

**EVALUATION OF THE PERFORMANCE OF COMMUNITY-BASED NATURAL RESOURCES  
MANAGEMENT (CBNRM) PROJECTS ALONG AN ARIDITY GRADIENT IN BOTSWANA**



**A THESIS SUBMITTED IN FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE OF**

**MASTER OF SCIENCE**

**OF**

**RHODES UNIVERSITY**

**BY**

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**OCTOBER 2012**

## **Abstract**

The Botswana Community Based Natural Resources Management (CBNRM) programme started in 1989. Its aims were to promote sustainable development through sustainable natural resources management and utilisation to improve rural livelihoods. The country CBNRM programme has recorded mixed outcomes and this has raised questions on the programme performance throughout the country. Since the programme has been recognised as one of the eight main livelihood strategies for rural communities in Botswana, there was a need to evaluate the programme performance and determine the factors that influence it. This thesis therefore evaluated the performance of CBNRM projects along an aridity gradient in Botswana and by so doing answered the two research questions of:

(1) What factors influence the performance of CBNRM? And (2) how does aridity influence the performance of CBNRM programmes?

Performance was determined in terms of financial benefits generated by CBNRM projects and the projects adherence to the CBNRM principles. Data were collected from seven selected CBNRM projects covering three aridity zones (wet, medium rainfall and dry areas) in the country. Data were also collected from key informants and community based organisations (CBO) project managers. Research findings have indicated differences in the performance of CBNRM projects across the identified three aridity zones. Factors that influenced the performance of CBNRM projects varied among the three aridity zones. These factors included: existence of complimentary rules and regulations for managing CBNRM projects; literacy levels of communities involved in CBNRM; ethnic composition of the project communities; historic and current socio-economic trends within communities; collaboration between CBNRM institutions and other local level institutes; amount of benefits generated through the projects; ability of institutions to resolve outstanding issues in time and type of CBNRM project. Research results also indicated that there was variation in the performance of CBNRM projects across the three aridity zones. Aridity was found to directly influence the performance of CBNRM projects through its influence on the amount of revenues that projects generated.

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## **Acronyms**

|           |  |
|-----------|--|
| BNRMP     | Botswana Natural Resources Management Programme                              |
| BRIMP     | Botswana Rangeland Inventory and Monitoring Project                          |
| BSAP      | Biodiversity Strategy and Action Plan  |
| BWP       | Botswana Pula  |
| CBNRM     | Community-Based Natural Resources Management                                 |
| CBNRM-PPI | Community-Based Natural Resources Management - Project Performance Indicator |
| CBO       | Community Based Organisation   |
| CECT      | Chobe Enclave Conservation Trust   |
| CEG       | Community Escort Guide   |
| CHA       | Controlled Hunting Area  |
| CSO       | Central Statistics Office  |
| CTT       | Cgaecgae Tlhabololo Trust  |
| DSM       | Department of Surveys and Mapping  |
| DWNP      | Department of Wildlife and National Parks                                    |
| GH        | Ghanzi   |
| GLB       | Ghanzi Land Board  |
| GoB       | Government of Botswana   |
| IT        | Information Technology   |
| IUCN      | International Union on Conservation of Nature                                |
| JV        | Joint Venture  |
| JVA       | Joint Venture Agreement  |
| JVP       | Joint Venture Partnership  |
| KCS       | Kalahari Conservation Society  |



|       |  |
|-------|--|
| KD    | Kgalagadi                                      |
| KDT   | Khwai Development Trust                        |
| KKDT  | Khawa Kopanelo Development Trust               |
| KLB   | Kgalagadi Land Board                           |
| LUMP  | Land Use Management Plan                       |
| LUP   | Land Use Plan                                  |
| MDGs  | Millennium Development Goals                   |
| MOMS  | Management Oriented Monitoring System          |
| NACSO | Namibian CBNRM Support Organisation            |
| NEEM  | Nascent, Emerging, Evolving and Mature         |
| NG    | Ngamiland                                      |
| NGO   | Non-Governmental Organisation                  |
| NIP   | National Implementation Plan                   |
| ODMP  | Okavango Delta Management Plan                 |
| OKMCT | Okavango Kopano Mokoro Community Trust         |
| PA    | Protected Area                                 |
| POPs  | Persistent Organic Pollutants                  |
| RAD   | Rural Area Dweller                             |
| RADP  | Rural Area Dweller Programme                   |
| RALE  | Registered Accountable Legal Entity            |
| RISDP | Regional Indicative Strategic Development Plan |
| SADC  | Southern African Development Community         |
| SNV   | Netherlands Development Agency                 |
| TAC   | Technical Advisory Committee                   |

|        |   |
|--------|---|
| TLB    | Tawana Land board   |
| STMT   | Sankuyo Tshwaragano Management Trust                      |
| UN     | United Nations  |
| UNCBD  | United Nations Convention on Bio-Diversity                |
| UNCCD  | United Nations Convention on Combating of Desertification |
| UNEP   | United Nations Environmental Programme                    |
| UNESCO | United Nations Scientific and Cultural Organisation       |
| UNFCCC | United Nations Framework Convention on Climate Change     |
| US\$   | United States dollar                                      |
| USAID  | United States Aid for International Development           |
| WCMP   | Wildlife Conservation and Management Programme            |
| WCS    | World Conservation Strategy                               |
| WMA    | Wildlife Management Area                                  |
| XDT    | Xhauxwatubi Development Trust                             |
| XNRCT  | Xwiskurusa Natural Resources Conservation Trust           |

## CHAPTER ONE

### Introduction

#### 1.1 Introduction

Our planet's rich biodiversity is the foundation which underpins human well-being (UN, 2005; IUCN, 2009). It is the interactions of humans and the ecosystems that have shaped the world and the utilisation patterns that we have today. Human well-being and continued existence is solely dependent on the environment and its associated ecosystem services. Though part of the environment, humans have through their activities brought about diverse and in most cases negative environmental changes which are evident today (Rockstrom *et al.*, 2009). These include a build up in greenhouse gases, deforestation for agriculture and other purposes, and over-utilisation of resources that exist on earth. Of the resultant changes that have occurred, the one that has had the greatest consequences for both humans and other species is the change in vegetation cover, which has resulted in habitat loss and therefore a decline in bird and other animal species populations (Ford *et al.*, 2009).

The human-environment interactions that have occurred over centuries have culminated in different or unique ecosystem management and natural resources utilisation patterns. Evidence of this can be found in the conservation ethics that have been enshrined within people's religions and beliefs for centuries, and present day literature indicates that, traditionally, people relied heavily on the abundant wild natural resources that surrounded them (Fabricius, 2004; IUCN, 2009). Over time, elaborate resources management systems emerged, thus the traditional ecological knowledge systems and institutions could serve as an important entry point to sustainable management and conservation of natural resources (Phuthago and Chanda, 2004).

Rural communities world-wide are heavily dependent on the environment and natural resources for their livelihoods, through daily usages such as food provision, medicinal purposes and other uses (Millenium Ecosystems Assessment (MA), 2005). With increases in the world population,

pressure has been exerted on natural resources, especially biodiversity, and the protectionist approaches to conservation that have tended to marginalize local communities have not helped the situation (Phethego and Chanda, 2004). Though nature, in some form, has survived the rash actions of human societies that are based on ever-growing consumption of resources (IUCN, 2009), activities such as agriculture (which is the life-line of rural communities) have transformed most of the landscape (IUCN, 2009). This has also adversely affected biodiversity. Norris (2008) states that if we want to retain biodiversity in agricultural landscapes, we need to understand better the value (both social and economic) to man, and to develop mechanisms to retain the value to rural communities managing the land. Besides increases in land areas under use over time, there has also been an increase in the use of other natural resources by the rural communities.

Intensive human uses of resources in the late 19<sup>th</sup> and early 20<sup>th</sup> centuries and the rampant patterns of exploitation processes drastically affected the resources, and compromised the conservation of the natural resources and sustainable development (Amankwah, 2007). In Africa, natural resources management and development patterns were largely influenced by “imposed” colonial ideals (Fabricius, 2004), which destroyed the traditional value system and left nothing in its place (Sibanda, 1998); thus the fate of the environment and natural resources conservation was in an indeterminate state. Realizing the damaging effects of the conservation and use patterns of natural resources in the late 19<sup>th</sup> and early 20<sup>th</sup> century, the international community took initiatives to remedy the situation. Thus efficient management and sustainable use of natural resources has since become a question of survival in the entire world in the face of ever increasing population numbers (Brook *et al.*, 2008; Lindenmayer *et al.*, 2008; Aslin *et al.*, 2009; Matose and Watts, 2010). It is within this realm that CBNRM was conceptualised.

## **1.2 Community-based natural resources management (CBNRM)**

Several definitions of CBNRM have been given by different stakeholders (NACSO, 2001; Fabricius, 2004; GoB 2007b and Dressler *et al.*, 2010). Different definitions given by these stakeholders all refer to the significance of community involvement in natural resources management and conservation, for sustainability and development. This is the basis of the

CBNRM approach. The Namibian association of CBNRM support organisation (NACSO, 2001) defines CBNRM as the management of natural resources under a defined plan developed and agreed to by all concerned stakeholders. The approach is community based in that the community managing the resources has the legal rights, the local institutions and the economic incentives to take substantial responsibility for sustainable use of the resources. Under the natural resources management plans, communities become the primary implementers assisted and monitored by technical services. CBNRM is also defined as a concept that is used to refer to an approach that combines rural development and natural resources conservation (Cassidy *et al.*, 1999). It is also defined as the name commonly used for integrated approach to rural development and wildlife conservation experimented with in the early 1980's (Gujadhar, 2000). Of these three definitions, the definition by the Namibian association of CBNRM support organisations is more comprehensive and encompasses all issues depicted in the other two definitions and therefore that definition was adopted for the purpose of this study. There are pressing socio-economic and environmental concerns and challenges in the current millennium (Kates *et al.*, 2009). CBNRM accentuates the importance of environmental resources in development and the need to engage communities and enhance their participation in the development process. In line with the above, Mbaiwa (2004) states that sustainable community development and natural resources management have become intertwined.

The concept of sustainable development originated from environmental thinking about the limitations of natural resources and the use of our ecosystems. Strategies for sustainable development as stipulated in Agenda 21, stress the need to integrate environmental concerns into development and have community participation in natural resources management. (GoB, 2007b). Such allusions are in line with the CBNRM concept which aims at achieving sustainable development by putting more emphasis on the importance of participatory local democracy (whereby the power to make choices and apply accountability is vested in the people rather than in committees and managers) (Child *et al.*, 2009). CBNRM further assumes that the community is the major decision maker and community institutions have the capacity to enforce regulations (Pathak *et al.*, 2004). The success and effectiveness of CBNRM is therefore a milestone in the attainment of sustainable development. In line with the above global trends,

the government of Botswana adopted the CBNRM concept in the early 80s as a means towards sustainable development and environmental conservation.

### **1.3 CBNRM in Botswana**

#### **1.3.1 Background to CBNRM in Botswana**

In the early 1970s, the government of Botswana initiated the development of land use plans (LUPs) in each of the country's eight districts (GoB, 1970). A notable characteristic in these plans was the recognition of the land use conflict between agriculture and wildlife and therefore, in an effort to resolve this, areas adjacent to protected areas (PAs) were set aside for environmental and natural resources management purposes. The areas also acted as buffer zones between the protected areas and agricultural areas. After the adoption of the Wildlife Conservation Policy in 1986, these areas became wildlife management areas (WMAs). The WMAs on tribal and state land constitute 22% of the total land area (GoB, 1992a). Wildlife and natural resources utilisation are the most appropriate land use option for these areas as the land is mostly unsuitable for arable agriculture (GoB, 1986). The WMAs also act as migratory corridors for water-dependent species during the dry season and accommodate wildlife spill-over from the parks during these migrations, and therefore prevent conflict between the protected areas and more intensive agricultural use areas (GoB, 2007a). Within the WMAs are the controlled hunting areas (CHAs), which have been zoned for various types of natural resources use (including both consumptive and non-consumptive uses) under commercial and community management (GoB, 1992a).

The government of Botswana, through the Department of Wildlife and National Parks (DWNP) with funding from United States Aid for International Development (USAID), embarked on the Botswana natural resources management programme (BNRMP) in 1989, to pursue improved conservation of natural resources, which focused mainly in the CHAs within the WMAs (Child *et al.*, 2009). This initiative marked the commencement of the Botswana CBNRM programme. The programme emphasised community involvement in natural resources management due to a number of reasons, including:

- government inability to effectively implement conservation policies due to the huge expanse of the countryside and limited resources (manpower) at its disposal; and
- abundance of natural resources offering a unique opportunity for rural economic diversification, improvement of livelihoods and fight against poverty.

At the initial stages of the programme, there were limited or inadequate policies to guide and facilitate the programme. As the initial guidance to the programme implementation, in 1995 (20<sup>th</sup> November, 1995), the then permanent secretaries of the Ministry of Commerce and Industry and Ministry of Local Government, jointly issued a signed savingram which served to enable communities to receive and retain the benefits received from the use and beneficiation of natural resources that they had access to. To compliment this savingram, the government through the BNRMP then drafted other policy documents to guide community involvement in the resources management and utilization process. As a result, the joint venture (JV) guidelines and later the CBNRM guidelines were drafted to guide natural resources business operations between the community and private sector. These documents were complementary to the Wildlife and National Parks Act of 1992.

Earlier, in 1989 the then Ministry of Local Government Lands and Housing had also categorized the CHAs (which were the basis of CBNRM) into different natural resources use zones in a move to rationalize their management and the related development activities within these areas. Categories designated to the different CHAs were:

- Community managed wildlife utilization in WMAs;
- Community photographic areas in WMAs;
- Commercial photographic areas;
- Commercial multipurpose areas;
- Community managed wildlife utilization in livestock areas; and
- Other CHAs (GoB, 1998).

There is a total of 159 CHAs, each one having its designated primary resource use (GoB, 1992a). With the start of the CBNRM programme in 1989, some specific CHAs were allocated to specific communities residing within or adjacent to these for CBNRM purposes. Natural resources utilization patterns in the country have since been guided by the above-mentioned LUPs and settlement plans which most of the districts have enacted as depicted in the designated uses for the different CHAs.

### **1.3.2 Resource use patterns under the Botswana CBNRM programme**

A sizable proportion of the population of Botswana residing in the remote rural areas is dependent on hunting and gathering. Through advice from the BNRMP, government then sought the commitment of resident rural communities to actively contribute to the conservation and management of natural resources through the adoption of CBNRM. The main assumptions were that by allocating management and user rights to communities who reside in the CHAs for economic benefits where natural resources occur, communities would sustainably manage and utilize these resources.

This set-up then allowed the DWNP to decentralize management responsibilities of wildlife in the WMA to communities and therefore its efforts were now concentrated in the management of protected areas (PAs). With the introduction of CBNRM in the WMAs, communities then concentrated on the management of these areas and this effectively excluded them from protected areas management, therefore abating their possible claim to the PAs (Child *et al.*, 2009). Though excluded from the PAs management through the above explained set up, communities still had some influence in wildlife management issues as WMAs are part of the PAs (by definition). The programme also aimed at enhancing opportunities for communities to stimulate rural development through earned benefits from natural resources and therefore reduce poverty and dependence on government handouts (GoB, 2001).

### **1.3.3 Community eligibility criteria for involvement in CBNRM**

Communities involved in CBNRM are required by government to have representative and accountable registered legal entity (RALE) or community based organization (CBO) in the form of a Trust, in order to be allocated CHAs by the land authorities through a 15 year Head-lease and,



in turn, be allocated wildlife hunting quotas for the CHAs by the DWNP. Detailed eligibility criteria for communities to engage in CBNRM as set out in the CBNRM Policy (GoB 2007b), are that the:

- community must establish a RALE, being the CBO;
- RALE must have a registered constitution or bye-laws to prove representativeness of all community members in the planned venture;
- district authorities, through a technical advisory committee (TAC) under the District Commissioner's office, must have approved the trust, and
- community will then be given rights within a CHA in which it is resident, or the area adjacent to that particular community (GoB, 2007a).

Furthermore, if the community is to use the resources commercially, it is required to:

- draft a land use management plan (LUMP) showing the intended natural resources use and conservation, and
- then request a 15 year lease of the CHA and quotas from DWNP in case of wildlife resource utilisation.

To ensure that the above conditions were met and that there is sustainable management of the resources, the government had to, on a continuous basis; liaise closely with the communities involved in CBNRM and other stakeholders in the co-management of resources. On an annual basis the communities' constitutions and finances are audited to ensure that all community members are involved in the decision-making process and that there is proper utilisation of financial and other benefits derived thereof (equitable utilisation of benefits).

#### **1.3.4 Significance of CBNRM in Botswana**

The economy of Botswana is largely based on the mining sector which accounts for more than 50% of the country's gross domestic product (GoB, 2002b). Though the mining sector has grown rapidly since independence, the highly capital intensive nature of the sector has led to high unemployment and deterioration in the rural income distribution (GoB, 2002a). This leaves a large proportion of the population relying on the agricultural sector, which in turn has seen a

decline in productivity over the years due to poor soils, unreliable rainfall and persistent droughts. The Revised National Policy for Rural Development (GoB 2002a) estimates that 47% of all households in the rural areas cannot meet their basic needs from agriculture. Diversification of the rural economy is a priority and a major challenge, and also an opportunity to fight poverty and sustain livelihoods (GoB, 2007a). CBNRM offers a unique opportunity for this since the country is endowed with invaluable natural resources. The significance of CBNRM in Botswana is further highlighted in the country's National Strategy for Poverty Reduction (GoB, 2003), which has depicted CBNRM as part of the six sustainable livelihoods programmes. There is therefore a genuine need to critically assess the performance of the programme to determine its success factors. This study is an attempt at determining these success factors and the findings will guide in the programme alignment.

#### **1.4 Structure of the thesis**

Chapter One introduces the research problem. It also provides a theoretical orientation of the thesis and highlights the origins of global environmental protection and natural resources conservation strategies and trends since the beginning of the 19<sup>th</sup> century which ultimately prompted the development and adoption of such concepts as CBNRM.

Chapter Two gives a detailed literature review on the issues pertaining to CBNRM and provides a synopsis of the performance of the Botswana CBNRM programme based on secondary data and literature review.

Chapter Three provides the methods, results and discussions related to the survey question on factors that influence the performance of CBNRM (that is, what factors influence the performance of CBNRM), and also determines whether the seven major principles for increasing the success of CBNRM projects have been adhered to in the country programme.

Chapter Four provides the methods, results and discussion related to the survey question on aridity and its effect on the performance of CBNRM (that is, how aridity influences the performance of CBNRM).

Chapter Five gives an overall discussion of the research findings and how they relate to the research hypothesis. This chapter also provides conclusions based on the study results, and makes recommendations on the best approaches or implementation strategies for CBNRM and improvement of the country CBNRM programme.

## **CHAPTER TWO**

### **Literature review and study area**

#### **Introduction**

This chapter presents a general literature review of global conservation and development events which have led to some of the important modern day natural resources conservation and development approaches, of which sustainable development and CBNRM are part of. The chapter further provides an account of the Botswana CBNRM programme from inception to the present and also provides a general introduction to the study area.

#### **2.1 General literature review**

##### **2.1.1 Towards comprehensive environmental protection**

Development processes pursued in the past two centuries involved intensive human use of natural resources and these had negative effects on the environment (Drexhage and Murphy, 2010). These development approaches excluded participation of the grassroots rural communities who depended on the natural resources for their livelihoods. In some cases communities were forced to move from areas intended for conservation. Such coercive conservation was detrimental to the rural people's livelihoods, the environment and natural resources in general (Hitchcock, 1995). The decade of economic and political crisis in Africa in the 1980s and 1990s also exposed the weaknesses of states and challenged their continued socio-economic dominance over civil society through interventionist and intrusive state-led development strategies (Wardel and Lund, 2006). In an effort to address the apparent environmental challenges which had become more apparent during the 1970s, the first environmental conference was held in Stockholm in 1972 (UNCED, 1992). A number of initiatives to address environmental issues followed this conference over the years, including the formulation in 1980 of the United Nations Environmental Programme (UNEP), the International Union on Conservation of Nature (IUCN), the World Conservation Strategy (WCS)

and ultimately the holding of the 1992 Rio de Janeiro Earth summit which came up with the important Rio Declaration (UNCED, 1992).

The last is important as it came up with three significant instruments which are pertinent to natural resources conservation and sustainable development. These are:

- The Rio declaration on environment and development, which recognizes the potential of indigenous people and other traditional or local people for the management and development of ecosystems through the deployment of traditional knowledge systems.
- Agenda 21; which is a comprehensive plan of action to be implemented at global, national and local levels, and
- The United Nations Convention on Biological Biodiversity (UNCBD); which is the world's first legal instrument on biodiversity and its conservation. It is also significant for its objective of equitable sharing of the benefits from the exploitation and use of genetic resources (UNCBD Document, Article 8(J) and Article 10 (C)).

Other significant conventions that also came up as a result of the Rio convention were; the United Nations Framework Convention on Climate Change (UNFCCC) and the United Nations Convention of Combating Desertification (UNCCD). All these emphasise environmental and natural resources conservation, with involvement of indigenous or local people.

Subsequent to the above, through the United Nations millennium declaration (8<sup>th</sup> September, 2000), world leaders committed nations to the new global partnership to reduce poverty by setting out a series of time-bound targets with a deadline of 2015; that is, Millennium Development Goals (MDGs) (UN, 2005). MDG 7 is of particular interest to natural resources conservation as it aims at ensuring environmental sustainability, with two of its targets as, integration of principles of sustainable development into country policies and programmes and reverse loss of environmental resources, and reducing biodiversity loss, through achieving by 2010, a significant reduction in the rate of its loss.

In response to these global initiatives, regional bodies and national governments came up with a number of initiatives and programmes aimed at environmental conservation and sustainable development. The promotion of community-based sustainable use of natural resources which entails participatory conservation in the form of community-based natural resources management (CBNRM) (Stoll-Kleemann *et al.*, 2010), whereby the indigenous communities play a significant role, is one such initiative. The Southern Africa Development Community (SADC) through its regional indicative strategic development plan (RISDP) of 1999 also recognises the environment and sustainable development as its high priority intervention areas. In cascading this to individual states within the region, individual SADC member states have devised uptake initiatives in the form of plans, programmes and creation of enabling environments in the form of enactment of policies and legislation.

### **2.1.2 CBNRM and sustainable development**

Sustainable development as espoused in the global environmental protection initiatives seeks to reconcile the ecological, social and economic dimensions of development, now and into the future, and adopts a global perspective in this regard (Baker, 2006). The model states that: environmental stresses are linked with one another; environmental stresses and patterns of economic development are linked with one another; and environmental and economic problems are linked with social and political factors. It strives to attain social equity, economic efficiency and ecological sustainability by linking the economy, society and the ecology (Baker, 2006). Achieving progress towards sustainability thus implies monitoring and preferably improving both human and ecosystems well-being, not one at the expense of the other (Hardi and Zdan, 1997). Practically, it is rather difficult for development projects to strike a balance or to operate in an equilibrium with regard to the three and therefore the model subsists on trade-offs amongst the three areas of concern. The idea therefore expresses the inter-dependence between the people and surrounding world (Hardi and Zdan, 1997)

The sustainable development and CBNRM concepts are interlinked. The twin objectives of CBNRM which are: the improvement of rural livelihoods through benefits from sustainable

natural resources management and conservation of natural resources all key on sustainability. The sustainability concept is of importance in CBNRM as it has the potential to ultimately influence the way communities act and think, leading to correctly managed and controlled resource use (Aslin *et al.*, 2009). Thus the two concepts are in consonance as sustainability is embedded in twin objectives of CBNRM, whereby a balance is struck in terms of using both scientific and traditional management systems ensuring that conservation meets local livelihood aspirations as well as scientific conservation objectives (Ostrom, 1990). This promotes development that is contained within the ecological carrying capacity of the planet, which is socially just and economically inclusive (Baker, 2006). Natural resources ownership fostered through CBNRM outcomes usher in communities' sense of obligation to protect natural resources and to use them in a sustainable way (Lin and Chang, 2011).

Furthermore, both sustainable development and CBNRM advocate for human empowerment and non-violence in the use of natural resources and this can be attained if there is free flow of information to eradicate ignorance, poverty and any form of discrimination. CBNRM has a strong link to poverty alleviation (Dressler and Büscher, 2008), as it provides local rural communities with much required income on which to improve their livelihoods (Allison and Ellis, 2001; Hoole and Berkes, 2010). Human empowerment can be better attained through active local participation as advocated by CBNRM. This is in line with the sustainable development pillar of social equity, which places much emphasis on community participation. This essentially implies strengthening already existing and building new social organisations engaged in the planning and implementation of development projects.

In attaining ecological efficiency, use of natural resources should be within their sustained yields and for renewable resources the use should not compromise the regeneration rate. The atmosphere, many bodies of water, and large areas of soil should not exceed their absorptive limits as regards wastes of all kinds generated from the development process (Shmidheiny, 1992). The contribution of ecological sustainability to sustainable development of projects is embedded in the following strategies (Baker, 2006):

- encouraging the integration of ecological consideration into economic and sector development policies;
- devising anticipatory preventative strategies for development; and
- demonstrating that sound ecological policies also benefit development.

Ecological sustainability can therefore be maintained jointly with efforts to attain economic development (Baker, 2006). Economic efficiency is concerned with optimal use of the natural resources to meet human needs and economic growth (Baker, 2006). Emphasis is placed on the use of assimilative capacity, science and technology, and institutional arrangements in the utilisation of natural resources, as is the case with CBNRM (Baker, 2006). The adoption of multi-criteria techniques that affect trade-offs between the three pillars of sustainable development is a way to realize benefits and conservation of natural resources.

