LAND USE CHANGE AND BORDERING IN THE GREATER MAPUNGUBWE TRANSFRONTIER CONSERVATION AREA

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DECLARATION

I, **Ndidzulafhi Innocent Sinthumule**, declare that the work contained in this thesis is my own original work and that it has not been previously submitted for a degree or any other qualification at this University or any other institution.

Signed:----------

Date:----------

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ABBREVIATIONS

AC	Advisory Committees
A2A	Adirondack to Algonquin wildlife corridor
ANC	African National Congress
BBRDC	Beit Bridge Rural District Council
CAMPFIRE	Communal Areas Management Programme for Indigenous Resources
CBD	Convention on Biological Diversity
CBNRM	Community Based Natural Resources Management
CDWG	Community Development Working Group
CEO	Chief Executive Officer
CITES	Convention on International Trade in Endangered Species on Wild Fauna and Flora
COR	Certificate of Rights
DEA	Department of Environmental Affairs
DEAT	Department of Environmental Affairs and Tourism
DMR	Department of Mineral Resources
DPWM	Department of Parks and Wildlife Management
DRDLR	Department of Rural Development and Land Reform
DWNP	Department of Wildlife and National Parks
EIA	Environmental Impact Assessment
EXCO	Executive Committee
FPP	Friends of Peace Parks
FPSG	Fixed Period State Grant
GLTFP	Great Limpopo Transfrontier Park
IDP	Integrated Development Plan
IISD	International Institute for Sustainable Development
JMB	Joint Management Board
JWG	Joint Working Groups
KTP	Kgalagadi Transfrontier Park
LCC	Land Claims Court

LGPA	Limshapo Game Protection Association
LHA	Lancaster House Agreement
MDTP	Maloti-Drakensberg Transfrontier Project
MBC	Mesoamerican Biological Corridor
MDC	Movement for Democratic Change
MoU	Memorandum of Understanding
NEMA	National Environmental Management Act
NGOs	Non Governmental Organisations
NOTUGRE	Northern Tuli Game Reserve
NTP	National Parks Trust
PPF	Peace Parks Foundation
RRP	Refugee Research Programme
SADC	Southern African Development Community
SADF	South African Defense Force
SAFE	South African Fruits Exporters
SANParks	South African National Parks
TBCAs	Transboundary Conservation Areas
TBNRM	Transboundary Natural Resource Management
TBPA	Transboundary Protected Areas
TFCAs	Transfrontier Conservation Areas
TMC	Trilateral Ministerial Committee
TTC	Trilateral Technical Committee
UN	United Nations
UNESCO	United Nations Educational, Scientific and Cultural Organisation
USAID	United States Agency for International Development
WCU	World Conservation Union
WMA	Wildlife Management Area
WRI	World Resource Institute
WWF-SA	World Wildlife Fund for Nature in South Africa
Y2Y	Yellowstone to Yukon wildlife corridors
ZCC	Zion Christian Church

ABSTRACT

This study uses bioregionalism and bordering as a lens for understanding the construction of Mapungubwe as a transfrontier conservation area and the effects of that process on biodiversity, the local economy and local communities. The main assumption underlying the study is that transfrontier conservation areas are founded on principles of bioregionalism. The study is motivated by three main claims that are advanced in support of the establishment of bioregions across international borders, namely, that transfrontier conservation areas enhance biodiversity, promote economic development and improve the livelihoods of local communities. Whereas research by ecologists and conservation biologists provide scientific data on which transfrontier conservation areas are anchored, social science research has criticized these areas for neglecting, marginalizing and disempowering local communities. The nascent body of literature on transfrontier conservation is yet to clarify how transfrontier conservation areas are created as bioregions. This study pays attention to this process; concentrating on the change in land use that transpired to encourage the construction of a bioregion, and the outcome of this process on biodiversity, the local economy and local communities. It is essential to understand the bioregional process because any outcome from, or consequences of transfrontier conservation areas, hinges on that process.

The study uses theoretical insights from bodies of work on bioregionalism and border studies to identify aspects of bioregionalism that support the creation of transfrontier conservation areas. These areas are a product of a conservation planning paradigm that embraces bioregion at a larger scale as opposed to a bioregionalist social movement that encourages bioregionalism at a smaller scale. As with all types of regions, bioregions are not prearranged, but are rather socially constructed in both biophysical and social settings. This is made possible through the establishment of conservation corridors that connect patches of various land use activities across international borders.

In terms of methodology, the study adopts an interpretive approach because this approach is suitable for researching multiple social realities and their complexity. Moreover, this approach is

associated with qualitative data and encourages observation and in-depth conversation with participants in their natural setting. The interpretive approach allows for understanding the process by which land is acquired for the creation of the Greater Mapungubwe Transfrontier Conservation Areas, and the implications of the change in land use on biodiversity protection and socio-economic development. In line with the tenets of the interpretive approach, the study uses triangulation and grounded theory as methods of enquiry into data collection and analysis. Triangulation is used to relate and validate data collected through various methods, namely, interviews, observation and document analysis. Grounded theory is used as an essential research instrument to provide guidance to sampling, data collection and analysis. This theory requires that data analysis be done simultaneously with data collection throughout the research process.

The main finding from this study is that whereas conservation lobby groups claim that TFCA represents a borderless landscape; the creation of GMTFCA as a cross-border space leads to new forms of bordering, which is accompanied by twin processes of de-bordering and re-bordering. The study also found that bioregionalism in Mapungubwe depends on buying of farms as well as involving land owners. This way, bioregionalism in the study area relies heavily on white farmers holding property rights. It was found that bioregionalism is not a uniform process, and that it does not reduce the gaps between ecological and social systems. The conclusions of the study are that researching transfrontier conservation areas on one side of the border is useful for understanding the ways in which individual countries respond to the need to protect and manage biodiversity and the consequences thereof. However, findings from one part of the transfrontier conservation area do not give insight into how the entire bioregion is created. A clear understanding of the production of bioregion is a prerequisite for analyzing the consequences of this process. Research on transfrontier conservation areas demands methodologies that cover both sides of the international border. This is important since we need to know the similarities and differences that bioregionalism creates on its wake. The study draws on material from Mapungubwe to argue that transfrontier conservation do not live up to their expectations.

CHAPTER ONE

INTRODUCTION: THE MAPUNGUBWE BIOREGION

> *Mapungubwe itself is a high (30 m) isolated sandstone outcrop, some 323x78 m in extent that overlooks the confluence. Its geographical position is significant because some seven hundred years ago Mapungubwe straddled the trade routes both to the Indian Ocean and into the interior. The underlying importance of Mapungubwe, which was abandoned after 400 years of settlement in 1290 AD, is that it was for a period the largest 'kingdom'-to use a Eurocentric term-in the sub-continent* (Carruthers, 2006: 2).

1.0. Introduction

Over the years, the conservation of biodiversity has traditionally been practiced in the form of national parks and nature reserves. The common traditional techniques deployed in the management of national parks and protected areas followed the 'fence and fines' approach underpinned by ideals of *in-situ* conservation (Barrett and Arcese, 1995; Hansen and DeFries, 2007; Muchapondwa *et al*., 2009; Child, 2009a; Carruthers, 2009). The 'fence and fines' approach to conservation focused mainly on the conservation of plants and animal species, maintenance of ecosystem and ecological processes without considering communities (Ramutsindela, 2004a; Dowie, 2009; Child, 2009a; Carruthers, 2009). This exclusionary model of conservation has been under severe criticism by social scientists (Ramutsindela, 2004b; Dowie, 2009), conservation biologists (Bennett, 2003; Pence *et al*., 2003; Hilty *et al.,* 2006; Muchapondwa *et al*., 2009) and ecologists **(**Hansen and DeFries, 2007; DeFries *et al*., 2010). This is because on one hand, social scientists are concerned with the exclusion of local and indigenous people from conservation activities; especially the creation of nature reserves and national parks that led to massive removals of native communities all over the world (Dowie, 2009). On the other hand, conservation biologists and ecologists are anxious that national parks and protected areas are not large enough for the conservation and maintenance of ecological systems (Hilty *et al.,* 2006; Hansen and DeFries, 2007; Muchapondwa *et al*., 2009; DeFries *et al*., 2010). Thus, national parks and protected areas appear as isolated islands of biodiversity (Macarthur and Wilson, 1967). As a result, this does not encourage free movement of wildlife from one area to another despite the fact that protected areas, particularly in southern Africa are overpopulated by large mammals such as elephants. Furthermore, the conservation approach of 'fence and fines' does not help countries to increase land under conservation (Pence *et al*., 2003;

Ramutsindela, 2004a; Muchapondwa *et al*., 2009). With the 'fence and fine' approach or *in-situ* conservation strategy, the assumption is that protected areas alone are capable of meeting biodiversity targets of increasing the percentage of land under conservation. However, in 2010, biodiversity targets had not been met at the global level. Despite this, Parties to the Convention on Biological Diversity (CBD) adopted the Strategic Plan for Biodiversity 2011 to 2020, including a set of twenty (20) headline targets known as Aichi Biodiversity Targets (Bertzky *et al*., 2012). Aichi Target eleven (11) is the one that deals specifically with protected areas and other area-based conservation measures which aim to protect an ambitious target of at least 17% of the world's terrestrial and inland water by 2020 (Bertzky *et al*., 2012; International Institute for Sustainable Development (IISD), 2012). These biodiversity goals are particularly important in southern Africa where countries such Lesotho, Malawi, Mozambique, Namibia, South Africa, Swaziland, Zambia and Zimbabwe have less than the minimum percentage required. As a result, these countries have to find ways of releasing additional land for biodiversity conservation.

Nature conservationists and ecologists have emphasized the need to manage entire landscapes as a unit where the region in question encompasses the network of existing protected ecosystem or the unprotected ecosystem or portions of both (Margules and Pressey, 2000; Pence *et al*., 2003; Bennett, 2004; Muchapondwa *et al*., 2009). This new innovation in conservation strategies is done through the establishment of Transfrontier Conservation Areas (TFCAs) that crosses international frontiers. As Ramutsindela (2004a) has noted, TFCAs represent a shift towards transboundary cooperation as a vehicle for managing ecosystems that had been bisected by political boundaries, particularly between states. TFCAs are therefore considered as the latest conservation paradigm and a new solution to challenges of managing nature. It is anticipated that TFCA will provide answers to the most pressing conservation challenges affecting protected areas which include overpopulation of elephants (Van Aarde *et al*., 2006; van Aarde and Jackson, 2007); lack of funds and capacity in biodiversity protection (Ramutsindela, 2004a; Munthali, 2007); and low percentage of land under conservation (Ramutsindela, 2004a; Muchapondwa *et al*., 2009). In addition, it is expected that TFCA will benefit local populations particularly those living within or adjacent to the jurisdictional zones of TFCA (Katerere *et al*., 2001; Dzingirai, 2004; Jones, 2005). What is less clear in studies of TFCAs are the ways in which the TFCA process unfolds, especially the creation of TFCAs as bioregions. This study

pays attention to this process; focusing on how land use changes to enhance the creation of TFCAs and the implications of this process for biodiversity, the local economy and local communities. This thesis uses Mapungubwe TFCA straddling Botswana, South Africa and Zimbabwe as a case study.

This introductory chapter provides the background to this study, and specifically seeks to explain the emergence of TFCAs as the 21st century approach for managing protected areas. The chapter focuses on the conservation ideas underpinning the establishment of TFCAs particularly in southern Africa, and also introduces Mapungubwe TFCA. This chapter is divided into three main sections. The first section presents the statement of research problem, aim and objectives, the research questions and the contribution the study seeks to make to the study of TFCAs. The second section introduces the study area whereas the third and final section presents a brief summary of all the chapters.

1.1. Background to the research

In recent years, interests in conservation have rapidly rallied around the concept of TFCAs. This is because of the expectations it has raised in terms of economic development of impoverished local communities (Sandwith *et al*., 2001; Hanks, 2003), biodiversity conservation (van der Linde, 2001; Bennett, 2003; Bennett, 2004) and enhanced tourism (Ferreira, 2004). A myriad of concepts and corresponding terms are used to promote most of the aspirations espoused by TFCAs. These include Transboundary Conservation Areas (TBCAs) (Griffin *et al*., 1999; Mayoral-Phillips, 2002), Transboundary Natural Resource Management (TBNRM) (van der Linde, 2001; Katerere *et al.*, 2001; Wolmer, 2003), Transboundary Protected Areas (TBPA) (Sandwith *et al*., 2001; Van Ameron, 2002), Peace Parks (Peace Parks Foundation (PPFa), 2010; 2011) and TFCA (Draper *et al*., 2004; Duffy, 2006; Ramutsindela, 2007; Munthali, 2007; Spierenburg *et al*., 2008; Büscher, 2010; Noe, 2010). These terms may look different, but in essence they all refer to large conservation areas that straddle the political boundaries between two or more countries, and cover 'natural systems' that include one or more protected areas (Sandwith *et al*., 2001). This study adopts the concept of TFCA because it incorporates protected and non-protected areas and integrates them across international boundaries. It involves the state, the private sector, Non Governmental Organisations (NGOs) while affecting communities living

within and around the jurisdictional zones of TFCA. TFCAs have a long history which dates back to the creation of the first bi-national park on the United States-Canadian border, the Water-Glacier International Peace Park established in 1932 (Mayoral-Phillips, 2002; van Amerom, 2002; Duffy, 2006; PPF, 2010a) and the idea was tried in colonial southern Africa (Mavhunga and Spierenburg, 2009). By 1988 the idea had taken root within the World Conservation Union (WCU). Initially the WCU identified 70 potential TFCAs in 65 countries around the world, but by 2012 this figure had increased to 227 transboundary protected area complexes incorporating 3,043 individual protected areas or internationally designated sites. It was in Africa, however, that the peace parks concept truly sparked into life (PPF, 2012a). The courageous dream of contiguous TFCAs in southern Africa was realized in the early 1990s when the late Anton Rupert, a South African business tycoon, made formal proposals for TFCAs with the support of his long-time friend, the late Prince Bernard of the Netherlands (Spierenburg and Wels, 2010; Ramutsindela *et al*., 2011). The signing of the Southern African Development Community (SADC) Protocol on Wildlife Conservation and Law Enforcement on the 18th August 1999 and the formation of the PPF on 1st February1997 provided a momentum for the establishment of TFCAs in the region. In addition, as Ramutsindela (2004b) has noted, the post-apartheid political, socio-economic and historical circumstances also created conditions for the establishment of TFCAs in the region. According to the PPF which is a NGO created with the purpose of stimulating and facilitating the development of transfrontier conservation areas in the region[1] (van Amerom and Büscher, 2005; Duffy, 2006), there are currently 13 TFCAs of varying sizes that have been listed as proposed or legislated in the southern African region (PPF, 2009; 2010a; 2011). Of the 13 TFCA in southern Africa, three treaties have been signed, seven Memorandums of Understanding (MoU) signed, two MoU are pending, and two TFCAs are at conceptual phase (Appendix One).

