THE ROLE OF ENVIRONMENTAL EDUCATION IN ENHANCING COMMUNITY PARTICIPATION IN WILDLIFE MANAGEMENT IN ZAMBIA

THESIS
M. Ed.
Cho
2008
C·1

By

Gibson Bwalya Chola

A dissertation submitted to the University of Zambia in partial fulfilment of the requirements of the degree of Masters of Education in Environmental Education.

The University of Zambia

Lusaka

2008

DECLARATION

I hereby declare that the work presented in this study for the Master of Education Degree in Environmental Education is the result of my own work and it has not been previously submitted for a degree, diploma or other qualification at this or another university. Various persons and organizations where I collected data have been duly acknowledged.

Signed: .... Date: 23.06.08

DEDICATION

I dedicate this work to my late father Edson Chola Jonasi, my late brother Alvine Kabalika Chola and late sister Cecilia Kanungwe Chola. Although they have departed to the next world, their memory still lives on.

My mother Stelia Chipazyo Mwanza for her love and devotion in raising me, my wife Maggie Chabala Chileshe for encouraging me to remain focused and ensuring that I complete this study and my children Mapalo, Maiwase, Mutale 'Chimote', Musenge and Jessy for their love and patience during my absence from home to undertake this study. My gratitude is due to them all.

This work is also dedicated to my late lecturer Dr. Ackim Tembo, whose input into this study was more than vital.

APPROVAL

This dissertation of Gibson Bwalya Chola has been approved as partial fulfilment of the requirements for the award of the Master of Education degree in Environmental Education by the University of Zambia.

Signed: .... Date: ....23rd June, 2008......

Signed: .... Date: ....30/06/2008......

Signed: .... Date: ....

ACKNOWLEDGEMENTS

TABLE OF CONTENTS

List of Appendices

LIST OF TABLES

LIST OF FIGURES

ACRONYMS

ABS	Access and Benefit Sharing
CBD	Convention on Biological Diversity
NEAP	National Environmental Action Plan
MENR	Ministry of Environment and Natural Resources
IUCN	International Conservation Union
ECZ	Environmental Council of Zambia
ZAWA	Zambia Wildlife Authority
GMAs	Game Management Areas
UNCED	United Nations Conference on Environment and Development
CBNRM	Community Based Natural Resources Management
LIRDP	Luangwa Integrated Resources Development Program
ADMADE	Administrative Management Design
NPWS	National Parks and Wildlife Service
CRB	Community Resource Board
MOT	Ministry of Tourism
GRZ	Government of the Republic of Zambia
NCS	National Conservation Strategy
ESP	Environmental Support Programme
EPPC	Environmental Pollution Protection Control
CITES	Convention in Trade of Endangered Species
Pas	Protected Areas
VAG	Village Action Group
SLAMU	South Luangwa Area Management Unit

CLA   Community Liaison Assistant

IIED   International Institute for Environment and Development

ABSTRACT

This study aimed at investigating the extent to which Environment Education targeted at local communities implementing wildlife Community Based Natural Resources Management (CBNRM) in South Luangwa National Park had contributed to enhancing local communities' knowledge and understanding of environmental, social and biodiversity issues to help achieve local, national and international development and conservation objectives. A randomly selected sample of 240 respondents comprising 120 Ordinary and 120 Executive Committee members from six Community Resource Boards (CRBs) participated in the study.

The sample size was further broken into twenty ordinary and twenty executive committee respondents from each of the six CRBs. Two objective questionnaires were used to measure and assess community environmental and biodiversity knowledge and awareness. In addition, random interviews and focus group discussions with the sample population were used to consult institutional and community stakeholders.

Results from the study show that a local community's entire environmental and biodiversity knowledge, skills and conservation awareness was only confined to wildlife. The study found that knowledge on wildlife value and conservation was generally good and there was no significant difference in performance between Ordinary CRB and Executive Committee members. This result clearly shows that the entire local community's environmental and biodiversity knowledge and awareness was narrowly focused on wildlife and paid little attention to broader conservation perspectives.

Furthermore, the study established that the local community's knowledge and awareness of broader environmental, social and bio-diversity issues had necessarily been limited by the format under which CBNRM had been managed in Zambia and by the differential attention given to wildlife conservation policy to suit ZAWA and State objectives. Arising from these findings, the study concludes that generally, the majority of local communities which took part in wildlife-based natural resource management lacked the necessary knowledge and skills of social, environmental and biodiversity issues and policies to enable them adopt environmental friendly behaviour and thereby help increase their capacity to participate in meaningful conservation and achieve sustainable development.

What this means is that the CBNRM approaches in practice at the time of this study (2006) did not facilitate learning and change. As this study has shown, key actors (in this case practitioners like Government and ZAWA) generally resisted modifying existing attitudes and behaviours and, instead, sought to control information, usually by resorting to highly constrained discourses and problem definitions that only served the prevailing political system. Interviews with focus groups established that the main cause for this resistance was 'denial,' which was found to be symptomatic of ZAWA personnel. By 'denial' I refer to a situation where ZAWA personnel strongly rejected criticism for any operational errors or flaws for fear that any admission would bring into question the credibility of the entire administrative complex.

This study has also concluded that fear and denial combined with the economic and political ramifications of the new CBNRM politic had resulted into a process characterized by scientific exclusion and a tendency by practitioners and policy-

makers to ignore local knowledge and contextual experience when formulating conservation and development policies that affect the poor. The study found that this tendency was the basis of ZAWA's sectoral (Top Down) approach to community mobilisation at the time of conducting this study in 2006. This result may also help explain the absence of broader social, environmental and biodiversity knowledge and skills among the participating communities.

What this result means is that ZAWA needs to take into account local peoples' venerable experiences when formulating or implementing policies that directly impact on the poor. For example, poor people's perception of poverty must be taken into account during the development and formulation of any anti-poverty policies and programmes. What this study however found is that most of ZAWA's CBNRM policies were introduced centrally; as a response to internal or external political pressure, but not in response to specific local natural resource management initiatives or experiences.

From the results of this study, it is recommended that in order to overcome obstacles to the mobilisation of multiple perspectives in environmental and biodiversity conservation, ZAWA should employ a broadened mobilisation approach called 'environmental education' if the format of environmental and biodiversity skills, knowledge and attitudes for both practitioners and participants have to improve.

CHAPTER 1: BACKGROUND TO THE STUDY

1.1 CONCEPTUAL ROOTS TO THE IDEA OF CONSERVATION

The concept of conserving wildlife in Zoological or Game Parks in the World has its roots within the biblical flood account through the notion of 'endangered (threatened) species'. The idea of endangered species in this context is based on the understanding that an advancing enemy, in this case the flood, poses dangers of possible destruction (extinction) of wildlife (Genesis 6:17; Namafe, 2006:39).

The policy response to the concept of 'endangered species' has generally tended to be 'triage' conservation, implying the custody and care given to selected wildlife species. In order to demonstrate the connection between conservation efforts and the menacing dangers of floods, the phrase 'Noah's Ark' or 'Operation Noah' has often been employed.

The practice of conserving wildlife through national parks in many places including Zambia has, indeed, been patterned on this general understanding of 'the rising destruction in the world today brought about by the thoughtless actions of man.' Therefore, the notion of 'endangered species' which need to be protected through national parks as 'Noah's Ark,' is based on the analogical rising flood of human destruction and thoughtless actions and not on the actual watery floods as such (Namafe, ibid).

Following closely from this conservation idea, at the end of the eighties, there arose another idea called 'sustainable development' in both academic and vernacular

1

discourses which inaugurated a new era of environmental concern. A realization of the planet's limitedness and bio-spherical fragility also had an impact on development: the illusion of perpetual growth and expansion without ecological limitations was deemed not to be sustainable (Schuurman, 1993 and Adams, 2001).

This realization culminated at the United Nations Conference on Environment and Development's (UNCED's) Earth Summit in Rio de Janeiro, 1992. The Rio Summit placed great importance on bio-diversity as well as the venerable contribution to diversity made by indigenous people that made up an estimated 90 percent of the world's cultural diversity (Gray, 1996). Furthermore, sustainable development to a large extent claims to deal with the issue of inter-generational equity (Cross, 2002; Davids, 2005). This concept is echoed by the Brundtland Report as "development that meet the needs of the present without compromising the ability of future generations to meet their own needs" (Adams, 1993:208).

The 'new' image of indigenous people with unique local knowledge and contextual experience led to the popularity of a conservation approach called 'Community Based Natural Resources Management' (CBNRM). As one of the main strategies of sustainable development, CBNRM strove to marry development and conservation initiatives (Chambers, 1994; Agarawal, 1995, 1999 and Adams, 2001). To a large extent, sustainable development claims to deal with inter-generational equity. With the rise of participatory approaches enjoyed in development theory over the last decade, the important role of local communities and their institutions has increasingly been widely recognized. It has generally been accepted that locals are normally very

conscious of environmental issues, even more so in the areas close to where they live (Orlove & Brush, 1996).

1.1.1 Community Based Natural Resources Management (CBNRM) Approach

As an attempt to find new solutions for the failure of top-down approaches to conservation, CBNRM rests on the recognition that local communities must have direct control over the utilization and benefits of natural resources (wildlife, forest products) in order to value them in a sustainable manner (Cassidy, 2000). CBNRM is both a conservation and rural development strategy, involving community mobilization and organization, institutional development, comprehensive training, enterprise development, and monitoring of the natural resource base (Cassidy, 2000, 2001; Arntzen, 2003).

This study has used the following description of a CBNRM project: a project or activity where a community (one village or a group of villages) organize themselves in such a way that they derive benefits from the utilization of local natural resources and are actively involved in their use as well as conservation. Communities form an institution that is responsible on their behalf for utilization and conservation of local natural resources. Often (but not always), communities will receive exclusive rights and responsibilities from government (Final Report on Review of CBNRM in Botswana, 2003). The new paradigm for conservation, which devolves resource user or ownership rights to communities in varying degrees, however, should not be seen as a panacea for environmental problems (Little & Murphree, 1994; Colchester, 2000 and Emerton, 2001).

3

The predicted and sustainable use of resources, the inherent shortcomings of the protected area approach on its own, the increasing levels of poverty in Zambia and the prospects of involving local communities in wildlife management provide the context for this study. The revision of the Zambia Wildlife Policy of 1993 and the subsequent restructuring of the Wildlife Sector, culminated in the enactment of the Wildlife Act No. 12 of 1998 which had two intentions as listed below:

- To provide a shift from a Government and centrally controlled Wildlife conservation agenda to a stakeholder driven and decentralized one (NPWS/MOT, 1998), and

- To provide a legal framework for Community Based Natural Resource Management CBNRM (Mwenya, 1990; NPWS/MOT, 1994; ECZ, 2000 and Chisulo, 1995).

The revised Wildlife policy and legal framework were intended to address wildlife depletion and promote its conservation and sustainable use through the creation of a new semi-autonomous national wildlife agency: Zambia Wildlife Authority (ZAWA). The factors affecting this relationship include legitimacy and authority which must go together as one is ineffective without the other (Murphree, 2000); how traditional practices of the people have been affected by conservation, lack of knowledge and interest in conservation, domination by scientists and experts, lack of ownership of the process of change, over dependence on donors. internal conflicts within the community and tenure (Makombe, 1994; Murphree, 1992; Matenga, 2000; Cross, 2002 and CONASA, 2002).

Since the 1990s Zambia has experienced a rapid development and implementation of CBNRM and along with it, a range of laws, guidelines, policies and regulations so much so that the CBNRM practitioners themselves and the participants find it hard to keep up with the stream of policy documents in difficult to understand legal language (Cassidy & Madzwamuse, 1999). According to Munthali (1993), Environmental Education is key in providing information to local communities and ensuring that all necessary capacity is built if CBNRM programmes have to become economically, environmentally and legally sound.

1.1.2 Composition and Functions of Community Resource Boards

Community Resource Boards are constituted following chiefdom boundaries. Every chiefdom is represented by one Community Resource Board (ZAWA, 2004). According to the 1998 Wildlife Act, membership shall comprise not less than seven but not more than ten elected community representatives, one representative of the local authority in the area and a representative of the chief in whose area a board is established. A chief in whose area a board is established shall be patron of that board. Each CRB draws up its own constitution as per requirement of the 1998 Wildlife Act, to facilitate and guide it in its daily operations.

1.1.3 Process leading to CRB formation.

A community with an interest in managing wildlife resources in their area applies to the Zambia Wildlife Authority for formation and registration of a CRB for their area. ZAWA facilitates elections leading to the formation of a CRB. ZAWA, with the involvement of community members, facilitates the demarcation of chiefdom into Village Action Groups (VAGs). (see **Appendix IV** for ZAWA's Organisational

5

Structure in South Luangwa Area Management Unit-SLAMU). These are constituencies where community representatives are elected to the board. Currently (2008), ZAWA has facilitated the formation of 69 CRBs which are spread in 25 Game Management Areas across the country. However, one CRB is in an Open Area (Mumbwa), while two are in National Parks-Liuwa and Sioma-Ngwezi, (ZAWA, 2004).

1.2   POPULATION AND LAND USE IN ZAMBIA

The population of Zambia, according to the Zambia Analytical Report (CSO, 2003) was estimated at 13 million of which 62% was rural and 38% urban. The average population density was 13.5 people per Km^2, but reached 69.7 people per Km^2 in the capital, Lusaka and dropped to 4.4 people per Km^2 in remote rural areas of the North-Western Province. The annual population growth rate of 3.1% was among the highest in the World, with a doubling time of 23 years. Approximately 70% of the population was below the age of 25.

According to Environmental Council of Zambia (2001) report, of Zambia's total area of 752,000 km2, 30% is officially gazetted for wildlife conservation, 25% for agriculture, 9% for forestry and 2% for urban development while the remaining 12% is unspecified. The country has 19 National Parks and 36 Game Management Areas (GMAs), covering about 8 percent and 22 percent respectively of the country's land mass. These areas are located in thinly populated remote and poor parts of Zambia. Economic opportunities are usually limited, and most people living in these areas traditionally engage in hunting and gathering. Wildlife utilization is the primary form of land use in GMAs and is therefore assumed to be the main source of livelihood for local people.

Game Management Areas also bring along development constraints. Agriculture is subject to restrictions. For example, no livestock are permitted outside the community zones of the Game Management Areas. However, the GMAs' Act provides for the involvement of local communities in the management of wildlife resources. For the Zambia Wildlife Authority (ZAWA), this meant that the management of wildlife estate in Zambia could now be transferred down to local communities. This took cognisance of the fact that communities living in and next to the wildlife estates had to participate, and receive direct benefits from the conservation of their wildlife whose population had continued to register considerable decline (ZAWA, 2002).

Before the 1998 ZAWA Act, and without demonstrable benefits, local communities remained disenchanted and took recourse to illegal exploitation of wildlife. Consequently, ZAWA realized that the traditional approach had in the past only succeeded in widening the gap between authority and the local community. CBNRM is a means of reconciling conservation and development objectives by ensuring that the interests of local communities are taken into account in making trade-offs. This recognizes the fact that conservation is more or nearly 90 percent human management, and that people among or next to a resource are the main agents of change.

As a result of this, there is a considered, deliberate effort to have local communities as part of a solution even-though they constitute or are part of a recognized problem or threat (Moyo, 1993; Little, 1994; Lynch & Talbott, 1995 and Luangwa Integrated Resources Development Project Report, 1997).

In order to fulfil this obligation, Part III of the Zambia Wildlife Act No.12 of 1998 provides for the establishment and registration of Community Resource Boards (CRBs), through which local communities would effectively participate in wildlife management in partnership with ZAWA. The communities, through the CRBS, are expected to benefit from revenue generated from hunting activities taking place in their respective GMAs. They are also expected to invest their revenue in activities that would uplift their socio-economic conditions (ZAWA, 2004). This revenue is shared according to agreed percentages, among the stakeholders namely; ZAWA, the community and the Central Government. The community is further obliged to conduct law enforcement by recruiting village scouts, be part of the development of land use plans for GMAs, manage hunting quotas and also take part in determining quotas (ZAWA, 2004).

