such as accountability, transparency and participation can develop into a viable approach contributing to a sustainable forest

management (Makoto et al 2015). A study carried in Uganda showed that from 1990 to around 2010, forest cover reduced by 1.3 million hectares hence Uganda has lost 25% of its forest cover (National Forest Plan 2013). Naluwairo (2015) suggest that the continued degradation of Uganda's forests is increasingly attributed to poor governance. He added that this was manifested in many forms that include political interference, poor institutional coordination, corruption and inconsistency in law enforcement. Considering the governance principles discussed above, it is clear that close to nothing has been done in Uganda as far as practicing good governance is concerned. However to a greater extent, this is not only a challenge in Uganda but it is a disease that has spread down south even reaching Zimbabwe.

2.4.1 Role of local leaders in application of good governance principles at local level.

Newman et al. (2004) allude that there are many categories of local leaders in the forestry sub sector. These include locally elected political leaders and appointed leaders, for example councilors, community leaders (including elders, headmen, chiefs, cultural and religious leaders). All these play their respective roles to foster the application of good governance. De Visser, et al.(2010) suggest that locally elected political leaders are well positioned to play the roles of improving forest governance through investing in understanding forest governance issues in their constituencies and raise them in district and local council meetings. Chakaipa (2010) also advocate that locally elected leaders should initiate and push for the enactment of relevant bye-laws and ordinances to promote good governance. Despite the roles that these local leaders would have been playing and much positive results expected, there are also controversies involved which are impeding the successful implementation of governance principles at local level. Matyszak (2011) argue that, elected local government councils; the other is that of appointed traditional leaders and appointed officials imposed by central government. There are thus two loci of power in local government running parallel to each other, one democratic and one appointed, with some formal linkages between the two established by statute. The result is that numerous tentacles of power emanating from different sources in this bifurcated system touch upon and control the lives of the inhabitants of rural areas. Furthermore to that, Mushamba, (2010) argue that legislation merging the two was passed in 1988 but only became effective in 1993. The second relates to traditional

authority. The pre-independence government utilized traditional leaders as primary policy implementers (particularly in regard to land), and they were given extensive powers as means of exercising control over the rural populace. As a result, Chiefs' relations with their communities was often fractious, though the view that Chiefs were completely and successfully co-opted to act as agents for the minority white government does not appear to be supported by close examination. Therefore this compromises their role to effectively apply good governance at local level.

2.4.2 Role of the local people in application of good governance principles.

It is widely argued that success of natural resource conservation will depend on the support of the local communities living adjacent to the resource (Ferraro, 2002). As noted by Bruce et al. (2002) public acceptance is of utmost importance to every management decision made by public agencies concerning natural resources. Whilst fighting unsustainable utilization of forest resources at local level, it is clear that this exercise can only be successful through the involvement of the people affected. Therefore as a result environmental agencies can be successful in the application of good forest governance. Andersson (2004) argue that one way of evaluating the external management regimes from local communities' perspective is through generating their satisfaction levels with the way the forest is managed. He also added that another way to evaluate forest management regimes is to assess the extent to which local people are given the opportunity to organize and actively participate in the forest management. Therefore involvement and participation of local people is the medium for implementation of governance principles.

Apart from the above, Tanyanyiwa and Chikwanha (2011) advocate that the traditional systems have been a matter of survival to the local communities who generated these systems and indigenous people can provide valuable input about the local environment and how to effectively manage its natural resources. Emery (1996) cited that many feel that indigenous knowledge can thus provide a powerful basis from which alternative ways of managing resources can be developed. Indigenous knowledge technologies and know-how have an advantage over Science in that they rely on locally available skills and materials and are thus often more cost-effective than introducing exotic technologies

from outside sources. However Mukwada (2000) argues that resource conservation involves the sparing use of a resource in order to perpetuate its use in a sustainable manner. Hence this means indigenous knowledge system is a tool which was used or is being used to conserve natural resources.

2.4.3 Role of environmental institutions on application of governance principles.

The Ministry of Environment, Water and Climate of Zimbabwe is made up of institutions that work together with the main aim of achieving one goal: conservation of natural resources. The Zimbabwe Environmental Management Act (2004) provides for the sustainable management of natural resources and protection of the environment; the prevention of pollution and environmental degradation. The Act also provides for the preparation of a National Environmental Plan and other plans for the protection of the environment. The implementing agency of the Act is the Environmental Management Agency and Ministry of Environment and Natural Resources Management. The Forest Act (1954) provides for management of wood resources throughout Zimbabwe although its focus is state forests and on private land. The Communal Land Forest Produce Act applies to the Communal Areas like the Crown Range area under study, but may be read with the Forest Act. The main management strategy in both acts is to establish conditions under which forest produce can be used and to determine and regulate the extent of that use. However, apart from the highlighted efforts by environmental institutions to implement good governance principles, there are also controversies involved. Conflict can spring from unclear or unfair land and resource ownership rights that render local communities' logging activities illegal (Kaimowitz 2002). Contrary to that Becker (2001) advocate that the contributions of formal institutions to management of natural resources have been influenced by unclear responsibility and power transfers in the decentralization reforms. This as a result has seen conflict of interest among stakeholders hence undermining the implementation of good governance principles at local level.

The topic of forest governance in Zimbabwe has not been given enough attention and not much has been done by research institutions to clearly come up with a comprehensive framework of what exactly is forest governance. Organizations, institutions and individuals are still struggling to understand this subject and what is involved in

governance, it is not yet clear which principles define governance, how are they supposed to be implemented and who are to be involved. There is therefore need to understand governance issues as far as forest management is concerned. Hence this study seeks to explore governance of local forests, the application of governance principles and the resultant effectiveness.

CHAPTER THREE: RESEARCH METHODS AND MATERIALS

3.1 Research design

The research design refers to the overall strategy chosen by the researcher to integrate the different components of the study in a coherent and logical way, thereby ensuring that the researcher will effectively address the research problem. (De Vaus 2001). It constitute the blueprint for the collection, measurement and analysis of data.(Trochim 2006). A research design will typically include how data is to be collected, what instruments will be employed, how the instruments will be used and the intended means for analyzing data collected.

Descriptive research was adopted in this research mainly because of its appropriateness to the research problem and its use of both qualitative and quantitative research paradigms. Descriptive research can be either quantitative or qualitative. It can involve collections of quantitative information that can be tabulated along a continuum in numerical form, such as scores on a test or the number of times a person chooses to use a-certain feature of a multimedia program, or it can describe categories of information such as gender or patterns of interaction when using technology in a group situation. Descriptive research involves gathering data that describe events and then organizes, tabulates, depicts, and describes the data collection. Three main purposes of research are to describe, explain, and validate findings. Description emerges following creative exploration, and serves to organize the findings in order to fit them with explanations, and then test or validate those explanations (AECT 2001). Descriptive research was therefore used by the researcher to evaluate the effectiveness of good governance and how the principles are applied at local forest in Crown Range area Ward 19, Chiredzi District.

Both qualitative and quantitative approaches were employed by the researcher resulting in data triangulation where questionnaires, interviews, focus group discussions and observations were utilized. Data triangulation enabled the researcher to look at information from more than one stand point and provided the researcher with additional information on the study area. To attain the above mentioned data, closed questions were used. Closed ended questions were used because they restricted respondents to choose answers only from particular options which made the data collected unproblematic to

analyze. Closed questions allowed the collection of qualitative data on the impact of governance on the exploitation of local forests. According to Kidder and Fine (1997) quantitative and qualitative techniques provide a standoff between breadth and depth, and between generalizability and targeting to specific populations.

According to Creswell (2003) quantitative research is a type of research that explains phenomena by collecting numerical data that are analyzed using numerically based methods (statistics). Kidder and Fine (1987) noted that data collected through quantitative methods are often believed to yield more objective and accurate information because they were collected using standardized methods and can be replicated. The quantitative data is also essential since it shows the rate of depletion of the local forest that is happening in the study area, hence measuring the effectiveness of the governance principles being applied in the area. The researcher collected data on the vegetation density of the local forest in Crown Range area. Plotless sampling strategy was used by the researcher, and this method is used where forests are impenetrable due to density and also where resources are limited. This method has the advantage of integrating large areas within a single sampling point. The nearest individual method was used which involves the sampling points throughout the survey area. The distance to the nearest individual of each tree species is recorded and the density is derived. Vegetation density was calculated and compared with the data from previous years to show the rate of depletion of tree cover hence determining the effectiveness of the principles being applied. The data was obtained from RDC records on the state of local forests at ward level. Remote sensed images were also analysed to come up with a comparison of the past and present status of local forest. Statistical data on the quantity of confiscated goods from offenders was also obtained by the researcher and it was analyzed using tables, graphs and charts to measure the effectiveness of forest governance in the area.

QRCA (2015) defines qualitative research as the research designed to reveal a target audience's range of behavior and perceptions that drive it with reference to specific topics or issues. It uses in-depth studies of small groups of people to guide and support the construction of hypotheses and the results of qualitative research are descriptive rather than predictive. This makes qualitative research paradigms highly flexible and this

flexibility implies that the methods are well suited for getting an insider's perspective, the meanings people attach to events and issues in their lives. Qualitative research will also validate the measurements and balance the opinions between the local people and the governing structures in the Crown Range area. The qualitative research design was used to get the in depth information through interviews, closed and open ended questionnaires and focus group discussions. The information obtained revealed how the local people comply to the laws and policies governing forests and also the approaches by the authorities such as Forestry Commission, Chiredzi Rural District Council (CRDC), Councillors, Chiefs and also Non-Governmental organisations(NGOs) operating in the area.

The research design evaluates the nature of good governance principles and their application at local forest level. It also analyses the level of compliance of the local people to the regulations concerning the good governance of the local forest resource. The evaluation of these factors there after gives room for the suggestion of possible solutions to the research problem highlighted.

3.2 Target Population

Target population is the whole group of individuals or objects to which researchers are attracted in simplifying conclusions (Newman 2000). The research population targeted by this research included three groups, due to its heterogeneity nature. The first group is that of management authorities which included Forestry Commission, CRDC, NGOs, Environmental Management Agency (EMA), AGRITEX and other extension services of the area. These were targeted as they are the ones responsible for the implementation of all forestry institutional Laws and Policies and also responsible for the monitoring of all these institutional arrangements. Their close contact with the forest and great experience in forest management makes them the most fundamental target population of this research. Above all they are the gate way for the research to be conducted in the area since they are the authorities who are liable to issue permission for the research to be conducted in their area.

Second group of target population was Crown Range community which included nine villages under different village Heads. The total population of these villagers is 1797

(approximately 89% of ward 19 Crown Range population Census Report 2012) living within 307 households (Forestry Census 2013). Females and children represent the highest proportion within the target population constituting 62.5% (1044 females and children) of the total population and this was attributed to male migration to greener pastures in South Africa and cities. These are generally peasants living in the resettlement area which used to be an animal range and forested area. Crown Range Local community was targeted by this study because they live and interact not only with local forest but also with the relevant management authorities, such that it is important to regard these communities in this study as they are in special position to protect or undermine local forest areas depending on the decisions they make about the use of their own property, the activities they undertake, legally or illegally, and the degree to which they choose to oppose, support, or ignore the potentially destructive actions of others (Weaver and Lawton, 2008).

The last group targeted by the research constitutes the local authorities of the area that involves the councillor, chief, headmen and the village chairpersons. This group was essential to the research since they are the custodians of the natural resources in the area. They bear the responsibility of implementing policies, laws and regulations concerning local forests. They provided information based on their opinions concerning forest governance and how they are related to governing organisations as well as how the local people are affected by the application of good governance principles.

Furthermore to the above vegetation data was also targeted by the researcher. Data on the vegetation density and species abundance was mainly targeted since it showed the effectiveness of the implementation of governance principles at local forest level. Measuring the vegetation density and comparing with the previous data actually showed the importance of governance and how it have achieved good forest governance and how it have failed.