Social equity, economic efficiency and ecological efficiency are fundamental to sustainable development projects as they have to demonstrate that these could be maintained in partnership; and partnership involves weighing the economic costs of damage to ecosystems and the benefits which could be attained from conserving the ecosystems, and this is in line with the CBNRM concept (Baker, 2006).

## **2.2 Performance of the Botswana CBNRM programme**

In line with the global and regional initiative on environmental conservation, Botswana adopted the CBNRM concept in 1989. Implementation of the Botswana CBNRM programme took the form of planner-centred participation where communities' views were solicited on their involvement in this government-driven initiative on natural resources management, and this meant compliance with pre-set obligations or conditions (Thakadu, 2005). In planning CBNRM projects, the government also placed emphasis on the potential of the natural resource under consideration within a particular locality where a community resides.



### **2.2.1 Outcomes and general issues from the programme**

Though perceived as successful, in general the CBNRM programme in Botswana has produced uneven outcomes at individual project level and this has caused some debate about the viability of the programme. A number of factors have been purported to be the source of these varied outcomes of the programme within common localities and in different parts of the country; however the evidence to validate these is incomplete.

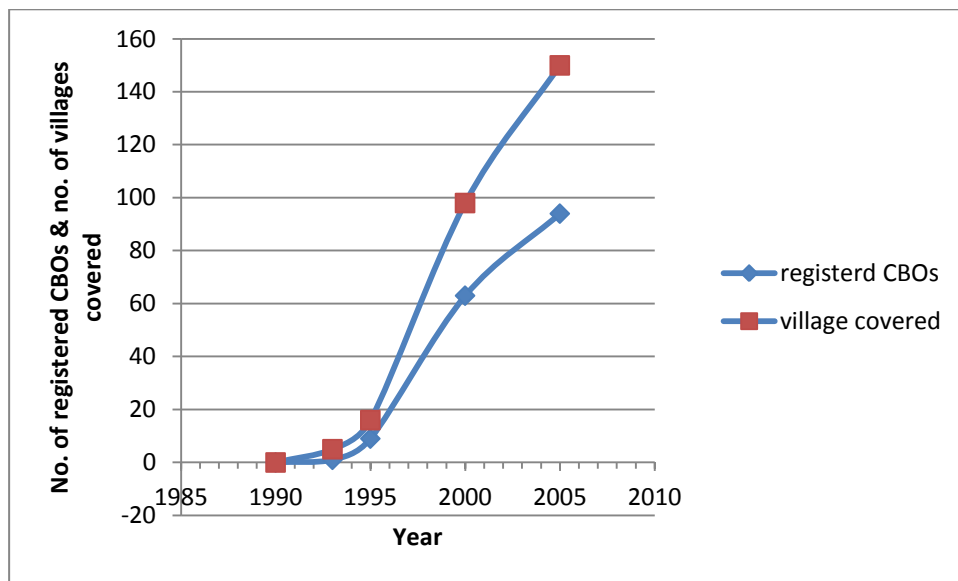
The generally perceived success of the programme is depicted by its expansion to cover the entire countryside and its ability to have successfully established or gone through the start-up phase for most or all individual projects at community level. It has also gained recognition and been embraced by government as an important conservation initiative outside the protected areas. Despite its success, CBNRM has faced a number of challenges, which are associated either with the programme itself or with the implementation process. These challenges have long-term implications on the programme outcomes and its future implementation and due attention has to be given to them.

### **2.2.2 Recorded programme results from 1989-2005**

Most CBNRM projects started in Botswana were spearheaded by the DWNP and therefore a majority of the projects in the country are wildlife and tourism based. There are however, some CBNRM projects based on cultural tourism and these use heritage site and cultural activities for tourism purposes. Other CBNRM projects are based on the utilisation of veldt products such as food and medicinal plants, although they are limited markets for these products. Communities operating wildlife and tourism based projects are in formal joint venture partnerships or agreements (JVAs) with private operators (GoB, 2010). These partnerships entail payment of annual land rentals for the respective community areas and also buying of wildlife hunting quotas issued to the communities by the government. In addition to the revenues accrued from the joint venture partnerships, through their respective trusts communities also get employment from private entrepreneurs and at times initiate their own business operations through revenues received and this also creates employment for the community or project

members. This model of joint venture partnership has however negated active community involvement in the actual running of the business venture. Communities have just been recipients of funds from the private partner and this does not support or provide for skills transfer to the grassroots.

Figure 2.1 below shows the proliferation of CBOs from the programme inception till 2005 (1993-2005).



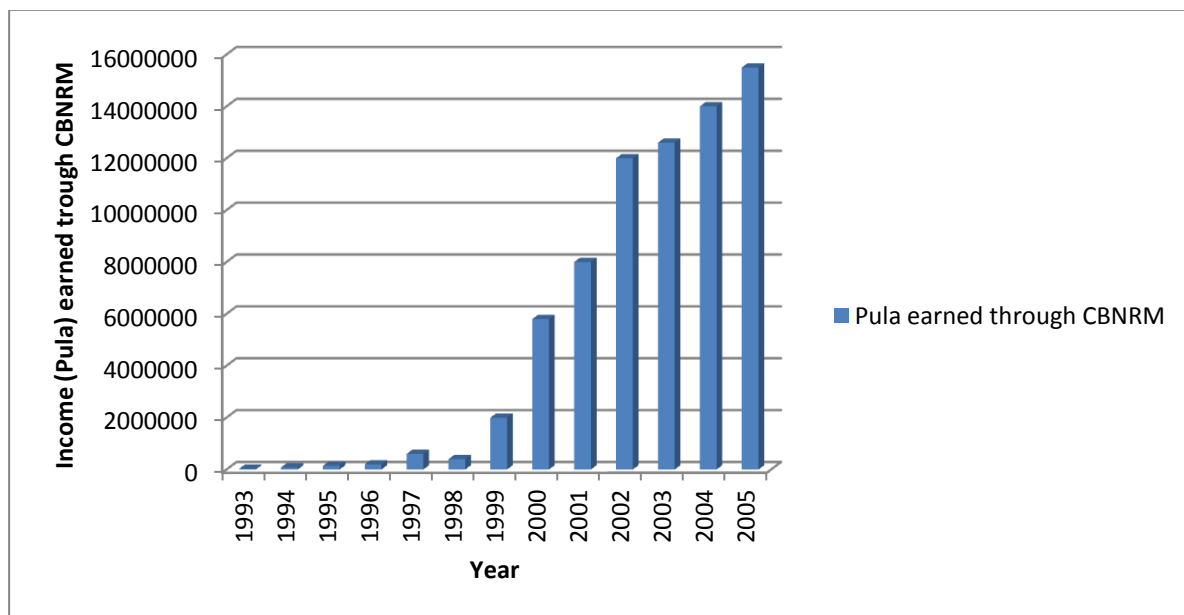
**FIGURE 2.1 NUMBER OF CBNRM PROJECTS/CBOs AND VILLAGES COVERED (1993-2005)**

**SOURCE: KCS, 2006.**

There was a proliferation of CBOs after registration of the first pilot project of the Chobe Enclave Conservation Trust (CECT) in 1993. The motivation for communities to engage in CBNRM was due to the revenues that such projects received directly from the utilization of natural resources in their respective areas as evidenced by the CECT. It is estimated that by 2005, a total of 94 CBOs had already been formed and these covered more than 150 villages in the country and represented a total population of approximately 135,000 or about 10% of total national population (KCS, 2006). Though registered, not all CBOs were actively operational or had projects running.

Amongst communities that had designated CHAs there were high expectations of generating some revenues and even those communities without designated areas formed CBOs and requested to be allocated CHAs for CBNRM purposes. Not all started projects were viable since most of them had not conducted any feasibility studies. Figure 2.2 below shows revenues that were earned from CBNRM projects between 1993 and 2005.

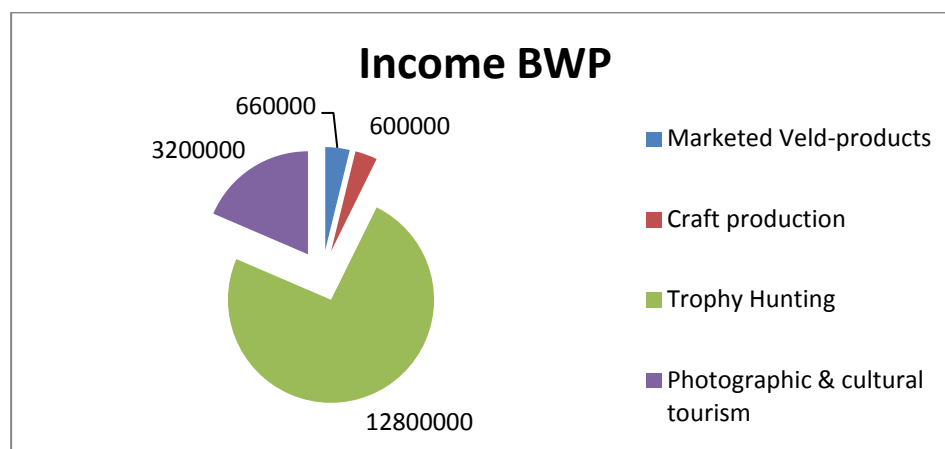
#### 2.2.2.1 Revenues accrued from CBNRM projects



**FIGURE 2.2: GROWTH IN ANNUAL INCOME GENERATED BY COMMUNITIES THROUGH CBNRM**

Source: KCS, 2006. (Note: US\$1=BWP7)

In the first four years of CBNRM implementation in the country, revenues generated by the CBNRM projects were low and stagnant as indicated in Figure 2.2 above. This is due to the fact that only a few projects were operational. Involvement of other agencies such as the Netherlands Development Agency (SNV) in the facilitation of CBNRM in the country ushered in the increase and diversification of CBNRM activities from wildlife based projects as some of the CBOs started also utilizing veldt and forest products, crafts production and cultural tourism as shown below (Figure 2.3).



**FIGURE 2.3:** TOTAL ESTIMATED CBNRM INCOMES FOR DIFFERENT CBNRM ACTIVITIES IN 2005

Source: KCS, 2006. (US\$1=BWP7)

Besides income generation, CBNRM projects through their respective trusts created other socio-economic benefits for their respective communities, including jobs, provision of social services (such as funds for the elderly, orphans, youth sport, funerals, scholarships and assistance for the disabled people), water reticulation at household level, provision of IT infrastructure, transport services, building of community halls at village level and toilets for households. Table 2.1 below shows the amount of employment nationally that was created through CBNRM activities in 2005 (2005 was the only year that such comprehensive data had been compiled).

**TABLE 2.1: NATIONAL EMPLOYMENT OPPORTUNITIES CREATED THROUGH CBNRM AS AT 2005**

| Activity                          | Employment     |
|-----------------------------------|----------------|
| Trophy hunting                    | 560            |
| Photographic and cultural tourism | 420            |
| Veld products marketing           | At least 3,100 |
| Crafts                            | At least 4,000 |
| Total                             | At least 8.080 |

Source: CBNRM Status Report, November 2006

Mandatory employment as espoused in the JVA through the respective CBNRM activities was 780 and assets were also acquired. Table 2.2 shows the assets acquired by the communities through revenues from CBNRM in 2005.

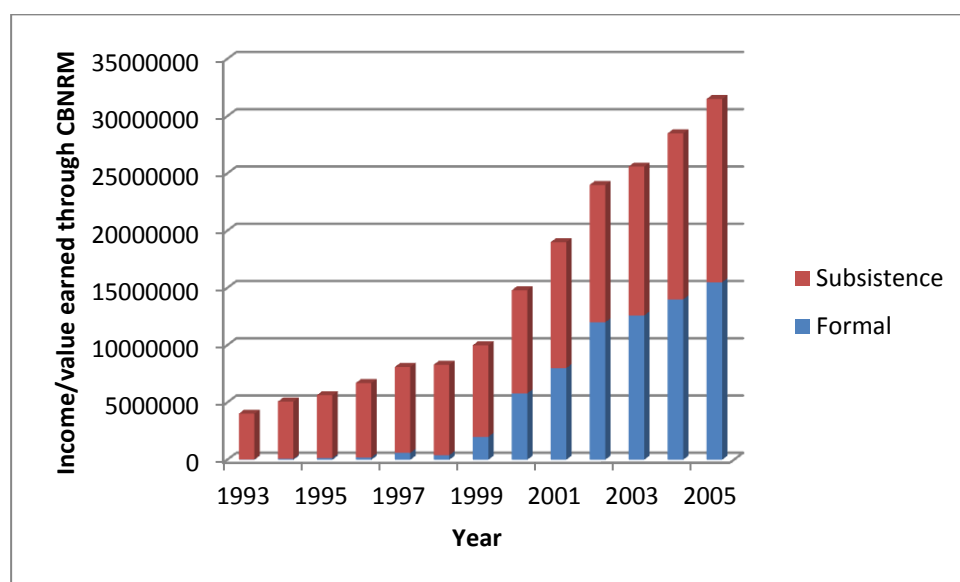
**TABLE 2.2: ASSETS ACQUIRED BY THE COMMUNITIES THROUGH INCOME FROM CBNRM NATIONALLY (2005)**

| Assets          | Total number of assets owned by CBOs | Number of communities that own these assets |
|-----------------|--------------------------------------|---|
| DSTV            | 3                                    | 2   |
| Internet Access | 7                                    | 7   |
| Computers       | 23                                   | 17  |
| Printers        | 24                                   | 14  |
| Vehicles        | 42                                   | 15  |

Source: CBNRM Status Report, November 2006

Most of these acquired assets were used communally by the communities. Vehicles, communication radios and televisions in community halls have been of great use to individuals and the entire community as they provide communication links and information.

As seen above, CBNRM projects have contributed greatly to the improvement of rural economies and enhancement of livelihoods through provision of essential services, enhancing communication and bringing information to the people through television and so opening the rural communities to the outside world. Figure 2.4 below shows some of the subsistence gains from CBNRM that have been quantified in monetary terms.

**Figure 2.4: Increase in income/value earned through CBNRM activities (1993-2005)**

Source: KCS, 2006. (US\$1=BWP7)

### **2.2.2.2 Involvement of communities in natural resources management (NRM)**

CBNRM as a natural resource conservation programme necessitated involvement of communities in the natural resources conservation process. To this end, the CBOs had conservation aspects embedded in their respective constitutions through specific clauses which mandated them to be involved in this undertaking. The projects further employed community escort guides (CEGs) who acted as natural resources monitors in the project areas. Their role was to ensure that no illegal activities occurred in the area and to assess the status of the environment within the communities' areas. To ensure this, communities adopted the Management Oriented Monitoring System (MOMS) as their management and monitoring framework in 2005. This was initially piloted by three CBOs. The implementation of MOMS, which mainly entailed systematic collection and recording of data on natural resources, was chiefly the responsibility of the CEGs, and by 2005 a total of 111 CEGs had been employed in 14 wildlife-based CBRNM projects (KCS, 2006).

### **2.2.2.3 Cash payments**

At least four community projects had paid annual cash dividends to their respective household members in 2005, although some have since stopped these due to financial constraints (KCS, 2006). Amounts paid ranged from P200-P500 per annum. Some of the projects that have paid these dividends include:

- Mababe Zokotsama Community Development Trust
- Sankuyo Tshwaragano Management Trust
- Khwai Development Trust, and
- Khawa Kopanelo Development Trust.

Though overall CBNRM seems to have done well in Botswana, the majority (about 80%) of the revenues generated are from the wet zone. This area is generally important for tourism because of the abundance of wildlife, the general biodiversity and the scenic beauty, as is usually the

case with most wetlands in the world since they provide good breeding areas for wildlife, birds, amphibians, aquatic mammals and fish (Mbaiwa and Darkoh, 2006).

There have, however, been mixed outcomes from different CBNRM projects even within the wet areas, and some of the projects that have managed to generate substantial revenues have not been keen to reinvest these in the improvement of their communities' livelihoods. Although communities have embraced CBNRM and play an active role in CBNRM projects in the medium rainfall and dry areas, not enough revenues and other benefits have been generated to make a significant impact on people's livelihoods and rural development.

#### **2.2.2.4 Conclusion**

Based on data on revenues accrued, employment and accrued assets from CBNRM as shown above, CBNRM seems to have performed well in Botswana. On a regional scale, performance of CBNRM in Southern Africa has been constantly brought into the limelight in terms of its significance in contributing to both environmental conservation and rural development (Nkhata and Breen, 2010). Child and Barnes (2010) recognise that CBNRM, like democracy, is both an imperfect process and a conceptual goal, and is therefore hard to achieve in its entirety.

Further research is, however, necessary to determine whether there is consistency in the programme performance throughout the country. Information on the performance of individual CBNRM projects is vital for continuity and further improvement of the programme as it will shed light on factors that influence projects and overall programme performance. This study therefore solicits information on factors that influence the performance of CBNRM in Botswana.

### **2.3 Study hypothesis, objectives and key questions**

The hypothesis in this study is that *“CBNRM is more effective in wet areas than in dry areas due to abundant natural resources, leading to high benefits, and therefore improved livelihoods and rural development in these areas”*.

The overall objective of the study is to determine whether CBNRM projects have attained the twin objectives of natural resources conservation and rural development throughout all aridity zones of the country.

The outcomes of this study are important as they will assist the government and other stakeholders in focusing the resources in areas (aridity zones) where CBNRM has the potential to make an impact and will also provide an insight on particular aspects that need attention in the country programme.

The study also aims at revealing whether the country CBNRM programme has embraced the seven major principles for improving the success of CBNRM (Fabricius, 2004).

The study research questions are:

- a. What factors influence the performance of CBNRM?
- b. How does aridity influence the performance of CBNRM?

The seven major principles for improving CBNRM (Fabricius *et al.* 2004) support are:

- A diverse and flexible range of livelihood options must exist and be maintained.
- The production potential of the resource base must be maintained or improved.
- Institutions for local governance and land and resource management must be in place and must be effective.
- There must be economic and other benefits to provide an incentive for the wise use of the resources.
- There must be effective policies and laws; they are implemented, and authority is handed down to the lowest level where there is capacity.
- There should be sensitive and responsible facilitation from outside.
- Local-level power relations must be favourable for CBNRM and local relations must be understood.



## **2.4 Study area**

The study covers the entire country of Botswana. The total area of Botswana is approximately 582,000 square kilometres (GoB, 2000a), and the ecological zones of the country are described as a classification of the physical environment which distinguishes between the sand-covered plains in the western part of the country and the rocky plains that dominate the eastern part (GoB, 2002a). The National Settlement Policy, 1998 (GoB, 1998b) describes the country's ecological zones as comprising the hard veldt, wet sand veldt, dry sand veldt and transition sand veldt-hard veldt. Research data were collected within the above-mentioned areas.

### **2.4.1 The country profile**

#### **2.4.1.1 Geography**

Botswana is located in Southern Africa and has land boundaries of a total length of 4,013 kilometres with Namibia, South Africa, Zimbabwe and Zambia. Figure 2.5 below shows the geographic location of Botswana within the southern Africa region.



**Figure 2.5: Map of Botswana showing its location in Southern Africa**

Source: Botswana national implementation plan (NIP) of Stockholm convention on POPs (GoB, 2008)

The country's soils are more than 70% desert sands and the Kalahari Desert lies in the south-west of the country (GoB, 2002b). The Okavango delta, the world's largest inland delta, is in the north-west and the Makgadikgadi pan, a large salt pan, lies in the north. The lowest point is at the junction of the Limpopo and Shashe rivers, at a height of 513 m. The highest point is in the Tsodilo hills, at 1,489 m.

The annual climate ranges from months of dry temperate weather during winter to days or weeks of sub-tropical humidity interspersed with drier hot weather during summer (GoB, 2002b). Annual rainfall averages 460 mm including a range from 650 mm in the extreme north-east to less than 130 mm in the extreme south-west.

### **2.4.1.2 Population**

The population of Botswana in 2003 was estimated at 1,785,000 (CSO, 2003) and unpublished 2011 preliminary census results show the current population as 2,035,000. Nearly 80% of the population of the country lives in the eastern strip where there are better soils. The preliminary results also indicate that 22% of the country's population lives in the urban areas and the following are the distributions within each aridity zone:

- The proportion of the urban population in the Wet area is five (5) percent,
- In the Medium rainfall area is fifteen (15) percent and
- In the Dry area is two and half (2.5) percent.

**Source:** Statistics Botswana, 2011.

General sources of livelihood in the wet area include riverine (arable) farming, livestock, fishing and in some cases hunting. In the dry area people subsist mainly on livestock farming and the livelihood sources in the medium rainfall area is a combination of those in the wet and dry areas as it is in the peripheries of the two areas (Statistics Botswana, 2011).

## **2.4.2 Environmental Overview**

### **2.4.2.1 Biodiversity**

Botswana's biodiversity is important for the sustainability of the country's livelihood, especially in the rural areas (GoB, 2002b). Other economic sectors, such as tourism, also depend on biodiversity. One of the threats to Botswana's biodiversity is habitat destruction and reduction emanating from the increase in population which leads to over-exploitation of the resources and factors related to development (GoB, 2002b). Some of the factors that affect biodiversity include encroachment of human settlements into the virgin areas leading to habitat destruction and biodiversity in Botswana is also affected by natural phenomena such as climate change and evolution (GoB, 2002b). It is, however, important to note that Botswana's biodiversity represents a huge asset both economically and ecologically (GoB, 2002b). Botswana has ratified the United Nations Convention on Biodiversity (UNCBD) and, as a way of implementing and

adhering to the convention's obligations, developed a biodiversity strategy and action plan (BSAP) in 2004. A depletion of palatable grass species and the resultant poor vegetation cover has resulted in 17% of the rangelands of Botswana being degraded (GoB, 1998a).

## **2.5 Scope of the study**

The study focuses on defined aridity zones which are based on the country's ecological zones as defined in the State of the Environment Report of 2002 (GoB, 2002b). However, for the purpose of this study, there is an inclusion of the medium rainfall zone, which is not classified in any of the contemporary literature of Botswana. Aridity zones identified for this study are as described below.

### **2.5.1 The wet area**

The area is depicted by the wet sand veldt (with annual rainfall of 400mm and above), with further high inflow of water from river which have their sources from neighbouring countries (GoB, 2002b).

#### **2.5.1.1 Socio-economic and biophysical environment of the area**

Due to the abundance of water in this area, it is a haven for a wide range of wildlife species and within the area there are also pockets of fertile soils (GoB, 2002b), mainly in the Okavango Delta and the Chobe-Zambezi drainage system. Some of the country's forest reserves are also located within this area.

##### **2.5.1.1.1 Temperature**

The temperature in this area can be described as mild, with temperatures ranging between 15 – 35°C (STMT, 2009). The highest maximum temperature recorded at the peak of the summer season is 45°C.

##### **2.5.1.1.2 Geology**

Most soils are Kalahari sands (arenosols) and often extend up to 300m deep (GoB, 2002b). The area is also covered with sediments from the larger Kalahari, mainly alluvial sands, and their

alteration into calcrete and silcrete and organic peat and these pockets of fertile soils are mainly found around the Okavango Delta and the alluvial plains within the Zambezi-Chobe drainage system (GoB, 2002b). A substantial portion of the area is overlain by a layer of sand commonly known as the Kalahari beds (KDT, 2007), and bedrock is only exposed in isolated areas, as a result most of the geology is concealed.

#### **2.5.1.1.3 Vegetation**

Vegetation in the area is mainly tree savannah (KDT, 2007; OKMCT, 2008 and STMT, 2009). This vegetation community is, however, dominated by woodland vegetation, interspersed by dry deciduous forest with grassland and sedges that are typical of the flood plains. Vegetation composition and abundance is influenced by rainfall patterns and displays, flood regime landscape characteristics (STMT, 2009). It should, however, be noted that increase of elephant populations in the area (north-western parts of Botswana) has also resulted in the transformation of the riparian woodlands to grasslands (GoB, 2002b). It also contains a number of woody tree species including certain species that are listed as protected in the Forest (Amendment) Act (2005) OKMCT, 2008).

#### **2.5.1.1.4 The wildlife resource**

There is a wide diversity of wildlife resources in the area and it is estimated that there are over 160 species of mammals, birds, amphibians and reptiles (OKMCT, 2007). There are more than 34 species of mammals larger than a jackal within this area, including both herbivores and carnivores (OKMCT, 2007). The large diversity of habitats in the area, which ranges from dry deciduous forest to swampy wetlands, in addition to supporting substantial populations of herbivores and carnivores, also provides habitats for a variety of bird species. Besides the above-mentioned wildlife resources, the area is also rich in fish resources which are used for both recreation and subsistence purposes by the local communities. The area is the richest resource area in the country, in terms of biodiversity (GoB, 2002b).

### **2.5.2 The medium rainfall area**

This depicts the areas lying in the periphery of the wet area and the dry area (transition area from wet to dry) and the annual rainfall of this aridity zone is between 350mm and 390mm (GoB, 2002b). This zone lies on the edges of Ngamiland, Chobe and Central districts, and the Kgalagadi-Ghanzi districts.

#### **2.5.2.1 Biophysical environment of the area**

The area is unique in the sense that it exhibits some wet and dry area species, though sporadically and in small numbers. This is due to the fact that the area's physical elements which play a critical role in influencing distribution, abundance and diversity of species are an interface of the two areas (GoB, 2002b).

#### **2.5.2.2 Geology**

The area is predominantly undulating and sloping gradually towards the east and south, and much of the surface is covered with sandy soils, with the surface area occasionally broken by isolated rocky outcrops (CTT, 2010). The soils are predominantly sandy arenosols, ferralic and haplic which are deep well-drained soils with low water retention capacity (GoB, 2002b). The area's proximity to flood areas such as the Okavango delta, offers access to fluvisols which develop on alluvial deposits and these can be regarded as fertile soils.