There are a number of reasons why TFCAs have been pushed in southern Africa. These include the potential for TFCAs to help manage the elephant population. For instance, the establishment of Great Limpopo Transfrontier Park (GLTFP) created a bigger ecological space which allowed park officials to relocate excess elephants from Kruger National Park into Mozambique

[1] Region is Southern African Development Community (SADC).

(Ramutsindela, 2004b). With the exception of Angola, the southern African countries[2] are all signatories of the United Nations (UN) Convention on International Trade in Endangered Species on Wild Fauna and Flora (CITES) and as a result culling is not an option. TFCAs therefore create bigger ecological range which encourages free movement of elephants from one country to another.

There has been growing recognition that most governments in southern Africa are failing to sustain effective management of their protected area systems principally due to lack of funding, capacity and political will. As a result, most state protected areas agencies are unable to employ sufficient numbers of qualified staff and fail to provide the requisite infrastructure and equipment that can fulfill the management requirements of protected areas (Munthali, 2007). It is therefore acknowledged that conservation problems demand international cooperation and collaboration because the effects of those problems are not state bound (Ramutsindela, 2004b). This necessitates the integration of protected areas that are in close proximity yet separated by international boundaries to be managed as TFCAs. As Ramutsindela (2004b) has noted, biodiversity is presented as a global heritage and therefore its protection becomes the responsibility of international community. It is anticipated that cooperation, collaboration and joint management of biodiversity by participating countries will help to resolve conservation problems.

There has been a growing concern by conservation biologists that although national parks and protected areas are vital for the maintenance of the biodiversity of any country, they are not sufficient solution for biodiversity conservation despite adequate management within their borders (Shafer, 1995; Miller, 1996; Trisurat, 2006; Hilty *et al.,* 2006; Hansen and DeFries, 2007; Muchapondwa *et al*., 2009). This is because genetic, taxonomic and ecological diversity manifests itself throughout the whole system and not only in protected areas (Miller, 1996), and individual protected areas lack collaboration beyond the legal boundaries (Trisurat, 2006). Hansen and DeFries (2007) observe that changes in land use outside protected areas can alter ecological function inside protected areas and result in biodiversity loss given that protected

[2] Southern African countries are Angola, Botswana, Lesotho, Madagascar, Malawi, Mauritius, Mozambique, Namibia, South Africa, Swaziland, Zambia, and Zimbabwe.

areas are almost always parts of larger ecosystems. Furthermore, large and continuous areas of the original habitats have been both reduced in area and divided into fragments by political boundaries drawn arbitrarily (Hanks, 2003). These limitations of national parks and protected areas form a compelling argument for a much more comprehensive approach to protect biodiversity even beyond protected areas. Conservation biology approaches encourage the development of habitat corridors as a conservation tool to increase connectivity between habitat islands into a continuum of habitat across the border (Bennett, 2003; Bennett, 2004; Caro *et al*., 2009). This notion is also supported by island biogeography theory which considers that reserves and national parks form islands inside human-altered landscapes (habitat fragmentation) (Macarther and Wilson, 1967; Lomolino *et al*., 2010). These arguments have therefore provided a scientific rationale for the establishment of transboundary environmental management. TFCAs are therefore intended to restore connectivity between parts of an ecosystem. It is anticipated that migration corridors will increase the movement of wildlife between parks and reserves and therefore increase the number of species that can be supported. In addition to scientific reasoning, TFCAs have also been pushed on the grounds of economic and political imperatives as highlited later in this chapter.

This study seeks to understand TFCAs from the vantage point of bioregionalism (cf Chapter Two). This is necessary because the idea of bioregion was used to support the creation of TFCAs in southern Africa (Wolmer, 2003; Ramutsindela, 2004a). As we shall see later (cf Chapter Two), bioregionalism promotes the idea that ecological systems should be protected or re-established at a larger scale. This study focuses on the Greater Mapungubwe TFCA (GMTFCA) which is one of the proposed TFCA in southern Africa between Botswana, South Africa and Zimbabwe. The Mapungubwe bioregion is selected on the basis of the rich biodiversity of the area, its scenic beauty and the cultural importance of the archaeological treasures of Mapungubwe. The area supports populations of big game, including the famous Tuli elephant, all major predators. It offers the potential for the development of a viable, consumptive and non-consumptive tourism industry (GMTFCA TTC, 2010). The similarity of ivory objects, pottery remains and imported glass beads excavated at different sites that spread across the modern international boundaries of Botswana, South Africa and Zimbabwe, attests to the cultural affinity of the people who lived in the region during the Iron Age period (GMTFCA TTC, 2010).

The cultural significance of the area has led Mapungubwe cultural landscape to be proclaimed the World Heritage Site by United Nations Educational, Scientific and Cultural Organisation (UNESCO) on 5th July 2003 (PPF, 2006; 2009; 2012; SANParks, 2008a). The inclusion of Mapungubwe cultural landscape as a world heritage site confirms the significance of the area in southern Africa. Mapungubwe cultural landscape is the home of the major famous Golden Rhino[3], a symbol of the power of the king of Mapungubwe people who inhabited the Limpopo River Valley between 900 AD and 1300 AD. At the time, Mapungubwe had developed into the largest kingdom on the subcontinent (Huffman, 2000; 2008; Tiley-Nel, 2006; Carruthers, 2006). Based on this history, the GMTFCA is established at the confluence of Limpopo and Shashe Rivers in order to jointly manage the archaeological, cultural and natural landscape, and for the promotion of sustainable tourism. The Mapungubwe bioregion is therefore generally regarded as the cultural TFCA, with a strong focus on the Iron Age landscape linked to Mapungubwe and Great Zimbabwe, as well as the early settler or colonial history (GMTFCA TTC, 2010). The cultural aspects make Mapungubwe TFCA to be completely different from other TFCAs in southern Africa.

The idea of a TFCA at the confluence of Limpopo and Shashe has a long history that dates back to 1922 from an initiative of General Jan Smuts who was then Prime Minister of the Union of South Africa. It would have been the first formal trasfrontier park in Africa, because the neighboring Rhodesian[4] (now Zimbabwe) government and the colony of Bechuanaland[5] were willing to cooperate in the venture (Carruthers, 2006; 2009). Unfortunately, the establishment of a TFCA at the confluence created political differences between Smuts' government (United Party)[6] and the opposition (National Party)[7] that eventually led to its abolishment by the National Party after winning the election in 1948 (Carruthers, 2006; 2009) (cf Chapter Two).

[3] Golden Rhino is statue made of gold foil tacked with tiny pins around a wooden core retrieved from a royal burial site on Mapungubwe hill in Limpopo in 1933 (PPF, 2007).

[4] Rhodesia is a former colony of Britain which is now Zimbabwe.

[5] Bechuanaland is a country of Tswana speaking people, which is now Botswana.

[6] United Party was South Africa ruling party from 1934 to 1948.

[7] National Party was South Africa ruling party from 1948 to 1994.

Over the last two decades, Mapungubwe region has undergone a transformation similar to that proposed by General Smuts. The idea of developing a TFCA that crosses the Limpopo and Shashe Rivers has frequently been discussed informally on either side of Limpopo River. A workshop sponsored by PPF, which included participants from Botswana, South Africa and Zimbabwe was held in May 1999 at the Matops in Zimbabwe (Cumming, 2003). The purpose of the workshop was to discuss the possibility of initiating a TFCA at the confluence of Limpopo and Shashe Rivers. Interest in developing a TFCA in the Mapungubwe region has since gained momentum with several meetings held. The dream of establishing the TFCA at the confluence of Limpopo and Shashe Rivers was finally realized with the signing of the MoU by the Ministers of the three countries on 22nd June 2006 (MoU, 2006a).

The purpose of signing the MoU in the TFCA process is to formalize an intention to conserve the natural and cultural resources of the area transcending the international boundaries among the participating countries. Thus, the signing of MoU expresses the intentions by countries to work together towards the establishment of a TFCA across the border. As captured in the MoU, the purpose of establishing GMTFCA is conservation of biodiversity and cultural heritage resources, socio-economic development and public enjoyment (MoU, 2006). Since the signing of MoU, there have been major developments towards the creation of Mapungubwe TFCA. On 19th June 2009 the interim name Limpopo/Shashe was changed to GMTFCA by the Ministers of the three partner countries. The Ministers of the three countries indicated that the decision to change the name of the TFCA was based on the need for a name that accurately reflected the uniqueness of the TFCA, adding that the name Greater Mapungubwe was preferred because all three countries had sites called Mapungubwe (PPF, 2009). In addition, the Integrated Development Plan (IDP) for the TFCA in the Mapungubwe region was finalized by the Trilateral Technical Committee (TTC) in 2010 and distributed to all stakeholders. The IDP is the primary overarching planning document that forms the framework for operations and implementation. It provides the strategic guidelines, strategic business plan and concept development plan for the management, utilisation and development of the Mapungubwe TFCA within the constraints of the existing environment (GMTFCA TTC, 2010). Furthermore, the TTC has also finalized a draft treaty which is yet to be signed by the state presidents of the three countries. The main thrusts of GMTFCA as captured on the draft treaty are to foster transnational collaboration and co-operation between the Parties,

promote alliances in the management of biological natural resources and cultural heritage resources, ecotourism and enhance ecosystem integrity and natural ecological processes (GMTFCA Draft Treaty, 2011).

It is clear from the literature that the Limpopo Valley has been inhabited by people since 900 AD (Carruthers, 2006; Tiley-Nel, 2006; Huffman 2009). The people who inhabited the area had cattle, agricultural fields and the ability to mine and smelt iron and gold (Carruthers, 2006). Undoubtedly, the pre-colonial human presence in the region should have altered the environment substantially due to different land use activities. Since then, land use change has occurred on both sides of the Limpopo River. This historical land use change in the Mapungubwe region is not the focus of this study. Rather this study focuses on the creation of GMTFCA between 1994 and 2010 and changes in land use that were instrumental to this process.

1.2. Statement of research problem

The concept of TFCA is gathering momentum and has become an important dimension of environmental protection all over the world. The sudden rise of the concept is due to several reasons and claims by the supporters of TFCA. The most cited ecological reasons for establishing TFCAs are to protect internationally shared ecosystems, such as watersheds and biodiversity assets; increase the area available for wildlife and plant populations thereby reducing the extinction risk due to stochastic events; and re-establish seasonal migration routes (Sandwith *et al.*, 2001; Hanks, 2003; Munthali, 2007). In addition to these ecological reasons, the TFCA concept is being accepted as a means of driving economic growth through regional integration and development; promotion of peace and security (de Villiers, 1999; Katerere *et al.*, 2001; Hanks, 2003) but is also seen as a product of globalization and the agenda of international donors and organizations (Katerere *et al.*, 2001; Wolmer, 2003; Ramutsindela, 2004b; 2007; Duffy, 2001; 2006). The claims about TFCAs provide a useful lens for analyzing the emergence of TFCA in post-apartheid southern Africa.

As a starting point, this study investigates the creation of the GMTFCA as a bioregional process. The underlying assumption is that any outcome from, or consequences of TFCAs hinge on the ways in which the bioregion is created. The process that produces a TFCA is also useful for

understanding the similarities and differences that might emerge from TFCAs (cf Chapter Seven). Furthermore, where they exist, the commonalities and dissimilarities call for sensitivity to conclusions drawn about TFCAs. In addition to the process of creating TFCA, the study also evaluates the claims that are made by proponents of TFCAs. A critical and independent analysis of the drivers of TFCAs is necessary to see if they live up to their expectation. This study assesses the three main thrusts that are advanced in support of TFCAs; namely, that TFCAs enhance biodiversity management; promote local economic development; and improve the livelihoods of local communities (cf Chapter Four, Six and Seven). The study uses the GMTFCA spanning Botswana, South Africa and Zimbabwe to assess these claims in the context of the unfolding TFCA process.

1.3. Aim and objectives of the study

The main aim of the study is to investigate the creation of Mapungubwe TFCA as a bioregion through the lens of land use change and bordering and to analyse the environmental and socio-economic consequences arising from that process. In order to realize the overall aim of the study, three objectives are formulated. The first objective is to understand the creation of Mapungubwe as a bioregion; the second is to analyze the environmental outcomes of the TFCA; and the third is to determine the social and economic implications of the establishment of the Mapungubwe TFCAs on local communities.

1.4. Research questions

Several questions arise with regard to GMTFCA and the impact it has in the study area. Two key questions guide research in this study. The first question is how Mapungubwe is constituted as a bioregion? Answers to this question are crucial for the first objective of the study, namely, understanding the creation of Mapungubwe as a bioregion. The second question, which covers objectives two and three is; what are the implications of land use change on biodiversity management, local economy and communities?