1.2.1 Biodiversity knowledge in Zambia

Museums, herbaria and gene banks are repositories of bio-diversity resources. However, in Zambia these are inadequate and the few that exist are poorly funded and managed. This in turn poses a threat to the maintenance of plant and animal biodiversity (Little, 1994). Furthermore, as some literature on biodiversity in Zambia is maintained at institutions abroad, limited access to such literature hampers the advancement of biodiversity knowledge. Lack of proper training in biodiversity management especially in Taxonomy, has contributed to poor documentation on biodiversity and its management in the country (www.biodiv.org).

1.2.2 Cultural and Social Values.

The value attached to a resource has implications on how it is used (or abused). Most of the values we attach to resources today emanate from our traditions and cultures. Natural resources have been harvested by rural communities for food, shelter, fuel, beverages, fibres, tools, religious purposes and as a source of income since humanity's existence. These harvests have been driven by the cultural/tradition imperative, survival needs and, to a greater extent, for cash income. Also of particular importance in assessing the impact of social and cultural values on biodiversity is the tendency to under-value natural resources. Most natural resources are valued as "free-goods" and this tends to encourage over consumption due to a lower market price as compared to their closest propagated relatives.

1.2.3 Institutional and Legal Framework

The development of legislation dealing with natural resources management dates back to the colonial era (Moris, 1987; Shuurman, 1993; IIED, 1994; Jackmann, 1998; Jones, 2004). Formulation of laws followed a sectoral approach as pieces of legislation were formulated to deal with forests, wildlife, land, fisheries, and many other natural resources. Given poor coordination, the promulgation of these laws brought about duplication gaps (CBD Strategy and Action Plan-Zambia, Part III; 1998). Most of these Acts are now outdated and require revision in order to bring them in line with current (2008) requirements in biodiversity management.

Apart from being outdated, the sectoral approach of these legal instruments is a source of worry. Biodiversity management, in reality requires a holistic approach given organisms, plants and animals. Other than the Wildlife Act and the EPPC Act, the rest

9

of the Acts take a sectoral approach by focusing on one or two components of biodiversity.

A study done under the auspices of the Environmental Support Program (ESP), looked at the legal framework and institutional capacity of various natural resources legislation in Zambia (Chinene and Mudenda, 1997). The study shows that Zambia lacks an environmental policy out of which can be formed suitable environmental legislation. The study concludes that weaknesses in the current (2008) system had to do with legislation itself, its implementation and enforcement (The Ramsar Convention on Wetlands, National Report of Zambia for COP7).

1.2.4   Natural Resources Legislation and Bio diversity Conservation

The first attempt to coordinate various laws was done under the auspices of the National Conservation Strategy (NCS) of 1985. The NCS aimed at ensuring the sustainable use of renewable natural resources, maintaining biological diversity and essential processes and life support systems. The NCS recommended key environmental issues and prescribed policy, legislative and institutional measures to address these issues.

The main legal instruments dealing with different facets of biological diversity, include; Plumage Birds Protection Act, Cap. 310 (1915); Plants, Pests and Diseases Act Cap. 346 (1959); Agricultural Lands Act, Cap. 292 (1960); Natural Resources Conservation Act, Cap. 315 (1970); the Forest Act, Cap. 311 (1973); Fisheries Act, Cap.314 (1974); EPPC Act, No. 12 (1990); Lands Act No. 29 (1995) and the National

Parks and Wildlife Act, No.10 (recently amended to the Zambia Wildlife Act, No. 12 of 1998).

The Act also provides for the conservation, protection and enhancement of wildlife ecosystem biodiversity and for the promotion of opportunities for the equitable and sustainable use of the special qualities of national parks. Above all, the Act provides for the implementation of the biodiversity conservation as well as of the related ones such as CITES, Ramsar and the Lusaka Agreement on Cooperative Enforcement Operations Directed at Illegal Trade in Wild Fauna and Flora (Mwenya et al., 1990; NPWS/MOT, 1994; Tilley, 1995; Chisulo, 1995; CBD Strategy and Action Plan-Zambia, Part III: 1998; ECZ, 2000;).

In Zambia, a good part of the country's biodiversity is found in systems that come under state control. These include the majority of the forests, wildlife reserves, wetlands, botanical and geological gardens, gene collections, and so on. Understanding of roles of institutions mandated to manage and use these resources and the policies and legislation guiding them is a prerequisite to the understanding of biodiversity in Zambia.

1.2.5 The 'National Parks and Wildlife Act, Cap. 201'.

The National Parks and Wildlife Act provides for the establishment, control and management of National Parks and Game Management Areas. The Act also provides for public participation through the establishment of integrated resource management committees comprising local committees, for the management of a National Park or

Game Management Area. Currently (2008), there are 62 Community Resource Boards in Zambia (ZAWA, 2002; Barzdo et al. 2002; Sunday Times, April 24, 2005).

The objectives of the community based wildlife conservation are to promote and develop an integrated approach to the management of human and natural wildlife resources in a National Park or Game Management Area. The local community will benefit from the revenues payable under the Act from licenses and services rendered for the utilization of wildlife resources. The revenues will be placed in a fund established by the local communities for use by the community and management of natural resources in the area (The Ramsar Convention on Wetlands, National Report of Zambia for COP. 7).

There are other factors that influence community participation in natural resources conservation. These include the dualistic nature of the Zambian society which recognizes that apart from statute law, there is also customary law. Whilst statute law confers the rights to use of components of biodiversity to holders of the leasehold title, under customary law resource use rights are allocated to multiple users on the same piece of land.

Depending on ethnic groups, the application of customary law in some communities in Zambia is very advanced, making it difficult to combine the implementation of the two types of laws. One result of this is that the introduction of central government control of natural resources through parallel institutions has been a source of conflict. (Mwenya et al., 1990; NPWS/MOT, 1994; Chisulo, 1995; ECZ, 2000; Sichilongo, 2003; Van Heerden, 2005). Another source of conflict was poverty. Poverty not only

affects peoples' participation, but also causes and was a consequence of environmental degradation (Zambia Poverty Reduction Strategy Paper, 2002 and Sichilongo, 2003).

Therefore, although there has been widespread experience with the devolution of wildlife management through-out Southern Africa, reviews of this experience reveal little evidence that such policies have led to improved equity or local economic benefit (Kiss, 1990; Little, 1994 and Madzudzo, 1998). As a result, there is little consensus on what constitutes an effective policy regime for CBNRM. As this study has revealed, meaningful devolution or co-management of common pool resources remains elusive despite the rhetoric by most governments in Southern Africa.

1.2.6 National Environmental Action Plan, 1994

Zambia ratified the convention on Biological Diversity (CBD) in 1992. However, it was not until 1994 that the World Bank prescribed the National Environmental Action Plan (NEAP), which became the national environmental policy framework in 1994 (Sichilongo, 2003). The NEAP identified depletion of the wildlife resource base as one of the major environmental problems in Zambia due, mainly to illegal hunting. Other environmental problems were deforestation, sanitation, pollution, waste management, and land degradation (MENR, 1994).

With their natural, historical and cultural resources, forms of Knowledge and institutions of governance, local communities are critical political actors for development. ZAWA (2002), defined "Local community" in wildlife management context as the lowest unit of social organization, where individuals can speak and

There is no doubt that lack of capacity is a major obstacle to conservation of natural resources and delivery of social service in developing countries (Murphree, 1994; Sichilongo, 2003). To this effect, Article 13 of the Convention highlights the need for public education and awareness and the requirement to increase capacity and knowledge about the Convention. The objectives of the Convention on Biological Diversity (CBD) are the conservation, sustainable use and fair and equitable sharing of benefits arising out of the use of biodiversity. The CBD recognizes the potential and actual value of biological resources to people and that appropriate access to equitable sharing of benefits there from is necessary for their sustainable use. It is exploitation of the genetic characteristics of biological resources that initiates the access and benefit-sharing (ABS) provisions of the CBD.

In order to gain access to resources, a user must provide benefits and in order to receive benefits a provider must facilitate access to those resources. To enable ABS to be implemented effectively, a great deal of groundwork must be done first. This includes the provision of information to promote and raise awareness, capacity building within a number of different stakeholder groups and the development of strategies for access and benefit sharing (ABS).

In Zambia, community involvement in wildlife management dates back to the early 1980s when the concept was introduced through various projects such as the Zambia Wetlands Project, the Luangwa Integrated Resource Development (LIRDP), the Administrative Management Design for Game Management areas (ADMADE), which is now a national programme (ZAWA, 2002). The Zambia Wildlife Authority (ZAWA) which is a statutory body established and mandated by Parliament through

15

Act No. 12 of 1998, provides for the involvement of local communities in the management of wildlife resources (ZAWA, 2004).

However, strong policy directives and political will is required in undertaking the community conservation approach successfully because no matter how much delegation is given to communities, Government through ZAWA must remain responsible for national wildlife conservation concerns. The viability of ZAWA maintaining the role of proprietor and controller of wildlife resources as was originally intended in protected areas however, depends upon ZAWA's capacity to perform this role effectively (Murphree, 1994) and communities' capacity to participate (Swanson, 1994). There is no better way to demonstrate this than looking at the operations of wildlife Community Based Natural Resources Management-(CBNRM) projects.

1.2.8 Land Tenure in Protected Areas

Zambia has 19 National Parks and 36 Game Management Areas (GMAs), covering about 8% and 22% of the country's land mass. National Parks are protected areas where land belongs to the state and no human settlements are allowed, whereas Game Management Areas are quasi-protected areas. The GMAs act as an extensive buffer zone area around all major national parks, are under customary land tenure but the Zambia Wildlife Authority (ZAWA) has statutory control over wildlife utilization. When wildlife populations permit ZAWA, uses the GMAs as sport hunting reserves and they provide a significant part of ZAWA's revenue.

ZAWA markets the hunts, collects the revenue and shares it with the resident communities through the community resource boards established under its community conservation programme. Communities receive 45 percent of hunting revenues through the Community Resource Boards (CRBs) while the local chief who is always the patron of the local CRB receives 5 percent of the revenue. Human settlements are allowed in GMAs, though these are usually controlled by General Management Plans, developed to regulate human activities in GMAs. National Parks are solely managed by ZAWA, while GMAs are managed by ZAWA in conjunction with local communities (ZAWA, 2004). Appendix (III) is a Map of Zambia showing the South Luangwa Game Management Area Unit (SLAMU) from where informants in the study were drawn.

Zambia has the second largest proportion of land under protection for Wildlife in Southern Africa, covering approximately 225,000 Km2 of which 8% are Game Management Areas (IUCN Category VI). Unfortunately, according to the state of the Environment in Zambia Report (2000), approximately 50% of the parks are either depleted or encroached. No national park is managed satisfactorily and it is difficult to establish the realistic status of wildlife populations due to inadequate capacity for monitoring and law enforcement (ECZ, 2000).

1.3   STATEMENT OF THE PROBLEM

1.3.1   Research Problem

There is clear evidence that there is very low level of awareness on broader issues of environmental and biodiversity sustainability in Zambia. Low awareness levels on

wildlife management are wide spread among the government officials, ZAWA staff and consequently the community members. Evidently, the existing situation on the ground is low community participation in the management of wildlife. This situation is undesirable as it can lead to depletion and extinction of the vital animal species and forestry. If this happens, the consequences on the ecosystem on which humanity's survival depends will be grave.

Education in Zambia is often times formal and designed to address several issues. What is missing in our education system however, is adequate environmental education/sensitisation to enhance community awareness about the planet earth's ecological limitedness and bio-spherical fragility to the rising tide of destruction brought about by man's thoughtless actions.

Currently (2008) natural resources conservation and management appears to be limited to wildlife only while large tracts of formerly protected forests have been abandoned by the state and left to indiscriminate destruction by charcoal burners. The belief that natural resources are God's free gift to be exploited without restriction has resulted in community members not appreciating natural resources and eventually led to over exploitation, depletion and extinction of species such fisheries in Luapula Province, wildlife such as the black rhino and forests.

It is thus, imperative that a study such as this one be conducted to emphasize the important role of environmental education in enhancing community awareness and participation in environmental and biodiversity conservation in Zambia.

1.3.2 Purpose of the Study

The aim of the study was to determine the type of environmental and bio-diversity knowledge and skills which local communities (participants) and government personnel (practitioners) required in order for them to feel confident in their operations so that they achieve developmental and conservation objectives.

Further, the study investigated the nexus between policy and implementation on one hand, and sensitisation and methodology on the other.

Finally, the study aimed at proposing an 'Environmental Education' lesson format which would be based on a broader understanding of conservation to incorporate environmental, social and biodiversity knowledge, skills and attitudes to achieve local, national and international conservation objectives.

In view of the above aims, the assumption of this study was that a holistic approach to natural resources conservation was required to help communities' increase their knowledge, skills and understanding of environmental, social and biodiversity conservation policies and issues. Such a holistic approach would help communities to achieve both local and international development and conservation objectives.

By documenting experiences and lessons learnt during the implementation of the CBNRM concept, the study has concluded that only the introduction of environmental education will provide appropriate teaching /learning experiences for practitioners and participants of community based natural resources conservation. This is because fully informed stakeholders and communities may understand each other's specific

opportunities, problems, roles and responsibilities and dispel feelings of mistrust arising from misinterpretations of laws, policies and regulations or even having unrealistic expectations (Cassidy & Madzwamuse, 1999; Cassidy & Tveden, 1999; Cassidy & Jansen, 2000; Gujadhur, 2000; Cassidy, 2000 and Ellis, 2000).

1.3.3   Objectives of the Study

Drawn from the above noted general aims, the following were the specific objectives that guided the study:

❖ To establish whether there are variations in performance between Ordinary and Executive Committee members of each CRB.

❖ To establish the proportion of CRBs displaying an insufficient knowledge and understanding of environmental and biodiversity policies and issues.

❖ To clarify the nature of the nexus between policy and implementation on one hand and sensitisation and methodology on the other.

❖ To determine the effectiveness of sensitisation strategies which were being used in providing information to local communities as a way towards enhancing their capacity.

1.3.4   General Research Questions

The study was guided by the following general research questions:

- What type of environmental and biodiversity knowledge, skills and attitudes do the local communities (participants) and governmental personnel (practitioners) who implement CBNRM require for them to be confident in their operations to help achieve local and international developmental and conservation objectives?

- What is the nature of the nexus between policy and implementation on one hand, and sensitisation and the CBNRM methodology, on the other?

- With reference to the above two questions, what format of environmental and biodiversity knowledge, skills and attitudes need to be devised for local communities and government personnel implementing CBNRM projects in order for them to be competent in their operations?

1.3.5   Specific Research Questions

Listed below are the specific research questions for this study:

1. Are there variations in the knowledge between Ordinary CRB and Executive Committee members?

2. What is the proportion of CRBs displaying an insufficient knowledge and understanding of environmental and biodiversity legislation?

3. What is the relationship between policy and implementation on one hand and sensitisation approach and methodology employed on the other?

4. Does the lack of awareness and understanding of environmental and biodiversity legislation and policies affect local community's participation in CBNRM and the equitable and sustainable use of natural resources?

1.3.6 Significance of the Study

It is hoped that knowledge from the study would highlight the vulnerability of ZAWAs' current (2008) CBNRM sensitisation practices and approaches and that this information would, in turn, help bring about the development of an integrated, broadened and participatory teaching/learning approach to better achieve local, national and international conservation and development objectives.

The study is valuable in that, although many of the CBNRM practitioners and participants have a conservation ethic, infusion of environmental topics within continuing education (awareness) programmes may well help change their natural resource management practices to meet environmental and biodiversity conservation and development objectives once they understand the pertinent issues.

The findings from the study could also help generate the development of a broadened, participatory teaching/learning approach (for both participants and practitioners) to help build capacity and support for the full implementation of the new CBNRM policy. This is because partial or selective implementation of the CBNRM approach could have negative consequences to wildlife conservation and management (Cassidy & Madzwamuse, 1999 and Sichilongo, 2003).