#### **2.5.2.3 Biodiversity**

The vegetation of the area is mainly shrub-savannah with patches of isolated woodlands (GoB, 2002b). The most prominent tree species in this area are *Terminalia sericea*, *Lonchocarpus nelsii*, and *Acacias*, and the grass species include *Schmidtia kalahariensis*, *Aristida* spp., *Eragotis* spp. and *Aanthopora* spp. (GoB, 2002b). The dominant animal species in this zone include those found in both the wet and dry areas.

### **2.5.3 The dry area**

This is depicted by mainly the dry sand veldt with an annual rainfall of less than 350mm. The area is characterized by low rainfall and lack of surface water resources, making the zone highly dependent on underground water (GoB, 2002b).

### **2.5.3.1 Biophysical environment of the dry area**

The dry area falls entirely within the Kalahari ecosystem, which is essentially a large sand-filled basin (GoB, 2002b). This feature and other physical elements play a major role in influencing the distribution, abundance and diversity of biological species in the area.

### **2.5.3.2 Climate**

The Kalahari climate is classified as semi-arid of low altitude, hot steppe type with some summer rainfall (KKDT, 2007). The rainfall is highly variable within and between years as well as spatially, ranging at around 225mm to 250mm (GoB, 2002b). Average daily temperatures in summer are 20°–34° Celsius, although maximum temperatures can reach 45° Celsius and in winter they can fall as low as -8° Celsius with dry frosts (GoB, 2002b). Frequent droughts in the area have led to plants and animals characterized by their adaptation to the conditions of water scarcity, therefore resulting in the carrying capacity of the land being low or limited (GoB, 2002b).

### **2.5.3.3 Biodiversity**

The vegetation of the area consists mainly of thorn trees and broad-leafed shrubs (KKDT, 2007). The dominant plant species are *Acacia erioloba*, *Acacia luederitzii*, *Acacia mellifera*, *Terminalia sericia*, *Grewia flava* and *Grewia retinervis*. Grass species include *Antheophora pubescens*, *Eragrostis lehmanniana*, and *Schmidia pappophoroides*. There is a diverse range of wildlife species in the Kalahari though the populations are generally low.

## **2.6 Study projects within the aridity zones and the selection criteria**

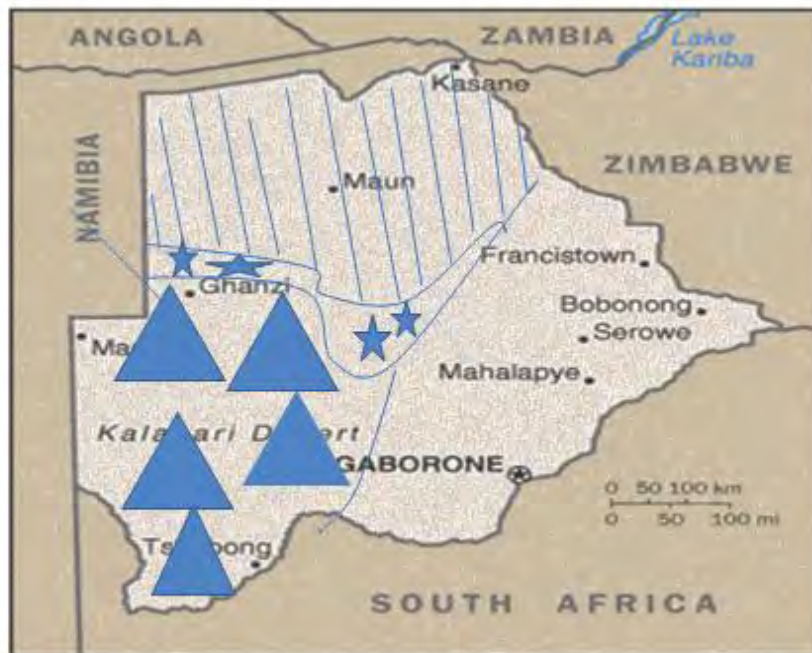
### **2.6.1 Selection criteria**

A total of seven CBNRM projects were selected for evaluation (out of a total of sixteen (16) projects nationally) within the three above-mentioned aridity zones, and within the zones, the numbers of projects selected were as follows: three in the wet area, two in the medium rainfall area and two in the dry area. The selection criteria of projects were based on the following:

- Selected projects for evaluation are primarily wildlife and tourism based.
- The projects have a defined CHA (gazetted area with defined boundaries).
- They have 15-year lease from the land authority for the use of the area and natural resources.

- They have an institution with a registered deed of trust or constitution and have been in existence for at least ten (10) years.
- The projects are among the oldest within their aridity zone (that is, the oldest or earlier registered ones were selected in each area).

The figure below shows the location of the three study aridity zones.



**Key:** Dry area; ▲ Medium rainfall area; ★ Wet area; 

**FIGURE 2.6: LOCATION OF THREE ARIDITY ZONES USED IN THE STUDY**

Source: Adapted map from Botswana national implementation plan (NIP) of Stockholm convention on POPs (GoB, 2008)

### 2.6.2 Selected projects in the wet area

The three selected projects for evaluation within the wet area were:

- Okavango Kopano Mokoro Community Trust (OKMCT) which operates in CHA NG 32.
- Sankuyo Tshwaragano Management Trust (STMT) which operates in CHAs NG 33 and NG34.
- Khwai Development Trust (KDT) which operates in CHA NG 18.



### 2.6.2.1 Profile of the projects

All study projects in the wet area are within the Okavango delta. Many people residing here derive their livelihoods from the area and it is also economically valuable as it serves both as a source of revenue from a number of economic activities which include tourism and it is a source of water for the region (ODMP, 2006). Figure 2.6 below shows the location of the study projects or CHAs (NG 18, NG 32 and NG 33/34) in the wet area. Also within this figure are the two medium rainfall area study projects or CHAs: NG 49 for the XDT and NG 4/5 for the CTT, which apparently lie within the boundaries of Ngamiland district.

### 2.6.2.2 Human population

The total population of the three sampled projects is 2,994, and more details of the projects are provided in Table 2.3 below.

**TABLE 2.3: POPULATION, AREA SIZE, COMMENCEMENT DATE AND HOUSEHOLD NUMBERS OF WET AREA RESEARCH PROJECTS**

| Project | Start date | Area (CHA) | Area size             | Population | No. of households |
|---------|------------|------------|-----------------------|------------|-------------------|
| KDT     | 2000       | NG 18      | 1,812 km <sup>2</sup> | 395        | 59                |
| STMT    | 1995       | NG 33/34   | 9,300 km <sup>2</sup> | 540        | 78                |
| OKMCT   | 1997       | NG 32      | 1,225 km <sup>2</sup> | 2,122      | 300               |

Source: CSO, 2001 and Projects' files and LUMPs

There are six officially recognized villages of the OKMCT: Ditshing, Daunara, Quqao, Xaxaba, Boro and Xaraxao, but none of these villages has been gazetted or recognized as an official village by government (OKMCT, 2007). According to documentation in the NG 32 land use management plan (LUMP) (OKMCT, 2007), the villages were formed around the 1980s. With the drying up of the downstream channels of the delta due to reduced inflow, there was an influx of people from downstream areas such as Thamalakane River in search of natural resources such as fish, reeds and grass in the wet upstream areas. The population within these villages is

therefore a mixture of ethnic groups of Batawa, Bayei, Hambukushu and Basarwa, and the percentage ethnic compositions are not known.

The STMT project is under the single village of Sankuyo. The population of Sankuyo is 540 (CSO, 2001). The village is inhabited by mainly the Bayei ethnic group, who are apparently the largest group in Ngamiland and are believed to have originated from present day Zambia (STMT, 2009).

The KDT project is also under the single village of Khwai. The inhabitants of Khwai village are mainly Basarwa of the Babukakhwe lineage. They moved to present day Khwai village in 1965 after being relocated to the area from Segagama in 1963 to make way for the establishment of Moremi game reserve (Mbaiwa, 2005), and the village was only gazetted in 2009. While the Basarwa are in the majority at Khwai, other ethnic groups such as Bayei, Batawana and Basubiya have since become residents of the village (Mbaiwa, 2005).

#### **2.6.2.3 Natural resources management and monitoring**

All the three projects are currently operating under 15-year lease agreements, which were signed with the land authority (Tawana Land board (TLB)) and these gave them exclusive user rights over the areas and their natural resources. The communities have also, sub-leased their areas to commercial safari companies for both hunting and photographic utilization.

#### **2.6.3 Selected projects in the medium rainfall area**

The two projects in the intermediate area which were selected for evaluation are:

- Cgaecgae Tlhabololo Trust (CTT) which operates in CHA NG 4/5.
- Xauxwatubi Development Trust (XDT) which operates in CHA NG 49.

##### **2.6.3.1 Projects' profile**

The two projects selected for evaluation are both operated by single-village communities, and are Xaixai village with the CTT and Phuduhudu village with the XDT.

### 2.6.3.2 Human population

The total population of the two projects or villages is 827, with the CTT having a population of 280, and the KDT 455 (CSO, 2001).

The majority of village residents of Xaixai are Basarwa of Ju/'hoansi lineage (75%), and the remainder are Bahereroru. The village residents earn a living through foraging, livestock and, to a limited extent, ploughing. Agricultural activities are mainly done by the Herero and most Basarwa earn some income through the sale of ostrich eggshells, bead necklaces and leather works. The people also subsist through a number of government programmes such as drought relief, destitute programme and the Rural Area Dweller Programme (RADP), a special programme for uplifting the living standards of the Basarwa. There are approximately 48 households in the village and most of them have several family units.

The population of Phuduhudu is 455. The village is adjacent to the Makgadikgadi/Nxai Pans National Parks. Residents earn a living through both arable and pastoral agriculture, although it is limited by the prevalence of problem animals from the protected areas which destroy both crops and livestock (GoB, 2010). The population of the village is mainly composed of the Basarwa ethnic group, although other groups from elsewhere in the country have settled in the village. Summarised details on the respective projects are shown in Table 2.4 below.

**Table 2.4: Population, area size, commencement date and household numbers of medium rainfall area research projects**

| Project | Start date | Area (CHA) | Area size               | Population | No. of households |
|---------|------------|------------|-------------------------|------------|-------------------|
| CTT     | 1997       | NG 4       | 300,000 km <sup>2</sup> | 372        | 48                |
| XDT     | 2000       | NG 49      | 1,550 km <sup>2</sup>   | 455        | 59                |

Source: CSO, 2001 and Projects' Files and LUMPs

### 2.6.3.3 Natural resources management and monitoring

Like other CBNRM projects in the country, the projects have a 15-year lease agreement signed with the TLB which gave them exclusive user rights over the area and its natural resources. The

communities have also sub-leased their respective areas to commercial safari companies for both hunting and photographic utilization, although in recent years there have been problems between the communities and the projects joint venture partners (JVPs).

#### **2.6.4 Selected projects in the dry area**

Projects that were selected for the evaluation within the intermediate area are:

- Khawa Kopanelo Development Trust (KKDT) which operates in CHA KD 15.
- Xwiskurusa Natural Resources Conservation Trust (XNRCT) which operates in CHA GH 10.

##### **2.6.4.1 Projects' profiles**

The XNRCT which operates in GH 10 is under the three villages of Kacgae, West Hanahai and East Hanahai, while the KKDT which operates in KD 15 falls under one village of Khawa.

##### **2.6.4.2 Human Population**

The total population of the two sampled projects is 1,972, with the XNRCT having a population of 1,247 and the KKDT of 725 (CSO, 2001).

The village of Khawa is a Remote Area Dweller (RAD) settlement in the Kgalagadi district and the inhabitants of the settlement began to settle in the area in 1974 when a few families came into the area due to the availability of a reliable water supply from a borehole in the area. The settlement slowly grew as more people moved into Khawa from farms along the Molopo River where they lived as squatters and worked for South African farmers (KKDT, 2007). The population of Khawa is mainly composed of the Bakgothu and Batlharo ethnic groups and Afrikaans is their main language.

The XNRCT project is under the three villages of East Hanahai, West Hanahai and Kacgae. West Hanahai was one of the first established RAD settlements in Ghanzi district in 1976, with Basarwa as the main inhabitants. The inhabitants were people who had been working in the farms around the district and had no particular residence. Through the RADP, portable water and other social amenities were provided to the settlement. Through a similar process of availing of land and water, the settlement of East Hanahai was also established around the same

period. The other settlement of Kacgae also came about as a result of the felt need by the Basarwa for water. The settlement was later recognized and assisted under the RADP. The population of West Hanahai, East Hanahai and Kacgae is mainly composed of the Basarwa, although other ethnic groups like Bakgagadi have moved into the respective settlements. Summarised details of the respective projects are shown in the Table 2.5 below.

**TABLE 2.5: POPULATION, AREA SIZE, COMMENCEMENT DATE AND HOUSEHOLD NUMBERS OF DRY AREA RESEARCH PROJECTS**

| Project      | Start date | Area<br>(CHA) | Area size             | Population | No. of<br>households |
|--------------|------------|---------------|-----------------------|------------|----------------------|
| <b>XNRCT</b> | 1997       | GH 10         | 9,172 km <sup>2</sup> | 1,247      | 165                  |
| <b>KKDT</b>  | 2001       | KD 15         | 6,800 km <sup>2</sup> | 725        | 89                   |

Source: CSO (2001) and Projects files and LUMPS

#### **2.6.4.3 Natural resources management and monitoring**

The two projects are currently operating under 15-year leases which were signed with the Kgalagadi Land Board (KLB) and the Ghanzi Land Board (GLB) and this gave them exclusive user rights over the area and its natural resources. The communities have also sub-leased their respective areas to commercial safari companies for both hunting and photographic utilization, although in recent years there have been problems between the communities and the projects joint venture partners (JVPs).

## **CHAPTER THREE**

### **Factors that influence the performance of community-based natural resources management projects in Botswana**

#### **3.1 Introduction**

This chapter deals with factors that influence the performance of CBNRM and by so doing answers the first research question, which is: what factors influence the performance of CBNRM?

#### **3.2 Methods and materials**

The study focused on the seven selected CBNRM projects and selected respondents were interviewed to answer the research questions via structured questionnaires. The data-gathering process was done at three levels which ran concurrently, and the three levels involved interviews with three groups of respondents: the households, key informants and CBO project managers. Each group of respondents had a specific questionnaire as shown in the Appendices A, B and C.

##### **3.2.1 Household interviewee selection**

###### **3.2.1.1 Household selection in single village projects**

A total of thirty households were selected for interview in each of the seven sampled projects. In total there were five single village projects selected: each village had several wards based mainly on ethnic groups within the village. During the data collection exercise, each of these wards was treated as a stratum and within each stratum an equal number of households was selected using simple random sampling to make up the total 30 households to be interviewed. For small villages with a single ward and a homogeneous population in terms of ethnicity, simple random sampling was used to select the 30 households to be interviewed. Random sampling also ensured that there was equal chance for both female and male headed household selection for interview.

### **3.2.1.2 Multiple village projects**

In the two multiple villages sampled, each village was composed of the same ethnic group and therefore each village was identified as a stratum. An equal number of households were therefore randomly selected from each village to make up the total of thirty households to be interviewed in each project.

### **3.2.2 Key Informant selection**

Key informants were comprised of extension officers from government and non-governmental organisations (NGOs) at national and district level. One representative from each of the NGOs involved in CBNRM in the country, and one government extension officer from each department actively involved in facilitation of CBNRM at district level, were selected for the interview. A further two DWNP officers at headquarters were also selected as key informants. In the case of NGO representatives, only CBNRM extension officers were selected for interview and where there was more than one officer, the most senior was selected. Due to a limited number of NGOs involved in CBNRM, all involved NGOs were sampled for the study. The same method was used to select government departments' extension officers at district level. The two selected DWNP officers interviewed at headquarters were the most senior officers involved in CBNRM, since the DWNP is the department that coordinates the country CBNRM programme.

### **3.2.3 CBO project manager selection**

All CBO project managers were interviewed, although not all selected study projects had managers in place. In total five CBO project managers were interviewed since only five of the seven selected projects had managers.

## **3.3 Data collection**

### **3.3.1 Interview process**

A pilot test of the questionnaires was done through a simulation research exercise in August 2010 with delegates from Botswana who attended a CBNRM training course at Rhodes University. Through this exercise, some corrections and adjustments were made to the questionnaires. After the first field exercise (first day of data collection) there was need to

further adjust the questionnaires. This was done in the field since the adjustments were not major.

For selected households, the head of the household was interviewed. The interviews were carried out with the help of research assistants. Key informant questionnaires and CBO project manager questionnaires were administered by the researcher through one-on-one interviews. There were, however, instances where they wanted time to reflect on the questionnaire and answer it independently. In such instances, they were given the time and space to do so and the questionnaires collected later. This also applied to those who were not available or had other things to do at the time of the visit: questionnaires were left for collection later.

### **3.4 Data analysis**

Collected household data were aggregated into aridity zones and proportions of responses to the identified important CBNRM performance indicator variables were calculated (Table 3.2). A total of 10 variables were used as pointers to the factors that affect CBNRM performance and these were:

- existence of a registered local institution to run the CBNRM project;
- involvement of the community in drafting the trust constitution;
- availability of other administrative regulations and rules for running the project (besides constitutions);
- involvement of the community in decision-making on project issues;
- adequate representation by elected committees or boards;
- role satisfaction of individuals within the project;
- availability of a land use management plan (LUMP) for the project;
- ease of use of the available LUMP,
- existence of other environmental rules and regulation in the project, and
- realisation of any benefits from the project.

Since most collected data were categorical, household responses or performance on these variables were compared across the three aridity zones or areas using the Chi Square test to find



out whether there were significant differences among the areas (Table 3.3). Furthermore Chi-Squared analyses were also done on the data as indicated in Section 3.5. Data analyses were done using Microsoft Excel. Since there were three aridity zones in the analysis, the n value was three ( $n=3$ ) and therefore degrees of freedom (df) for this test was two (that is;  $df = n-1$  or  $3-1$  is 2) and p being 0.05; the table value for Chi Square (at degrees of freedom (df) of 2 ( $df=2$ ) and  $p=0.05$ ) level of significance is 5.99.

Qualitative responses from households, key informants and CBO project managers were compiled into common thematic areas. These responses provided further insights on factors that influence CBNRM project performance and contributed to the discussion section (Section 3.6).

Some variables in the data were used as proxies for comparison of projects on the adherence to the seven major principles of increasing the success of CBNRM projects across the three aridity areas (Table 3.5 and Figure 3.1). These were further used to determine the performance status of CBNRM projects in each of the three aridity zones (Table 3.6). The principles, denotation and the respective proxies are shown in Table 3.1 below.

**TABLE 3.1: PRINCIPLES DENOTATIONS AND THEIR MEASURE PROXIES**

| Principle  | Denotation | Proxy  |
|--|------------|--|
| Local institutions for governance, land and resource management are in place & effective.  | P1         | Projects have registered CBOs and LUMPs for running their projects.                            |
| There must be effective policies and laws; they are implemented, and authority is handed down to the lowest level where there is capacity. | P2         | They are other admin. rules and regulations for running projects.                              |
| Local-level power relations must be favourable for CBNRM   | P3         | There is adequate representation on elected committees or boards.                              |
| There should be sensitive and responsible facilitation from outside  | P4         | There is satisfaction on the roles played by the extension officers.                           |
| The production potential of the resource base must be maintained or improved.  | P5         | There have been changes in the status of the environment since the start of the CBNRM project. |
| There must be economic and other benefits to provide an incentive for the wise use of the resources.                                       | P6         | There have been benefits realized from the CBNRM projects.                                     |
| A diverse and flexible range of livelihood options must exist and be maintained.   | P7         | There are other livelihood strategies for the communities.                                     |

### 3.5 Results

#### 3.5.1 Factors influencing performance of CBNRM projects

##### 3.5.1.1 CBNRM performance across the three aridity zones

All projects in the three aridity zones had registered local institutions for running their CBNRM projects as indicated in Table 3.2 below. There was no significant difference between the three aridity zones with regard to the involvement of communities in drafting the trust constitutions (calculated Chi Square of 4.4, is less than 5.99 (table value). The proportion of households who acknowledged involvement in the drafting of their respective project constitutions was above 80% in all aridity zones with 82% of households in the dry area, 93% of households in the medium rainfall area and 82% of households in the wet area acknowledging involvement in drafting of the project constitutions (Table 3.2). There were also no significant differences in household responses on the ease of use of their project LUMPs, the involvement of the communities in decision-making on their respective project issues and experiencing any losses

emanating from their respective CBNRM projects (calculated Chi Square of 3.1, 5.7 and 3.9 respectively are less than 5.99 (table value)). A total of 99% of households in the wet area, 92% in the dry area and 87% in the medium rainfall area indicated that their LUMPs were easy to use on a daily basis in the management of their project areas.

There were, however, significant differences in household responses between the three aridity zones on other variables. There was a significant difference between the three areas on the availability of other administrative rules and regulations for running projects (Chi Square of 36.8 is more than 5.99 (table value)). A total of 67% in the dry and medium rainfall areas acknowledged availability of other administrative rules and regulations in their projects, while the wet area had a high proportion of responses at 97%. There were also significant differences between the three areas with regard to the existence of other environmental rules and regulations in the project (Chi Square of 28.4 is more than 5.99 (table value)), with 66.7% respondents acknowledging existence of these in dry and medium rainfall area, while a high proportion of 96.7% in the wet area acknowledged this. On the issue of adequate representation by elected committees or boards, there was also a significant difference between the three areas (Chi Square of 31.7 is more than 5.99 (table value)) and 72% of respondents acknowledged this in the dry area, 70% in the wet area, while there were only 28% positive responses in the medium rainfall area. There was also a significant difference in the response on the issue of role satisfaction of individuals within the projects (Chi Square of 12.5 is more than 5.99 (table value)), with 76%, 45% and 69% positive responses in the dry, medium rainfall and wet areas respectively. There was also a significant difference on responses to the satisfaction with roles played by the extension officers (Chi Square of 13.5 is more than 5.99 (table value)); with 65%, 40% and 68.9% positive responses on this in the dry, medium rainfall and wet areas respectively. Results also indicate a significant difference on the issue of the realisation of benefits from the projects (Chi Square of 31.8 is more than 5.99 (table value)) and the difference in positive response proportions were 100% for the dry and wet areas (no difference) while the medium rainfall area recorded a lower positive response proportion of 80% (Tables 3.2 and 3.3).

Table 3.2: Proportion of households' responses to CBNRM performance indicator variables

| Variables  | Proportion <b><u>YES</u></b> responses (%) |                      |          |
|--|--|----------------------|----------|
|  | Dry area                                   | Medium rainfall area | Wet area |
| Existence of a registered local institution community trust to run the CBNRM project | 100  | 100                  | 100      |
| Involvement of the community in drafting the trust constitution                      | 82   | 93                   | 82       |
| Availability of a land use management plan (LUMP) for the project                    | 100  | 100                  | 100      |
| Ease of use of the available LUMP  | 92   | 87                   | 99       |
| Availability of other administrative regulations and rules for running the project   | 67   | 67                   | 97       |
| Involvement of the community in decision making on project issues                    | 93   | 95                   | 100      |
| Adequate representation by elected committees or boards                              | 72   | 28                   | 70       |
| Role satisfaction of individuals within the project                                  | 76   | 45                   | 69       |
| Realisation of any benefits from the project   | 100  | 80                   | 100      |
| Experienced losses emanating from the project  | 62   | 55                   | 46       |
| Dry area, N=60: Medium rainfall area, N=60: Wet area, N=90                           |  |                      |          |

**TABLE 3.3: LEVEL OF DIFFERENCES IN PERFORMANCE INDICATOR VARIABLES AMONG THE THREE ARIDITY AREAS**

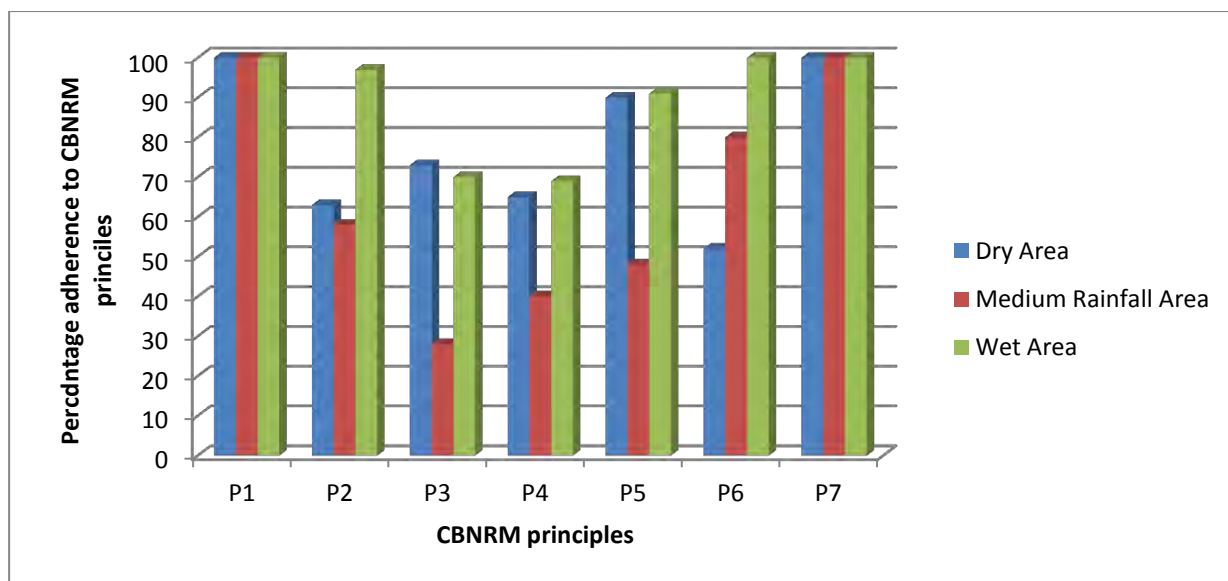
|  | Responses          |                              |                       |             |
|--|--------------------|------------------------------|-----------------------|-------------|
|  | Dry area<br>(n=60) | Medium<br>rainfall<br>(n=60) | Wet<br>area<br>(n=90) |             |
| Variables  | Yes                | Yes                          | Yes                   | chi square  |
| Involvement of the community in drafting the trust constitution          | 49                 | 56                           | 74                    | <b>4.4</b>  |
| Ease of use of the available LUMP  | 56                 | 58                           | 89                    | <b>3.1</b>  |
| Availability of other admin. rules & regulations for running the project | 38                 | 35                           | 87                    | <b>36.8</b> |
| Existence of other environmental rules and regulation in the project     | 40                 | 40                           | 87                    | <b>28.4</b> |
| Involvement of the community in decision making on project issues        | 56                 | 57                           | 90                    | <b>5.7</b>  |
| Adequate representation by elected committees or boards.                 | 43                 | 17                           | 63                    | <b>31.7</b> |
| Roles satisfaction of individuals within the project                     | 44                 | 27                           | 62                    | <b>12.5</b> |
| Role satisfaction with extension officers                                | 39                 | 24                           | 62                    | <b>13.5</b> |
| Realisation of any benefits from the project                             | 60                 | 48                           | 90                    | <b>31.8</b> |
| Experienced losses emanating from the project                            | 37                 | 33                           | 41                    | <b>3.9</b>  |

### 3.5.2 Adherence of CBNRM projects to the seven principles for increasing success

Generally all projects in the three areas fully adhered to two of the seven principles: that institutions for local governance and land and resource management must be in place and must be effective (P1) and the existence of a diverse range of livelihood (P7) as shown in Figure 3.1, where 100% of the respondents answered in the affirmative.