1.5. Significance of the study

Although protected areas have been in locations spanning international boundaries for years, the concept of TFCAs only gained momentum in southern Africa in the early 1990s in part as a

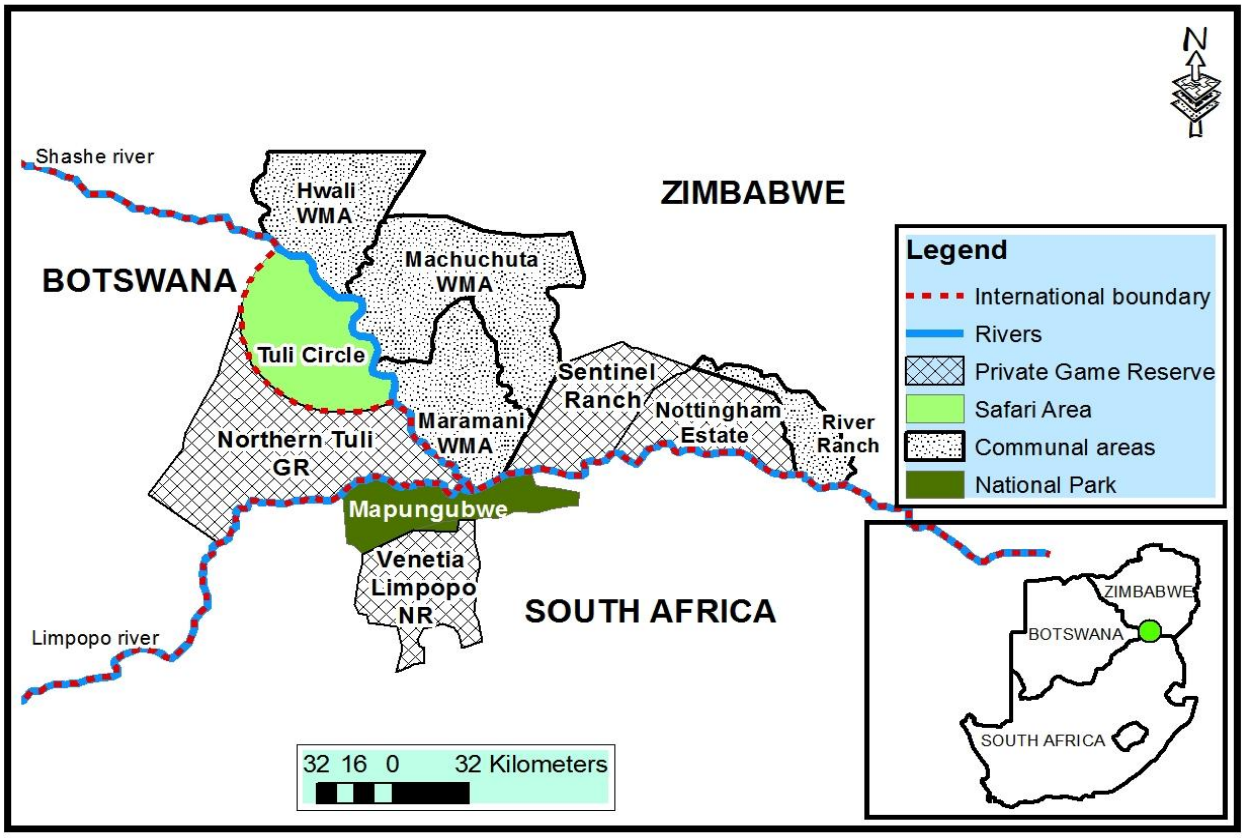
result of the understanding that, since ecosystems cross human created national boundaries, good ecosystem management and conservation of biodiversity requires co-operation between neighbouring states (Bennett, 2003; Bennett, 2004). As a result, TFCAs have become an important theme in environmental management. Literature on TFCAs has focused on the potential for TFCA to conserve biodiversity, promote peace and socio-economic development (de Villiers, 1999; Hanks, 2003; Sandwith *et al*., 2001). Social science research on TFCAs can be categorised into general critiques (Duffy, 2001; Wolmer, 2003; Van Ameron and Büscher, 2005; Ramutsindela, 2004b; 2007), specific criticisms of TFCAs and local communities (Metcalfe, 2003; Jones, 2005; Spierenburg *et al*., 2008), the evaluation of TFCAs as part of global environmental governance (Duffy, 2001; 2006; Ramutsindela, 2004b; 2007), and an exposition of TFCAs as a neoliberalization of conservation (Dressler and Büscher, 2008; Büscher, 2010). There are two main research approaches that are used to study TFCAs. One approach involves studying TFCAs on both sides of the border. This approach helps to make comparison of different activities happening across the border and to understand whether those activities are the product of the TFCA process. A number of studies on TFCAs have followed this methodological approach. For example, Ramutsindela (2004) and Herbst and Mills (2010) studied both sides of the border on the KTFP between Botswana and South Africa. Similarly, Büscher (2010) reported on both sides of the borders on the Maloti-Drakensberg Transfrontier Project (MDTP) between Lesotho and South Africa. Another method involves studying TFCA on one side of the border. This helps to understand how conservation matters are handled from a country's perspective. Literature suggests that most of the research on TFCAs has been conducted on one side of the border. For instance, in GLTFP between Mozambique, South Africa and Zimbabwe, some scholars explained the implications of TFCA on communities on the Mozambican side of the TFCA (Ferreira, 2006; Milgroom and Spierenburg, 2008; Lunstrum, 2010), others explored the implications of Zimbabwe's involvement in the TFCA (Wolmer, 2003) whereas Dressler and Büscher (2008) studied the Community Based Natural Resources Management (CBNRM) crises on the South African side of the TFCA. In addition, in the creation of GLTFP, Whande (2007) and Whande and Suich (2009) reported on the South African side of the TFCA. In the creation of Selous-Niassa TFCA across the Tanzania-Mozambique border; Noe (2010) covered the Tanzanian side of the TFCA. All of these studies have only focused on one side of the border whereas the conclusion made seems to be about the entire

TFCA. This study approaches the Mapungubwe TFCA as a whole rather than in parts. The study uses this methodological approach in order to understand possible commonalities and dissimilarities across the border, and to know whether the outcomes are as a result of the process of creating the TFCA or not (cf Chapter Seven). The study suggests that failure to research both sides of the TFCA is akin to studying national parks in isolation. In addition to this, most studies on TFCA have followed a narrow disciplinary focus. The social science focuses only on the social component of the TFCA (Metcalfe, 2003; Spierenburg *et al*., 2008) whereas biological science focuses only on the biophysical component (Rouget *et al*., 2003; Rouget *et al*., 2006). This research pays attention to the scope of the social and biophysical attributes of TFCAs using Mapungubwe as an example of how this could be archieved.

1.6. The study area

The GMTFCA is located at the confluence of the Limpopo and Shashe Rivers, on the international boundaries between Botswana, South Africa and Zimbabwe (Figure 1.1). On the Botswana side, the land committed to the TFCA is the Northern Tuli Game Reserve (NOTUGRE) which is entirely owned by private land owners. A full discussion on land ownership is given in Chapter Four. NOTUGRE is in Bobirwa area on the extreme northeast of Botswana, and is bordered by the Shashe and Limpopo Rivers, which serve as 'natural boundaries' between Zimbabwe and South Africa (de la Harpe and de la Harpe, 2004; Grafhorst, 2012). It was established in the 1960s when a total of 36 farmers in the area agreed to pull down their fences to allow free movement of wildlife. The reserve extends over an area of approximately 75 000 ha, making it one of the largest privately game sanctuaries in Africa (de la Harpe and de la Harpe, 2004; Grafhorst, 2012). On the South African side, the land committed to the TFCA is in the Vhembe District Municipality bordered by the Limpopo River, which serves as a border between Botswana, South Africa and Zimbabwe. The land is made up of Mapungubwe National Park, contracted freehold land that is not owned by South African National Parks (SANParks) but found within Mapungubwe National Park and World Heritage Site, and Venetia Limpopo Nature Reserve, which combined together constitute 55 000 ha (cf Chapter Four).

Figure 1.1: Greater Mapungubwe TFCA.



Source: GMTFCA TTC, 2010

On the Zimbabwean side, the proposed component of the TFCA is in Beit Bridge District in the southern part of the country. Beit Bridge District is one of the seven districts of Matebeland South Province. There are a total of 14 wards in Beit Bridge District and of the 14 wards, ward 6, 8 and 9 fall within the proposed Zimbabwean component of the TFCA. The land committed to the TFCA is Tuli Circle Safari Area (part of the Zimbabwean national conservation estate), the western portions of the Machuchuta Wildlife Management Areas (WMA)[8] along the Shashe River, the western and eastern portions of the Maramani WMA, River Ranch WMA, Sentinel Ranch and Nottingham Estate which combined together constitute 130 000 ha (GMTFCA TTC, 2010) (cf Chapter Four).

[8] Wildlife Management Areas (WMA) is village land set aside for protection of wildlife and managed by local communities. In Zimbabwe, Machuchuta, Maramani and River Ranch are Wildlife Management Areas that are part of Mapungubwe TFCA.

Mapungubwe region is characterized by high temperatures, very poor soils and low erratic rainfall. The area lies between 500 m and 700 m above sea level. Rainfall usually falls during the summer months between October and March. The primary determinant of plant growth and productivity in the area is low and uncertain, with a long-term mean annual rainfall of 334 mm at Beitbridge, 360 mm at Tuli (Cumming, 2003) and 350 mm to 400 mm in Mapungubwe area (Götze *et al.*, 2003). Evaporation from free water surfaces is in excess of 2 500 mm per annum for the largest part of the area (Götze *et al.*, 2003; Cumming, 2003). The vegetation is mostly low, open mopane veld (*Colophospermum mopane*) with *Commiphora* and *Combretum* species. Very attractive *Acacia* woodlands occur on riparian fringes and areas of alluvial soils (Cumming, 2003).

1.7. Guide to chapters

The thesis is organized into Seven Chapters. Chapter Two presents bioregionalism and bordering as a conceptual orientation of the thesis and data analysis. As with all types of regions, bioregions are not pre-given but are rather constructed in both biophysical and social settings (see discussion on regions in Agnew, 2008; Paasi, 2009; Ramutsindela, 2013). This is made possible through the creation of ecological corridors that connect biophysical and social spheres, and habitats on both sides of the border. Furthermore, the chapter discusses different ways in which corridors are created with different implications on the communities living in the area. The chapter also explains how local communities who have been alienated during colonial and apartheid[9] eras are incorporated into the TFCA arena. The chapter highlights that communities' rights in land have implications on how they are incorporated into areas earmarked for TFCAs. The chapter uses the case studies on TFCAs to demonstrate that the establishment of TFCAs particularly in southern Africa has led to the marginalisation of communities, relocation of communities, poor consultation, limitation in the use of the land, reduced access to resources and human-wildlife conflict. It sets the foundation for investigating GMTFCA and the results presented in Chapters Four to Six.

[9] Apartheid was a system of racial segregation imposed through legislation by white government minority to black majority.

Chapter Three presents a research methodology and the techniques that have been employed to collect and analyse data. The chapter explains the research design that connects research questions, approach followed, techniques of inquiry and methods of data collection. It specifically explains the interpretive and qualitative approaches followed and how the results of the study are validated through the use of triangulation. Furthermore, it also details how grounded theory method is used to guide sampling, data collection, and analysis. The chapter gives a synopsis of sampling method employed as well as the sample size. It highlights primary and secondary data sources used in this study and explains the data collection techniques such as interviews, observation and documents analysis.

Chapter Four examines how the process of creating Mapungubwe bioregion unfolds and how the bioregion is managed to promote the protection of natural resources. In particular, the chapter explaines land acquisition for the purpose of the TFCA on both sides of the border. It notes that Mapungubwe bioregion is created through the acquisition of state land (national parks), private land and communal land. Communal land[10] incorporated into the TFCA appears in the form of WMAs. WMAs have become an important tool for establishing and expanding conservation areas across the border because of their position around protected areas. The chapter also pays attention to challenges that threaten the creation of Mapungubwe bioregion such as mining, commercial agriculture, habitat fragmentation (land consolidation), incompatible land use practices and differences in the utilization of wildlife resources. At the time of writing in Februray 2014 there was no joint management of biodiversity in Mapungubwe, and each country was still responsible for managing its own natural resources.

Chapter Five explains the property and natural resource rights in the Mapungubwe region. It highlights that without property right in land, it becomes difficult to consolidate land for the creation of a bioregion. It observes that Mapungubwe region is dominated by private land owners who are not interested to sell their land or to be part of the TFCA. This has implications for the creation of Mapungubwe bioregion. A critical component of this chapter is the examination of land reform programmes on both sides of the border. The main issues emerging

[10] Communal land is a rural village land occupied by communities rather than an individual or a company.

from this study are that the land reform programme in Botswana has little or no impact on the creation of the TFCA. On the South Africa side of the bioregion, the study found that the whole of Mapungubwe National Park has been claimed and the land claims are still pending. On the Zimbabwe side, land redistribution has introduced War veterans[11] as the legitimate land owners of portion of Sentinel and Nottingham. However, the study found that, whereas all other land owners have been informed and involved in the establishment of Mapungubwe bioregion, this is not the case with War veterans.

Chapter Six uses empirical data to argue that the creation of Mapungubwe bioregion has sidelined the local communities who are important stakeholders. It provides evidence of the ways in which local communities who have interest in the resources within the areas earmarked for TFCA, are pushed to the margins during the creation of Mapungubwe bioregion. The chapter further highlights that the establishment of Mapungubwe TFCA is mainly top-down with decision taken at the higher level without the involvement of local communities. This has limited the potential of local communities to participate and influence decisions in the establishment of GMTFCA. Taken as a whole, the establishment of Mapungubwe bioregion has led to the disempowerment of local communities, which Dzingirai (2004) alluded to. The chapter uses economic indicators on both sides of the border to assess the space economy of the region, especially tourism and investment trends within and outside the GMTFCA. It was found that the creation of Mapungubwe TFCA has not yet contributed to economic development in the region. The chapter has also discusses land use conflict and the implications it has on both communities and commercial irrigation farmers. Land use change has huge implications for farm workers who are threatened with job losses, interrupted livelihood and dislocation from the farmland area. On the whole, the chapter demonstrates that the claim that TFCA involve local communities is not realized in the creation of Mapungubwe bioregion.

Chapter Seven provides the overall conclusion of the study and reflects on key insights of the study and their usefulness for researchingTFCAs. It provides answers to the research questions that guide the study while relating these questions to the aim and objectives of this thesis as a

[11] War veterans are freedom fighters in Zimbabwe.

whole. On the contribution to knowledge, the study found that, in contrast to the claims by conservationists that TFCA represents a landscape that is free of borders; the creation of GMTFCA as a cross-border space leads to new forms of bordering that are accompanied by conflicting and simultaneous processes of de-bordering and re-bordering. In addition, the study concludes that the methodological approach of investigating both sides of the border offer much potential to the study of TFCA. This is because the approach is able to pinpoint the differences and similarities of activities across the frontier which cannot be obtained by studies that report on one side of the border. Furthermore, the study found that the use of bioregional approach in TFCA research is affected by social systems that are not similar across the border. This makes the creation of a bioregion a complex undertaking. The main findings of the study are that although there are signs of promoting biodiversity in the Mapungubwe region, the establishment of Mapungubwe TFCA did not consult and involve local communities who are within and around the jurisdiction of the TFCA. In addition, the creation of Mapungubwe TFCA has not yet contributed to local economic development in the region. Overall, the study found that TFCAs do not live up to their expectations as demonstrated by the creation of Mapungubwe bioregion. To make sense of these findings, the next chapter gives a theoretical review of TFCA as a bioregional project in both biophysical and social milieus, and also reflects on claims made by supporters of TFCAs.

