

**UNDERSTANDING THE EFFECTS OF A PROTECTED
AREA ON LIVELIHOODS OF A NEIGHBOURING
LOCAL COMMUNITY: A CASE STUDY OF
MOKOLODI NATURE RESERVE,
BOTSWANA**

BY

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DECLARATION

The work contained in this mini-dissertation was carried out in the Centre for Environment, Agriculture and Development, University of KwaZulu-Natal, Pietermaritzburg Campus under the supervision of Dr. Mark Dent.

I hereby declare that the work contained here is entirely my own and has not in any form been submitted for the award of any degree or diploma in this or any other university. Where other people's work has been used, acknowledgement is duly given in the text.



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ABSTRACT

Establishment of protected areas continues to be recognized in many parts of the world as one of the most appropriate strategies of conserving biodiversity. As a result, their numbers have continued to increase globally with significant support coming from many national governments and international agencies. Some cases of earlier establishments of protected areas had negative effects on local communities especially where there was displacement and relocation of people, and loss of access to various natural resources important for livelihoods sustenance. In other cases however, protected areas brought positive effects to local communities such as creation of employment opportunities, contribution towards community development and giving the local people the opportunity to actively participate in natural resources management. All these effects have influenced livelihoods of many local communities in several ways.

This study focuses on the effects of Mokolodi Nature Reserve on a neighbouring community from the angle of a community that traditionally did not have exclusive access and use of the land that is now the reserve, nor have a claim against it. Effects of the changes that have occurred on the livelihoods of the local people since the establishment of the reserve are looked at, as well as the attitudes and perceptions that people have towards the reserve. Relationships between the reserve management and the local people that have brought changes in the lives of the local people form a key component of this study. Further, ways in which the local people are involved in natural resource management in the area are explored, as well as the reserve's contribution towards enhancing better and sustainable livelihoods of the local people

The study adopts a qualitative approach, with information being collected by use of structured questionnaires and key informant interviews. The majority of respondents were members of the local community. A few key informants were from outside the community but had associations with the area of study. Data was analyzed and presented in the form of descriptions, tables and graphs.

Findings show that the reserve has brought changes, some of which have benefited the local community such as provision of job opportunities and creation of environmental awareness among the people. However, according to some respondents, especially the older, such benefits are minimal and only go to a few people. Such respondents hence consider the reserve to be of little or no benefit to the community. Attitudes and perceptions towards the reserve vary amongst respondents, with younger respondents appearing to have more positive attitudes and perceptions towards the reserve. Indications are that the relationship between the reserve management and the local community is not very well developed. The older respondents however appear to be keen on having good relationships with the reserve management established, as opposed to many of the younger respondents whose main concern is employment. Lack of community conservation initiatives in the area is considered a drawback towards increased people's participation in resource management in the area.

Despite the varied opinions in terms of benefits and non-benefits, the reserve would still be considered to have played an important role in improving the livelihoods of the local people. Indications that some people have an interest in getting involved in various reserve-related activities, is a good opportunity for developing good relationships. This could also possibly change the negative attitudes and perception some people have towards the reserve. With continued interactions and learning of lessons from the past, there are opportunities for the reserve management and the local people to work together and hence find a balance between conservation priorities and local livelihoods. This would also work towards achieving one of the initial goals of the establishment of the reserve, of improving the standards of living of people in the local community.

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TABLE OF CONTENTS

DECLARATION	i
ABSTRACT	ii
ACKNOWLEDGEMENTS	iv
TABLE OF CONTENTS	v
LIST OF TABLES	ix
LIST OF FIGURES	x
LIST OF APPENDICES	xi
LIST OF ACRONYMS	xii
CHAPTER ONE: INTRODUCTION	1
Background of the study	1
Justification for and significance of the study	4
Problem statement	5
Aim of the study	5
Research questions	6
Scope of the study	6
Methodology.....	7
Assumptions made in the study	7
Limitations of the study and how they were addressed	8
Summary of the chapter.....	9
CHAPTER TWO: LITERATURE REVIEW	11
2.1 Protected areas in Africa	11
2.2 Protected areas in Botswana	16
2.3 Conservation discourse relevant to protected areas	18
2.3.1 Fortress conservation	19
2.3.2 Community conservation	20
2.3.2.1 Protected area outreach.....	21

2.3.2.2	Collaborative management.....	22
2.3.2.3	Community-based conservation.....	23
2.4	Biodiversity conservation and livelihoods of local people	24
2.4.1	Benefits of biodiversity conservation to local people	26
2.4.2	Costs of biodiversity conservation to local people	27
2.5	Relationships and attitudes with reference to protected areas.....	29
2.5.1	Developing relationships between protected areas and local people.....	30
2.5.2	Attitudes among local people towards protected areas	32
2.6	Summary of the chapter.....	35

CHAPTER THREE: BACKGROUND OF THE STUDY

AREA.....	36	
3.1	Overview of Botswana	36
3.2	Overview of Mokolodi	38
3.2.1	Historical context	38
3.2.2	Geographical context	41
3.2.3	The philosophy behind Mokolodi Nature Reserve	44
3.3	Summary of the chapter.....	45

CHAPTER FOUR: METHODOLOGY..... 46

4.1	Preparation of data collection instruments	46
4.2	Sampling techniques	48
4.3	The study process	51
4.3.1	Pilot survey.....	51
4.3.2	Data collection.....	52
4.4	Analysis of interviews and questionnaires.....	54
4.5	Ethical considerations.....	55
4.6	Summary of the chapter.....	55

CHAPTER FIVE: PRESENTATION AND ANALYSIS OF

RESULTS.....	56
5.1 Demographic variables.....	56
5.2 Changes since the establishment of the reserve.....	57
5.2.1 Local community’s history and livelihoods.....	57
5.2.2 Natural resource use and availability.....	58
5.2.3 Analysis of specific changes.....	60
5.3 Local people’s attitudes and perceptions towards the reserve.....	61
5.4 Relationship between the reserve management and the local community....	64
5.4.1 General interactions.....	64
5.4.2 Working relationships.....	65
5.5 Involvement of the local people in natural resource management	68
5.5.1 Local people’s contribution in the reserve.....	68
5.5.2 Roles that people could play in future.....	70
5.6 Analysis of effects and role of the reserve in the community.....	71
5.6.1 Benefits of the reserve to the community.....	71
5.6.2 Access to resources.....	72
5.6.3 Effects of the reserve on individuals and their households.....	72
5.6.4 Gauging of reserve’s contribution to the community.....	74
5.6.5 Expectations of the local community.....	75
5.7 Summary of the chapter.....	76

CHAPTER SIX: DISCUSSION AND CONCLUSIONS..... 78

6.1 General perspective.....	78
6.2 Changes with the establishment of the reserve and their effects on livelihoods of the local people	79
6.3 Natural resources access and use.....	81
6.4 Attitudes and perceptions towards the reserve.....	83
6.5 Relationships between the reserve and the local community.....	84
6.6 Involvement of the local people in natural resource management	87
6.7 Role of the reserve in enhancing the lives of the local people.....	89

6.8	Conclusions.....	90
6.9	Recommendations.....	92
6.10	Future research.....	93
	REFERENCES.....	94
	APPENDICES.....	104

LIST OF TABLES

2.1: Strategies to community conservation and some key characteristics	23
2.2: Examples of the local economic cost of wildlife damage to agriculture	29
5.1: Responses on people being allowed into the reserve to collect firewood among other resources	59
5.2: Perceived benefits of the reserve to the community based on age and gender..	62
5.3: Perception about the reserve	64
5.4: Assessment of the working relationship between the community and the reserve management.....	67
5.5: Responses to effects of the reserve on individual respondents	73
5.6: Gauging of the reserve's contribution to the community	74

LIST OF FIGURES

2.1: Map of Botswana showing National Parks and Game Reserves.....	18
2.2: Contribution of biodiversity to rural livelihoods.....	25
2.3: A summary of factors that may influence attitudes towards conservation.....	34
3.1: Map of Southern Africa showing the location of Botswana.....	36
3.2: Map of Mokolodi Nature Reserve.....	42
4.1: A diagrammatic illustration of the population stratification for the study.....	50
5.1: Perceived changes in the community since the establishment of the reserve.....	61
5.2: Percentage of respondents' households based on employment in the reserve.....	66
5.3: Responses to local community's contribution in the reserve.....	69
5.4: Roles respondents could play in future in the reserve.....	70
5.5: Perceived benefits of the reserve to the community.....	71
5.6: Responses of respondents' expectations from the reserve.....	75

LIST OF APPENDICES

Appendix 1: Definitions of the IUCN Protected Area Management Categories.....	104
Appendix 2: Photographs of village dwellings.....	105
Appendix 3: Survey questionnaire with guideline notes.....	106
Appendix 4: Survey questionnaire.....	112
Appendix 5: Interview schedule.....	117
Appendix 6: Additional results tables.....	118
Appendix 8: Consent letter.....	119
Appendix 9: Declaration form.....	121
Appendix 10: Research permit.....	122

LIST OF ACRONYMS

BDC	Botswana Development Corporation
BWP	Botswana Pula (Currency)
DoT	Department of Tourism
DWNP	Department of Wildlife and National Parks
HATAB	Hospitality and Tourism Association of Botswana
IUCN	International Union of Conservation of Nature and Natural Resources
MEWT	Ministry of Environment, Wildlife and Tourism
MNR	Mokolodi Nature Reserve
RRA	Rapid Rural Appraisal
SADC	Southern Africa Development Community
SIDA	Swedish International Development Cooperation Agency
TANAPA	Tanzania National Parks
UN	United Nations
UNEP	United Nations Environmental Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
USAID	United States Agency for International Development
VDC	Village Development Committee
WCMC	World Conservation Monitoring Centre
WMAs	Wildlife Management Areas
WWF	World Wide Fund for Nature

CHAPTER ONE

INTRODUCTION

The purpose of this chapter is to set the scene upon which this study is based. Background information provides a brief overview of the scenario of the case study, which is followed by a section justifying the significance of the study. A statement of the problem under consideration is given as well as the overarching aim of the study. The key research questions which this study endeavours to answer are also outlined. Other sections covered in this chapter include the scope of the study, the methodology adopted, the assumptions made before the commencement of the study, as well as the limitations that the study faced and how each was addressed.

1.1 Background of the study

This study was carried out by adopting a case study approach whereby a privately owned nature reserve and a neighbouring community are under consideration. The focus is on Mokolodi Nature Reserve (MNR) (hereafter referred to as the reserve) and Mokolodi village (hereafter referred to as the local community) which share a common boundary on the northeastern end of the reserve. The reserve which was established in 1994 is located in the South East District of Botswana, about 14 kilometres from the city of Gaborone (Mokolodi Nature Reserve undated). The land upon which the reserve was established was long under private ownership and part of it operated as a cattle farm for many years (Mokolodi Nature Reserve 2003a). The reserve is one of the recognized private protected areas in Botswana (UNEP-WCMC undated).

Mokolodi village on the other hand existed long before the establishment of the reserve. Available records during the survey indicated that as early as 1933 a few people had already inhabited the area (Mokolodi Nature Reserve 2003a). Based on the National Population and Housing census of 2001, the village had a population of 584 in 2001

(Central Statistics Office 2002). Most of the current inhabitants have lived in the village most of their lives as was reflected during the survey carried out for this study. As such, most of the people have seen various changes occur in the area, one among them being the transformation of a cattle farm which employed only seven people from the local community to a nature reserve which has a complement of 70 employees, of which 40% are from the local community (Mokolodi Nature Reserve 2006a). Considering this therefore, there is some degree of interaction between the reserve and the local people.

With the establishment of protected areas increasingly being recognized as one of the most appropriate and conventional way of conserving biodiversity in the world (Allendorf *et al* 2007; Mbaiwa 2005), their numbers have continued to increase globally over the last few decades. For example, according to the 2003 United Nations List of Protected Areas, there were less than 10 000 recognized protected area in 1962 but by 2003, the figures had risen to over 100 000 (Chape *et al* 2003). According to IUCN (2005: 289), “*protected areas now cover more land than that under permanent arable crops*”. This is an indication that more land than ever before is now set aside mainly for biodiversity conservation. With specific reference to the establishment of private protected areas, indications are that their numbers are equally increasing globally even as they continue to play a significant role in biodiversity conservation (IUCN 2005; Mitchell 2007).

Some of the first formally protected areas in Africa were established during the colonial period (Johannesen 2006) and their numbers have been on the increase covering vast areas of land. Eastern and Southern Africa alone, which consist of 20 countries, has over 1.9 million square kilometres of land under recognized protected areas (Chape *et al* 2003). The establishment of these areas happened under different set ups and circumstances. Establishment of some protected areas was characterized by displacement and relocation of local communities (Colagiovanni 2002; Mbaiwa 2005) and without much regard for their welfare (Wells *et al* 1992). Other establishments happened on relatively pristine uninhabited areas or areas which were not utilised by local

communities hence there were minimum or no conflicts. Others as in the case of MNR were established on privately owned land through change of land use.

The effects of protected areas on their neighbouring communities and their livelihoods are therefore quite diverse depending on the circumstances under which each area was established. For example, where establishments were characterized by displacement and relocation of local communities, conflicts between the protected areas managers and the local people often followed as the local people felt they had lost their ancestral land and were denied the right to access resources in these areas (Mbaiwa 2005). This affected the livelihoods of many local people as they tried to adjust to the changes and also had an impact on the extent to which conservation objectives were being met (Mbaiwa 2005; Quintana and Morse 2005). Some cases have even been characterized by land claims by the local communities, for example the Makuleke Land claim in Kruger National Park, South Africa (Bond *et al* 2004).

On the contrary, other scenarios presented opportunities for the neighbouring local communities in terms of benefits received from the protected areas. For example in the case under consideration in this study, the change in land use from a cattle farm to a nature reserve saw an increase in job opportunities for the local people (Mokolodi Nature Reserve 2003b). Other benefits in other areas have been noted such as in the case of Mahushe Shongwe Game Reserve in South Africa benefiting the neighbouring Mzinti community, through revenue sharing (King 2006). Other communities neighbouring protected areas have benefited from various community development projects initiated with the support coming from the protected areas. For instance in the case of Pilanesberg National Park in South Africa supporting various development projects in the neighbouring local community (Emerton 2001).

Engaging neighbouring local communities in the management of natural resources in their areas and protected areas themselves has been one among the many approaches that many protected areas managers have tried to adopt for the success of conservation initiatives (Wells *et al* 1992). Specific community based programs have hence resulted from such efforts. However, this case study presents a different situation whereby

initiatives to engage the local people in resource management through the adoption of various community conservation strategies are not in existence. Though the concept of community conservation does not apply in the situation under this study, it is discussed to show the changing trends in conservation approaches in the context of protected areas. The discussion provides a platform upon which such a concept may be adopted for the future success of conservation initiatives both inside and outside the reserve.

In an effort to more thoroughly understand the dynamics that this case study presents, the study looks at among other things, the relationship that exists between the reserve management and the local community. It is understood that the kind of relationship that is in existence between such parties goes a long way in shaping the attitudes and perception of the local community towards a protected area and hence determines the kind of support given by the local people towards various conservation initiatives (Worboys *et al* 2005). Roles that the local community play and could play in future in helping the reserve meet various conservation objectives are also looked at. The reserve's contribution towards livelihood improvements in the local community is also explored as well as the local people's expectations of the role the reserve could play in contributing towards sustainable livelihoods in the area.

1.2 Justification for and significance of the study

Diverse views and opinions are often presented regarding protected areas and their effects on neighbouring local communities. While some protected areas are viewed as existing at the expense of local people, especially where there was displacement and relocation of local people during the establishment (Mbaiwa 2005), others have been known to be of benefit to their neighbours (Emerton 2004; King 2006). Studies have hence been carried out to gain an understanding of individual cases, with each drawing various conclusions. Many of the studies have focused on protected areas where displacement of local people and their lost rights to access resource were predominant.

This case study presents a different scenario and hence the need for the study to be carried out. The study aims at adding to the existing literature on the subject of relationships between protected areas and local communities, from the angle of a neighbouring community that traditionally did not have exclusive use of the land that is now the reserve, nor do they have a claim against it. However, the fact that the local people have some interactions with the reserve and also have expectations of receiving benefits from the reserve implies that the reserve has some effects on the people's lives. In his work on *'Performance of parks in a century of change'*, Cumming (2004) calls for a need to examine and quantify "the flow of direct and indirect benefits from parks to their neighbours..." (pg.117). This therefore justifies carrying out a study of this nature. At the same time, the fact that more areas continue to be declared and gain recognition as protected areas warrants the need to look at the role these important conservation areas have played and could play in sustaining livelihoods of people in local communities.

1.3 Problem statement

The establishment and existence of MNR has brought changes in the neighbouring Mokolodi village. Some of the changes are as a result of actions which the reserve has carried out that have fundamentally influenced the relationship between the reserve managers and the community, as well as people's attitudes and perceptions towards the reserve. These changes may have effects on the livelihoods of the local people in different ways. The issue therefore is that some of the effects the reserve has on the local community are not clearly articulated and understood. Understanding these effects could reflect on the important role the reserve has played in the area as well as point out on aspects that could be addressed for future success in biodiversity conservation and improvement of livelihoods among the local people.

1.4 Aim of the study

The overarching aim of the study is to gain an understanding of how people in a local community have been affected by the establishment of a protected area in their

neighbourhood. The effects in reference are those that impact positively and negatively on the lives of the people, their capabilities and their means of living (e.g. food, income and assets).

1.5 Research questions

To achieve the above aim, the research endeavours to answer the following key questions:

- i. How have the changes brought about by the establishment of MNR affected the livelihoods of people in the local community?
- ii. Have the local people's attitudes and perceptions towards MNR had an impact on their lives?
- iii. Are there relationships between the local people and reserve which have brought changes in the lives of the local people?
- iv. How are the local people involved in the management of natural resource both in the reserve and in the community areas?
- v. What role has the reserve played towards enhancing the lives of the local people towards better and sustainable livelihoods?

1.6 Scope of the study

The study specifically looks at the effects, both positive and negative that MNR has had on the livelihoods of the people in the local community since its establishment. Livelihoods in the context of this study are taken to mean "...the way of life and work which helps persons or communities to meet their needs for survival" (Kothari 1997: 38).

Mokolodi village, which is the community under consideration borders the reserve on the northeastern side and is a small village in comparison to other villages in the district. On the western and southwestern end of the reserve, there are two neighbouring settlements while on the southern and southeastern end of the reserve, land is owned by private individuals. Amongst all the neighbours, Mokolodi village seems to have more direct and

occasional interactions with the reserve, partly due to the fact that a significant percentage of the employees in the reserve come from this village. The level of interaction between the reserve and people from the two settlements is almost non-existent and hence was not taken into consideration in this study. On the other hand, the reserve has minimum effects on the livelihoods of people living on the privately owned properties as most of them have stable lifestyles and sources of livelihoods. Considering such factors therefore justifies the reason for considering the village for the main focus for this study.

1.7 Methodology

In carrying out this study, a qualitative approach to research was adopted. Data was obtained from a cross-section of respondents, the majority of whom were residents of Mokolodi village. Only a few individuals from outside the local community were involved in the process as key informants due to their associations with the study areas. Structured questionnaires and interview schedules were the two data collection instruments that were used in this study. Additional information to supplement data collected in the survey was obtained by reviewing documents obtained from the reserve.

Purposive sampling was used to identify individual respondents for face-to-face personal interviews (key informants interview), while stratified random sampling was used to identify questionnaire respondents. Five key informant interviews were conducted and 60 structured questionnaires were responded to. Information obtained from the key informants through the face-to-face interviews was used to feed into the main data collected using the structured questionnaires. The data was analyzed using Microsoft Excel and the results were presented in form of descriptions, tables and graphs.

1.8 Assumptions made in the study

With regard to factors that were foreseen as potential setbacks in this study, a few assumptions were made prior to commencement. These assumptions were:

- i. That the study would be approved by the relevant authorities i.e. the Ministry of Environment, Wildlife and Tourism, the management of the reserve as well as the local community leaders.
- ii. That the management of the reserve would be ready to provide some documented information relevant to the study for review such as history records, maps and progress reports.
- iii. That the local community leadership and members would cooperate through engaging in the process of providing information relevant to the study.
- iv. That the resources required to carry out the study such as funds to cover all the study costs and reliable transport means, especially during the data collection phase, would be available and hence the study would progress uninterrupted up to completion.
- v. That despite the limited time, sufficient data would be obtained to form a solid base for the study.

Each of the assumptions made turned out positively and hence it was possible to successfully carry out the study according to the initial plan.

1.9 Limitations of the study and how they were addressed

In the process of carrying out the study, various limitations were encountered and each had to be addressed adequately for the success of the study. Unavailability of some targeted respondents at the required time due to various other commitments they might have had was one of the limitations. In most of the households visited, only women and children were present. Visits to some households had to be rescheduled to evenings, or until a time when most people would be available. This impediment slowed down the data collection process.

On the other hand, there was a communication barrier between the interviewer and most interviewees because of language differences. The majority of interviewees were not fluent in English, while the interviewer was not fluent in the local language, Setswana. As a result, there was need to involve a third party who acted as a translator on most

occasions. This also slowed down the data collection process and may also have led to some subtle misunderstandings in the process of translating information from one language to another.

On some occasions, some respondents gave inadequate responses or no responses to some questions. This was possibly due to misconceptions of the purpose of study or misunderstanding of some questions and concepts. Some respondents showed a lack of interest in answering various questions despite their willingness to be involved in the process. Efforts were made to probe and to do follow ups as much as was possible so as to obtain responses that were more complete and for clarifications. Where there seemed to be elements of misunderstanding of the questions and concepts, more thorough explanations were done.

Transport to the study area was also a drawback especially at the initial stages of the field survey. This was mainly due to unavailability of public transport to the study area. The initial stages of the survey were therefore slow paced. The transport problem was however sorted out adequately at the later stages and the process of data collection carried on to completion successfully.

1.10 Summary of the chapter

The chapter has given basic background information based on the specific case study being looked at as well as on a broader scale of establishment of protected areas, hence setting the scene for the study. The justification for carrying out the study shows that the study intends to add to the existing literature on the subject of relationships between protected areas and local communities. The statement of the problem given revolves around changes that the establishment of the reserve has brought and their effects on the livelihoods of local people. The aim of the study is to gain an understanding of the effects protected areas have on local communities and their livelihoods and to achieve this aim, five research questions have been outlined. A brief outline gives the extent to which the study focuses as well as the methodology adopted in this study. Assumptions that were made at the onset of the study have been listed in this chapter and indications are that all

the assumptions turned out positive, hence the success of the study. Various limitations that could have potentially affected the success of the study have also been highlighted with an explanation of how each was overcome.

CHAPTER TWO

LITERATURE REVIEW

The purpose of this chapter is to give a general review of literature relevant to issues highlighted in the study. A brief discussion of protected areas in the context of Africa and Botswana is given first. This is followed by a section on conservation discourse which highlights the shifting trends in conservation strategies in the context of protected areas. Further, a discussion on the importance of biodiversity and effects of biodiversity conservation on livelihoods of local people is given. The chapter concludes with a section highlighting the linkages between protected areas and local people based on relationships developed and attitudes among the local people towards protected areas and conservation in general.