In general the wet area exhibited the highest adherence levels for all the seven principles compared to the other two zones, followed by the dry area, with the medium rainfall area displaying the lowest adherence levels for all principles (Figure 3.1) except for P1, which is *de jure* adherence as it is a requirement by the CBNRM Policy (GoB, 2007b) that all CBNRM projects have registered institutions, and (P7) which is *de facto* adherence, due to government diversification drive of the economy which therefore offers a range of other livelihood strategies.

There were significant differences among the three aridity areas in the performance of CBNRM projects as signified through the adherence to the other five major principles of increasing success of CBNRM projects (P2, P3, P4, P5 and P6 at Chi Square of 30.91, 13.13, 13.52, 35.64 and 31.81 respectively, which are more than 5.99 (table value).) as shown in Table 3.4



**Figure 3.1: Proportion of positive responses on adherence to the seven principles (%)**

**TABLE 3.4: PERFORMANCE OF PROJECTS ACROSS THE ARIDITY AREAS BASED ON THE SEVEN PRINCIPLES FOR INCREASING SUCCESS OF CBNRM PROJECTS**

| Positive household responses on adherence to the seven principles |                    |                         |                    |            |
|---|--------------------|-------------------------|--------------------|------------|
| Principle   | Dry Area<br>(n=60) | Medium                  |                    | Chi square |
|   |                    | Rainfall Area<br>(n=60) | Wet Area<br>(n=90) |            |
| P2  | 38                 | 35                      | 87                 | 30.91      |
| P3  | 43                 | 17                      | 63                 | 13.13      |
| P4  | 39                 | 24                      | 62                 | 13.52      |
| P5  | 54                 | 29                      | 82                 | 45.64      |
| P6  | 60                 | 48                      | 90                 | 31.81      |

## 3.6 Discussion

### 3.6.1 Factors influencing performance of CBNRM projects

#### 3.6.1.1 CBNRM performance across the three aridity zones

Research findings have indicated significant differences in the performance of CBNRM projects on all the five *de factor* principles across the three aridity zones (Table 3.4). The results are consistent with observations as documented by other researchers and scholars (Schafer and Bell, 2002; Thakadu, 2005; Swatuk, 2005; Mbaiwa and Stronza, 2010). There are indeed different factors that influence these differences and most of these factors were found to be project and context specific and included: existence of complimentary rules and regulations for managing CBNRM projects; literacy levels of communities involved in CBNRM; ethnicity composition of the project communities; historic and current socio-economic trends within communities; dominant stakeholder problem or lack of consultations with other stakeholders by the lead CBNRM agency; collaboration between CBNRM institutions and other local level institutes; amount of benefits generated through the projects; ability of institutions to resolve outstanding issues in time; existence of alternative livelihood strategies; availability of a programme implementation plan or programme vision; and choice of CBNRM projects to be undertaken in specific areas (Appendices A, B, and C). These factors were further explored in the sections below. There were no gender issues raised or observed during the research and

therefore the research findings were not critically evaluated on gender related issues. This observation could have been due the communal participatory approach by the CBNRM programme and therefore offering equal opportunities to all sectors of the society and making sure that all voices were heard.

#### **3.6.1.1.1 Existence of complimentary rules and regulations for managing CBNRM projects**

This is one of the factors that have influenced the performance of CBNRM projects. Although all CBNRM projects were legally registered and had constitutions and LUMPs for guiding project implementation, these instruments were broad in nature and therefore some CBNRM projects had devised rules and regulations for the day to day running of their respective projects, and these projects had exhibited positive results or better performance levels. Such projects perform better in administration and management of project business than those without such regulations. All projects in the wet area had devised such rules and regulations and the wet area had shown to perform better than the other two aridity zones

#### **3.6.1.1.2 Literacy levels of communities**

Literacy levels of communities were found to play a crucial role in the performance of CBNRM projects. Although no official statistics on the levels of literacy per project were available it was apparent that those projects whose community had low levels of literacy had lagged behind. The Xhauxwatubi development trust (XDT) in the medium rainfall was typical of such; though having a fair amount of resources, research findings revealed that it did not perform well and the sentiments expressed were that illiteracy was the main problem and this was substantiated by the results of performance level of medium rainfall projects. This issue was also substantiated by studies carried out on CBNRM by Taylor (2001) and Thakadu (2005). Thakadu (2005) stated that it was expected that communities with lower levels of literacy would need more time to assimilate and adapt to new policies and concepts.

#### **3.6.1.1.3 Ethnic composition of the project communities**

Research findings revealed that ethnicity was one of the factors that impeded or impacted on the progress of some of the CBNRM projects. This was more pronounced in the multi-village



projects where the villages are usually aligned on an ethnic basis. A more pronounced case during the research, however, was the ethnic tension between Basarwa and Baherero in the CTT project. There was apathy within the Basarwa ethnic group as they felt (although they were in the majority) that they were being marginalised in the CBNRM project and as a result the CTT project was almost dormant during the study period (September-December 2010). The DWNP in its previous records and files also reported such a conflict in the project (DWNP, 2000b). This demonstrates the difficulty of successfully introducing a rural development programme such as CBNRM into an area rife with differences and conflict, an issue that has also been cited by Swatuk (2005). Similar tensions were also recorded in the OKMCT project in the wet area.

#### **3.6.1.1.4 Historic and current socio-economic trends within communities**

The past and current development trends and livelihood strategies adopted by government in an effort to improve the livelihoods of the rural communities has had an effect on CBNRM as revealed by the study. The tendency to issue handouts to the rural communities (especially Basarwa) has resulted in heavy dependency on government handouts and this has been an impediment to active participation in CBNRM. In predominantly Basarwa areas, communities are in the process of being mentored into organized and settled lives as opposed to their previously nomadic lives and this, compounded with government handouts, makes community members indifferent to active participation in CBNRM in their areas. Rozemejier and Van de Jagt (2000) have stated that there is an essential need for thorough socio-economic research to inform the programme in associated communities. Such an exercise was never done in the case of CBNRM in Botswana and a generalised programme was introduced country-wide without cognisance of communities' socio-economic factors.

#### **3.6.1.1.5 Dominant stakeholder problem or lack of consultations with other stakeholders by the lead CBNRM agency**

CBNRM in Botswana took the form of planner-centred or top-down participation where communities were told how best they could be involved in this government-initiated programme (Thakadu, 2005). This situation has made government (especially the top echelons

within government) assume a dominant role in the programme, especially on important aspects such as policy development. Lack of consultation by government when making crucial decisions has impacted negatively on CBNRM performance especially where such decisions directly affect communities (Mbaiwa, 2005). A typical case of this is the government directive which instructed communities to have their revenues held in special holding accounts which they could access only with authorisation from district commissioners. This has caused tension between stakeholders and threatened progress in the implementation of CBNRM as communities felt hard done by the government (Mbaiwa, 2005). Some communities have even challenged such a move in the court of law as is the case with the STMT project (STMT, 2010).

#### **3.6.1.1.6 Collaboration between CBNRM institutions and other local level institutes**

Collaboration between local level institutes has contributed positively to the successful implementation of CBNRM in some projects (GoB, 2010). Projects that have exhibited cohesion among their members have progressed and there has been accountability from the leadership. There are CBNRM projects that have created linkages with the traditional leadership institution and this has also enhanced accountability within such CBNRM projects. Recognition and respect of the traditional leadership supremacy has enabled the chieftainship through its authority to demand transparency and community cohesion in project implementation. In such projects, the chiefs' active involvement in their village projects has also resulted in the protection of the rights of the marginalized. Examples of such projects are the STMT and KDT in the wet area and KKDT in the dry area and these have contributed to high levels of project performance in the respective aridity zones, as shown in Section 3.5.

#### **3.6.1.1.7 Amount of benefits generated through the projects and classification of benefits**

CBNRM projects that generate high benefits to communities have experienced a higher success rate (GoB, 2010). The research have also shown that projects in the wet area enjoy a high success rate (Section 3.5) and these projects generated high incomes for their communities as shown in Appendix E, where more than 80% of CBNRM generated revenues come from the

area. Such benefits assisted in livelihood improvement of the communities involved and could have been an incentive for active participation in CBNRM activities by project members.

Botswana CBNRM programme's restrictive definition of benefits as money or revenues could have resulted in other possible uses of natural resources by communities being overlooked, underscoring the contribution that the projects could have had on local livelihoods. In some projects, where wildlife hunting quotas are not commercially viable, communities could use their quota for subsistence purposes especially where people have benefited from this form of use in the past. This could be therefore a strategy in which communities or households generate their livelihoods (Kgathi *et al.*, 2007). This would further broaden the contribution of CBNRM to people's livelihoods and encourage active participation which could lead to better CBNRM project performance. Results to quantitative questions in Appendix A indicate that communities only cited monetary related issues as other benefits from CBNRM. However, some households in the dry area have indicated that they have suffered some loss of hunting rights due to CBNRM (23 households out of 60 or approximately 38%) as shown in Appendix A.

#### **3.6.1.1.8 Ability by institutions to resolve outstanding issues in time**

The ability by CBNRM institutions to deal with outstanding issues within reasonable or accepted time periods helps build confidence within the community. It was apparent during the study that some projects that had not actively resolved long outstanding issues (like theft of money in the OKMCT) and this had negatively affected the project. If certain issues are left unresolved; they could escalate and negatively affect performance of the CBNRM project. A typical case was the loss of money in the OKMCT project in 2006 (stated above) through unscrupulous behaviour of the then elected representatives (OKMCT, 2010) and failure to instigate appropriate action had negatively affected the project performance in that some community members have lost confidence in their leadership. This indicates how unresolved issues could cause problems in CBNRM projects.

#### **3.6.1.1.9 Existence of alternative livelihood strategies**

CBNRM is among the six sustainable rural livelihoods programmes in Botswana (GoB, 2003) and its successful performance depends on its effectiveness in the improvement of rural community livelihoods. In areas where there are easily accessible strategies or freely accessed benefits, such as assistance provided by government assistance programmes like the rural area dweller programme RADP (GOB, 1998), more attention has been paid to such programmes as is the case in projects such as the XNRCT project in the dry area. This has negatively affected the CBNRM project performance due lack of community participation in preference to easily available options.

In the wet area, however, where such programmes are not available and agriculture production has been limited by restriction on activities that can be undertaken and by destruction from wild animals, CBNRM has excelled due to the attention paid to it by communities, as shown in Section 3.5.

#### **3.6.1.1.10 Availability of a programme implementation plan or programme vision**

Lack of a programme implementation plan for the Botswana CBNRM programme has negatively affected the performance of CBNRM projects. Spontaneous decision-making by the government as the coordinating agency in an effort to provide direction to the programme has led to the problems of dominance or lack of consultation with other stakeholders by the lead CBNRM agency described in 3.6.1.1.5 above. Such reactive responses to arising issues are due to lack of a proper programme implementation plan as became evident during the research (Mbaiwa, 2005).

#### **3.6.1.1.11 Choice of CBNRM projects to be undertaken in specific areas**

Research findings have revealed that some CBNRM projects that are undertaken in some areas in Botswana are inappropriate. A “one-size” fits all model of implementing wildlife based CBNRM projects was undertaken in certain areas of Botswana although they differ on a number of aspects. CHAs in the wet area have been successful in commercial utilization of wildlife

quotas whilst those in dry areas have struggled to generate revenues (Appendix E) due to limited wildlife resources in these areas, therefore negatively affecting project performance. The comparative advantage of areas has to be considered when choosing the type of CBNRM projects to be undertaken and for the dry areas cultural tourism could have been a viable option as the Basarwa/Bushman culture is already marketed worldwide.

### **3.6.2 Adherence of CBNRM projects to the seven principles for increasing success**

The Botswana CBNRM programme in general has adhered to the seven major principles for increasing success in CBNRM projects. This has been achieved partly through the country's laws, policies and strategies which have institutionalised some of these principles, and these policies include: the CBNRM Policy, 2007 (GoB, 2007b); Wildlife Conservation Policy, 1986 (GoB, 1986); Tourism Policy, 1990 (GoB, 1990a); National Policy on Natural Resources Conservation and Development, 1990 (GoB, 1990b); National Biodiversity Strategy and Action Plan, 2004 (GoB, 2004); Wildlife Conservation and National Parks Act, 1992 (GoB, 1992a); Tourism Act, 1992 (GoB, 1992b) and National Strategy for Poverty Reduction, 2003 (GoB, 2003). The extents to which these have been embraced in the programme differ within the aridity zones as reflected by the differences in performance levels as indicated in Section 3.5.

The Botswana CBNRM programme and its related policies is largely driven by the government. There are some areas within the programme where there are no deliberate efforts by the government to devolve the process to communities and some policies are only partially implemented, and this has a direct impact on the uptake of some of these major principles. The CBNRM policy (GoB, 2007b), the Revised National Policy on Rural Development (GoB, 1997) and the National Biodiversity Strategy and Action Plan, 2004 (GoB, 2004) have resulted in the uptake of the principles that institutions for local governance and land and resource management must be in place and must be effective (P1) and that a diverse and flexible range of livelihood options must exist and be maintained (P7). Together with other policies, these also encourage the uptake of other principles through recognition of CBNRM as one of the sustainable livelihood programmes by linking and facilitating coordination of the various sectoral policies, and to

engender a common vision and unity in pursuit of rural development, and also encourage sustainable and wise use of resources through the provision of a framework of specific activities.

However, the limited extent of the uptake of some of the principles (though embedded in some policies) could arise from the fact that the government has always assumed a dominant role in CBNRM and therefore communities are just told what to do when there are issues that affect their projects, as was revealed during the study. Government has also progressively tightened restrictions on CBNRM through policies, regulations and practices that favour authorities (Potetee and Ribot, 2010) and this has been to the detriment of decentralisation and therefore the uptake of some of these principles. Although there may be effective policies and laws in place, these are not fully implemented and there is limited devolution to communities.

Government has largely provided facilitation and extension services to CBNRM projects and this is due to the fact that there is a limited number of NGOs that provide such services to communities, as revealed during the study. This has been to the detriment of some of the projects in certain areas, especially the dry and medium rainfall areas, as government efforts have been focused on the wet area where large revenues are generated from CBNRM. This further compromises some of the major principles in the neglected areas, especially P4 which states that there should be sensitive and responsible facilitation from outside, and empowerment and re-empowerment of resource users.

CBNRM is fundamentally premised on institutional reforms that decentralise authority to local actors, and in the absence of such reforms, the incentives for local groups to collectively invest in natural resources management are unlikely to exist or emerge (Nelson and Agrawal, 2008). For long-term sustainability of CBNRM in Botswana, there is therefore a need for a scrutiny of the devolutionary process in the country CBNRM programme. Without a clear role being given to communities in policy implementation, it would be difficult to determine their contribution to the conservation of natural resources. It was apparent through the research that there is very little that communities contribute in terms of conservation initiatives. This was further highlighted by the fact that though communities have adopted MOMS as their natural resources

monitoring framework, information generated through this is not used in decision making by the government.

Processes within the Botswana CBNRM programme therefore represent ambiguity on the extent of uptake of some of the seven major principles for increasing success of CBNRM projects.

## **CHAPTER FOUR**

### **Effects of aridity on the performance of CBNRM projects**

#### **4.1 Introduction**

This chapter looks at the influence of aridity on performance of CBNRM projects in Botswana, which then answers the second research question: how does aridity affect the performance of CBNRM projects?

#### **4.2 Methods and materials**

The study focused on seven selected CBNRM projects and selected respondents were interviewed to answer the research questions via structured questionnaires. The data-gathering process was done at three levels which ran concurrently, and the three levels involved interviews with three groups of respondents: the households, key informants and CBO project managers. Each group of respondents had a specific questionnaire.

##### **4.2.1 Household interviewee selection**

###### **4.2.1.1 Household selection in single village projects**

A total of thirty households were selected for interview in each of the seven sampled projects. In total there were five single village projects selected: each village had several wards based mainly on ethnic groups within the village. During the data collection exercise, each of these wards was treated as a stratum and within each stratum an equal number of households was selected using simple random sampling to make up the total 30 households to be interviewed. For small villages with a single ward and a homogeneous population in terms of ethnicity, simple random sampling was used to select the 30 households to be interviewed.

###### **4.2.1.2 Multiple village projects**

In the two multiple villages sampled, each village was composed of the same ethnic group and therefore each village was identified as a stratum. An equal number of households were therefore randomly selected from each village to make up the total of thirty households to be interviewed in each project.



#### **4.2.2 Key Informant selection**

Key informants were comprised of extension officers from government and non-governmental organisations (NGOs) at national and district level. One representative from each from of the NGOs involved in CBNRM in the country, and one government extension officer from each department actively involved in facilitation of CBNRM at district level, were selected for the interview. A further two DWNP officers at headquarters were also selected as key informants. In the case of NGO representatives, only CBNRM extension officers were selected for interview and where there was more than one officer, the most senior was selected. Due to a limited number of NGOs involved in CBNRM, all involved NGOs were sampled for the study. The same method was used to select government department extension officers at district level. The two selected DWNP officers interviewed at headquarters were the most senior officers involved in CBNRM, since the DWNP is the department that coordinates the country CBNRM programme.

#### **4.2.3 CBO project manager selection**

All CBO project managers were interviewed, although not all selected study projects had managers in place. In total five CBO project managers were interviewed since only five of the seven selected projects had managers.

### **4.3 Data collection**

#### **4.3.1 Interview process**

A pilot test of the questionnaires was done through a simulation research exercise in August 2010 with delegates from Botswana who attended a CBNRM training course at Rhodes University. Through this exercise, some corrections and adjustments were made to the questionnaires. After the first field exercise (first day of data collection) there was need to further adjust the questionnaires. This was done in the field since the adjustments were not major.

For selected households, the head of the household was interviewed. The interviews were carried out with the help of research assistants. Key informant questionnaires and CBO project

manager questionnaires were administered by the researcher through one-on-one interviews. There were, however, instances where they wanted time to reflect on the questionnaire and answer it independently. In such instances, they were given the time and space to do so and the questionnaires collected later. This also applied to those who were not available or had other things to do at the time of the visit: questionnaires were left for collection later.

#### **4.3.2 Secondary data collection**

Secondary data was collected from the files of the research projects and other identified CBNRM stakeholders. The collected secondary data included general information on CBNRM in Botswana as well as specific information on the selected study projects. Specific information on the research projects included annual wildlife hunting quotas given to the selected projects over a five year period (2005-2010), revenues and benefits received or generated by the projects and general records and reports from the projects offices and other stakeholders.

### **4.4 Data analysis**

#### **4.4.1 CBNRM projects performance in the three aridity zones**

Collected household data were aggregated into aridity zones and proportions of responses to the questions related to the seven major principles of increasing success of CBNRM projects (see Chapter Three, Table 3.1) were calculated (Table 4.2). The seven principles are:

- P1** Institutions for local governance and land and resource management must be in place and must be effective.
- P2** There must be effective policies and laws; they are implemented, and authority is handed down to the lowest level where there is capacity.
- P3** Local-level power relations must be favourable for CBNRM and local relations must be understood.
- P4** There should be sensitive and responsible facilitation from outside and there should be empowerment and re-empowerment of resource users.
- P5** The production potential of the resource base must be maintained or improved.

- P6** There must be economic and other benefits to provide an incentive for the wise use of the resources.
- P7** A diverse and flexible range of livelihood options must exist and be maintained.

In an effort to measure project performance, an index was developed which was based on the households' positive responses to the questions on the principles. For the purpose of the study, this index was referred to as the CBNRM project performance index (CBNRM-PPI). The CBNRM-PPI gave weights to proportions of positive responses to the proxy questions and the weights range from one to five. The highest score of five indicated the highest frequency range of positive responses to each of the proxy questions. The overall performance of each project in the aridity zones was calculated as the average of the weights that were scored for each question..

#### **4.4.2 Influence of aridity on CBNRM projects performance**

In measuring the influence of aridity on the performance of CBNRM projects, average annual rainfall and benefits in terms of revenues generated by the projects were used. Although there were other variables pertaining to CBNRM performance, revenues were considered as the appropriate reflection of outcomes of the projects and they are also linked to the twin objectives of CBNRM. The relationship between the average annual rainfall and the annual benefits generated in each of study projects was determined.

Qualitative responses from households, key informants and CBO project manager questionnaires were compiled into common thematic areas. These responses provided further insights on the analysis results of quantitative data. All data analysis was done using Microsoft Excel.

## 4.5 Results

### 4.5.1 Performance of projects in the three aridity zones

Weights given to the ranges of proportions are described in section 4.4.1 above are shown in Table 4.1. There was little variation in the performance of CBNRM projects in the three aridity zones. CBNRM projects performed best in the wet area (Table 4.2). Adherence to each of the seven major principles for increasing success of CBNRM projects indicated 69-100% affirmative response from the households in the wet area and overall performance was “excellent”; in the medium rainfall area, the range for individual proxies was 28-100%, with overall/average as “very good”, while in the dry area performance ranged from 52-100% with average performance as “very good” (Table 4.2).

**TABLE 4.1: RANKS FOR THE RANGE OF PROPORTIONS OF POSITIVE RESPONSES AND THEIR DENOTATIONS**

| Proportion (%) | Weight | Denotation |
|----------------|--------|------------|
| 0-20           | 1      | very poor  |
| 21-40          | 2      | Poor       |
| 41-60          | 3      | average    |
| 61-80          | 4      | very good  |
| 81-100         | 5      | excellent  |

**TABLE 4.2: PERCENTAGE PROPORTION OF HOUSEHOLD POSITIVE RESPONSES TO THE SEVEN PRINCIPLES (PROXIES) AND RANKINGS.**

| Principle    | Dry Area | Medium Rainfall Area | Wet Area |
|--------------|----------|----------------------|----------|
| P1           | 100      | 100                  | 100      |
| P2           | 63       | 58                   | 97       |
| P3           | 73       | 28                   | 70       |
| P4           | 65       | 40                   | 69       |
| P5           | 90       | 48                   | 91       |
| P6           | 52       | 80                   | 100      |
| P7           | 100      | 100                  | 100      |
| Average %    | 77.57    | 64.85                | 89.57    |
| Average rank | 4        | 4                    | 5        |

On average CBNRM projects in the wet area have performed better than the other areas and the medium rainfall and dry area have performed the alike as shown in Table 4.2.

#### 4.5.2 Projects performance relative to aridity

In general revenues generated by CBNRM projects increased exponentially with an increase in the average annual rainfall (Figure 4.1). This phenomenal increase in the revenues is a reflection of an increase in natural resources (wildlife) with rainfall. This therefore makes wet areas highly productive in terms of biodiversity and therefore associated benefits.