Finally, in order to assess the impact of CBNRM, it is necessary to have something against which to measure change. At present there is no ideal situation against which to evaluate the positive and negative impacts of CBNRM on the local communities use of natural resources. It would be useful to make an assessment of change in the local communities; both in behaviour and their socio-economic position toward

conservation, and compare this to an ideal situation for effective natural resources management.

In this regard, findings from this study may also be used to evaluate the effectiveness of the CBNRM legislation on local communities since ZAWA has, since the inception of CBNRM in 1998, to date (2008) never conducted any formal impact assessment of CBNRM projects on community behavioural change.

CHAPTER TWO: LITERATURE REVIEW

INTRODUCTION

There is a broad literature on participatory approaches to the study and design of rural development interventions. Efforts to link these participatory methods to policy have demonstrated the value of the tools in generating policy-relevant information, but have also concluded that this information is seldom applied successfully to policy change (Moyo, 1993 and Nhantumbo, 2003).

Many people in the world today believe that there is an urgent need to build a sustainable future through the agency of environmental education. The reasons for this are many. Namafe (2006:3), suggested that the various environmental and developmental problems of the world and localities are as a result of a systematic pattern operating in four dimensions of the environment namely; the natural, economic, social and political. He concluded that these problems could only be addressed through broadened forms of knowledge using a holistic, participatory approach called 'Environmental Education.'

This suggestion has been supported by findings of a national study on the sustainable management of natural forests conducted in Western Australia. The study noted the complexities arising out of ecological, social, and economic collisions and concluded that effective conflict management requires holistic approaches that seek to address socio-econo-ecological complexities via an inter-disciplinary integration approach (Orlove & Brush, 1996). The conclusions of the above study have been supported by the findings of a similar study carried out in Botswana on the sustainability of the wildlife eco-system which showed that communities were more likely to make the

transition to independence successfully if they had a strong base of knowledge and skills (Cassidy, 2000, 2001 & Arntzen, 2003). Both studies however, recognised that although local communities were often internally heterogeneous and unequal, none of these cautions or caveats significantly undermines the basic premise of CBNRM. Both these studies concluded that CBNRM should be a grassroots initiative.

In Zambia, no adequate evaluation has been carried out on CBNRM policies since its adoption because it has been so widely accepted and considered as 'a privileged solution which is thought not to require testing and modification' (Knight, 2000; Hulme, 2000; Mberengwa, 2001; Matenga, 2002 and Sichilongo, 20003). Still others have studied the shortcomings of community conservation such as limited monitoring to identify potential problems (Lewis & Phiri, 1998 and Sichilongo, 2003) or the lack of guarantee that a participatory approach will necessarily be effective in delivering conservation goals as well as how emphasis on development goals can de-emphasize conservation goals (Leader-Williams, 1993; Emerton, 2001 and Adams & Hulme, 2001).

Arising from all the above concerns, it has become apparent for this study to evaluate the effectiveness of the practitioners' approaches and strategies (in use at the time of this study in 2006) in raising community awareness, mobilizing support and participation for natural resources conservation, so that practice on the ground not only informs policy reform but also forces a more critical discussion and learning of lessons among stakeholders (Lewis & Carter, 1993; Makombe, 1994; Cassidy, 2000; Emerton, 2001; Dalal-Clayton and Child, 2003 and Hulme, 2003).

To ensure this facet of CBNRM is given proper attention, the study assessed the local communities' knowledge and understanding of CBNRM policies, environmental, social and biodiversity issues to help achieve national and international conservation objectives. For this to happen, policies and regulations need to be well formulated in order to harmonize the possible conflicts in the key areas of conservation effort (NPWS/MOT, 1998). The choice of wildlife as the first resource selected for formal CBNRM projects in Zambia reflects this dilemma: it shows rapid economic returns, but it is traditionally a "man's" resource. Because wildlife is the 'men's' resource, men tend to dominate discussions surrounding its use (Chambers, 1994; Burton, 2000 and Gujadhur, 2000).

This study also recommends that practitioners need to remain alert to the needs of women by ensuring that CBNRM projects fit in with women's busy and often fragmented daily routines. However, in Zambia grassroots approaches are usually blind to inequalities confronting women. Equity does not only mean giving women access to and control over resources, it also means ensuring that women do not lose access to and control over their own resources when these suddenly become of value to men. CBNRM should not exacerbate inequity.

Therefore, although not all the nuances surrounding community knowledge and skills in environmental, social and biodiversity conservation issues and policies have been captured in this study, results from this study have confirmed the need for a broadened bottom-up participatory approach which will face a reduced risk of cooptation and corruption and prevent the overly narrow political framing of complex policy issues that has dominated current (2006) natural resources sensitisation

approaches (Little, 1994; Cassidy & Madzwamuse, 1999; Cassidy & Tveden, 1999; Cassidy & Jansen, 2000 and Child, 2001). Zambia's CBNRM is not formal, but is embedded in a range of existing environmental acts (www.art.org.zw). Perhaps the most important factor to note from the study is that the lack of a clear and integrated national policy on CBNRM is in fact a general problem not only in Zambia but the whole Southern African region.

'Environmental Education' as a 'bottom up' approach is an open approach to conservation and demands a widening of understanding and Knowledge leading to what might be seen as networks of Knowledge. The notion of knowledge networks also recognizes the possible value of contributions by non-experts (participants) to our understanding of nature based on local knowledge and venerable experience. Therefore, knowledge of local conditions may not merely shape policy problems, but can also determine which data are strong and relevant (Chisulo, 1995; Gujadhur, 2000 and Ghimire, 2000).

The manifest failure of state and market mechanisms to promote sustainable and equitable natural resources management in the developing world has stimulated a search for community-based alternatives (Agrawal and Gibson, 1999). Advocates argue that community-based natural resources management (CBNRM) offers the best prospect for meeting conservation objectives while improving the position of impoverished rural communities who have been denied the fundamental right to substantive participation in decisions that impact on their well-being and livelihoods (Colchester, 1994; Lynch & Talbott, 1995).

Finally, the literature review was supplemented with interviews with participants, practitioners and other stakeholders who facilitate the implementation of CBNRM projects in Zambia.

CHAPTER THREE: METHODOLOGY

INTRODUCTION

This chapter is divided into the following sub-sections: the first section describes the design, population, sampling procedure and research instruments. The last section comprises data collection methods, analysis of data and limitations of the study.

The general methodology employed in this study was consultation of institutional and community stakeholders in community conservation using interactive, participatory, open and transparent approaches (Bernard, 1994, 2002; IIED, 1999; Moyo, 2000; Hume, 2000; Burton, 2000 and Sichilongo, 2003).

The study was carried out between late October and mid November, 2006 in the South Luangwa Area Management Unit (SLAMU) also popularly known as Mfuwe. This area is found in Mambwe District of the Eastern Province of Zambia and consists of six Chiefdoms from which key informants were drawn (see appendix III). Most of the communities were met in their areas while one community was met at SLAMU headquarters in Mfuwe.

3.1   RESEARCH DESIGN

This study employed a combination of two sampling methods to obtain primary data from South Luangwa Area Management Unit (SLAMU) using both Structured Interviews (qualitative) and Questionnaires (quantitative) research designs.

It adopted a discourse-analytic approach that followed other work in public policy development: see for example (Burton, 2000; Bernard, 2002 and Jones, 2004).

29

Interview data was analysed via visual coding and analytic deduction in the search for discursive themes and patterns. The analysis was done on the sentence level with the aims;

(a) to minimize author intervention and the risk of selectiveness,

(b) to enable participants to tell their stories, and

(c) to transfer openness and transparency to the reader.

Chosen data fragments were partitioned into word maps, also called rhetorical landscapes (Barrow & Murphree, 2001) or environets (Ostrom, 1990; Solomon & Le Grange, 2006), to identify emerging themes and create more manageable data categories. Data partitioning provided the basis for further questioning and analysis and allowed for a parenthetical presentation of the interview data in the analysis of questionnaire responses. The study then complemented and compared interview data with information from questionnaires.

The study focused on assessing community awareness, knowledge and skills of environmental and biodiversity policies and issues to determine the format of environmental skills, knowledge and attitudes that need to be devised for both practitioners and participants in order to achieve national and international conservation and development objectives. It included assessment of values and uses of, and threats to collective action and common property management.

Firstly, a questionnaire survey was conducted in each Community Resource Board (CRB) to gain baseline data (general CBNRM policy and legislation awareness and socio-economic information pertaining to the benefits from wildlife conservation).

These were written in English. Community Liaison Assistants (CLA) employed by ZAWA and assigned to each CRB as Liaison Officers were used to supervise the completion of the questionnaires and especially did translation of questionnaires from English to Kunda.

Literacy levels among ordinary CRB members are very low and therefore the Community Liaison Officers in most cases had to assist with the recording of answers. This implied that the Community Liaison Officers had to first receive training before the survey could start.

3.2   DEFINITION OF STUDY POPULATION

The study population was drawn from Mambwe; a rural district also popularly called "Malambo" or Mfuwe in the Eastern Province of Zambia. According to the 2000 National Census of Population and Housing, comparison of the national provincial population size ranks Eastern Province third largest at 1.3 million after Copperbelt at 1.6 million and Lusaka at 1.4 million. Of the total population of 1.3 in Eastern Province, 1.1 million were rural dwellers.

The Zambian (2000) Census approximated the population of Mfuwe at about 3 thousand made up of the six (6) Chiefdoms of Jumbe, Kakumbi, Malama, Mkhanya, Msoro and Nsefu which also constituted the six Community Resource Boards. The sampling unit in the study population was either male or female adults residing in the above mentioned areas between late October and early November 2006. The target population comprised all executive committee and ordinary Community Resource Board (CRB) members.

Chiefs Nsefu, Mnkhanya, Kakumbi, Malama, Msoro and Jumbe all belong to one tribe known as Kunda. However, the whole Mambwe District is famously known as "MALAMBO". Some translate this as intestine of buffalo due to abundance of buffalos and other wildlife or place of dams due to many dams that form as a result of floods in the rainy season. The abundance of wildlife in this area has gained popularity and led to the construction of many lodges in the area (SLAMU, 2002).

According to the Living Conditions Survey Report of 2002-2003, regional analysis of the incidence of poverty reveals high proportions of the poor in Northern Province at 81 percent followed by North Western at 72 percent, Eastern at 71 percent and Luapula at 70 percent. Furthermore, the incidence of poverty in Zambia was higher in rural areas, at 74 percent than in urban areas, at 52 percent. The observed high levels of extreme poverty in Eastern Province have a telling effect on food security situation and therefore on the environment, thereby threatening biodiversity sustainability and conservation (CSO, 1995, 1998, 2000, 2002-2003, 2004).

Each CRB is made up of three units namely; the CRB Executive, Village Action Group (VAG) executive and the Ordinary Community Members.

3.3 SAMPLE AND SAMPLING PROCEDURE

A combination of random and purposive sampling strategies was used in selecting the required sample. To this effect, all 120 executive committee members comprising 60 elected executive trust members and 60 elected Village Action Group members from the six study communities were purposively included in the sample of the study. This was because of their strategic position to provide the required information for this study. The number of executive committee members in the study communities was so

low that sampling them in their individual communities would not have made sense. However, a simple random sampling strategy was used to select ordinary community members in all the study communities mentioned above. This was employed as follows:

A list of all the members in each community was obtained from the local leadership. This formed a sampling frame from which 10 VAG members and 10 ordinary respondents were randomly picked from each Community Resource Board (CRB). Consideration was paid to variables such as sex and age of the respondent. Below is the breakdown of the selected sample from each of the six CRBs:

Table 1: Selected Sample

Category	Community						Total
	Jumbe	Kakumbi	Malama	Mkhanya	Msoro	Nsefu	
Executive Members	20	20	20	20	20	20	120
VAG members	10	10	10	10	10	10	60
Ordinary members	10	10	10	10	10	10	60
Total	40	40	40	40	40	40	240

3.4   RESEARCH INSTRUMENTS AND THEIR ADMINISTRATION

In all, there were two objective questionnaires which were used to collect data from two sections of the community resource boards namely; the CRB Executive Committee and the Ordinary CRB Community Members. Descriptive and illustrated qualitative and quantitative information about the capacity and knowledge of

communities to understand and interpret conservation policies and bio-diversity issues was solicited from respondents using:

(a) Interactive, participatory, open and transparent approaches and using a non probability sampling approach (IIED, 1999; Hulme, 2000; Bernard, 1994 & 2002 and Davids, 2005).

(b) Information was solicited from respondents using two Structured/objective questionnaires followed by in-depth interviews as described in (Bernard, 2002; Sichilongo, 2003; Schalk, 2005).

(c) The questionnaires covered an array of environmental, biodiversity and conservation issues intended to assess knowledge and awareness of broader perspectives.

(d) All respondents who participated in the study had been exposed to CBNRM sensitisation and capacity building training workshops. This implies that these respondents had received learning instructions in their local language.

(e) The screening instruments/questionnaires were group administered and provided the individual Community Resource Board measure in this study.

(f) In addition, random semi-structured group interviews with focus groups were administered to complement the findings obtained from individual group tests. This is because group interviews with focus groups are crucial to the validity of the study, thereby ensuring a triangulation of data.

3.5   DATA COLLECTION PROCEDURE

Descriptive and illustrated qualitative information about the capacity and knowledge of communities to understand and interpret bio-diversity conservation issues was

solicited from informants using interactive, participatory, open and transparent approaches and using a non probability sampling approach.

Information was solicited from respondents using Structured/ objective questionnaires as a group test while at the same time using them (questionnaires) for in-depth interviews as described in Bernard (2002).

A total of 240 respondents participated in the study conducted between the last week of October and mid-November, 2006. A random sample of 10 individual one to one in-depth interviews, consisting of 5 ordinary and 5 executive committee respondents, were carried out in each CRB by turning the objective questionnaires into subjective or open-ended questionnaires, with each interview lasting about one hour. The questioning technique was either Structured, Semi-structured or Unstructured depending on the profile of and/or relationship with each respondent.

Two closed ended (YES/NO) questionnaires consisting of eight (08) questions each were designed. Although the questionnaires had a logical sequence, the order of asking questions depended on the responses received to each. Additional questions were introduced to seek clarification, to probe further and pursue leads for additional information offered by informants.

The design conformed to that recommended by Bernard, 1994 & 2002 and Burton, 2000) in circumstances where it was not certain that there would be a chance to see the informants again. Data collection involved a combination of taking notes, on the

spot analysis and double-checking with the informants while progressing from one question to the next.

3.5.1 Interviews

Structured or Semi-structured interviews were used following the order of questions in the questionnaires and topics or interview guide. The author conducted the focus group interviews in person while the group-test questionnaires were co–facilitated by five Community Liaison Assistants (CLAs) with one Community Liaison Assistant handling two of the six participating CRBs. Both interviewer and respondents were free to follow new leads (Bernard cited in Sichilongo, 2003). The preparation, start and conduct of the interview was given particular attention. Appointments for each interview were made ahead of time either in person, notice or mobile phone to Community Liaison Assistants (CLA).

Each interview was preceded by an introduction of the aims of the study and a briefing to the effect that the questions were only a guide; and as such respondents were free to introduce any relevant additional information (IIED, 1999; Hulme, 2000; Bernard, 2002). Informants were assured that any information they provided would be treated in the strictest confidence. The author also spent four days with the Malama Community Resource Board during their 2007 Annual Work Plan and Budget Workshop in order to obtain additional and comparative data on community participatory conservation and benefit sharing (see Copies of questionnaires in Appendix I & II).

3.5.2 Focus Group Discussions

Although focus (interview) group discussions are meant to supplement and or prepare for full surveys, they are widely useful in themselves as they help in establishing how and what people think and feel about a particular issue or the process of arriving at a decision (Bernard, 2002: 225). The same questions and procedures used in group-tests were employed in the focus group interviews. The focus/interview groups were drawn from the two community based structures namely; the CRB Executive Committees and the Ordinary CRB members. The respondents in the focus groups were key and competent members of their respective CRBs.