2.1 Protected areas in Africa

The number of protected areas globally has been on the increase as the need to conserve natural resources, preserve cultural heritage, and realize some economic benefits among other issues have continued to gain priority. The UN List of Protected Areas of 2003 indicates that the number of protected areas globally rose from less than 10 000 in 1962 to more than 100 000 by 2003, covering about 18.8 million square kilometres, inclusive of marine protected areas. This increase is in part due to a widened network of organizations working together, as well as the actual increase in the extent of the conservation estate globally (Chape *et al* 2003). However, it is important to note that the substantial increase is mainly limited to terrestrial protected areas. According to Chape *et al* (2003), marine protected areas only comprise a mere 8.7% (1.64 million square kilometres) of the total protected area, which represents only 0.5% of the total oceans surface area. IUCN recognizes the important role played by protected areas in conservation of natural resources and has continued to advocate for the establishment of more areas to add to the already existing 11.5% of the global land surface classified as protected areas. According

to the 2003 IUCN list, Eastern and Southern Africa which consist of 20 countries, has 4 852 protected areas covering a total area of 1 967 242 square kilometres (17.17% of land area).

IUCN defines a protected area as:

“An area of land and/or sea especially dedicated to the protection and maintenance of biological diversity, and of natural and associated cultural resources, and managed through legal or other effective means.”

(Chape *et al* 2003:2)

In Africa, the need to conserve wildlife whose numbers were drastically declining due to increased hunting (Fabricius 2004), led to the establishment of formal protected areas starting early in the 20th century (Johannesen 2006). This approach to conservation, commonly known as the ‘fortress conservation’ or ‘fences and fines approach’ originated from the West and the main objective was to protect nature from exploitation through consumptive use especially by the local communities (Lepper 2006). Hunting even for subsistence purposes was not allowed in most of the areas proclaimed as protected areas, as this was considered as poaching (Fabricius 2004).

A meeting of the representatives from African colonial powers held in London in 1900 to sign what became the first world “international conservation treaty: the Convention for the Preservation of Animals” (Fabricius 2004:6), paved the way for the adoption of the protected area strategy to conservation. Despite the fact that the concept of formal protected areas was new in Africa, conservation of various natural resources was not a new practice in many African traditional societies. Various communities had a history of utilizing resources sustainably and practicing some degree of resource management. Use of traditional knowledge played an important part in conservation of natural resources amongst many communities (ibid). Among the Basarwa of Khwai in Botswana for example, hunting was carried out in specific times of the year and breeding animals were not hunted (Campbell 1997 and Thakadu 1997 in Mbaiwa 2005). In many of these

communities, regulation and monitoring of resource use was done by traditional leaders (Fabricius 2004).

Conservation policies that resulted in the establishment of protected areas gained support of various international agencies (Agrawal and Gibson 1999). Protected areas were hence established in many parts of Africa and this happened under different circumstances (Child 2004). For some protected areas to be established, local people had to be removed from their ancestral land resulting in displacement of many communities, restriction to resource use and loss of land for cultivation and pasture. The local people hence lost their rights to use resources and often received little or no compensation (Johannesen 2006; Mbaiwa 2005). The lack of a political voice amongst the local people gave them no chance of even having the least resistance (Fabricius 2004).

Some protected areas were however established on land that the local communities did not depend on to sustain their livelihoods. This implies that such areas were not primary grounds for activities such as hunting, gathering and farming, and therefore the establishment of the protected areas have minimal or no negative effects on local communities. In fact establishment of some the protected areas were of positive effect to some local neighbours as they became direct recipients of benefits such as employment opportunities and boosting of local economies. Some protected areas continued to allow the local communities to have access to various resources at certain times. For instance in the case of Kasungu National Park in Malawi, local communities have continued to harvest resources such as thatching grass and caterpillars, hence contributing to supporting livelihoods of local people (Cumming 2004). On the other hand, sections of some protected areas continued to have human presence whereby some of the local people, especially the indigenous people, continued to inhabit these areas and coexist with nature (Worboys *et al* 2005). For example according to Figueroa and Aronson (2006), over 50 percent of National Parks in Uganda have human occupation.

The establishment of protected areas at least in Southern Africa has greatly contributed to the restoration of particular animal species which were on the brink of extinction

(Cumming 2004) in the wake of commercialized hunting. Fabricius highlights this crucial role by pointing out that:

“The top-down approaches of governments and the efforts of private landowners did, indeed, save several species from the brink of extinction. Formally, protected areas made an important contribution to the survival of white rhinoceros, black wildebeest, roan antelope, oribi, tsessebe, bontebok and sable antelope in the sub region.”

(Fabricius 2004:9)

With the denationalization of wildlife in the 1960s in Southern Africa, whereby private landholders obtained “the right to manage and benefit from their wildlife”, wildlife conservation gained another dimension. There was increased change in land use from agricultural to conservation either for pleasure or for profit, as it was realized that this “was better for land, better for wildlife and provided more jobs and profits” (Child 2004:2). This has been attributed to the establishment of the many private protected areas in the Southern Africa region and in recent years the adoption of the concept of conservancies, where private landowners agree to collectively work together towards management of their land (Fabricius 2004).

Under the IUCN classification of protected areas, (**See Appendix 1**) various types of land under conservation such as conservancies and privately owned land under wildlife ranching or wildlife eco-tourism are not included in any of the categories. However, their contribution to biodiversity conservation at national level is of great significance (Endangered Wildlife Trust 2006). In addition, according to Mitchell (2007), many private protected areas are not included in the World Database on Protected Areas even though they satisfy the IUCN definition. For example, out of thousands of private protected areas in the United States, only 23 are listed as private reserves in the database.

Mitchell (2007) recognises that the number and extent of private protected areas in the last century has been on the increase partly due to “[a] growing recognition of the

opportunities for achieving conservation objectives on private land” (pg. 4). Though privately owned protected areas may not cover extensive areas when compared to state managed or public protected areas, their role in driving the conservation agenda in Southern Africa is of great significance. This significant role was recognized at the Vth IUCN Parks Congress, 2003 held in Durban, South Africa when it was noted that;

“Private protected areas in Southern Africa alone protect millions of ecologically important areas, especially in critical buffer zones and corridor areas.”

(IUCN 2005:275)

IUCN defines a private protected area as:

“..a land parcel of any size that is (1) predominantly managed for biodiversity conservation; (2) protected with or without formal government recognition; and (3) owned or otherwise secured by individuals, communities, corporations or non-governmental organizations.”

(IUCN 2005:275)

Most private protected areas, especially private game reserves are operated for income-generating tourism activities. These activities are mainly dependent on biodiversity and natural resources, hence making conservation a priority in management (Mitchell 2007). In addition to playing an important role in conservation, private protected areas contribute greatly in promoting economies and the welfare of the people. For instance, a study carried out in the Eastern Cape by the Nelson Mandela Metropolitan University’s Centre for African Conservation Ecology indicated that private game reserves generate more revenue per hectare when compared to alternative forms of land use. In addition, they tend to employ more people than original farmlands. The study portrayed that prior to the farms under consideration being converted to private game reserves, they employed only 260 people but upon conversion, the number of employees increased to 1 172 (Bezuidenhout 2007). Such contributions are quite significant and more often benefit the local neighbouring communities hence improving the general welfare of the people.

2.2 Protected areas in Botswana

Establishment of protected areas in Botswana began during the British rule which started in 1885 and ended 1966 when the country gained independence. Like in many other parts of the world, establishment of protected areas in Botswana was seen as the most appropriate way of conserving biodiversity (Mbaiwa 2005). Where local communities had to give way for the creation of some protected areas, they moved to adjacent land some of which was later designated as Wildlife Management Areas (WMAs) (ibid). As cited elsewhere, it is important to note that not all cases of establishment of protected areas resulted in displacement of local communities as some of the areas were previously uninhabited by humans and were also not primary grounds for the local people to undertake activities such as hunting and gathering, livestock grazing and farming among others. Other protected areas were established on privately owned land, for example Mokolodi Nature Reserve which was established through change in land use on privately owned land (Mokolodi Nature Reserve 2003b).

In Botswana, protected areas include National Parks, Game / Wildlife Reserves, Wildlife Management Areas and Forest Reserves. All these fall under the jurisdiction of the Ministry of Environment, Wildlife and Tourism (MEWT), under which falls the Department of Wildlife and National Parks (DWNP) which manages the National Parks, Game Reserves and Wildlife Management Areas (WMAs), while the Department of Forestry manages the Forest Reserves (IUCN and Ecosurv 2003). National Parks and Game Reserves cover about 18% of the country's land surface, which is beyond the current global average of 13% (Endangered Wildlife Trust 2006). In addition, WMAs cover about 22% of Botswana (Lepper 2006). Therefore, about 40% of the total land surface in Botswana is to some degree protected for the purpose of wildlife conservation and tourism development. Activities such as human settlement and agriculture production are not allowed in National Parks and Game Reserves but can be carried out in WMAs (Mbaiwa 2005).

In terms of the IUCN classification of protected areas, only four protected areas in Botswana are classified under category II (National Parks), namely Chobe, Gemsbok, Makgadikgadi Pan and Nxai Pan and cover over 4.5 million hectares (Endangered Wildlife Trust 2006). Vast and well-known areas such as Moremi and Central Kalahari do not fall under this category because the national legislation recognizes them as Game Reserves (ibid). These among other state run game reserves in the country such as Khutse, Gaborone, Coutada, Mannyelanong and Sichifalo fall under category IV (Habitat/Species Management Areas).

Private protected areas in Botswana include Jwaneng Game Park, Khama Rhino Sanctuary, Mashatu Game Reserve, Nata Sanctuary, Orapa Game Reserve and Mokolodi Nature Reserve (UNEP-WCMC undated). Private protected areas in Botswana when compared to public protected areas, offer much greater flexibility in their tourism activities. Activities offered in these areas are mainly for generating income. Some examples include exclusive game viewing tours, small camps, night drives, and guided walking tours (Expert Africa 2007). The figure below (**Figure 2.1**) shows the location of some of the protected areas in Botswana.

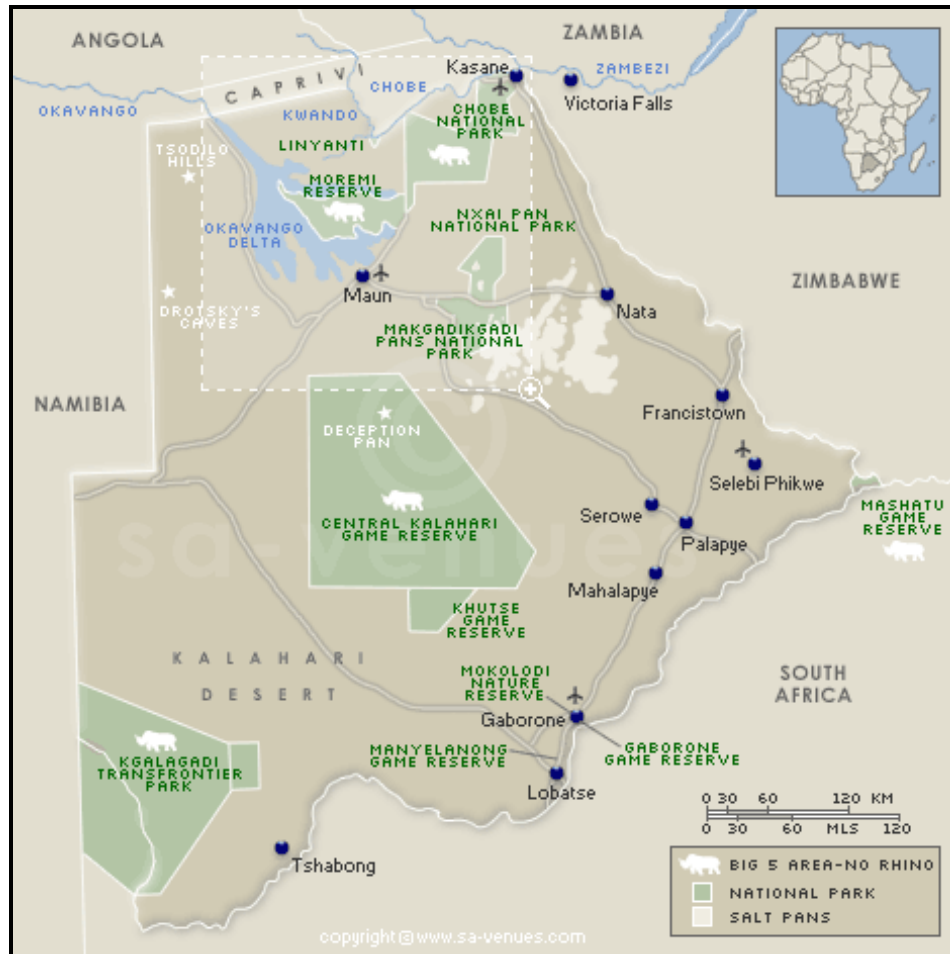


Figure 2.1: Map of Botswana showing National Parks and Game Reserves (Adopted from South Africa Explored undated)

2.3 Conservation discourse relevant to protected areas

The discourse presented focuses on the two approaches to conservation in the context of protected areas, fortress conservation and community conservation, which Adams and Hulme (2001) label as the notion of ‘*narratives and counter-narratives*’. This discourse does not tend to imply that one approach should be discarded and the other embraced in its fullness. In fact, Adams and Hulme (2001) consider such a notion as naïve and suggest that in reality, the issue should be an integration of the two such that there is gradual evolution in conservation policies and practices. Though the concept of community conservation has not been adopted in this case study, it is important to present the

discussion so as to show the trends in conservation approaches in the context of protected areas.

2.3.1 Fortress conservation

This is a western approach to conservation and is credited with the establishment of protected areas (Adams and Hulme 2001). The approach which follows the principles of the American National Parks ‘fence and fines’ model, is considered by some conservationists not to have been very successful, especially in Africa (Songorwa 1999). According to Adams and Hulme (2001), the adoption of this approach to conservation was mostly characterized by “exclusion of people as residents, the prevention of consumptive use and minimization of other forms of human impacts” in designated areas (pg.10). Under this approach, the first areas in Africa to be declared as protected areas included Sabie Game Reserve (now Kruger National Park) in 1892 and the Parc National Albert (now Virunga National Park in Congo) in 1925 among others (Adams and Hulme 2001).

The fortress approach was very well intentioned, that is to conserve natural resources and especially the dwindling wildlife resources. However, it was not well received by most local communities and hence led to emergence of conflicts between the local people and protected areas managers. In most situations, the local people developed negative attitudes towards conservation and this affected the effectiveness of meeting conservation objectives (Fabricius 2004; Mbaiwa 1999 in Mbaiwa 2005). Most conflicts revolved around issues of resource access and use (Mbaiwa 2005), and this had an effect on the local people as they struggled to sustain their livelihoods from limited resources that they could access (Fabricius 2004).

With time however, it came to be realized that the fortress conservation approach which was top-down oriented, was becoming unpopular mainly due to its exclusion of people from the process of conservation and prevention of consumptive use of resources (Adams and Hulme 2001). There was a need for strategies to change by adoption of initiatives that would seek the involvement and cooperation of local communities if conservation was to succeed in the long term (Wells *et al* 1992; Worboys *et al* 2005). Besides that,

some conservationists came to realize that excluding people from management of resources not only increases conflicts, but also “increases monitoring costs and fail to benefit from valuable local knowledge and resource management systems” (Hayes 2006). This kind of thinking has led to adoption of conservation strategies based on the concept of community conservation or community centered conservation.

2.3.2 Community conservation

Community conservation approach emerged as a result of the challenges that faced fortress conservation approach (Adams and Hulme 2001). Lack of capacity in the governing agencies of the top-down approach to integrate local people in conservation programs also led to acceptance of community conservation as an alternative approach among many institutions (Agrawal and Gibson 1999). The need to promote development in rural areas also acted as a catalyst towards the shift in conservation approaches (Fabricius 2004).

One of the key elements of this approach is that it emphasizes the need for including local people in the conservation process (Adams and Hulme 2001). This approach has gained considerable support from many international agencies such as the World Bank, USAID, Conservation International, The Nature Conservancy, SIDA, and World Wide Fund for Nature (WWF) among others (Agrawal and Gibson 1999). International gatherings such as the 1974 UNESCO Man and Biosphere Program, 1980 World Conservation Strategy, World National Parks Congresses and the 1987 World Commission on Environment and Development among others played a crucial role in pushing forward the need to integrate people in biodiversity conservation programs (Mehta and Kellert 1998). Such efforts as well as extensive academic work done on the subject of community-based management have encouraged the development of community conservation approaches across the globe.

Adams and Hulme (2001) in *Conservation and Community*, define community conservation as:

“..those principles and practices that argue that conservation goals should be pursued by strategies that emphasize the role of local residents in decision-making about natural resources.”

(Adams and Hulme 2001:13)

The idea of community conservation is however not new but has built on previously existing ideas and practices, for example those practiced in the African traditional systems (Adams and Hulme 2001). The approach is people centered with one of its elements being encouraging participation of local people in and around protected areas in the conservation process. The other element focuses on linking conservation objectives to the local development needs, resulting in establishment of development projects (ibid). However, the level of engagement of local people in the conservation process differs with every project as well as with the community itself. This is because communities are not homogenous and usually consists of individuals within groups who have varying interests, goals and preferences towards resource use and distribution (Agrawal and Gibson 1999). Such factors therefore need to be taken into consideration in the process of engaging local communities in conservation to avoid possible conflicts and shortcomings.

According to Adams and Hulme (2001), three types of strategies are identified with community conservation. These are:

- i. Protected area outreach;
- ii. Collaborative management, and
- iii. Community based conservation.

2.3.2.1 Protected area outreach

This strategy endeavours to address mistakes made in the past during the establishment of protected area for instance where local communities were forcefully removed from their land. The approach seeks to benefit the local people living close to protected areas by using the protected area as a basis for the benefits as well as trying to solve conflicts between the people and the protected area in a “mutually agreeable manner” (Barrow and Murphree 2001:33). Although managing rural livelihoods is secondary to

conservation in this strategy, benefit sharing may contribute to poverty alleviation within the community through the various services provided (ibid). Benefit sharing may as well influence people's attitudes towards protected areas and conservation (Gillingham and Lee 1999) hence this approach is important towards attitudinal change among the local people. Under this strategy, decision-making about resource management is determined by the State as it retains the ownership of the land and resources (Barrow and Murphree 2001).

2.3.2.2 Collaborative management

IUCN in the World Conservation Congress, Resolution 1.42, defines collaborative management or co-management as,

“..a partnership in which government agencies, local communities and resource users, non-governmental organizations and other stakeholders negotiate, as appropriate to each context, the authority and responsibility for the management of a specific area or set of resources.”

(IUCN 1996 in Carlsson and Berkes 2005:69).

This strategy as well seeks to achieve both conservation and livelihood objectives but in a rather different way whereby formal agreements are made and responsibilities are shared between the various stakeholders. Local people are as well given access to the conservation area (Barrow and Murphree 2001). The idea in collaborative management is to develop a partnership amongst the stakeholders and agree on the various functions, rights and responsibilities (Borrini-Feyerabend 1996 in Carlsson and Berkes 2005). One of the achievements that co-management is credited for is “the ability to bring conflicting parties together and force dialogue” (Colagiovanni 2002:35). According to Barrow and Murphree (2001), this strategy involves complex ownership arrangements, requiring various mechanisms for collaborative management to be put in place.

2.3.2.3 Community-based conservation

According to Barrow and Murphree (2001), this strategy places emphasis on providing “economic incentives” to local people, “devolution of authority and responsibility to communities” as well as “development of communal institutions and structures” for the management of natural resources (pg.34). The strategy generally deals with initiatives that place emphasis on sustainable use of natural resources by rural people as well as empowerment of local communities so that they can actively participate in decision-making and management of local natural resources. Under this strategy, conservation and development are considered compatible (Mehta and Kellert 1998). Under this strategy, land and resources may be owned by the local resource users (Barrow and Murphree 2001).

The key characteristics of the three strategies to community conservation discussed above are provided in the table below (**Table 2.1**) based on their objectives, ownership status and management characteristics.

Table 2.1: Strategies to community conservation and some key characteristics

	Protected area outreach	Collaborative management	Community-based conservation
Objectives	Conservation of ecosystems, biodiversity and species	Conservation with some rural livelihoods benefits	Sustainable rural livelihoods
Ownership / tenure status	State owned land and resources (e.g. national parks, forests and game reserves)	State owned land with mechanisms for collaborative management of certain resources with the community. Complex tenure and ownership arrangements	Local resource users own land and resources either <i>de jure</i> or <i>de facto</i> . State may have some control of last resort
Management characteristics	State determines all decisions about resource management	Agreement between state and user group about managing some resource(s) which are state owned. Management arrangement critical	Conservation as an element of land use. An emphasis on developing the rural economy

(Adapted from: Barrow and Murphree 2001:32)

2.4 Biodiversity conservation and livelihoods of local people

Apart from the important role that protected areas play in conserving biodiversity (Allendorf *et al* 2007; Wells *et al* 1992), they also play a role of contributing towards the livelihoods of the neighbouring local communities especially in the developing world (Sekhar 2003). This is more so considering that communities living in rural areas tend to depend more directly on biodiversity than urban dwellers (Kothari 1997). According to Shackleton and Shackleton (2004), studies carried out in Southern Africa have shown the importance of ‘everyday resources’ such as fuel wood, medicine, wild foods, building materials among others, on livelihoods of local people.

To examine people’s dependency on biodiversity to supplement their livelihoods, a Biodiversity Strategy Action Plan team under IUCN and Ecosurv, carried out a field research in 2003 covering six districts in Botswana. According to the results from the research, the degree of dependency varied between groups based on gender, economic status, age and ethnic lines. The research further revealed that dependency also varied with seasons. The research concluded that the poor often have a higher dependency on biodiverse natural resources for their livelihoods compared to other classes of people in the society (IUCN and Ecosurv 2003). This goes ahead to show that many rural communities are highly dependent on biodiversity to sustain their livelihoods.

Biodiversity has both direct and indirect benefits to people, which lead to sustaining livelihoods in different ways. These range from indirect benefits in the form of services which contribute towards proper functioning of the ecosystem such as carbon storage, air purification and nutrients recycling (Worboys *et al* 2005), to direct tangible benefits whereby various resources are used for various purposes such as food, building materials, medicine and for generating income (MEWT 2004). Various wild resources have been used as alternative food sources especially in times of crisis. Marula (*Sclerocarya birrea*) fruit and kernels for example are good alternative sources of protein and fat, while thousands of plant species are used for various medicinal purposes. About 10% of all the plants found in Southern Africa are recognized as being of some medicinal value

(Magome and Fabricius 2004). Biodiversity therefore allows self-reliance and independence within the community since most goods and services are locally available. At the same time, it also provides alternatives within the community in terms of livelihoods sustaining elements hence ensuring livelihoods stability (Kothari 1997). To show the importance of biodiversity, a summary of the contribution of biodiversity to rural livelihoods is illustrated in the figure below (**Figure 2.2**). The value of biodiversity in the illustration is based on two broad categories; direct use value and indirect / non-use value.