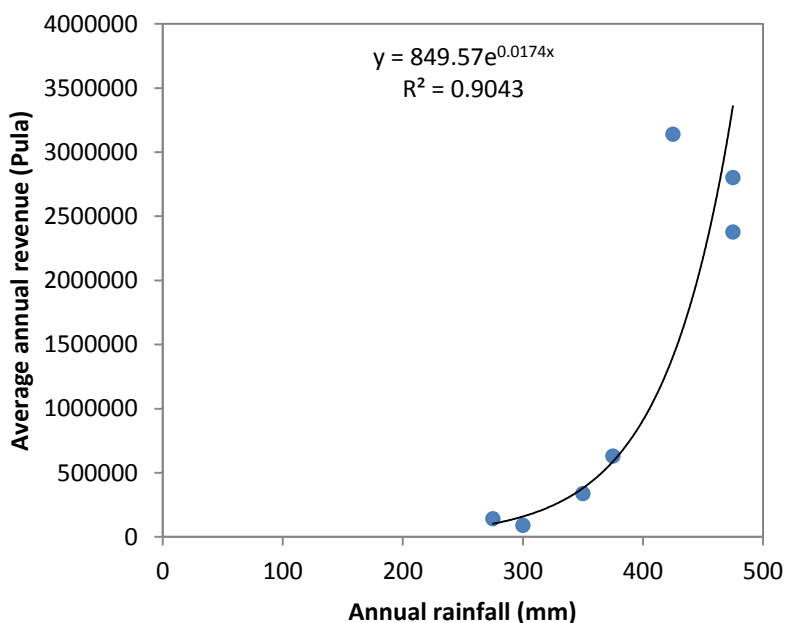


Figure 4.1: Annual rainfall and average annual income generated for each of the study projects

#### 4.6 Discussion

##### 4.6.1 Projects performance in each of the three aridity zones

In general CBNRM projects have shown to be performing well (above average) in Botswana (Table 4.2). This could be due the fact that there has been adherence to the seven principles of increasing success of the projects (Fabricius, 2004). Such a scenario of adherence could have been created by the preconditions that the government of Botswana has laid out for communities wishing to engage in CBNRM projects (GoB, 2007b); as the country programme is largely panner-based or top-down (Thakadu, 2005) and most principles are also *de jure* as spelt out in the CBNRM Policy (GoB 2007b).

Most extension services in CBNRM in the country are provided by the government and therefore this ensures that most or all set conditions in the policy are adhered to or communities are asked or told what to do (Thakadu, 2005). These preconditions could portray a positive picture of the country programme. There was however limited data on the attainment of conservation of natural resources through community involvement; which is one of the fundamentals of CBNRM which could have been used to substantiate the above outcomes in Table 4.2. Furthermore the only or main benefit which communities seemed to be conscious of, was the money generated from the projects.

The slight variation in the performance levels of different CBNRM projects in the three areas as indicated in Table 4.2 could therefore be context dependent based on the factors that are beyond the seven principles stated by Fabricius (2004). Communities in the medium rainfall areas, for example, which recorded the lowest performance level, were adversely affected by illiteracy and ethnicity, which apparently is a unique feature in area (Appendix A). These have negatively affected projects performance compared to the wet and dry areas. Schafer and Bell (2002) have urged CBNRM practitioners to treat the concept of “community” with care and to disaggregate “community” by social and other characteristics which differentiate them internally, rather than assuming a homogeneous united population. This would ensure that all interests are taken on board and therefore minimise the negative impacts.

Contrary to the principle that there must be economic and other benefits to provide an incentive for the wise use of the resources, people will embrace CBNRM if it proves attractive to them (Elliot, 1997). Such attraction does not necessarily have to be associated with any tangible benefits, but could be spiritual or otherwise. Thus, if there are other economic and livelihood strategies outside CBNRM that provide tangible benefits, then CBNRM projects could still be embraced and supported by communities or be successful. The dry area, therefore, though it generating the least amount of direct benefits (in terms of revenues), has recorded very good performance (Table 4.2). This could be accounted for by socio-cultural factors such as a sense of pride and ownership associated with their CBNRM projects and other government programmes (outside CBNRM) which provide for the communities’ livelihoods.

#### 4.6.2 Projects performance relative to aridity

Aridity as measured by the amount of average rainfall has shown to be effective in the generation of benefits (revenues) to communities (Figure 4.1) with high benefits in wet areas. Realised benefits from CBNRM projects have the potential to prompt changes in attitudes towards natural resources (Arntzen *et al.*, 2003; Baland and Plateau, 1996; Thakadu, 2005) and therefore resulting in resources conservation and sustainable utilisation. In Botswana active involvement in management of natural resources (wildlife) by communities has been demonstrated through the adoption of a management and monitoring framework, like the Management Oriented Monitoring System (MOMS), which has been mainly adopted by projects in the wet area (STMT, 2010; KDT, 2010; OKMCT, 2010). This underscores the importance or influence that aridity has on the performance of CBNRM and therefore the attainment of the twin objective of CBNRM. Machel (1997) maintains that CBNRM will only work if benefits to local communities outweigh the costs of conservation. In the wet areas of Botswana, communities have always had limited livelihood strategies and CBNRM has provided an opportunity for active participation in related activities that directly contribute to their well-being.

High CBNRM benefit in the wet area which surpasses other areas as demonstrated in Figure 4.1 has resulted in the generation of some political and administrative aspects in the country's CBNRM programme. It was apparent during the study that government efforts in the facilitation of CBNRM were concentrated in the wet area and therefore the level of support given to communities in different areas was skewed with much attention focused on the wet area (Appendix A). Therefore although there might be some deliberate efforts towards fostering adherence to the seven principles within the country's CBNRM programme in general, such circumstances would determine the performance levels of different projects as is the case in Botswana. Suito-Jensen and Nathan (2011) stated that, understanding the dynamic relations in addition to *de jure* issue provides full understanding of the CBNRM process. Such bias as in the Botswana situation could be a sign that the government have plans on the programme direction has predetermined views on the potential CBNRM in the different areas (concentrating its efforts on the areas with long term potential of successful CBNRM projects). Input towards

different CBNRM projects are therefore not consistent and thus affecting levels of performance of projects in the different aridity zones.

If community based initiatives in management and utilisation of natural resources are to be effective, they need to address immediate needs at community level (Thakadu, 2005). Communities have used revenues generated from their CBNRM initiatives to address their needs for cash income (Arntzen *et al.*, 2003) and therefore the prevalence of potentially viable resources within their respective areas is a necessity. Thus aridity as a determinant of resources endowment and therefore the resources potential within an area is an important aspect in this regard.

The exponential relationship between rainfall and revenues generated in the CBNRM areas (which is essentially the relationship between aridity and amount of natural resources prevalent in the areas) as depicted in Figure 4.1, indicates the important role that aridity plays in the performance of CBNRM. Less arid or wet area CBNRM projects have generated more revenues for their respective communities and therefore contributed to better performance of CBNRM projects. This has been corroborated by the “excellent” performance level of CBNRM in the wet area. The Botswana State of the Environment Report (GoB, 2002b) states that due to the abundance of water in the wet area, it is a haven for wildlife species and as such is a major tourist region. Besides high revenues generated in the wet area, there are other benefits in the wet area as depicted in Chapter Two (which include employment). High revenues have ushered in the improvement of community livelihoods.



## **CHAPTER FIVE**

### **General discussions, recommendations and conclusions**

#### **5.1 Introduction**

This chapter discusses findings from Chapters Three and Four, which answer the two research questions of this study. It also gives recommendations and conclusions drawn from the research findings. Research findings indicate that there are a number of factors that influence the performance of CBNRM projects in Botswana as detailed in Chapter Three. The results further show that, in general, the Botswana CBNRM programme has adhered to the seven major principles for increasing the success of CBNRM projects, though to varying extents in the three aridity zones (Table 3.4). The findings further indicate that aridity has a significant influence on the performance of CBNRM projects (Figure 4.1). The research results also indicate that the performance of CBNRM projects varies across the three aridity zones (Table 4.3).

#### **5.2 General discussion**

The research findings indicated that a numbers of factors influence the performance of CBNRM projects along an aridity gradient in Botswana. Some of the factors are not directly linked to the seven major principles for increasing success of CBNRM projects. Performance factors are also associated with the features of individual projects and their respective communities.

The degree of adherence to seven important principles for increasing CBNRM projects success however, directly impacts on the projects performance and therefore the country CBNRM programme (Table 4.2). The Botswana CBNRM programme adopted a planner-centred/top-down approach where communities were chosen without due attention to tribal affiliation or consideration of their literacy levels in providing facilitation services (Thakadu, 2005). Such a situation, coupled with limited human resources (in terms of numbers and skills) to facilitate the CBNRM process has resulted in ethnic tensions in some projects due to unavailability of conflict mediation strategy which could be offered by the facilitators. This has also contributed to poor performance of the projects. Inequitable facilitation efforts by the government as the lead

CBNRM agency (Table 3.3 and Table 4.2) in the country also left some areas at a disadvantage and therefore negatively affected their performance. Such a scenario reflects lack of proper feasibility studies in project formulation which in some cases led to negation of the ideal situation to foster understanding and build relationships to promote trust within communities (Rozemeijer and van de Jagt, 2000). Thakadu (2005) has also stated that some officers were in government facilitation teams during the course of CBNRM implementation and yet they were not aware of their roles and responsibilities. Such inadequate skills led to a further rise in factors that negatively affected CBNRM performance.

Research results also indicated that there are disparities between projects in the three aridity zones, especially in the way the projects were managed. Some projects, especially those in the wet areas, have come up with complementary rules and regulations for managing the CBNRM projects beside the mandatory enactment of constitutions as required by the CBNRM policy (GoB, 2007a). Such developments reflected inconsistencies in projects management although standardised models were adopted country wide; however this would be sign of adptive management for those projects that have enacted their own rules. This was therefore a sign that different projects take different time periods to mature and therefore more time should be dedicated to the weaker ones (those that show signs of slow maturity).

It was also apparent from the research findings that, although institutions of land and resources management are in place, the lack of skilled facilitators or a dedicated office to deal with CBNRM in the country has handicapped such institutions (Thakadu, 2005). The mentoring processes that such institutions could have gone through were deficient and therefore lacked capacity to deal with arising issues. This was indicated as one of the factors that have negatively influenced CBNRM projects performance, that is, the lack of ability by institutions to resolve outstanding issues in time (OKMCT, 2010). Therefore only those communities fortunate and prudent enough to have a vision of linking up their CBNRM institutions with other local level institutes have been able to forge ahead. This has gone a long way in providing a platform to bring cohesion within the community, especially where the traditional leadership is actively involved as alluded to in Chapter Three, Section 3.6.

It was clear from the research findings that factors that influence the performance of CBNRM are both internal and external. The internal factors are related to issues within the communities' socio-economic, cultural and political set-up, while the external factors include activities that originate from outside the communities but are aimed at influencing some set-up at community level. Complex historical, social and political contexts at community level further underlie some of the factors that influence CBNRM (Twyman, 2000). There are, however, linkages between the external and internal factors and both could lead to situations that could be beneficial or detrimental to CBNRM performance depending on how such factors were conceptualised and/or handled within the programme by both the community itself and other CBNRM stakeholders (such as programme facilitators and others who play an active role in the programme).

As already stated, aridity has a direct influence on CBNRM especially on the amount of benefits that CBNRM projects could generate (Figure 4.1). Thus projects in the wet areas have a comparative advantage with regard to the amount of benefits generated through CBNRM. This could therefore be one of the reasons, as revealed by the research finding, why government seems to concentrate more efforts in terms of facilitation in the wet area. It could therefore be deduced from this scenario that CBNRM is more effective in the wet area than in the dry area, justifying the research hypothesis that: CBNRM is more effective in wet areas than in dry areas due to abundant natural resources, leading to high benefits, and therefore improved livelihoods and rural development in these areas. However, defining benefits from CBNRM only in terms of revenues or economic benefits is too narrow, too simplistic and potentially counterproductive (Berkes, 2003). There could be other benefits, such as social and political benefits, arising from CBNRM which cannot necessarily be quantified in monetary terms and yet could be essential for the success of projects.

### **5.3 Recommendations**

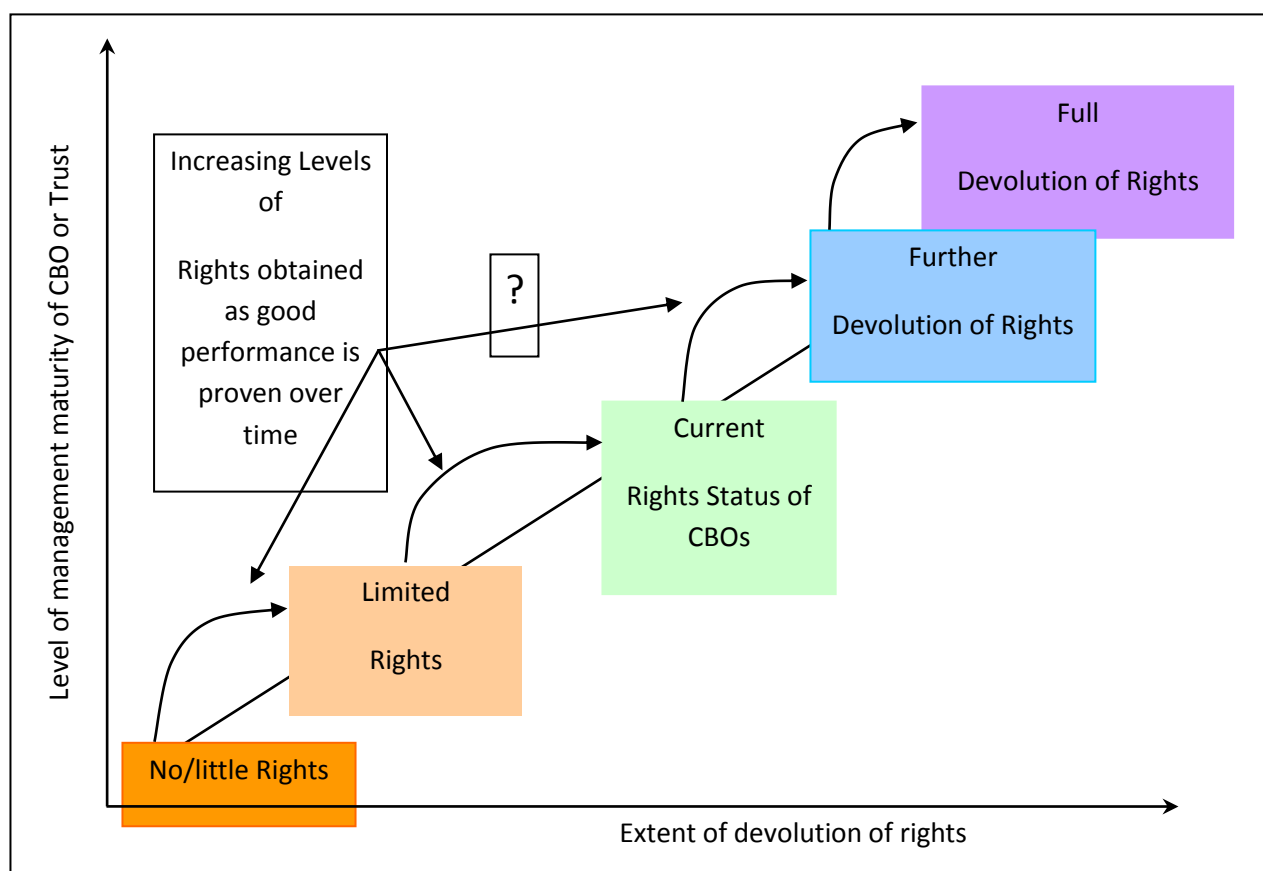
It is apparent that there are shortcomings in the Botswana CBNRM programme and some of these could be overcome if certain actions are instigated. The factors that negatively affect CBNRM performance which were highlighted through the research results underscore the need for a dedicated CBNRM office (or agency), and such a need cannot be overemphasised. This would provide the much needed specialist or appropriate facilitation to the communities or CBNRM projects, as shown by the range of issues that are prevalent in different communities' projects and areas. This would also expedite resolution of the long-standing issue of limited knowledge about CBNRM and inadequate capacity to provide services to CBNRM communities and would further lead to the setting up of appropriate systems and plans with all the intended goals and clear direction or desired ultimate outcomes, which include the development of a "vision" for CBNRM in Botswana. This fact was echoed by Thakadu (2005) who mentioned that some officers who were drafted by the government into the mobilisation teams were not aware of their roles and responsibilities and could not adequately represent their departments. This scenario still pertains to date where the DWNP with advice from the TAC has been mandated to guide and facilitate the CBNRM process at district level yet those officers mandated with this task are not necessarily experts in CBNRM and also have other tasks to perform.

Beside the above, lack of a vision for the country programme has resulted in the high echelon within the government dictating how CBNRM projects should be run by prescribing actions to be taken in any situation that arises, and this that has frustrated the process and caused mayhem as decisions are always reactive in nature, other than being proactive as recorded in some files and records (STMT, 2010; GoB, 2010).

This necessitates the development of an implementation plan with a vision for the country's CBNRM programme which will be overseen by a CBNRM authority or dedicated office (this is also supported by study results: see Appendices A, B and C). Such an authority will circumvent dominance by certain stakeholders and prevent problems that might otherwise arise. The vision will also spell out the devolutionary process to communities in terms of both governance and natural resources management and the vision will also demonstrate the extent of commitment

by the state to local control over resources, as national policies and legislation implementation are currently the responsibility of the government.

The fact that government has treated all CBNRM projects alike irrespective of the level of maturity demonstrated is one factor that has heightened the government's desire to want to hold on policy and legislation implementation and natural resources management rights without any deliberate plan of devolution of these to deserving communities. Government together with other stakeholders should come up with a deliberate plan that would ensure that such rights are ultimately devolved to deserving communities. This could be done through an audit of the existing CBNRM projects which would place them at different levels depending on the factors that pertain in these projects such as governance, adherence to rules and regulations and others. Such an audit will also inform the dedicated CBNRM office on the appropriate facilitation or assistance that individual CBNRM projects require and make provision for the acquisition of appropriate skills within the organisation. Classification of projects or community trusts together with rights devolution could take the form shown in Figure 5.1 below: this was once suggested to the MEWT upper echelons but never saw the light of the day as there was not enough justification for its adoption at the time.



**Figure 5.1: Incremental rights devolution model showing assumption of greater rights through proven acceptable performance from an audit**

Source: Adapted from DWNP/WCMP report to the DWNP Director; 3<sup>rd</sup> March 2005 (GoB, 2005).

It is conceivable that CBNRM projects or institutions also go through different growth stages. Like other organisations, they go through the Nascent, Emerging, Evolving and finally reach the Mature stage (NEEM) and therefore a model like the one above would identify the stage at which the institution is in and lead to identification of appropriate facilitation and management assistance to be provided.

At national level, the general developmental approach of Botswana has identified special groups of communities such as Basarwa and tailor-made developmental programmes and projects suitable for them based on their uniqueness. The same could be adopted in CBNRM instead of applying a uniform approach of the programme country wide without due consideration of

differences in the groups' socio-cultural, economic and political complexes at community level. Therefore, the need to give due attention to special groups would benefit from a rapid assessment of the current situation which will come up with recommendations on the way forward in different communities and conditions.

There has been limited monitoring of the CBNRM programme performance and activities as the research results have revealed that the programme has no monitoring framework, therefore there has been very little or limited information generated over the years on the programme. Such information is essential in planning and realignment of the programme. Although some communities have been collecting monitoring data through the MOMS and government has also been doing scientific research, there is no convergence of these two sets of data and therefore it is necessary to find common ground in the co-monitoring of natural resources between government and the communities and this will form the basis for co-management of the resources. A programme monitoring framework has to be set up as it will assist in the management of the programme.

#### **5.4 Conclusions**

The CBNRM programme in Botswana has generally performed well, as indicated in Table 4.2 and it has followed the fundamentals of CBNRM in the formulation of projects throughout the country. The initial intensive facilitation of CBNRM projects by NGOs and donors at programme inception has scaled down over the years, as was evidenced by the withdrawal of the resident community advisor from projects such as NKXT in Kgalagadi and CTT in Ngamiland, where the SNV had engaged full-time facilitators for the projects as revealed through the research. Withdrawal of such facilitators and scaling down of government facilitators seems to have been premature for some projects as they have slid back to the initiation stage, and some have had their governance and accountability structures dysfunctional leading to resentment and apathy at community level as indicated during the research in projects such as CTT and OKMCT. The Government tendency to offer selective facilitation has also left some projects vulnerable, especially in the medium rainfall and dry areas.

Research results revealed that little research was done on CBNRM in Botswana prior to the commencement of the programme, and during the implementation process of the programme there has been little monitoring as indicated by the unavailability of a programme monitoring framework. This has apparently trickled down to individual CBNRM projects where no feasibility studies or socio-economic studies to inform the CBNRM process were carried out prior to project commencement. In the subsequent stages of the programme, it has also operated without any proper implementation plan or vision to guide it. This explains why there are uncertainties on the programme direction and hence no proper support to the programme. This could have given rise to the prevalent scenario where the government has frequently made spontaneous decisions on certain aspects which have led to general dissatisfaction amongst some community members and the programme extension officers, as already alluded to. Such actions by the government could have arisen from the felt obligation to direct the programme, however, lack of information could have led to the pronouncement of unpopular decisions.

Adherence of the Botswana CBNRM programme to the seven major principles for increasing CBNRM success, though at varying proportions (Table 4.2), provides an opportunity for the programme realignment and the development of an implementation plan. The current status of the programme would serve as the basis for such a plan.

The Botswana CBNRM programme is a predominantly wildlife and tourism based programme and most tangible benefits realised from CBNRM are thus from such utilisation. The projects that have made more monetary benefit to the communities are the ones in wet area (Figure 4.1) due to water availability for wildlife. The Wildlife Conservation Policy (1986) (GoB, 1986) and the Tourism Act (1992) (GoB, 1992b) were instrumental in the initiation of the programme as mentioned by Thakadu (2005) and led to reluctance by other government agencies to participate actively in the programme. The status quo has continued to date despite the fact that a dedicated policy (CBNRM Policy of 2007) has been enacted to encourage other sectors such as forestry to assume an active role in the programme with regard to forestry based CBNRM. Besides maintaining the status quo; due presumably to the lack of the programme



vision and implementation plan, there could be other justifications for this situation. Child (2009) stated that some natural resources (such as veldt and forest resources) do not yet have a readily available market to generate benefits and that developing new products takes skill, investment, marketing and a lot of time, unlike wildlife and tourism which have long established themselves in the market and have become viable business ventures.

Despite the challenges encountered and a variation in the range in benefits generated by the programme in different areas, the general participation of communities and its acceptance at national level could be used as a vehicle for biodiversity conservation and with proper planning would further improve rural livelihoods. The fact that communities have been able to voice their concerns on the programme issues is a positive sign in the growth and improvement in local governance, not only on CBNRM, as the programme has created awareness of individuals on their civil rights politically and economically.

Overall, CBNRM has progressed in Botswana in the last three decades, despite the fact that the programme still faces a number of challenges that have been outlined in this document as revealed by the research. With proper planning and active participation of all stakeholders, the programme would improve and go a long way in biodiversity conservation and improvement of rural livelihoods. However, based on the resource endowment of the different areas, CBNRM might not be a viable livelihood strategy in the dry areas as resources in these areas have proven difficult to utilise commercially and therefore yield little benefits in the form of revenues to the communities, unless other utilisation patterns could be adopted (which include subsistence use of wildlife).

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## APPENDICES

### **Appendix A: Household questionnaire and responses**

#### Part A: Demographic Information

1. Name of respondent: \_\_\_\_\_
2. Gender of respondent: Female                      Male
3. Age of respondent: \_\_\_\_\_
4. Occupation or position: \_\_\_\_\_
5. Number of people in household: \_\_\_\_\_

#### PART B: Project Institutional Data (Knowledge)

6. What are the activities/functions of your CBNRM project?
7. Does the project have a constitution?  
Yes                      No
8. Were you involved in drafting the constitution?  
Yes                      No
9. Is the constitution adhered to? Yes                      No
10. Is your CBNRM project still functional and if not why? Yes                      No
11. Does the project have an approved management plan? Yes                      No
12. Is the Land Use Management Plan and/or Management Plan simple enough for you to use on a daily basis in the project management process?  
Yes                      No
13. Do you have other rules and/or regulations that relate to the use of the natural resources within your area? Yes                      No
14. If yes; are they adhered to by the members? Yes                      No
15. Current number of men and women sitting on the committee/board of trustees:  
Men \_\_\_\_\_ Women \_\_\_\_\_ Total \_\_\_\_\_

#### PART C: Governance Issues

16. Are board/committee members elected by the community? Yes                      No
17. If yes, how often does the community elect a new committee? \_\_\_\_\_
18. If no, who elects the committee? \_\_\_\_\_
19. Does the constitution allow the re-election of committee members?  
Yes                      No
20. If YES, is there a limitation on the number of years they may serve?

Yes No

18. When was the last board/committee election held?

19. Was it according to the constitution; and if not, why? Yes No

20. How many times does the project hold the following meetings?

a. Meetings of committee members \_\_\_\_\_times per months / \_\_\_\_\_times per year

b. Meeting of committee with General membership \_\_\_\_\_times per months / \_\_\_\_\_times per year

21. Are there any specific qualifications required for the position of Chairperson, Treasurer and Secretary? Yes No

22. If YES to the above question, write the required qualifications for each person.

Chairperson\_\_\_\_\_

Treasurer\_\_\_\_\_

Secretary\_\_\_\_\_

23. Are all project/trust members involved in making decisions on major issues that affect the project? Yes No

24. How does the community reach an agreement on some of the issues where members might have different views?

25. Do the board/committee report back satisfactorily on the assignments that the community might have given them or decisions that they take elsewhere on behalf of the community?

Yes No

26. Is there a formal reporting procedure by the board to community members? Yes No

27. If yes; what is the procedure of reporting?

28. Is a household in the village automatically a member of the project? Yes No

29. Can any member request for a meeting to discuss some issues of concerns if he/she has any?

Yes No

30. Are you satisfied with your project or the role you are currently playing in the project/trust? Yes No

31. Do you have agreed plans of taking care of the environment and natural resources as a community or project members?

Yes No

32. If yes; which aspects of the environment or particular natural resources does this plan cover?

33. Has the plan(s) been implemented? Yes No

34. Has this contributed to improvement in the environment and natural resources? Yes No Explain:

35. Do Government and/or NGO rural Development Extension officers visit your project/community?

Yes No

36. If Yes, how often? \_\_\_\_\_

37. Which Extension Officers within government (department) or which NGOs visit your project?

38. How do they assist or what role do they play in your project?

39. Are you satisfied with the roles of these extension officers? Yes No

Explain:

40. What are the factors that affect the performance of your project (Negative and positive) or what are the challenges to your project/trust?