CHAPTER TWO
THEORETICAL REFLECTION ON TRANSFRONTIER CONSERVATION AREAS AS A BIOREGIONAL PROJECT

2.0. Introduction

This chapter discusses bioregionalism and bordering as a body of literature necessary for understanding the creation of the GMTFCA. The assumptions underlying the chapter and the study as a whole are that TFCAs are founded on principles of bioregionalism that are in turn couched in the language of environmentalism, regional integration and sustainable livelihoods. The study of TFCAs can shed light on bioregionalism as a process, especially how it unfolds and the outcomes it generates (cf Chapter Seven). The central argument of this chapter is that a bioregional perspective is relevant for understanding TFCAs because bioregionalism seeks to integrate social, economic and ecological factors at a landscape level (cf Chapter Four). As Wolmer (2003) has noted, bioregionalism describes people, wildlife and landscapes as organic, continuous systems wherein humans should live in harmony with nature within 'natural boundaries'. Thus, the ideals of bioregionalism inform much of what TFCAs are about.

The structure of this chapter is as follows: in the first part I reflect on the different perspectives on TFCAs in order to link bioregional perspectives with the study of TFCAs. The second section is devoted to schools of thought on bioregionalism and bordering processes; and the links between bioregionalism and bordering with TFCAs. In the third section I discuss conservation corridors and their roles towards re-creating bioregions. These corridors are significant in that they bring the impact of bioregionalism and TFCAs to the forefront. It is for this reason that the fourth section focuses on communities, especially how they are impacted by TFCA projects.

2.1. Perspectives on the study of transfrontier conservation areas

Different perspectives have been used to explain the emergence of TFCAs. In southern Africa, the primary driver of TFCA is the PPF whose mission is to facilitate the establishment of these conservation areas and the development of human resources necessary to manage them (PPF, 2009; 2010a). Proponents of TFCA consider them 'Peace Parks' (de Villiers, 1999; Sandwith *et al*., 2001; Hanks, 2003), and this concept is used for marketing TFCA projects to political

leaders in post-apartheid southern Africa. It is claimed that the establishment of Peace Parks in the region will provide a non-military model for addressing conflicts and promoting stability in the region through the encouragement of inter-state collaboration and cooperation (Zbicz and Green, 1997; Griffin, 1999; de Villiers, 1999; Sandwith *et al*., 2001; Van der Linde *et al*., 2001; Budowski, 2003; Hanks, 2003). This begs the question of the extent to which the establishment of a TFCA fosters or builds peace and stability in the southern African region. Why are TFCA not introduced in countries where there are conflicts? Surprisingly, TFCAs are often introduced into areas experiencing little or no conflicts; making this assumption problematic. In addition, other proponents of Peace Parks also assume that these parks will re-unite communities that had been divided by colonial boundaries (Griffin, 1999; Van der Linde *et al*., 2001). This pleads the question of the extent to which the establishment of TFCA re-unite communities that had been divided by colonial boundaries in southern Africa. Furthermore, how possible is it that TFCA can re-unite communities divided by colonial borders since communities on each side of the border are ruled by governments with different laws that are not always compatible? As Wolmer (2003, p. 265) has noted, "it appears very unlikely that southern African governments will be willing to cede any power or territory to the ethnic groups spanning their borders and TFCA is likely to cause inter-state disputes rather than to assuage them".

Rather than TFCAs simply being about conservation of biodiversity, other scholars consider them a kind of regulated globalisation which aims to gain control over unmanaged and unregulated wild places sited around international borders (Duffy, 2001). This perspective suggests that, by expanding conservation areas, TFCAs might erode national sovereignty by imposing a global governance structure. Since TFCAs are always in border areas, they are perceived as projects that necessarily require nation states to cede sovereign control over a piece of territory to a transnational management authority. However, it is argued that rather than requiring the state to relinquish its sovereign control over parts of its territory, in fact such areas often assist in extending state power over areas that had been previously beyond the reach of law enforcement and other government agencies (Duffy, 2001; Lunstrum, 2013). As Lunstrum (2013) has noted, with the help of international donor funding, the Mozambican government extended its control over Coutada 16 space (the Limpopo National Park's precursor) through the establishment of GLTFP. Since TFCAs are sited around international borders, the advocates of

global governance argued that expanding conservation areas across political and artificial human-imposed administrative boundaries will have implications on national sovereignty (Van Amarom, 2002; Wolmer, 2003; van Amerom and Büscher, 2005; Duffy, 2006). Questions are raised about who has decision-making power and control over the area from global to local scales, and how will decision makers be held accountable (as an issue of governance). It might be expected that such ambitious transnational schemes for environmental management run into difficulties and encounter multiple problems at the implementation stage. This is because TFCAs are established in areas that are filled with multiple networks that are equally interested in gaining access and competing for control over the resources (Wolmer, 2003; Duffy, 2006). The involvement of a wide range of actors with varying interests can lead to potential conflict and power struggles among them. This has the potential to prolong disagreements between the actors involved (Van Amarom, 2002).

There are views that TFCAs are largely an expression of the philosophy of bioregionalism (Hughes, 2002; Wolmer, 2003; Ramutsindela, 2004a, b; Ferreira, 2006) that focuses on the bioregion as a unit of management (Miller, 1996). Bioregionalism seeks to address environmental problems by integrating human societies with their ecological support systems, working within ecological rather than artificial boundaries created by bureaucracies (Brunckhorst, 2000; 2002). Bioregionalism promotes large-scale conservation. This is done by joining together adjacent protected areas across international boundaries as discussed in Chapter Four. According to Ramutsindela (2004a), in Africa, the notion of a bioregion represents a reincarnation of the vision of what the continent once looked like before colonialism.

For others, TFCAs manifest neoliberalism in conservation (Dressler and Büscher, 2008; Büscher, 2010). They offer the potential for opening up new spaces for business opportunities to local elites and, mainly, international corporations. This is made possible through privatisation of available land for, among other things, golf and recreation estate and general tourism. Some conservation land is made available to private organisation through joint ventures with local communities whereas some land is leased to private organisations. In this way nature is progressively commoditised (Wolmer, 2003; Dressler and Büscher, 2008; Büscher, 2010). TFCAs are also serving as marketing brands that aim to lure private sector investment in the

southern African region (Büscher, 2010) and feeding into the process of regional economic integration (Wolmer, 2003). According to Wolmer (2003), the role of the state is to provide an enabling environment to stimulate private sector involvement. Supporters of TFCAs in southern Africa have consistently argued that the economic rationale for these conservation areas is the development of ecotourism (Griffin, 1999; Hanks, 2003). This pleads for the question whether ecotourism provided by TFCA is any different from the one provided by national parks and other protected areas. How reliable is ecotourism in the region and who benefit from it? Some scholars argued that TFCAs enable economies of scale to be exploited and provide an opportunity for the private sector (and donors) investment in ways that reduce local users investment in, or pull them off, their land (Dressler and Büscher, 2008). With massive funds necessary for large-scale ecoregional planning initiatives, large conservation organisations are becoming increasingly business-like entities. These funding structures as well as the managerial tools for these large-scale and top-down initiatives inevitably privilege big conservation (transnational conservation) organisations at the expense of grassroots or even national conservation organizations (Wolmer, 2003; Dressler and Büscher, 2008).

The Mapungubwe TFCA does not only involve the linkages of parks, but also bring together communal lands (affected communities), private game farms and national parks on both sides of the border (cf Chapter Four). A bioregional model has been adopted in order to combine these varying land use activities to be managed as a single entity. TFCAs involve the combination of various patches of land with different land use activities to be managed together across human imposed borders. This concurs with the idea of bioregionalism, i.e. promoting large-scale conservation across landscapes thereby making administrative borders irrelevant to the organization of spaces of conservation. In addition, bioregion promotes broad-scale conservation such that landscape connectivity becomes a socio-ecological imperative. An understanding of bioregionalism and bordering is important as both processes are involved in the creation of cross-border TFCAs. The section below explains some fundamental tenets of bioregionalism and bordering; and theoretically integrate bordering and bioregionalism in the creation of cross-border bioregions in the form of TFCAs.

2.2. Understanding bioregionalism and bordering processes

There are two schools of thought regarding bioregionalism. The first school of thought relates to a social movement that intends to restore and maintain local natural systems from destruction in order to satisfy basic human needs (Berg, 2002). Bioregionalism as a philosophy of social movement has emerged largely from North American counterculture in the late 1960s (Aberley, 1999). Aberley (1999) considers bioregionalism as a story best learned by listening over long period of time to many voices. This means that bioregionalism is a combination of different views, ideas and practices from people with various backgrounds. As a result, different people see bioregionalism in different ways; making it difficult to confine bioregionalism to one meaning. Dodge (1981) considers bioregionalism as government by life; Sale (2000) defines it as fluid and organic, whereas Aberley (1999) sees it as a body of thought and related practice that has evolved in response to the challenge of reconnecting socially-just human cultures in a sustainable manner to the region-scales in which they are irrevocably imbedded. Although there are differences of opinion regarding bioregionalism, bioregionalists share a common vision that the earth consists of contiguous but discrete natural regions which are considered bioregion (Dodge, 1981; Sale, 1985, 2000; Aberley, 1999; Berg, 2002).

According to Sale (1985), bioregion is a place defined by its life forms, its topography and its biota, rather than by human dictates; a region governed by nature, not legislature. A bioregion in this perspective is defined in terms of the unique overall pattern of natural characteristics that are found in a specific place (Berg, 2002). The main features are generally found throughout a continuous geographic terrain and include a particular climate, local aspects of seasons, landforms, watersheds, soils, and native plants and animals (Sale, 1985; Aberley, 1999; Berg, 2002). Each one of these features leads to bioregions of different sizes. According to this view, the final boundaries of a bioregion are best described by people who live within it, through human recognition of the realities of living-in-place (Aberley, 1999). In this sense, the boundaries of a bioregion are defined by both biophysical elements and the practices of human culture living in an area. Human culture becomes a critical element that distinguishes the concept of bioregion from similar ecological entities or any natural science ecological concept (Traina, 1995; McGinnis, 1999). In traditional environmental practices, local or indigenous people have often been ignored. In fact, local or indigenous people were considered as poachers and

interlopers rather than as integral component of a natural community (Traina, 1995). This has led to the battle between natural and social sciences, with natural sciences pressing for the expansion of protected area and protection of biological diversity on one hand and social sciences pushing for the rights of local communities to own and use natural resources, including land, on the other hand. The bioregional idea promotes the integration of the two opposing components (human culture and nature) to be managed as a single entity (Traina, 1995). The rationale behind the integration of people and nature is clear from Sale (2000) who argued that people will tend to protect the place and the environment on which they live and depend on. This is only possible at a smaller scale or at a local level where the effects of different human activities can be noticed and addressed (Sale, 2000). This leads to the development of bioregions which support the idea that 'smaller is beautiful'. In essence, bioregionalism attempts to strike a middle ground by reconciling nature and human activities within a local level (Traina, 1995).

From the perspective of social movement, the idea and practices of bioregions are not new but can be traced back to aboriginal and prehistoric times. Long before bioregionalism entered the mainstream lexicon, indigenous people who inhabited the landscape were guided by, and also lived according to tenets of bioregionalism even though they did not call themselves bioregionalists (Traina, 1995; Durning, 1992 cited by McGinnis, 1999; Berthold-Bond, 2000). The claim, which is debatable, is that indigenous people or prehistoric human population groups lived in harmony with nature for centuries. Animals have been used as totem or emblem of a family to link humanity with nature. Inside a circle of animals and plants, human beings are joined by a multitude of fibers that connect them to a place. Human culture is a result of this system of primordial connection with both plants and animals (McGinnis, 1999). As a result people find ultimate meaning and transformative power in nature (Taylor, 2000). That is to say there is spiritual connection between humans and nature or a place where they live. Berthold-Bond (2000) argued that places and people are inseparable. Places exist only with reference to people, and the meaning of place can be revealed only in terms of human responses to the particular environment as a framework of daily living. Places are created through an interaction between people and the environment (Berthold-Bond, 2000). The goal of bioregionalism is nothing less than to foster an ethics of place and create sustainable human societies in harmony with the natural world, and consistent with the flourishing of all native species (Taylor, 2000).

In contrast with administrative or political boundaries, bioregions are seen as the main organizing units in which people can live within nature's limits (Sale, 1985; 2000). Taylor (2000) argued that the actual political boundaries which have defined the idea of a region within modern states need to be redrawn to reflect the natural contours of differing ecosystem types. According to Berthold-Bond (2000), bioregionalism is conceived as a radical critique of the modern state. As Traina (1995) has noted, political boundaries have little meaning from either a bioregional perspective or in classical ecological thinking. Consequently any type of partition including that of bioregion is somewhat arbitrary or artificial. According to Ramutsindela (2007), bioregionalism dismisses the modern state on three grounds. First, the modern state imposes monoculture on people of diverse background; secondly, it has failed to address seriously the crises of ecological peril and the political systems that have caused ecological disintegration and lastly, it is at odds with natural laws which govern biotic communities without coercion, organized force or organized authority. It is important to note that the removal of modern states will however have implications on governance.

Bioregionalism challenges the legitimacy of any form of centralized governance (McGinnis, 1999; Berthold-Bond, 2000; Taylor, 2000). Rather it passionately promotes political autonomy, decentralized governance, grass roots empowerment and bottom up approach led by communities themselves (McGinnis, 1999; Aberley, 1999; Taylor, 2000). Bioregionalism as a social movement has been criticized because bioregions are arbitrarily defined (Taylor, 2000). Moreover, bioregionalism's environmentally deterministic approach – the view that nature determines culture within the context of specific regions (Ramutsindela, 2004b) and its romanticized representation of traditional indigenous cultures living in harmony with the environment (Taylor, 2000; Berthold-Bond, 2000) are problematic. It is important to note that these criticisms have been directed to the implementation of bioregionalism at a smaller scale.