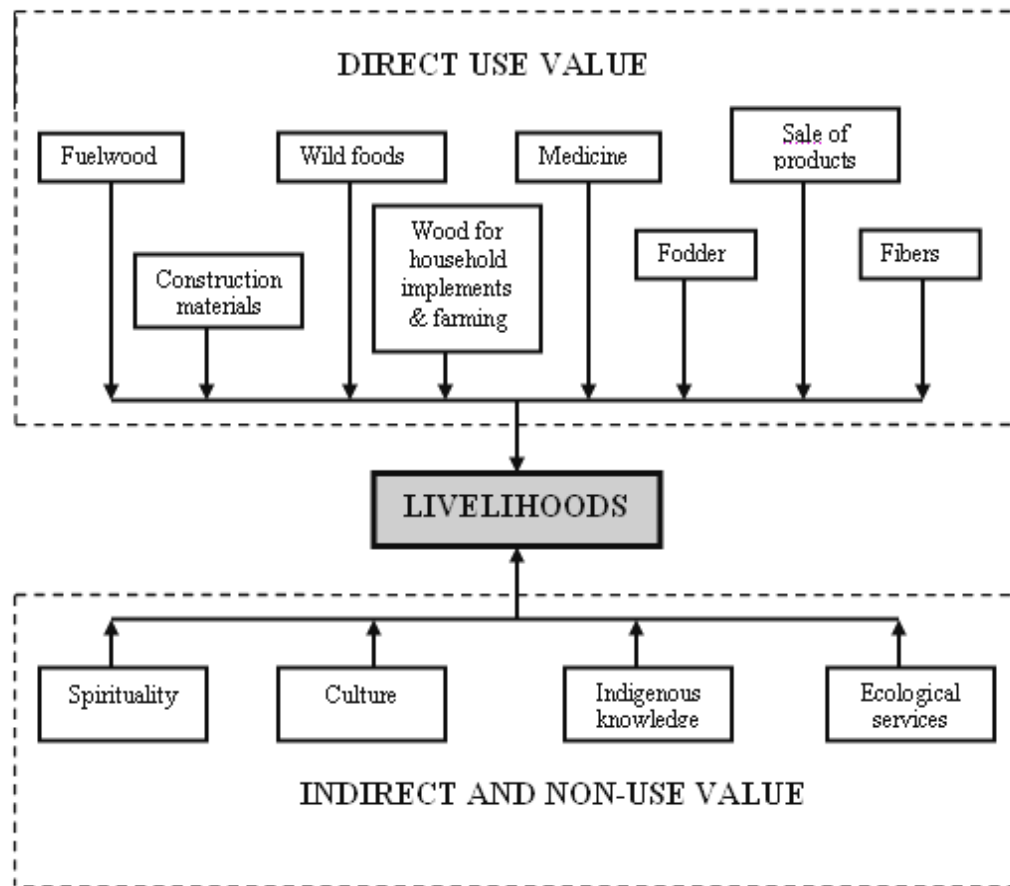


Figure 2.2: Contribution of biodiversity to rural livelihoods

(Adapted from Shackleton and Shackleton 2004:137)

Due to this dependency, it follows that biodiversity conservation has effects on general livelihoods of local people. A brief discussion on the benefits and costs of biodiversity conservation would create an understanding some of the effects protected areas have on

livelihoods of local communities. In the discussion, biodiversity conservation is taken in the context of establishment and management of protected areas.

2.4.1 Benefits of biodiversity conservation to local people

Initiatives to conserve biodiversity in many areas have resulted in adoption of strategies that have led to the creation of protected areas. Protected areas exist within a wide spectrum which ranges from those which allow a certain degree of sustainable extraction of resources to those that are highly restrictive of human activities and are only visited by a few people (Worboys *et al* 2005). Many protected areas therefore have directly benefited many neighbouring communities in various ways. One such benefit is provision of income to the local communities through the creation of business and employment opportunities hence contributing to economic development. For example in Chobe and Ngamiland districts of Botswana, various business ventures associated with protected areas have boosted the areas' economic development (MEWT 2003). Most job opportunities created in and around protected areas often are taken up by local people living in the neighbourhood of such areas (Cumming 2004; Worboys *et al* 2005) hence improving the welfare of the local people. For example, in KwaZulu-Natal, records from the former Natal Parks Board indicate that between 1995 and 1996, about US\$ 1.61 million was earned as income by neighbouring people through employment in parks (Cumming 2004).

Apart from direct economic gains through employment and established business ventures, benefits from some protected areas trickle down to local communities in various forms. This comes through benefit sharing arrangements which are put in place as a strategy to win the support of the local people towards conservation as well as improve their welfare (Emerton 2001). Pilanesberg National Park in South Africa provides a good example whereby as a result of benefit sharing arrangements, local communities have benefited through development of local enterprises, which have consequently contributed to improvement of their welfare (*ibid*). In East Africa, according to Emerton (2001), many local communities have benefited from initiatives whereby some percentage of revenue generated from some protected areas have been channelled to fund various local

community development projects such as infrastructure development and educational bursaries among others.

Protected areas also do have non-use values that have an effect on people's lives. According to Worboys *et al* (2005), among the non-use values that protected areas provide is the preservation of cultural values of people. This provides an opportunity for people's culture to carry on across generations hence giving them "a sense of identity, connection or meaning related to traditional cultures and lifestyles" (pg.83). Benefits received by local people which they can relate to conservation and protected areas have in some cases contributed to the success of many conservation efforts. Magome and Fabricius (2004) point out that observations have been made that where benefits from conservation are more, people tend to be more supportive of various conservation initiatives but where the benefits seem to go to "outsiders" at the local people's expense or are minimal, there is often limited support. Protected areas managers should therefore consider local people beneficiation as a key element during their planning.

2.4.2 Costs of biodiversity conservation on local people

Conservation of biodiversity comes with some costs especially to the people living around protected areas, as livelihoods of some are dependent on resources found in these areas (Sekhar 2003 in Mbaiwa 2005). Cases whereby establishment of a protected area has resulted in displacement and removal of local communities from their land have been numerous in many parts of the world (Worboys *et al* 2005). This has not only led to loss of land but also reduced or restricted access to various resources which are essential for livelihoods sustenance (Mbaiwa 2005). Such restrictions in many instances have resulted in illegal harvesting of resources among the local people as they attempt to meet their basic needs (Magome and Fabricius 2004). Such illegal practices arise because of lack of alternative sources of livelihoods sustenance due to the poor physical and socio-economic conditions local people find themselves in. According to Emerton (2001), such conditions often do not support a wide range of income generating activities.

In some areas, creation of protected areas takes up land which could potentially be put into other forms of uses such as agricultural production and grazing of livestock by the local people. For example in areas where substantial good amounts of rainfall are received annually, land could potentially be of higher returns and benefits under agricultural production than under biodiversity conservation (Magome and Fabricius 2004). The opportunity costs foregone by engaging in biodiversity conservation in such situations is therefore directly borne by the local people. For instance, some local people around MNR had previously used a portion of land for grazing their livestock and as a source of some plant resources before the land was included as part of the reserve. This portion of land was privately owned but the local people had access to it and hence when it became part of the reserve, many people felt that they had lost a valuable source upon which they derived various resources (Mokone 1997b). Such is the case in several other areas where land is acquired for the purpose of conserving biodiversity.

Establishment of protected areas especially near farming zones may result in incidences of crop damage, predation of livestock by wild animals and even transmission of diseases to livestock (Emerton 2001). Such damages often lead to the local people developing negative attitudes towards conservation and also affect people-park relationships (Allendorf *et al* 2007). To exemplify the extent of some costs of wildlife conservation, Emerton (2001) gives a breakdown of some specific incidences with quantified costs (**Table 2.2**) which have had effect on the livelihoods of the local people in Kenya and Zambia.

Table 2.2: Examples of the local economic cost of wildlife damage to agriculture

Country	Type of wildlife cost	Estimated Value of damage	Source
Kenya	Laikipia disease transmission to livestock	US\$37 / km sq	(Grootenhuis 1996)
	Maasai Mara agricultural production costs	35 – 45% of total production	(Norton-Griffiths 1996)
	Maasai Mara livestock disease, kills and injury	US\$104 / km sq	(Mwangi 1995)
	Maasai Mara crop damage	US\$200-400 / household	(Omondi 1994)
	Shimba Hills elephant crop damage	US\$100 / household	(PDS 1997)
Zambia	Mumbwa Game Management Area crop damage	US\$122 / household	(Siachoono 1995)

(Adapted from Emerton 2001:218)

Considering the dependency of people on biodiversity, protected areas and their management cannot be considered in isolation from people, especially those living in the neighbourhood. Therefore, there is need for the protected areas managers to work in collaboration with the local people for the success of various conservation objectives and also for sake of improving the welfare of the local people (Alcorn 1997; Allendorf *et al* 2007; IUCN and Ecosurv 2003). However, the process of achieving this collaboration is complex often due to various differences and priorities that exist between the local people and the protected areas managers (Allendorf *et al* 2007).

2.5 Relationships and attitudes with reference to protected areas

Due to the many linkages that exist between protected areas and the surrounding areas, protected areas can no longer be considered in isolation from their neighbours. People are an integral part of the environment and therefore the human aspect should be taken into consideration in protected areas management (Garrant 1982). Assessing how relationships can be developed between protected areas and local people as well as understanding people's attitudes and perceptions towards protected areas is important in understanding the linkages between protected areas and local people.

2.5.1 Developing relationships between protected areas and local people

The fact that some communities live in and around protected areas means that there is need for protected areas managers to work in collaboration with these communities to achieve various conservation objectives (Alcorn 1997). According to Allendorf *et al* (2007), one of the problems that has affected the success of most protected areas is the relationship between the local people and protected areas managers. For success to be realized, protected areas managers should not disregard the local people but work towards adopting strategies that promote development of good relationships with the local communities.

Relationships that exist between local communities and protected areas may be understood using different approaches such as assessing the extent of damages caused by wildlife, level of resource use, effects of various development projects in the communities among others (Allendorf *et al* 2007). However, one basic indication of existing relationships between local people and the protected areas is through the visits by protected area staff to neighbouring communities and the frequency of such visits. Visits to communities may be undertaken for the purpose of holding consultative meetings as well as informing people about what is happening in the park. According to Kangwana and Ole Mako (2001), this kind of an initiative often leads in developing and maintaining good relationships. For instance a study carried out in Tarangire National Park in Tanzania and the surrounding communities, established that in villages where there were no visits by park staff, people maintained that they did not have any relationship with the park, while in those villages that were visited, people indicated that good relationships existed. Some of these relationships however are quite vulnerable as they are highly determined by personalities and leadership capabilities of the individual staff working for the park (ibid).

In developing relationships that result in working together, it is important to understand the community first, their way of interaction and communication. Worboys *et al* (2005), in '*Protected Areas Management: Principles and Practice*', point out that understanding the community may involve undertaking a Rapid Rural Appraisal (RRA) as well as a

Community Assessment. RRA helps to gain an understanding of the social, economic and political processes in a community while community assessment looks into issues such as community history, dynamics of decision-making and channels of communication and interaction. While understanding the dynamics of the community, it is also important to take into consideration that every community is different and hence exhibit different relationships with protected areas managers. Relationships tend to differ even amongst various individuals or groups within the same community (Hulme and Infield 2001). For example, young people may tend to have better relationships with the protected area managers when compared to the older people or *vice versa*. Assumptions that communities will express the same interests and that their relationships with the protected areas managers will always be the same would therefore be misleading. In some situations, relationships may change over time based on changes that communities go through as well as on events that take place within the community. For example in the case of Lake Mbuho National Park in Uganda, the construction of a school in a neighbouring community supported by the park, led to improved relationships between the local people and the park management, but following a raid by park rangers in the same community, relationships were soured for a long time (Hulme and Infield 2001).

To foster good relationships with communities, another element to take into consideration is that protected areas should not be managed in ways that seem to conflict with the interests of the community (Worboys *et al* 2005). For example, more benefits should not seem to go to ‘outsiders’ at the expense of the local people. Where outside entities seem to benefit more than the local community does, relationships between the local people and the protected areas managers tend to weaken, making it difficult for people to support conservation (Allendorf *et al* 2007). Benefits such as provision of jobs to the local people as well as education on conservation issues either formally or informally may greatly contribute to local people developing trust in the protected area hence improved relationships (Garrant 1982).

At the same time, routine communication between the protected areas managers and the community need to be maintained as it is important to keep people updated about what is

happening in the protected area (Worboys *et al* 2005). In most situations, as was observed during the introduction phase of community conservation in Tanzania National Parks (TANAPA), the local communities are always ready for dialogue and will expect the park managers or staff to approach them (Bergin 2001). Lack of consultation may lead to weakening of relationships, which may also compromise the success of various conservation initiatives (Alcorn 1997). Apart from formal interactions with local communities, protected area managers and staff should informally interact with the communities in numerous routine matters as this further enhances local cooperation and support. On informal interactions, Garrant (1982) points out that:

“Experience has shown very clearly that friendly informal discussions at the right time, conducted in the spirit of trust and cooperation, are usually more effective in achieving conservation objectives than years of legal battles.”

(Garrant 1982:69)

According to Worboys *et al* (2005), communities have expectations which they desire to see fulfilled by protected areas managers. Expectations such as being kept inform about major projects in the protected area and consultation may be achieved through the regular interactions. This consequently creates a positive image of the protected area among the community hence resulting in building good relationships.

2.5.2 Attitudes among local people towards protected areas

Attitudes are generally indications of how people feel about something that is of concern to them and develop as people become more aware or familiar with an object or a situation (Hayes 1993). In the process of getting familiar with the object or situation, they tend to be evaluative and hence attitudes develop (*ibid*). In presenting a typology of attitudes towards wildlife, Gary (1993) mentions that people’s attitudes tend to change over time as they go through various situations in life. People’s attitudes towards protected areas as well change with different situations and may greatly be influenced by among other things, the kind of relationship that exists between the people and the protected area management. For instance, where relationships between the local people

and protected areas managers are good and well-established, people tend to have positive attitudes towards a protected area (Allendorf *et al* 1997).

Studies that have focused on local people's responses to protected areas indicate that attitudes towards protected areas and conservation in general are also greatly influenced by benefits received at the local level. Where benefits are either minimal, non-existent or unevenly distributed, negative attitudes tend to be dominant and conservation fails to win local support (Jim and Xi 2002). For example, a study carried out in India to assess local people's attitudes towards conservation and wildlife tourism in Sariska Tiger Reserve shows that people's attitude towards protected areas were highly influenced by direct benefits received such as employment and access to collect resources in the protected area (Sekhar 2003). Further studies have shown that for positive attitudes towards protected areas to be maintained among the local people, losses should not seem to exceed benefits received either directly or indirectly from conservation initiatives (Homeland *et al* 1997 in Gillingham and Lee 1999).

The issue of uneven distribution of benefits such that more benefits seem to go to people outside the local community or to a few people within the community often creates negative attitudes among those people who receive little or no benefits. Such was the situation in Sariska Tiger Reserve where most of the benefits from wildlife tourism were going to people from outside the local community who had been allowed to operate tourism enterprises in the area (Sekhar 2003). Apart from direct benefits, involvement of local people in the decision-making processes may be another factor influencing people's attitudes towards protected areas and conservation (Gillingham and Lee 1999). Where there is local people's participation in decision-making or some form of consultative process, attitudes towards the protected area will often be positive. Other factors such as age and education level of the local people may as well have an influence in shaping people's attitudes (Jim and Xi 2002). The figure below (**Figure 2.3**) gives a general summary of some of the factors perceived to influence people's attitudes towards protected areas and conservation in general.

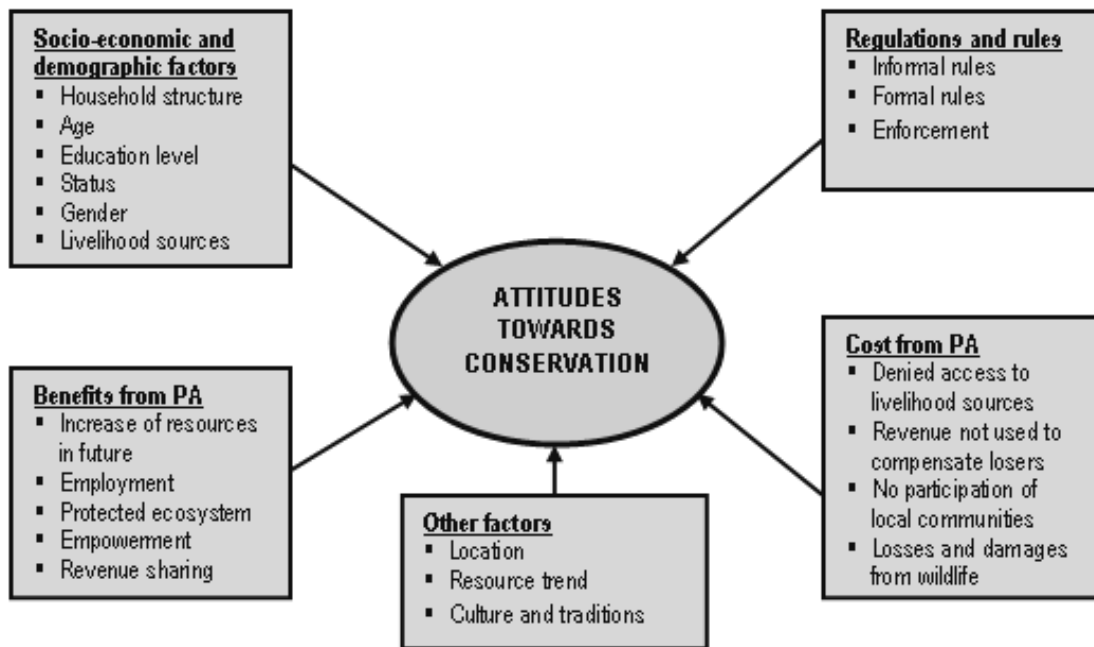


Figure 2.3: A summary of factors that may influence attitudes towards conservation (Developed from Gillingham and Lee 1999; Jim and Xi 2002; Sekhar 2003 and Sesabo *et al* 2005)

While people’s attitudes towards objects and situations may be influenced by a number of factors, their assessment is often complex and may present a few problems. Hayes (1993) for example mentions that in a survey to measure attitudes, respondents may tend to give responses that are biased towards giving a certain outcome or that tend to suit that particular situation hence not reflecting people’s actual attitudes. Interpreting the various statements made by respondents on the other hand may also pose a problem in determining attitudes that people may hold (Hayes 1993). Various techniques can be applied to measure attitudes in different surveys and situations. According to Hayes (1993), some of the techniques include the use of Likert scale, semantic differential and interview analysis among others. While Likert scale and semantic differential techniques use attitude scales for assessment, interview analysis deals with evaluating the information obtained from responses to be able to pick out statements or sections that reveal the underlying attitude. In assessing attitudes of local people towards conservation and wildlife tourism around Sariska Tiger Reserve in India, an analysis of statements made by respondents towards the benefits that they receive was used. This technique of

analyzing statements from the information obtained is used in this study to assess attitudes amongst the local people towards a protected area.

2.6 Summary of the chapter

The discussion presented has shown that establishment of protected areas in the broader African context emerged during the colonial period and the numbers have been on the increase over the years. The establishments happened under different circumstances hence affecting local communities in different ways. Botswana has vast areas of land covered by protected areas and has several protected areas recognized internationally. These protected areas fall under various categories according to the IUCN classification and have played an important role in biodiversity conservation. The conservation discourse given in reference to protected areas shows that the current conservation thinking is shifting from the top-down fortress approach to a more people focused community conservation approach, under which several strategies fall. As more emphasis continues to be laid on biodiversity conservation, there is need to look at what effects this has on livelihoods of local people. The discussion has shown that there are both positive and negative effects on local people's livelihoods attached to biodiversity conservation. Of importance in promoting biodiversity conservation and improving livelihoods of local people, is the need for understanding the interactions between protected areas and local people. This is highlighted in the discussion as it outlines the need to develop relationships between protected areas managers and the local people, and also on the various factors that influence attitudes among the local people towards the protected areas. Existing relationships between protected areas managers and the local people may have an impact on local people's attitudes towards protected areas, which in turn may influence the success of various conservation initiatives. Assessing people attitudes is often problematic and therefore the discussion concludes by highlighting some possible ways in which they could be assessed.

CHAPTER THREE

BACKGROUND OF THE STUDY AREA

The aim of this chapter is to give historical and geographical background of the study area. An overview at the national level gives a background of the country Botswana as well as a few socio-economic aspects. Thereafter, an overview of the actual study area focusing on MNR and Mokolodi village is given from both a historical and geographical perspective. Highlighting the historical and geographical elements of the study area is important for the understanding of some issues around the topic of study. The chapter concludes with a section outlining the philosophy behind the existence of the reserve.

3.1 Overview of Botswana

Botswana is a landlocked country located in Southern Africa, bordering South Africa to the south, Namibia to the west, Zambia to the north and Zimbabwe to the east (**Figure 3.1**). The country has an average elevation of about 1 000 meters above sea level and is generally dry with no natural standing water except in the Okavango Delta in the northwest and the Limpopo River in the east (Main 2001). The country is about 581 730 square kilometres in land surface of which 18 percent is covered by national parks and game reserves and 22 percent is under WMAs (Lepper 2006).

The early inhabitants of the country were the Khoi who were cattle keepers and the San (Basarwa) who were hunters and gatherers (Silitshena and McLeod 1992). Other groups of people, especially the Bantu speaking group from Central-West Africa arrived into the country about 2 000 years ago by crossing the Zambezi River (Main 2001). According to HATAB (2007), the country had an estimated population of 1.85 million by 2006 with an approximate average annual growth rate of 3.5% percent.



Figure 3.1: Map of Southern Africa showing the location of Botswana
(Source: Department of Tourism (DoT) Botswana 2007)

According to Main (2001), Botswana has in the recent years emerged as one of the wealthiest countries in Africa, due to the discovery of diamonds in the late 1960s and 1970s. Today, it is the third largest producer of diamonds in the world and in the recent years, tourism has made a significant contribution to the growth of the economy. However, just like many other African countries, Botswana is faced with many challenges among them being the increasing gap between the rich and the poor as well as the need to provide jobs and other services for the growing population (ibid).

For the purpose of reducing the impact on and protecting the country's fragile, attractive ecosystems such as the Okavango Delta and the Makgadikgadi Pans, the low volume – high value eco-tourism model has been adopted in the country. This model limits the number of tourists allowed in a given area at a particular time. This is achieved by keeping the entry fees to protected areas for non-residents high and keeping the number

of beds in lodges in national parks and game reserves low (SNV 2001). Charges for citizens and residents are however, reasonably lower to promote domestic tourism (ibid).