41. How has the project/trust responded to or dealt with the negative factors or challenges?

42. Can the community run this project without the assistance of extension officers? Yes No

PART D: Cost-Benefits (Revenue / Benefit Distribution)

43. Are there any benefits that have been brought about by the project? Yes No

44. If yes; what are the levels of these benefits?

|        |  |
|--------|--|
| High   |  |
| Medium |  |
| Small  |  |

45. What are these benefits or positive things that you got from the project?

46. Are there any losses or negative things that have been brought about by the project?  
Yes No

47. What are the levels of losses?

|        |  |
|--------|--|
| High   |  |
| Medium |  |
| Small  |  |

48. What are these losses that have been brought about by the project?

49. Has your CBNRM project generated any revenues through its activities? Yes No

50. Has the project ever made any cash payments from the CBNRM revenue to each household or individual project/trust members? Yes No

51. If yes, how much has each household received from project in the last five years?

|                 | Year |      |      |      |      |
|-----------------|------|------|------|------|------|
|                 | 2006 | 2007 | 2008 | 2009 | 2010 |
| Amount received |      |      |      |      |      |

64. Is the payment still being made? Yes No

52. Is the project still generating/receiving any revenues through the CBNRM activities?  
Yes No

53. Does the project provide a sitting allowance for Board members? Yes No

54. What are the sources of livelihood for your household? (Rank in order of importance, 1 most important)

| Sources of livelihood   |      | Use/purpose |                        |
|-------------------------|------|-------------|------------------------|
|                         | Rank | Consumption | Cash/ amount per annum |
| Livestock farming       |      |             |                        |
| CBNRM                   |      |             |                        |
| Rain fed arable farming |      |             |                        |

|  |  |  |  |
|--|--|--|--|
| Informal employment (Specify)                                |  |  |  |
| Formal employment  |  |  |  |
| Ipelegeng (Drought relief)                                   |  |  |  |
| Government welfare e.g. old age pension, orphans & destitute |  |  |  |
| Remittances  |  |  |  |
| Other (specify)  |  |  |  |

#### PART E: Community enterprise

55. Did the project ever have any Joint Venture agreement/partner? Yes No

56. Does the project currently have a joint venture agreement/partner? Yes No

57. If YES to 69, how long has the JVP agreement existed?

58. If NO to 70; what is the reason for not having a JVP now?

#### PART F: Natural Resource Management

59. Has the status of the environment and/or natural resources changed since the beginning of the CBNRM project in your area? Yes No

60. How has it changed?

|                   |  |
|-------------------|--|
| Remained the same |  |
| Got better        |  |
| Got worse         |  |

61. Why do you think is the case as in (73 and 74)?

**Responses to household questionnaire**

a. Does your project have a registered constitution?

|        | Yes | No | Total |
|--------|-----|----|-------|
| Dry    | 60  | 0  | 60    |
| Medium | 60  | 0  | 60    |
| Wet    | 90  | 0  | 90    |
| Total  | 210 | 0  | 210   |

b. Were you involved in the drafting of the constitution?

|        | Yes | No | Total |
|--------|-----|----|-------|
| Dry    | 49  | 11 | 60    |
| Medium | 56  | 4  | 60    |
| Wet    | 74  | 16 | 90    |
| Total  | 179 | 31 | 210   |

c. Does the community or members adhere to the constitution?

Adherence to constitution

|          | Yes | No | Not always |     |
|----------|-----|----|------------|-----|
| Dry area | 37  | 13 | 10         | 60  |
| Medium   | 43  | 13 | 4          | 60  |
| Wet      | 78  | 9  | 3          | 90  |
|          | 158 | 35 | 17         | 210 |

d. Do you have other rules/regulations for running or administration of the project/trust?

|        | Yes | No | Total |
|--------|-----|----|-------|
| Dry    | 38  | 22 | 60    |
| Medium | 35  | 25 | 60    |
| Wet    | 87  | 3  | 90    |
| Total  | 160 | 50 | 210   |



e. Are these rules and/or regulations adhered to by the community/trust members?

|          | Adhered to |    | Total |
|----------|------------|----|-------|
|          | Yes        | No |       |
| Dry area | 37         | 1  | 38    |
| Medium   | 35         | 0  | 35    |
| Wet area | 85         | 2  | 87    |
|          | 157        | 3  | 160   |

f. Are all trust/project members involved in making decisions concerning the project or major issues that affect the project?

|          | Involved in dcsin making |          | TOTAL      |
|----------|--------------------------|----------|------------|
|          | Yes                      | No       |            |
| Dry area | 56                       | 4        | <b>60</b>  |
| Medium   | 57                       | 3        | <b>60</b>  |
| Wet area | 90                       | 0        | <b>90</b>  |
| Total    | <b>203</b>               | <b>7</b> | <b>210</b> |

g. Are you satisfied with the role you are currently playing in the project/trust?

|               | Yes        | No        | Total      |
|---------------|------------|-----------|------------|
| <b>Dry</b>    | 44         | 16        | <b>60</b>  |
| <b>Medium</b> | 27         | 33        | <b>60</b>  |
| <b>Wet</b>    | 62         | 28        | <b>90</b>  |
| <b>Total</b>  | <b>133</b> | <b>77</b> | <b>210</b> |

h. Do elected boards/committees adequately represent the community/project (trust) members?

|               | Yes        | No        | Total      |
|---------------|------------|-----------|------------|
| <b>Dry</b>    | 43         | 17        | <b>60</b>  |
| <b>Medium</b> | 17         | 43        | <b>60</b>  |
| <b>Wet</b>    | 63         | 27        | <b>90</b>  |
| <b>Total</b>  | <b>123</b> | <b>87</b> | <b>210</b> |

i. Do government and/or NGO rural extension officers visit your project to assist?

Visitation

|          | Yes        | No       | Total      |
|----------|------------|----------|------------|
| Dry area | 60         | 0        | <b>60</b>  |
| Medium   | 60         | 0        | <b>60</b>  |
| Wet area | 90         | 0        | <b>90</b>  |
| Total    | <b>210</b> | <b>0</b> | <b>210</b> |

j. Are you satisfied with the role of extension officer in your project?

|               | Yes        | No        | Total      |
|---------------|------------|-----------|------------|
| <b>Dry</b>    | 39         | 21        | <b>60</b>  |
| <b>Medium</b> | 24         | 36        | <b>60</b>  |
| <b>Wet</b>    | 62         | 28        | <b>90</b>  |
| <b>Total</b>  | <b>125</b> | <b>85</b> | <b>210</b> |

k. Does the project/trust have a land use management plan (LUMP)?

**Dry area**

| LUMP     |     |    |         |           |
|----------|-----|----|---------|-----------|
|          | Yes | No | No idea | Total     |
| Dry area | 60  | 0  | 0       | <b>60</b> |
| Medium   | 60  | 0  | 0       | <b>60</b> |

l. Is the LUMP simple enough for you to use on a daily basis in the management of land/natural resources?

**Dry area**

Usable

|          | yes       | no       | Total     |
|----------|-----------|----------|-----------|
| Dry area | 56        | 4        | <b>60</b> |
| Medium   | 58        | 2        | <b>60</b> |
| Wet area | <b>89</b> | <b>1</b> | <b>90</b> |

**203                      7                      210**

m. Do have any policies, regulation or plans for taking care of the environment and/or natural resources?

|               | <b>Yes</b> | <b>No</b> | <b>Total</b> |
|---------------|------------|-----------|--------------|
| <b>Dry</b>    | 40         | 20        | <b>60</b>    |
| <b>Medium</b> | 40         | 20        | <b>60</b>    |
| <b>Wet</b>    | 87         | 3         | <b>90</b>    |
| <b>Total</b>  | <b>167</b> | <b>43</b> | <b>210</b>   |

o. Have they been implemented?

| Implemented  |            |           |              |
|--------------|------------|-----------|--------------|
|              | <b>Yes</b> | <b>NO</b> | <b>Total</b> |
| Dry area     | 40         | 0         | <b>40</b>    |
| Medium       | 40         | 0         | <b>40</b>    |
| Wet area     | 85         | 2         | <b>87</b>    |
| <b>Total</b> | <b>165</b> | <b>2</b>  | <b>167</b>   |

p. If yes; has this contributed to the improvement the environment and/or natural resources?

| Envir Imprvmnt |            |           |                 |              |
|----------------|------------|-----------|-----------------|--------------|
|                | <b>Yes</b> | <b>No</b> | <b>Not sure</b> | <b>Total</b> |
| Dry area       | 36         | 0         | 4               | <b>40</b>    |
| Medium         | 36         | 2         | 2               | <b>40</b>    |
| Wet area       | <b>82</b>  | <b>3</b>  | <b>0</b>        | <b>85</b>    |
| <b>Total</b>   | <b>154</b> | <b>5</b>  | <b>6</b>        | <b>165</b>   |

q. Has the status of the environment and natural resources changed since the beginning of the CBNRM project in your area?

| Changed  |            |           |                |              |
|----------|------------|-----------|----------------|--------------|
|          | <b>Yes</b> | <b>No</b> | <b>dnt knw</b> | <b>Total</b> |
| Dry area | 54         | 3         | 3              | <b>60</b>    |
| Medium   | 29         | 31        | 0              | <b>60</b>    |
| Wet area | 82         | 8         | 0              | <b>90</b>    |

|       |            |           |          |            |
|-------|------------|-----------|----------|------------|
| Total | <b>165</b> | <b>42</b> | <b>3</b> | <b>210</b> |
|-------|------------|-----------|----------|------------|

r. If yes: how has it changed?

#### STATUS OF ENVIIRONMENT

|          | Got better | Got worse | Total      |
|----------|------------|-----------|------------|
| Dry area | 31         | 23        | <b>54</b>  |
| Medium   | 18         | 11        | <b>29</b>  |
| Wet area | 66         | 16        | <b>82</b>  |
| Total    | <b>115</b> | <b>50</b> | <b>165</b> |

s. Have you had any benefits due the project?

|               | Yes        | No        | Total      |
|---------------|------------|-----------|------------|
| <b>Dry</b>    | 60         | 0         | <b>60</b>  |
| <b>Medium</b> | 48         | 12        | <b>60</b>  |
| <b>Wet</b>    | 90         | 0         | <b>90</b>  |
| <b>Total</b>  | <b>198</b> | <b>12</b> | <b>210</b> |

t. Have you had any losses due th the project?

|               | Yes        | No        | Total      |
|---------------|------------|-----------|------------|
| <b>Dry</b>    | 37         | 23        | <b>60</b>  |
| <b>Medium</b> | 33         | 27        | <b>60</b>  |
| <b>Wet</b>    | 41         | 49        | <b>90</b>  |
| <b>Total</b>  | <b>111</b> | <b>99</b> | <b>210</b> |

**Qualitative response summaries of households**

| QUESTIONS & RESPONSES   | Frequencies |       |      |     |     |       |      |
|---|-------------|-------|------|-----|-----|-------|------|
|   | KDT         | OKMCT | STMT | CTT | XDT | XNRCT | KKDT |
| 31 Satisfied with role in trust                                       |             |       |      |     |     |       |      |
| Yes:  |             |       |      |     |     |       |      |
| Involved in decision making:  | 5           |       | 26   |     |     | 1     | 14   |
| Right to be heard in meetings:  |             | 2     | 13   |     |     | 1     | 2    |
| Contribute during meetings  |             | 3     | 9    |     |     |       | 3    |
| Derive benefits from trust,   | 2           |       |      | 12  |     |       |      |
| Have responsibility in the running of the project                     |             |       |      |     |     | 1     | 5    |
| No:   |             |       |      |     |     |       |      |
| No consultations and meetings to be informed on the trust             |             |       |      | 16  |     |       |      |
| Not given opportunity to contribute as no meeting held                |             |       |      |     |     |       |      |
| Actions and decision by govt undermine community business:            |             |       |      |     |     | 1     |      |
| No employment opportunities in the trust:                             |             | 2     |      |     |     |       |      |
| Don't get all benefits (houses for others),                           | 2           |       |      |     |     |       |      |
| No individual or household dividends,                                 |             |       |      |     |     |       |      |
| No family member employed in the project                              | 2           |       |      |     |     |       |      |
| No training offered:  |             | 2     |      |     |     |       |      |
| No proper elections held for the board of trustees:                   |             | 7     |      |     |     |       |      |
| Constitution not adhered to   |             |       |      | 11  | 1   | 1     |      |
| No benefits from the trust,   |             |       |      |     | 1   |       |      |
| Poor management   |             |       |      |     |     | 1     |      |
| Corrupt Board,  |             | 7     |      |     | 2   | 1     |      |
| Board doesn't follow community advice,                                |             | 3     |      |     | 1   |       |      |
| Board doesn't report back to the community/no meetings                |             | 4     |      |     | 7   | 5     |      |
| Lack of knowledge on trust business/no information dissemination,     |             |       |      |     | 2   | 1     |      |
| 35 improvement in natural resources/environment                       |             |       |      |     |     |       |      |
| Yes:  |             |       |      |     |     |       |      |
| Illegal activities/Poaching gone down:                                | 2           |       | 23   |     | 1   | 3     | 23   |
| Regulation of nat. resources use (grass and fish: open/close seasons) | 11          | 2     |      |     | 6   |       |      |
| CEGs monitoring the area through MOMS                                 | 2           |       | 18   |     |     |       | 2    |
| Neat environment due to litter picking:                               |             | 7     | 5    |     | 2   |       |      |
| Law being observed:   |             | 4     | 1    |     |     | 1     |      |
| Natural resources being conserved by all:                             | 6           | 7     |      | 9   | 3   |       | 7    |

|   |    |    |    |    |    |   |    |
|---|----|----|----|----|----|---|----|
| less tree and grass cutting                                       |    | 1  |    |    |    | 5 | 13 |
| Fire incidents gone down:   |    |    |    |    | 2  |   | 6  |
| No:   |    |    |    |    |    |   |    |
| 40: Satisfied with Govt/NGO facilitators role                     |    |    |    |    |    |   |    |
| Yes:  |    |    |    |    |    |   |    |
| Help solve problems:  |    |    | 3  |    |    | 1 | 1  |
| Give grants to the project:                                       |    |    | 1  |    |    |   | 8  |
| Advise on project progress and technical issues:                  |    |    | 8  | 14 | 1  | 6 | 9  |
| Community members understand issues better due them:              |    |    | 2  |    |    | 1 |    |
| Advice help in decision making & give direction:                  | 4  |    | 11 | 11 |    | 5 | 8  |
| Most member now enlightened to run trust due to them:             |    |    | 2  |    |    |   |    |
| Avail information to the community:                               |    |    | 1  |    |    | 3 |    |
| Give ideas on how to deal with outstanding issues                 |    |    | 1  |    |    |   | 3  |
| Provide training  |    |    |    |    |    | 2 |    |
| No:   |    |    |    |    |    |   |    |
| Don't come regularly except to instruct us/take too long to visit | 6  | 7  |    |    |    |   |    |
| Don't capture or adhere to suggestions from the community,        | 3  |    | 2  |    | 2  |   |    |
| Don't regard our contribution as useful,                          | 3  |    |    |    |    |   |    |
| Never bring any feedback on our suggestions/ideas and requests,   | 4  |    |    |    |    |   |    |
| Don't help resolving community issues/problems/not enough advice  |    |    |    | 11 | 2  | 3 |    |
| Don't always turn up when invited for meetings,                   |    |    |    |    |    | 1 |    |
| Don't help community to deal with Board's unprocedural acts,      |    |    |    | 9  | 5  |   |    |
| Only turn up when there are burning issues                        |    |    |    |    | 3  | 1 |    |
| Take too long to respond to community concerns                    |    |    |    |    | 6  | 2 |    |
| Don't always turn up when invited                                 |    |    |    |    | 2  | 2 | 4  |
| Not all govt department come to help us                           |    |    |    |    |    |   | 5  |
| 45. Benefits from the project:                                    |    |    |    |    |    |   |    |
| Meat,   |    | 4  | 3  |    | 1  | 5 | 3  |
| Jobs/employment,  | 10 | 11 | 12 |    | 12 | 7 | 16 |
| Money   |    | 4  |    |    | 12 | 8 |    |
| Development projects in the village,                              | 2  |    | 4  |    |    |   |    |
| Houses for elderly,   | 9  |    | 3  |    | 13 |   |    |
| standpipes in households,   | 7  |    | 7  |    |    |   |    |
| Transport to Maun,  | 11 | 1  | 6  |    |    |   |    |
| Toilets in households,  |    |    | 3  |    |    |   |    |
| Assistance to local primary school,                               |    |    | 4  |    | 10 |   |    |

|   |    |    |    |    |    |    |    |
|---|----|----|----|----|----|----|----|
| Pension,  |    |    | 7  |    |    |    |    |
| Scholarship at tertiary level,                                  | 7  |    | 11 |    |    |    | 19 |
| Sports funds (support for football team),                       |    |    | 3  |    | 3  | 5  | 20 |
| Destitute fund,   |    |    | 1  |    |    |    |    |
| Funeral benefits  | 19 | 10 | 6  | 14 | 11 | 16 | 21 |
| Money for ploughing,  |    | 7  | 6  |    |    |    |    |
| Water reticulation,   |    | 11 |    |    |    |    |    |
| Small businesses support  |    | 6  | 2  |    |    |    |    |
| Training and Skills on conservation,                            | 3  |    |    |    |    | 2  |    |
| Household dividends   | 9  |    | 5  |    |    |    |    |
| Toilets in the community cemetery,                              |    |    |    |    | 2  |    |    |
| Tourist market for cultural dance                               |    |    |    | 17 |    |    |    |
| 46. Losses  |    |    |    |    |    |    |    |
| Fields and livestock  |    |    | 4  |    |    |    |    |
| No hunting of key species                                       |    |    |    |    |    |    | 7  |
| No collection of wild fruits in the area (restricted movement), |    |    | 1  |    |    | 3  | 1  |
| Ban on hunting,   | 3  |    | 2  |    |    |    |    |
| Money (P105 000 in 2007),                                       |    | 9  |    |    |    |    |    |
| Access to fishing in the area,                                  |    | 5  |    |    |    |    |    |
| No or restriction in canoeing in the area,                      |    | 4  |    |    |    |    |    |
| Misuse of trust funds by Board of trustees/manager              |    | 3  |    | 6  | 2  |    |    |
| No more hunting by individuals (loss of hunting rights/SGL)     |    |    |    |    |    | 12 | 11 |
| Lost ights to run/ have a say in the trust                      |    |    |    | 9  |    |    |    |
| Lack of control of/over the area,                               | 4  |    |    |    |    |    |    |
| House/huts destruction by too many elephants                    | 8  |    |    |    |    |    |    |
| Unaccounted for money by the Board of trustees                  | 2  |    |    |    |    | 13 |    |
| None payment by the JVP (not adhering to agreement),            |    |    |    |    | 17 |    |    |
| No meat ration  |    |    |    |    |    | 2  |    |
| Reduction in hunting quotas                                     |    |    |    |    |    | 2  | 2  |
| No rights to the area   |    |    |    |    |    |    | 4  |

## Appendix B: Key informant questionnaire and answers

Respondent \_\_\_\_\_

Sex \_\_\_\_\_

Organization: \_\_\_\_\_

Position: \_\_\_\_\_

Years of involvement in CBNRM \_\_\_\_\_

District: \_\_\_\_\_

CBNRM Projects facilitated: \_\_\_\_\_

1. How long have you been involved in the CBNRM programme (in your district – for district based personnel)? \_\_\_\_\_
2. What is your role in the CBNRM programme/project(s)?

|                  |  |
|------------------|--|
| Facilitator      |  |
| Advisor          |  |
| Manager          |  |
| JVP              |  |
| Others (specify) |  |

3. List the activities performed under your role the programme/project(s)?
4. How would you describe CBNRM performance in your area/your project(s)/in the country?

|                            |  |
|----------------------------|--|
| Effective/Successful       |  |
| Mixed outcomes             |  |
| Not effective/unsuccessful |  |

5. What factors have influenced the above (chosen in 4) performance of CBNRM in your district/your project/ in the country? (both positive and negative)?
6. Of these factors mentioned above, are the all the negative ones reconcilable/can they be overcome, and how? Yes No
- Explain
7. Has there been any way or attempt of dealing with these negative factors before? Yes No
8. If YES to 7, how and if NO why (explain)?
9. Are there variations in individual projects effectiveness in your district/in the country? Yes No
10. If YES to 9, what is the cause of this?
11. Is there a difference in CBNRM performance in the different districts in the country? Yes No
12. If YES to 11, what factors cause this difference?
13. Is CBNRM attaining the objectives of:

- a. **Conservation of the environment/natural resources (with local communities involvement)?**  
Yes No Explain?
- b. **Benefits generation from natural resources use and improvement of livelihoods of communities and rural development?** Yes  
No Explain?

14. Do you have any indicators or data to confirm your answer to 13 and if YES, what are the sources of these data?

Yes

No

15. Are there any ground rules/principles that have been adopted in CBNRM implementation)? Yes No

16. If YES, what are these principles?

17. Has your individual project/ district programme or the national CBNRM programme applied any of principles below and if YES, give details?

- a. *There are existing effective institutions at community level that enable individuals to actively participate in decision making on issue related to land use and natural resources management.*

Yes No

- b. *The institutions and its management structure are adaptive, flexible and evolve.* Yes No

**(Summary a and b: Institutions for local governance and land and resource management are in place and are effective. The institutions and its management structure are adaptive, flexible and evolve).**

- c. *The production potential of the resource base has been maintained or improved, through enactment of good managerial practices that ensure sustenance of the resources.* Yes No

- d. *There are other sources of livelihood for community members besides CBNRM (A diverse and flexible range of livelihood options exist and are maintained) This provides for a range of possible option for survival and prevent over reliance on one strategy which might have detrimental effects, in case of failure.* Yes No

- e. *There are economic benefits to provide an incentive for the wise use of the resources. The perceived and actual benefits outweigh the costs.* Yes No

- f. *There are policies and laws that govern and promote CBNRM.* Yes No

*These policies and laws are well understood, by the community or their local institution.* Yes No

- g. *The community has developed the capacity to implement these and also have the authority to do so and are indeed implementing these* Yes No



- (Summary of g, h and i: There are effective policies and laws; they are implemented, and authority has been handed down to the lowest level where there is capacity (local control of over resources).*
- h. *Facilitation from government, civil society and/or other stakeholders has been provided and it takes cognizance of issues and aspects like different groups within community, the disadvantaged, women youth etc ?* Yes No  
The facilitation deals with issues that are of importance to in the running of CBNRM and they involve the entire community or project members. Yes No
- i. *(Summary of j and k: There is sensitive and responsible facilitation from outside(There is empowerment and re-empowerment of resource users)*
- m. *There is no dominance of the project activities by certain groups or individuals within the community i.e. all members are afforded equal opportunities to have a say in the project.* Yes No
- n. *The weak or marginalized are protected and are able to air their views* Yes No  
*(Summary of m and n: Local-level power relations are favourable for CBNRM and local relations are understood. Own agendas and vested interests do not dominate the process; the weaker role players-for example, the poor and the women can speak openly).*
18. Is there any likelihood that the CBNRM projects that are not effective or lagging behind could attain the status of the ones that are effective (if any)? Yes No
- If YES to 18, how would/could this be attained and if NO why?
19. Do different projects have monitoring frameworks in place? Yes No  
If YES, what do they monitor and if NO why is there no monitoring?
20. What is the significance of these monitoring frameworks in CBNRM?
21. Does government, NGOs and other stakeholders use the information from the monitoring frameworks (if there are any in place)? Yes No  
If YES, how and if NO, why?
22. Are the monitoring outcomes incorporated into the management/implementation plans of the projects? Yes No  
If YES, how and if NO why?
23. What is the current role of the following stakeholders in your CBNRM projects or CBNRM in general and is it in accordance to their perceived mandate?  
Government:  
NGOs:  
Community:
24. How would you describe conditions of the environment and/or natural resources in the area in the past 5 years?
- |                   |  |
|-------------------|--|
| Remained the same |  |
| Improved          |  |
| Deteriorated      |  |
25. If there is a change, would you attribute this to CBNRM?  
Yes No
- Elaborate:
26. How are the working relations between government, communities and NGOs in the management of the environment/natural resources?
27. Is CBNRM projects performance related to or influenced by aridity?  
Yes No  
If YES, how does aridity affect CBNRM performance?
28. What are the local communities' attitudes and perceptions towards CBNRM?
29. Do communities in CBNRM understand the concept of sustainable natural resources management and conservation?  
Yes No
30. If YES, how do they ensure that; and if NO, why?
31. What factors are essential for the sustainability of CBNRM projects or CBNRM in general?
32. Are you satisfied with the way in which CBNRM is being implemented and managed in the country?  
Yes No
33. If NO, why? How could the CBNRM programme be enhanced?
34. What are the strengths of CBNRM in your district/area or CBNRM project(s)?
35. What are the weaknesses of CBNRM in your district/area or CBNRM project(s)? What are the opportunities of CBNRM in your district/area or CBNRM project(s)?
36. What are the threats to CBNRM in your district/area or CBNRM project(s)?
37. What are the challenges to the programme or your project(s) or to CBNRM in your area/district?
38. How has the programme or project/trust responded to the challenges?
39. What would be your recommendations on/about the CBNRM programme in the country?