The second school of thought regarding bioregion manifests in conservation planning paradigm or landscape regional ecology. This school of thought also shares the same principle of integration of biodiversity with communities and socio-economic imperatives. However, it differs with the social movement in terms of the scale of operation. Whilst social movement encourages bioregion at a smaller scale (Sale, 1985; 2000), conservation planning on the other

hand conceptualizes bioregion at a larger scale (Miller, 1996; Brunckhorst, 2002). That is to say the scale of operation becomes an important attribute that differentiate social movement from conservation planning paradigms. To clarify the point: whilst social movement encourages bioregion at a local or village level, conservation planning on the other hand encourages bioregion at a landscape regional level. Although there is no common definition of bioregion, Miller (1996) consider it as a geographic space that contains one whole or several nested ecosystems, characterized by its landforms, vegetative cover, human culture, and history, as identified by local communities, government agencies, and scientists. For Brunckhorst (1998, 2000) bioregion is a regional-landscape scale that integrates human governance with ecological law. In this sense, bioregions cut across administrative and international boundaries, and necessitate integration of social, economic and ecological factors in regional planning and management. This viewpoint seeks to bring all stakeholders (state, private sector and local communities) together to own and build a dynamic plan for a bioregion (Brunckhorst, 2001, 2002). This leads to the development of bioregions which support the idea that 'bigger is better'.

Equaly important in the establishment of cross-border TFCA are bordering processes. Borders have become increasingly complex in the modern world. They have multiple meanings; and are constructed, produced and reproduced in various social and cultural practices (Newman and Paasi, 1998; Newman, 2006; Brunet-Jailly, 2011; Paasi, 2012). However, central to the current studies of borders is the emphasis that borders are institutions rather than simply lines on the map (Paasi, 1998, 1999, 2012; Newman, 2003, 2006; Brunet-Jailly, 2011). As Paasi and Prokkola (2008) have noted, institutions are normally understood as constructed structures of social practice. "Border as institutions are about people, and for most settled territories they are predominantly about inclusion and exclusion, as they are woven into varied cultural, economic and political fabrics" (Brunet-Jailly, 2011, p. 3). Essentially, borders prevent the entry of undesired elements which could be people, goods, arms or drugs. Thus, they prevent those who are wanted from those who are not. They protect those who are inside from those who are outside (Newman, 2003, 2006; Agnew, 2008; Paasi and Prokkola, 2008). For these reasons, borders are considered as discursive landscape of social power, which are labeled as *emotional landscapes of control* (Paasi and Prokkola, 2008; Paasi, 2012). As such, "borders constitute institutions that enable legitimation, signification and domination, creating a system of order

through which control can be exercised" (Newman, 2006, p.148). Newman (2006) observes that over the past two decades, border studies have become an important theme not only in political geography, but also in other fields of study including sociology, political science, history and international relations. The revival of border studies is credited to Ohmae's 'borderless world' thesis that they seek to challenge. It is argued that borders matter because they have real effects to people (Agnew, 2008; Ramutsindela, 2013). Furthermore, "they limit the exercise of intellect, imagination, and political will" (Agnew, 2008, p. 175) but they also help to understand the changing social world (Ramutsindela, 2013). In this sense, as John Agnew put it: "a border should be seen as evolving and that has both merits and demerits that must be always reweighted" (p. 175).

Central to the contemporary study of borders is the notion of bordering that is dynamic in its own right (Newman, 2006). Subsequently, border studies are now paying special attention to bordering process and its effects on people's daily lives. This study focuses on the process of bordering in cross-border areas. Sassen (2013, p. 68) defines "bordering as the flows of capital, information, professionals and undocumented migrants from various institutions and geographic locations". There are two types of bordering. The first type refers to traditional national state borders or geographic borderlines which regulate cross-border flow of different types of commodities, capital, people, services, and information (Sassen, 2013). It produces two but separate transversal bordered spaces that both cut across state borders. On one hand, there is cross-border space of corporations and high-level professionals. In this category, professionals are allowed to circulate and freely pass cross-border spaces without impediments. As Sassen (2013) enlighten it: this enhances protection and opportunity. Thus, as professionals move freely across the bordered space, they are protected by law and they are able to meet and interact with other experts in other countries. On the other hand there is a cross-border space of migrants who need to justify their claim to entry into a geographic location. This is marked by a shift from opportunity to a space of capture and detention (Sassen, 2013). In this group, state borders remain barriers that obstruct the migrant workers to move from one state to another. Thus, migrant workers remain confined to one geographic area. Looking at these two transversal cross-border spaces, in terms of cross-border movement, the professionals are in a space that separates them from working class, poor migrants and tourists.

Bordering dynamics are not tied to the geography of state borders. Most of them take place away from the border itself. Accordingly, this type of bordering does not require crossing of borders as is the case with state borders. Rather, the bordering operates at either a transnational or supranational scale, and includes emergent global law systems and globally networked digital interactive domains. The formation of global laws and other such spaces lead to an increase or multiplication of bordered spaces. Though these spaces may cross national borders, they are not state-centered and as a result they bypass national jurisdiction of states (Sassen, 2013).

Looking at the two types of bordering and the resulting bordered spaces as explained above, it is clear that the process of bordering has become part of daily life not only at crossing points but also outside the borderlands (Paasi, 2012). Thus, the process of bordering happens at locations within and beyond particular borders on the map. Hence, Agnew (2008, p. 184) suggests that "bordering practices are much more widely diffused geographically". As a result, new terminologies are continuously introduced to capture the nature of borders and bordering processes. The concepts of de-bordering and re-bordering are a demonstration of attempts to grasp various forms of borders and the process producing, shaping, and reconfiguring them in material and non-material senses. It is therefore important to differentiate the two processes and understand how they manifest in TFCA.

De-bordering is the process of removing state borders to allow the transnational flow of goods, information, capital, people and services across the border (De Giorgi, 2010; Chen, 2013). In this sense, there is a shift in the function of borders from being a barrier into a bridge or an open door to encourage circulation and freedom of movement. However, this liberty of mobility is not universally recognized, particularly after 9/11 in the United States. As a result, the process of de-bordering has been paralleled by a simultaneous process of re-bordering (De Giorgi, 2010; Salter, 2012; Chen, 2013). The process of re-bordering is part of enforcement and security measure in the regulation and control of mobilities which has emerged particularly in cities (De Giorgi, 2010; Paasi, 2012). Re-bordering entails renewed state control over borders so as to control the growing phenomenon of terrorism and other illegal crossings (Newman, 2006; Paasi and Prokkola, 2008; Paasi, 2012; Salter, 2012; Chen, 2013). Put differently, re-bordering means exercising border control away from the border itself. The surveillance instruments which are

generally technical, mobile and networked are used to strengthen bordering practices and control of goods and services (Agnew, 2008; Salter, 2012; Paasi, 2012). These technical devices are now found everywhere including airports, shopping malls and streets and are labeled as *technical landscapes of control* (Paasi and Prokkola, 2008). For instance, at international airports, "travelers are pre-screened by airline agents and border officials prior to departure on international flights, often against no-fly lists or passenger profiles that reflect anxieties about illegal immigration and false asylum claims, health concerns, and security threats" (Salter, 2012, p. 736). In other words, within the modern world, the functioning of new borders has less to do with the power to exclude non-citizens from access to a state's territory, and more with an attempt to control, select, and govern at a distance specific category of people (De Giorgi, 2010). As Chen (2013) has noted, the process of de-bordering and re-bordering reinforce borders as mutating spaces rather than fixed lines.

The conceptual framework of bordering and bioregionalism as explained above provide an avenue for theoretically linking bordering and bioregion in the establishment of cross-border bioregion, i.e TFCAs. It is the process of bordering in the nation state that is important in the establishment of cross-border bioregion. As we noted above, bordering in geographic borderlines produces spaces that cut across state borders. In the same manner, a bioregion is associated with the creation of space across state borders. It can therefore be suggested that bordering and bioregionalism take place in cross-border areas. The creation of a bioregion in cross-border areas depends entirely on bordered space which is in turn a product of bordering. Thus, bordering creates spaces that cut across state borders and such spaces are used in the creation of a bioregion. In this sense, bordering in cross-border areas is a necessary condition for the creation of cross-border bioregions in the form of trans-border conservation areas. The large-scale bioregionalism discussed above support the creation of trans-border conservation areas.

Conservation planning paradigm as applied in TFCA aims at linking isolated protected areas and other land use types across the borders of two or more countries (cf Chapter Four). The idea is to bring together protected areas that are in close proximity to one another yet separated by international borders, and to manage them as a single entity. Ecologically, the aim is to establish bioregions (Ramutsindela, 2004a). According to the World Resource Institute (WRI), an NGO

active in issues related to global resource management, bioregion should be large enough to maintain the integrity of the region's biological communities; support important ecological processes; meet the habitat requirements of keystone and indicator species (WRI, 2000). In essence, this allows more biodiversity to be conserved over a larger area. The notion of large-scale bioregions is supported by the field of conservation biology that provides the scientific basis for the expansion of protected areas in order to retain the maximal species richness or to preserve all native species characteristics (Shafer, 1995). Hansen and DeFries (2007) noted that for effective conservation of biodiversity, it is important to redraw and redefine traditional borders around protected areas. This reasoning justifies the expansion of protected areas even beyond national borders. This is done through the establishment of ecological corridors which help to re-establish the connectivity of habitats that had been fragmented by human imposed borders and to restore ecosystem functions. The point here is that bioregions bring together biophysical and social elements through the use of ecological corridors. The section below explains conservation corridors and their significance in linking habitats and protected areas.

2.3. Corridors as conservation tool

It is internationally recognized that habitats are crucial for the survival, maintenance and reproduction of species. However, habitat fragmentation and habitat loss are widespread and profound, and their implications for the protection of biological diversity and the sustainability of natural resources are of global concern (Bennett, 2003; Hilty *et al.,* 2006). Although these are not new phenomenon, it is the rate at which change is taking place all over the world that is of great concern. Bennett (2003) defines fragmentation as changes that occur when large blocks of vegetation are incompletely cleared leaving multiple smaller blocks that are separated from each other. This results in the reduction in habitat amount, increase in the number of habitat patches, decrease in sizes of habitat patches, and increase in isolation of patches (Fahrig, 2003). Fragmentation prevents or restricts the biota's potential for dispersal which limits their capacity to supplement declining populations, to recolonize habitats where extinction has occurred or to recolonize newly suitable habitats (Bennett, 2003; Hilty *et al.,* 2006). As a result there is fear that habitat fragmentation may lead to total population extinction and a reduction in biological diversity (Rosenberg *et al.,* 1997). This concern has led to an increasing number of conservation initiatives around the world aiming to create or restore functional linkages between protected

areas and their surrounding regions. This includes building extensive linked systems at the landscape scale (Bennett, 2004; Goldman, 2009).

The predominant structure for connectivity and linkages in landscapes is the conservation corridor (Rosenberg *et al*., 1997; Bennett, 2003; Bennett, 2004; Chetkiewicz *et al*., 2006; Goldman, 2009). Corridors are defined as regions of the landscape that facilitate the flow or movement of individuals, genes, and ecological processes (Chetkiewicz *et al*., 2006; Hilty *et al.*, 2006). That is to say they connect two or more habitat patches to allow the movement of organism. Corridors that facilitate the movement of organisms between habitat fragments are increasingly being adopted as cornerstone for modern conservation to maintain and restore biodiversity across different spatial and temporal scales (Bennett, 2003; Hilty *et al.*, 2006; Chetkiewicz *et al*., 2006; Goldman, 2009). The linkages are said to increase the viability of local species population by allowing individual animals access to a larger area habitat; facilitating seasonal migration; permitting genetic exchange with other local populations and allowing local individuals to move away from habitat that is degraded (Bennett, 2003; Bennett, 2004).

Proponents of TFCAs claim that connecting protected areas by removing fences and ignoring the traditional functions of international boundaries will create a larger and contiguous area for conservation which will increase biodiversity (Griffin, 1999; Van der Linde *et al*., 2001; Sandwith *et al*., 2001; Hanks, 2003). This begs the question of how the removal of fences and boundaries and connecting separated protected areas increase biodiversity. On which lands and under which conditions does the connection of protected areas take place? What are the implications of such connections for local communities? Answers to these questions may help us to understand the wider impacts of TFCAs on society and nature. Other specific biodiversity TFCA intentions include the protection of internationally shared ecosystems, such as watersheds and biodiversity assets (Munthali, 2007); increasing the land size which is seen as necessary for the maintenance of an adequately diverse and sufficient large gene pool, or to encompass the range necessary for large mammals (Van der Linde *et al*., 2001; Sandwith *et al*., 2001; Wolmer, 2003; Trisurat, 2006; Munthali, 2007).

The linkages or connectivity of habitats is done both at local scale and at the regional landscape scale. At the local scale, the most common linkages include the use of under passes or ecoduct across a highway, forest corridors, hedgerows; fencerows; streams; roadsides and patches of plants in agricultural fields (Bennett, 2003). All these promote dispersal, movement of species and seasonal migration of animals at a local scale (Bennett, 2003; Bennett, 2004). There are many documented examples of animals using the types of linkages as pathways (see Bennett, 2003; Bennett, 2004). However, these types of linkages are not useful for wildlife management at landscape level or scale. Yet, it is at the landscape scale that connectivity is particularly important for wildlife conservation and management hence proposals for land management are being made to encourage connectivity of protected areas across boundaries to form TFCAs. At the regional landscape scale, wildlife corridors are used to connect two or more protected areas across international boundaries. There are a number of wildlife corridors that are planned all over the world to link protected areas across international borders. It is therefore important to understand how wildlife corridors are established to form TFCAs. Different case studies on corridors referred to below to understand how wildlife corridors are established in areas populated by human settlement.