3.5.3 Notes

It was not possible to use either a cassette or dictation machine to record the interviews of the focus group discussions on account of the numbers of people involved and places where the meetings were held which made it both in appropriate, distracting and cumbersome. Therefore, the process followed by Sichilongo (2003) was used. Ideas, impressions and observations were therefore noted during the interview sessions. The notes acted as clues for additional questions, ideas for further exploration and angles to take with particular respondents or others. A hard cover note book was used for taking notes.

3.6 DATA CLEANING

The data from the objective questionnaires was cleaned for any inadvertent error(s) and no error(s) was/were found. There were however, a number of possible sources of error(s) in the open-ended interview questions as follows:

3.6.1 Possible sources of Error

3.6.1.1 Interviews

Changing the closed questionnaire into open-ended questions in a semi-structured interview was sometimes difficult to manage and maintain objectivity especially where the respondents had much information to give which was equally informative. The challenge was therefore to ensure that all relevant ground on environmental and biodiversity conservation knowledge and awareness was covered.

3.6.1.2 Sequence of Questioning

The sequence of questioning was sometimes not possible to maintain because each respondent responded differently to the initial question and this called for additional questions either for clarification or for bridging to the next question in the sequence or indeed leading questions to direct the discussion.

3.6.1.3 Methodology

The methodology employed in turning the closed or objective questionnaires into open-ended or subjective questionnaires does not however, lend itself easily to statistical analysis. The intention of the study was not to statistically determine the important factors in community conservation but to seek deeper insights into the process of assessing over-all community knowledge, understanding and appreciation of environmental, social and biodiversity issues within the policy and legislation frame-work of CBNRM.

Nevertheless, interviews got better as more were done. Probably this was because some issues that arose in earlier interviews were (from experience) adequately clarified and leads from respondents pursued.

The most serious possible source of error is the deference or acquiescence effect where the participants say what they think the researcher wants to hear (Bernard, 2002). In order to neutralize this, the goal of the study was emphasized and a free atmosphere ensured. Ample time was given to informants to reflect on and discuss responses using common facilitation techniques.

3.7   DATA ANALYSIS

The Statistical Package for Social Sciences (SPSS) computer software was used to analyse data. However, before data could be analysed, it had to be cleaned. Pivot and Cross Tabulation tables were run thereafter. Graphical presentation of data was performed in MS Excel. The analysis used an eight point objective assessment of stakeholder capacity and knowledge to understand and interpret related environmental, social and bio-diversity conservation issues and policies.

3.8   DATA INTERPRETATION

Descriptive analysis was used to present the variables in percentages to show the respective variables in which CRBs were significantly strong or weak. Therefore, percentage scores were used to analyse and establish the differences and or similarities in performance between Ordinary and Executive Committee respondents in each CRB and between the different CRBs.

3.9   LIMITATIONS OF THE STUDY

One of the methodological obstacles was the insecurity exhibited by both some Executive Committee and Ordinary CRB members leading to fear of reprisals from the local political leadership and the fear not to be criticized. For this reason, after

some consultations with local acquaintances, it was discovered that group interviews (focus groups) and discussions about CBNRM projects would be seen as a political activity, leading to fear of criticism among the local community leadership.

Another obstacle was the refusal by some respondents, especially those with some formal schooling to participate in the study because this particular study was following on the heels of another similar study that was being undertaken by a group of Lusaka based Consultants engaged by ZAWA. Would-be respondents were reluctant to co-operate, noting that their most valuable economic time was being wasted on 'too many' unproductive studies on CBNRM. Some went as far as demanding to be paid to secure their cooperation. However, ZAWA officers were at hand to iron out the differences and eventually the study proceeded without any further disruption.

In all, there were six focus groups (ten from each of the six participating CRBs) with a total interview sample size of sixty (60) respondents (5 respondents from the Executive Committee and 5 from Ordinary members making a total of 10 per CRB). The focus groups are crucial to the validity of the research because it ensures a triangulation of data (Burton, 2000 and Bernard, 2002).

The researcher also visited four out of the six Chief's palaces namely; Malama, Kakumbi, Msoro and Jumbe to get first hand information from their Royal Highnesses about the operations of the Community Resource Boards in their Chiefdoms. Unfortunately, none of the Chiefs was found at their palaces although the researcher was able to meet their representatives. However, the representatives were

unwilling to engage the researcher on any issue without authorization from their Chiefs. The study focused on informants from one sector of stakeholders namely CRB Executive Committee, Village Action Group (VAG) and Ordinary Members.

CHAPTER FOUR: PRESENTATION AND ANALYSIS OF FINDINGS

INTRODUCTION

This section presents and analyses findings of the study whose aim was to establish the capacity and knowledge of communities to understand and interpret environmental and bio-diversity conservation issues and policies. The findings in this section are presented by theme and each theme attempts to answer a particular research question of this study.

4.1   TYPE OF ENVIRONMENTAL AND BIODIVERSITY KNOWLEDGE, SKILLS AND ATTITUDES REQUIRED BY COMMUNITY MEMBERS AND GOVERNMENTAL PERSONNEL (PRACTITIONERS)

One of the specific research questions of this study read as follows:-

What is the proportion of CRBs displaying an insufficient knowledge of the CBD, CBNRM policies and related legislation?

In order address the above question, this study had to establish what type of environmental and biodiversity knowledge, skills and attitudes the local communities (participants) and governmental personnel (practitioners) who implemented the CBNRM required for them to be confident in their operations. To do this the study assessed local community's knowledge and awareness of the convention on bio-

diversity and whether or not they understood the policies and regulations of the Zambia Wildlife Act No.12 of 1998.

From Table 2 below, it is clear that out of a total sample size of 120 ordinary CRB respondents from the 6 participating CRBs, 81 respondents (68%) said they were aware of the Convention on Biodiversity while 34 respondents (28%) said they were not aware while 5 respondents (4%) did not state whether or not they were aware.

Table 2: Awareness of Convention on Biodiversity

Response	Frequency	Percent
Yes	81	68.0
No	34	28.0
None response	5	4.0
Total	120	100.0

In order to assess the level of awareness of the Convention on Biodiversity, table 3 below shows that awareness was generally high in all the six communities. The most outstanding performance was from Msoro CRB where 8 out of 10 executive committee respondents (80%) said they were aware of the convention on bio-diversity and the policies and regulations of the 1998 Zambia Wildlife Act, while in Kakumbi, 9 out of 15 respondents (60%) said they were only aware of convention on bio-diversity. The differences in the levels of awareness among CRBs is a confirmation of the extent to which policies and objectives of community conservation, combining with goals of biodiversity conservation and community development have failed to be fulfilled mainly as a result of local participants and ZAWA practitioners lack of facilitation or implementation skills and knowledge.

43

Table 3: Level of awareness of the conservation of biodiversity

Response	Community					
	Jumbe	Kakumbi	Malama	Mkhanya	Msoro	Nsefu
Yes	8 (57.1%)	9 (60%)	10 (76.9%)	11 (68.8%)	8 (80%)	14 (87.5%)
No	6 (42.9%)	6 (40%)	2 (15.4%)	3 (18.8%)	1 (10%)	2 (12.5%)
No response	-	-	1 (7.7%)	2 (12.5%)	1 (10%)	-
Total	14 (100%)	15 (100%)	13 (100%)	16 (100%)	10 (100%)	16 (100%)

With regard to biodiversity knowledge in Zambia, it is interesting to note that from the findings of the study almost 83.3 percent of all respondents expressed the view that it is important to protect the country's environment and bio-diversity. However, there was much controversy surrounding the question of whether indigenous communities deliberately lived within their means and protected their environment or whether their minimal impact on environment was a function of their technological limitations and low population densities at the time (2006).

Figure 1 below shows the percentage distribution of the population in relation to the question. **"Do you think it is important to protect bio-diversity?"**

Figure 1: Rating the importance of protecting bio-diversity
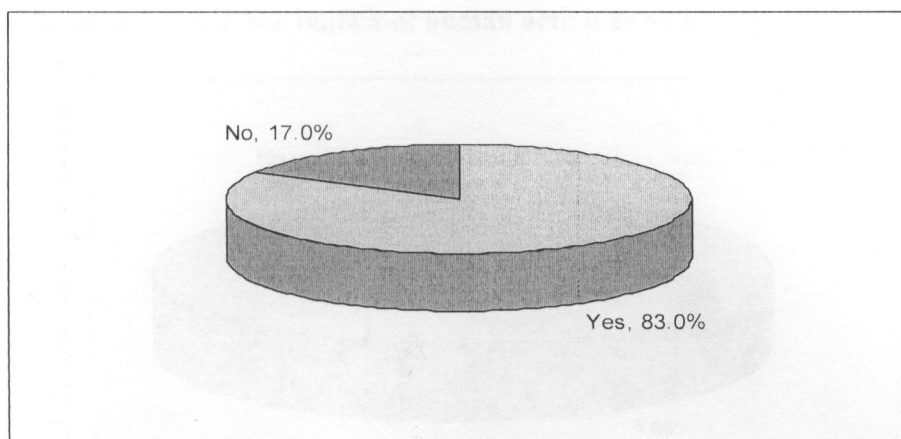
In addition, the same proportion of respondents equally indicated that they were aware of some of the impacts of human activities on the biological diversity and health of our environment. Analysis of table 3 shows that community knowledge and understanding of environmental and bio-diversity conservation was limited to wildlife. Interviews with informants revealed that this result was an outcome of the type of sensitisation approach used which emphasized the commercial value and benefit of wildlife. This attitude appears to undermine the guarantee of a participatory approach becoming effective in delivering conservation goals as well as how emphasis on development goals can de-emphasize conservation goals.

What this implies is that there is need to introduce an aware environmental education approach for both practitioners and participants to gain knowledge and skills on broader environmental, social and bio-diversity issues to achieve local and international conservation and development objectives.

Figure 2 below depicts this finding.

Figure 2: Awareness of the impact of human activities on bio-diversity
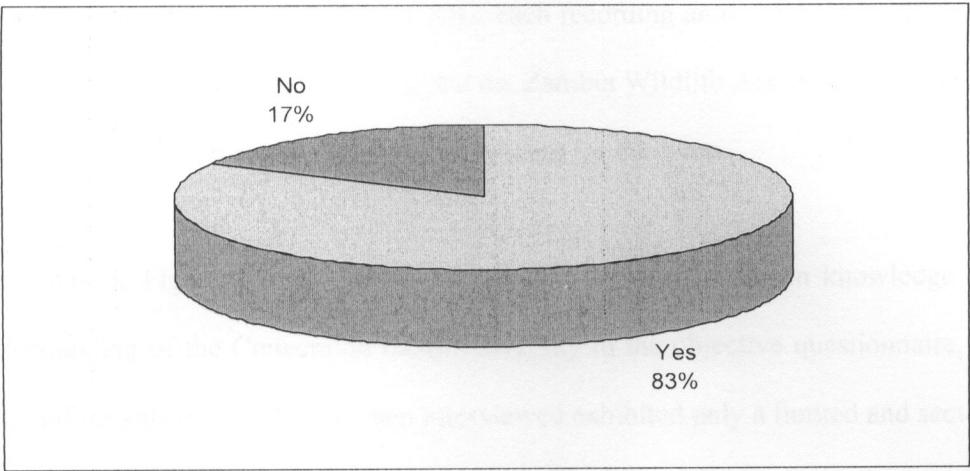
Figure 2 above has revealed that individuals' perceptions of dimensions and characteristics of awareness are not always well reflected in the objective knowledge measures and therefore this measure is purely subjective and is based on the perception of the respondent being enumerated. In fact, data from the interview survey shows that in general, the respondents had a very limited knowledge of broader environmental and biodiversity perspectives although the objective score from the questionnaire shows that the majority of respondents (83 percent) who said they understood the 1998 Zambia Wildlife Act were also aware of the Convention on Biodiversity. The challenge posed by this outcome was to monitor and measure whether awareness was leading to specific environment-friendly behaviour and whether community participation is indeed increasing capacity for conservation and sustainable use (Lewis & Phiri, 1998; Madzudzo, 1998; Sichilongo, 2003).

The results have established the existence of a strong correlation between local communities' understanding of the Zambia Wildlife Act of 1998 and knowledge of the convention on biodiversity. The result suggests a lack of significant difference in knowledge of the

46

convention on biodiversity and understanding of the 1998 Wildlife Act among the ordinary CRBs members. Performance score was consistently above average with respondents for instance; from Mkhanya and Nsefu CRBs, each recording an overwhelming high response of 16 or 80 percent of those who understood the Zambia Wildlife Act of 1998, while only Msoro recorded the lowest responses of 10 or 50 percent for the same.

Nevertheless, Figure 3 below shows that despite the high score on knowledge and understanding of the Convention on Bio-diversity in the objective questionnaire, the same informants (respondents) when interviewed exhibited only a limited and sectoral knowledge and understanding of the Convention based no wildlife.

Figure 3: Distribution of understanding policies and Regulations of Zambian Wildlife Act No. 12 of 1998
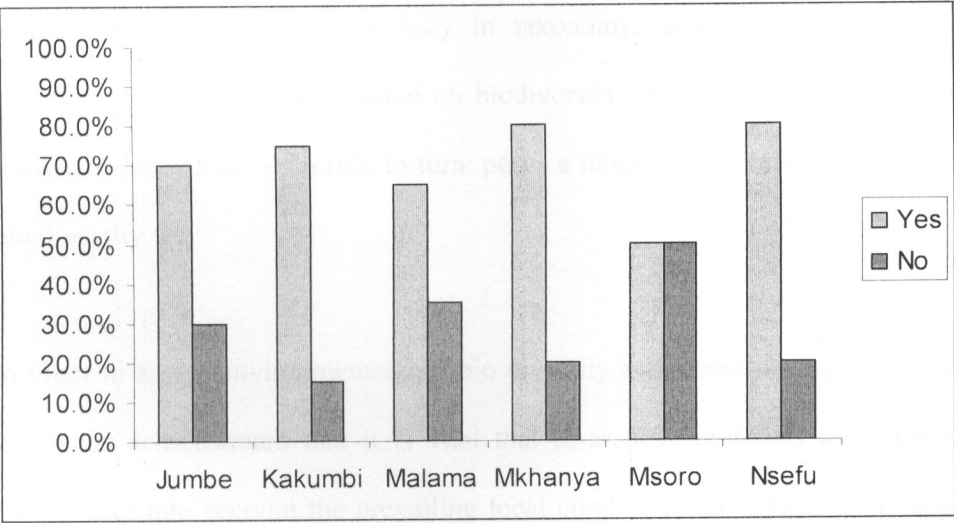
In addition, almost all informants interviewed expressed reservations on some aspects of the Wildlife Act which, while claiming to devolve power and authority to communities, implementation was contrary. To this effect, the study established the need for ZAWA to

make amendments to the Wildlife Act to clarify roles and responsibilities of community resource boards (CRBs)-such as; the operational terms of who is the most senior among CRB staff, reporting relationships and lines of communication including the recognition of the Village Action Group (VAG) as the basic unit of Community Conservation in Zambia (while the CRB is the administrative structure) to help create a mechanism for stakeholder coordination.

Currently (2008), natural scientists dominate biodiversity research in Zambia. Consequently, little effort has been made to investigate the role of legal and social factors, such as land tenure, poverty and property rights in promoting biodiversity management. This failure has undermined the process of achieving a holistic understanding of social, environmental and biodiversity factors that permeate conservation in Zambia and therefore needs to be changed. The study found that the main reason for this failure was the lack of proper training in biodiversity management; especially in taxonomy, among practitioners which had also contributed to poor documentation on biodiversity and its management in the country. The study concludes that this result, in turn, poses a threat to the maintenance of plant and animal bio diversity.