3.3 Sample size and its determination

Sampling according to Neela (2010) is the process of selecting units (people, objects) from a population of interest so that by studying the sample we may fairly generalize our results back to the population from which they were chosen.. Sampling refers to the statistical process of selecting and studying the characteristics of a relatively small number of items from a relatively large population of such items, to draw statistically valid inferences about the characteristics about the entire population (Krishna 2010). . Leedy (1992) argued that in a bid to get fair and reasonable research information for a large population, the researcher has to use 10% to 20% of the sample size so as to represent the whole population. In this research 20% of the total households (307 households) in Crown Range area were selected (62 households) and to accommodate the greater number of females 52.5% of the 62 household representatives were females (32) while males represented 47.5% (29). Respondents from forestry management and local authorities were selected on the bases of their experience and exposure in the forestry field and their knowledge of forest regulations as illustrated in the table 3.1;

Table 3.1: Sample size panel for Respondents subgroups

Respondents	Number of Households	Selected sample size of household representatives	Sample size selected for each household representatives.	
			Females 52,5%	Males 47,5%
Crown Range community	307	62	32	29
Community leaders (chiefs, head men, councillor)	----	----	6	5
Forest related institutions (FC, CRDC, NGOs, AGRITEX)	----	----	4	3
Total	307	62	42	37

3.4 Data collection methods and instruments

Data Collection is an important aspect of any type of research study. Inaccurate data collection can impact the results of a study and ultimately lead to invalid results (Martin 2012). This section generally highlights the procedures and instruments which the researcher employed in this research. This study adopted interviews, questionnaires, direct observations and field measurements as research instruments and to compliment these, secondary data sources such as journals, newspapers, satellite imageries, and Forestry Commission archived reports were used. The following is a brief description of research instruments and secondary data sources used by the researcher:

3.4.1 Questionnaires design and administration

According to Smith (1991), a questionnaire is a written instrument used to obtain information from study subjects. Developing a questionnaire is the last step in designing a study after all variables of interest have been identified. Questionnaires were mainly targeting 2 major groups of the target population, the Crown Range Community and the local leadership. A sum of 42 questionnaires were administered to 31 household representatives (52,5% females) of the Crown Range Community and 11 household representatives of the community leadership. This was essential for the research since data on the effectiveness of the governance principles and their application was obtained.

Stratified random sampling is a method of sampling that involves the division of a population into smaller groups known as strata. In stratified random sampling, the strata are formed based on members' shared attributes or characteristics (INVESTOPEDIA 2016). The researcher used this method since it best suits the heterogeneity structure of the population in the community and also the main advantage with stratified random sampling is how it captures key population characteristics in the sample. The sampling technique was chosen by the researcher to best suit the characteristics of the target population so as to obtain the best results which are objective oriented (Webster 1985). The population was first divided into two major groups that are the community members and the local leaders of the area (chancellor, chief, headmen). The researcher then randomly selected the respondents through selecting 10 households after every 1km and 7 respondents were randomly selected among 9 community heads.

The researcher conducted self-administered questionnaires and both open-ended and closed-ended questions were included in the structure of the questionnaires. According to Sincero (2012) closed-ended questions are time efficient, responses are easy to code and interpret and also ideal for quantitative type of research while in open-ended questions, participants can respond to questions exactly as how they would like to answer them, the researcher can investigate the meaning of responses and its ideal for qualitative research. This allowed the researcher to collect the required information completely from respondents and gather information without mistakes and to ensure that all questionnaires are filled and returned. All questionnaires were therefore conducted in Shona with the

researcher filling up answers for the respondents. This also reduced chances of respondents discussing questions to give biased answers. The researcher greeted respondents in accordance to their culture. The researcher then introduced himself as a student free from the Government Department, highlighting the importance of his study to their own livelihood and the environment they live in, explaining to them why they were selected for this study. The researcher then ensured respondents full confidentiality on all the information obtained from them.

3.4.2 Structured interviews

Interviewing involves asking questions and getting answers from participants in a study. Interviewing has a variety of forms including: individual, face-to-face interviews and face-to-face group interviewing (Cohen and Crabtree 2006). Harish (2009) also define interview as the verbal conversation between two people with the objective of collecting relevant information for the purpose of research. Structured interviews were used in this study with a range of questions related to the objectives were directed to respondents on face to face bases. According to Cohen and Crabtree (2006) the characteristics of the structured interview are that the interviewer asks each respondent the same series of questions and questioning is standardised and the ordering and phrasing of the questions are kept consistent from interview to interview and also the interviewer plays a neutral role and acts casual and friendly, but does not insert his or her opinions in the interview.

Forestry Commission extension officer, Environment manager (CRDC), EMA officer, and NGOs environmental practitioners were selected for the structured interviews. Purposive sampling method was used in selecting respondents, where they were selected on the bases of being key players in the forestry field with great experience and knowledge not only about Forestry Laws but also about their implementation and implications to the environment and communities benefiting from these forests. The councillor of ward19, from within Crown range community was also selected due to his direct link with both their communities and forestry department as highlighted in table 3.2:

Table 3.2: Key informants and their justification

Interviewee	Justification
EMA manager	Assisting other government stakeholders interested in forests in terms of management and conservation
Non-Governmental organisations (SAFIRE)	Assisting the communities to comply with the environmental regulations governing forests and offering incentives for implementation.
Environment Manager CRDC	Monitoring all extension officers in Chiredzi District and ensure full implementation of all plans.
Forestry Extension Officer	Responsible for the implementation of all forestry regulation plans in field and extension services in forest areas.
Counsellor ward 19	Continued role in regulating, controlling forest entry by migrants and unsustainable exploitation by local people.

Interviews involved respondents with most busy schedules, hence to seek an opportunity to interview them the research sent cover letter to all organisation and offices required for interviewing. In the letter the researcher clearly indicated who he was, reasons why he was conducting this study and stated the importance of the study to all relevant organisation. The letter also clearly indicated the proposed date, time and duration of the interview and these were directly sent to relevant offices in person.

The researcher personally administered the interview at the interviewee's workplace using an interview guide consisting of a list of questions prepared before the interview day. The guide enabled the researcher to avoid getting carried away and losing track of the discussion, which would end up compromising the quality of data gathered. The researcher used structured interviews with the aim to avoid bias of information as the same questions were asked to every interviewee. According to Callisto (2010) structured interviews enables the researcher to examine the level of understanding a respondent has about a particular topic - usually in slightly more depth than with a postal questionnaire and also structured interviews can be used to identify respondents whose views you may

want to explore in more detail. This helped the researcher to meet the objectives of the research.

The researcher interviewed the representatives of the organizations from Forestry Commission, CRDC, EMA, AGRITEX and officers from various NGOs to give their views and understanding towards the governance of forests. The interviews were conducted face to face and this reinforced the data collected from the community members, so that the researcher was able to analyze and evaluate the data which was provided. Face to face interviews also helped the researcher to acquire first-hand information to avoid bias hence achieving the objective of how good forest governance principles are being applied at local level.

During interviews the researcher faced serious challenges of aggression and suspicion from respondents as most of the respondents did not trust the interviewer and considered him as one of the government authorities who seek to carry out an audit of their performance in disguise. Researcher was called “*Mufana wereseach yegovernment*” meaning researcher sent by government. This was however a clear reflection of the existence of conflicts between these two parties. Language was also a challenge as other departmental heads required further explanation of questions in vernacular and as a result some interviews were conducted in Shona. Ward 19 councillor was generally afraid to bring out their actual perception in relation to forestry management fearing being misquoted and being considered as undermining the government authorities. However, the research reassured the heads of confidentiality of the information, by constantly reflecting his national and student identity cards.

3.4.3 Direct observations

Direct observation, also known as observational study, is a method of collecting evaluative information in which the evaluator watches the subject in his or her usual environment without altering that environment. Direct observation is used when other data collection procedures, such as surveys, and questionnaires are not effective; when the goal is to evaluate an ongoing behavior process, event, or situation; or when there are physical outcomes that can be readily seen (Holmes 2013). According to Pilar (2013) direct observation is not necessarily an alternative to other types of field methods, such as

participant observation or qualitative interviews. Rather, it may be an initial approach to understanding a setting, a group of individuals, or forms of behavior prior to interacting with members or developing interview protocols. A tour was conducted in Crown Range community with an observational checklist aimed at observing their relationship with forest management department, community activities and observable environmental implications of their relationship and above all assessing the effectiveness of the governance principles in place. Field notes were written down to record observed phenomena in relation to the observational checklist and this was made to include observable aspects of the research which were not in the observational checklist. This allowed events, actions, behaviour and experiences to be seen through the eyes of the researcher without any construction on the part of being involved (Ritchie and Lewis 2009).

3.4.4 Field measurements

Field measurement deals with the actual and authentic information in the field of operation. The process involves determining what data is necessary and from where the information needs to be obtained (MSG, 2008). The diversity and density of trees was measured in the study points with the use of strings, tape measure, and pegs. The forest no longer had clear management zones as a result of invasions and settlements by the local people. However, the researcher used the plotless sampling technique where the nearest individual method was used and the distance to the nearest individuals of each species was recorded and the density of each tree species was derived. The method was based on a plotless approach because the dimensions of the sample unit are not clearly defined. The actual size of the sample depends on the dimensions of the plants viewed. Four sampling points were chosen by the researcher to cover the survey area with a target plant where measurements to all other points began. The actual distance to the nearest species of the same type depended on how the trees were sparsely distributed. The distance from a selected plant to its nearest plant (neighbour) was measured and the researcher chose a referent plant (the closest individual to a selected point). After that the researcher also identified the plant closest to the referent plant and measured distance between these two plants.

$$D = \frac{A}{(1.67 \bar{d})^2}$$

The researcher used the formular

- D= density
- A= specified area (that is 20 m²)
- d = distance measured from target plant to the nearest plant
- The 1.67 is a multiplier determined through fixed experiments that allows for accurate estimates of the area covered

The researcher used plotless sampling technique because it has several advantages over quadrat-based techniques since it is faster and not time consuming as compared to other techniques. This method also requires less equipment therefore it just need a way to measure distance hence it was the most appropriate in this research due to the limited resources and manpower available. Adding to that, the other advantage of this technique is that it does not require selection or adjustments in quadrant size.

3.5 Secondary data

3.5.1 Reports and Project documents

The researcher reviewed literature from Forestry Commission, EMA, CRDC, AGRITEX and Councilor, which included project documents, project annual reports and project review reports on environmental management activities. The technique was employed since it was vital in providing background information and facts about the project. Also this data was useful in cross checking primary data that was collected in the field.

3.5.2 Desktop Research

According to MSG (2008) desktop research is basically the collection of data from existing sources. The researcher used the internet in finding information related to the project. This included general information on the picture of diversity and density, historical background of diversity and density and study results that have been published. Thus these include studies in research works, articles and journals. This provides the researcher with wider information for the study. Data from the Forestry commission was

also important for the researcher. Such data include changes that have been taking place in the forest ecosystems, changes in species diversity and density in Crown Range local forest.

3.6 Data analysis and presentation

According to Creswell (2009) data analysis is an on-going process involving continual reflection about the data, asking analytic questions and writing memos through the study. The process of organizing and thinking about data is key to understanding what the data does and does not contain. There are a variety of ways in which people can approach data analysis. The researcher used statistical analysis which involves the manipulation of quantitative or qualitative data to describe phenomena and to make suggestions about relationships among variables. Statistical analysis has two main purposes. The first is descriptive, involving statistical tabulations to present quantitative or qualitative data in a concise and revealing format. The second use of statistical models is for inference; that is, to test relationships among variables of interest and to generalize the findings to a larger population. Statistical tabulations, graphical displays and statistics, such as the mean or the variance, can depict key characteristics of the data.

Qualitative data from interviews, secondary data and direct observations such as were analyzed using simple descriptive statistical tools, mean and mode. The tools gave numerical and graphical procedures to summarize collected data in a clear and clear way about a population. The method permitted the researcher adequate room to explore concrete information on the problems encountering local forest governance. Qualitative data was further represented using tables. Tables and pie charts were preferred because of their easiness to refer to and their interpretation. Tables were used to present the inclusivity of local people in access, utilization and decision making in local forest governance. SPSS was also used to analyze questionnaires which described the relationships between gender, household number and income and their contribution to local forest depletion in Crown Range Area. The data is fed to SPSS using Microsoft excel. The method permitted the researcher adequate room to explore concrete information on the governance of forests at local level.

3.7 Ethical considerations

According to David and Resnik (2015) ethics are norms for conduct that distinguish between acceptable and unacceptable behavior. Troachim (2006) noted that there are a number of key phrases that describe the system of ethical protections that the contemporary social research establishment has created to try to protect better the rights of their research participants. The principle of *voluntary participation* requires that people not be coerced into participating in research. Closely related to the notion of voluntary participation is the requirement of *informed consent*. Essentially, this means that prospective research participants must be fully informed about the procedures and risks involved in research and must give their consent to participate. Lastly, almost all research guarantees the participants *confidentiality*, they are assured that identifying information will not be made available to anyone who is not directly involved in the study. The above ethical issues were involved in the research since the target population was composed of people from different areas of the country with different cultures who were resettled in the study area. The researcher was flexible in order to meet the ethical considerations mentioned above though there were some challenges faced with other authorities concerning confidentiality. Most respondents especially from the government agencies feared security of personal data, the retention and disposal of data. This limited the participants to express his or her views on the subject of governance. The researcher countered this challenge by explaining that the research will not require any personal information (names and identity numbers), hence no respondent would be identified and that the data obtained was only for research purposes. Furthermore, the researcher faced another challenge of participants failing to understand the verbal explanations hence affecting the quality of data. However, the researcher minimized the error gap by translating the questions into common language (shona) which they could easily comprehend. Therefore by addressing to these ethical challenges the data collection process was successful.