The Adirondack to Algonquin (A2A) wildlife corridor in eastern North America was proposed to encourage the migration of wolves and other wildlife between the two parks. Most of the land which would comprise the A2A corridor is owned privately. Thus, the cooperation of land owner is vital if the corridor is to be successfully implemented (Brown and Harris, 2005). The study completed by Brown and Harris (2005), which surveyed households randomly scattered on the U.S. portion of the proposed corridor, found that the affected land owners or famers (83%) had no prior knowledge of the proposal and no contact with its advocates. Most of the respondents were farmers who relied on their land for livelihood. Although most of them were unaware of the A2A proposal, some respondents (24%) expressed the willingness to have their land included in the proposal. These results indicate that planning for this wildlife corridor was done without citizen participation or affected land owners. The idea clearly did not originate as a grassroots movement. According to Brown and Harris (2005) it appears to be a technical exercise undertaken by academics and NGOs without the knowledge of most residents who live in the area.

In the same manner, the establishment of the Yellowstone to Yukon (Y2Y) wildlife corridor between the United States and Canada by a network of organization, foundations and conservation minded individuals also faced a number of challenges. An early criticism of Y2Y was that investments in science and modeling were not well linked with actual on-the-ground conservation action. Another issue related to the challenge of extending the project vision across such a large spatial scale (Hilty *et al*., 2006). Furthermore, lack of consultation particularly at community level both in Crowsnest Pass and Canmore in Alberta was found as the main challenge of Y2Y initiative (McGregor *et al*., 2002). It is also important to note that the idea of Y2Y initiative has been opposed by a broad range of stakeholders particularly in Canada. As Chester (2003) has noted, much opposition to Y2Y has been reported in the media, while several editorials and industry reports have been highly critical of Y2Y. In addition, local municipalities and chambers of commerce in Canada have publicly repudiated the Y2Y vision (Chester, 2003).

The establishment of Paséo Pantera or Mesoamerican Biological Corridor (MBC) in Southern Mexico and Central America to link existing parks; newly created protected areas and buffer zones and corridors designed for mixed land use also faced a number of challenges. Scientists and environmentalists feared that politicians have turned the original idea of a science-based project into a rural development project with more funding going into sustainable development and not supporting the main project. In addition, a report by WRI pointed out that Paseo Pantera is too top-down, suffers from conflicting agendas and needs to gain wider public support if it is to succeed. The report suggests improving communication with local groups and emphasizing fundamental strategies such as resolving land conflicts as the key to the success of the Paseo Pantera project (Kaiser, 2001). Other challenges to this ambitious project are maintaining collaborative efforts in multiple countries; and planning and managing ecotourism; especially in countries with little infrastructure to support tourism and few resources to monitor the impact of the industry on biota (Hilty *et al*., 2006).

In Tanzania, land use conflict between elephants and communities led to the establishment of the first wildlife conservation corridor by the two Maasai communities in cooperation with government authorities and other stakeholders. The establishment of Kitendeni corridor to link Kilimajaro National Park in Tanzania and the Amboseli National Park in southern Kenya was

achieved through relocating some people who were living within the corridor and a school to other areas (Kikoti *et al*., 2010). Funds were made available by Tanzania National Parks, Monduli District Council and other stakeholders to build and furnish a new school far away from the corridor area. Activities such as livestock grazing, medicinal plant collection and firewood collection of dead wood are allowed within the corridor (Kikoti *et al*., 2010).

The Kangchenjunga landscape conservation corridors in eastern Himalaya (between Nepal, Bhutan and India) were established with the aim of developing a sustainable approach to transboundary biodiversity management of the landscape. The corridors management plan allowed communities living in or adjacent to the corridors to use the area for agro-forestry and organic farming-based livelihoods instead of intensive agriculture that has degraded the forest areas in the corridors in recent years (Chettri *et al.,* 2007). In this case communities are required to change from intensive agriculture to agro-forestry and organic farming. Forest-based enterprises such as medicinal plant cultivation and ecotourism are also emphasized for local economic development and poverty alleviation mainly to restore and maintain multi-functionality of the area and to minimize further impacts. In this case, a multi-stakeholder approach was followed with the overall objective of restoring fragmented and deteriorating forest resources through the development of conservation corridors, and the adaptation of conservation measures moving from a species approach to a landscape approach (Chettri *et al.*, 2007).

The examples given above demonstrate that the establishment of conservation corridors at landscape level in areas populated by human settlement faces a wide range of challenges in different parts of the world. This ranges from lack of consultation at local level; top-down approach; restricting access to resources by local communities; forced change of land use by local communities; separation of people with wildlife; and relocation of local communities. It is also important to note that these ambitious large scale conservation initiatives are initiated by conservation biologists, environmentalists, a network of donors and NGOs as is evident in TFCAs. The examples above have shown that corridors used for habitat connectivity impact on local communities. If indeed TFCAs are based on the idea of bioregions, we need to know how TFCAs relate to local communities. The claims made by proponents of TFCAs regarding local communities are a useful starting point for understanding this relationship.

2.4. The claims of transfrontier conservation areas about communities

The general world-wide history of national parks and protected areas demonstrates little or no concern for the interest of local or indigenous people (Dowie, 2009). The common practice in conservation relates to attempts to preserve species from extinction by separating humans from non-humans through, among other things, the creation of nature reserves and national parks. Most often, in the United States, India, Thailand, Brazil and many parts of Africa, communities were forcibly removed from national parks and other protected areas in order to make way for recreational tourism (Dowie, 2009). Dowie (2009) considers local or indigenous communities forcibly removed from their ancestral land for conservation purposes as 'conservation refugees'. As a result of these practices, local communities who depended entirely on natural resources were systematically alienated from ownership, participation and control over these resources. This resulted in communities being denied access to basic resources for their livelihoods and cultural needs (De Velliers, 2008). As documented by many scholars, in southern Africa, these practices were common in the colonial and apartheid eras (Metcalfe, 2003; Ramutsindela, 2003; Magome and Murombedzi, 2003; Kepe; 2004; Ferreira, 2006).

This exclusionary model of wilderness preservation was based on very wrong assumptions that local people are only helpful as labourers and viewed as agents of environmental destruction who should be removed from protected area at the earliest convenience (De Velliers, 2008; Carruthers, 2009). Over the past three decades, there has been a paradigm shift in global conservation approaches from strict preservation to the need for conservation to contribute to poverty alleviation, community projects developments, job creation and rural development. The earlier 'parks without people' concept has been replaced by the notion of 'people and parks' through Community Based Natural Resource Management (CBNRM) as an approach to conservation. However, in recent year, CBNRM projects have been criticized for supporting private sector interests rather than the resource base of rural livelihoods (Dressler and Büscher, 2008). In addition to CBNRM, TFCAs have emerged recently under the banner of a new conservation paradigm that supposedly takes the interests and livelihoods of local residents seriously. The claim that local community living in or close to TFCAs will participate in the establishment and management of TFCAs has become an important argument to support their establishment in post-apartheid southern Africa. This principal claim by proponents of TFCAs

should be subjected to scrutiny. Conceptually, this begs the question of how and why communities who have been alienated from conservation for centuries are now being considered important in the TFCA discourse. Is the place of communities in TFCAs any different from that in national parks? To what extent is the idea of national parks embraced or eschewed in the design of TFCAs? These questions are important in order to understand if TFCAs constitute a fundamental paradigm shift in nature conservation.

TFCAs are also increasingly promoted as a vehicle for local economic development (Van der Linde *et al*., 2001; Sandwith *et al*., 2001; Hanks, 2003). Ecotourism development is seen as the main vehicle for economic growth (Sandwith *et al*., 2001; Ramutsindela, 2004a, b). Tourism based on wildlife and other resources is considered an industry with high growth potential, especially in areas which have marginal value for agriculture. It is therefore assumed that local communities and the region will benefit from development of viable, consumptive and non-consumptive ecotourism opportunities generated by TFCAs (Van der Linde *et al*., 2001; Katerere *et al*., 2001; Sandwith *et al*., 2001). This is despite that both consumptive and non-consumptive approaches to 'conservation for development' have been widely criticized for failing to provide more income than other local alternatives (Coomes, 2004; Ticktin, 2004). The claim that TFCA will provide opportunities for ecotourism also needs a closer inspection. Theoretically, this begs the question of what TFCAs bring into the ecotourism industry that other forms of protected areas could not bring? In which ways do TFCAs give impetus to ecotourism? Is ecotourism in TFCAs a guarantee, if so how does the local community benefit from the enterprise? These questions are worth asking if we are to understand the links between TFCAs and local communities, especially in the domain of local economic development and ecotourism-inspired poverty alleviation projects. The next section reflects on the place of communities in the TFCA arena. It also highlights the relationships between TFCAs and local communities through case studies in order to understand if TFCAs are different from national parks.

2.4.1. The place of communities in transfrontier conservation areas

Local communities who were marginalized during colonial and apartheid periods are increasingly becoming a reference point in conservation in southern Africa. This has come as a result of the realization by conservation biologists and park managers that many protected areas

are not big enough for conservation of biodiversity (Shafer, 1995; Hilty *et al.*, 2006). This concern has led to an attempt to increase the size of protected areas. Protected area authorities realized that they needed to collaborate with the very communities they have alienated for centuries (Metcalfe, 2003). The reason for collaboration with communities is to gain access to the land that is owned by communities in order to have bigger ecological range for wildlife. As Ramutsindela (2004a; 2009) has noted, studies in southern Africa have shown that local communities are incorporated into the design of TFCA through community projects, most of which are concerned with wildlife management and nature-based tourism ventures.

There are a number of ways in which communities enter into the TFCA arena. Communities that are adjacent to areas earmarked for TFCAs are lured to release their land for these conservation projects (Ramutsindela, 2004a). Proponents of TFCAs claim that these projects will create employment opportunities in distressed rural areas (Van der Linde *et al*., 2001; Sandwith *et al*., 2001; Hanks, 2003). This claim is more attractive to poor rural communities who face poverty, starvation and high rates of unemployment. This begs the questions what kind of job opportunities and other tangible benefits does a TFCA create for local communities? Is the kind of job opportunities created by TFCA any different from those created by national parks? These questions are critical in order to understand the role of TFCA in job creation for local communities. The answers to these questions may help to validate the legitimacy of this claim. Local communities are also encouraged to lease their land in TFCAs even if the land was not originally used for conservation. For example, Mhinga communities in Limpopo Province in South Africa voluntarily gave their portion of land to Kruger National Park in anticipation of financial benefits from GLTFP (Ramutsindela, 2004a).

Communities also enter the TFCA arena through land claim and land restitution in national parks and other conservation areas forming part of TFCAs. Land claims give local people legal right to land and have forced park officials to consider partnerships with local communities in order to have a bigger space for conservation. The Makuleke community who were forcibly removed in 1969 in order to expand Kruger National Park to the north comes readily to mind (for details see Ramutsindela, 2002; 2003; Magome and Murombedzi, 2003; Kepe *et al*., 2005; Carruthers, 2007; Robins and van der Waal, 2008; Grossman and Holden, 2009). Literature on forced

removal of communities from national parks in South Africa is helpful for understanding the antagonistic relationships between national parks and local communities but does not say much about the society-nature relations in the context of TFCAs. I try to sketch the various contexts in this chapter.

For a start, in December 1995, the Makuleke community lodged a land claim in the northern section of Kruger National Park and in 1998, the claim was eventually settled. The settlement restores land to the community whilst maintaining its conservation status as a contractual national park (Ramutsindela, 2002; 2003; Magome and Murombedzi, 2003; Kepe *et al*., 2005; Carruthers, 2007; Robins and van der Waal, 2008; Grossman and Holden, 2009). The same happened to the Khomani San and the Mier who successfully claimed their land in Kalahari Gemsbok National Park in 1999, the same year that the government of Botswana and South Africa signed an agreement for the establishment of the TFCA (Kepe *et al*., 2005; Carruthers, 2007; Ramutsindela, 2003, 2009; Grossman and Holden, 2009). The restoration of their land rights through land restitution meant that the communities become the co-owners of the park falling under the proposed TFCA. In the same vein, the establishment of Richtersveld National Park in 1991 led to a contractual agreement with the Richtersveld (Nama) communities after a successful court interdict (Ramutsindela, 2003; Magome and Murombedzi, 2003; Grossman and Holden, 2009).

It is worth noting that all land restitution in the case studies referred to above have adopted a joint management approach as a strategy to reconcile the communities and biodiversity conservation. This approach allows SANParks to gain additional land for biodiversity conservation purposes. Land owners retain title deeds and negotiated rights of the land but cannot be allowed to mine, prospect, use the land for agriculture and physically occupy their land. Although they have regained their land through land restitution, the lifestyle and relationship that existed between the communities and the land before dispossession has been lost forever. The title deeds given to communities force them to adopt the new land use based on the potential economic profits that the land will yield through ecotourism.

Land claims are not the only mechanism for re-linking communities and TFCAs. The strategic location of a community might force a TFCA project to pay attention to the community in question. For example, Zimbabwe's involvement in the GLTFP is dependent on linking Gonarezhou National Park in Zimbabwe to Kruger National Park in South Africa. The only possible way to link the two parks is through Sengwe wildlife corridor (Wolmer, 2003; Ramutsindela, 2007; Sibanda, 2010). The Sengwe communities could not be completely ignored as they are within the proposed corridor linking the two parks. Consequently, the GLTFP Treaty acknowledges Sengwe community as an important component of the park. Similarly, Communal Areas Management Programme for Indigenous Resources (CAMPFIRE) programme in Zimbabwe provides a platform for local communities to enter into TFCA. According to Taylor (2009) the cornerstone of CAMPFIRE is the devolution of rights to manage, use, dispose of and benefits from natural resources. All the CAMPFIRE districts with associated communal lands are situated around protected areas allowing free movement of animals from protected areas into communal lands in each district (Taylor, 2009). That is to say communal areas around protected area in each CAMPFIRE district provide additional land for wildlife movement and the expansion of the TFCA. For example, Chipinge, Chiredzi and Chimanimani are CAMPFIRE districts that surround Gonarezhou National Park on the northern side. In future, this could be used to expand Zimbabwe's contribution into GLTFP or to merge Gonarezhou with other protected area in Zimbabwe.