In order to assess environmental and bio diversity awareness among local communities, this study has demonstrated that it is vital that awareness strategies used are appropriate and should take into account the prevailing local conditions. To establish the appropriateness of the strategies used in sensitising community members in environmental and biodiversity conservation, a deliberate question was posed 'whether the strategies used to make community members aware of environmental and bio-diversity conservation were appropriate'. Linked to this question was another (question) which asked respondents 'what

they think could be done to ensure equitable and sustainable use of bio-diversity resources'.
Table 4 below summarises the responses to the two questions as follows:

Table 4: **Whether awareness strategies were Appropriate**

Response	Community					
	Jumbe	Kakumbi	Malama	Mkhanya	Msoro	Nsefu
Yes	6 (35%)	7 (41%)	8 (50%)	7 (39%)	6 (33%)	4 (22.2%)
No	11 (65%)	9 (53%)	8 (50%)	10 (56%)	12 (67%)	13 (72.2%)
No response	-	1 (5.6%)	-	1 (5.6%)	-	1 (5.6%)
Total	17 (100%)	17 (100%)	16 (100%)	18 (100%)	18 (100%)	18 (100%)

From a total sample size of 120 ordinary CRB respondents from the 6 CRBs participating in the study, 45 respondents (37.5%) said the awareness strategies used were appropriate, 71 respondents (59.2%) said the awareness strategies used were not appropriate while 4 respondents (3.3%) did not state whether or not the awareness strategies were appropriate.

These findings suggest that 71 respondents (59.2%) found the awareness strategies used at the time of this study in 2006 inadequate and inappropriate. This response may have been due to the practitioners' habit of using a 'top down' approach to community sensitisation. What this result suggests is that, ZAWA must begin to take actions to build awareness, share knowledge, validate claims and build interventions using participatory methods which

themselves help change attitudes. Another issue arising from this result is the failure of the top-down approaches to community sensitisation which has meant that these bureaucratically mediated ad-hoc initiatives are threatened by the re-emergence and worsening of previously 'solved' political problems, rapid changes in political direction, and external shocks (Hulme, 2000).

This study has concluded that ZAWA needs to provide more capacity and support to the full implementation of the new CBNRM policy as partial or selective implementation could have serious consequences. The results also confirm the criticism that has often been levelled against the decentralization policy reforms in natural resources management by scholars that 'local officials are not provided with the training and resources necessary to implement the policies effectively' (Kiss, 1990; Chisulo, 1995; Jackmann, 1998; Gujadhur, 2000; Jones, 2004).

This criticism has also been corroborated by the findings of a similar study carried out in Botswana which noted 'the confusion of local officials (practitioners) who lacked broadened modes of knowledge and skills to help effect behavioural change among communities and thereby achieve developmental and conservation objectives (Colchester, 1994 and Hachileka, 1999). The study recommends that ZAWA should pay particular attention to effective recognition of communication with communities and other stakeholders if challenges associated with interpreting and implementing a supportive CBNRM policy have to be addressed. This entails implementation of a broadened, bottom-up participatory approach to promote awareness, build capacity and develop strategies for access and benefit sharing. The outcome of the results also showed a conflict between policy and practice or a flawed methodology and confirmed what other conservationists had earlier concluded that only the

implementation of innovative participatory methodologies would bring effective change and overcome policy implementation pitfalls at community level.

Despite the majority of the respondents finding the awareness strategies inadequate, slightly over a third (37.5%) of them also said 'more should be done to ensure equitable and sustainable use of biodiversity resources'. Figure 4 below depicts these findings categorised by the biodiversity policy areas of research.

Figure 4: Should more be done to ensure equitable and sustainable use of Bio diversity resources?
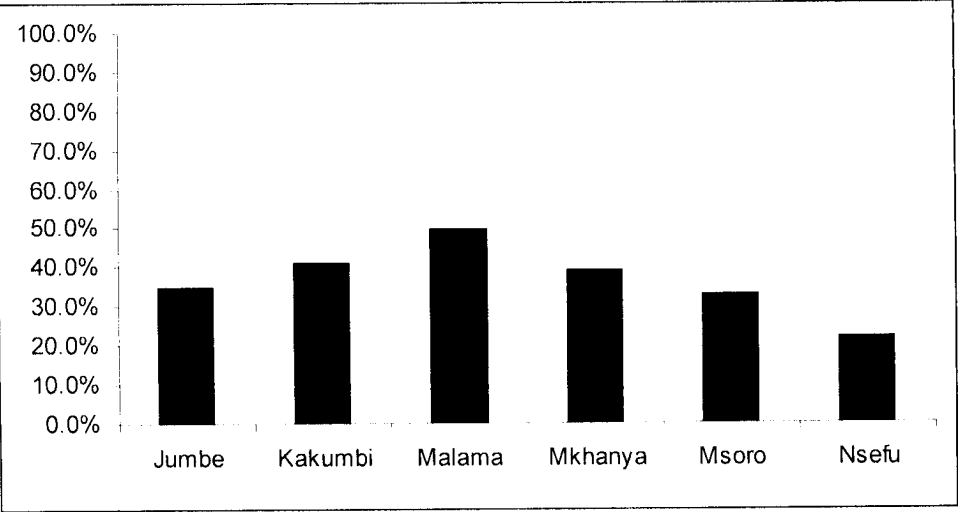
4.2   NATURE OF THE NEXUS BETWEEN POLICY AND IMPLEMENTATION, AND SENSITIZATION AND THE CBNRM METHODOLOGY

Out of a total sample size of 120 executive committee respondents from the 6 CRBs, 86 respondents (72%) said the right to benefit from CBNRM was the same for all members irrespective of their ethnic group, age, social status or sex, while 30 respondents (25%) said the right to benefit from CBNRM was not the same for all

members and only 4 respondents (3%) in total did not state whether or not the right to benefit from CBNRM was the same for all members.

The study shows that majority 86 of respondents (72%) want a more equitable sharing and sustainable use of resources. For instance, Nsefu and Msoro had the highest number (90%) of respondents who stated that more needs to be done to ensure equitable sharing and sustainable use of resources while Mkhanya CRB at (55%) recorded the second highest number of respondents who wanted to see more effort put into ensuring equitable sharing and sustainable use of resources and Malama CRB recorded the least.

The structure of any organisation plays a key role in determining participation in management and decision-making. The six Community Resource Boards in Upper Lupande-South Luangwa National Park, were all formed as Trusts and therefore automatically included all community members. There were two arenas for decision making in community projects. Some decisions were made at ordinary general meetings while others were made by elected representatives who formed a committee or board of trustees. Most of the decisions have to do with sharing of the resulting accrued financial benefits from ZAWA and very little with resource creation. Even so, most major decisions made by communities concerning resource utilisation were subject to ZAWA approval.

Consequently, the rhetoric of community empowerment enshrined in the Wildlife legislation of 1998 was not systematically matched with political will to pursue devolved resource management with vigour. In this regard, the communities felt that

there was no equity in the management of wildlife as all major decisions on wildlife were the prerogative of ZAWA which also marketed and controlled all funds raised from wildlife.

Community financial benefits from wildlife are two fold; individual and community. However, this study found that most financial benefits were at community level, yet poverty at individual house level poses a great risk to conservation since that is were exploitation of natural resources for survival occurs. The study concluded that ZAWA was not able to provide leadership on transfer of ownership of high value, common property to communities and that although policy is often in place it is not followed in implementation.

These results also confirm assertions by Mberengwa (2001) and Metenga (2002), that although there has been widespread experience with devolution of wildlife management throughout Southern Africa, reviews of this experience show very little evidence that such policies have led to improved equity or local economic benefit. The underlying meaning of this conclusion is that there is little consensus on what constitutes an effective policy regime for CBNRM. In other words, and as this study has established, meaningful devolution or co-management of common pool resources remains elusive despite the rhetoric by most governments in southern Africa.

Another important out come from the study is that the majority of ordinary CRB respondents in all the six participating CRBs found the awareness strategies used in community sensitisation inappropriate. For instance, results from interviews with both executive and ordinary CRB members show that a large proportion of them lack

broader knowledge tools to help them understand and interpret phenomena; including environmental, biodiversity and social issues.

As noted earlier in this study, the above outcome is due to the inadequacy of ZAWAs' current (2008) sensitisation strategies' which have operated at a high degree of generalization. Yet, despite the apparent mismatch between methodology and policy impact, the study concluded that sensitisation strategies should be broad based and should stem from participatory learning at community level. In fact, it was clear from the study findings that, the failure of the CBNRM policy was largely due to its failure to recognise the need for inclusive representation of all classes of the community which led to inequality in participation. This outcome is shown in figure 5.

Figure 5: The failure of the policy is lack of inclusiveness
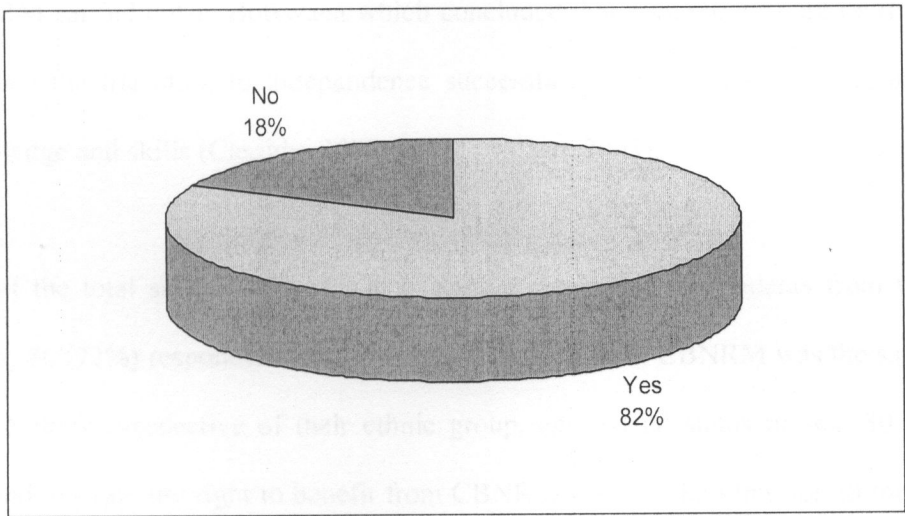
The study has confirmed the extent to which policies and objectives of community conservation, combining with goals of biodiversity conservation and community

development have failed to be fulfilled mainly as a result of local and ZAWA practitioners lack of facilitation and implementation skills and knowledge of broader environmental, social and biodiversity issues. As Knight (2000) has noted, it is helpful for CBNRM practitioners to understand the potential and mechanisms by which field experience can shape policy, as a guide to strengthening their own practice and building a more supportive context for sustainable and equitable resource use.

The above conclusion is also a reminder of the failure of decentralisation policy reforms in CBNRM. Indeed, a frequent criticism of decentralization policy reforms in CBNRM and other sectors is that local officials are not provided with the training and resources necessary to implement the policies effectively. Therefore, a great deal of work is required to make explicit the need to open up closed bodies of knowledge (Tyler, 1995). The result is also a confirmation of the findings of a similar study on CBNRM carried out in Botswana which concluded that communities are more likely to make the transition to independence successfully if they have a strong base of knowledge and skills (Cassidy, 2000, 2001; Arntzen, 2003).

Out of the total sample size of 120 executive committee respondents from the six CRBs, 86 (72%) respondents said the right to benefit from CBNRM was the same for all members irrespective of their ethnic group, age, social status or sex, 30 (25%) respondents said the right to benefit from CBNRM was not the same for all members while the remaining 4 (3%) respondents in total did not state whether or not the right to benefit from CBNRM was the same for all members.

The study further found that the possible reason why 86 (72%) of CRB executive respondents said that the right to benefit from CBNRM was the same for all members may be due to the fact that current (2008) CBNRM benefits end at community level. In addition, the study established that while the Wildlife Act. No. 12 of 1998 claims to devolve the rights to co-manage wildlife with participating communities, results on the ground showed that communities have not fully accepted the co-ownership of wildlife which they still consider to belong to ZAWA and the state. This assumption was clearly demonstrated by the number of claims/demands made by communities for compensation from ZAWA each-time wildlife raided people's fields or food storage huts or killed a community member.

Figure 6: Whether all CRB members enjoy same equity of benefit from CBNRM
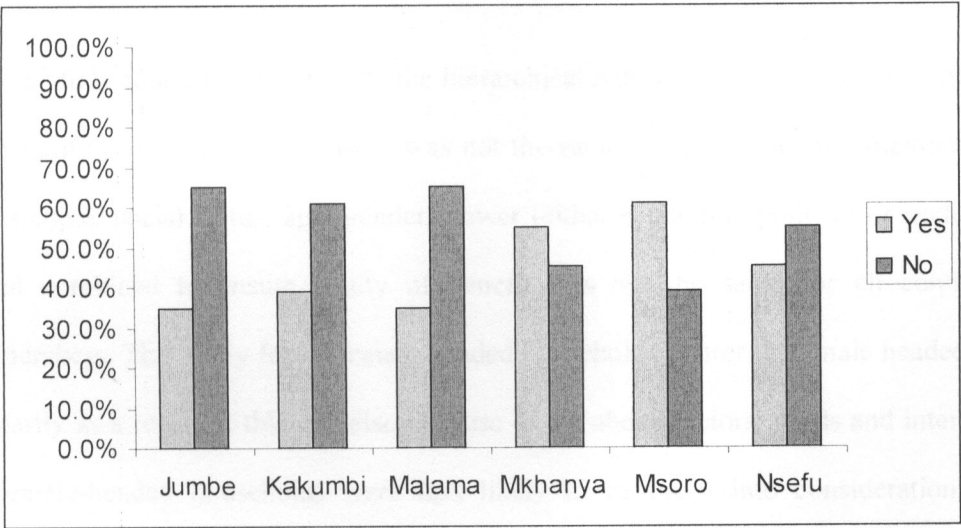
From the table above, it is clear that community resource members are consulted and consensus reached on community projects to be undertaken. However, it is also clear that community members equated the right to participate in decision making with equity to rights of benefit on community level.

Concerning the decision making at board of committee level, it should first be noted that all adult members of the CRBs had the right to vote for the executive committee or board, and it was therefore often assumed that this body was truly representative. To the contrary, this study found out that the candidates chosen were usually men and this was mainly caused by traditional social roles. For instance, the study found that men dominated management and executive positions in all committees and CRBs. From interviews with community members, it appears that many women were afraid of taking on responsibility for decision-making, lest they be blamed for making mistakes. In addition, given that rural communities tend not to question the different roles of men and women, it is unlikely that these committees were specifically aware of women's interests and needs.

The study found that because of the hierarchical nature of African societies equity of benefit even at community level was not the same for all community members. For example, social status, age, gender, power (either economic, political or traditional) all combined to ensure equity of benefit was not the same for all community members. This study found female-headed households poorer than male headed ones, partly as a result of this and also because of the above factors, needs and interests of female-headed households were less likely to be taken into consideration when decisions were made by the committees. Furthermore, the study found that Chiefs and trust board members for example, had more benefit than ordinary community members. Focus group interviews confirmed that there was more benefit accruing to those with higher social status. This attitude appeared to undermine the concept of broad-based participation. To this effect, this study recommends that it was important

that both community leaders and the general public fully accept the idea of control by the whole community, rather than only by a few key personalities. In addition, the study recommends that ZAWA needs to ensure equity of benefit to all community members even-though, as note above, the nature of traditional society is hierarchical and has strong cultural traditions and allegiances to observe.

Also from interviews, the study established that although state legislation of resource rights often ignores the complexity of local property relations and access arrangements, the more difficult question of resource ownership has not been resolved. Yet, as concluded later in this study, the benefits of natural resources community conservation in Zambia are not significant enough to influence the individual's and local communities lives and attitudes especially in wildlife poor areas, making the approach difficult to replicate from donor supported pilot projects. In wildlife poor areas, communities are benefiting more from their agricultural and other economic activities than from participating in conservation activities (Hachileka, 1999 & Matenga, 2000).

On the other hand, the study found that in areas where agricultural activity is inhibited by wildlife, some entire local communities directly depended on poaching for their livelihood (Lameck Ndhlovu, 2006; personal communication). One of the principle objectives of CBNRM is to eradicate poverty among local communities by promoting rural development. However, this study found that current (2008) CBNRM poverty eradication strategies only address poverty at community level. Thus, although there is an expressed need for more investment in infrastructure development in rural communities and while the need for improvement of livelihoods showed the

importance of benefits, their distribution and poverty reduction, exploitation of resources for sustainable livelihoods by the poor occurs at an individual household level.