### Summary of Key Informant responses

#### Key Informants profiles

| Organisation | Govt | NGO |
|--------------|------|-----|
| female       | 4    | 2   |
| male         | 5    | 2   |

#### a. How would you describe the performance of CBNRM in Botswana?

|                |   |
|----------------|---|
| Successful     | 2 |
| unsuccessful   | 2 |
| mixed outcomes | 9 |

#### b. What factors influence the above or CBNRM performance?

No. of respondent

|   |    |
|---|----|
| Community literacy level (lack of capacity, lack of management skills at community level              | 7  |
| Poor facilitation & logistical support from government and NGOs (no dedicated CBNRM desk office/unit) | 10 |
| Biased policy which advocate for standard CBNRM models and power relations among stakeholders         | 4  |
| Poor or dysfunctional governance structures at community level  | 1  |
| Amount of benefits generated or potential benefits to be generate and related benefits sharing plan   | 3  |
| Too much government interference (control measures by government                                      | 4  |
| Capacity at both facilitation and community level/no proper mobilization strategies                   | 4  |
| CBNRM importance as compared to other livelihood strategies   | 5  |
| Past trends at community level (example; government handouts)   | 3  |

#### c. Of these factors, can these that negatively influence CBNRM be overcome?

|     |    |
|-----|----|
| Yes | 12 |
| No  | 1  |

#### d. Are there any variations in individual project performance within the same districts or area?

|     |    |
|-----|----|
| Yes | 13 |
| No  | 0  |

#### e. What are the causes of variations in project performance within the same area or district?

|   |   |
|---|---|
| Choice of projects to be undertaken/different ideas or activities     | 5 |
| Difference in the resource base in the CHAs (NR abundance & distrbtn) | 7 |
| Capacities of different communities involved in CBNRM                 | 3 |
| Poor decision making  | 1 |
| Constant changing of leadership (board of trustees)                   | 1 |

#### f. Is there any variation in project performances between different areas or districts?

|     |    |
|-----|----|
| Yes | 13 |
| No  | 0  |

#### g. What are the cause of variation in project performance between different areas or districts?

|  |    |
|--|----|
| Difference in the resource base in districts (NR abundance & distrbtn) | 12 |
|--|----|

|   |   |
|---|---|
| Difference in economic value of NR in different districts         | 8 |
| Capacities of different communities involved in CBNRM             | 3 |
| Choice of projects to be undertaken/different ideas or activities | 6 |
| Community commitment and interest levels                          | 2 |
| Reliance on other productive activities (cattle) in Kgalagadi     | 3 |

h. Is CBNRM attaining the objective of natural resources conservation with the involvement of the custodian communities?

|     |   |
|-----|---|
| Yes | 9 |
| No  | 4 |

i. Is CBNRM attaining the objective of benefits generation for the communities involved?

|     |    |
|-----|----|
| Yes | 13 |
| No  | 0  |

j. Were the CBNRM principles adopted during the formulation of the projects in different areas?

|     |    |
|-----|----|
| Yes | 11 |
| No  | 2  |

k. How has the condition or status of the environment changed in the CBNRM CHA/areas in the last 5 years?

|                        |   |
|------------------------|---|
| Got better/improved    | 4 |
| Remained the same      | 3 |
| Got worse/deteriorated | 3 |
| don't know             | 3 |

l. Would you attribute this status to CBNRM?

|     |   |
|-----|---|
| Yes | 6 |
| No  | 4 |

m. Is the performance of CBNRM projects related to the aridity or dryness/wetness of the area?

|                             |   |
|-----------------------------|---|
| Yes                         | 9 |
| No                          | 2 |
| Depend on nature of project | 2 |

n. What factors are essential for the sustainability of CBNRM (CBNRM projects)?

o. Are you satisfied with the way CBNRM is being implemented in the country?

|     |    |
|-----|----|
| Yes | 1  |
| No  | 12 |

## **Appendix C: CBO Projects manager questionnaire and some responses**

Regularity of Register Update: \_\_\_\_\_

40. Is the CBNRM project attaining the objectives of:

a. **Conservation of the environment/natural resources (with local communities involvement)?**

Yes No Explain?

b. **Benefits generation from natural resources use and improvement of livelihoods of the community and contributing to rural development?**

Yes No Explain?

41. **Do you have any indicators or data to confirm the above and if YES, what are these? Yes No**

42. Are there any principles that have been adopted in the implementation and management of the project?

**Yes No**

43. If YES, what are these principles?

44. Has the project put in place or applied the CBNRM principles below, and how?

j. *Institutions for local governance and land and resource management are in place and are effective. The institutions and its management structure are adaptive, flexible and evolve.* Yes No

k. *The production potential of the resource base has been maintained or improve, through enactment of good managerial practices that ensure sustenance of the resources.* Yes No

l. *A diverse and flexible range of livelihood options exist and are maintained. This provides for a range of possible option for survival and prevent over reliance on one strategy which might have detrimental effects, in case of failure.* Yes No

m. *There are economic and other benefits to provide an incentive for the wise use of the resources. The perceived and actual benefits should outweigh the costs.* Yes No

n. *There are effective policies and laws; they are implemented, and authority has been handed down to the lowest level where there is capacity (local control of over resources).* Yes No

o. *There is sensitive and responsible facilitation from outside. (There is empowerment and re-empowerment of resource users).* Yes No

45. *Local-level power relations are favourable for CBNRM and local relations are understood. Own agendas and vested interests do not dominate the process; the weaker role players-for example, the poor and the women can speak openly.*

Yes No Does the project use or have any monitoring framework/system in place?

Yes No

46. If YES;

a. How was it developed? Locally Brought in by outsiders

b. Was it approved by the community members? Yes No

47. Is the information /data collected through the monitoring framework of use to the project?

Yes No

48. If YES, how is it useful and if NO why?

49. How is the monitoring information/data communicated to the community?

50. How do they (community) use it in the project?

51. Do other agencies recognize and/or make use of the data from the monitoring framework or recognize decisions made based on this information? Explain.

Yes No

52. How has the information from the monitoring framework contributed to:

a. Conservation of natural resources and the environment by the local community?

b. Benefits **generation from natural resources management and use and improvement of livelihoods of the community?**

53. How has the status of the following changed as a results of monitoring in the last 5 years?

|                   |                 |  |
|-------------------|-----------------|--|
| <b>Governance</b> | <i>Improved</i> |  |
|-------------------|-----------------|--|

|                                       |                          |  |
|---------------------------------------|--------------------------|--|
|                                       | <i>Remained the same</i> |  |
|                                       | <i>Deteriorated</i>      |  |
| <b>Natural resources conservation</b> | <i>Improved</i>          |  |
|                                       | <i>Remained the same</i> |  |
|                                       | <i>Deteriorated</i>      |  |
| <b>State of the environment</b>       | <i>Improved</i>          |  |
|                                       | <i>Remained the same</i> |  |
|                                       | <i>Deteriorated</i>      |  |

54. How would you describe the current condition of natural resources in the area?

|                           |  |
|---------------------------|--|
| <i>Good/satisfactory</i>  |  |
| <i>Average</i>            |  |
| <i>Bad/unsatisfactory</i> |  |

55. What are the sources of livelihood for community members in the area?  
(Rank in order of importance, 1 most important)

|   | <b>Sources of livelihood</b>                         | <b>Tick</b> | <b>Rank</b> |
|---|--|-------------|-------------|
| 1 | Livestock farming                                    |             |             |
| 2 | CBNRM  |             |             |
| 3 | Rain fed arable farming                              |             |             |
| 4 | Informal employment (Specify)                        |             |             |
| 5 | Formal employment                                    |             |             |
| 6 | Ipelegeng (Drought relief)                           |             |             |
| 7 | Government welfare e.g. old-age, orphans & destitute |             |             |
| 8 | Remittances  |             |             |
| 9 | Other ( <i>specify</i> )                             |             |             |

56. Which environmental laws, policies and regulations does the project implement?

57. What role does the project play in the implementation of these?

58. Do people in the community comply with these laws, policies and regulations?

Yes                  No                  Not always

59. If not, why do you think people violate the laws?

60. What is the frequency of the violations?

61. Are the laws, policies and regulations sufficient? Yes                  No

62. If not, how do you think they can be improved or what could be done?

63. Has the project ever contributed towards improvement of the environment/natural resources status; technical, financially, in-kind or otherwise? explain; Yes                  No

64. Comments and/or recommendations about the CBNRM project?

# **TEMPLATES ON FURTHER INFORMATION ABOUT THE PROJECT**

26. Indicators for effectiveness of the CBNRM project (to completed with project managers)

| <b>Elements</b>                  | <b>Provisions or features/ aspects</b> | <b>Measures/indicators as per constitutional provisions</b>                             | <b>Adherence or provision</b> |           | <b>Proof/evidence in-line with constitutional provisions or plans in place and/or comments</b>   |
|----------------------------------|--|---|-------------------------------|-----------|--|
|                                  |  |   | <b>Yes</b>                    | <b>No</b> |  |
| <b>Constitution (Governance)</b> | <i>Functional/ Management</i>          | <i>Ongoing project activities on the ground</i>   |                               |           |  |
|                                  | <i>Decision making</i>                 | <i>Forum for all members(meetings) – constitutional provision</i>                       |                               |           |  |
|                                  | <i>Accountability</i>                  | <i>Forum for board to report ( meetings)</i>  |                               |           |  |
|                                  | <i>Participation</i>                   | <i>Quorum in general meetings –- specified in constitution</i>                          |                               |           |  |
|                                  | <i>Representative</i>                  | <i>Regular elections of representatives –constitutional provision</i>                   |                               |           |  |
|                                  | <i>Finance</i>                         | <i>Use of financial resource (approved budgets)</i>                                     |                               |           |  |
|                                  | <i>Others (specify)</i>                |   |                               |           |  |
|                                  |  |   |                               |           |  |
| <b>Benefits</b>                  | <b>Outlined features or aspects</b>    | <b>Measures/indicators as per agreed plans/frameworks</b>                               |                               |           | <b>Proof/evidence in-line with constitutional provisions or plans in place (and/or comments)</b> |
|                                  | <i>Land use</i>                        | <i>Implementation process as per plan provisions and adaptation</i>                     |                               |           |  |
|                                  | <i>Tourism/hunting plans</i>           | <i>Implementation in line with Plans and schedules &amp; adaptation</i>                 |                               |           |  |
|                                  | <i>Employment</i>                      | <i>Transparency in employment and numbers of people employed</i>                        |                               |           |  |
|                                  | <i>Training</i>                        | <i>Training Plan and schedules in place and plan implementation</i>                     |                               |           |  |
|                                  | <i>Social benefits</i>                 | <i>Agreed benefits and distribution plan in place</i>                                   |                               |           |  |
|                                  | <i>Economic benefits</i>               | <i>Transparency and plans in place</i>  |                               |           |  |
|                                  | <i>Grass &amp; crafts</i>              | <i>Harvesting, Distribution &amp; marketing, &amp; monitoring plans in place</i>        |                               |           |  |
|                                  | <i>Wildlife monitoring</i>             | <i>Status, trophy quality &amp; availability in the area (monitoring plan in place)</i> |                               |           |  |
|                                  | <i>Sustainable resources</i>           | <i>Resources status as per monitoring plan</i>  |                               |           |  |
|                                  |  |   |                               |           |  |
| <b>Natural Resources</b>         | <b>Outlined features or aspects</b>    | <b>Measures/indicators as per agreed plans/frameworks</b>                               |                               |           | <b>Proof/evidence in-line with constitutional provisions or plans in place (and/or comments)</b> |
|                                  | <i>Poaching</i>                        | <i>Incidents, trends and efforts/plans to deal with the situation</i>                   |                               |           |  |
|                                  | <i>Diseases</i>                        | <i>Incidents, trends and management</i>   |                               |           |  |

|                |  |   |  |  |  |
|----------------|--|---|--|--|--|
|                |  | <i>strategies</i>   |  |  |  |
|                | <i>Illegal activities</i>                | <i>Incidents, trends and efforts/plans to deal with the situation</i>     |  |  |  |
|                | <i>Resources depletion</i>               | <i>Incidents, trends etc and efforts/plans to deal with the situation</i> |  |  |  |
|                | <i>Rain/floods</i>                       | <i>Incidents, trends and efforts/plans to deal with the situation</i>     |  |  |  |
|                | <i>Fires</i>                             | <i>Incidents, trends and efforts/plans to deal with the situation</i>     |  |  |  |
|                | <i>Problem animals</i>                   | <i>Incidents, trends and efforts/plans to deal with the situation</i>     |  |  |  |
|                | <i>Others (specify)</i>                  | <i>Incidents, trends and efforts/plans to deal with the situation</i>     |  |  |  |
|                |  |   |  |  |  |
| <b>Threats</b> | <b>Indicators as per monitoring plan</b> | <b>Measures/indicators as per agreed plans/frameworks</b>                 |  |  | <b>Proof/evidence in-line with constitutional provisions or plans in place (and/or comments)</b> |
|                | <i>Lack of skills</i>                    | <i>Identification &amp; coping strategies in place</i>                    |  |  |  |
|                | <i>Lack of patrolling</i>                | <i>Identification &amp; coping strategies in place</i>                    |  |  |  |
|                | <i>Lack of vigilance</i>                 | <i>Identification &amp; coping strategies in place</i>                    |  |  |  |
|                | <i>Natural disaster</i>                  | <i>Identification &amp; coping strategies in place</i>                    |  |  |  |
|                | <i>Others (specify)</i>                  | <i>Identification &amp; coping strategies in place</i>                    |  |  |  |

27. Income generated through different CBNRM activities in the last 5 years?

|    | <b>Activity</b>                                   | <b>Amount generated</b> |             |             |             |             |              |
|----|---|-------------------------|-------------|-------------|-------------|-------------|--------------|
|    |   | <b>2006</b>             | <b>2007</b> | <b>2008</b> | <b>2009</b> | <b>2010</b> | <b>Total</b> |
| 1  | <i>Land rental</i>                                |                         |             |             |             |             |              |
| 2  | <i>Hunting quota sold/auctioned</i>               |                         |             |             |             |             |              |
| 3  | <i>Photographic tourism</i>                       |                         |             |             |             |             |              |
| 4  | <i>Cultural tourism</i>                           |                         |             |             |             |             |              |
| 5  | <i>Lodges</i>                                     |                         |             |             |             |             |              |
| 6  | <i>Campsites</i>                                  |                         |             |             |             |             |              |
| 7  | <i>Veldt products (please specify) harvesting</i> |                         |             |             |             |             |              |
| 8  | <i>Veldt products (please specify) processing</i> |                         |             |             |             |             |              |
| 9  | <i>Hiking</i>                                     |                         |             |             |             |             |              |
| 10 | <i>Walking safaris</i>                            |                         |             |             |             |             |              |
| 11 | <i>Mobile safaris</i>                             |                         |             |             |             |             |              |
| 12 | <i>Making and selling crafts</i>                  |                         |             |             |             |             |              |

|    |  |  |  |  |  |  |  |
|----|--|--|--|--|--|--|--|
| 13 | <i>Other activities (please specify)</i> |  |  |  |  |  |  |
|    | <b>Total</b>                             |  |  |  |  |  |  |

28. Household dividends paid to members by the project in the last five years?

| <b>Year</b> | <b>Number of HH</b> | <b>Amount received/hh</b> | <b>Total</b> |
|-------------|---------------------|---------------------------|--------------|
| <b>2006</b> |                     |                           |              |
| <b>2007</b> |                     |                           |              |
| <b>2008</b> |                     |                           |              |
| <b>2009</b> |                     |                           |              |
| <b>2010</b> |                     |                           |              |

29. Which social services has the project provided to the community members in the last 5 years?

|    | <b>Social Service</b>                     | <b>Value/Amount per HH or individual</b> |             |             |             |             |
|----|---|--|-------------|-------------|-------------|-------------|
|    |   | <b>2006</b>                              | <b>2007</b> | <b>2008</b> | <b>2009</b> | <b>2010</b> |
| 1  | <i>Assistance for funerals</i>            |  |             |             |             |             |
| 2  | <i>Housing</i>                            |  |             |             |             |             |
| 3  | <i>Portable water</i>                     |  |             |             |             |             |
| 4  | <i>Sanitation facilities (toilets)</i>    |  |             |             |             |             |
| 5  | <i>Scholarships</i>                       |  |             |             |             |             |
| 6  | <i>Assistance for orphans</i>             |  |             |             |             |             |
| 7  | <i>Services for elderly people</i>        |  |             |             |             |             |
| 8  | <i>Assistance for disabled persons</i>    |  |             |             |             |             |
| 9  | <i>Support for local sport activities</i> |  |             |             |             |             |
| 10 | <i>Transport services</i>                 |  |             |             |             |             |
| 11 | <i>Other (please specify)</i>             |  |             |             |             |             |
|    | <b>Total value for the year</b>           |  |             |             |             |             |

30. How much investment has the project provided towards environmental/natural resources conservation in the last 5 years?

| <b>Year</b> | <b>Benefits/investment into the environment/natural resource conservation</b> |
|-------------|---|
| <b>2006</b> |   |
| <b>2007</b> |   |
| <b>2008</b> |   |
| <b>2009</b> |   |
| <b>2010</b> |   |

31. How many employment opportunities for community members/local persons have been created by the project in the last 5 years?

| <b>Employer</b> | <b>Number employed</b> |               |             |               |             |               |             |               |             |               |
|-----------------|------------------------|---------------|-------------|---------------|-------------|---------------|-------------|---------------|-------------|---------------|
|                 | <b>2006</b>            |               | <b>2007</b> |               | <b>2008</b> |               | <b>2009</b> |               | <b>2010</b> |               |
|                 | <b>male</b>            | <b>female</b> | <b>male</b> | <b>female</b> | <b>male</b> | <b>female</b> | <b>male</b> | <b>female</b> | <b>male</b> | <b>female</b> |



|   |                         |                         |                         |                         |                         |                         |                         |                         |                         |                         |
|---|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|
| <i>CBNRM project/Community Trust</i>            |                         |                         |                         |                         |                         |                         |                         |                         |                         |                         |
| <i>Joint Venture Partner</i>                    |                         |                         |                         |                         |                         |                         |                         |                         |                         |                         |
| <i>Other employment opportunities (specify)</i> |                         |                         |                         |                         |                         |                         |                         |                         |                         |                         |
| <b>Value of employment</b>                      | <b>Employment value</b> | <b>Employment value</b> | <b>Employment value</b> | <b>Employment value</b> | <b>Employment value</b> | <b>Employment value</b> | <b>Employment value</b> | <b>Employment value</b> | <b>Employment value</b> | <b>Employment value</b> |
| <i>CBNRM project/Community Trust</i>            |                         |                         |                         |                         |                         |                         |                         |                         |                         |                         |
| <i>Joint Venture Partner</i>                    |                         |                         |                         |                         |                         |                         |                         |                         |                         |                         |
| <i>Other employment opportunities (specify)</i> |                         |                         |                         |                         |                         |                         |                         |                         |                         |                         |

32. Positions or posts in which people have been employed in?

| <b>Employer</b>                             | <b>Number employed</b> |             |             |             |             |
|---|------------------------|-------------|-------------|-------------|-------------|
|   | <b>2006</b>            | <b>2007</b> | <b>2008</b> | <b>2009</b> | <b>2010</b> |
| <b><i>CBNRM project/Community Trust</i></b> |                        |             |             |             |             |
| <i>Managers</i>                             |                        |             |             |             |             |
| <i>Supervisors</i>                          |                        |             |             |             |             |
| <i>Guides</i>                               |                        |             |             |             |             |
| <i>Other General Workers</i>                |                        |             |             |             |             |
| <b><i>Joint Venture Partner</i></b>         |                        |             |             |             |             |
| <i>Managers</i>                             |                        |             |             |             |             |
| <i>Supervisors</i>                          |                        |             |             |             |             |
| <i>Guides</i>                               |                        |             |             |             |             |
| <i>Other General Workers</i>                |                        |             |             |             |             |

33. Assets owned by the project and access to the assets

| <b>Asset</b>           | <b>Number</b> | <b>Who controls them (and who has access to them &amp; how are they accessed)</b> |
|------------------------|---------------|---|
| <b>Computers</b>       |               |   |
| <b>Printers</b>        |               |   |
| <b>Internet access</b> |               |   |
| <b>DSTV</b>            |               |   |
| <b>Vehicles</b>        |               |   |

|                         |  |  |
|-------------------------|--|--|
| <b>Others (specify)</b> |  |  |
|-------------------------|--|--|

34. Development projects done in the village/provided to community in the last 5 years

| <b><i>Year</i></b> | <b><i>No. of projects</i></b> | <b><i>Description of Projects undertaken</i></b> | <b><i>Total costs of Projects</i></b> |
|--------------------|-------------------------------|--|---------------------------------------|
| <b>2006</b>        |                               |  |                                       |
| <b>2007</b>        |                               |  |                                       |
| <b>2008</b>        |                               |  |                                       |
| <b>2009</b>        |                               |  |                                       |
| <b>2010</b>        |                               |  |                                       |
|                    |                               |  |                                       |

### Summary of CBNRM Project Managers responses

a. Is CBNRM project attaining the objective of conservation of natural resources with the involvement of the local community?

Yes 5

No 0

b. Is CBNRM project attaining the objective of benefits generation for improvement of local communities livelihoods?

Yes 5

No 0

c. Are there any particular principles that have been adopted in the implementation and management of CBNRM projects?

Yes 5

No 0

d. What is guiding the implementation and management of CBNRM?

Othe similar projects 3

Expert guidance 4

implementation plans 1

CBNRM guidelines 4

laws/legislation 4

policies 5

individual facilitation 3

others 0

e. Of these aspects, which are the three most important to the programme/projects?

|                  |   |  |   |   |   |          |
|------------------|---|--|---|---|---|----------|
| CBNRM guidelines | 1 |  | 1 | 1 | 1 | <b>4</b> |
|------------------|---|--|---|---|---|----------|

|                 |   |   |  |   |   |          |
|-----------------|---|---|--|---|---|----------|
| Expert guidance | 1 | 1 |  | 1 | 1 | <b>4</b> |
|-----------------|---|---|--|---|---|----------|

|                  |   |   |   |  |  |          |
|------------------|---|---|---|--|--|----------|
| laws/legislation | 1 | 1 | 1 |  |  | <b>3</b> |
|------------------|---|---|---|--|--|----------|

|          |  |   |   |   |   |          |
|----------|--|---|---|---|---|----------|
| policies |  | 1 | 1 | 1 | 1 | <b>4</b> |
|----------|--|---|---|---|---|----------|

|                         |  |  |   |  |  |          |
|-------------------------|--|--|---|--|--|----------|
| individual facilitation |  |  | 1 |  |  | <b>1</b> |
|-------------------------|--|--|---|--|--|----------|

f. Have these principles been applied in your projects?

|     |   |
|-----|---|
| Yes | 5 |
| No  | 0 |

g. Do people comply with the rules, regulations and policies that are applied by the CBNRM projects?

|            |   |
|------------|---|
| Yes        | 3 |
| No         | 0 |
| Not always | 2 |

h. Are the current CBNRM policies, rules and regulations sufficient?

|     |   |
|-----|---|
| Yes | 2 |
| No  | 3 |

i. How has the status of the following changed as a result of monitoring in the last 5 years?

|                                       |                          |   |
|---------------------------------------|--------------------------|---|
| <b>Governance</b>                     | <i>Improved</i>          | 2 |
|                                       | <i>Remained the same</i> | 3 |
|                                       | <i>Deteriorated</i>      |   |
| <b>Natural resources conservation</b> | <i>Improved</i>          | 5 |
|                                       | <i>Remained the same</i> |   |
|                                       | <i>Deteriorated</i>      |   |
| <b>State of environ</b>               | <i>Improved</i>          | 4 |
|                                       | <i>Remained the same</i> | 1 |
|                                       | <i>Deteriorated</i>      |   |

j. What are the sources of livelihood for community members in the area?

| <b>Sources of livelihood</b>  | RANK     |          |          |          |          | <b>Total</b> |
|-------------------------------|----------|----------|----------|----------|----------|--------------|
|                               | <b>1</b> | <b>2</b> | <b>3</b> | <b>4</b> | <b>5</b> |              |
| Livestock farming             | 2        | 1        |          |          | 1        | 4            |
| CBNRM                         | 3        | 1        |          | 1        |          | 5            |
| Rain fed arable farming       |          | 1        | 2        |          |          | 3            |
| Informal employment (Specify) |          |          | 1        | 2        | 2        | 5            |

|                            |   |   |   |   |
|----------------------------|---|---|---|---|
| Formal employment          | 1 | 1 | 1 | 3 |
| Ipelegeng (Drought relief) | 1 |   | 1 | 2 |
| Government welfare         | 1 | 1 |   | 2 |
| Remittances                |   | 1 |   | 1 |

i. How has the status of the following changed as a result of monitoring in the last 5 years?

|                                       |                          |   |
|---------------------------------------|--------------------------|---|
| <b>Natural resources conservation</b> | <i>imprvd</i>            | 5 |
|                                       | <i>Remained the same</i> | 0 |
|                                       | <i>Deteriorated</i>      | 0 |

## Appendix D

Summarized list of household benefits from CBNRM

| Benefits   | Dry Area | Intermediate | Wet Area |
|--|----------|--------------|----------|
| 1. Meat  | 23       | -            | 16       |
| Proportion of the total (%)  | 38.33    | -            | 17.78    |
| 2. Employment  | 23       | 12           | 33       |
| Proportion of the total (%)  | 38.33    | 20           | 36.67    |
| 3. Social services (funeral, destitute fund, transport   | 37       | 25           | 80       |
| Proportion of the total (%)  | 61.67    | 41.67        | 88.89    |
| 4. Household benefits (toilets in households, standpipes, water reticulation   |          |              | 35       |
| Proportion of the total (%)  |          |              | 40       |
| 5. Support for sports  | 25       | 6            | 44       |
| Proportion of the total (%)  | 41.67    | 10           | 48.89    |
| 6. Assistances to elderly (houses, pension fund)   |          | 12           | 26       |
| Proportion of the total (%)  |          | 20           | 28.89    |
| 7. Household dividends/money   |          |              | 52       |
| Proportion of the total (%)  |          |              | 57.78    |
| 8. Money to the community  | 24       | 18           | 8        |
| Proportion of the total (%)  | 40       | 30           | 8.89     |
| 9. Tourist market for cultural dancers   |          | 29           | -        |
| Proportion of the total (%)  |          | 48.33        | -        |
| 10. Others (Donation to primary school, scholarship at tertiary, small business support, ploughing scheme, community hall, TV etc) | 19       | 16           | 74       |
| Proportion of the total (%)  | 31.67    | 26.67        | 82.22    |

All households indicated that they had benefits: i.e. Wet Area =60; Intermediate =60 & Wet Area=90

Summarized stated benefits from CBNRM by households during the interviews

Outlined losses through CBNRM by households

| Loss   | Dry Area | Intermediate | Wet Area |
|--|----------|--------------|----------|
| 1. Restricted activities to the area (fishing, canoeing with tourist |          | -            | 21       |
| Proportion of the total (%)  | -        | -            | 51.22    |
| 2. Ban on hunting & cancellation of key species in quota             | 11       | -            | 5        |
| Proportion of the total (%)  | 29.73    | -            | 12.2     |

|   |       |       |       |
|---|-------|-------|-------|
| 3. Restricted access to the areas (lost control & rights of area)                       | -     | -     | -     |
| & no access veld products   | 25    | -     | 4     |
| Proportion of the total (%)   | 67.57 | -     | 9.76  |
| 4. Misuse/embezzlement of trust funds by the boards                                     | 13    | 8     | 35    |
| Proportion of the total (%)   | 35.14 | 19.51 | 85.37 |
| 5. Loss of individual hunting right (Special Game Licenses)                             | 29    | -     | -     |
| Proportion of the total (%)   | 78.38 | -     | -     |
| 6. Loss of meat rations   | 24    | -     | -     |
| Proportion of the total (%)   | 64.86 | -     | -     |
| 7. Non-payment by JVP/not adhering to agreement   | -     | 23    | -     |
| Proportion of the total (%)   | -     | 69.7  | -     |
| 8. Property destruction by high no of wildlife (due to no hunting)                      |       | -     | 23    |
| Proportion of the total (%)   | -     | -     | 56.1  |
| Total households that have reported losses: Dry Area=37: Intermediate =33 &Wet Area =41 |       |       |       |

Summarized stated benefits from CBNRM by households during the interviews

**Note:** It is possible that a single respondent could either list one, or more or even all benefits and/or losses and therefore there is no pattern or trends in the proportions of benefits and losses above.