In its commitment towards biodiversity conservation, Botswana has developed legislation through various Acts of Parliament, for example, the Fauna Conservation Act and the Wildlife Conservation and National Parks Act, which have been effective in protecting endangered and threatened species as well as ecosystems (IUCN and Ecosurv 2003). A Biodiversity Strategy and Action Plan was developed and adopted in 2004. The country is also a signatory of various regional and international conventions and treaties such as the SADC Protocol on shared Watercourse Systems, the Ramsar Wetlands Convention, the Rio Declaration on Environment and Development and the Climate Change Convention just to mention but a few (ibid). Private game reserves in the country have played a significant role in the conservation of biodiversity in the country and some have been key stakeholders in various national committees and fora. Some private game reserves for instance have played a leading role in the reintroduction of rhinos in the country and hence their increased contribution in pushing forward the national conservation agenda (Mokolodi Nature Reserve 2006a).

3.2 Overview of Mokolodi

3.2.1 Historical context

It is believed that more than a million years ago, human beings wandered around the slopes of the Rasemong Hills, which border MNR on the western side. These people hunted a wide range of animals some of which are now extinct such as the giant buffalo (Mokolodi Nature Reserve 2003a). Some of the evidence to this kind of a lifestyle is available in the form of abandoned stone tools, some of which are on display at the Mokolodi Education Centre. Further, there are also traces of Bushmen who hunted and gathered along the Mokolodi Valley and Ngotwane River. Some Bushmen paintings can still be found in Manyana, a village several kilometres from the reserve (ibid).

In the 16th and 17th century, Tswana-speaking people arrived in the greater southeastern Botswana and introduced cattle husbandry as well as land tilling. There is evidence of early Tswana settlements in the reserve in the form of small distinct stone foundations and some stoned walled enclosures. It is therefore evident that this area had early inhabitants. However, these early inhabitants were displaced in a series of invasions which occurred in the early decades of the 19th century. The arrival of the European traders and missionaries in the area followed the invasions but this only accelerated the hunting of wild animals, causing some animals to migrate westward (Mokolodi Nature Reserve 2003b).

Further, according to the historical account provided in MNR Newsletter (Mokolodi Nature Reserve 2003a), the area received British protection upon the arrival of the Boers in the area. A Boer war was waged at the edge of the present day reserve after which the British administration facilitated demarcation of land for settlers from Europe as well as established tribal boundaries. The neighbouring tribes, Balete, Bangwaketse and Bakwena obtained their demarcated territories for the first in the areas neighbouring the present day reserve.

Following the demarcation, the land which is currently the reserve, was owned by Richard Transfeldt and Mmaphatse and was under ranching for many years. Changes of land ownership continued in subsequent years with the land being sub-divided further and sold. In 1972, a portion of land referred to as Traquair was acquired by Ian and Gwithian Kirby who carried on with various agricultural practices, among them being cattle ranching. Parts of the land commonly referred to as Crocodile Pools, previously owned by Transfeldt were sold to various individuals among them being Mokwadi Kgopo. It is this portion of land purchased by Kgopo together with the former Traquair farm owned by Ian and Gwithian Kirby that form the present day MNR (Mokolodi Nature Reserve 2003b).

According to the recent history details of the area, the drought of the 1980s had an adverse toll on the cattle in Kirby's Traquair farm which resulted in the deaths of many

cattle while some were sold off. However, the existing wild animals endured the drought. As land was recovering from the drought, an idea of creating a lasting inheritance for the children of Botswana was born and hence the establishment of the nature reserve. The reserve was opened in January of 1994 on a 3000 hectares piece of land, formerly the Traquair farm with a registration a 99-year leasehold in favour of Mokolodi Wildlife Foundation at an annual rate of BWP 1.00. The reserve was established in order to promote wildlife conservation, particularly the nurturing and propagation of rare and endangered species, and to provide environmental education, particularly in South Eastern Botswana, where an increasing human population had significantly reduced the number of wild animals (Mokolodi Nature Reserve 2003b). The establishment was in accordance to the Wildlife Conservation and National Parks Act of 1992, section 13 which recognizes the establishment of private game reserves in the country (Government of Botswana 1992).

The reserve was later expanded to include an area of about 2 000 hectares known as Crocodile Pools which was purchased from Golden Opportunity (Pty) Ltd in 1997 (Mokone 1997b). Though this portion of land was privately owned, the local people, the Balete tribe, could access it for grazing purposes as well as for harvesting of sand and firewood. Before the land was sold, the Balete had approached the government to buy and allocate this portion of land to them but this delayed due to government's long procedures (Mokone 1997a). Mokolodi Wildlife Foundation eventually bought the portion of land through the assistance of various individuals. The selling of the land for the purpose of expanding the reserve was not well received by local people (Balete) who claimed they had lost part of the area where they grazed their livestock and harvested various resources as well as land for their children in future (Mokone 1997b).

Mokolodi village on the other hand had its first inhabitants migrating from Rankoromane near Otse, a village south-west of Mokolodi though the available historical records did not indicate the dates of the migration. Before settling in the area, permission had to be sought from the Chief of Mankodi, a neighbouring village which by then was already established. Upon being granted permission to settle in the present Mokolodi village,

Rasetlhogwane who had led the migrants into the area became the village headman. A severe drought in 1933 caused many people to leave the village in search of water, leaving behind just a few inhabitants. Upon the death of the headman in 1961, his son, Molomo Rasetlhogwane took over the leadership of the village and took the initiative to bring back the villagers who had earlier left due to drought (Rasetlhogwane pers comm. 2007). This initiative greatly contributed to establishing the foundation of the current Mokolodi village.

By 1984, the village had grown large enough to have a council representative as more people had moved into the village from neighbouring areas such as Gabane, Mmankgodi and Manyana. However, it was not until February 2006 that Mokolodi was declared a full-fledged village and formally recognized as such, with Molomo Rasetlhogwane being officially inaugurated as the village headman in February 2007 (Rasetlhogwane pers. comm. 2007).

It is important to note that unlike in many other cases commonly cited whereby local communities had to be moved from their settlements for the establishment of national parks and game reserves, people in Mokolodi were not moved out of the area during the establishment of MNR. The land upon which the reserve was established was already under private ownership even before the existence of the village. The local people therefore do not have any claim of ownership of the land.

3.2.2 Geographical context

Mokolodi Nature Reserve is located in the South East district of Botswana, about 14 kilometres west of capital city Gaborone, along the Gaborone – Lobatse road. The reserve covers an area of about 5 000 hectares of land stocked with a varied population of species indigenous to South Eastern Botswana (**Figure 3.2**). The reserve was established with two main objectives, one being the promotion of conservation through reintroduction of indigenous animal species in the area and the other being provision of environmental education (Mokolodi Nature Reserve undated).

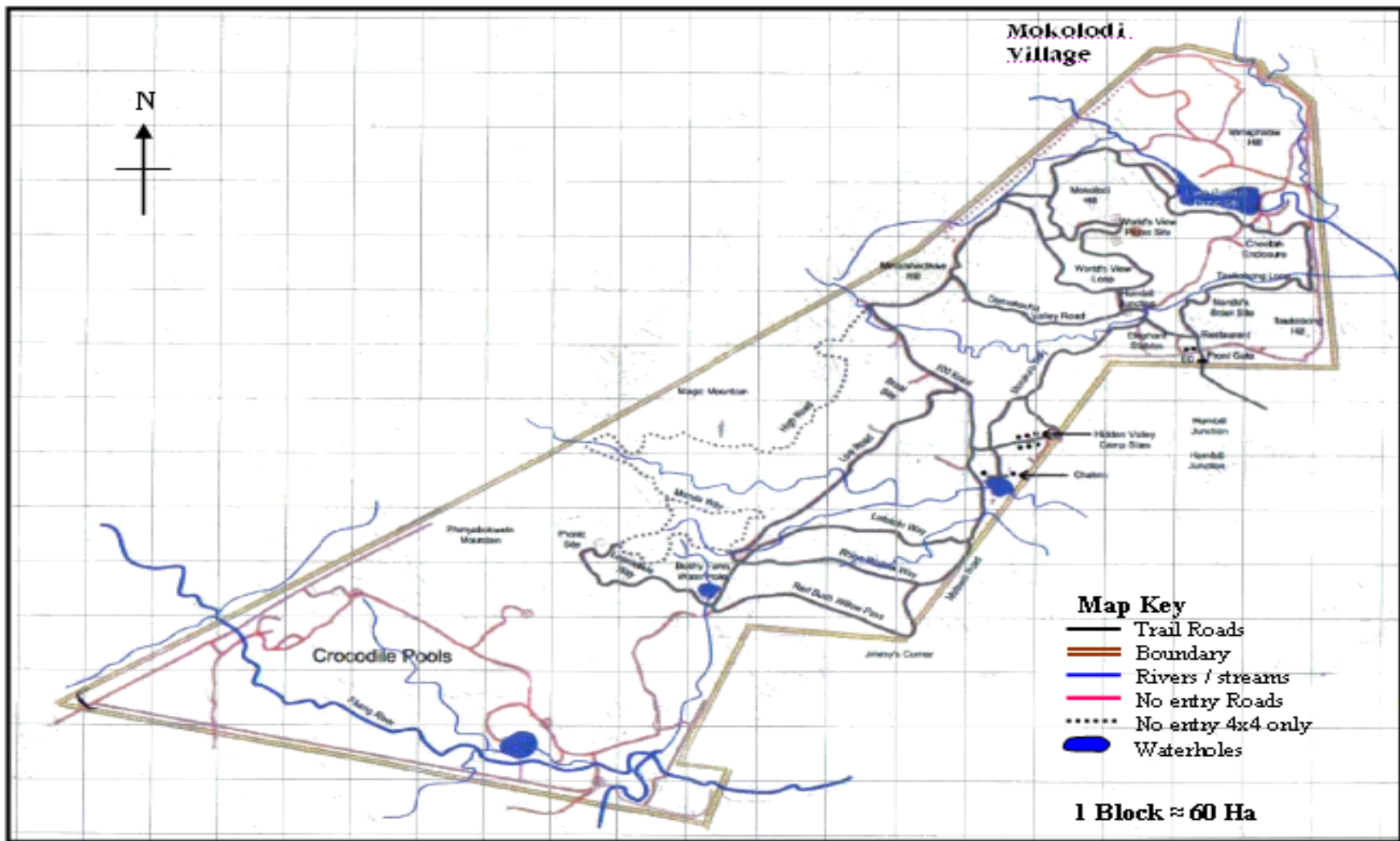


Figure 3.2: Map of Mokolodi Nature Reserve (Source: Mokolodi Nature Reserve 2006b)

Mokolodi village is an immediate neighbour to the reserve on the northeastern end. The National Population and Housing Census of 2001 indicate that the village had 584 people (313 males and 271 females) (Central Statistics Office 2002). Some of the residents of this village are second and third generation of original inhabitants from the neighbouring villages such Gabane, Manyana and Mmankgodi. The village is informally divided into five wards namely Tiping, Lesetlhana, Diekeng, Motshwereng and Lehurutshe (Rasetlhogwane per comm. 2007). Households in the village are widely dispersed especially in Tiping and Lehurutshe wards, with ploughing fields between them. Houses in the village are constructed from mud and bricks while roofing is either made of thatch or iron sheets. According to Tazelaar and Michael (1995), the village has no school and therefore children walk to neighbouring schools in Gabane and Kgale, a situation which had not changed even at the time of carrying this study, Majority of the people in this village are involved in subsistence farming and most households have at least one or more types of livestock.

In terms of employment, MNR is the highest single employer in the village, an achievement which has been made possible in the endeavour to promote community development, through creation of job opportunities (Mokolodi Nature Reserve 2005). Most of the people from the village hold positions which do not require specialized skills. In comparison to other neighbors to the reserve, Mokolodi village seems to have more direct interactions with the reserve and hence the conclusion that the reserve has some effects on the way of life of local people.

Neighbouring the reserve on the western and southwestern side are Fikeng and Metsemaswane settlements respectively. These settlements are sparsely populated where people have settled on ploughing fields and are involved in subsistence farming. The majority of the people grow crops such as maize, beans, watermelons and sorghum as well as keep livestock. The land bordering the reserve on the southeastern and eastern end is mainly privately owned. Some sections of this land have been developed by individual owners and are characterized by private permanent residential houses. Most of the residential plots are clearly marked out and fenced off. However, several individual

owners of land have formed a conservancy by the name Sethlane Farms Conservancy, whose objective is to conserve the area's biodiversity (Bay pers comm. 2007). Adjacent to Sethlane is another private property of significance to the area commonly referred to as St Clair Lion Park. This land recently has been purchased by the parastatal, Botswana Development Corporation (BDC), and is as well being subdivided and sold off to different individuals.

3.2.3 The philosophy behind Mokolodi Nature Reserve

The philosophy behind the MNR project over the years has been the sustainable use of wildlife and other natural resources to generate funds through tourism, allowing the subsidizing of a strong environmental education facility (Mokolodi Nature Reserve 2003b). MNR today as a conservation and environmental facility has a complement of about 70 employees of which about 40 percent are from the adjacent Mokolodi village (Mokolodi Nature Reserve 2006a).

The initial goal of the establishment of the reserve was for the local communities to have a strong sense of ownership of the project and the reserve to be actively involved in improving the standards of living among the local people. This saw initiatives such as mobilization of young people from the village to form an accomplished traditional dance troupe as well as formation of a village football club. Over the years, the reserve has experienced continuous changes in management, which to some extent has affected the consistency of implementation of some of the original ideas. On some occasions, different management has meant different approaches and strategies in dealing with issues and this has sometimes affected the overriding vision of the reserve (Mokgosi pers. comm. 2007). However, amidst the numerous challenges, the project is still a very unique and interesting one, whereby previously degraded land is put into good use through conservation and provision of environmental education and thereby promoting rural community interaction and employment (Mokolodi Nature Reserve 2003b).

3.3 Summary of the chapter

The discussion presented in this chapter has given a brief overview firstly on Botswana as a country from a historical and socio-economic perspective and secondly on the area upon which MNR is established, which has a history that dates back several decades. Botswana is a developing country emerging as an economic powerhouse in the region and is committed to biodiversity conservation. The establishment of the reserve came as a landmark effort in trying to conserve biodiversity in the southeastern region of the country, with reintroduce indigenous animal species in the area taking place successfully. The brief outline given on Mokolodi village indicates that though the village was officially recognized in the recent past, it has a history dating back to the early decades of the 20th century. Finally, it is outlined in the discussion that the initial goal for the establishment of MNR was to work towards improving the living standards of the local people mainly through creation of employment opportunities for the local people.

CHAPTER FOUR

METHODOLOGY

The purpose of this chapter is to present an outline of the methods that were adopted in carrying out the study. A section explaining how the data collection instruments were prepared is given, followed by a section on sampling techniques applied in the study explains how the sample was determined. The section titled study process outlines the main phases that were undertaken in carrying out the research. The data analysis procedure is also briefly outlined. A section indicating some principles with regard to research ethics that were taken into consideration concludes the chapter.

4.1 Preparation of data collection instruments

For the purpose of collecting the required data for this study, two instruments namely interview schedules and questionnaires were used. The interview schedules contained a number of semi-structured questions that were to be used during the key informant interviews. The purpose of having the semi-structured questions was to ensure that the interviews were kept relatively focused, yet not too restrictive so as to give the interviewees an opportunity to express and add their own opinions on certain issues that they felt needed some emphasis. This ensured that the interviews remained relatively standardized, despite the different personalities and opinions of the interviewees. The content of each interview schedule was determined by the information which was intended to be derived from each key informant, though all the semi-structured questions were focused on drawing responses that would provide answers to the key research questions.

Questionnaires were also prepared with the key research questions as the main guide. At the initial stage, questions were drafted bearing in mind the various issues around the subject of study such as management and use of resources, respondent's attitudes and perceptions towards the reserve, kind of relationships in existence between the reserve

management and the local people among others. The questions were then grouped into sections with reference to the specific research questions they addressed. In this regard, effort was made to ensure that the various research questions were addressed amongst the sections in a relatively balanced manner to avoid overemphasizing some at the expense of others. Each question was thereafter analyzed to assess the reason for asking it and the implication of the expected answer. Some guideline notes were made under each question to this effect (**See Appendix 3**). This process later proved beneficial as the notes provided a guideline during the data analysis and interpretation stages. Once the inclusion of each question in the questionnaire was justified and it was certain that the questions would be sufficient to obtain the kind of data anticipated, the questions were formatted accordingly to form the final questionnaire for survey (**See Appendix 4**).

The questionnaires contained both closed and open-ended questions. The use of both open and closed ended questions ensures that the questionnaire is not too restrictive and at the same time not too wide open. Closed ended questions which required either a 'yes' or 'no' answer were for instance used to gauge respondent's general attitudes and perceptions towards the reserve and in some cases were followed by open ended sub-questions as probes so as to seek clarification. Questions such as whether the respondent thought the reserve had any benefits to the local community and whether they thought the reserve obstructed them from obtaining resources were asked in this format. Open-ended questions, which required independent responses, were also included in the questionnaire. These ranged from questions which required short and precise responses such as the duration the respondent has resided in the community, to others which required longer responses such as what the respondent wished to see the management of the reserve do for the community, and what the community members should do in future to help the reserve meet its objectives. Some questions as well provided the respondents with options whereby they had to select one of the provided options and state the reason(s) for their choice. Filter questions were also used in order to exclude some respondents from a particular sequence of questions which could have been irrelevant to them. The questionnaires were also used to obtain demographic variables such as age, education level and household size.

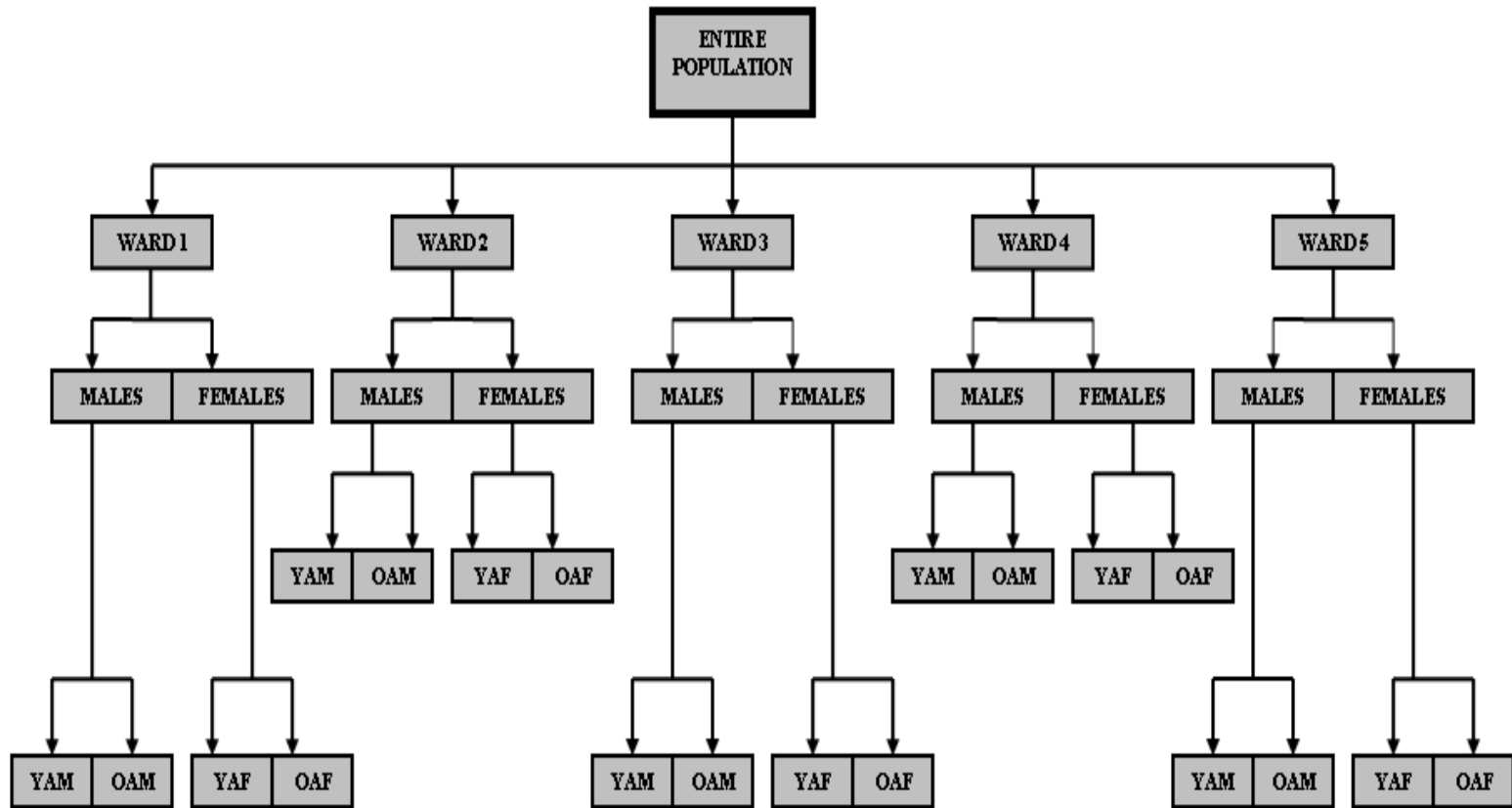
The questionnaire and the interview schedules were tested by conducting a pilot survey. This was carried out by selecting a few respondents, some of whom were from the study area. Some were given the questionnaires to respond to while others were casually taken through the interview schedule. Responses from each of the respondents were very important as these reflected on the effectiveness of each of the instrument prepared in collecting data for the study. After the pilot survey, a few amendments were made on the instruments to fine-tune them in preparation for the actual data collection.

4.2 Sampling techniques

Purposive sampling and stratified random sampling were used to determine the population sample for this study. Purposive sampling ensured that specific persons were deliberately selected for the purpose of providing important information relevant to the study. This type of sampling is useful because it facilitates direct access to key persons who have knowledge and work experience related to the study topic and area (Welman *et al* 2006). The key persons identified using this technique were engaged in the key informants interviews and readily provided information that was of relevance to the study

The stratified random sampling technique ensured that important strata of the population were considered in obtaining information and were well represented in the sample. The strata created were a combination of several variables, based on area of residence within the community (ward), gender and age. The five wards in the village were used as a basis of initial stratification such that the entire population was broadly divided into five ward-based strata or sub-populations. In each ward, gender was taken into consideration to further divide the sub-populations into two strata, male and female. Under these two strata in each ward, a further division was made based on age such that in each ward there were four well-defined strata, these being, young adult males, old adult males, young adult females, and old adult females (**Figure 4.1**). People between the ages of 18 and 40 were considered as young adults while those over 40 years were considered as old adults. Once the relatively homogenous strata were identified, random samples were drawn from each separate ward. The sampling was carried out at household level whereby only one

individual per household visited was taken as a respondent. The advantage of a stratified random sample according to Welman *et al* (2006) is that members of a particular stratum are relatively homogenous compared to the larger population.



Key

- YAM - Young Adult Male
- OAM - Old Adult Male
- YAF - Young Adult Female
- OAF - Old Adult Female

Figure 4.1: A diagrammatic illustration of the population stratification for the study

4.3 The study process

The study adopted a qualitative approach to research whereby data was generated by obtaining information from a cross-section of people, the majority of whom were local village residents. Questionnaires and key informants interviews were used to obtain the information. Observations in the course of the fieldwork were as well made. The study process began with a review of relevant literature so as to gain a deeper understanding of the research topic as well as to establish whether related work had been done previously and areas that would require emphasis. Literature was mainly sourced from peer reviewed journal articles, reports, conference documents and books by different authors. In the course of the literature review, questionnaires and interview schedules, which were to be used for data collection, were developed. Thereafter, the field survey was carried out in two main phases as outlined below.