The creation of WMA in Botswana facilitated the entry of local communities into TFCAs without having to sell the idea to those communities (Ramutsindela, 2009). The WMA cover approximately 24% of the land and are all located adjacent to the protected areas and have a buffer zone function (Rozenmeijer, 2009). They also promote management of wildlife outside protected areas (Child, 2009b), and enhance opportunities for communities to earn benefits from natural resources, and encourage rural development (Rozenmeijer, 2009). This is realized through high fee paying recreational hunting by tourists and subsistence hunting by the local people and the money generated is channeled into community trust (Child, 2009b). The geographical location of all WMAs in Botswana allows them to be integrated into the design of TFCA or to be used as migratory corridors to facilitate movement of animals because they are adjacent to protected areas. They could also be used to create extensive TFCAs in Botswana.

In Namibia, communities are encouraged to join together to establish conservancies which have operating rules, management plans and criteria for distribution of income derived from joint wildlife management. The idea of conservancies has been made possible by the promulgation of conservancy legislation in 1996. The legislation provides for the rights over wildlife and tourism to be given to communal area residences that form a conservancy (Jones and Weaver, 2009). In 2007, there were 50 communal conservancies in Namibia covering 14% of the total surface area. As Jones and Weaver (2009) have noted, of the existing communal conservancies, 31 are adjacent to protected areas, lie across important corridors between protected areas or provide wet season dispersal areas for wildlife that move out of protected areas, increasing the land available to wildlife by more than 50% beyond the existing protected area system (Jones and Weaver, 2009). The availability of such corridors and dispersal areas is particularly important for large mammals such as elephants whose seasonal movement pattern requires extensive tracts of land (Jones, 2005 cited by Jones and Weaver, 2009). The location of conservancies also facilitates the incorporation of protected area into TFCAs as the case of conservancies between Skeleton Coast and Etosha National Park in the north-western part of the country demonstrates (Ramutsindela, 2009).

2.4.2. Experiences of communities in the creation of transfrontier conservation areas

The establishment of TFCAs in southern Africa has been well promoted and publicized, however, criticism of them is growing (Wolmer, 2003, Duffy, 2006, Ramutsindela, 2007; Spierenburg *et al*., 2008). This is because of the negative implications of TFCA initiatives on communities. The establishment of TFCAs in southern Africa has been associated mainly with, among other things, lack of consultation; marginalization of communities; limitations on land use and access to resources; forced removal of communities; and loss of agricultural and grazing land (Spierenburg *et al*., 2006; Ramutsindela, 2007; Milgroom and Spierenburg, 2008). The Kgalagadi and GLTFP for which treaties have been signed provide good examples of how this happened. The Kgalagadi Transfrontier Park (KTP) has been well documented for its lack of involvement and consultation with San communities in and around the park (Mayoral-Phillips, 2002). According to Mayoral-Phillips, (2002) during the planning and implementation phases of KTP, no reference was given to the San community by the Botswana government. In addition, no

economic management plan that included tourism development made reference to community involvement. According to Mayoral-Phillips (2002) this has long-lasting detrimental socio-economic impacts upon the San. In an attempt to redress the problem, Botswana Department of Wildlife and National Parks (DWNP) was not keen on the concept of community economic empowerment but preferred an alternative concept of community relations (Mayoral-Phillips, 2002).

The same applies to the establishment of GLTFP on communities on the Mozambican and Zimbabwean side. For Mozambique to participate fully in the project, it had to raise the status of Coutada 16 from a hunting ground to a national park. Accordingly, in 2001 Coutada 16 was gazetted as Limpopo National Park in order to become part of GLTFP (Spierenburg *et al*., 2006; Ramutsindela, 2007; Milgroom and Spierenburg, 2008). The new park regulations prohibited hunting and restricted extraction of forest products for commercial purposes which negatively affected local communities who mostly depend on natural resources (Milgroom and Spierenburg, 2008). Ironically, the change of Coutada 16 from a hunting ground to Limpopo National Park was done without consultation with the communities living in Coutada 16. A report prepared by the University of Witwatersrand Refugee Research Programme (RRP), concluded that communities of Coutada 16 in Mozambique had little or no knowledge about the change of the status of the area into GLTFP (RRP, 2002). This means TFCA are imposed on local communities once a decision is taken at higher level, mainly, by governments and donor agencies. This reduces the chances of communities to participate and influence the TFCA process.

The change of status of the Coutada 16 from a wildlife utilization area to a National Park undermined community's right to the land thereby placing the area under the authority of Ministry of Tourism (Spierenburg *et al*., 2006; 2008). To make matters worse, wildlife including lions and elephants were released from Kruger to Limpopo National Park with devastating effects on the lives and livelihoods of those living in the park (Spierenburg *et al*., 2008; Milgroom and Spierenburg, 2008). The United States Agency for International Development (USAID) and a PPF consultant concluded that the area along the banks of Shingwedzi River where the majority of Mozambican people stay is the most suitable for sustaining viable wildlife

and tourism development (Spierenburg *et al*., 2008; Milgroom and Spierenburg, 2008). Resident people are being forced to relocate from the Limpopo National Park in order to create extra space for wildlife and to make the park more attractive for private investment (Ferreira, 2006; Munthali, 2007; Spierenburg *et al*., 2008; Milgroom and Spierenburg, 2008; Lunstrum, 2010). The relocation and removal do not take into account the preference by the majority of respondents to survey (83%) to live with wildlife than to be moved off their ancestral land (RRP, 2002). In this way, TFCAs tend to replicate the forced removal of communities that took place during colonial and apartheid periods (Ramutsindela 2004a; Spierenburg *et al*., 2006; Whande, 2009).

The involvement of Zimbabwe in GLTFP is dependent on linking Gonarezhou National Park in Zimbabwe to Kruger National Park in South Africa through Sengwe corridor. Surprisingly, the community of Sengwe communal areas who are directly affected by the establishment of Sengwe wildlife corridor had not been consulted while their area forms part of the GLTFP. The communal land was marked as part of GLTFP (Metcalfe, 2003; Wolmer, 2003; Duffy, 2006; Ferreira; 2006). The proposed Sengwe wildlife corridor is most likeky to result in the relocation of communities to allow animals and tourists to roam freely in the area. A total of 740 families (about 4 640 people) await relocation to pave the way for the Sengwe wildlife corridor (Sibanda, 2010). The creation of the corridor also implied that Sengwe communities will lose grazing and agricultural land, access to resources within the corridor and most importantly their ancestral land. This also demonstrates that decisions about the creation of TFCAs are taken at higher levels and imposed onto communities.

The establishment of Selous-Niassa TFCA in Tanzania depends on linking Selous Game Reserve in southern Tanzania and Niassa Game Reserve in northern Mozambique (Baldus *et al*., 2003; Noe, 2010). The proposed Selous-Niassa wildlife corridor is on the Tanzanian side and passes across village land in Tunduru and Namtumbo districts. The establishment of the Selous-Niassa wildlife corridor has resulted in village boundaries being re-drawn to facilitate the creation of corridors, with the results that a new border which separates people and wildlife has emerged (Noe, 2010). Whilst proponents of TFCAs are oppossed to political and administrative boundaries that obstruct the free movement of animals across borders, they are however also

creating new boundaries that separate people from wildlife. This process has resulted in the relocation of some people and their farms from the core area of the project (Noe, 2010).

2.5. Conclusion

This chapter has demonstrated that the idea of bioregionalism is important for understanding the scientific grounding of TFCAs. Bioregionalism, as we have noted, has more than one strand. The two main strands variously emphasize the local and landscape scales. Despite these variations in scale, bioregionalists share a common proposition, namely, the interconnectedness between the biophysical environment and the people who live on the land. They are also in agreement on the need to protect this interconnectedness. This makes bioregionalism a useful theory for studying TFCAs. Two main reasons can be advanced to substantiate this assertion. First, TFCAs have adopted a conservation planning paradigm that embraces bioregion at a larger scale as opposed to social movement that encourages bioregion at a smaller scale. Such a bioregion is not pre-given but is rather socially constructed. This is made possible through the creation of conservation corridors that connect biophysical and social milieus to change the configuration of the landscape for purposes of conservation. For this to happen, existing borders have to be rearranged. The literature reviewed in this chapter shows that the creation of corridors does not follow the same path. Each path might have different implications on the communities living in the area. Second, bioregionalism helps us to understand the process from which the impacts of conservation paradigms on local communities flow. In the process of creating TFCAs as bioregions, the landscape in which communities live and on which they depend are fundamentally transformed. This chapter has established that communities enter into TFCAs arena through community projects that are related to conservation and wildlife management. The consequences of this on communities are discussed in Chapter Six. In the next chapter, I explain the research methods employed in this study to collect and analyze data gathered in Botswana, South Africa and Zimbabwe.

CHAPTER THREE
RESEARCH METHODOLOGY

3.0. Introduction

This chapter presents the methods employed and the steps followed in acquiring and analyzing different data sets. The chapter starts with a research design that connects research questions to strategies of inquiry and methods for collecting empirical material. It details the approach followed and the design of the main research instruments used to gather primary and secondary data. It further indicates how issues of validity and reliability were addressed through triangulation. The chapter is organised into four main sections. The first section deliberates on the sources of data that are used in this study. The subsequent section focuses on the sampling design and sampling size of informants who were interviewed. The third section explains the data collection techniques while the fourth section presents and analyse the data. Ethical issues observed during data collection as well as the limitations of the study are also highlighted.

3.1. Research design and methodology

An investigation into the questions of why and how the GMTFCA is constituted as a bioregion, with what implications for biodiversity, the local economy and communities required the selection of appropriate methods and approaches for collecting and analyzing data. As Hofstee (2006) and DiCicco-Bloom and Crabtree (2006) remind us, the choice of research methods should be guided by the objectives and research questions. In order to investigate the creation of Mapungubwe as a bioregion and to understand the consequences of that process, the study adopted an interpretive approach which deals with multiple, socially constructed realities or 'qualities', that are complex and indivisible into discrete variables (Glesne, 1999). This approach often uses observation and in-depth conversations with participants in one or several sites. These techniques require that the researcher spends more time in direct personal contact with those being studied. Other interpretative researchers analyze transcripts of conversations or study videotapes of behavior in extraordinary detail, looking for subtle nonverbal communication, to understand details of interactions in their context (Neuman, 2000). The ontological belief for interpretive approach is to understand and interpret how the various participants in a social setting create meaning and manage their practical affairs in everyday life (Glesne, 1999; Miles

and Huberman, 1994; Neuman, 2000; Marshall and Rossman, 2006; Zimmer, 2006). This approach embraces a constructivist vision of research, according to which data are not gathered, but rather generated by the interaction between the subject who studies and the subject being studied. Thus, in order to produce knowledge, there must be a particular social interaction (Miles and Huberman, 1994; Glesne, 1999; Corbetta, 2003). The use of an interpretive approach is warranted because of its pragmatic value; that is, its use and suitability in human interactions and processes, and its conduciveness to further inquiry (Schwandt, 1994). This approach was important in this research because through social interaction with different stakeholders, the research uncovered deeper perspectives, feelings, experience, behaviors, thoughts and values regarding the process leading to the creation of the Mapungubwe bioregion. Unlike the use of aerial photographs and satellite pictures that can only capture the landscape, boundaries, land cover and different land use activities without giving details about the insights of people under study, the assumptions of the study are that such insights can be gained through a qualitative approach. The approach allows the researcher to understand the process by which land is acquired for the creation of the GMTFCA and the implications of the change in land use on people. The findings from different stakeholders' aid our understanding of how bioregionalism unfolds on both sides of the border. In addition, they also help to determine the implications of constructing a bioregion on the local economy and communities in the area.

Unlike positivist approaches that prefer quantitative data (use of experiments, surveys and statistics); the interpretive approach is associated with qualitative data to acquire in-depth understanding of everyday life (Neuman, 2000). Qualitative research puts emphasis on the qualities of entities and on processes and meanings that are not experimentally examined or measured in terms of quantity, amount, intensity or frequency (Denzin and Lincoln, 2000). They are a source of well grounded, rich descriptions and explanations of processes in identifiable local context. With the qualitative approach, one can preserve chronological flow, see precisely which events led to which consequences, and derive fruitful explanation (Miles and Huberman, 1994). Miles and Huberman, (1994) argue that words organized into incidence and stories have a concrete, vivid, meaningful flavor that often proves far more convincing to the reader than pages of summarized numbers. Supporters of qualitative approach argue that human actions are significantly influenced by the setting in which they occur and one should therefore study that

behavior in those real-life situations. Thus, the study should be conducted in a setting where all these complexities operate over time and where data on the multiple versions of reality can be collected (Patton, 1990; Marshall and Rossman, 2006). In the case of Mapungubwe TFCA, data on communities were collected in villages and farms in the three countries involved. Specifically, data were solicited from private land owners, farmers, farm workers, government and NGOs officials in their day-to-day area of operation. Furthermore, through face-to-face interaction with participants, the researcher was able to get access participants' feelings, experiences, and opinions about the process of creating Mapungubwe bioregion. Lastly, qualitative approach was found to be more appropriate in this study because it encourages the use of open-ended interview questions in data collection, and thus allows the researcher to capture the unforeseen as it is flexible as opposed to quantitative approach that is rigidly structured.

In order to strengthen the validity of the findings of this study, some groups of people were visited more than once and were asked the same questions to verify the truthfulness of the answers given in the first visit. Some informants were given back their transcripts and a summary of the analysis provided by the researcher to read and comment on them. Any remarks, disagreements or additional information provided by the informants were incorporated into the final analysis. This was important in order to enhance the credibility and rigor of the analysis. In addition, triangulation was also used to validate the results. Denzin (1978) broadly defines triangulation as the combination of methodologies in the study of the same phenomenon. The purpose of triangulation is not the simple combination of different kinds of data, but the attempt to relate them so as to counteract the threats to validity identified in each (Patton, 1990; Berg, 1995; Decrop, 1999; Esterberg, 2002). As Brannen (1992) and Esterberg (2002) have noted, field methods that do not use multiple research strategies are seen as narrow and inadequate. Accordingly, in this study, three data collection methods that include interview, observational data and analysis of existing documents were used to seek answers to research questions.