As a result of the above outcome, 30 (25%) executive respondents stated that the right to benefit from CBNRM was limited, conditional and not the same for all members. The result was further supported by responses from the focus group interviews which showed that the executive committee's perceptions of equity of CBNRM rights had little or no correlation with equity of benefit(s) derived from CBNRM projects.

Consequently, the study found that the lack of direct benefit at individual household level poses the greatest threat to community conservation. In view of this, the study has concluded that although it is doubtful whether community conservation is contributing to the reduction of poverty, in the absence of data to prove it and criteria to measure it, it is an important factor that should be considered.

This outcome calls for urgent measures to tackle growing individual household poverty among communities by ensuring that each CRB sets aside a certain percentage of their gross revenue (approximately 30% but depending on the total income) in a community fund, which will be equally distributed to all community members at the end of each financial year with a strong emphasis on benefits being felt at household level. The study has established the need for ZAWA to urgently review the impact of the current (2008) CBNRM policies on rural poverty in order to come up with an effective policy regime.

The study has further revealed that the effectiveness of development efforts, particularly in rural communities, is closely linked to social capital that draws upon the mutual trust and understanding built and shared among individuals and households. This enables cooperation, reduces transaction costs and makes it possible to optimise solutions to many problems. However, in view of the decline in social capital in most rural communities in third world countries due to rapid changes brought about by migration, urbanization and modern means of communication and transportation, the weakening of social capital has important implications for the implementation of development strategies. And this study has confirmed that decentralization may not be effective if social capital has dissipated.

Results from the study also point to the fact that the difference in opinion on CBNRM rights has to do with power relations and is therefore a source of conflict. For example, CBNRM projects have witnessed growing competition and conflicts over control of natural resources. Conflicts may also arise when assets are depleting or when new assets are created as a result of the regeneration and restoration of resources and with particular reference to this study, conflicts may also arise when existing resources are made available to local communities as a result of the decentralization of management of natural resources such as in the CBNRM projects.

In addition, the study found that the dualistic nature of Zambian society recognizes that apart from statute law, there is also customary law.

Whilst statute law confers the rights to use of components of biodiversity to holders of leasehold title, under customary law resource use rights are allocated to multiple users on the same piece of land. Depending on ethnic groups, the application of customary law in some societies in Zambia (such as in Barotseland) is very advanced, making it

difficult to combine the implementation of the two types of laws. According to Mwenya (1990), the introduction of central government control of natural resources through parallel institutions has also been a source of conflict.

One important valid finding drawn from this study is that despite many years of formal policy implementation, devolution has remained contested because of the difficulty of wrestling significant management authority from the state to better serve the interests of the participating local communities. ZAWA must therefore, provide clear devolution of power to communities.

4.4 FORM OF ENVIRONMENTAL AND BIODIVERSITY KNOWLEDGE, SKILLS AND ATTITUDES NEEDED

In this section an attempt was made to establish the form of environmental and biodiversity knowledge, skills and attitudes that needed to be devised for local communities and personnel implementing CBNRM projects in order for them to be competent in their operations.

In order to test the above objective, respondents' knowledge and understanding of broader environmental and biodiversity conservation policies and sensitisation strategies were assessed. Out of a total sample of 120 executive committee respondents from the 6 CRBs, 87 (72.5%) of them stated that the conservation policies and awareness strategies in use then (2006) were sectoral, a quarter or 30 (25%) of respondents stated that conservation policies and awareness strategies in use then (2006) were not sectoral while 3 (2.5%) respondents did not state whether or not the policies and strategies were sectoral. Results are summarised in Table 5 below.

Table 5: CBNRM initiatives in Zambia predominantly focus on generating Financial benefits

Response	Community						Total
	Jumbe	Kakumbi	Malama	Mkhanya	Msoro	Nsefu	
Yes	8 (40%)	6 (30%)	11 (55%)	7 (35%)	9 (45%)	6 (30%)	87 (72.5%)
No	1 (5%)	6 (30%)	1 (5%)	1 (5%)	1 (5%)	2 (10%)	30 (25%)
None response	-	-	-	-	-	-	3 (2.5%)
Total	9 (45%)	12 (60%)	12 (60%)	8 (40%)	10 (50%)	8 (40%)	120 (100%)

Analysis of table 5 above shows that 87 (72.5%) of the respondents in the study were of the view that the 2006 CBNRM initiatives were only focused Wildlife protection and not on broader environmental, social and biodiversity conservation and development perspectives. This result is a confirmation of why environmentalists have criticised ZAWAs' Wildlife conservation agenda to be too narrowly focused on the commercial value and benefits of wildlife and that ZAWA paid less attention to broader conservation objectives.

Further analysis of table 5, shows that while nearly half (49.1%) of the respondents stated that the 2006 CBNRM conservation policies and sensitisation strategies were sectoral, Mkhanya and Nsefu CRBs together recorded the highest number (65%) of Executive Committee respondents who stated that CBNRM conservation policies and

sensitisation strategies were sectoral. The percentage distribution of the responses is shown in figure 7 below.

Figure 7: Are current (2006) conservation policies and sensitisation strategies

     Sectoral?
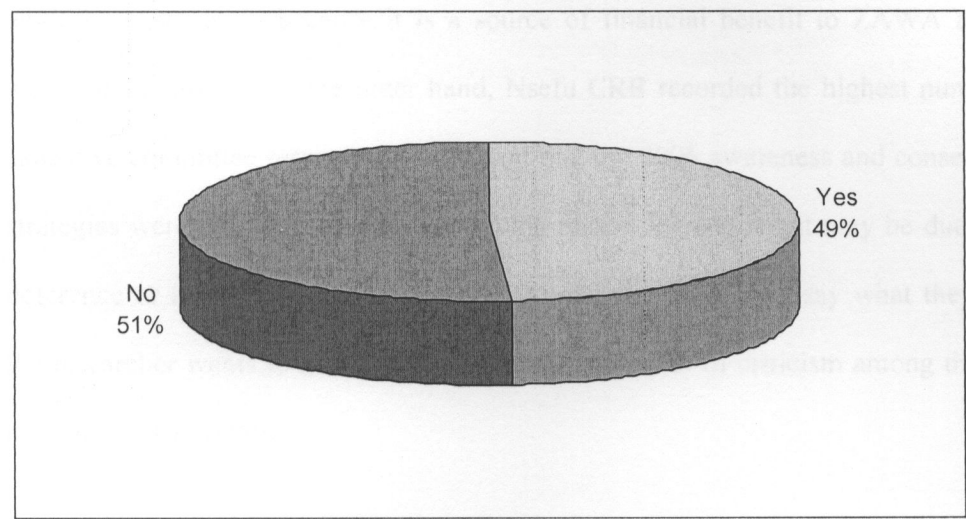
The large number of executive committee respondents who stated that conservation policies and sensitisation strategies in use during this study in 2006 were sectoral may imply that much of the local community's entire environmental and biodiversity conservation knowledge and awareness was limited to wildlife.

Generally, the result shows a higher level of awareness of wildlife conservation policies among CRB executive committee respondents than knowledge and skills of broader environmental and biodiversity conservation issues. From table 5 above, it is clear that environmental and biodiversity conservation knowledge and awareness concerning wildlife was significantly correlating in both the ordinary and executive committee respondents. By correlation here, I mean that there was a relationship

between the high knowledge and awareness of wildlife conservation policies exhibited by both the executive and ordinary CRB members.

Table 5 has also confirmed that the correlation between the two variables is valid. The analysis shows that CBNRM awareness and conservation strategies emphasized wildlife conservation because it is a source of financial benefit to ZAWA and the local communities. On the other hand, Nsefu CRB recorded the highest number of executive committee respondents who said that the 2006 awareness and conservation strategies were not sectoral. The underlying reason for this result may be due to the deference or acquiescence effect where respondents sometimes say what they think the researcher wants to hear or simply due to some fear of criticism among the local community leadership.

CHAPTER FIVE: CONCLUSIONS AND RECOMMENDATION

6.1 CONCLUSIONS

Generally, the results from this study have shown that the majority of the participants have a very narrow and limited perception of conservation. For example, respondents scored highly on knowledge and understanding of wildlife conservation and benefit but had a poor score on broader environmental and biodiversity perspectives. The results also show that the local community's conservation knowledge and skills has necessarily been limited by the format under which CBNRM has been managed in Zambia and by the differential attention given to conservation policy to suit ZAWA and State objectives.

What this means is that current (2006) CBNRM approaches do not facilitate learning and change. As this study has shown, key actors (in this case practitioners) generally resisted the modification of existing attitudes and behaviours, and instead seek to control information, usually by resorting to highly constrained discourses and problem definitions that only served the prevailing political system. The study established that this resistance was mainly caused by 'denial,' which was found to be symptomatic of ZAWA personnel.

The term 'denial' may explain why ZAWA officials did 'not want to know' about dissenting views, as it would have meant that 'they would have to change their current (2006) procedures' even though they (ZAWA) had been arguing that they knew and that what they were doing was right. Some respondents interviewed stated that this sort of 'closed-shop' behaviour was endemic in a lot of ZAWA and government officials.

On the other hand, ZAWA officials when interviewed, put the blame the other way; on the communities. They noted that changes in both attitudes and roles occured at a slower pace in rural communities.

As a result, part of the confrontation that exists between ZAWA and local communities on the management and benefits of wildlife needed to be seen in connection with a profession and administration in denial, with its practitioners and managers responding systematically and apprehensively to challenges to their professional pride, identities and egos. Moris (1987) noted that these bureaucratically mediated ad hoc initiatives were threatened by the re-emergence and worsening of previously 'solved' political problems, rapid changes in political direction, and external shocks.

As a consequence, these closed-shop professions, like any other tight knit organization, are at risk of cultural cloning, breeding practitioners with systemic blind spots and myopias toward change around them. Because of this, confrontation and fervent defence of culturally entrenched views can become the norm. For this reason Van Heerden (2005) concluded that administrations are prone to strongly reject criticism for fear that any admission of errors or flaws would bring into question the credibility of the entire administrative complex.

This study has shown that fear and denial combined with the economic and political ramifications of the new CBNRM politic have resulted in a process characterized by scientific exclusion and a sense of closure. The study established that fear and denial is the basis of ZAWA's current (2006) 'Top Down' approach to community

sensitisation and this may help explain the current (2006) gap between what the local communities know and what ZAWA practitioners claim to have taught during community sensitisation workshops.

The main finding of this study is that respondents' knowledge and awareness of the environment was limited to wildlife conservation and benefit because their sensitisation was sectoral; focused mostly on the protection of wildlife. It is also interesting to note that the most important reason why communities are participating in conservation is so as to receive benefits and yet most of the activities that they are participating in are conservation oriented.

In general, what this study has found is that considering the large proportion of community participants who lack the necessary knowledge tools of understanding the world, there is now need to deliberately put in place a new, open, transparent and robust participatory approach called 'environmental education' to improve capacity building opportunities available to rural communities. The study has established that this approach to community mobilisation will enable local communities and practitioners have a broader, more complete understanding of reality, reduce uncertainty and the likely-hood of unintentional consequences.

All these findings suggest that ZAWA should provide more capacity and support to the full implementation of the new CBNRM policy as partial or selective implementation could have serious consequences. Finally, this study has shown that Zambia lacks a clear and integrated national policy on CBNRM out of which can be formed suitable environmental legislation. As a result Zambia's CBNRM is not

formal, but is embedded in a range of existing environmental acts. As this study has shown, this result is due to the development of legislation in Zambia which has followed a sectoral approach as pieces of legislation have been formulated to deal with forests, wildlife, land and fisheries and many other natural resources. Given the poor coordination, the promulgation of these laws has brought about duplication gaps. In view of this, ZAWA must address the weaknesses in the current (2006) systems which have to do not only with legislation itself, but also its implementation and enforcement. Specifically the study has established the following:

6.1.1 Policy and Legislation

The study has identified policy and legislation as one of the threats to bio diversity conservation. This is because as a means of harmonizing natural resource conservation, any partial or selective implementation of the legal and policy framework can have severe consequences on conservation. The study found that CBNRM is experiencing many problems arising from practical implementation of policy into action due to:

(a) The development of legislation in Zambia has followed a sectoral approach as pieces of legislation have been formulated to deal with forests, wildlife, land and fisheries. The poor coordination the promulgation of these laws has brought about duplication gaps and led to glaring disparities between methodology and policy implementation.

(b) Zambia's CBNRM is not formal, but is embedded in a range of existing environmental acts. As a result, Zambia lacks a clear and integrated national policy on CBNRM out of which can be formed suitable environmental legislation.

(c) There is need to make amendments to the Wildlife Act to clarify roles and responsibilities of CRBs by making clear operational terms of who is the most senior among CRB staff, reporting relationships and lines of communication including the recognition of the Village Action Group (VAG) as the basic unit of community conservation in Zambia while the CRB is the administrative structure.

(d) CBNRM has significantly increased the total financial benefits that communities receive from natural resources. How these benefits affect communities depend largely on whether benefits are paid directly to individuals or to the community. In the case of the CRBs under this study, financial benefits were used for community development projects. The net result is that households have lost access to the resources and any benefits from them. They also have less control over the resources than before. Currently (2006), CBNRM policy only addresses poverty at community level while exploitation of natural resource for sustainable livelihoods by the poor occurs at an individual household level. What this study established is that there is need to urgently review the impact of the current (2006) CBNRM policies on rural poverty in order to come up with an effective policy regime.

(e) Although CBNRM is meant to be about the sustainable use, monitoring and conservation of natural resources, most projects have seen little change in the way that resources are managed. The only real changes are in the way natural resources are benefiting people. Analysis of results have shown that despite many years of formal policy implementation, devolution has remained contested because of the difficulty of wrestling significant management authority to better serve the interest of the

participating local communities. Results also confirm the assertion by Cassidy (2001); that although there has been widespread experience with devolution of wildlife management and benefit throughout Southern Africa, reviews of this experience show very little evidence that such policies have led to improved equity or local economic benefit.

(f) The study also revealed that the dualistic nature of Zambian Society recognizes that apart from statute law, there is also customary law. However, the application of customary law in some societies in Zambia depending on ethnic group (such as in Barotseland) is very advanced making it difficult to combine the implementation of the two types of laws leading to conflict. The above result shows that little effort has been made to investigate the role of legal and social factors such as land tenure and property rights in promoting biodiversity management.

(g) The study has further demonstrated that while CBNRM communities showed a very high score on wildlife conservation knowledge and awareness, the score was nonetheless poor on none wildlife environmental and biodiversity knowledge and skills. In view of this, it was established that this outcome is a result of ZAWAs' use of a top-down approach to community sensitisation and recommends that ZAWA pays particular attention to effective recognition of communication with communities and other stakeholders using participatory methodologies if challenges associated with interpreting and implementing a supportive CBNRM policy have to be addressed.

6.1.2 Capacity Building

The study further established that the failure of current (2006) sensitisation strategies to promote broadened forms of knowledge to help build local capacity in resource protection and promote sustainable livelihoods is mainly due to;

(a) The confusion of local officials (practitioners) who lacked the necessary environmental, social, biodiversity knowledge and skills to help raise community awareness and participation. The study proposes that more capacity and support be made for the full implementation of the CBNRM policy as partial or selective implementation could have serious consequences.

(b) Findings of the study also show that a significant proportion of practitioners lack training in biodiversity management especially in taxonomy and this has contributed to poor documentation on biodiversity and its management in the country and poses a threat to the maintenance of plant and animal biodiversity.

(c) Results also show that although respective local communities are consulted during the drafting of each CRB's constitution, CRBs have not been effective at ensuring local awareness building and understanding of constitutions. Therefore, there is need to ensure that CRB constitutions which are written in highly technical language are translated into local languages.

(d) Another important finding is that much of CBNRM is contextualised in theory. However, results show that theory can be very helpful to practitioners if it provides an explanation why things happen at; a local level such as

village, district, regional, national or internationally. For this reason, ZAWA must employ participatory methodologies using the agency of environmental education to facilitate greater action research capacity to understand the social dynamics in Zambia and globally to feed CBNRM policies and practice.