CHAPTER FOUR: RESULTS AND DISCUSSION

4.1 Demographic characteristics of the respondents

4.1.0 Status of respondents according sex

Females represented the majority of respondents constituting 52.4% of the total respondents, while males represented 47.6% of the questionnaire respondents for this study. The dominance of women in Crown Range community increases the likelihood of interaction with the forest and uncontrolled selling of firewood as a major source of income. Outward migration contributed to this sex ratio since most males migrate to South Africa in search of greener pastures. Also a greater proportion of males moved into the nearby town such as Chiredzi for employment while others are mostly employed in the sugar producing company (Tongaat Hulett) in the District.

4.1.1 Age group of respondents

Figure 4.1 shows the age group of respondents which was categorised into four groups that is 15-30, 31-45 (economically active), 46-60 and 61-75 aged population. The results from respondents reveal that the population is mainly dominated by economically active group of which it was female dominated. A frequency of over 25 respondents falls in the category of 15-30 years with a percentage of 55.6% which is more than half of the respondents to which the questionnaires were administered. The dominance of this group ensures the reliability of information on which principles are applied at local forest level since they are the ones who have more duration of staying in the area.

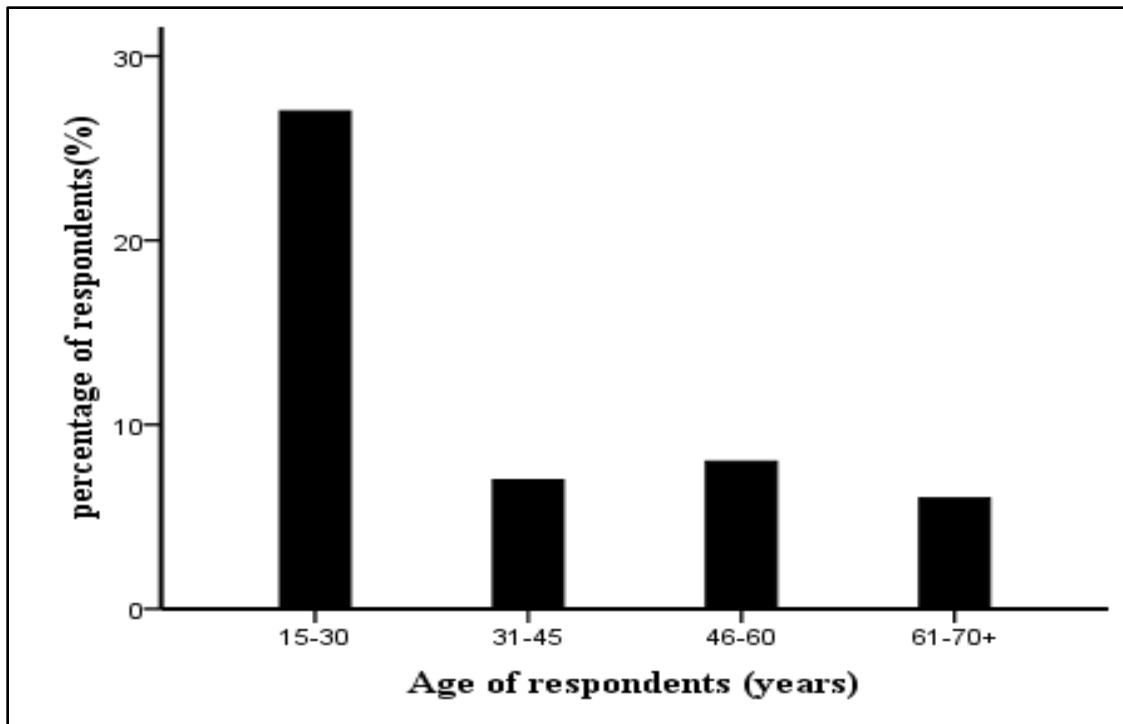


Figure 4.1: Age groups of Crown Range Community

Figure 4.1 shows that the population structure of Crown Range area is mainly composed of the economically active population from 15-30 with woman and children having the highest frequency. However, the middle age and the elderly are almost below average due to out- migration to nearby towns seeking employment whereas the elderly also do not compose a higher trend because the area is a newly resettled area which accommodate energetic people. From the results shown above it means that in Crown Range area the economically active population are the most involved in the management of local forests. However, since the population of respondents is mainly woman dominated, it means that woman play a pivotal role in the governance of local forests. Other studies have also highlighted the role of women in forest conservation. According to Mishra and Singh (2005), the accumulated experiences continually growing in number, show the importance of taking social and cultural differences into account. Traditionally, local forest governance have been considered a male dominion, however documentation shows that in the majority of communities both women and men use forest for their

subsistence activities. Therefore general overview is that women are responsible for using forests at household level hence they have an interest in protecting forests.

4.1.2 Respondents' level of education.

Figure 4.2 shows the education level of respondents; where primary level has 57.8% representing the highest percentage of the community have reached this level followed by 'O' level which has 33.3% of the population of Crown Range who attained this level. Advanced and Diploma levels have the lowest percentage of respondents who reached the levels. Generally Crown Range community is dominated by people with the least level of education.

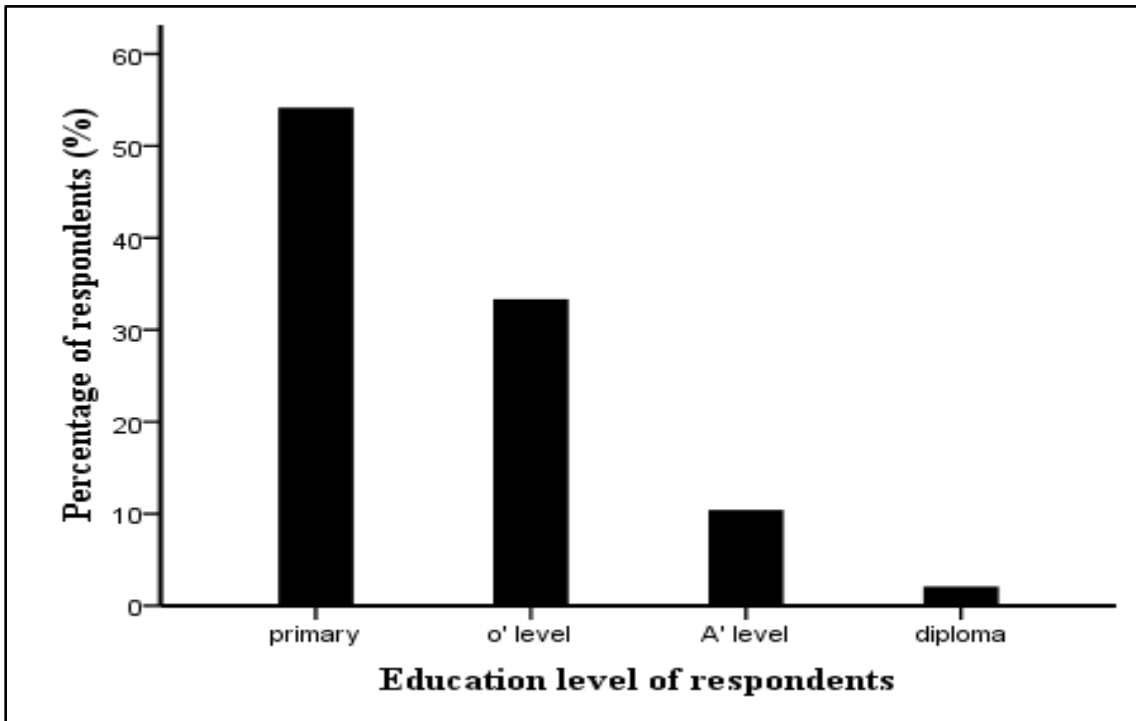


Figure 4.2: Education level of Crown Range Community.

The results on figure 4.2 imply that the community's level of education also determines their opportunities to get employed as well as affecting their income levels. Figure 4.3 also shows that there is a relationship between gender and level of education. Most males in the community have attained the highest level of education of at least 'O' level as compared to females. About 57.1% male respondents reached 'O' level while 25% of

female respondents reached the same level. However, woman has the highest percentage of those who reached only primary level of education. Therefore woman have the least chances to acquire higher levels of education and as a result of this woman have more duration of their stay in the community hence they interact more with forest resources in Crown Range area. However, the gap that is left between gender and education determine how the resources are exploited. According to Karam (2004) the world due to imbalance of gender and education will not only cause the world to be unjust but unsecure. The failure of women to read and write is a major barrier to women, since this may lead to their failure to enjoy the rather limited rights they legally have such as access to land and natural resources. Contrary to the situation in Crown Range community where almost all women have full access to forest resources regardless of their high levels of illiteracy. This has also resulted in unsustainable exploitation and since lack of education has blunted them from the idea of sustainability. Furthermore, according to Ugurlu and Aladag (2009) education, including formal education, public awareness and training should be recognized as a process by which human beings and societies can reach their fullest potential. Education is critical for promoting sustainable development and improving the capacity of the people to address environment and development issues. Education is the key to sustainable management of local forest in Crown Range area as high illiteracy levels mostly of women have proved to be detrimental to the environment.

4.1.5 Employment status of the respondents

Figure 4.3 shows that Crown Range community is composed of a population which is highly unemployed. The figure 4.3 shows that 47.9% of the respondents indicated that they are not employed hence they have the highest population. Those who casually get employed had the second highest proportion of respondents (35.4%) who get employed seasonally especially during the harvesting season of sugar cane at the Tongaat Hulle's company. Usually most males will be employed as cane cutters. The least proportion (16.7%) is of those who are permanently employed and these include cattle herders and a few who work in the nearby Chiredzi town who were allocated land in the area.

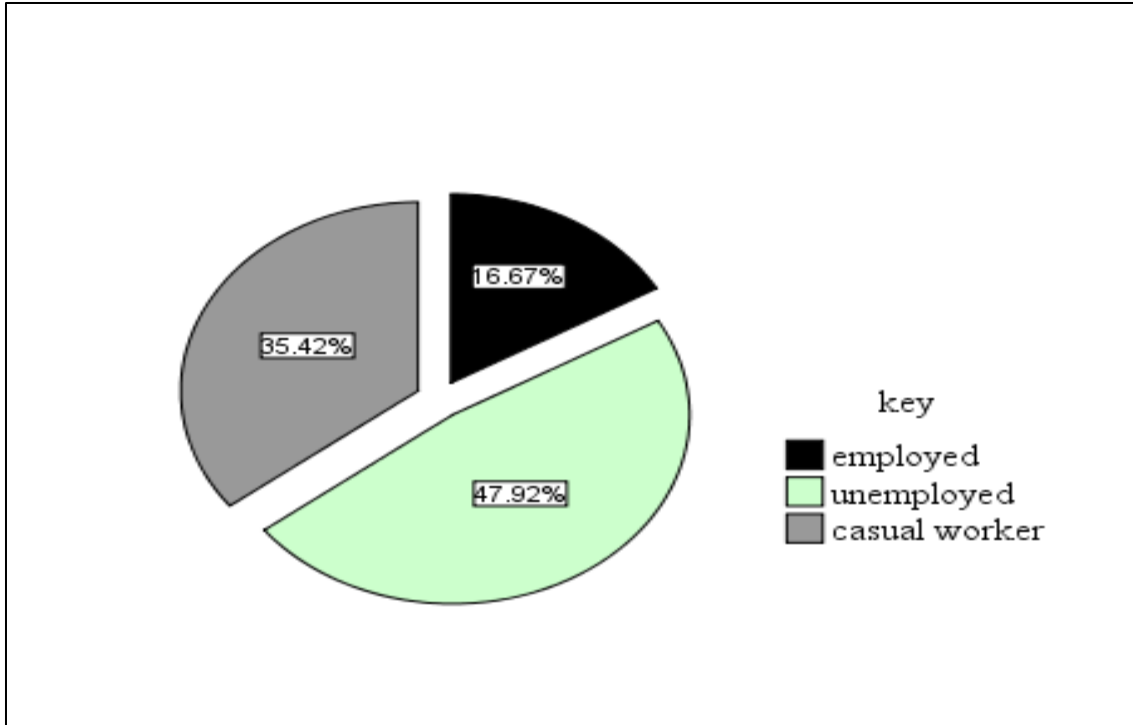


Figure 4.3: Employment status of Crown Range Community

Figure 4.3 reveals that the majority of the population in Crown Range community is highly unemployed than employed. However a significant proportion of respondents are casual workers(seasonal), these are those who are temporarily employed for wages and also seasonally employed. Because of this trend of employment, it has posed an impact on the implementation of good governance principles on local forest management. A study carried out in Nepal as stated by Dhakal et. al (2005) highlighted that, about 57% of the communal area dwellers owned 15 % of the land and had an average of 0.5 hectares or less. Despite being an agro-based economy, most households are landless. The landless people earn their living by working on other’s farms, renting lands or other employment. In these conditions it is difficult for poor households to support themselves if they do not rely on local forests. Similar to Crown Range community which is an agro based community and have large pieces of land, in spite the fact that it is a dry land most people are relying on the local forest for their livelihoods and source of income through selling firewood. This has posed an impact on the forest since it there is uncontrolled exploitation of mopane wood.