4.3.1 Pilot survey

Before commencing with the fieldwork, an application for a research permit was made to the Ministry of Environment, Wildlife and Tourism (MEWT) as required by the Republic of Botswana law. Once a permit was issued, a pilot survey was carried out before the actual data collection commenced. The pilot study took a period of four days and twelve respondents were involved in the process. The purpose of the pilot survey was to test the effectiveness of the data collection instruments which had been developed and to assess whether it would be possible to collect the actual data within the estimated time and costs. During the survey, a few people were contacted to provide some baseline information. At the same time, questionnaires were served to a few people some of whom were from the local community that the study targeted. The pilot survey also helped to establish whether the right kind of data would be obtained to conduct the intended analyses. Upon evaluating the performance of the pilot survey, the data collection instruments were revised accordingly in such a way that they would be effective in collecting the data required.

Before carrying out the pilot survey, a meeting was organized with the local village leaders to brief them about the study and its intended purpose as well as to seek their endorsement as far as carrying out the study in the village was concerned. The meeting also served as an opportunity to seek approval to interview and interact with members of the community during the actual data collection process. The endorsement of the study by the local leaders helped eliminate possible suspicion of the intention of the study and generally influenced people's attitude towards the study such that most were willing to get involved. The endorsement was therefore crucial for the success of the data collection process.

During the time of carrying out the pilot survey, a meeting was also organized with the management of the nature reserve to inform them about the intended study and its purpose. Though people in the reserve were not directly involved in the survey, it was important for the management of the reserve to be aware that a study affiliated to the reserve was being carried out. It was also necessary for the management of the reserve to endorse the study as some of the information relevant to the study was to be sourced from the reserve library and data bank.

4.3.2 Data collection

The actual data collection process took place between the months of August and September 2007 and involved visits to various households in the village where people were issued with questionnaires. Two individuals from the community offered to assist in the process of data collection. Their involvement was very useful as they served as translators where language was a barrier in communication. This also made it possible for the community members to open up and respond to interview questions with much ease.

Key informant interviews were conducted with a few people using semi-structured questions. Among them included the village headman and a representative from the reserve. Semi-structured interviews are good as they generally ensure that interviews remain relatively focused and lead towards a definite agenda (Welman *et al* 2006). However, flexibility during interviews was exercised to allow interviewees the

opportunity to share their own perceptions freely. Questions asked in the interviews covered issues such as the history of the community and resource use and management in the area, existing working relationships between neighbouring communities and the reserve managers and general perceptions on existence of the reserve in the area among others. The probing technique was applied where it was found necessary so as to follow up and seek clarification or further information on certain issues that were being raised.

As it was not possible to conduct face-to-face personal interviews with as many respondents, structured questionnaires were used to obtain information from a representative sample of the community and the responses were recorded by the interviewer in situations where the respondents were not literate enough to give written responses. However, for individuals who could give written responses, questionnaires were issued and they were allowed to respond to questions on their own. It was possible to identify such people with the help of the two individuals who were assisting in the data collection process, as they were well conversant with majority of the people across the village. Each questionnaire took approximately forty-five minutes to one hour to complete.

Documented information relevant to the study was obtained from the reserve. This provided secondary data, which supplemented the primary data obtained from the various respondents. Such information was contained in annual reports, progress reports, quarterly newsletter publications, specific reports of studies carried out in the area and in other materials containing general information. Personal observations of activities taking place in the field that could be relevant to the study were also made. Throughout the fieldwork process, additional personal field notes and comments were made to add to the data collected through interviews, questionnaires and documents reviewed.

The population sample that was involved in responding to the questionnaires consisted of 60 individuals ($n = 60$), selected from each of the five wards that form the village. Gender and age category were first taken into consideration before respondents were selected randomly such that an equal number of males and females in the two broad age

categories were sampled. As such therefore in each ward, a total of 12 individuals were taken as respondents, of which 3 were young adult males, 3 old adult males, 3 young adult females and 3 old adult females. The 12 individuals represented 12 different households in each ward and this was thought to be a good representative sample since the number of households in each ward was estimated to be between 15 and 20. Five key informant interviews were conducted with different individuals among them being the village headman, a representative of the management of the reserve as well as individuals who have been involved in various projects in the area. All the interviews were conducted informally despite the use of the interview schedule and explored a wide range of issues.

4.4 Analysis of interviews and questionnaires

Primary data obtained from the interview and questionnaire responses as well as secondary data from documents obtained from the reserve were examined extensively. Sorting out and coding of data in the questionnaires for analysis with regard to content was done. The responses were sorted out with regard to the specific research questions each endeavoured to answer. Coding involved labelling of questions with codes, single words or short phrases that reflected a particular meaning. For example, a question such as, *“Do you think the reserve obstructs people in the community from obtaining the necessary resources that they need?”* was coded as OBSTR. Field notes were converted into write-ups, which could be analyzed. These provided valuable supplementary information to the main data. All the sorted and coded data was entered into excel spreadsheets and was then analyzed and interpreted. This was presented in form of graphs, tables and descriptions. The interpretation of the data adopted a dual approach whereby the main data from questionnaire responses was reinforced by information obtained from the personal interviews. The interpreted data was discussed in line with the key research questions and was reinforced by some information earlier obtained from various literature sources. This then led to the compilation of a final document consisting of all the components of the study.

4.5 Ethical considerations

Before the commencement of the field survey, ethical clearance was sought from the University's Ethics Committee, in accordance to the University's code of ethics. A consent letter which was to be issued to the respondents was written. This letter explained the purpose of the study and let the respondents know the conditions under which they were participating in the survey. The letter for example made it clear to the respondents that participation in the survey was voluntary and that they would not receive any form of reward for taking part in the survey. The letter helped clear any form of misconception that the respondents would have regarding the study and was issued to every respondent. Those respondents who could not read were informed of the content of the letter and were left with a copy for their own records. Once the respondent was in agreement with the contents of the letter and were willing to participate in the survey, they were given a declaration form which they were required to sign as an indication of their consent to participate in the survey.

4.6 Summary of the chapter

The chapter has outlined the methods that were adopted in carrying out the study. The study adopted a qualitative approach to research where subjective data was obtained. Structured questionnaires and interviews schedules were used to collect data. The sample population consisted of sixty individuals who were selected based on the ward they resided, gender and age. A further five key informants were engaged in personal interviews. The field survey was in two phases, pilot survey and actual survey. Analysis of data was done by use of excel spreadsheets and was presented in the form of graphs, tables and descriptions. A code of ethics was adhered to as required of researchers and in this case all the respondents were presented with consent letter and declaration forms.

CHAPTER FIVE

PRESENTATION AND ANALYSIS OF RESULTS

The chapter presents results from the survey conducted for this study. The main data obtained are based on the questionnaire responses from sixty (60) respondents who formed the sample population. The 60 respondents form approximately 10% of the total village population, taking into consideration the statistics obtained from Central Statistics Office on 2001 population census. Information obtained from the key informants is not presented in this analysis but forms part of the discussion of the results. The key research questions were used as the guideline in structuring the presentation of the results. Some elements of the results are presented on a supplementary basis such that they reinforce the key elements that endeavour to answer the research questions, hence meeting the overall aim of the study.

5.1 Demographic variables

The sample population consisted of 50% male and 50% female and was a representative of various ages which ranged from 18 to over 60 years. Of the respondents involved in the survey, 31.7% indicated they had no formal education, 23.3% had primary education, 18.3% had junior secondary education, 18.3% senior secondary education and 3.3% had tertiary level education. Just over fifty six percent (56.6%) of the respondents indicated that they were unemployed at the time of the survey, 36.7% were employed while 6.7% were students at the senior secondary level of education (**See Appendix 6.1**). Of those who indicated that they were employed, 31.8% were employed in the reserve. The average household sizes was found to be about 9 individuals per household but the actual sizes of households visited ranged from one individual to 25 individuals. Estimating the number of households in the community to be about 80, approximately 30% of the households in the community had an individual working in the reserve.

5.2 Changes since the establishment of the reserve

5.2.1 Local community's history and livelihoods

Historical records available during the survey indicated that as early as 1933, people had already settled in the present day Mokolodi village, though they were few. As such, most of the current inhabitants were born in the village. Among the respondents who were involved in this survey, 60% indicated that they were born in the village and have lived there all their lives. Those who mentioned that they had moved into the village at some point in their lives indicated that they did so for various reasons among them being marriage and joining family members, farming and cattle rearing and to be close to their work places. Most of the people have hence been in the village for many years and some, especially the older people, mentioned that they had seen the village go through changes. Some were in a position to recall events that have happened over time and brought changes in livelihoods in the village.

One elderly man in an interview recalled seeing the area where the reserve is, being fenced off. Despite the fact that the area was under private ownership even before the reserve was established, people could occasionally access some sections for the purposes of obtaining some resources such as firewood and medicinal plants. However, it was not established during the study whether people did this with permission from the owner or not. The fencing, he said, blocked the most direct route to a water source, where most people at that time obtained water for domestic purposes, especially during the dry season. There was also a problem with livestock, especially goats, finding their way into the fenced area and this started creating some conflicts and tension between the reserve managers and the local people. Previously, livestock would stray into the privately owned land and the owners would drive them back without much conflict.

Though crop farming is practiced in the community, it is not sustainable because the area experiences long dry spells. However, people engage in farming and livestock rearing on a subsistence basis with common crops such as maize, millet, beans and watermelons being grown. Farms are located within the community and are ploughed during the

summer. The majority of people are dependent on some form of employment either full time or part time, though most people indicated that it was difficult to find jobs. Of the households visited 10% had no individual engaged in any form of employment, 33.3% had only one individual employed while 55% had more than one individual employed. Just over forty percent (43.3%) of the households visited had either one or two individuals working in the reserve. As determined from the interviews, many people in the community depend on occasional part-time jobs, which are not very reliable and some may go for a long time without finding any. During the survey, some people who depend on such jobs for income did not have any at the time. The population in the village has been growing over the years as some people have been moving in from neighbouring areas. The survey however did not dwell on the population dynamics in the village.

5.2.2 Natural resource use and availability

To determine the extent of availability of resources in the community, respondents were asked whether they had a source of collecting firewood, among other natural resources. In this community, firewood is one of the natural resources used in every household. Some households however, occasionally use other sources of fuel such as paraffin and gas, although this is to a limited extent. All respondents indicated that they had a source of obtaining various resources but some, especially the older females, indicated that the sources were too far. These sources are on tribal land which is uninhabited and is also used for other communal purposes such as grazing of livestock.

When asked whether they had an alternative source of collecting firewood, 45% of the respondents indicated they had an alternative but pointed out the alternative sources were a long distance from the village and hence they did not frequent them. Other resources that people obtain from surrounding areas though in smaller quantities include medicinal plants, wild fruits, traditional vegetables and thatching grass. Due to dry conditions which had prevailed in the recent past and continuous harvesting of various resources, most respondents indicated that obtaining some resources was proving difficult. Some of the livestock were even dying due to scarcity of fodder. This shows that the community is vulnerable to resource scarcity hence affecting local people's livelihoods.

Considering that resource scarcity is one of the challenges facing most people in the community, respondents were asked whether they thought people should be allowed into the reserve to collect firewood. Forty three percent (43%) of the respondents responded affirmatively and as expected, the majority of them were females. In terms of age, 70% of the young adult respondents indicated that people should not be allowed into the reserve for firewood collection compared to 43.3% of the old adults who gave a similar response (**Table 5.1**). Over half of the young adult respondents who indicated that people should not be allowed into the reserve for firewood collection supported their responses by saying that the area is for conservation purposes hence harvesting of resources would not be appropriate. Some other respondents, about 40% of the total respondents, said that the reserve was a private property and therefore going in there to collect firewood and other natural resources would not be right. Of the 17 old adult respondents who indicated that the people should be allowed into the reserve to collect firewood, 10 were female. Of the 10 female respondents, seven (7) indicated that there was scarcity of firewood in the current sources and that the distances walked to collect the resources were too long, hence they should be allowed into the reserve to obtain the resources

Table 5.1: Responses on people being allowed into the reserve to collect firewood among other resources

Question: Do you think people should be allowed into the reserve to collect firewood among other resources?

Category	Yes	No
Young adult females	4	11
Young adult males	5	10
Sub total	9 (30.0%)	21(70.0%)
Old adult females	10	5
Old adult males	7	8
Sub total	17(56.7%)	13(43.3%)
Overall	26 (43%)	34 (57%)

It was common to hear casual comments, mostly from the old adults, implying that people should be allowed to obtain resources from the reserve, as expressed in the words of one old woman who said:

“We are suffering everyday. They should open the reserve for us so that we can obtain some firewood and maybe grass for thatching. By now I would at least be having a traditional thatched hut.”

(Respondent 06 Tiping Ward)

The village headman in an interview pointed out that people were struggling to obtain resources for daily use such as firewood in the village. As much as he understood the reserve was a private property, he suggested that reserve management should consider setting aside a few days in a year for the local people to go into the reserve to collect some firewood. Alternatively, he indicated that people could engaged in some projects in the reserve such as bush clearing and thereafter be allowed to take away the firewood that results from the process. “This could be a good arrangement and is one way the reserve can give back to its people. Everybody would be a winner,” he said.

5.2.3 Analysis of specific changes

To establish the changes that had occurred in the community over time, respondents were asked to mention the changes they thought had occurred in the area since the reserve was established. Just over seventy three percent (73.3%) of the respondents indicated that nothing had changed since the establishment of the reserve. More than half of these respondents were unemployed and seemed not to consider the contribution the reserve had made in terms of providing employment as a significant change. Most appeared to respond to this with reference to the benefits they had expected the reserve to have brought to the community such as community development projects. However, 25% of the respondents indicated that some changes had occurred over time. Some of the specific changes mentioned included creation of employment opportunities hence reducing the unemployment rate in the area and acquisition of knowledge and skills among the local people. Such responses mostly came from respondents who were employed or had someone from their household working in the reserve. Limited access to resources, restricted movement of people and livestock, and conservation of the environment were also mentioned as some of the changes that had occurred since the reserve was

established, though by a few respondents. Specific changes mentioned by the various respondents and their frequency are given in the figure below (**Figure 5.1**).

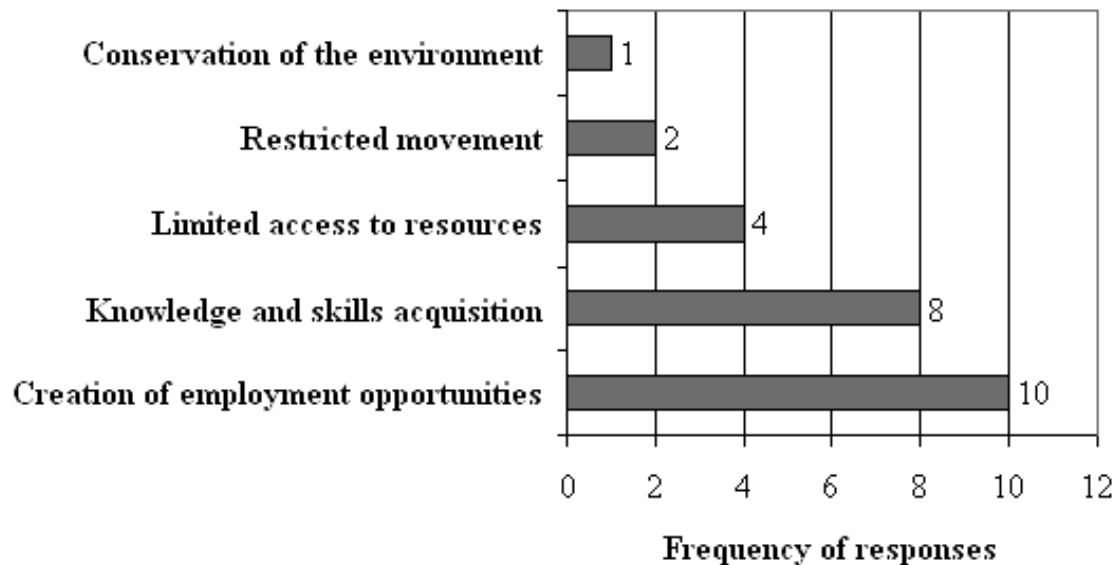


Figure 5.1: Perceived changes in the community since the establishment of the reserve

Seventy five percent, (75%) of the respondents who associated the acquisition of more knowledge and skills with the establishment of the reserve were young adults. This was possibly due to the fact that they have been the beneficiaries of the occasional training and attachment opportunities that the reserve had extended to the community and others hoped to benefit in the same way in future. Some also considered that their informal interactions with some reserve staff from the community and occasional visits to the reserve had as well given them more enlightenment about wildlife and conservation. Information obtained from the reserve indicated that about 40% of the 70 employees working in the reserve were from the local community.

5.3 Local people’s attitudes and perceptions towards the reserve

As discussed in chapter 2, benefits received by the local people could greatly influence their attitudes and perceptions towards a protected area. Establishing whether people thought the reserve was of any benefit to the community would therefore help in assessing their attitudes and perceptions towards the reserve. Asked whether they thought

the reserve was of any direct benefit to their community, 48.3% of the respondents responded positively. Cross tabulating the responses with gender and age of the respondents showed that more females felt that the reserve was of some benefit to the community, while over 60% of the old adults felt that the reserve was not of benefit to the community (**Table 5.2**).

Table 5.2: Perceived benefits of the reserve to the community based on age and gender

Question: Do you think the reserve is of any benefit to the community?

Categories		Number of respondents	
		Yes	No
Gender	Female	16 (53.3%)	14 (46.7%)
	Male	13 (43.3%)	17 (56.7%)
Age	Young adults	18 (60.0%)	12 (40.0%)
	Old adults	11 (36.7%)	19 (63.3%)
Overall percentage		48.3%	51.7%

The results reflect that, the respondents’ attitudes and perceptions towards the reserve based on perceived benefits vary between the two age categories. On this basis therefore, the indication is that more of the young adults have positive attitudes and perceptions towards the reserve compared to the old. As a further indication of positive attitudes and perceptions, some of the young people hoped the reserve could provide jobs for them in future. The old adults on the other hand were expecting direct benefits to trickle down to them from the reserve, which has not been happening, hence the trend in the responses. Most at their age could not foresee working in the reserve, which is the most direct way they could benefit, hence to them the reserve is of no benefit. This was even reflected in the remarks made by some, as one old female respondent pointed out:

“We are old and we have nothing to do with that park, it is of no use to us, maybe it will help the younger people; we are just here waiting to die”

(Respondent 04 Motswereeng Ward)

Despite the mixed responses on benefits received from the reserve, 83.3% of the respondents indicated that they did not have a problem with the existence of the reserve as they were happy living in the community. They attributed this to the fact that they got along well with their neighbours but a few (16%) mentioned that the creation of employment opportunities and provision of education about wildlife by the reserve had made a positive difference in their lives. Some of the respondents (over 40%) seemed to be aware of the increase in the number of jobs offered since the establishment of the reserve. Of the respondents who said that they were not content living in the area, 37.5% indicated that the community was lagging behind in terms of development when compared to other communities. Though the responsibility of the development is under the local government, these respondents indicated that they expected the reserve management to give some assistance towards developing the community.

To further assess attitudes and perceptions, respondents were asked for their thoughts about the future of the reserve. Seventy eight percent (78%) of the respondents indicated that they wish to see the reserve expanded as this would create more employment opportunities for the local people and also enable people to learn more about wildlife. Seven percent (7%) indicated that the reserve should be closed down citing reasons such as the reserve being of no benefit to the community, while 15% indicated that the reserve was fine in its current form and therefore should continue operating. Gender did not seem to influence responses to this question but notably, all the respondents who indicated that the reserve should be closed down were in the old adults' category. This is a further reflection of the general attitudes and perceptions among the older people towards the reserve.

To further gauge people's attitudes and perceptions towards the reserve, respondents were asked what they thought about the reserve, based on the options provided. The respondents gave various responses as provided in the table below (**Table 5.3**).

Table 5.3: Perception about the reserve

Question: What do you think about the reserve?

Option	Number of responses	Percentage
The reserve is a threat to the community	8	13.3
The reserve is an opportunity to the community	39	65.0
Not quite sure	13	21.7

Despite the high positive responses, most respondents were quick to point out that the reserve had employed only a few people from the community and that its general benefits to the community were minimal. Some, however, perceived the reserve as a potential employer and provider of education about wildlife to more local people in future hence the positive responses. Where attitudes were negative or the perception was that the reserve was a threat, people pointed out that the reserve was of no benefit to the community and that access to natural resources had been limited. Once again, benefits seem to influence people's attitudes and perceptions towards the reserve.

5.4 Relationship between the reserve management and the local community

5.4.1 General interactions

To establish whether people in the community had any contact with the reserve regardless of whether they work there or not, respondents were asked whether they had ever been into the reserve at any one time. Just over sixty percent (63.3%) of the respondents indicated that they had been to the reserve at some point, some (13.3%) by virtue of the fact that they work or had been working there, others (28.8%) to visit relatives and friends while others (16.7%) for various reasons, among them being to seek for jobs. Very few (5%) indicated that they had been to the reserve to view animals or for other recreational purposes. Some of the elderly respondents, however, could recall a time when they were taken into the reserve for a familiarization tour and had a chance to view animals. Most felt that this was a good initiative and felt that it should happen more often. However, some respondents mentioned that in the recent past, getting into the

reserve for reasons such as visiting relatives had been very restricted and people had often felt they were not being treated fairly. Even some of the reserve staff from the community expressed similar views. One of respondents, an old adult male commented:

“The good relationships of the past seem to be diminishing as time goes on and we do not like it this way. We want to be able to work together with them [the reserve management] and live happily together. Let them come and talk with us.”

(Respondent 11 Diekeng Ward)

Such comments show that people have an interest in working together with the reserve and maintaining good relationships given the opportunity. Over thirty percent (31.7%) of the respondents indicated that they would wish to see the reserve managers visit the community and engaged in interactions with the people. This was mentioned when respondents were asked whether anyone from the reserve visited the community to talk to the people and how often this happens. Just over eighty six percent (86.7%) of the respondents indicated that this never happens but a few (13.3%) indicated that in the past some people used to visit them. One such visit that some could recall was when reserve staff visited the community to give a snake talk and demonstration. Others mentioned that at one time, a Christmas party was organized for the children in the village by the reserve management. They, however, pointed out that such events no longer took place, as indicated in the remarks of one of the respondents:

“It is like they have forgotten all about us and assume that we do not exist. In the past, they used to send people to come to talk with us and tell us what is happening there and even get our views, but not anymore these days. I think things ought to change.”

(Respondent 06 Motswereng Ward)

5.4.2 Working relationships

To assess the existing working relationships and linkages between the reserve and the local community, respondents were asked whether any individual in their household worked in the reserve. Thirty eight point three percent (38.3%) of the respondents

indicated that either themselves or one member in their household worked in the reserve while 5% indicated that two members in their household were working in the reserve. The figure below (**Figure 5.2**) shows the percentage of respondents' households based on employment in the reserve.