(e)   The main objective of this study was to carry out a participatory and transparent assessment of the local communities' skills and knowledge of Social, Environmental and Biodiversity policies and issues in achieving conservation and community development objectives. Results of this study clearly show that CBNRM projects have continued to remain in the sphere of natural resource conservation and have not yet sufficiently linked up with national rural development initiatives such as the Poverty Reduction Program, Millenium Development Goals and the Fifth National Development Plan.

6.1.3 Poverty Alleviation

(a) Findings from the study clearly show that the major threat to environmental and natural resource conservation and sustainability is the growing individual household poverty among communities. ZAWA must urgently tackle this by ensuring that each CRB sets aside a certain percentage of their gross revenue (approximately 30% but depending on the total income) in a community fund which will be equally distributed to all CRB members at the end of each financial year with a strong emphasis on benefits being felt at household level.

(b) The findings from the study are a further proof of the widely acknowledged principle that the effectiveness of development efforts, particularly in rural communities, is closely linked to social capital which enables cooperation,

mutual trust and optimises solutions to many problems. As results have shown, decentralization may not be effective if social capital has dissipated. The weakening of social capital has important implications for the implementation of development strategies.

6.2   RECOMMENDATIONS

From the information available from this study, the following recommendations are made to Zambia Wildlife Authority (ZAWA) in an effort to help improve the form of environmental skills, knowledge and attitudes to be devised for both practitioners and participants in order to achieve local, national and international conservation and development objectives.

1.   The present (2008) ZAWA's wildlife conservation agenda is sectoral and narrowly focused on the commercial value and benefits of wildlife conservation. ZAWA must in this regard pay greater attention to broader environmental and conservation perspectives and examines weaknesses in the current (2008) system which has to do with legislation itself, its implementation and enforcement.

2.   In terms policy, results from the study show that Zambia lacks a clear and integrated national environmental policy on CBNRM out of which can be formed suitable environmental legislation. ZAWA should therefore adopt an integrated participatory approach to conservation using the agency of environmental education.

3. Poverty eradication must be directed at individual household level since that is where exploitation of resources for sustainable livelihoods by the poor occurs. In particular, results have clearly shown that the most prominent cause of poverty among self-assessed poor households was the inability to afford the cost of agricultural inputs such as fertilizer and seeds. The study specifically recommends that;

(a) Each CRB should set aside a certain percentage of the gross revenue (approximately 30% but depending on the total income) in a community investment fund, which will be equally distributed to all community members at the end of each financial year with a strong emphasis on benefits being felt at household level.

(b) ZAWA should review the impact of the current (2006) CBNRM policies on rural poverty in order to come up with an effective policy regime for CBNRM.

5. Results have further shown that current (2006) community sensitisation strategies are inadequate. ZAWA must therefore, pay particular attention to effective recognition of communication with communities and stakeholders if challenges associated with interpreting and implementing a supportive CBNRM policy have to be addressed.

6. One of the key mechanisms for ensuring the equitable participation of both women and men in CBNRM is a written constitution that governs the functioning of the community based organisation. Findings from this study indicate that;

(i)   although CRBs are legally constituted and registered organizations, implementing the organizational structure has been difficult and show weakness at the staffing and operational level. For instance, the constitutions do not show clarity in operational terms, of who is the most senior amongst staff, reporting relationships and lines of communication including the recognition of the Village Action Group (VAG) as the basic unit of conservation in Zambia while the CRB is an administrative structure.

(ii)   When asked about this, the community's answer for the order of hierarchy in CRBs appeared to be in direct response to suggestions from the supporting agency; ZAWA. Does this represent a loss of control? In communities whose constitution considered all members to be of equal status, women, ethnic minorities and poor households risked being marginalized. In this case, careful facilitation in the initial mobilisation phase of communities will help improve representation.

ZAWA must therefore make amendments to the Act to address the above concerns.

7. The study found that despite many years of formal policy implementation, devolution has largely remained contested because of the difficulty of

wrestling significant management authority from the state. In view of the above, ZAWA must provide clear devolution of power to communities.

8. Individuals' perceptions of dimensions and characteristics of poverty are not always well reflected in the objective poverty measures, which are mainly based on household expenditure data. In this study, the measure of poverty was purely subjective; based on the perception of the respondents being enumerated. To this effect, a valid finding of this study is that ZAWA should take into account the poor persons' perception of poverty during the development and formulation of any anti-poverty policies and programmes.

8. Another important finding is that Zambia's CBNRM is not formal, but is embedded in a range of existing environmental Acts. The study recommends that ZAWA addresses the weaknesses in the current (2006) system which had to do with legislation itself, its implementation and enforcement.

9. In as far as CBNRM rural development perspectives are concerned, the findings of this study show that at the moment (2006) natural scientists dominate biodiversity research in Zambia. As a result CBNRM projects have continued to remain in the sphere of natural resource conservation and have not yet sufficiently linked up with planned national rural development initiatives contained in programmes such as the Poverty Reduction Programme (PRP), Millenium Development Goals (MDGs) and the Fifth National Development Plan (FNDP).

10. Furthermore, ZAWA should make every effort to investigate the role of legal and social factors, such as land tenure and property rights in promoting bio-diversity management in CBNRM projects. ZAWA must ensure that adequate consultations are in this respect made with stakeholders.

Finally, it is important to note from this study that at the moment (2006) there is no specific draft policy on CBNRM. However, the 1998 wildlife Act while recognising the need for representation of interests of all community members in CBNRM does not really address issues such as the fact that social differences between men and women, or between different ethnic groups, may affect peoples ability to influence decisions to suit their specific needs.

Even so, working towards equality of opportunity in CBNRM does not need to threaten traditional institutions or the breakdown of economic tasks and responsibilities. If too many social changes are imposed on rural communities, they will feel threatened, and resist. This could seriously undermine the viability of a CBNRM project. Because of this, interventions should be flexible in order to accommodate variations in attitudes both over time and from one location to another.

7.0   Suggestions for Future Research.

In order to overcome obstacles to the mobilization of multiple perspectives in environmental and biodiversity conservation policies, there is need for future research to focus on identifying what makes communities resilient and making explicit the pervasive constraints that characterize natural resource conflicts.

8.0   **Closing Remarks**

To the extent that this study has critically reviewed CBNRM participants' and practitioners knowledge and skills of environmental and biodiversity conservation policies and issues to achieve local and international development and conversation objectives, the main conclusions are that;

- there is still very little natural resources monitoring undertaken and management decisions made by the communities.

- monitoring is not based on a blend of indigenous and contemporary community knowledge, strengthened by resource management guidelines from ZAWA. Instead, final decisions over key resources are still the responsibility of ZAWA.

- most of the current (2006) CBNRM policies were introduced centrally as a response to internal or external political pressure, but not in response to specific local natural resources management initiatives or actual experiences of local people.

- environmental and biodiversity conservation will remain a pipe dream unless CBNRM projects take into account poor people's perception of poverty during the development and formation of any anti-poverty policies and programmes.

This study therefore concludes that a great deal of work is required to make explicit the need to open up 'closed bodies of knowledge.' Treating each of these different modes as valid enables a synthesis of knowledge and understanding, enhancing contextual sensitivity and thus improving adaptive capacity.

REFERENCES

Adams, W. & Hulme, D. (2001) **Changing Narratives, Policies & Practices in African Concervation in African Wildlife and livelihoods**: The promise and performance of community conservation, Cape Town, David Philip.

Adams, W.M., and Hulme, D. (1999) **Conservation and Communities: Changing Narratives, Policies and Practices in African Conservation** in Hulme, D. and Murphree, M. (2001) Editors. **African Wildlife and Livelihoods: The Promise and Performance Livelihoods of Community Conservation**. Oxford: John Curry Ltd, Portsmouth NH: Heinemann.

Adams, W.M., and Hulme, D. (2001) **If Community Conservation is the Answer in Africa, What is the question?** Oryx 35 (3) 193-200, Fauna and Flora International.

Agarawal, A. & Gibson, C.C. (1999**) Enchantment and Disenchantment: The Role of Community in Natural Resource Management in World Development**, Vol. 27, No. 4, pp.629-664

Agarawal, A. (1995) **Dismantling the Divide between indigenous and Scientific Knowledge in Development and Change**. Vol. 26, pp.413-439

Agrawal, A., and Gibson, C., (1999) **Enchantment and disenchantment: the role of community in natural resource conservation.** World Development, 27(4), 629-650

Ainslie, A. (1999) **When Community is not enough: Managing Common Property Natural Resources in Rural South Africa**, Development Southern Africa, Vol.16, No. 3, pp. 375-401

Anstey, S. (2001) **Necessarily Vague in Hulme & Murphree (eds) African wildlife and Livelihoods**, Oxford, James Currey.

Barrow, E., and Murphree, M. (2001) **Community Conservation from Concept to Practice: A Practical Framework** in Hulme, D. and Murphree, M. (2001) Editors. **African Wildlife and Livelihoods; The Promise and Performance Livelihood of Community Conservation**. Oxford: John Curry Ltd. Portsmouth NH: Heinemann

Bernard, H.R. (2002) Research Methods in Anthropology: Qualitative and Quantitative Methods, 3rd Edition, Alta Miira Press, England.

Bernard, R. (1994) **Research Methods in Anthropology, Qualitative and Quantitative Approaches**, London, Routledge.

Bond, I. (2001) CAMPFIRE and the Incentives for Institutional Change in Hulme, D. and Murphree, M. (2001) Editors. **African Wildlife and Livelihoods: The Promise and Performance Livelihood of Community Conservation**. Oxford: John Curry Ltd. Portsmouth NH: Heinemann

Bryant, R.L. (1997) **Beyond the Impasse: the Power of Political Ecology in Third World Environmental Research in Area**, Vol. 29. No.1, pp.5-19.

Burton, D. (2000) **Research Training for Social Scientists**, London, Sage Publications.

Cassidy, L. (2000) **CBNRM and Legal Rights to Resources in Botswana**. IUCN/SNV CBNRM Support Programme. Bay Publishing Company. Gaborone, Botswana.

Cassidy, L., and Madzwamuse, M. (1999) Eds; **Community Mobilisation in Community Based Natural Resources Management in Botswana**. Report of Workshop Proceedings. December 9-11, 1998. Francistown. Botswana.

Central Statistical Office (1995); **1990 Census of Population, Housing and Agriculture: Zambia Analytical Report**, Vol. 10, Government Printers, Lusaka, Zambia.

Central Statistical Office (2003); **2000 Census of Population and Housing: Zambia Analytical Report**, Vol. 10, CSO, Lusaka, Zambia.

Central Statistical Office (2004); **Living Conditions Monitoring Survey Report 2002-2003**, CSO, Lusaka, Zambia.

Chambers, R. (1994) **Participatory Rural Appraisal (PRA), Analysis of Experience in World Development**, Vol. 22, No. 9, pp. 1253-1268.

Child, B. and Bergstrom, C. (2001) **Community Wildlife Management in Zambia: Testing Indicators of Sustainable Use in a Case Study of South Luangwa.** Norwegian Agency for Development (NORAD)/ World Conservation Union (IUCN) Socio-economic Programme.

Chisulo, W. (1995) **The Zambian Approach to the Distribution of Wildlife Revenue** in Steiner, A., and Rihoy, E. Editors. **The Commons without Tragedy: Strategies for Community Based Natural Resources Management in Southern Africa.** SADC Wildlife Teechnical Coordination Unit, Malawi.

Civil Society for Poverty Reduction (2002) Poverty Reduction Strategy Paper; A Civil Society Perspective.

Colchester, M. (1994). **Sustaining the forests: the community-based approach in South and South-East Asia.** Development and Change, 25, 69-100.

Community Based Natural Resources Management and Sustainable Agriculture (CONASA) Project (2002) **Review of Zambia's Natural Resource Policy Documents** (Land, National Parks and Wildlife, Water), Lusaka.

Community Based Natural Resources Management and Sustainable Agriculture (CONASA) Project (2002) **Natural Resources Legislation and Policy Training Workshop Report,** Lusaka.

Community Based Natural Resources Management and Sustainable Agriculture (CONASA) Project (2002) **Policy and Legislative Review of the Fisheries, Forestry, Wildlife and Water Sectors vis-a –vis CBNRM**. Lusaka.

Corchester, M. (2000) **Salvaging Nature: Indigenous People and Protected Areas in Ghimire**, K.B. and Pimbert, M.P. (2000) Editors. **Social Change and Conservation**. Earthscan Publications, UK.

Cross N. (2002) **Sustainable Development Explained in Developments** Issue No.18, Department for International Development, DFID

Dalal-Clayton, B. and Child, B. (2001) **Lessons from Luangwa. International Institute for Environment and Development**, Wildlife and Development Series No.13

Davids, I., Theron, F., & Maphunye, K.J. (2005) **Participatory Development in South Africa: A Development Management Perspective**, Pretoria, Van Schaik Publishers.

Emerton, L. (2001) **The Nature of Benefits and the Benefits of Nature: Why Wildlife Conservation has not benefited communities in Africa** in Hulme, D. and Murphree, M. (Editors).**African Wildlife and Livelihoods: The Promise and Performance Livelihood of Community Conservation**, Oxford: John Curry Ltd, Portsmouth NH: Heinemann

Environmental Council of Zambia (2001) **State of the Environment Report**, Lusaka.

Ghimire, K.B. and Pimbert, M.P. (2000) Editors. **Social Change and Conservation: Environmental Politics and Impacts of National Parks and Protected Areas**. Earthscan Publications, UK

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

Gray, A. (1991) **The Impact of Biodiversity Conservation in Indigenous Peoples** in Shiva, V. (1991) Editors. **Biodiversity, Social and Ecological Perspectives**, London, Zed Books.

Gujadhur, T. (2000) **Organisations and their approaches in Community Based Natural Resources Management in Botswana, Namibia, Zambia and Zimbabwe**. Gaborone, Botswana.

Gujadhur, T. (2001) **Joint Venture Options for communities and Safari Operators in Botswana**. IUCN/SNV CBNRM Support Programme Paper No. 6. www.cbnrm.bw

Hachileka, E., Chundama, M., and Mupimpila, M., (1999) **The Effectiveness of Benefit –Sharing in Community Based Wildlife Resource Management Programmes in Zambia**. Social Recovery Project, Lusaka

Hardin, G. (1968) **The Tragedy of the Commons** in Science162, pp.1243-1248

http://wildnetafrica.co.zacites/info/vfs essay 007.html

http://wildnetafrica.co.zacites/info/vfs essay 007.html

Hulme, D. (2000) **A Framework for Studying Community Conservation in Africa**. Paper No. 4, Institute for Development Policy and Management IPDM. University of Manchester. http://www.man.ac.uk/ipdm

Hulme, D. and Murphree, M. (2001) Eds. **African Wildlife and Livelihoods; The Promise and Performance Livelihood of Community Conservation**. Oxford: John Curry Ltd. Portsmouth NH: Heinemann.

IIED (1994) **Whose Eden? An Overview of Community Approaches to Wildlife Management, International Institute for Environment and Development.** London.

Jackmann, H. (1998) **Monitoring Illegal Wildlife Use and Law Enforcement in African Savana Rangelands**. Wildlife Resource Monitoring Unit. Environmental Council of Zambia, Lusaka, Zambia.

Jones, B.T.B. (2004) **Synthesis of the current status of CBNRM Policy and Legislation in Botswana, Malawi, Mozambique, Namibia, Zambia and Zimbabwe**. WWF-SARPO. Harare, Zimbabwe.

Kiss, A. (1990) **Living with Wildlife, Wildlife Resources Management with Local Participation in Africa**, The World Bank, Washington DC.

Knight, J. (ed) (2000) **Natural Enemies, People-Wildlife Conflicts in Anthropological Perspective**, London, Routledge.

Leader-Williams, N., and Milner-Gulland, E.J. (1993) **Politics for the Enforcement of Wildlife Laws: The Balance between Detection and Penalties in Luangwa Valley**, Zambia. Conservation Biology, Vol. 7, No.3:611-617

Lewis, D.M., and Phiri, A. (1998) **Wildlife Snaring-An Indicator of Community Response to a Community –based Conservation Project**. Oryx, 32(2), 111-121. Fauna and Flora International.