4.1.3 Income of respondents

Figure 4.4 shows that Crown Range community is composed of low to medium income families. The average income of the respondents ranges from \$0-\$20 for low income earners and \$30-\$80 for medium income earners and finally \$100-\$200 for high income earners.

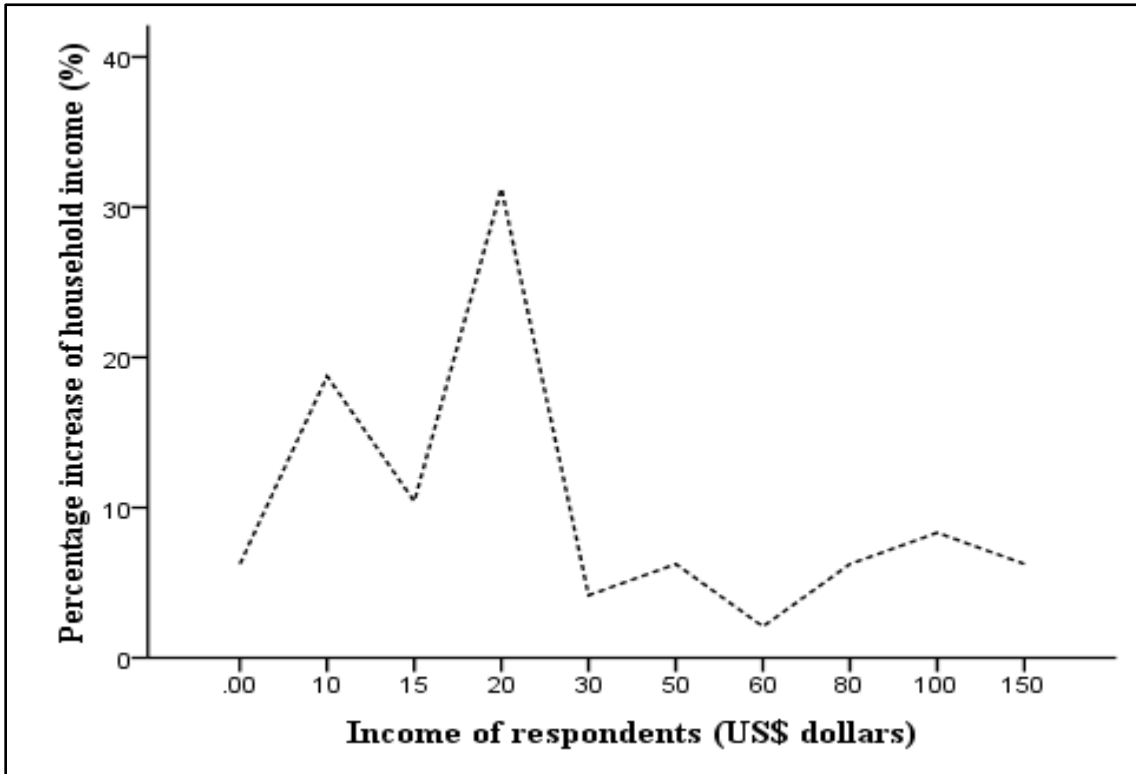


Figure 4.4: Income levels in Crown Range Community

As shown in figure 4.4, respondents with the average income of \$20 per month have the highest percentage of 22.2% while families with the average income of \$200 and above have the lowest threshold of 2.2%-4.4%. Families with medium income \$50-\$80 have the average percentage of 13.3%. This gives a picture that most of the families in Crown Range community are surviving at low income earnings. From the direct observation results, the researcher observed that their major source of income is selling firewood and chuckle along highways as well as other farm products like watermelons.

4.1.4 Household size of respondents

Figure 4.5 shows the household sizes of respondents which were grouped into three categories using codes of numbers. The first code (1) represent households with 1-4 people, (2) representing households with 5-9 people and (3) representing households with 10+ people.

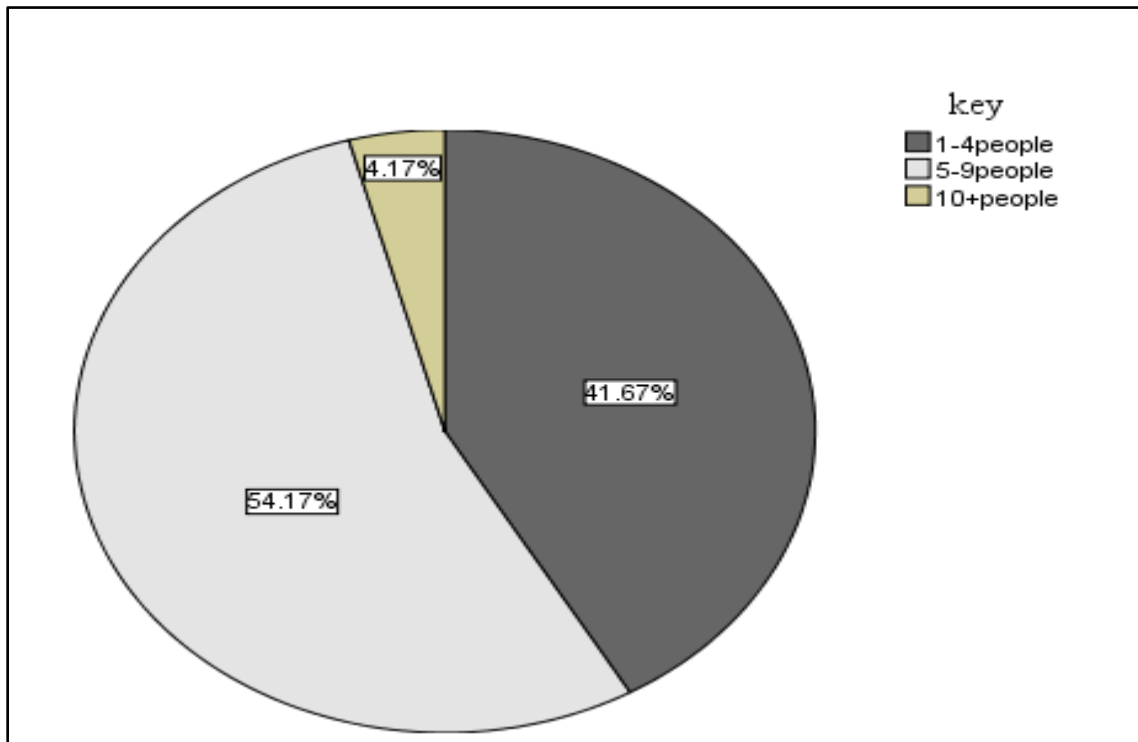


Figure 4.5: Household sizes of Crown Range Community

The results decoded on figure 4.5 revealed that the second category of household size has the highest percentage (54.17%) which composed of households with 5-9 people and the last category has the least percentage (4.17%) hence few families are composed of 10 and above people. However the first category has the second highest percentage of 41.6 % therefore it shows that most families are still growing. Therefore the above results have revealed that the community is dominated by economically active and youthful population, hence more impact on depletion of local forests.

.4.2 Good governance principles being applied in Crown Range community.

4.2.1 Access of respondents to forest resources.

The forest resources are grouped into two categories, timber products and non-timber forest products. The results from the respondents show that 79.2% of population has full access to local forest resources. The remaining 20.8% of the community have no full access to forest resources and this is mainly due to their lack of adequate resources to exploit the resources and their age also contribute. These few are vulnerable since they do not own tools such as axes or wheel barrows hence it is difficult to borrow frequently. However, the majority of community members have more access to the local forest because there are limited restrictions to exploitation. The respondents indicated that they are free to exploit as much firewood as they require without any limitations. About 75% of respondents have indicated that they have no access to non-timber forest products such as fruits, mopane worms and thatching grass. This is because these products are limited in proportion as compared to timber products. The other factor is that humans and animals compete for the same resources.

Table 4.1: Respondents' access to local forest

	Frequency	Percent	Valid Percent	Cumulative Percent
Regular access per month	38	79.2	79.2	79.2
Rarely access per month	10	20.8	20.8	100.0
Total	48	100.0	100.0	

From the results on the table 4.1, it can be assumed that the majority of the population in Crown Range community has access to forest resources. However the proportion of those who rarely access the forests also gives a picture that there are factors that contribute to this lack of access. According to Johnson (2005) issues of lack of access to communal forests exploitation is mainly centered on gender equality and indigenous knowledge systems (IKS). From a study carried out in Costa Rica traditionally forest governance especially that include logging have been considered a male dominion. Moreover another study carried out in India (Raju 2006) showed that IKS strongly limited the access of people to exploit forest products. A woman from the Advasi community in India was quoted as saying:

“We were accustomed to respect all types of life,” including plants and animals, each tribe, and each family circle had its own protector animal or plant, which they in turn also protected.”

This is almost to the Crown Range community where elderly women’s access to forests is limited and this is mainly because of them being conservative and holding onto their cultural beliefs that roles such as logging is only for the men. Another fact that strikes a similarity with that of Crown Range community is the application of IKS of which a minority still has the belief that forests are sacred and their natural state must be maintained to get the intended benefits. However the modern realm of forest governance is pushing away IKS hence the forests are losing their values hence they have become properties to which people and animals have freedom to exploit therefore leading to rampant depletion of local forests. In India it was recommended that the governance authorities integrate IKS and new reforms of local forest governance. This is significant to effectively the remaining planks of forests in communal areas of Zimbabwe.

4.2.2 Participation of respondents in decision making concerning forest governance.

Crown Range community is mainly composed of female headed households, hence the community is female dominated. This has got the impact striking balance in decision making process. The majority of the respondents revealed that they are not involved in decision making. The results on Figure 4.6 revealed that 68.4% of the total respondents are not involved in decision making as far as local forest governance is concerned. It was revealed that the community members only take orders from the authorities. Moreover,

organizations such as RDC, EMA, and FC just enforce policies that are not familiar to the community members. Among the respondents woman who make up the greater proportion of the community of about 60% also expressed the sentiments that their contributions as women are not considered, only the voices of the minority males are considered during meetings. This is mainly due to a number of factors that include low levels of education, low self-esteem and gender discrimination. Furthermore, the decisions that are made through the top-down approach are only meant to generate revenue for governance authorities but the benefits are not channeled to the community. The results have revealed that little to nothing has been done to develop the community from the revenue generated from the community resources. Developments such as construction of schools, development of roads and drilling of boreholes are only ways of attracting people's attention by voice but this has not been put to practice.