## **Appendix E**

Income from CBNRM projects in Botswana

### 1. Overall total for all projects in different areas 2005-2009

7 projects in wet, 2 medium rainfall and 6 in dry area

|       | Wet      | Medium  | Dry     | Total    |
|-------|----------|---------|---------|----------|
| 2005  | 12337324 | 822503  | 604397  | 13764224 |
| 2006  | 12312353 | 1493787 | 718770  | 14524910 |
| 2007  | 16657352 | 2811253 | 1354348 | 20822953 |
| 2008  | 19840974 | 2008007 | 666028  | 22515009 |
| 2009  | 13748856 | 835743  | 753401  | 15338000 |
| Total | 74896859 | 7971293 | 4096944 | 86965096 |

### 2. Average income for all projects per area 2005-2009

|       | Wet      | Medium   | Dry      | Total    |
|-------|----------|----------|----------|----------|
| 2005  | 1762475  | 411251.5 | 100732.8 | 2274459  |
| 2006  | 1758908  | 746893.5 | 119795   | 2625596  |
| 2007  | 2379622  | 2405627  | 225724.7 | 5010973  |
| 2008  | 2834425  | 1004004  | 111003.8 | 3949432  |
| 2009  | 1964122  | 417871.5 | 125566.8 | 2507561  |
| Total | 10699551 | 4985647  | 682823.2 | 16368021 |

### 4. Average incomes for projects covered by the study

|       | Wet      | Medium   | Dry      | Total    |
|-------|----------|----------|----------|----------|
| 2005  | 2111109  | 307751.5 | 102761   | 2521622  |
| 2006  | 2114230  | 640593.5 | 116379.5 | 2871203  |
| 2007  | 2919136  | 552798.5 | 194091.5 | 3666026  |
| 2008  | 3540381  | 504003.5 | 98164.5  | 4142549  |
| 2009  | 3184379  | 417871.5 | 70875    | 3673126  |
| Total | 13869235 | 2423019  | 582271.5 | 16874525 |

### 5. Incomes for individual projects covered by the study (2005-2009)

|       | OKMCT    | STMT     | KDT      | XDT     | CTT     | KKDT   | XNRCT  |
|-------|----------|----------|----------|---------|---------|--------|--------|
| 2005  | 2090582  | 2776185  | 1466560  | 250000  | 365503  | 102805 | 102717 |
| 2006  | 2193365  | 2143054  | 2006272  | 1255275 | 25912   | 110650 | 122109 |
| 2007  | 3121780  | 3068848  | 2566779  | 399941  | 705656  | 271257 | 116926 |
| 2008  | 4160180  | 3314031  | 3146932  | 701188  | 306819  | 122050 | 74279  |
| 2009  | 4137424  | 2711277  | 2704437  | 547743  | 288000  | 103750 | 38000  |
| TOTAL | 15703331 | 14013395 | 11890980 | 3154147 | 1691890 | 710512 | 454031 |



4. Total incomes for projects covered by the study

|       | Wet      | Medium  | Dry     | Total    |
|-------|----------|---------|---------|----------|
| 2005  | 6333327  | 615503  | 205522  | 7154352  |
| 2006  | 6342691  | 1281187 | 232759  | 7856637  |
| 2007  | 8757407  | 1105597 | 388183  | 10251187 |
| 2008  | 10621143 | 1008007 | 196329  | 11825479 |
| 2009  | 9553138  | 835743  | 141750  | 10530631 |
| Total | 41607706 | 4846037 | 1164543 | 47618286 |

## Appendix F

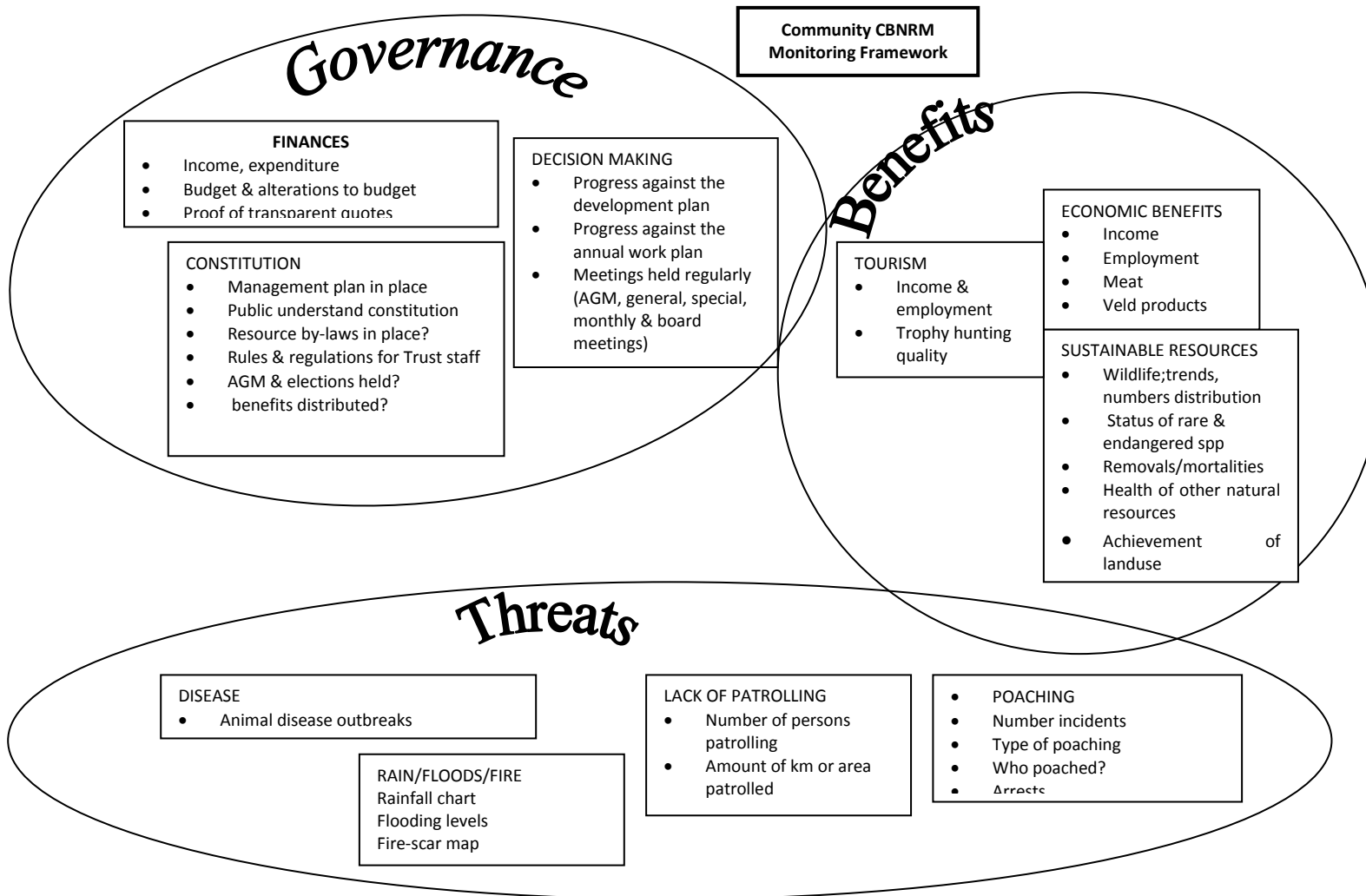
### Policies and Legislation affecting CBNRM

| Policy and Legislation                                  |   | Aim and/or relevance to the CBNRM programme   |
|---|---|---|
| <b>Long-term Vision of Botswana</b>                     |   |   |
| National Vision 2016: Towards Prosperity for All". 1997 |   | This document sets out the Government of Botswana's long-term vision of the achievement of <i>kagisano</i> , or social harmony.   |
| <b>National Policies and plans</b>                      |   |   |
| 1   | Community-Based Natural Resources Management (CBNRM) Policy, 2007       | Creation of foundation for conservation-based development, in which biodiversity & ecosystems protection is balanced with improved rural livelihoods & poverty reduction  |
| 2   | Tribal Grazing Land Policy, 1970  | Advocate for land-use plans throughout all districts of Botswana and the "reserved areas" or buffer zones or WMAs adjacent PAs are direct result of the policy  |
| 3   | Wildlife Conservation Policy, 1986                                      | The Policy provides strategies for development of viable and commercial wildlife sector through practice of sustainable resource utilization and conservation in Wildlife Management Areas (WMA) and in the process addresses issues of community livelihoods through citizen participation in the wildlife industry  |
| 4   | Tourism Policy, 1990  | The policy provides guidelines for planning, developing and managing tourism in Botswana. It is designed to ensure that tourism activities are carried out on an ecologically sustainable basis   |
| 5   | National Policy on Natural Resources Conservation and Development, 1990 | Forms the umbrella of environmental policies to-date, and it entrenched the notion of sustainable development in the environment and development planning process & aim to increase the effectiveness with which natural resources are used and managed, so that beneficial interactions are optimised and harmful environmental side effects are minimised |
| 6   | National Water Conservation Policy and Strategy Framework 2002          | The Water Policy has amongst its objectives, the protection, conservation, and efficient use, management of water resources, and protection and restoration of the environment. The Policy seeks to use water conservation to promote environmental sustainability, economic efficiency and social equity.  |
| 7   | National Settlement Policy 1998   | The Settlement Policy provides for the creation of settlements and the re-settlement of people as part of a developmental process.  |
| 8   | The Revised National Policy on Rural Development 1997                   | The Revised National Policy on Rural Development is a framework policy to link and facilitate coordination of the various sectoral policies, and to engender a common vision and unity in pursuit of rural development  |
| 9   | Draft National Wetlands Policy and Strategy, 2000                       | The Draft Policy provides the contextual and institutional framework for appropriate and effective management, conservation and sustainable use of Botswana's wetlands resources  |
| 10  | National Biodiversity Strategy and Action Plan 2004                     | The goal of the strategy and action plan is long-term health of Botswana's ecosystems and related species, and to encourage sustainable and wise use of resources through the provision of a framework of specific activities   |
| 11  | National Water Conservation Policy and Strategy Framework 2002          | The Water Policy has amongst its objectives, the protection, conservation, and efficient use, management of water resources, and protection and restoration of the environment. The Policy seeks to use water conservation to promote environmental sustainability, economic efficiency and social equity.  |
| <b>National Legislative instruments</b>                 |   |   |
| 1   | Wildlife Conservation and National Parks Act, 1992                      | The Act provides for the conservation and management of the wildlife of Botswana and the gazettment of WMAs & CHAs and recognition of community involvement in conservation was through this act  |
| 2   | Tribal Land (Amendment) Act, 1993                                       | The Act provides for the establishment of the tribal Land Boards and vests communal land in such Land Boards. It also defines the powers and duties of the Land Boards.   |
| 3   | Forest (Amendment) Act, 2005.   | The Act provides for the regulation and protection of forests and forest products in Botswana and   |

|    |  |   |
|----|--|---|
|    |  | provides for bye-laws for utilisation of forests & by-products  |
| 4  | Environmental Impact Assessment Act, 2005.           | The Act provides for environmentally sound policies, programmes and projects  |
| 5  | Fish Protection Act, 1975                            | This Act provides for the effective regulation, control, protection and improvement of fish and fishing in Botswana   |
| 6  | Tourism Act, 1992                                    | The Act makes provision for the regulating of the tourism industry with regard to promoting its development and well being  |
| 6  | Water Act 1968                                       | The Act regulates the management and use of water resources within Botswana   |
| 7  | Herbage Preservation Act, 1977                       | It is the legal framework administering the management of fire in Botswana which are a threat to ecosystems of the country  |
| 8  | National Strategy for Poverty Reduction, 2003        | Recognition of CBNRM as one of the sustainable livelihood programmes  |
| 9  | National Biodiversity Strategy and Action Plan, 2004 | The goal of the strategy and action plan is long-term health of Botswana's ecosystems and related species, and to encourage sustainable and wise use of resources through the provision of a framework of specific activities designed to improve the way biodiversity is perceived, utilised and conserved |
| 10 | Botswana Tourism Master Plan, 2000                   | The master plan serves as a basic guideline for development of tourism, enabling the decision makers to agree on the principles for the direction of tourism development for the next decade  |

## Appendix G

The Botswana CBNRM Key Issues/Mind Map for Monitoring by communities  
(MOMS Framework for communities)



## Appendix H

Seven principles for increasing success of CBNRM projects: proportions (percentages) of responses affirmative responses by Key Informants and CBNRM project managers.

| Principles   | Key Informants (n=13) |       |                         | Project Managers (n=5) |    |                        |              |
|--|-----------------------|-------|-------------------------|------------------------|----|------------------------|--------------|
|  | YES                   | NO    | Partly/not in all prjts | YES                    | NO | Partly/not in all pjts | Not entirely |
| <b>1. Existence of local gov. inst for land &amp; resources. Management</b>  |                       |       |                         |                        |    |                        |              |
| a. There exists effective institutions at community level that enable individuals to actively participate in dec. making on CBNRM issues | 100                   | -     | -                       | 100                    | -  | -                      |              |
| b. Inst. & management structures are adaptive, flexible & evolving   | 38.46                 | 30.77 | 30.77                   |                        |    |                        |              |
| <b>2. There are effective policies &amp; laws and are implemented</b>  |                       |       |                         |                        |    |                        |              |
| a. There are policies and laws that govern and promote CBNRM.  | 100                   | -     | -                       | 100                    | -  | -                      |              |
| b. Policies & laws are well understood by the community  | 38.46                 | 38.46 | 23.08                   | 40                     | 40 | 20                     |              |
| c. Comm. has developed capacity to implement them & has authority  | 23.08                 | 38.46 | 30.77                   | -                      | -  | 80                     | 20           |
| <b>3. Local level power relation favorable for CBNRM</b>   |                       |       |                         |                        |    |                        |              |
| a. There is no dominance by groups/individuals (all have a say)  | 30.77                 | 38.46 | 30.77                   | 60                     | -  | 40                     | -            |
| b. The weak/marginalized are protected (able to air own views)   | 23.08                 | 46.15 | 30.77                   | 60                     | -  | 40                     | -            |
| <b>4. There is sensitive &amp; responsible facilitation</b>  |                       |       |                         |                        |    |                        |              |
| a. Facilitation from gov., civil society etc has been provided & takes cognizance of diff. groups in community e.g. marginalized         | 46.15                 | 15.38 | 38.46                   | 60                     | -  | -                      | 40           |
| b. Facilitation involves entire comm. & deals with issues of importance  | 61.54                 | 38.46 | -                       | 100                    | -  | -                      | -            |
| <b>5. There are sources of livelihood for community</b>  | 30.77                 | 7.70  | 61.54                   | 20                     | 60 | 20                     | -            |
| <b>6. There are benefit (benefits outweigh costs)</b>  | 84.62                 | 15.38 | -                       | 100                    | -  | -                      | -            |
|  | Yes                   | No    | Unclear                 |                        |    |                        |              |
| <b>7. Production potential of res. Base maintained/enhanced</b>  | 61.54                 | 7.70  | 30.77                   | 100                    | -  | -                      | -            |

| <b>Comments from Key Informants and CBNRM project managers on the major principle for success in CBNRM</b>   |  |
|--|--|
| <b>1. Institutions for local governance and land and resource management are in place and are effective. The institutions and its management structure are adaptive, flexible and evolve).</b>   |  |
| a. There exist effective institutions at community level that enable individuals to actively participate in decision making on issue related to land use and natural resources management.   | <ul style="list-style-type: none"> <li>It is a policy requirement that communities should register trusts/CBOs and individuals within the community are members.</li> <li>Members of the community make decisions about their trust/projects during the annual general meetings (AGM).</li> <li>Very much effective; they serve as the umbrella arm of the community at large and implement the programmes of the community</li> <li>TAC, CBO Boards and Dikgosi play a pivotal role in enabling active participation by community</li> </ul>  |
| b. The institutions and its management structure are adaptive, flexible and evolve.  | <ul style="list-style-type: none"> <li>Recently there have been new changes that signal change or evolving of organizations; for example, trusts are now required to hire project managers.</li> <li>Effectiveness of institutions is largely dependent on capabilities at community level</li> <li>The implementation of CBNRM is a daunting task with so many challenges that have to be addressed.</li> <li>Too much focus on wildlife utilization encouraged by the government and lack of a diversification strategy</li> </ul>   |
| <b>2. The production potential of the resource base has been maintained or improved, through enactment of good managerial practices that ensure sustenance of the resources</b>  |  |
|  | <ul style="list-style-type: none"> <li>There is very little that communities contribute in terms of conservation initiatives</li> <li>No clear evidence to prove or disapprove this.</li> <li>Communities have been involve in natural resources improvement exercises like tree planting and adapting good harvesting strategies</li> <li>Some areas have had intensive training and use MOMS to monitor natural resources, control poaching and veldt fires; however areas with low potential have not improved.</li> <li>Policies are in place to enhance this.</li> <li>Records from MOMS show that wildlife numbers are high in the area and patrolling reduces illegal incidents like poaching</li> <li>This is achieved through MOMS</li> </ul>   |
| <b>3. There are other sources of livelihood for community members besides CBNRM (A diverse and flexible range of livelihood options exist and are maintained) This provides for a range of possible option for survival and prevent over reliance on one strategy which might have detrimental effects, in case of failure</b> |  |
|  | <ul style="list-style-type: none"> <li>This varies by location; other areas and projects have community members engaged in mixed farming whereas only rely on CBNRM as farming cannot be practiced in these areas due to their vicinity to wildlife areas and farming results in losses</li> <li>This is true to some extent, but other communities rely heavily on CBNRM as they are very remote and there are no government and private sector initiatives.</li> <li>The sources are only limited to farming which is widely practiced in rural areas.</li> <li>In Kgalagadi the only other viable livelihood strategy is the livestock industry.</li> <li>The government has in place several other livelihood schemes for communities, e.g. drought relief, destitute programme, RADP.</li> <li>There are limited alternatives in other areas</li> </ul> |
| <b>4. There are economic benefits to provide an incentive for the wise use of the resources. The perceived and actual benefits outweigh the costs</b>  |  |
|  | <ul style="list-style-type: none"> <li>Employment and other benefits realized from natural resources encourage wise use. Families use the money gained to improve their livelihoods.</li> <li>To some extent the main benefits are employment and transport; people highly appreciate these benefits and as such they value the natural resources in their areas</li> <li>Communities receive benefits from natural resources like wildlife.</li> <li>There are limited losses as the areas are mainly WMAs, although their potential is not fully exploited due to limited capacity</li> <li>Meat is available from hunting, grass and fish are also available in the area</li> </ul>   |
| <b>5. There are effective policies and laws; they are implemented, and authority has been handed down to the lowest level where there is capacity (local control of resources).</b>  |  |
| a. There are policies and laws that govern and promote CBNRM   |  |
|  | <ul style="list-style-type: none"> <li>There are policies and laws that govern and promote CBNRM like: <ul style="list-style-type: none"> <li>The CBNRM Policy (2007) and its guidelines</li> <li>Tourism Policy</li> <li>Wildlife Conservation and Management Policy (1986)</li> </ul> </li> </ul>  |
| b. These policies and laws are well understood, by the community or their local institution.   |  |

|  |
|--|
| <ul style="list-style-type: none"> <li>Most policies are being driven by government and communities are just told about them when there are issues that affect the project in relation to these</li> <li>These are discussed through regular meetings</li> <li>These have been introduced to the general public and the trust at large.</li> </ul>   |
| <p>c. The community has developed the capacity to implement these and also have the authority to do so and are indeed implementing these</p>   |
| <ul style="list-style-type: none"> <li>Policies are top-down and not discussed with other stakeholders and therefore communities lack proper understanding of these policies</li> <li>To a large extent the implementation process lies with the government</li> <li>Communities are implementing these through their respective trusts/CBOS</li> <li>There is limited capacity at community level due to illiteracy.</li> <li>As enshrined in the policy, <b>YES</b>; but government has maintained a leading role in the policy implementation</li> <li>There is need for more training and discussion with communities on policies and also take their contributions on board</li> <li>Capacity is still weak at community level</li> <li>Authority is not entirely on the communities, government keeps taking away much authority and responsibility from them</li> </ul>   |
| <p><b>6. There is sensitive and responsible facilitation from outside (There is empowerment and re-empowerment of resource users)</b></p>  |
| <p>a. Facilitation from government, civil society and/or other stakeholders has been provided and it takes cognizance of issues and aspects like different groups within community, the disadvantaged, women and youth.</p>  |
| <ul style="list-style-type: none"> <li>There is limited manpower within government to provide all the necessary facilitation and there is a limited number of NGOs available to assist</li> <li>More needs to be done to involve the disadvantaged, women and the youth.</li> <li>There is little action or limited action by extension officers in the Ghanzi region,</li> <li>Through the community trusts, governance training workshops are provided.</li> <li>Much, if not all facilitation is from government.</li> </ul>  |
| <p>b. The facilitation deals with issues that are of importance in the running of CBNRM and they involve the entire community or project members.</p>  |
| <ul style="list-style-type: none"> <li>Not much is being done in terms of facilitation in the Ghanzi region.</li> <li>Yes, although at times in situations where there are divergent views, government officers/ facilitators would impose their will.</li> <li>There is continuous training provided by government extension officers to the community on good governance, funds management and other CBNRM related issues.</li> <li>Although some facilitation is offered by government and the JVP has a negative effect</li> </ul>   |
| <p><b>7. Local-level power relations are favourable for CBNRM and local relations are understood. Own agendas and vested interests do not dominate the process; the weaker role players-for example, the poor and the women can speak openly).</b></p>   |
| <p>a. There is no dominance of the project activities by certain groups or individuals within the community i.e. all members are afforded equal opportunities to have a say in the project.</p>  |
| <ul style="list-style-type: none"> <li><b>YES</b>, but there will always be unequal development in every society</li> <li>There is dominance by individuals in some trusts/CBOs and some boards (board of trustees) have been run or filled by the same individuals for a long time. All community members are however, given an opportunity to run the trusts.</li> <li>Though this is a desirable, currently the village/community leadership has a greater say on issues being addressed; but this is being addressed through capacity building.</li> <li>There is dominance by certain individual and at times the posts in the board of trusts revolve among family members.</li> <li>There is dominance by individuals especially retired personnel who want to bolster their positions or use CBNRM as a stepping stone to other positions like; politics</li> </ul>  |
| <p>b. The weak or marginalized are protected and are able to air their views</p>   |
| <ul style="list-style-type: none"> <li>There is opportunity for this to happen but no person can be forced to take this opportunity</li> <li>Most of the projects undertaken are agreed to at the general meetings, but in a number of times, boards impose projects on the community.</li> <li>There are factions within the community at times and this is due to manipulation by some individuals for their self interests and the marginalized always suffer in such situations.</li> <li>The marginalized remain marginalized and actually appear to be very loyal to the privileged.</li> <li>The Kgotla system affords everyone an opportunity to participate or air their views.</li> <li>The TAC and Kgosis can mediate on behalf of those who feel aggrieved and air their views.</li> <li>Yes; though ultimately in cases of non-agreement, the leaders dominate.</li> <li>Depends on different CBOs</li> </ul> |