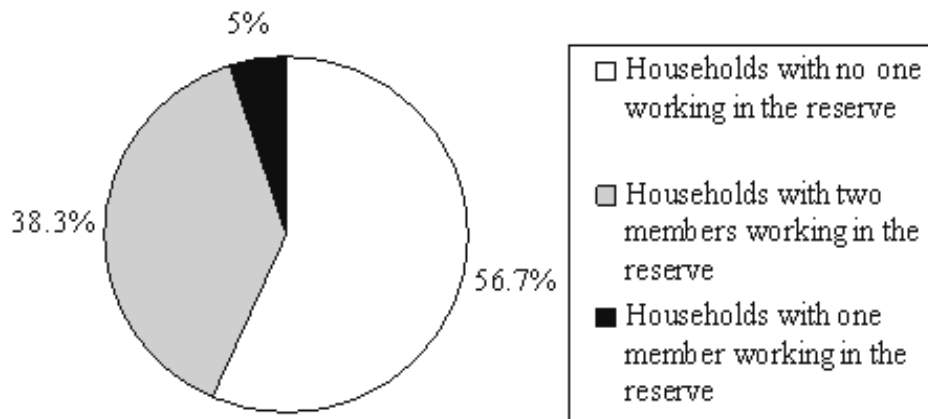


Figure 5.2: Percentage of respondents' households based on employment in the reserve

The current working relationship between the reserve management and the community seemed not to be well established as respondents went ahead to indicate that there was no established system whereby they could report incidences such as animal escapes and illegal harvesting of resources. One respondent pointed out that when such incidences occur, they make their own effort to contact anyone from the reserve and this affects the rate of response. The village headman when asked about the issue of having a system to report incidences indicated that in the past, there was a procedure whereby people caught in the illegal harvesting of resources would be apprehended to the village elders but this was not happening any more. He said the reserve management was handling such cases without involving the local community leaders. He concluded by saying, "There is no longer that close working relationship in dealing with some of these incidences as it was the case in the past." Some respondents indicated that the way these incidences were being dealt with was affecting the relationship between the reserve and the community.

An overall assessment of the working relationship between the reserve management and the community was done based on the respondents' perceptions. Respondents were asked

to indicate their perception on the community’s working relationship with the reserve management based on a scale that was provided. Some respondents seemed to have a problem in giving responses as some would fail to give an appropriate reason that matched the scale they had selected. For instance in some cases, reasons that one respondent gave for mentioning that the relationship was good would be similar to another respondent’s reasons for finding the relationship to be average. The responses are presented in table below (**Table 5.4**).

Table 5.4: Assessment of the working relationship between the community and the reserve management

Question: How would you rank the community’s working relationship with the reserve management?

Scale	Number of respondents	Percentage
Excellent Always consult each other on various issues and work together towards assisting each other meet specific goals and develop mutual understanding.	0	0
Good Sometimes consult each other on issues and assist each other to meet specific goals as well as develop mutual understanding.	18	30
Average Occasionally consult each other and working together with efforts being made to ensure that there is mutual understanding.	24	40
Poor Very little is done to consult each other even when there are issues to be dealt with. Working together happens on very few occasions.	17	28.3
None No efforts are made at all to consult or work together. Each party operates independently.	1	1.7

Just over forty six percent (46.7%) of the respondents in the ‘good’ and ‘average’ categories above, supported their responses by indicating that some people from the community worked in the reserve and that people in the community helped in the reserve when there were incidences such as fire outbreaks and floods. Another reason for considering the relationship as good or average was the fact that the reserve occasionally

assisted the community with chairs and tables during some functions and meetings. Reasons for ranking the working relationships as poor by some respondents varied. Reasons such as there being no visits and consultations by the reserve managers or their representatives for instance on issues on resource management despite people expressing interest were given. Other respondents (11.7%) indicated that the reserve was not of much help to the community and that only a few people from the community worked in the reserve. Over half of the respondents who gave such responses seemed not to be aware that people from the community formed a significant percentage of the overall employees in the reserve. A portion of these respondents (57%) felt that priority should be given to people from the community when it came to employment in the reserve and in this way, stronger working relationships would be developed and more people would benefit.

5.5 Involvement of the local people in natural resource management

In this particular case study, the role that local people play towards management of resources inside and outside the reserve could only be assessed by looking at the various engagements people had with the reserve, whose main objective is conservation. This is because there were no community organized groups or community conservation initiatives which had been established to mobilize people's collective action towards natural resource management in the area.

5.5.1 Local people's contribution in the reserve

By virtue of the interactions that exist between the reserve and the community, it was assumed that the local people play an important role in helping the reserve meet its objectives. As such, respondents were asked whether they thought people in the community were helping towards this end. It was not expected that respondents would be aware of the actual objectives of the reserve, but was assumed that most understood that conservation was the main objective and therefore would give their responses with this in mind. Seventy five percent (75%) of the respondents indicated that the local people were indeed helping the reserve meeting its objectives. Most indicated that this was through

the labour and skills that local people were providing in the reserve. Others mentioned that the community at large was contributing by assisting in dealing with occasional disasters in the reserve such as wild fire outbreaks and floods as well as reporting incidences such as animal escapes and illegal harvesting of natural resources (Figure 5.3). Some of the respondents gave more than one response.

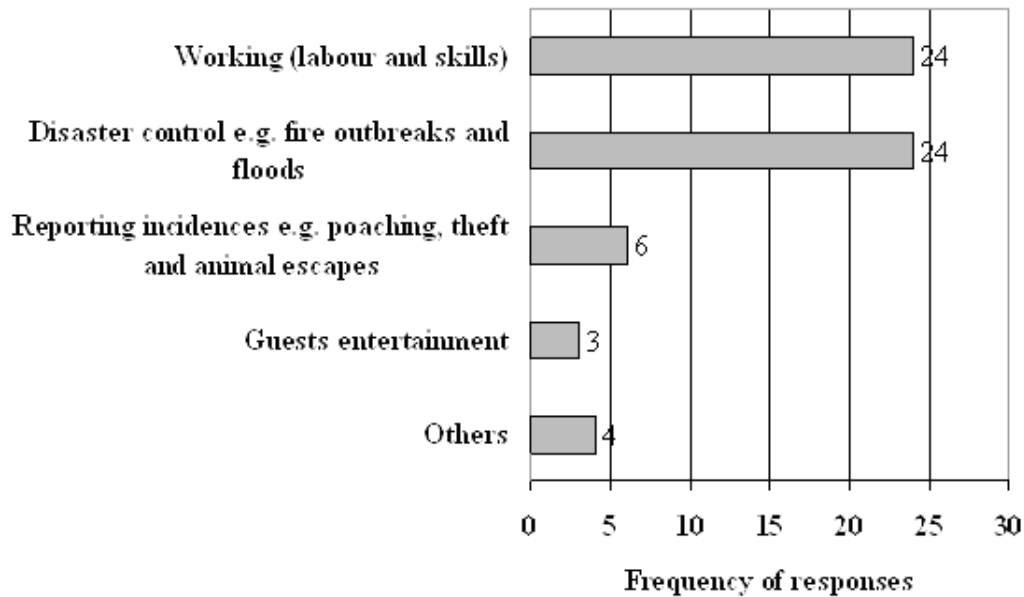


Figure 5.3: Responses to local community’s contribution in the reserve

In giving their responses, close to half of the respondents (46.7%) could recall a fire outbreak incidence which had occurred several months earlier in the reserve and mentioned that people from the community helped in extinguishing the fire. Some (23.3%) pointed out that they had assisted in such incidences though they did not occur often. These respondents considered their contribution during such times as important. Over 75% of the respondents indicated that they were willing to assist and would continue doing so when called upon. This indicates that the local people are generally willing to work together with the reserve management towards meeting various objectives. However, some (11.7%) expected there to be mutual benefits as one indicated that, “We will help them if they also help us in return”. Other respondents (8.33%) considered their role of reporting incidences such as animal escapes and illegal harvesting of resources as equally important in helping the reserve management meet its objectives.

5.5.2. Roles that people could play in future

Respondents were asked in what ways they thought people could help the reserve meet its objectives in future, hence contributing towards resource management. Over twenty eight percent (28.3%) of the respondents, most of whom were old adults, mentioned that people could engage in occasional meetings with the reserve staff to discuss issues of common interest as well as develop good relationships. Other respondents (8.3%) indicated that they would make their contributions by helping the reserve carry out various projects and in times of incidences such as fire outbreaks. Others (6.7%) felt that their contribution would be through reporting incidences of illegal harvesting of resources and animals escapes, while some (16.7%) indicated that they would do nothing to help, because the reserve was not doing anything to help the community apart from offering jobs to a few people. Just over twenty one percent (21.7%) of the respondents were not sure of the role people could play, while 18.3% gave no response to this question (Figure 5.4).

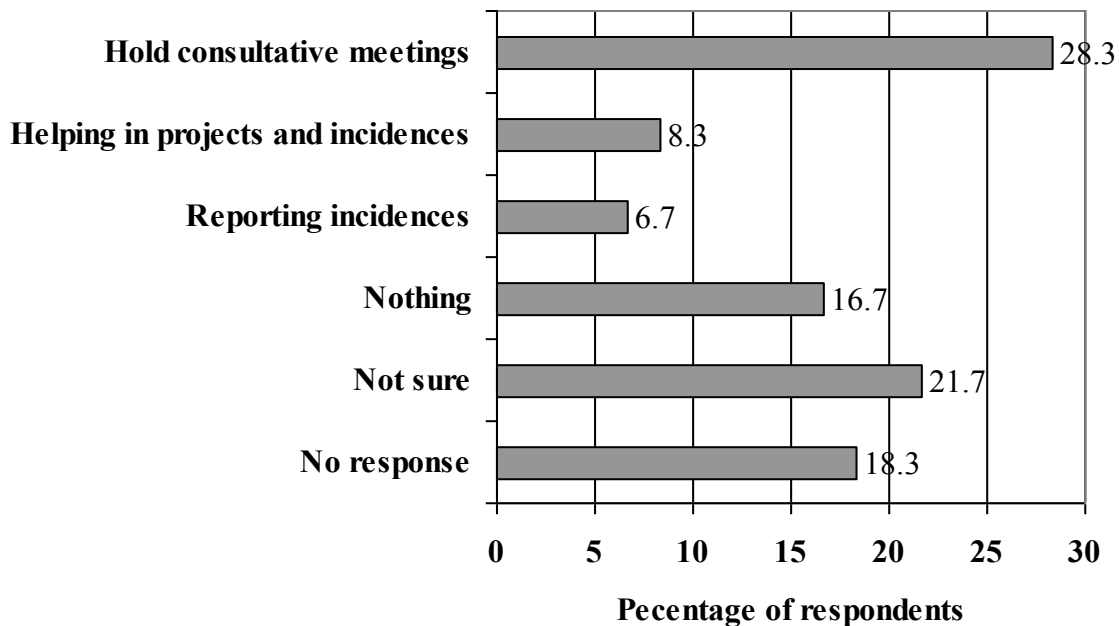


Figure 5.4: Roles respondents could play in future in the reserve

5.6 Analysis of effects and role of the reserve in the community

5.6.1 Benefits of the reserve to the community

To establish the kind of benefits the reserve provides to the community, respondents who indicated that the reserve was of benefit to the community were asked to mention some of the specific benefits. Twenty-four respondents mentioned that the reserve benefited the community through employment, followed by education or enlightening people about wildlife among others (**Figure 5.5**). Respondents were encouraged to give more than one response.

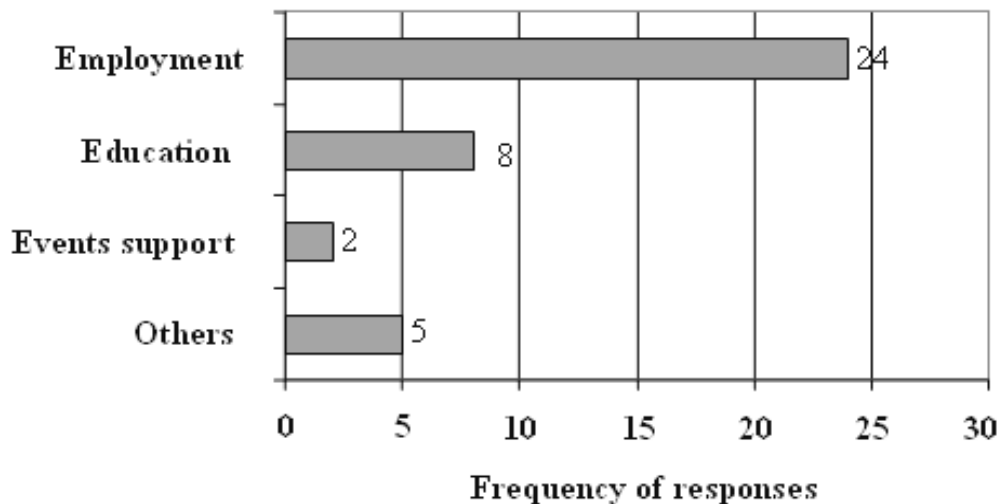


Figure 5.5: Perceived benefits of the reserve to the community

Based on the responses, it is clear that the reserve plays a major role in providing employment to people in the community. Information obtained from the reserve indicated that about 40% of employees in the reserve were from the local community. A number of respondents also felt that the reserve had provided an opportunity for people in community to know more about wildlife and get enlightened about conservation. This had been through the contact some people have had with the reserve staff and a few opportunities that had been available in the reserve for training. The reserve provides environmental education programs to visiting school groups and hence some considered education as a benefit to the community. On functions support, the reserve had occasionally been providing tables and chairs during different events and functions in the

community such as meetings, funerals and weddings. Some respondents however, pointed out that such benefits only went to a few people, and mostly to those working in the reserve, but still others considered this as a benefit.

5.6.2 Access to resources

To assess whether the reserve had any effect in terms of access to resources in the area, respondents were asked whether they thought the reserve was obstructing people from obtaining the necessary resources that they needed. Sixty five percent (65%) of the respondents indicated that the reserve was not an obstruction to obtaining resources. The high response was probably due to the fact that majority of the people had sources of obtaining firewood and areas to graze livestock. Some of the respondents (35%) however indicated that the reserve was an obstruction to obtaining resources such as firewood and thatching grass and passed comments such as; “There is a lot of firewood in there which is just wasting away.” Asked how they thought the issue could be dealt with, some mentioned that arrangements should be made to allow people into the reserve occasionally to collect firewood or even be engaged in projects within the reserve and in return be allowed to obtain firewood. Through such an initiative, the respondents felt that the reserve would be contributing towards improving the welfare of the people in the community.

5.6.3 Effects of the reserve on individuals and their households

The respondents were asked how the establishment of the reserve had affected them. A number of options were provided and each respondent was allowed to select only one. Twenty percent (20%) of the respondents indicated that the reserve had affected them positively, 45% had been affected negatively, 25% had not been affected in any way, while 10% were not sure (**Table 5.5**).

Table 5.5: Responses to effects of the reserve on individual respondents

Question: How has the existence of the reserve near this community affected you?

Effect	Number of respondents	Percentage (%)
Positively	12	20
Negatively	27	45
Not been affected	15	25
Not sure	6	10

Some of the respondents who indicated that they were affected positively, mentioned that the reserve had provided employment to themselves or members of their households hence they had a source of income. Some indicated that they had acquired some knowledge about wildlife as well as had an opportunity to be familiar with certain animals. For instance, one young respondent remarked:

“Some of the animals they brought into the reserve such as rhinos, giraffes and elephants are all new to us. It is always very nice to see them otherwise where else would we have seen and known about them?”

(Respondent 03 Diekeng Ward)

Some of the respondents who indicated that they had been affected negatively by the establishment of the reserve, mentioned lack of access to resources such as firewood, wild fruits and medicinal plants, which they felt were in abundance in the reserve, as the main reason for their view. When the effects were cross tabulated with age and gender (See **Appendix 6.2**), it was found that majority of those who mentioned that the reserve had limited their access to resources were old adult females. One old woman pointed out that she had to walk long distances to collect firewood while there was plenty inside the reserve. On the other hand, those who indicated that they had not been affected in any way by the establishment of the reserve mentioned that they were carrying on with their lives as usual without any interference. The majority of those who gave such responses seemed to be those who were employed elsewhere, hence had income sources independent of the reserve.

5.6.4 Gauging of the reserve's contribution to the community

Gauging of the reserve's actual contribution to the community would further help to understand the role the reserve play in the lives of the local people and see whether this would correlate with benefit responses given. This was done based on a scale which had categories ranging from 'none existent' to 'high'. A few respondents gauged the reserve's contribution to the community as moderate, while most indicated that the contribution was low. A few others thought that the reserve did not make any contributions to the community (Table 5.6).

Table 5.6: Gauging of the reserve's contribution to the community

Question: How would you gauge the reserve's contribution or assistance to the community

Scale	Number of respondents	Percentage
High	0	0
Moderate	5	8.4
Low	45	75.0
Nonexistent	8	13.3
No response	2	3.3

Though 40% of the respondents appreciated that the reserve had provided employment to members of the community, over half of them gauged the contribution of the reserve to the community as low. The main reason given was that only a few people were employed and hence just the few and their immediate households benefited from the reserve. Respondents did not seem to take into consideration that the reserve as a single entity had made a significant contribution in providing jobs compared to other employers in the area. Some respondents (11.7%) further indicated that most help such as lending of chairs and tables during functions only went to those people who worked in the reserve and therefore felt that the reserve was not helping the community at large. This overall gauging of the reserve's contribution to the community is a reinforcement of the results on benefits of the reserve to the community. The indication is that despite the fact that some direct benefits were realized from the reserve, respondents considered them minimal and that they were not well distributed across the community.

5.6.5 Expectations of the local community

To assess whether there was any potential for the reserve to contribute towards improving the welfare of people in the local community, respondents were asked of what they expected to see the reserve do in their community. Forty-two (42) respondents indicated that the reserve management should engage in various community projects in order to develop the community and hence contribute towards improving the welfare of the local people. Some of the development projects that the respondents proposed included building of a community multi-purpose hall, a day care centre, a school and a clinic as well as establishing a trust fund especially to help out-of-school youth in starting small scale business enterprises. Other responses of expectations included employing more people and allowing resource collection among others. Responses to expectations as expressed by the respondents are provided in the figure below (**Figure 5.6**) with the frequency of responses obtained. Multiple responses were obtained from some of the respondents.

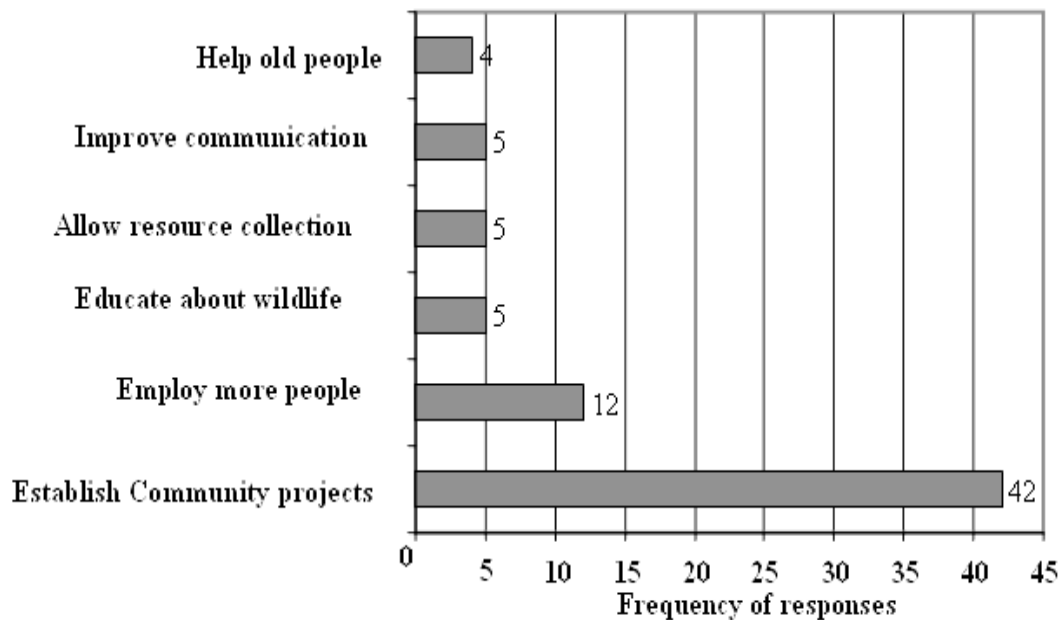


Figure 5.6: Responses of respondents' expectations from the reserve

The responses indicate that the local people's expectations of the reserve to assist in community development among other things are quite high and a lack of understanding among the people that this was mainly the responsibility of the local government.

Notably among the expectations was the indication by some respondents that they would wish to see an improvement in communication between themselves and the reserve managers.

5.7 Summary of the chapter

The information obtained from the various respondents has been analyzed and presented in this chapter. An equal number of males and females were taken as respondents representing diverse ages. The respondents as well had different education backgrounds. The results show that life in the community has been changing with time with some changes being attributed to the establishment of the reserve. Some respondents considered the reserve to have brought positive changes and hence improving their livelihoods while others considered that the reserve had not brought changes in the community. Most of the older respondents linked the reserve to negative changes such as limited access to resources although the results further show that the establishment of the reserve did not limit people's access to resources as most had sources for obtaining the resources other than the reserve.

Attitudes and perceptions towards the reserve among the respondents were seen to vary between the two age categories, with young adult respondents expressing more positive attitudes and perceptions. On relationships between the reserve and the local community, responses indicated that these relationships were weakening with time and most people were not content with the trend. Involvement of local people in resource management in the area was seen only through people's engagements in various activities within the reserve. This was either through formal employment or informally through occasional engagement in various activities. Respondents expressed their willingness to work together with the reserve management in various ways towards helping the reserve meet some of its objectives.

On contribution of the reserve to the local community, most respondents mentioned that the reserve had mainly contributed through creation of jobs and provision of

opportunities to get enlightened about wildlife and conservation. Others felt there were no contributions at all, especially where there was no member in their household working in the reserve. Most of the respondents seemed to narrow the contribution to household level. All the respondents had expectations which they desired to see the reserve meet. Most focused on development projects that the reserve could engage in at the community level to improve the welfare of the people. A few other expectations were on creation of more jobs opportunities, provision of education on wildlife as well as opening up communication channels with the local people.

CHAPTER SIX

DISCUSSION AND CONCLUSIONS

This chapter provides a discussion of the main findings of the study as presented in the previous chapter (**Chapter five**). The discussion is done with the aim of answering the key research questions hence achieving the aim of the study. Where appropriate, a few examples and information from other sources are cited so as to emphasise some points.