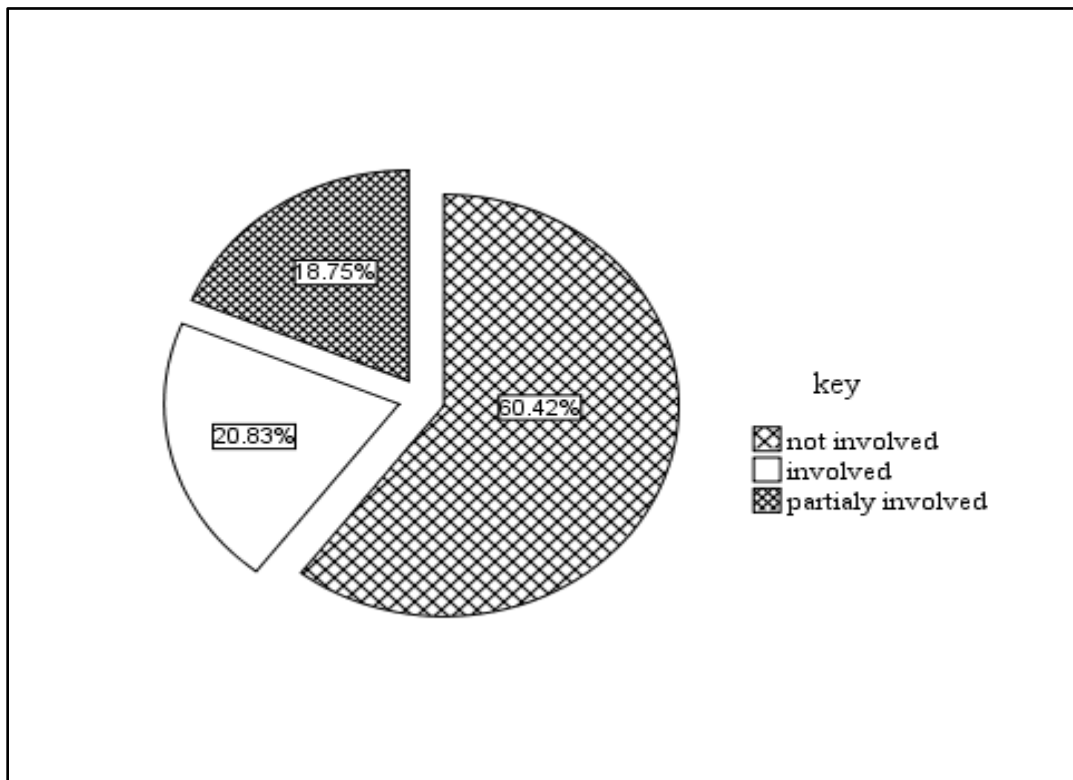


Figure 4.6 Community's involvement in decision making

Figure 4.6 illustrates the proportions of respondents who are involved decision making and those who are not involved as well as those who are partially involved in decision making. It is clear from the results that the majority of the community members have no

access to decision making concerning the governance of local forests especially women. According to Paz (2007), many studies show how differences between women (for example, age, socio-economic class, or specific circumstances related to their domestic and extra-domestic work) can imply different opportunities and limitations to participate in forest governance. For example, young mothers may not only have less time to participate in the decision making processes, they may also be given, for cultural reasons, less space and opportunity to express their opinions in comparison to older women. The same can be said about poor women in comparison to higher-income women in the community. Yet it may be these young or poor women who are most dependent upon forest products, and who stand to be most affected by decisions of the wider community. However this situation is affecting many communities including Crown Range where women are marginalized at the same time high income earners are considered for decision making in the sense that they easily access the meetings as compared to the poor. Therefore the study implies that there has to be a paradigm shift from the customary system of governance which do not allow all members participate in decision making to an integrated approach which incorporate all levels of the society.

4.2.3 How the Crown Range community establishes decisions on local forest governance.

From the field work carried out, it is clear that most of the decisions passed on the governance of local forest in the community are done by the local authorities that include the RDC and the village heads. The majority of the respondents indicated that decisions are passed on the top-down approach bases and others also indicated that other decisions are established by the community. Some of the community members believe that there are no strict measures concerning the governance of local forest hence the respondents indicated that decisions are made at individual level. The community leadership taking the instructions from the RDC decides on the rules and regulations governing local forests and also on penalties and fines to those who do not comply with the rules and regulations. A significant number of woman in Crown Range area also indicated that they rarely attend community meeting concerning conservation of the environment. Only 20.8% of the respondents indicated that they attend meetings monthly and 12.5% of the

respondents indicated that they attend every meeting while 37.5% indicated that they attend meetings once a year and sometimes not at all.

Table 4.2: Frequency of respondents' meeting attendance

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid monthly	10	20.8	20.8	20.8
yearly	18	37.5	37.5	58.3
every meeting	6	12.5	12.5	70.8
not at all	14	29.2	29.2	100.0
Total	48	100.0	100.0	

The results provide an assumption that the majority of Crown Range community member have lost their authority over making decisions on governance of local forests. Christy et.al (2007) basing on a study carried out in Democratic Republic of Congo (DRC) argued that the state have ignored the customary law and uses the statutory to determine who is supposed to make decisions and how they are to be made as well as the distribution of the benefits. A study was also carried out in Vietnam (Cotula and Mayers 2009) and revealed that customary law was replaced by the statutory tenure and this has compromised the decision making of the people at local level. This has resulted in the local people facing the dilemma of ignoring their customary norms hence exploiting forests for short term benefits. This is similar to the situation in Crown Range area where customary laws and norms have been degraded by statutory regulations which marginalize the local people to establish decisions concerning local forests. This as a result of ineffectiveness of the statutory law has seen unsustainable exploitation of resources persisting. At a global scale forest law making is making reforms that suits the dependent communities to make decisions and designing benefit sharing mechanisms, hence if this was to be adopted at local level would see a positive change in the governance of forests.

4.3 Transparency and Accountability of local forest governance in Crown Range area.

4.3.1 Access of the community to information on local forest governance.

The results from the fieldwork carried out by the researcher indicated that the largest proportion (53.4%) of the respondents rarely access the information concerning the decisions on how the forest products are to be used or shared and how conservation of local forests is implemented. The other group of respondents (20.3%) which had the least proportion of members indicated that they have access to information at regular basis through various sources such as newspapers and radios as well as from other people in the community. A large proportion of respondents (27.2%) also indicated that they do not have access information of how much revenue is generated from their natural resources, how they benefit and information on new ideas for effective conservation of local forests. The trends from the results indicate that most people in the community do not regularly get information. This is mostly influenced by the levels of income of the respondents so that they would be able to acquire media sources such as newspapers, radios, televisions and pamphlets from the organizations. Core channels in which information is communicated remained different with information from other people in the community (56.3%) having the highest proportion. However, a relatively high proportion of information (45.4%) is communicated to the people through the community chairperson. Due to the circumstances of low income which is very common in the area very few (23%) access their information through radio and newspaper platforms.

4.3.2 The visibility of forest governance to the community and stakeholders.

Results from the research have shown that most respondents (55.5%) regardless of gender do not have confidence in the clarity of information and activities concerning the management and utilization of forest resources. Respondents from the community (45%) indicated that there is no transparency in the visibility of decision making process and (25%) also share the partial sentiments that decision making is visible however, the desirability of the information or the decisions passed is a subject of scrutiny. The results from the interviews that were conducted among the stakeholders also revealed that most organizations such as EMA, RDC and FC share information concerning the governance of natural resources in the community. This contradiction is as a result of the relationship

between these organizations and the local people. The observations made during the fieldwork revealed that most members have negative attitudes towards FC and EMA. This is also exacerbated by low levels of education which mystify the community's judgment on the true agenda of the organizations. However, interviews carried out from various stakeholders revealed the RDC has got the overall authority over rural communities hence they are the ones who make decisions concerning the utilization of the resources therefore other stakeholder can only carryout activities provided they seek permission from the RDC. A greater percentage (80%) of respondents from the Crown Range Community indicated that the RDC does not give information and statistics on how much timber is logged per year, how much revenue has been obtained and how is it going to be used. About 20% of the respondents highlighted that they casually get the information through interaction with the ward chancellor who attend District committee meetings.

4.4 Efficiency of local forest governance in Crown Range area

4.4.1 What Crown Range community understands about sustainable utilization of forests.

Sustainable management of forests is a subject that most of the community members in Crown Range area have not yet grasped its demands. From the questionnaires survey which was carried out by the researcher the majority of respondents do not understand the subject of sustainable management of forests. The other proportion of respondents indicated that they only use dead wood for fuel and only log poles for other purposes like roofing houses (*nhungo*) therefore they claim that they are practicing sustainability. A small proportion of respondents between the ages 15-30 also indicated that they practice sustainability as they are taught the importance of trees in schools. However, they try and educate their elders on the importance of trees to present and future generations though the elders are reluctant to listen because they claim to have more knowledge than the young generation. This therefore result in the unsustainable exploitation of resources as shown on plate 1.

Plate 1: Piles of firewood for sale along the highway



Direct observations in the Crown Range area showed no sign of sustainability being practiced and this is mainly attributed to the education levels in the area. However a small group of members who understand the subject of sustainability have no influence since they are mainly composed of youth between 15-30 age groups. Despite poor implementation of governance principles driving the unsustainable exploitation of local forest in Crown Range area there are various factors that contribute to this situation. Skutsh et. al (2009) stated that, clearly there are different drivers behind degradation, but particularly in the dry forests and savanna woodlands of the tropics a major factor is the increasing exploitation of forest products by local communities for subsistence purposes, which include livelihood cash income. Growing population pressure and growing needs for cash for health and education for instance. Generally these are the factors which are affecting the community at large. In Mexico Collaborative Forest Management strategy

was adopted which gives the local people the responsibility to manage their resources. Such strategies involve sustainable harvesting of timber, as in the case of many Mexican rural communities (Bray et al., 2005). Therefore although there are similar initiatives in Zimbabwe such as CAMPFIRE, they need to be supported and spread to all communities to achieve sustainability.

4.4.2 Importance of forest benefits to local communities.

Crown Range community is one of the areas in Chiredzi district without any rivers or streams nearby and to worsen the situation it lies in the dry area of region (5)V. From the survey carried out it is clear that most of the community members earn their living through livestock rearing and crop production. However a greater proportion of the inhabitants indicated that they earn their living from selling firewood from the local forests. Those who raise family income through selling firewood along the highway (Fig4.7) had the greatest percentage (55%) whereas those who increase their family food base from the forest had the least proportion of 35%. About 45% of the respondents indicated that they acquire other benefits from the local forest such as firewood for domestic purposes as well as poles for fencing and roofing houses. However a few also indicated that they also raise school fees for the children from selling firewood and charcoal along the Chiredzi-Harare highway. The study shows that most of the community members in Crown Range area obtain their income from the forest hence they are forest dependent. This is also aggravated by the effects of climate change which result in the area receiving not enough rainfall to sustain crop growth. A study was carried out in Kenya to show the effects of climate change on local forests and the results revealed that most rural communities are left with no option in the situation of drought than to depend on forests for their livelihoods. However not only humans need to survive such situations but also animals depend on forests for food and shelter Combes (2007). Therefore from the results presented a greater proportion of the community is dependent on forest as their source of income and other benefits like roofing materials and wild fruits though not all are benefiting since it is based on the survival of the fittest system hence benefit sharing is not efficient.

Plate 2: Man pushing a wheelbarrow with firewood for sale



4.4.3 Sustainability of livelihoods

The community members of the Crown Range area depend on the communal forests to support their livelihoods. This is mainly because of the reason that the area is a dry land and crops grown are rain fed. The situation is worsened due to the fact that, this area lies in region V which commonly experience unreliable rainfall amounts. Therefore this means it is difficult for the community members to practice commercial agriculture. This pushes the community members to exploit the forest taking advantage of the regular load shedding of electricity experienced in Chiredzi town hence firewood is on demand. The other importance of the communal area is that it provides their livestock with grazing pastures. Mopane leaves are rich in nutrients hence good food for their animals. Some families with large herds of cattle also generate income from selling their cattle. Among numerous benefits the community members get from the communal forest it is clear from the direct observations that firewood trading is most common in the area and this enable them to acquire basic commodities, and paying of school fees for their children hence enhancing the sustainability of livelihoods in the community.