Little, P.D., (1994) **The Link Between Local Particpation and Improved Conservation: a review of issues and experiences** in Western, D. and Wright, M. (Editors) **Natural Connections: Perspectives in Community-based Conservation**. Island Press.

Lynch, O.J., and Talbott, K. (1995) **Balancing acts: Community-based forest management and national law in Asia and the Pacific**. Washington , DC: World Resources Institute.

Madzudzo, E. (1998) **Community Based Natural Resources Management in zimbabwe: Opportunities and Constraints**. Centre for Applied Social Sciences, University of Zimbabwe. CASS Working PaperNRM Series, CPN 101/98.

Makombe, K. (1994) Editor, **Sharing the Land: Wildlife, People and Development in Africa**. IUCN Regional Office for Southern Africa. Environmental Issues, Series No. 1. IUCN/ROSA, Harare, Zimbabwe and IUCN/SUWP, Washington DC, USA.

Matenga, C. (2002) **Conservation Development Programmes in Protected Areas: Perspectives of Land Use in Game Management Areas in Zambia**. Paper presented to the 9th Biennial Conference of the International Association for the Study of Common Property (IASCP), 'The Commons in an age of Globalization'. 17-21 June, 2002, Victoria Falls, Zimbabwe.

Mberengwa, I. (2001) **CBNRM in Southern Africa: A Regional Programme of Analysis and Communication- The Legal Aspects of Governance in CBNRM, the Southern African Perspective.** Papers presented to the 2nd Regional Workshop held at the University of Western Cape, South Africa, 12-17 October, 2000. Southern African Commons Occasional Paper, Series No. 7/2001.

Ministry of Environment and Natural Resources-MENR (1994) **National Environmenta Action Plan (NEAP)**, Government of the Republic of Zambia.

Ministry of Finance and National Planning (2002) **Zambia Poverty Reduction Strategy Paper 2002-2004**. Government of the Republic Zambia

Moris, J. (1987) in Adams, W.M., and Hulme, D. (2001) **Conservation and Communities: Changing Narratives, Policies Practices in African Conservation** in Hulme, D. and Murphree, M. (2001) Editors. **African Wildlife and Livelihoods; The Promise and Performance Livelihood of Community Conservation.** Oxford: John Curry Ltd. Portsmouth NH: Heinemann.

Moyo, S., O'keefe, P., & Sill, M. (1993) **The Southern African Environment, Profiles of SADC Countries,** London, Earthscan Publishers Ltd.

Munthali,S.(1993) **Traditional and Modern Wildlife Conservation in Malawi: The Need for an Integrated Approach.** Oryx 27 (3) 185-187 Fauna and Flora International. Washington D.C

Mwenya, A.N., Lewis, D.M., and Kaweche, G.B. (1990) **ADMADE: Policy, Background and Future,** National Parks and Wildlife Service, New Administrative Management Design for Game Management Areas, Lusaka.

Namafe C.M. (2004) **Flooding in the Context of the Barotseland People of the Upper Zambezi Wetlands,** Southern African Journal of Environmental Education, Vol.21, pp.50-60

Namafe C.M. (2006) **Environmental Education in Zambia: A Critical Approach to Change and Transformation,** University of Zambia Press, Lusaka.

Nhantumbo, I., Norfolk, S. & Pereira, J. (2003) **Community Based Natural Resources Management in Mozambique, A Theoretical or Practical Strategy for Local Sustainable Development?** Brighton, University of Sussex.

Orlove, B., & Brush, S. (1996) **Anthropology and the Conservation of Biodiversity** in **Annual Review of Anthropology**, Vol. 25, pp.329-352.

Ostrom, E. (1990) **Governing the Commons-the Evolution of Institutions for Collective Action**, Cambridge, Cambridge University Press.

Schuurman, F.J. (1993). **Introduction: development theory in the 1990's**. In F.J. Schuurman (Editor), Beyond the Impasse: New directions in development theory. (pp.1-48). London: Zed Books

Sichilongo M. (2003) **The Significance of Community Resourc Boards (CRBs) in Zambia For Achieving National and International Connservation Objectives.** Un published M.Sc. Thesis, University of Kent, The United Kingdom.

Solomon, A. & P. Le Grange (2006). **The Convention on Biological Diversity: biodiversity, access and benefits-sharing. A resource for teachers.**
(Grades 10-12), SANBI, Pretoria, South Africa.

Van Heerden.S.W (2005) **Relative Sustainability: The Tragedy of the commons, trees, institutions and environment in Manica, Mozambique.**
Unpublished B.A. Hons thesis, Department of Anthropology & Development Studies, University of Johannesburg.

APPENDICES

APPENDIX I: QUESTIONNAIRE FOR ORDINARY COMMUNITY RESOURCE BOARD MEMBERS IN SOUTH LUANGWA GAME MANAGEMENT AREA

NAME OF COMMUNITY RESOURCE BOARD..

NAME OF RESPONDENT...

AGE...   SEX...............................

VILLAGE...

INSTRUCTIONS

Answer the following questions by ticking (✓) 'Yes' or 'No' according to your choice.

1.   Are you aware of the convention on Biodiversity?

    (a)   Yes   ☐

    (b)   No   ☐

2.   Do you understand the Zambia Wildlife Act No. 12 of 1998?

    (a)   Yes   ☐

    (b)   No   ☐

3.   Is the method and language used in awareness appropriate for the targeted audience?

    (a)   Yes   ☐

    (b)   No   ☐

4.   Do you think more still needs to be done to ensure equitable and sustainable use of the biodiversity resources?

    (a)   Yes   ☐

    (b)   No   ☐

5.   Has environmental awareness enhanced your participation in community resource management?

    (a)   Yes   ☐

(b)   No   ☐

6.   Do you think the strategies/approach(es) used to disseminate environmental and biodiversity awareness are appropriate?

(a)   Yes   ☐

(b)   No   ☐

7.   Are there certain policies of the Zambia Wildlife Act you find difficult to interpret?

(a)   Yes   ☐

(b)   No   ☐

8.   Did you attend any environmental education awareness workshop in community?

(a)   Yes   ☐

(b)   No   ☐

APPENDIX II: QUESTIONNAIRE FOR COMMUNITY RESOURCE BOARD EXECUTIVE COMMITTEE MEMBERS IN SOUTH LUANGWA GAME MANAGEMENT AREA

NAME OF COMMUNITY RESOURCE BOARD:....................................

NAME OF RESPONDENT..

AGE...   SEX................................

VILLAGE..

INSTRUCTIONS

Answer the following questions by ticking (✓) 'Yes' or 'No' according to your choice.

1.   Is the right to participate in CBNRM the same for all members?

      (a)   Yes   ☐

      (b)   No   ☐

2.   Does the 1998 Wildlife Act allow communities to manage wildlife in total?

      (a)   Yes   ☐

      (b)   No   ☐

3.   CBNRM does not provide enough individual incentives to promote sustainable use of natural resources.

      (a)   Yes   ☐

      (b)   No   ☐

4.   The opportunity to benefit from CBNRM is the same for all community members irrespective of gender, age, ethnic group or social status.

      (a)   Yes   ☐

      (b)   No   ☐

5.   Do all CRB members enjoy the same equity of benefit from CBNRM?

      (a)   Yes   ☐

(b)　No　☐

6.　CBNRM wildlife initiative in Zambia predominantly focus on generating financial benefits.

(a)　Yes　☐

(b)　No　☐

7.　Are the current environmental and biodiversity sensitization approaches adequate?

(a)　Yes　☐

(b)　No　☐

8.　Current awareness strategies and conservation policies are sectorial.

(a)　Yes　☐

(b)　No　☐

APPENDIX III : Map of Zambia

National Parks and G.M.As of Zambia

Legend:
- Zambia international boundary
- Major river
- Lakes
- River
- National parks
- Game Management Areas
- Zambia international boundary.shp

Labels visible on map: Nyika, Musalangu, Mukungule, North Luangwa, Munyamadzi, Luawata, Chikwa, Chifunda, Lupande, Sandwe, South Luangwa, Chisomo, West Petauke, Luano, Rufunsa, Lower Zambezi, Chiawa, Chembeshi, Bangweulu, Kafinde, Luwingu, Isangano, Lavushi Manda, Kasanka, Lake Tanganyika, Kaputa, Mweru Wantipa, Nsumbu, Lusenga, Lake Mweru, Lake Bangweulu, Isanga, Lunsemfwa, Blue Lagoon, Lochinvar, Kafue Flats, Mumbwa, Namwala, Nkala, Bilili, Mulobezi, Sichifulo, Kasonso Busanga, Lunga Luswishi, Lunga River, Kafue N.Park, Kabompo River, Mufele, Mabbo, Chibwika Ntambu, West Lunga, Lukwakwa, Chizela, Zambezi River, Luiwa, West Zambezi, Kafue River, Lungu, Luangwa River, Luembe

APPENDIX IV: ZAWA-Directorate of Game Mgt. Areas Organisation Structure

```
                          ┌──────────────┐
                          │ Area Warden  │
                          └──────────────┘
        ┌───────────┬───────────┬────────────┬────────────┐
┌──────────────┐ ┌──────────────┐ ┌──────────┐ ┌────────────────┐ ┌──────────┐
│Tourism Roads │ │ Ant-Poaching │ │  CBNRM   │ │ Admin. Accounts│ │ Research │
└──────────────┘ └──────────────┘ └──────────┘ └────────────────┘ └──────────┘
                                 ┌──────────────────┐
                                 │ Extension Officer│
                                 └──────────────────┘
   ┌──────┬──────┬──────┬──────┬──────┐
┌─────┐ ┌─────┐ ┌─────┐ ┌─────┐ ┌─────┐ ┌─────┐
│ CLA │ │ CLA │ │ CLA │ │ CLA │ │ CLA │ │ CLA │
└─────┘ └─────┘ └─────┘ └─────┘ └─────┘ └─────┘
                     ┌────────┐
                     │ Driver │
                     └────────┘
┌──────────┐ ┌─────────────┐ ┌──────────┐ ┌──────────┐ ┌─────────────┐ ┌──────────┐
│Jumbe CRB │ │ Kakumbi CRB │ │Nsefu CRB │ │Msoro CRB │ │ Mkhanya CRB │ │ Malama   │
│          │ │             │ │          │ │          │ │             │ │ CRB      │
└──────────┘ └─────────────┘ └──────────┘ └──────────┘ └─────────────┘ └──────────┘
┌──────┐ ┌──────┐ ┌──────┐ ┌──────┐ ┌──────┐ ┌──────┐
│ VAGs │ │ VAGs │ │ VAGs │ │ VAGs │ │ VAGs │ │ VAGs │
└──────┘ └──────┘ └──────┘ └──────┘ └──────┘ └──────┘
```
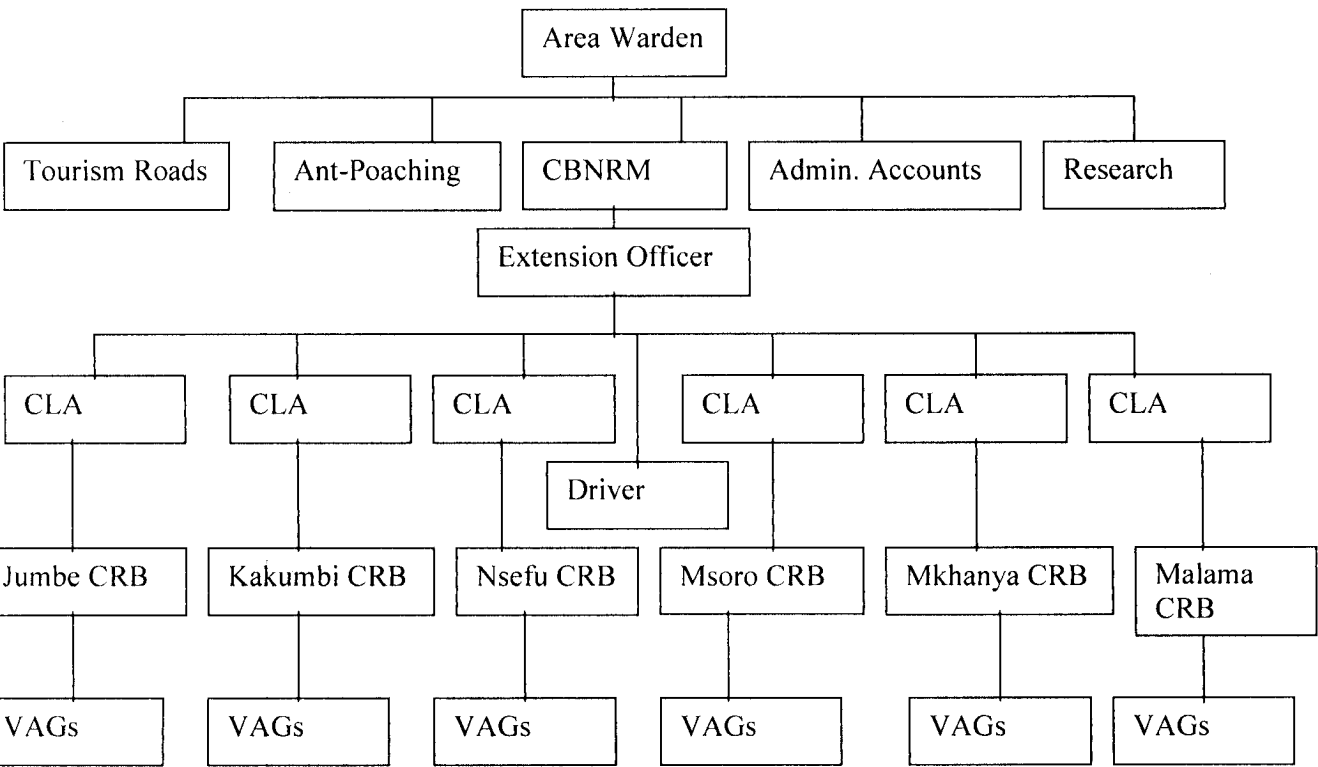
APPENDIX V: Proposed Implementation Plan

The essential argument of this study is that the research cases presented in this volume have surprisingly exposed the failure by CBNRM practitioners and other facilitators to use a holistic approach to Environmental and Social issues such as the high poverty levels among the rural communities, in organizing the teaching and learning of community conservation. This will help raise community awareness and participation.

The communities studied have amply demonstrated how important facilitation skills are for CBNRM practitioners. The success of delivering policy impacts from a participatory context depends crucially on the skills and initiative of the facilitator. One reason for the spread of CBNRM is that practitioners have worked out a repertoire of practices and institutions that can make sense both to villagers and to government officials, enabling cooperation even where objectives may differ. This approach is an attempt to clarify strengths and weaknesses in semi quantitative manner. However, it should be realized that the results are indicative, and the relative scores are more important than the absolute ones.

Table 4: Lesson plan and Activities

	Environmental issues and depletion of resources
4.1 Topic: Understanding the CBD	
Learning Area: Life Orientation	**Integration:**
Learning Outcomes: Citizenship Education	
Assessment Standards: Identify social and environmental issues and participate in a group project to address a contemporary social and environmental issue (e.g. the role of the state and individual as a signatory to the CBD)	
Assessment Method: Group Assessment Assessment Tool: Marking Grid	Prior Learning: Understanding the role of policies and legislation.
Resources: A copy of the Zambian Constitution, The National Environmental Action Plan (NEAP), The Zambia Wildlife Act (1998). Any relevant policies and conservation posters.	
Teacher Activity: Provide some information on What biodiversity is. Explain the role of policies and legislation. Define the difference between national and international policies.	

Activity 1.

Distribute a hand out to learners (see Appendix) and ask them to read the content and answer the questions:

1. Describe the aims of the Convention on Biological Diversity in your own words.

2. How are the three objectives of the CBD relevant to your life?

Refer to the responsibility statements in the CBD. Select the statements that mention one of the following issues:

- Rights of the state
- Capacity-building
- Environmental Impact Studies
- International collaboration
- Supportive environmental policies

Activity 2

Divide learners into groups and allocate them tasks for general presentation to the class on the following issues:

➤ Introduce the Convention on Biodiversity.

➤ Explain its purpose and objectives.