6.1 General perspective

Many studies that have been carried out involving protected areas and local communities have mainly revolved around situations where local communities were displaced and relocated from their ancestral land, for example work by Mbaiwa (2005) and Colagiovanni (2002). Others have focused on cases where access to resources were limited or denied and the local communities have laid claims on their former land. This study dealt with a different scenario involving the establishment of a reserve on a private piece of land. As indicated earlier, the land on which MNR was established was long under private ownership hence the local community did not have claim on it and neither used it exclusively as their source of obtaining various resource. Prior to fencing of the area however, the local people could occasionally access some sections of the land to obtain basic resources such as firewood. This probably explains the reason why some of the respondents especially the old people had the opinion that the establishment of the reserve had restricted their access to various resources.

From a general perspective, the survey results indicate that livelihoods of many people in the community are not stable, as most do not have sustainable sources of securing income. Many people depend on part-time jobs for income as indicated by some respondents though the study did not focus on establishing what percentage of the total working population this was. Some of the part-time jobs that people engage in mainly

include working as housemaids and gardeners in neighbouring estates and working in construction projects. These part-time jobs are not always reliable and hence some people go for long periods without any source of income. This could be one of the reasons why some respondents indicated that the reserve management should give priority to people from the local community when offering jobs.

6.2 Changes with the establishment of the reserve and their effects on livelihoods of the local people

The first research question that this study sought to answer involved assessing how the changes that came about as a result of the establishment of MNR affected the livelihoods of people in the local community. The establishment of the reserve involved the transformation of land use from a cattle farm to a reserve. This transformation came with various changes, some of which had direct influence on people's way of life in the local community. One such direct effect was the increase in the number of jobs offered in the reserve. When the land was being utilized for cattle farming, only seven people from the local community were employed but once the reserve was established, the number gradually increased over the years. As of the time of this study, the number of people employed in the reserve stood at 70, of which about 40% were from the local community, mostly holding less-specialized skill jobs. This increase in the number of jobs offered is very significant and goes to show that conservation has the potential in some situations, of directly benefiting local communities more than other forms of land use, in some areas. The increase meant that more households than ever before have benefited directly from the reserve through the income earned.

Data obtained from the survey showed that about 43.3% of the households visited had either one or two people working in the reserve. This means that more people in the community have had a relatively stable source of income courtesy of the reserve and this has played a significant role in reducing the unemployment rate in the community. However, most of the jobs have gone to young adults hence the view among the older people that they do not benefit from the reserve. At the same time, despite the substantial

increase in the number of jobs offered in the reserve over the years, some respondents felt that people from outside the local community were benefiting more. As such therefore, some respondents had the opinion that the reserve management should give priority to the local people when employing staff.

In this case study, employment is therefore the most direct and tangible benefit that local people have drawn from the reserve. The reserve has hence played a crucial role in supporting livelihoods of various people in the community in this way. Direct benefits from employment may only be limited to employees and their households, but as some of the income earned is spent within the community, several people benefit either directly or indirectly. Though such economic contributions may not be quantifiable, they are substantial and add to improving the general welfare of people in the community. Other studies have as well indicated the contribution of protected areas in providing employment to local communities hence greatly contributing towards improving their welfare. For example, the establishment of Mahushe Shongwe Game Reserve in South Africa has benefited the local Mzinti community in many ways, among them providing employment opportunities (King 2006).

The establishment of the reserve also brought changes associated with creating awareness about wildlife and conservation in general among the local people in the community. This awareness was more obvious amongst the young adults, some of who were keen to note that one of the major changes the reserve had brought in the community was provision of opportunities for people to know more about wildlife. Some of the opportunities were through formal arrangements whereby the reserve management had offered a few attachment and training opportunities to some people in the community. Such opportunities have provided valuable knowledge, skills and exposure hence putting the beneficiaries in better positions of handling specialized jobs for example tour guiding and field interpretation. On some occasions, screening for jobs has been done during the training process by the reserve management. Some beneficiaries of such opportunities have been able to secure jobs in other wildlife enterprises hence having sources of income. On a broader scale which is beyond the local community, the reserve has

provided education about the environment to visiting groups hence contributing more towards creating environmental awareness.

Past efforts by the reserve management to hold talks and demonstrations in the community as well as to organize tours for local people into the reserve have also played a role in creating general awareness about wildlife amongst the local people. At the same time, the fact that people occasionally see rare wildlife such as giraffes and rhinos across the reserve fence indirectly creates awareness about such animals. Some respondents indicated they appreciate such citing. In a way, this arouses some curiosity among some people and they tend to inquire and discuss about them hence gaining more insight. In addition, as people get to go into the reserve for various reasons, some get to develop an interest in wildlife and conservation related issues and tend to explore more. Due to this kind of exposure, people either directly or indirectly gain some awareness and knowledge about wildlife and conservation of natural resources. Such an element would probably be lacking in other communities that do not live in the neighbourhood of a protected or conservation area. In answering the first research question therefore, changes through creation of awareness and acquisition of knowledge about wildlife and conservation have had positive contribution among the local people. This has put some people in positions that they can participate in resource management both in the reserve and in the community areas.

6.3 Natural resources access and use

It was assumed that the establishment of MNR brought changes in terms of natural resource accessibility and use in the local community. As such, assessing whether such changes had occurred, and their effects on the livelihoods of the local people was done. Findings indicated that due to the fact that even before the establishment of the reserve people did not have exclusive access to the area for resources such as firewood and thatching grass, it would not be right to conclude that the local people had lost the right to access the resources in the reserve. Indication by the respondents that they had sources other than the reserve for obtaining resources, especially firewood was a reflection that

people in the community were not dependent on the reserve for resources. The establishment of the reserve therefore did not affect local people's access to resources in the area. Apart from a few people who occasionally obtained firewood from the reserve illegally, most people understood that such acts were prohibited.

Notably, most of the young adult respondents had the opinion that people should not be allowed into the reserve to collect firewood among other resources. The indication among some of the young adults that collecting of resources in the reserve would interfere with various conservation initiatives shows some understanding of conservation issues. Those who had the opinion that people should be allowed into the reserve to collect resources, did so with the view that most of the resources in the reserve especially firewood were not being utilized. They hence felt that these resources were wasting away while people in the community were faced with a problem of scarcity of the same resources. Such expressions mostly came from females who traditionally bear the responsibility of obtaining resources such as firewood for the household.

Other respondents, especially the old adults seemed to compare the past years where they could obtain resources from some sections of the area, to the present where the area is fenced off as a reserve. This explains why some had the opinion that the reserve was obstructing access to some resources and that they were affected negatively by the existence of the reserve. Some also felt that being immediate neighbours, they should draw direct benefits from the reserve in various ways such as being allowed into the reserve to obtain resources such as firewood, thatching grass and medicinal plants. Concluding from the responses, some people had the opinion that the reserve could play an important role in providing resources especially firewood to the local community at certain times of the year. An example of a specific case where local people have benefited from protected areas in this way is in Mahushe Shongwe Game Reserve in South Africa where Mpumalanga Parks Board allows seasonal collection of grass by a group from the local community (King 2006). While such initiatives are good strategies towards improving the welfare of the local people and seeking local support for conservation, their application may not always be appropriate in dealing with all

situations of resources access and local communities. Strategies that are appropriate for specific cases should be sought. The implementation of such strategies should be done cautiously to avoid overexploitation of the targeted resources as well as unauthorized harvesting of other resources in the process.

Alternatively, according to opinions of various respondents, the reserve management could engage the local people in some projects within the reserve such as bush clearing and in return allow the people to take the wood that results from the process. Such projects are known to benefit both parties as well as lead to the establishment and strengthening of good working relationships among other things. Some people in the local community have developed the perception that their livelihoods would be improved if they were allowed to access resources in the reserve.

6.4 Attitudes and perceptions towards the reserve

The study also sought to assess local people's attitudes and perceptions towards the reserve and how this had impacted on their lives, as outlined in the second research question. Based on some of the indicators used, respondent's attitudes and perceptions towards the reserve did not seem to be well defined. For example, some respondents gave some responses that portrayed positive attitudes and perceptions but later on give other responses portraying the opposite. Benefits obtained from the reserve were used as one of the indicators of assessing attitudes and perceptions among the respondents. The fact that more than half of the respondents indicated that the reserve was not of any benefit to the community, would have directly reflected that more people had a negative perception of the reserve. However, responses to another question assessing attitudes and perceptions indicated that most of the respondents had the opinion that the reserve was providing opportunities to the community. This on the other hand could be an indication that more people in the community had positive attitudes and perceptions towards the reserve. It was therefore not easy to generalize the attitudes and perceptions based on the responses given. For example, it was common for a respondent to indicate that the reserve was providing opportunities to the community but follow this with a comment that the reserve

employed only a few people from the community, and no other benefits were realized in the community as a whole. Some of the positive responses given were based on the perceptions respondents had about the potential role of the reserve in future. Most responses were not a reflection of the contributions the reserve had made towards improving the welfare of the people in the community, which would be a reflection of the actual role. Some respondents, for example, had the perception that the reserve could provide more employment opportunities in future.

The general reflection based on responses was that young adults had more positive attitudes and perceptions towards the reserve than the old adults. Even general casual comments from people across the community reflected this, as many of the older respondents often passed negative comments about the reserve. Positive attitudes and perceptions were seen in those who expressed hope that the reserve would be of benefit to them and the community in future. Benefits therefore seem to be an important factor that influences attitudes and perceptions towards the reserve and conservation in general. Some of those who expressed positive attitudes even hoped that the reserve could possibly be expanded to provide more employment opportunities. Therefore, in response to the second research question, it would appear that those respondents who had positive attitudes and perceptions towards the reserve had their lives impacted positively as they anticipated a better life in future. On the other hand, those who held negative attitudes and perceptions seemed to be in desperation and often complained about the situations they were in and were not content.

6.5 Relationships between the reserve and the local community

Relationships between the reserve management and the local people which had brought changes in the lives of the local people, were also assessed in line with the third research question. Despite the fact that 40% of the employees in the reserve are from the local community, the existing relationship between the local people and the reserve management seemed not to be well developed. Respondents' indications that they could not visit the reserve as freely as they used to in the past was a reflection that the

interaction between the local people and the reserve management was deteriorating hence affecting the relationship. Lack of occasional visits to the community by the reserve managers was a further indication of poor linkages between the local community and the reserve. Some respondents considered that good relationships existed in the past when reserve managers or their representatives visited the community occasionally. It is important that occasional visits to the local community by reserve staff be maintained as they act as a platform for establishing good relationships. For example in the case of Tarangire National Park in Tanzania and its surrounding communities discussed in chapter 2, some communities maintained that they had no relationship with park because the park staff never visited them while those communities which were visited indicated existence of good relationships (Kangwana and Ole Mako 2001). Further, indication that there was no established system of reporting incidences is a reflection of lack of a working relationship between the reserve and the local community. Efforts made by the local people to try to contact the reserve were an indication that the local people were willing to work together with the reserve management.

On assessment of the working relationships between the reserve management and the community, most respondents seemed to associate working relationship with benefits received mainly through direct employment. Where respondents and their households had benefited from the reserve through for example direct employment and training, they considered the working relationship to be good. While where such benefits were minimal or lacking, the relationship was considered as poor or none existent. The fact that some people from the community work in the reserve was the main reason that made some respondents considered the relationship as either good or average. Direct engagement of people through employment is one way of establishing good working relationships as people provide skills and labour in return for some income. The people engaged in the direct employment act as an important link between the reserve and the community therefore making it easier for good relationships to be developed. On the other hand, most of the respondents who mentioned that the working relationships were poor went further to indicate that there were no consultations from the reserve management on issues regarding resource management. Others mentioned that lack of occasional visits by

reserve managers or their representatives to the community were a contributing factor to poor relationship. This response once again shows the importance of visits to the community by reserve managers as a strategy towards building good relationships.

The overall indication based on the responses given is that the relationship between the reserve management and the local community was weakening with time as communication and interactions between the two parties was becoming less vibrant. To deal with such situations where relationships are dwindling, Worboys *et al* (2005) point out that communication channels and occasional interactions between protected area managers and the local community need to be developed as discussed earlier in chapter 2.

It is important to note that despite the number of jobs increasing significantly with the establishment of the reserve, some respondents especially the old adults seemed to value the importance of having good relationship with the reserve managers. They probably had the view that they would benefit from the reserve if good relationships were in existence, as most did not foresee themselves obtaining jobs in the reserve at their advanced age. For instance, the event mentioned earlier whereby the old people were taken into the reserve for a familiarization tour was made possible because of good relationships that existed at that time. Many of the young adult respondents on the other hand considered jobs offered by the reserve to be more significant than developing good relationships.

Studies in other similar situations have shown that developing good relationships with local people not only forges support for conservation initiatives but also gives people the opportunity to participate and contribute towards natural resource management. Though the relationships between the reserve management and the local community are not very well developed, they have caused some changes in the lives of the local people. Such involvement has been achieved mainly through employment hence playing a role in natural resource management. Among some people in the community, lack of well-established relationships has led to development of negative attitudes and perceptions towards the reserve.

6.6 Involvement of the local people in natural resource management

The fourth research question sought to address the issue of the local people's involvement in the management of natural resources both inside the reserve and in the community areas. The study revealed that local people's involvement in the management of natural resources in and around MNR was minimal due to lack of initiatives and strategies towards this end at the community level. The concept of community conservation where local communities are involved in the process of natural resources management was adopted in this particular area. Neither had community based organizations been established to encourage collective action amongst the local people towards dealing with certain issues. Community based organizations are known to play an important role of bringing together individuals with common interests and hence they are able to address certain issues such as natural resource management and community development collectively.

Through engagement in various activities, especially those generating benefits, community based organizations are known to contribute towards improving the general welfare of the people. For example, the formation of The Khwai Development Trust in the Okavango area, Botswana, made a substantial contribution in improving the livelihoods of the local people through engagement in tourism development activities (Mbaiwa 2005). Where such organizations exist, it is usually easier to address various issues because of the existence of organized structures or systems of operation. The lack of such organizations in the community under consideration has therefore limited active participation of most of the local people in resource management.

In the communal areas outside the reserve, people have not been involved in any form of resource management or conservation. The local people could therefore only be considered to be contributing towards resource management inside the reserve. This is through their involvement in various activities within the reserve, either through employment or through occasional involvement in some activities. About 30 people from the community are employed in the reserve, hence they would be considered to be either

directly or indirectly involved in resource management. Occasional engagement of local people in activities such as assisting in the reserve during wild fire outbreaks, has contributed towards management of natural resources to some extent. Several respondents indicated that most of the local people were often willing to engage in such activities occasionally. Such occasional engagements have in a way contributed towards creating awareness among the local people about natural resource management.

Indications by respondents that they were eager to engage in dialogue occasionally with the reserve management especially on issues relating to resource management is a reflection of the local people's interest in participating in the process of managing resources. Despite the fact that most people were not engaged in consultative meetings in the past, some respondents felt that these were important in sharing of ideas and addressing issues on natural resource management both inside and outside the reserve among other things. While such goodwill exists amongst the local people, the reserve management has not taken the initiative to involve the local people in the process of resource management inside the reserve as well as in the community areas. This could be achieved through establishment of fora where the local people and the reserve management could occasionally meet and hold discussions highlighting issues of mutual concern. Community conservation strategies such as the establishment of community based natural resource management programs could as well be adopted. Adoption of such strategies would result in improvement of relationships between the local people and the reserve management, and put the local people in a better position to be actively involved in resource management in the community areas. However, for community conservation to succeed, initiators should provide enough incentives so as to encourage active participation of local people. According to Emerton (2001), local people will rarely forego their daily engagements to participate in initiatives that seem not to meet some of their livelihood needs or provide any tangible benefits.

6.7 Role of the reserve in enhancing the lives of the local people

The last of the five research questions explored the role of the reserve in enhancing the lives of the local people. This was addressed by assessing the reserve's contribution to the local community as well as the effects the reserve had on individual respondents and their households. The major contribution that the reserve had made in the community was provision of job opportunities and to a lesser degree, the provision of education on wildlife and general conservation. These as discussed under the section on changes brought about by the establishment of the reserve, had a positive impact on the lives of the local people. The rise in the number of jobs provided by the reserve meant that more people from the local community could find a relatively stable source of income. It could be estimated that about 30% of the total households in the community have an individual working in the reserve. A few more households benefit indirectly taking into consideration the principle of economic multiplier effect, where money earned from the reserve in form of wages is spent within the community on various goods and services.

Assessment of effects of the reserve on individual respondents and their households indicated that those who were affected positively attributed that to the job and education opportunities provided by the reserve. Indication by other respondents that they were affected negatively was based on the issue of lack of access to resources such as firewood and medicinal plants, which they considered were abundant in the reserve. However, further findings in the study indicated that people in the community had sources of obtaining resources other than the reserve. Further indications by several other respondents that they were affected by the establishment of the reserve shows that some people in the community are not dependent of the reserve in terms of livelihood needs. The majority of such people are those who have employment elsewhere, for example in town. Such individuals formed close to 27% of the total respondents. The role that the reserve has played in contributing towards enhancing the lives of people in the local community has mainly been the provision of employment and training opportunities. Other minor contributions have been for example lending of chairs and tables to various people in the community during functions.

Some issues which were beyond the scope of this study were briefly dwelt on to show the broader picture of the study. Local people's expectations from the reserve seemed to be one of issues that most respondents seemed to highlight, though this was not part of the main objectives of this study. Some indicated that they expected the reserve to assist in various development projects within the community, though this is mainly the responsibility of the local government. While the reserve management could assist in some of the development projects out of goodwill, they could possibly lobby for more local government attention in the community. Other expectations were that the reserve should employ more people from the local community as opposed to outsiders.

On the other hand, MNR has played a significant role in creating environmental awareness in the greater Gaborone area and beyond through its environmental education programmes. This contribution has been through the visits made by various groups into the reserve or through the reserve's participation in fora to address various environmental issues at different levels.

6.8 Conclusions

The establishment of Mokolodi Nature Reserve unlike many other cases did not lead to a situation of displacement of the local people from their original land and neither did it affect people's access to various resources. People still had sources in their communal areas for obtaining various resources even after the reserve was established. The reserve however brought several changes in the local community, which influenced the livelihoods of people in different ways. This study has shown that the main direct benefit of the establishment of the reserve to the community is the creation of employment opportunities. The number of jobs provided by the reserve has significantly risen over the years to 70 from a mere seven when the area operated as a cattle farm. About 40% of these jobs have gone to the local people, hence providing a direct source of income to about 30% of the households in the community. Through the income earned, various basic needs in some households have substantially been met hence improving livelihoods of people. The economic multiplier effect has also resulted to more individuals and

households benefiting from the income earned in the reserve. At the same time, the reserve management has occasionally availed some opportunities though for a few people to gain some knowledge and skills especially on wildlife and conservation. This has been of positive effect to some community members.

Though respondents' attitudes and perceptions towards the reserve seemed not to be very well defined due to a mixed pattern in some response, it was possible to conclude that younger people in the community have more positive attitudes and perceptions as most expressed hope in benefiting from the reserve in future. Benefits seemed to be a key factor in shaping people's attitudes and perceptions towards the reserve in this case study. Some of the older people held negative attitudes and perceptions towards the reserve as they considered the reserve as a resource constraint and of little benefits to the community. This is probably due to the fact that most of the jobs were taken up by younger people and no direct benefits from the reserve were getting to them.

The relationship between the reserve management and the local community seemed to have been affected by several factors among them being lack of occasional interactions and communication between the two parties. Some respondents, especially the older seemed to value the issue of developing good relationships quite highly, when compared to the younger respondents who valued employment more. However, it is worth noting that despite the relationship between the reserve management and the local community not being so good, some people were willing to be engaged in various activities that relate to the reserve. This is a rare situation and a good opportunity for the reserve management to work with the local people in some of projects such as bush clearing and soil erosion control. Adoption of various community conservation strategies and involvement of the local people in the process of conservation in the community areas would also be appropriate. Such efforts would work towards seeking to strike a balance between conservation priorities and local livelihoods hence leading to sustainable development.

Though the study did not focus on the local people's expectations of benefiting from the reserve at length, such expectations appeared to be quite high. Despite the increase in the number of jobs provided by the reserve, some respondents felt that more needed to be done in terms of the reserve benefiting the local people. In order for the reserve to have more positive effects on the livelihoods of people in the local community, ways of how the community could benefit more from the reserve, either directly or indirectly should be sought. It is through such initiative that the livelihoods of the local people will be improved and hence meeting one of the initial goals of the establishment of the reserve, to improve the standard of living among the local people.

6.9 Recommendations

In light of the findings from this study and the discussion that has followed, a few recommendations are made which could help towards creating a balance between conservation priorities and improvement of local livelihoods. The recommendations include:

- i. The reserve management should consider involving the local people in some projects within the reserve such as bush clearing and soil erosion control. Wood from the bush clearing operations could then be made available to the people as one of the incentive for participating in the project.
- ii. The reserve management should make an effort to have occasional interactions with the local community both formally and informally. This could be achieved through occasional visits to the community by the reserve staff representing the management for various reasons such as holding discussions, giving talks and demonstrations among others.
- iii. There is need to have a key person within the reserve who can act as a link between the reserve and the local community. Such a person should be available for consultation by all parties in order to address certain issues when need be.
- iv. Efforts should be made within the local community to establish community based groups, under whose umbrella members could collectively work together towards a common goal. Such groups should possibly be initiated with the guidance of the

reserve management in collaboration with the Village Development Committee (VDC), with the objective of engaging in various development initiatives within the community hence developing the community.

- v. Opportunities for mutually beneficial partnerships between the reserve management and the local people should be sought. This could be in the form of developing and supporting business enterprises at the community level. For example, brick making operations, bee keeping, handicraft making among others.
- vi. As a strategy towards developing good relationships with the local community, the reserve management should strengthen the local community empowerment program by providing more training opportunities for some people in the local community; for example in tour guiding and field interpretation, basic computer skills among others.

6.10 Future research

With regard to the issues that arose from this study, some areas suggested for future research include:

- i. Exploring what the local people's expectations as far as benefiting from the reserve are concerned and practical avenues of achieving this.
- ii. Assessing the impact and contribution of MNR on a scale beyond its immediate neighbourhood. For example on the greater Gaborone area and South East District.
- iii. Contribution of private protected areas in Botswana to improving livelihoods of local communities.

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APPENDICES

Appendix 1: Definitions of the IUCN Protected Area Management Categories

CATEGORY Ia

Strict Nature Reserve: protected area managed mainly for science

Area of land and/or sea possessing some outstanding or representative ecosystems, geological or physiological features and/or species, available primarily for scientific research and/or environmental monitoring.

CATEGORY Ib

Wilderness Area: protected area managed mainly for wilderness protection

Large area of unmodified or slightly modified land, and/or sea, retaining its natural character and influence, without permanent or significant habitation, which is protected and managed so as to preserve its natural condition.

CATEGORY II

National Park: protected area managed mainly for ecosystem protection and recreation

Natural area of land and/or sea, designated to (a) protect the ecological integrity of one or more ecosystems for present and future generations, (b) exclude exploitation or occupation inimical to the purposes of designation of the area and (c) provide a foundation for spiritual, scientific, educational, recreational and visitor opportunities, all of which must be environmentally and culturally compatible.

CATEGORY III

Natural Monument: protected area managed mainly for conservation of specific natural features

Area containing one, or more, specific natural or natural/cultural feature which is of outstanding or unique value because of its inherent rarity, representative or aesthetic qualities or cultural significance.