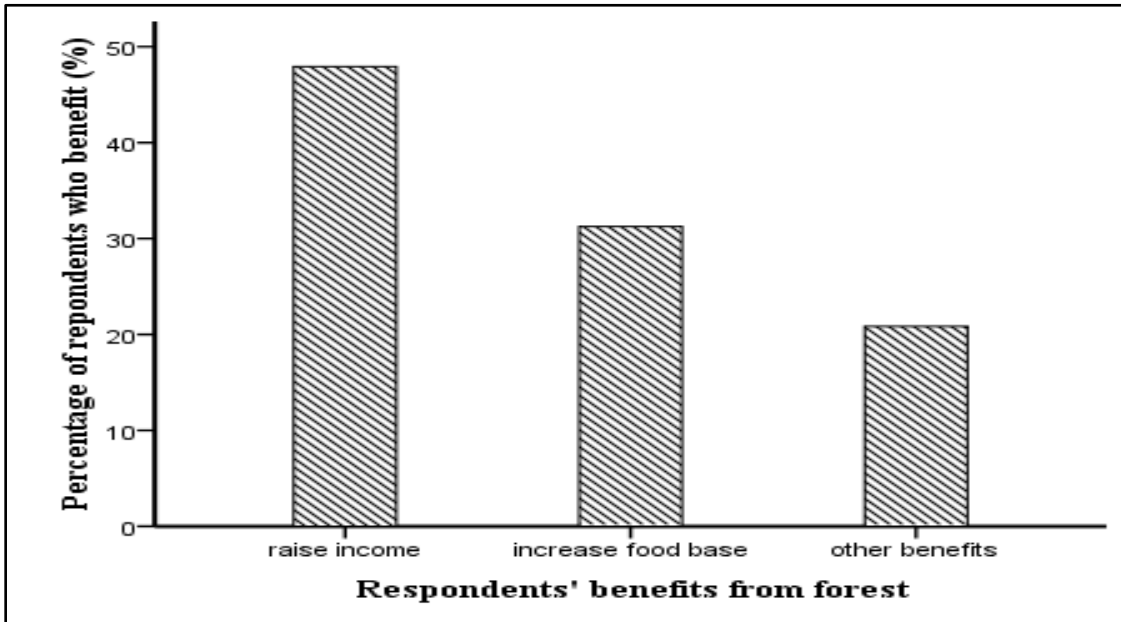


Figure 4.7: Benefits of Crown Range community from forest

4.4.4 Contribution of community towards practicing forest conservation.

Due to the high illiteracy levels in Crown Range area, not much is being done to conserve forests in the area. A greater proportion of respondents indicated that they have done nothing so far as individuals to conserve forests. A few individuals also indicated that they are teaching others to conserve trees though this has no impact due to the general look down upon each other that is common among community members. However, as a community, little is being done through the community chairperson who formed the environment committee of which he is the chair and this committee advises people not to destroy forest through unsustainable logging and starting fires. From an interview with some of the committee members it was revealed that the majority of community members only agree to comply by mouth but they don't practice it. Moreover most of the respondents also shared the sentiments that the community chairperson and the committee are the ring leaders in illegal selling of firewood. Therefore corruption is one of the major issues undermining good governance of local forests in Crown Range area. Recent studies have shown that corruption is a worldwide disease particularly in many developing countries containing a large proportion of biodiversity. According to Laurence (2004) a study was carried out in Indonesia describing the rampant corruption

in the local forests as a result of political destabilization in the country. It was discovered that community leaders in collaboration of government officials are chief culprits in corruption. This is similar to the situation in Crown Range community, where the community leaders are the ones practicing corruption. Furthermore, according to Smith et al (2003) most biodiversity conservation occurs in developing countries who require donor support to build their conservation capacity. However, this has been experiencing high political corruption limiting the success to good governance. This is also a situation experienced in Crown Range area where most of the actions are politicized hence they remain unquestioned. This has seen transparency being undermined at all points.

4.4.5 The role of organizations and local authorities towards local forest management.

There are various players in the District that are joining hands to come up with good governance of natural resources. These include RDC, EMA, FC and SAFIRE (NGO) and this are putting much effort in trying to achieve sound management of the environment. From an interview which was conducted by the researcher with the Extension Officer from Forestry Commission indicated that as far as the local forests are concerned they only come into play by providing the technical knowledge of forest conservation. The results from the interview also showed that the FC also makes sure that it gives the information to the RDC who has the authority of local forests. The FC also makes sure that it communicates its progress to other stakeholders through publicity materials which also educate the public on the benefits and importance of trees. However the officer also expressed that sometimes they work in assumption that the information has reached the targeted population. Moreover the FC also assist in By-law formulation through allowing the community to pass their own decisions concerning the way in which they want their local forests to be managed. Apart from this another interview was conducted by the researcher with the councilor of the area Ward 17 who also highlighted that tree planting activities are also taking place in the area especially in schools and he encourages the community to take part. The councilor also indicated that he also mobilizes the communities in his ward to participate in field days where all stakeholders such as FC, EMA and SAFIRE will be exhibiting skills of environmental conservation. The councilor also highlighted that he brings issues about his ward to the district full committee

meetings to be debated so as to provoke the local authorities to take action and address the environmental issues.

4.5 Effectiveness of good governance principles being applied in Crown Range area.

4.5.1 Rules, regulations and responsibilities of the community and authorities toward good governance of local forest resources.

The respondents from Crown Range community revealed they are aware that there are some rules, laws and regulations that govern the utilization of forests. The results from the survey indicated that 70% of the population of both genders is familiar with rule and regulations on the utilization. However, 30% of the respondents indicated that they are not familiar with and regulation concerning the utilization of local forest resources. The majority expressed their knowledge of the rules because they experienced some raids by the police accompanied by EMA and FC officers hence this was a clear indication to them that they are aware that there is some regulation attached to local forests utilization. The minority group expressed the view that they just assume that there are regulations but they have not heard of any. The researcher also noticed the attitude of the respondents as he approached their homesteads with papers in his hands that they are familiar of certain rules as the uttered statements like (*“anenge munhu weEMA”*) meaning he is an officer from EMA.

From the interviews with the councilor it was also revealed that regular meeting with the community are conducted to inform them about the importance of trees hence they are familiar of the regulations in one way or the other. The community chairperson also alluded from the conversation that he had with the researcher, the community members are the ones that decide the measures that must be implemented to safeguard the forest. Therefore this shows that they are responsible to their local forests. From an interview with the FC it was revealed that they are indirectly responsible for enforcing the regulations since the organization is an instrument in the hands of the master (RDC). The FC officer also expressed that from the Communal Lands Forest Produce Act, the community have the right to utilize their resources however the organization governs the amount of resources to be exploited.

From the results of the survey 67% of the respondents indicated that people in the community are not complying to the rules and regulations of local forest governance. A small proportion of the respondents 20% also indicated that they are compliant and this is because some of them are formally employed in the nearby Chiredzi town or receive some income from siblings in diaspora. The smallest proportion of respondents (13%) who indicated that they are compliant are the community members who are the elderly who no longer have the energy to log down the hard mopane trees. In compliment of the above from the interviews conducted at FC and SAFIRE it was revealed that the majority do not comply with the with the rules and regulations basing their argument on the major challenges they face to deal with people who illegally bring firewood for sell to Chiredzi town. Furthermore the records (table 4.3) from the Chiredzi RDC also reveal the level of compliance generally in the whole District.

Table 4.3: Illegal extraction of firewood fines.

ILLEGAL WOOD EXTRACTION FINE	AMOUNT OF FINE (US\$)	
	2015	2016
Lorry loads	525	624
Pick-up loads	525	701
Pushcart loads	263	300
Wheel burrow loads	21	40

The trend on the table 4.3 reveals that there has been a significant increase in the amount of fines between 2015-2016 which were obtained hence this gives the general picture of the level of compliance of the people in the district therefore questioning the effectiveness of the of the governance principles that have been applied in the area.

4.5.2 Changes in the forest cover, abundance and the size of area covered.

The results from the fieldwork carried out in Crown Range area it was found out that there is a significant change in the forest cover and resource availability. A greater proportion (76.2%) of the respondents testified that the forest land is experiencing depletion, 19.0% of the respondents also highlighted that the local forest is moderately depleting where as a minority of 4.8% also expressed the view that they are not noticing any change to the forest cover and any changes to the abundance as shown in Fig4.8.

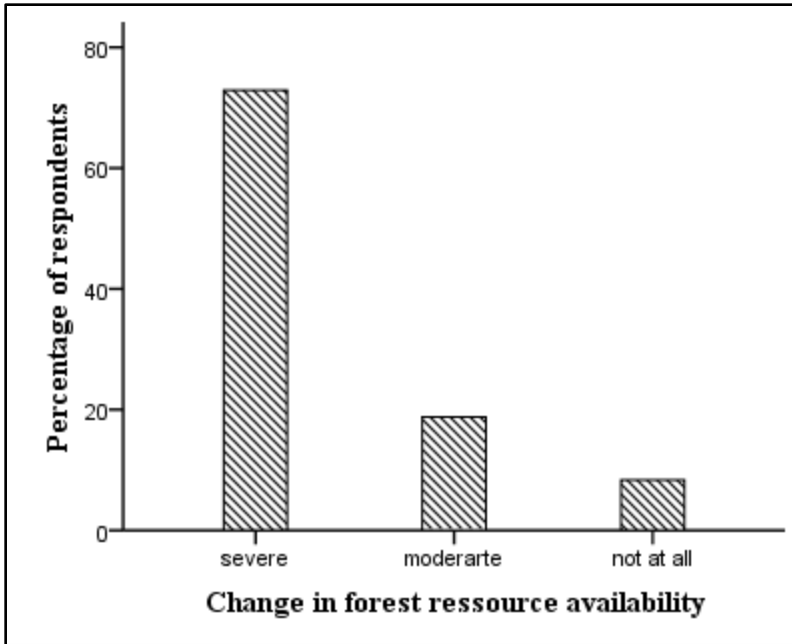


Figure 4.8: Change in forest density and abundance.

Table: 4.4: Density of vegetation in Crown Range forest

Point	Nearest neighbor plant(m)	Calculated density/ha
1	5.0	100
2	3.6	193
3	2.0	130
4	12.5	500

The average density of sample = 230 plants per hectare

The table 4.4 shows a trend of the field measurements that were done in the Crown Range local forest. The longest distance that was measured from the target plant to the nearest neighbor plant was 12.5m and the relative density was 500 plants/ha and the shortest distance that was measured was 2.0m and the density of trees was 130 plants/ha. The average density of the sample was 230 plants per hectare which is below the expected value of 1000 plants per hectare. Therefore this means there is rampant depletion of the forest area in the area hence there is a significant change in the forest cover.

4.5.3 Awareness raising

A greater proportion of the respondents in Crown Range community said that they are conservation awareness conscious. From the questionnaire survey that was carried out in the community, it is clear that they understand what awareness is since they pointed out that they participate in tree planting commemorations every year and also in field day programs where environmental issues are also exhibited. From an Interview with the ward Councilor, he also said that environmental awareness is one of the core agendas in most of the meetings that he addresses to the community members. However, awareness has not been successful since most people are living under low incomes hence they resort to forest resources to improve their income base. This as a result awareness is preached but it is not being practiced. Therefore the effectiveness of governance principles being applied is still a subject of scrutiny.

4.5.4 Forest land use, resource utilization conflicts experienced and their devolvement.

Forest land use conflicts are not common in Crown Range community and this is mainly due to the fact that the local forest is open to every inhabitant of the community. There are no limits to the exploitation of timber resources hence no one is accountable for the other. A greater proportion (75.4%) of the respondents (Fig4.9) answered (No) to forest land use conflicts while a small proportion (25.0%) answered (Yes). These few highlighted that these conflicts arise from intruders from other communities who come to exploit timber resources in their community. This was supported by the community chairperson who share the sentiments that he usually conflict with intruders who come from other communities to harvest Mukamba(*Afzelia quanzensis*) which is a hardwood good for making furniture hence it is marketable. An interview with the RDC environment manager also revealed that they usually conflict with a few individuals who are resistant to comply with the regulations that they agree on through By-law formulation. However the response from the community showed that most of the conflicts are solved through negotiations and usually when the method of negotiating at grass roots level the issues are reported to the police who then use their own means to solve the conflicts.

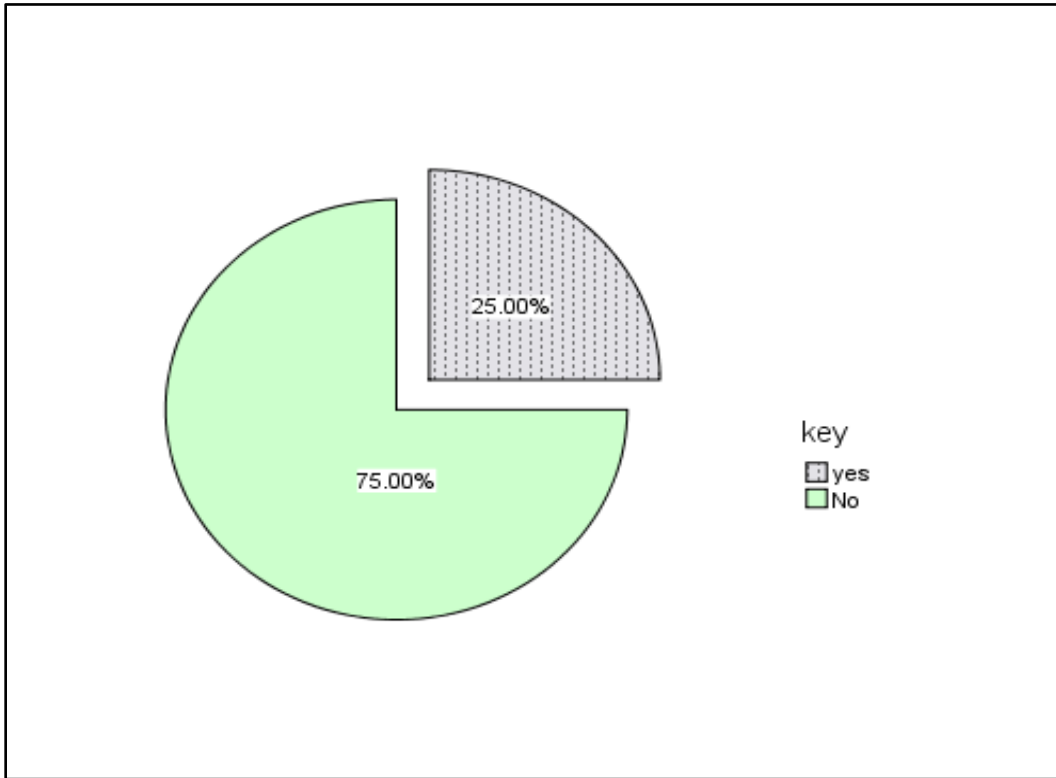


Figure 4.10: Forest land use conflicts in Crown Range area.

According to Baltodano (2010) from a study which was carried out in Costa Rica on community-based forest governance, when it comes to governing community resources, conflicts are common. It is helpful to develop mechanisms to encourage dialogue, for monitoring, and for accountability, along with other tools to enable the community to resolve internal conflicts in a creative and transparent manner. Similar to the situation in Crown Range area, most conflicts are solved at community level through dialogue and the community chairperson will be facilitating the negotiations. This means the issue of conflicts is not a serious case as far local forests are concerned.

CHAPTER FIVE: CONCLUSION AND RECOMMENTATIONS

5.1 Conclusion

Good governance and the application of principles is a sensitive issue as far as local forest management is concerned. From the results presented one can come up with an understanding that implementation of good forest governance principles is still lacking. This is attributed to the fact that it is not yet clear to the governance organizations and the public that which principles are supposed to be applied, how they are supposed to be applied and by whom. Moreover, governance is not all about where to go but also who is supposed to be involved in deciding. In the case of Crown Range area the results revealed that public participation in decision making is not a priority of the governance organizations and local authorities though it is stated on policies it is not practiced. How the principles of good governance of communal forests are supposed to be applied is another question that is still a mystery in natural resource management. It is not yet clear which approach is supposed to be adopted to ensure successful implementation of governance principles. The resultant effectiveness of the implementation of good governance principle is severely compromised in Crown Range area since the forest is degrading and unsustainable exploitation of forest resources is becoming uncontrollable. Therefore the good governance principles and their application at local forest level is still a subject of scrutiny and it is not yet clear who should make decisions with what capacity and who will be affected, to what extent.

5.2 Recommendations

5.2.1 To Forestry Commission and Environmental Management Agency.

- Forestry Commission and Environmental Management Agency are the two most common organizations who are closely linked to the conservation of natural resources including local forests. These organizations should implement an integrated approach in the application of governance principles through making of policies that complement the common principles that form the bases of their values as organizations. They need also to consider issue of limited resources as a major stumbling block to the implementation of governance principles hence come up with a joint work plan to ensure effective governance of local resources.

5.2.2 To Rural District Councils

- The Rural District Councils are the owners of the rural communities as well as the custodians of the environment. This implies that successful local resource management or failure is their responsibility. The RDC should always reach the people in the rural communities to provide good and services at the same time being transparent in disseminating information on the status of resources and provide reports on how the benefits from natural resources are used in developing their community.
- Fragmented policies and principles have appeared to be the major drawback in the implementation of good governance of local forests. Countering this requires the RDC to engage the technocrats (FC, EMA) to assist in providing the technical knowhow on how to protect the environment and also these organization to be transparent in providing information on the challenges that are faced and the way forward to counter such problems.

5.2.3 To local authorities

- The community chairpersons, chiefs and councilors are the immediate custodians of the natural resources in the communities; they are the eyes of the RDC. They should work with people hearing their needs, involving the local people in decision making and making sure that information reaches the lowest levels of community members. The councilors and chiefs should also decentralize their powers to other community members and form committees that are responsible for protecting their resources and this can work as an incentive to conservation.

5.2.4 To Non-Governmental Organizations (NGOs) (SAFIRE)

- The NGOs are also advocates for development in communities. They are there to give aid when there is a problem. The NGOs should be transparent in their dealing with other stakeholders and the community which is an issue in many communities, they need to be clear on their targeted agenda when they come into the community. They also need to involve the whole community in their initiatives rather than operating working with a small group in the community. They need to consider the level of education and income of the members so as to

provide adequate assistance for the communities hence reducing pressure on natural resources

REFERENCES

- Andersson, K.S. (2004) *Transnational Governance: Institutional Dynamics of Regulation*. Cambridge: Cambridge University Press.
- Angerand, S. (2003) *Community-based forest governance: from resistance to proposals for sustainable use*. Available from www.foei.org. [Accessed on 06/01/2016]
- Arts, B. and Buizer, M. (2009). *Forests, discourses, institutions. A discursive-institutional analysis of global forest governance*. Available at www.thinkforest.efi. [Accessed on 20/03/2016]
- Becker, L. 2001. *Seeing green in Mali's woods: Colonial legacy, forest use, and local control*. *Annals of the Association of American Geographers* 91(3)
- Bodin, O. and Crona, B. (2009). *The role of social networks in natural resource governance: what relational patterns make a difference?* Cambridge: Cambridge University Press.
- Brown, D., Birk, D.E. and Gassparo, F. (2002) *Good Governance: What can we learn from the forest sector?* Available from www.odifpeg.org.uk [Accessed on 30 November 2015].
- Bruce, W.B., Edmeades, G.O. and Barker, T.C. (2002) *Participation and involvement in governance*. Available on www.google.books.com . [Accessed on 28/03/16.]
- Central Statistical Office. (2012). *Census 2012*. Harare: Central Statistical Office.
- Cohen, D. and Crabtree, B. (2006) *"Qualitative Research Guidelines Project."* Available at www.qualres.org Accessed on 03/03/16
- Counsell, S. (2009) *Forest Governance in Africa*, available from www.africaportal.org [Accessed on 02 December 2015]
- Combes, B. (2007), *UN Decade of Education for Sustainable Development*. Available from www.cmec.ca.org. [Accessed on 09/05/2016]
- Cowling, H. (2014) *Assessing forest Governance : PROFOR*. Washington DC
- Creswell, J. (2009). *Research Design: Quantitative, Qualitative and Mixed Method Approaches*, 3rd Edition. Sage Publications Inc. CA
- David, B. and Resnik, J.D. (2015) *what is ethics in research and why is it important?* Available at www.niehs.nih.gov . Accessed on 10/03/2016

Davis, C., Cox, C. and Ekins, S. (2002) Governance and Management of Small Forest Tenures. Available at www.forrex.org. [Accessed on 29 November 2015].

De Vaus, D. (2001) *Research Design in Social Research*. London: SAGE

DFID, (2011) *Toward Better Strategies and Results: Collaborative approaches to strengthening Governance*. Carnegie International, Washington DC

Emery, A.R. (1996). *The Participation of Indigenous Peoples and Their Knowledge in Environmental Assessment and Development Planning (draft)*. Centre for Traditional Knowledge: Ottawa, Canada

Evans, K. (2014) *Fundamental tensions between the dual goals of efficiency and equality under REDD+*. Available online on www.fao.com. [Accessed 21/03/16]

FAO, (2015) Global Forest Resources Assessment. Available from www.fao.org [Accessed on 07 December 2015].

Ferraro, J.P. (2002) *Public Administration and Environmental Policy* p.22. Available on www.googlebooks.com. [Accessed on 27/03/16.]

Finely, J. (2012) Facing Morden Forest management management challenges: *mitigation, adaptation*. Available From www.news.pou.edu. [Accessed on 06/01/16]

Forestry Commission Zimbabwe (2004) *Forestry Management Plan for Masvingo Province*, Harare, Zimbabwe. www.forestry.co.zw.

Forestry Commission, (2014) How we work. Available from www.forestry.co.zw [Accessed on 19 October 2015.]

GFI, 2009. *The governance of forests toolkit (version 1): a draft framework of indicators for assessing governance of the forest sector*. The Governance of Forests Initiative. Available on-line at: www.wri.org/gfi. [Accessed on 22/03/2016.]

Graham, J., Amos, B. and Plumptre, T. (2003). *Governance principles for protected areas in the 21st century*. Ottawa: Institute on Governance, Parks Canada

Graham, J., Bruce, A. and Plumptre, T. (2003) Principles for Good Governance in the 21st Century. Available at www.iog.ca.org [Accessed on 19/01/2016]

Gray, E. D. (2014) *Doing Research in the Real World, 3rd edition*, Sage Publishers, London.

Guisselquist, R. (2012) “what does good governance mean.” Available from www.unu.edu.what-does-good-governance-mean [Accessed on 13 October 2015]

Holmes, A. (2013) *Direct observations*. New York. Springer.

Howlett, M., Rayner, J., Goehler, D., Heidbreder, E., Perron-Welch, F., Rukundo, O., Verkooijen, P., Wildburger, C. (2010). *Overcoming the challenges to integration: embracing complexity in forest policy design through multi-level governance*. Available on www.googlebooks.com. [Accessed 24/03/16]

ICUN (2013) Forest Conservation. Available from www.icun.org, [Accessed on 12 November 2015].

Jeffery, P. and Mishra, R. (2005). *The state of india after liberalization: Interdisciplinary perspectives*. Amazon: Routledge.

Kaimowitz, D. (2002) “Why are there so many conflicts over forests?” Available on www.mtnforum.org . [Accessed on 28/03/16]

Kaufmann, D., Kraay, A. and Mastruzzi, M. (2003). *Governance matters III: Governance indicators for 1996–2002*. Washington, DC: The World Bank.

Kishor, N. and Rosenbaum, K. (2012) Assessing and monitoring forest governance. Available at www.profor.info. [Accessed on 06/01/2016]

Kishor, N. and Rosenbaum, K. (2012) *Assessing and monitoring forest governance*. Available at www.profor.info. [Accessed on 21/03/2016]

Larson, J. and Petkova, G. (2011) *Tackling Illegal Logging and the Related Trade*. Available from www.cathamhouse.org. [Accessed on 23/03/2016.]

Larson, J. and Retkova, G. (2011) *Tackling Illegal Logging and the Related Trade*. Available from www.cathamhouse.org. [Accessed on 05 December 2015.]

Laurence, T. (2004) Corruption and its impacts on conservation outcomes. Available on www.googlebooks.co.zw . [Accessed on 10/0516]

Leedy, P.D. and Ormrod, J.E. (2005) *Practical Design, 8th Edition*. New Jersey: Pearson Merrill Prentice Hill. London.

Lockwood, M. (2010) Governance principles for Natural Resources Management. Available at www.tandfonline.com. [Accessed on 20/01/2016]

Lockwood, M. (2010) *Governance principles for Natural Resources Management*. Available at www.tandfonline.com. [Accessed on 20/01/2016]

- Marongwe, N. (2002). *Conflicts over Land and Other Natural Resources in Zimbabwe*, Harare, Zimbabwe Environmental Research Organisation (ZERO).
- Martin, G. (2012) *Qualitative and Quantitative data collection methods*. Available at www.stat.ncsu.edu. Accessed on 02/03/16.
- Mishra, A. J. and Singh, M. (2005) The importance of including women in community-based forest governance process. Available online at www.wrm.org . [Accessed on 8/05/16]
- Mohan, A., Shin, N. and Murali, A. (2003) *Decentralisation of local institutions and forest management*. Available online at www.fao.org. [Accessed on 23/03/2016]
- Moore, P., Graiber, T. and Baig, B. (2010) *Forest governance and law Enforcement*. Available on-line at URL: <http://www.profor.info>. [Accessed on 23/ 03/16]
- Mtisi, S., Mombeshora, S and Chaumba, J. (2001). Zimbabwe Mapping Phase Report: *Case Studies of Sangwe and Mahenye Communal Areas in Chiredzi and Chipinge*. Sustainable Livelihoods in Southern Africa Mapping Paper, Institute of Development Studies, Brighton
- Mufandayedza, E., Moyo, D.Z. and Makoni, P. (2013) Management of non-timber forest products in the South East lowveld of Zimbabwe. *African journal of Agricultural Research*. Vol. 10(12). pp. 1521-1530.
- Mukwada, G. (2000). *Natural Resources Conservation and Management*, Zimbabwe Open University, Harare.
- Mushamba, S. (2010) *Reformed land resource use in South Africa: Impact on Livelihoods*. Retrieved from www.mg.co.za. [Accessed on 23/03/16].
- Naluwairo, R. (2015) *Role of local leaders and actors in promoting good forest governance in Uganda*. Infosheet No.34 National Forest Plan. Kampala.
- Paz, L. (2007) Promoting good governance for sustainable livelihoods. Available on www.fao.org. [Accessed on 12/05/16]
- Pilar, A. (2013) Research Connections . Available on www.researchconnections.org. accessed on 03/03/16.
- Pillai, M. and Tuukka, C. (2011). *Forest Governance 2.0: A primer on ICTs and governance*. Washington DC: Program on Forests (PROFOR)

SAFIRE. (2004). Land-Use and Tenure on Contested Land: Chitsa Community in Gonarezhou National Park, SE Zimbabwe, IUCN Regional Office for Southern Africa, Harare.