CATEGORY IV

Habitat/Species Management Area: protected area managed mainly for conservation through management intervention

Area of land and/or sea subject to active intervention for management purposes so as to ensure the maintenance of habitats and/or to meet the requirements of specific species.

CATEGORY V

Protected Landscape/Seascape: protected area managed mainly for landscape/ seascape conservation and recreation

Area of land, with coast and sea as appropriate, where the interaction of people and nature over time has produced an area of distinct character with significant aesthetic, ecological and/or cultural value, and often with high biological diversity. Safeguarding the integrity of this traditional interaction is vital to the protection, maintenance and evolution of such an area.

CATEGORY VI

Managed Resource Protected Area: protected area managed mainly for the sustainable use of natural ecosystems

Area containing predominantly unmodified natural systems, managed to ensure long-term protection and maintenance of biological diversity, while providing at the same time a sustainable flow of natural products and services to meet community needs.

(Adapted from Chape *et al* 2003:12)

Appendix 2: Photographs of village dwellings



Photograph 1: Village dwellings constructed from bricks with iron sheet roofing



Photograph 2: Village dwelling constructed from mud with thatch roofing

Appendix 3: Survey questionnaire with guideline notes

A. Background / general information

1. Village / Ward:
2. Age bracket:

18-24 <input type="checkbox"/>	32-40 <input type="checkbox"/>	50-59 <input type="checkbox"/>
25-31 <input type="checkbox"/>	41-49 <input type="checkbox"/>	Over 60 <input type="checkbox"/>
3. Gender: Male Female
4. Occupation: (*Indicator of main source of income hence livelihood*)
2,3,4 Will help to determining the sampling strata taken
5. Education level:

Primary <input type="checkbox"/>	Senior secondary <input type="checkbox"/>	No formal education <input type="checkbox"/>
Junior secondary <input type="checkbox"/>	Tertiary <input type="checkbox"/>	Others Please specify <input type="checkbox"/>

Level of education may determine the kind of responses given. It is important to note this from the onset

6. Household size (*Number of people in your family*):
 How many are working (employed):
Help to establish the extent to which households depends on employment

B. History and changes

7. How long have you resided in the community?
Depending on the duration of residence, this may give an idea of how much the respondent is acquainted or is familiar with the community; attachment to the community also depends on duration of residence. Issues affecting the community may be taken differently by different people depending on how attached they are to community. This may have a bearing on how questions are responded to hence important for consideration.
8. Were you born in this community? Yes No
 If no, where were you living before coming here?
People normally have strong attachments to their place of birth and may be sensitive to what happens around their area. This may subsequently affect their perception of any changes that happen in the community. They may tend to be resistant to any forms of change.
9. Did you move into this community for any particular reason? Yes No
 If yes, what was the reason?
Help to determine if some people could have moved into the village for various reasons such as to find employment in the reserve, availability of land for settlement etc. Will help to establish if the reserve is a determining factor in the population dynamics of the community? This could hence be one of the direct effects of the reserve on the neighbouring community
10. Where have you been obtaining resources such as firewood?

Will give a lead to the source of natural resources that people use in the community and whether they rely on the reserve. Resources under consideration include firewood, fodder for livestock, material for building, wild berries, river sand and thatching grass. Most household in the community can however identify with firewood and use it at very often.

11. Do you have an alternative source or location of collecting these resources?

Yes No

Will reflect on possibility of alternative sources of obtaining resources to supporting livelihoods for people in the community. Will indicate whether people in the community are entirely dependent on the reserve for resources. Having alternative sources implies that the community's livelihood is relatively stable as exhaustion of resources in one area will result them to turning to the alternative.

12. What do you think has changed since the reserve was established?

Help to establish whether the establishment of the reserve has brought changes in the community and compare the changes that have occurred over time e.g. have lifestyles been transformed, positively or negatively; have people been empowered? If things have changed, what has changed? Key in assessing the overall effects.

C. Attitudes and perceptions – *will help establish whether people are for or against the reserve and whether they appreciate the role the reserve plays in resource management.*

13. Do you think wildlife benefits the country? Yes No

14. Do you think wildlife benefits the community? Yes No

15. Do you think wildlife benefits you and your household? Yes No

If yes in what way do you benefit?

Answers to these will reflect the level at which people consider wildlife to be of benefit. Do they link the benefits directly to their livelihoods? The level at which they view this benefits will shape their attitudes and perceptions towards the reserve. Many people may consider wildlife to be of benefit to the country and outsiders but not necessarily to the community or their household as they expect direct tangible benefits which may not be forthcoming.

16. Do you think it is important to protect wildlife for our children? Yes No

Will give an indication of whether people value the existence of wildlife and hence the reserve even for the sake of the future. Gauge people's attitude towards conservation; this will translate to attitudes towards the reserve. (Positive attitude towards conservation may imply positive attitude towards the reserve).

17. How do you feel about this area as a place to live?

Happy	<input type="checkbox"/>
Unhappy	<input type="checkbox"/>
Not given much thought	<input type="checkbox"/>

What is the reason for your answer?

To gauge the level of general satisfaction amongst the people. This will help to determine whether people are satisfied or happy living in the neighbourhood of the reserve and how the reserve affects them if at all it does. Can the reserve in any way be attributed to the way

people feel about the area? Do they live with resentment, satisfaction, appreciation etc? (These are contributing factors towards a sustainable livelihood)

18. What would you wish to see in the future;

The reserve should be closed down?	
The reserve should be expanded?	
It is fine the way it is	

What is the reason for your answer?
Will help establish how local people perceive the reserve and whether they see it as of significance to the community as a whole and their future vision with regard to the reserve. If people support the existence of the reserve and see it as of benefit, they will want to see it expanded or continue to operate.

19. What do you think about the reserve?

It is a threat to the community	
It creates opportunities to the community	
Not quite sure	

What is the reason for your answer?
Answer given will reflect on the general feeling amongst the people about the reserve; whether they see any potential in the reserve or not. Opportunities may be interpreted to mean benefits (direct and indirect). Threats would be taken to mean that people see the reserve to be of no benefit.

20. Do you experience any incidences whereby wild animals come into the village from the reserve? Yes No

If yes, what are some of the common animals that come into the village?
 What kind of damages if any do these animals cause?

.....
This will help determine if people's attitudes and perceptions towards the reserve are influenced by the damages or threats they see posed by wild animals which come to the community if any. Do they have negative attitudes to the reserve because of wildlife causing damages or threatening them or can this be attributed to other issues? (The damages or threats caused may be over-ridden by other benefits such as employment etc or vice versa). Damages and threats caused by wildlife could be another effect of the reserve on the community which could affect their livelihoods.

D. Relationships between the reserve and the local community– *is there empowerment of the local people through the development of good relationships?*

21. Is anyone in your household / family working in the reserve?

Yes No

If yes, how many?
Direct engagement of people through employment is one way of establishing good working relationships as people provide skills and labour in return for some income. Are working relationships well developed where there are people employed in the reserve and does this affect their attitudes and perceptions towards the reserve? Does working in the reserve affect perceptions and attitudes towards the reserve?

Also help to determine whether the household mainly depends on employment from the reserve (together with Q7)

Overall assessment of households; is there obvious differences between households with people working in the reserve and those with none. Does working in the reserve imply improved livelihood or otherwise and different attitudes and perceptions towards the reserve?

22. Have you ever been into the reserve? Yes No
If yes, what made you go into the reserve?
If no, would you visit the reserve if given a chance? Yes No

Having been to the reserve or expressing an interest to go is an indication of positive attitude towards the reserve and willingness to be identified with the reserve. Going into the reserve may be occasioned by existing good working relationships; (working there, looking for employment, collecting resources etc).

23. Do you know the principal purpose of having a reserve? Yes No
If yes, what do you think is the purpose of a reserve?

It is easier to forge working relationships among such people who have a general idea why a reserve is important. Such people may even be supportive of the reserve towards meeting various objectives. Will give a guide as to the basis people understand the importance of the reserve or whether they only view it from a benefits' perspective.

24. Does anyone from the reserve come to speak to you at any one point?
Yes No

If yes how often?
Determine whether there are any initiatives from the reserve to forge some working relationships. Are there any efforts to bridge the gap between the community and the reserve? Having meetings with the community is an indication on the reserve's consideration of the significance of the community in resource management and the desire to involve and sensitize them on conservation issues.

25. Is there an established system whereby you can report incidences such as animal escapes, poaching etc? Yes No

Establishes if there are any efforts which have been made to liaise with the community in deal with some of the issue and hence develop some working relationships in the process. Existence of such a system will be an indication of existing working relationships between the community and the reserve.

26. How would you rank the community's working relationship with the reserve?

Excellent	
Good	
Fair	
Poor	
None existent	

Please state the reason(s) for your answer

.....

Answer given will reflect the extent and strength of working relationship as viewed by the local people. Do the people appreciate the initiatives which the reserve has made to work together with them, if any? Do they feel that the reserve should try and do more?

E. Involvement of the local people in natural resource management

27. Are you a member of any community organized group? Yes No

If yes which group?

What is the group involved with?

Help establish if there are any organizations in place in the community which may be used to address certain issues of concern such as natural resource management or community development. Community groups may be used as fora to address other issues of concern to the community. The reserve can as well use of such groups to build and strengthen relationships with the community. It is easier to deal with organized groups since structures or systems of operation are already in place.

28. Do you think the people in the community are helping the reserve meet its objectives? Yes No

If yes, in what way are they helping?

.....

In what way do you think the people should help in future?

.....

Will reflect on the community's involvement and contribution to resource management. (Is there active participation?) Will help to identify areas the people think they can participate in natural resource management and also serve as an indication of whether the people are actually interested in being involved.

F. Role of the reserve in enhancing the lives of the local people

- has the reserve contributed in changing livelihoods in the community

29. Do you think the reserve obstructs people in the community from obtaining the necessary resources that they need? Yes No

If yes, in what way?

What do you think should be done to solve this issue?

Will give an indication whether the establishment of the reserve has affected the normal way of living of the people in the community in terms of access to resources and if it has, in what way. The answer will also reflect what the people think about harvesting of resources in relation to the reserve.

30. Do you think the reserve is of any benefit or help to the community?

Yes No

If yes, what do you think are some of the benefits?

.....

If no, why do you think so?

.....

Will help to determine how the people perceive the reserve in terms of benefits and what kind of benefits they associate the reserve with. If there are benefits that can be linked to the reserve, then the community will view the reserve as important to them and this will imply a positive contribution to the community.

31. How has the existence of the reserve near this community affected you?

Positively	
Negatively	
Not been affected	
Not sure	

What is the reason for your answer?.....
Will reflect of the impact of the reserve on the local people based on their perspective. The effect is on both positive and negative attributes. The answer may reflect on whether the respondent draws any benefits from the reserve.

32. What would you wish to see the management of the reserve do in this community?

.....

Will give an indication towards the expectations the local people have from the reserve and will also help to determine what potential the reserve has in developing the local communities.

33. Do you think people should be allowed into the reserve to collect firewood?

Yes No

What is the reason for your answer?
Will help determine how the people view the reserve, whether as an obstacle towards access to resources or otherwise. Reflect whether people think of the reserve as a source of resources to support their livelihoods or otherwise.

34. How would you gauge the reserve’s contribution or assistance to the community?

High	
Moderate	
Low	
None existent	

What is the reason for your answer?.....
Will help determine what contribution the reserve makes in the community from the local people’s perspective. The answer will also give an indication of the level of satisfaction the people have towards the reserve helping the community.

Appendix 4: Survey questionnaire

RESEARCH QUESTIONNAIRE

Please tick the appropriate box where necessary

1. Village / Ward:
2. Age bracket:

18-24 <input type="checkbox"/>	32-40 <input type="checkbox"/>	50-59 <input type="checkbox"/>
25-31 <input type="checkbox"/>	41-49 <input type="checkbox"/>	Over 60 <input type="checkbox"/>
3. Gender: Male Female
4. Occupation:
5. Education level:

Primary <input type="checkbox"/>	Senior secondary <input type="checkbox"/>	No formal education <input type="checkbox"/>
Junior secondary <input type="checkbox"/>	Tertiary <input type="checkbox"/>	Others Please specify <input type="checkbox"/>

.....
6. Household size (*Number of people in your family*):
 How many are working (employed):
7. Is anyone in your household / family working in the reserve? Yes No
 If yes, how many?
8. How long have you resided in this community?
9. Were you born in this community? Yes No
 If no, where were you living before coming here?
10. Did you move into this community for any particular reason? Yes No
 If yes, what was the reason?
11. Are you a member of any community-organized group? Yes No
 If yes which group?
 What is the group involved with?
12. Where have you been obtaining firewood?
13. Do you have an alternative source or location of collecting firewood? Yes No
14. Do you think people should be allowed into the reserve to collect firewood?
 Yes No
 What is the reason for your answer?

-
-
15. Do you think wildlife benefits the country? Yes No
16. Do you think wildlife benefits the community? Yes No
17. Do you think wildlife benefits you and your household? Yes No

If yes in what way do you benefit?

.....

.....

18. Do you think it is important to protect wildlife for our children? Yes No
19. Do you know the principal purpose of having a reserve? Yes No

If yes, what do you think is the purpose of a reserve?

.....

.....

20. Have you ever been into the reserve? Yes No

If yes, what made you go into the reserve?

.....

.....

If no, would you visit the reserve if given a chance? Yes No

21. How do you feel about this area as a place to live?

Happy	<input type="checkbox"/>
Unhappy	<input type="checkbox"/>
Not given much thought	<input type="checkbox"/>

What is the reason for your answer?

.....

.....

22. What would you wish to see in the future;

The reserve should be closed down?	<input type="checkbox"/>
The reserve should be expanded?	<input type="checkbox"/>
None of the above	<input type="checkbox"/>

What is the reason for your answer?

.....

.....

23. What do you think about the reserve?

It is a threat to the community	
It creates opportunities to the community	
Not quite sure	

What is the reason for your answer?

.....
.....

24. Does anyone from the reserve come to speak to you at any one point? Yes No

If yes, how often does this happen?

What do they mainly come to talk about?

.....

25. Do you ever experience any incidences whereby wild animals come into the village from the reserve? Yes No

If yes, what are some of the common animals that come into the village?

.....

What kind of damages if any do these animals cause?

.....

26. Is there an established system whereby you can report incidences such as animal escapes, damage of crops by animals, poaching etc? Yes No

27. How would you rank the community's working relationship with the reserve?

Excellent	
Good	
Fair	
Poor	
None existent	

Please state the reason(s) for your answer

.....

.....

.....

28. Do you think the people in the community are helping the reserve meet its objectives?

Yes No

If yes, in what way are they helping?

.....

In what way do you think the people should help in future?

.....
.....
29. Do you think the reserve obstructs people in the community from obtaining the necessary resources that they need? Yes No

If yes, in what way?

.....
.....
What do you think should be done to solve this issue?

.....
.....
30. Do you think the reserve is of any benefit or help to the community? Yes No

If yes, what do you think are some of the benefits?

.....
.....
If no, why do you think so?

.....
.....
31. How has the existence of the reserve near this community affected you?

Positively	
Negatively	
Not been affected	
Not sure	

What is the reason for your answer?

.....
.....
32. What would you wish to see the management of the reserve do in this community?

.....
.....
33. How would you gauge the reserve's contribution or assistance to the community?

High	
Moderate	
Low	
None existent	

What is the reason for your answer?

.....
34. What do you think has changed in this community since the reserve was established?

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

Appendix 5: Interview schedule

1. Where the first people who settled in this area come from and how they come to settle here?
2. Is land an issue in this community?
3. How land is currently allocated and who is responsible for allocation?
 - *Approximate population of the village
 - *Demarcations / units in the village
 - * Community structure in terms of leadership
4. Compared to the past how have things in the community changed?
(And in terms of management and use of natural resources, has anything changed?)
5. With the establishment of the reserve, have things changed in the community?
(And if they have changed, what do you think has changed?)
6. Has the existence of the reserve has affected the lives of people in the community in any way?
What are some of the effects?
7. Were you consulted as a leader of the community when the reserve was being established?
8. How would you consider your working relationship with the management of the reserve? Do they consult you regarding any issue?
What are some of the issues they consult you on?
9. In what areas do you think they should consult you more in future?
10. Are there any arrangements or initiatives within the community to approach the management of the reserve for the sake of trying to work together?
11. Are you happy with the current working relationship between the reserve and the community?
Reason for the answer?
12. Are there any formal structures or rules that are in place that help maintain a good working relationship? e.g. How to report incidences such as animal escape or poaching and who to talk to when you need assistance from the reserve.
13. Do you think the reserve is in any way limiting people from having access to natural resources such as firewood and fodder for livestock?
14. Do you think the community is helping the reserve in the management of natural resources?
In what way do you think they are helping?
And in what ways should they help in the future?
15. Have you had cases reported to you of people illegally getting into the reserve for some reasons such as hunting, getting fodder for livestock or collection of firewood?
How have you dealt with such issues in the past?
16. What are some of the challenges facing the community at the moment?
Are any of these challenges associated with the reserve in any way?
If yes, which ones?
17. What is the role of VDC and who belongs to the committee?
18. What would you wish to see the reserve do for this community?
19. Would you say that the reserve is of any benefits to the community?
What are some of these benefits?
20. Some of the community organized groups
Who facilitates their existence and operation?
Are any of these linked in any way to the reserve?

Appendix 6: Additional results tables

Appendix 6.1: Education level and occupation status of respondents

	Young adult females	Old adult females	Young adult males	Old adult males	Total
Education level					
None	0	8	1	10	19 (31.7%)
Primary	4	4	3	3	14 (23.4%)
Junior secondary	5	0	5	1	11(18.3%)
Senior secondary	5	1	5	0	11(18.3%)
Tertiary	1	0	1	0	2 (3.3%)
No response	0	2	0	1	3 (5%)
Occupation status					
Unemployed	10	11	6	7	34 (56.6%)
Employed	4	4	6	8	22 (36.7%)
Student	1	0	3	0	4 (6.7%)

Appendix 6.2: Cross tabulation of responses to effects of the reserve on individual respondents

Question: How has the existence of the reserve near this community affected you?

	Young adult female	Old adult female	Young adult male	Old adult male	Total
Positive effects					
Employment	1	1	3	2	7
Education	3	0	1	1	5
Negative effects					
No access to resources	3	9	4	4	20
Others	3	2	1	1	7
No effect					
	2	2	4	8	15
Not sure					
	3	1	1	1	6

Appendix 8: Consent letter

Centre for Environment Agriculture and Development
University of KwaZulu-Natal
Private Bag X01
Scottsville 3209
South Africa

INFORMED CONSENT DOCUMENT

I am Lincoln, a student at the University of KwaZulu – Natal. I am here to carry out a research as part of my academic work and therefore request for your help.

The research focuses on gaining an understanding the effects of protected area on livelihoods of neighbouring local communities. In this case I will be focusing on Mokolodi Nature Reserve and the neighbouring Mokolodi village. The general aim of the research is to try and assess the actual implications a reserve such as Mokolodi has on the way of life of the neighbouring people. This kind of knowledge will greatly contribute towards the overall goal of ensuring that natural resources are conserved effectively and at the same time local communities in the surrounding areas gain some form of benefits.

Permission has been obtained from the Ministry of Environment, Wildlife and Tourism as well as the management of Mokolodi Nature Reserve to carry out the research. The Chief of Mokolodi village is also aware of this research and has approved that it may go ahead.

As an important participant in this research, you will kindly be required to give answers to the questions in the questionnaire provided. You are kindly requested to answer the questions to the best of your knowledge. In a situation whereby you are not able to answer the questions all by yourself, someone will be available to assist you accordingly. The exercise will probably require between 30 and 45 minutes of your time.

Before proceeding with the exercise, I would also wish to make you aware of the following;

1. That total confidentiality of the information given as well as anonymity of the source of information will be maintained;
2. That your participation in this research is highly valued as your views will represent those of other people like yourself;
3. That your participation in this research is entirely voluntary and that you are free to withdraw from the study at any stage and for any reason;
4. That your participation in this research will not entitle you to any form of benefits or payments whatsoever;
5. That a decision not to participate in the research will not result to you being subjected to any form of disadvantage;
6. That information obtained in this research will solely be used for academic purposes.

This research is being undertaken under the supervision of Dr. Mark Dent, who may be contacted on the address above for any clarifications.

If you are able to participate in this research, your contribution will be highly appreciated. Kindly please sign the declaration form overleaf.
Thank you.

Sincerely

Lincoln Mwaniki Njiru
Centre for Environment Agriculture and Development
University of KwaZulu-Natal

Appendix 9: Declaration form

DECLARATION FORM

I..... (Full names of participant) hereby confirm that I understand the contents of this document and the nature of the research project, and I consent to participating in the research project.

I understand that I am at liberty to withdraw from the project at any time, should I so desire.

SIGNATURE OF PARTICIPANT

DATE

.....

.....

Appendix 10: Research permit

TELEPHONE: 3914955

TELEGRAMS: MEWT

TELEX:

TELEFAX: 3914861

REFERENCE: EWT 8/36/4 I (36)



REPUBLIC OF BOTSWANA

MINISTRY OF ENVIRONMENT,

WILDLIFE AND TOURISM

PRIVATE BAG BO 199

GABORONE

ALL CORRESPONDENCE MUST BE ADDRESSED TO
THE PERMANENT SECRETARY

Mr Lincoln Mwaniki Njiru
Private Bag 0457
Gaborone

23 August 2007

Dear Sir,

APPLICATION FOR A RESEARCH PERMIT:
“EFFECTS OF PROTECTED AREAS ON LIVELIHOODS OF
NEIGHBOURING LOCAL COMMUNITIES: A CASE STUDY OF
MOKOLODI NATURE RESERVE, BOTSWANA”

Reference is made to your application for research permit received on the 12th July on the above subject matter.

We are pleased to inform you that you are granted permission to conduct a research entitled **“Effects of protected areas on livelihoods of neighbouring local communities: a case study of Mokolodi Nature Reserve, Botswana”**. The research will be conducted in the Mokolodi Nature Reserve.

The permit is valid for a period of **four (4) months** effective from the **27th August 2007** to the **31st December 2007**.

The permit is granted subject to the following conditions:

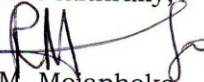
1. Signing and submission of an Agreement between Government of Botswana and Independent Researchers (enclosed).
2. Copies of any videos/publications produced as a result of this project are directly deposited with the Office of the President, National Assembly, Ministry of Environment, Wildlife and Tourism, Department of Wildlife & National Parks, National Archives,

National Library Service, Research and Development Office, and the University of Botswana Library.

3. The permit does not give authority to enter premises, private establishments or protected areas. Permission for such entry should be negotiated with those concerned.
4. You conduct the study according to particulars furnished in the approved application taking into account the above conditions.
5. The research team comprise of Mr Lincoln Mwaniki Njiru.
6. Failure to comply with any of the above conditions will result in the immediate cancellation of this permit.

Thank you.

Yours faithfully,



R.M. Mojaphoko

for/ **PERMANENT SECRETARY**

cc: Director of Wildlife & National Parks

encl.