Secco, L., Da Re, R., Pettenella, D.M. and Gatto, P. (2013) *Why and how to measure forest governance at local level*. Available on www.elsevier.com .[Accessed on 22/03/16.]

Sincero, M.S. (2012). Types of Survey Questions. Available from www.explorable.com. Accessed on 09/03/ 2016.

Smith, D. (1991) *Qualitative Research and Evaluation Methods, 3rd edn*, CA; Sage. Newbury Park

Tanyanyiwa, P. and Chikwanha, K. (2011) *The challenge of Sustainability linking politics, education and learning*. Amazon: Policy Press

Trochim, W.M.K. (2006) *Types of designs*. Available at www.socialresearchmethods.net. Accessed on 29/02/16.

Ugurly, N. B. and Aladag, E. (2009) Global climate change education. *Innovare Journal of Education*. Vol 4. (2) p 25-27.

UNDP (2012) Principles of good governance 21st century, Policy Brief 15. Ottawa

Young, O. (2002). *The Institutional Dimensions of Environmental Change: Fit, Interplay and Scale*. MIT Press, Cambridge MA.

APENDICES

Appendix 1: Questionnaire for Crown Range are on governance of local forest



FIELD WORKER.....PLACEDATE...../...../

QUESTIONNAIRE NO..... TIME.....

This questionnaire has been designed to establish the application of good governance principles at local forest level, the effectiveness and the impacts to the local people in Crown Range Area, Chiredzi District, Masvingo, Zimbabwe. The results are for academic purposes and participant confidentiality is highly guaranteed.

Please tick the box representing your response and fill in the spaces provided.

Do not write your name.

Section A: Personal details

1. Sex Male Female

2. Age.....

3. Marital status: Single Married Divorced Widowed

4. Educational level: Primary O level A level Diploma Degree

5. Nature of employment: Permanent Contract Casual others specify.....

6. Monthly or Annual income.....

7. Household size 1-4 (people) 5-9 10-15

SECTION B: *Determining how good governance principles are applied at local level.*

(Participation, Transparency, Accountability, Effectiveness)

Please tick the box representing your response and fill in the spaces provided

1. Which forest resources do you have access to ?

Timber products non-timber forest products

2. Are you involved in decision making on:

- | | | |
|---|--------------------------|--------------------------|
| a). How to access forest resources | yes | no |
| | <input type="checkbox"/> | <input type="checkbox"/> |
| b). When to access forest resources | <input type="checkbox"/> | <input type="checkbox"/> |
| c). The quantity of resources to be exploited | <input type="checkbox"/> | <input type="checkbox"/> |

3. Are you involved in making decisions on how benefits from forests are used?

.....
.....

4. What decisions do you make on how to utilize the returns from purchases of forest resources.

Construction schools development of roads drilling of boreholes

a) Explain any other uses of the benefits from the forests.....
.....
.....

5. How do you arrive at decisions on monitoring of the forest resources at local level?

At individual level as a community as council of elders as local authorities

- a) Enforcement of rules and regulations.....
b) how do you decide on penalties to offenders.....

6. Are woman consulted in decision making meetings? Yes No

a) How often do you attend meetings? monthly early very meeting not at all

b) Do you make decisions on trees with Value?.....

.....
...

c) Are woman consulted to decide the protection of local forests?

.....
.....
.....
.....

7. Do you have access to information concerning utilization and conservation of local forest resources? Regularly Rarely Not at all

a) Through which channels is the information communicated?

Village heads chiefs councilor Media other people or any other source specify

.....
.....

8. How visible is the process of decision making concerning local forests?

.....
.....
.....

a) From your own understanding, what are the means by which decisions are reached?

Majority rule expert opinion professional judgment or any other means

specify.....
.....
.....

b) Do governance authorities provide information on:

	yes	no
How much timber was logged from the forest	<input type="checkbox"/>	<input type="checkbox"/>
How much non-timber forest products were harvested from the forest	<input type="checkbox"/>	<input type="checkbox"/>
How much revenue was obtained from selling of these products	<input type="checkbox"/>	<input type="checkbox"/>
How the revenue is going to be used	<input type="checkbox"/>	<input type="checkbox"/>
How the revenue is going to be shared to the local people	<input type="checkbox"/>	<input type="checkbox"/>

9. Do you meet as a community to review progress on:

1. not at all 2. regularly 3. rarely

1 2 3

- | | | | |
|------------------------------|--------------------------|--------------------------|--------------------------|
| a) Annual progress reports | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| b) Achievement reports | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| c) Management plans | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| d) Effectiveness evaluations | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

10. Do you have any committees responsible for the management of local forest resources?..... If yes list the committees

.....

11. To what extent are these committees answerable to their activities in the community?

.....

a) Do you have the right to question the activities of the finance committee?

.....

b) Do you have the right to approve or disapprove the activities of committees' on their

1. not at all 2. rarely 3. partially 4. fully

1 2 3 4

- | | | | | |
|----------------|--------------------------|--------------------------|--------------------------|--------------------------|
| i) Processes | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| ii) Plans | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| iii) Decisions | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| iv) Actions | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

12. Do you have secure access to forest resources that you depend on? Explain

.....

b) How do you meet the needs at household level due to benefits from local forest?

- | | | | | |
|----------------------|-----|--------------------------|----|--------------------------|
| Raises family income | yes | <input type="checkbox"/> | no | <input type="checkbox"/> |
| Increase food base | | <input type="checkbox"/> | | <input type="checkbox"/> |
| | | <input type="checkbox"/> | | <input type="checkbox"/> |

Improve payment of school fees

Other
benefits.....

13. Are there any limitations to how much trees are to be cut per household.....

If yes do you agree to that.....

14. What do you understand by sustainable utilization of forest resources?
.....
.....

a) What have you done as an individual to ensure local forest sustainability ?
.....
.....
.....

15. Are you involved in any forest conservation activities as a community member?..... if yes specify the activities that you carry out
.....

16. In your own view what have been done so far by local authorities and committees to improve the forest resources in your local forest

- a) Tree planting
- b) Bee keeping
- c) Mopani worm breeding
- d) periodic harvesting of resources

17. Are there any laws, rules or regulations you are familiar with concerning the management of local forest resources?
.....

a) who is responsible for enforcing those regulations.....

b) Do you think people are complying to the rules and regulations of local forests.....

.....
.....
c) What is done to those who offend the rules and regulations of the local forest?

- i) Arrested by the police
- ii) Arrested by the community police
- iii) Pay fines
- iv) Nothing is done to offenders

18. Are there any changes to the abundance of different kinds of trees in the local forest?
.....

19. How has the changes in availability of some different kinds of resources in the forest taking place over the past 5 years? **1. Not at all 2. moderately 3. Severely 4. Very severe 5. Am not sure**

- | | 1 | 2 | 3 | 4 | 5 |
|--|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| a) Abundance in vegetation species | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| b) Accessibility to forest resources | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| c) extension of farming land into forest | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| d) Increase in more human settlement | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| e) Depletion of forest cover | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| f) Over grazing | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| g) Availability of new tree species | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

20. Are there any conflicts you experience over the use of forest resources?
.....
.....
.....

a) What are the likely causes of these conflicts?
.....

b) who is responsible for resolving the conflicts emanating from the access and use of resources?
.....
.....

- c) What methods are used to resolve the conflicts over forest resources utilization?
- d) In your own view to what extent have these methods of solving conflicts been successful?

.....

.....

.....

THANK YOU FOR YOUR COOPERATION

Appendix II: Interview guide for Forestry Commission

1. What is your understanding of good natural resource governance?
2. Have you adopted this new dimension of natural resource governance?
3. Which specific principles are you applying as an organization?
4. Are forest dependent communities actively involved in forest related decision making?
5. What criteria do you use to ensure participation and involvement of community members?
6. Which other organizations do you work with to achieve good governance principles at local level?
7. The organization succeeded to involve women in decision making. What was the connection between empowering women and the work of conservation?
8. Among the values of the organization, transparency is one of the goals. How do strive to implement this value?
9. Which methods or mechanisms do you use to make sure information is disseminated to the public?
10. Can you explain what is the capacity/ability of the organization to provide information required by the public or other stakeholders.
11. How do you strike the balance of meeting the needs of the people and ensuring sustainability?
12. As an organization how do you address the issue of forest land use conflicts in communal forest land?
 13. What do you understand about effectiveness as a principle and how do achieve this?
 14. Conservation of forests marks the centre of operations of this organization, how have you been achieving it in the organization?
 15. What conflicts have you experienced in this field and what measures have been taken to mitigate them.
 16. What has the organization done to achieve implementation of all its principles and what are the results in improving the state of the forest resource?
 17. How have you managed to reduce the conflict of increasing area under cultivation into forests and grazing area?

Appendix III: Interview guide for Environmental Management Agency

1. What do you understand by good governance of natural resource resources?
2. How far have you adopted this new dimension of natural resource management?
3. According to the mission and values of the organization which specific principles do you apply in management of natural resources?

4. Do you think the community and stakeholders should be involved in planning and decision making?
 5. From your own experience how do you ensure participation in natural resource management?
 6. How often do you consult the local leadership in the implementation of principles?
 7. How transparent do ensure equity in decision making process?
 8. Do you think information on rules, laws, regulations and activities concerning management of natural resources is accessible and to what extent?
 9. What mechanisms or criteria does the organization use to disseminate information to the public?
 10. How efficient is the organization in meeting the needs of the local people as far as access to local forests is concerned?
 11. From your own understanding how is the organization balancing meeting the needs of the local people and ensuring sustainability?
 12. From your own understanding what do you think sustainability is and what measures are being taken to achieve sustainable management of natural resources?
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9. What is your understanding of effectiveness in the implementation of good governance principles in natural resource management?
 10. How are you achieving conservation of local forests as the organization?
 11. What type of instruments do you use in the monitoring of natural resources in the area?
 12. Do you think there are any conflicts emanating in the communities concerning the exploitation of natural resources?
 13. What is your experience in reducing forest land use conflicts among the community members?
 14. What are the mechanisms do you use to enforce the law governing natural resources?
 15. From your own point of view do you think the activities carried out in the district are improving the resources management?

Appendix IV: Interview guide for SAFIRE (NGO)

1. How far do you understand the subject of good governance of local forests?
2. What are the specific principles do you apply to achieve good governance?

3. Highlight the common principles that are similar to other stakeholders in forest management.
4. What are the mechanisms used with the organization in the application of good governance principles?
5. How often are the local people involved in decision making?
6. Highlight on the source of funding and how it is distributed?
7. What are the projects or initiatives that you are carrying out in the district to achieve good forest governance?
8. How transparent is the information of activities and projects accessible to the public?
9. Can you justify how you practice equity in decision making process?
10. From your own understanding how do you balance meeting the needs of local people and ensuring sustainability.
11. What methods do you implement to ensure benefit sharing of forest products among the community members?
12. What are the achievements you have made since you started operating in the district?
13. In which other districts are you implementing good forest governance principles?
14. What are the challenges faced in trying to achieve good governance of forests?
15. What activities being carried out by the organization to ensure conservation of local forests?
16. From your own understanding how do you help in law enforcement in the management of forests at local level?

Appendix V: Interview guide for Councilor ward 17

1. How far do you understand the subject of good governance of local forests?
2. How have you tried to adopt the new realm of governance?
3. Which specific principle are you familiar with in the management of natural resources?

4. Are there any tree planting activities taking place in the District?
5. How often do you participate in these activities?
6. Are there any strict measures against illegal harvesting of forest products?
7. How do you work with other government institutions to achieve good forest governance?
8. How in your capacity do you ensure equity in decision making at grassroots level?
9. To what extent do you achieve balancing the needs of the local people and ensuring sustainability?
10. How often do you attend district full committee meetings?
11. How significant are the issues concerning management of forests are considered in the meetings.
12. How effective are the measures you apply in the conservation of forests at local level?
13. What are the challenges you face in the implementation of good governance principles?

Appendix VI: Observation checklist

ISSUES TO OBSERVED	OBSERVER'S COMMENTS
Area covered under forests	
Livelihood activities	
Nature of settlements in the area.	
Location of livelihood activities	
Attitude of local people towards enforcing organizations	
Process of decision making	
Age group and gender mostly involved in illegal forest harvesting.	
Environmental implications of illegal activities	
Community's relationship with the management institutions.	