The existing spatial plan that explains the core area and expansion zone for the GMTFCA was examined. The examination of IDP document and MoU provided a behind the scene look of the component of TFCA on both sides of the border. However, the examination of these documents

alone did not explain how the people (communities, landowners, farmers, farm workers, NGOs, government departments) actually respond to the plan and how they understand its impact on their lives or operations. As a result, interviews were used to find out the criteria that were used to select the area dedicated for the TFCA in each country; to get insights into people's thoughts, feelings and experience regarding the TFCA spatial plan; their reaction to the process that has been followed to acquire land on both side of the border; and the implications of the change in land use in the area. The behavior of people does not always match their words; as a result, observation was used to provide a check of what is reported in the interviews. Observation was also used to check what was planned for the TFCA and what was actually happening on the ground. In this case, the documents would not have made sense without interviews and field observation. Taken together, these three methods provided a good picture of the process of land acquisition and the implications of land use change on biodiversity, the local economy and communities.

There are many approaches for doing qualitative approach such as descriptive or case studies, ethnographies, historical, experimental research and grounded theory or creative research (Goddard and Melville, 2001; Albertse, 2007). Grounded theory was found more suitable in this study. Essentially, grounded theory method consists of systematic inductive guidelines for collecting and analyzing data to build middle-range theoretical frameworks that explain the collected data. The relevance of grounded theory derives from its offering analytic explanations of actual problems and basic processes in the research setting (Charmaz, 2000). Grounded theory shares with qualitative research the use of non-probability sampling and in particular the use of theoretical sampling. This involves collecting new data as analysis proceeds, in order to elaborate and builds up emerging insights and theory, a process that continues until the point of data saturation (Pidgeon and Henwood, 2004). As Charmaz (2000) pointed out, this method is durable because it accounts for variation; it is flexible because the researcher can modify their emerging or established analysis as conditions change or when additional data are collected. Strauss and Corbin (1990) argue that since grounded theory is drawn from the data, it is more likely to offer insights, enhance understanding, and provide a meaningful guide to action. In addition, it also allows theory to emerge from the data and is more likely to resemble reality (Strauss and Corbin, 1990; Charmaz, 2000; Pidgeon and Henwood, 2004). However, in this

study, grounded theory was not used to develop or prove any theory, but rather as an essential research instrument to provide guidance to sampling and the process of data collection and analysis. The characteristic features of grounded theory approach used in this study include theoretical sampling and the close interplay of data collection and analysis. In implementing grounded theory, I frame general research questions and choose the site for the research. The important stakeholders in the establishment of Mapungubwe TFCA were identified through attending the TTC meeting, analysis of MoU, IDP document and draft treaty and data collected from those stakeholders in their natural settings. Preliminary data analysis was done simultaneously with data collection and this allowed more analytic questions to arise that suggest future interviews and observation. The new data collected were tailored to answer logical questions that come from the analysis of existing data. In the following section, I elucidate on the primary and secondary sources of data.

3.2. Sources of data collection

This study uses both primary and secondary sources of data. Primary sources are the original sources like letters or an eyewitness account of event. Secondary sources are one-step removed from primary sources and include account of people who were not eyewitnesses (Esterberg, 2002). In this study, primary data was collected between February 2011 and June 2013. In Botswana, the areas that were visited include the NOTUGRE, Lentswe Le Moriti, Mathathane and Motlhabaneng[12] villages. In addition, government officials from the DWNP were also visited in Mathathane (village), Bobonong (town) and Gaborone (city) to gather primary data. In South Africa, the areas visited for primary data collection includes Mapungubwe National Park, and commercial agriculture and game farms within and around Mapungubwe National Park. Other important stakeholders that are actively involved in the project including the Department of Environmental Affairs and Tourism (DEAT), Department of Rural Development and Land Reform (DRDLR), and Venetia Limpopo Nature Reserve were also visited for their input. In Zimbabwe, the areas that were visited during primary data collection include the communal land areas of Maramani, Machuchuta and River Ranch, private properties (Sentinel Ranch and Nottingham Estate), Tuli Circle Safari Area, and Beit Bridge Rural District Council (BBRDC).

[12] Lentswe Le Moriti, Mathathane and Motlhabaneng are villages in Botswana. Though these villages are within and near the TFCA, they are not part of Greater Mapungubwe TFCA.

The total number of the people who were interviewed in each country appears in Table 3.1 and the names of informants and their institutional affiliation appear in Appendix Six.

Table 3.1: Total number of people interviewed in Botswana, South Africa and Zimbabwe.

Botswana		**South Africa**		**Zimbabwe**	
Role players	**Number**	**Role players**	**Number**	**Stakeholders**	**Number**
PPF	2	PPF	2	PPF	2
Private land owners	7	Private land owners	22	Private land owners	3
DWNP	4	DEAT	1	Department of Parks and Wildlife Management (DPWM)	2
Community members	19	DRDLR	2	Department of Agriculture	1
NOTUGRE employees	4	SANParks	2	War veterans	5
Farm workers	3	Land claimants	5	Community members	40
Veterinary Department	2	Farm workers (current and former)	9	Farm workers	2
		Venetia Limpopo Nature Reserve	3	BBRDC	2
Total number	**41**		**46**		**57**

Source: Author, 2013

The land committed for Mapungubwe TFCA in each country influenced the choice of stakeholders to be interviewed. Lack of significant variation in land tenure system in the areas committed for TFCA in each country affected the population strata from which sampling could take place. For instance, in Botswana, the land committed for TFCA is entirely privately owned and as a result the stakeholders to be involved are private land owners and government officials. Furthermore, there are no land claims on the Botswana side of the TFCA. This did not bring additional stakeholders to be involved in the TFCA as is the case with South Africa and Zimbabwe. The variation in categories of interviewees reflects the land tenure systems involved

in the TFCA. The data were mainly collected through interviews, observation and analysis of public records available as documents and reports. All the stakeholders appearing in Table 3.1 were interviewed in their natural setting in order to get their insights regarding land use change in the Mapungubwe region. Similarly, observation of ordinary events in natural settings was done in order to have first hand knowledge about the phenomenon under study. Finally, documents which include the MoU, IDP, Minutes of TTC meetings, PPF maps and draft treaty were also analyzed to gather information about the process of land use change in the Mapungubwe region. The analysis of documents was linked with research questions developed in the conceptual framework of the study. As Marshall and Rossman (2006) remind us, the analysis of documents produced in the course of everyday events or constructed specifically for the research at hand help to supplement information gathered through interview, participant observation and observation. Accordingly, the analysis of TFCA documents and public reports helped to understand the rationale behind the establishment of GMTFCA. These documents were also useful in developing an understanding of the setting and the key stakeholders involved in the project for further investigation.

In addition to primary data sources, secondary sources are also used in this study, and this included journal articles, books, newspapers, magazines and internet materials. The bulk of the secondary sources were obtained from the libraries of the universities of Cape Town and Venda. In the following section, I elaborate on the sampling method used in this study.

3.3. Sampling design and sample size

It is not practical to collect data from everyone in a community in order to get valid findings. As a result only a sample of a population is selected. As Neuman (2000) has noted, the primary purpose of sampling is to collect specific cases, events or actions that can clarify and deepen understanding. Probability and non-probability are the two main categories of sampling (De Vaus, 1996; Neuman, 2000; Corbetta, 2003; Albertse, 2007). In probability sampling, the nature of the population is defined and all members have an equal chance of selection. The objective is to draw a representative sample and the results obtained from the sample can be generalized to the population (Neuman, 2000; Corbetta, 2003; Onwuegbuzie and Leech, 2007). However, Marshall (1996) argued that it is not the most effective way of developing an understanding of

complex issues relating to human behavior. Marshall (1996) has provided practical reasons for this: first, for a true random sample to be selected, the characteristics under study of the whole population should be known which may not be possible with complex qualitative study. Second, random sampling of a population is likely to produce a representative sample only if the research characteristics are normally distributed within the population. However there is no evidence that the values, beliefs and attitudes that form the core of qualitative investigation are normally distributed, making the probability approach inappropriate. The goal of this study is not to generalize the findings to a population, but to obtain the feelings, experiences, thoughts, and opinions of respondents regarding the process of land use change in the Mapungubwe region. Non-probability sampling was found more suitable in this study because it recognizes that some informants are richer than others. Accordingly, Devers and Frankel (2000) have noted that 'rich informants' are more likely to provide valuable insight and understanding for the researcher which might have been missed by any other methods.

Purposive sampling is often employed in qualitative research. The logic and power of purposeful sampling lie in selecting information-rich cases that provides the greatest insight into the research question (Patton, 1990; Devers and Frankel, 2000; Onwuegbuzie and Leech, 2007). However, in order to address the objectives and research questions, this study adopted a combination of stratified and purposeful sampling which Patton (1990) and Miles and Huberman (1994) call stratified purposeful sampling strategy. Stratified purposeful sampling represents a sampling scheme in which a population is divided into sub-populations such that members of each sub-population are relatively homogeneous with respect to one or more characteristics and relatively heterogeneous from members of all other subgroups. In order to obtain a stratified purposeful sample, the sampling frame is first divided into sub-populations or strata; and then a purposeful sample is selected from each stratum (Patton, 1990; Miles and Huberman, 1994).

In this study, the key stakeholders in the establishment of Mapungubwe TFCA are heterogeneous. As a result, stratified sampling was used to subdivide the important stakeholders into homogeneous categories and within each stratum; purposive sampling was therefore used to select members to be interviewed. In Botswana, the stakeholders were subdivided into seven categories which included the Private land owners, DWNP, Community members, NOTUGRE

employees, farm workers, Veterinary Department and PPF officials. In South Africa, the stakeholders were subdivided into eight categories; these included SANParks, private land owners, farm workers (former and current), land claimants, DEAT, PPF, DRDLR and Venetia Limpopo Nature Reserve. In Zimbabwe, the stakeholders were subdivided into eight categories, namely, communities on communal land, farm workers, private land owners, DPWM, Department of Agriculture, War veterans, BBRDC and PPF. The total numbers of people who were interviewed in each category appear in Table 3.1. The number of people interviewed in each category differs from one country to another. Whereas some respondents were able to give adequate answers to the questions asked, others did not give satisfactory answers to some questions. This prompted the interviewer to identify more members in the same category to get clarification and, as a consequence of this; there is variation in the number of people interviewed in each stratum as indicated in Table 3.1. Following recommendations by Glesne (1998) and Roth (2005), the collection of data was done concurrently with data analysis. This was important in order to develop an understanding of responses to research questions at an early stage that allows for further probing into the research questions during fieldwork (see DiCicco-Bloom and Crabtree, 2006). This iterative process of data collection and analysis was done until the point of data saturation when no new categories or themes were emerging. In the following section, I explain the data collection techniques employed to gather data in the study area.

3.4. Data collection techniques

Qualitative research typically relies on four methods of gathering information: participating in the setting; observing directly, in-depth interviewing; and analyzing documents. These techniques form the core of qualitative enquiry. Several secondary and specialized methods of data collection supplement them (Marshall and Rossman, 2006). However, this study has employed interview, observation, and written documents as data collection techniques. These techniques are detailed here-under:

3.4.1. Interviews

The qualitative interview as a means of acquiring information is no longer restricted to the use by social science researchers; it is a worldwide mode of systematic enquiry. As Esterberg, (2002) has noted, the use of interview is so extensive today that it has been said that we live in an

'interview society'. Increasingly, qualitative researchers are realizing that interviews are not neutral tools of data gathering, but active interaction between two or more people leading to negotiated contextualized based results (Fontana and Frey, 2000). Thus the focus of qualitative interview is to encompass the 'why', 'what' and 'how' questions in order to illuminate and understand complex social issues (Lacey and Luff, 2001).

Interview takes a wide variety of forms including face-to-face, interviews by telephone, email, video and other extended means of communication (Fontana and Frey, 2000; Kitchin and Tate, 2000; Opdenakker, 2006). However, individual face-to-face verbal interchange remains the most common form of qualitative interview because the researcher is able to interact with respondents, allowing for more thorough examination of experiences, feelings or opinions (Sommer and Sommer, 1997; Kitchin and Tate, 2000; Goddard and Melville, 2001) and respondents are able to express themselves in their own words (Hofstee, 2006). It can provide a release of pent-up feelings and can be empowering as it recognizes people as experts in their own experiences. A further advantage of face-to-face interview is that people who may be unwilling or unable to write out a long, coherent answer are often willing to say it to an interviewer (Sommer and Sommer, 1997). Interview can also be tape recorded with the permission of an interviewee and allows for notes to be taken (Opdenakker, 2006).

There are many different ways of conducting interviews. Three basic types of interview can be distinguished: structured, semi-structured and unstructured interviews (Sommer and Sommer, 1997; Esterberg, 2002). In structured interview, the questions are predetermined both in content and in form. The fact that same questions are asked in the same order introduces a considerable degree of rigidity into the interview (Esterberg, 2002; Corbetta, 2003). In semi-structured interview, only the content but not the form of the questions is predetermined. This provides opportunities for both the interviewer and interviewee ample freedom, while at the same time ensuring that all the relevant themes are dealt with and all necessary information collected (Esterberg, 2002; Corbetta, 2003). In unstructured interview, neither the content nor the form of the questions is predetermined. The obvious limitation is that the question asked may vary from one respondent to another which may result in inconsistency in the collection of data (Corbetta, 2003). This makes comparison between data from different interviews difficult.

This study used interview as the main data collection technique. As Patton (1990) reminds us, we cannot observe everything we might want to know. Accordingly, we interview people to understand what life is like from perspectives other than our own. A semi-structured interview was found more suitable in this study because it is more flexible and allows for an open dialogue that can extend beyond the parameters set by the interview schedule. An average of one hour was spent during each interview. A checklist of open ended questions was prepared for each group or stratum of stakeholders in each country. Each group had a different set of open ended questions (Appendix Seven, Eight, Nine and Ten). A face-to-face interview was conducted in the natural setting until all groups of stakeholders were interviewed. The questions asked were prepared to address the three main thrusts of TFCA in the Mapungubwe region. They revolved around the claims that TFCAs promote conservation of biodiversity, local economic growth and tourism, and encourage socio-economic upliftment and empowerment of previously marginalized communities. The discussion below shows how three data sets on these themes were collected.

(a) Data on biodiversity conservation

The research focused on two important aspects of biodiversity: the process that has been followed to acquire land for conservation; and an examination of how biodiversity in the Mapungubwe region is managed and the implications of such management regimes (i.e. on the biodiversity of the area). On the Botswana side of the TFCA, the study concentrated on the process that has been followed to select the land committed for TFCA. The private land owners of NOTUGRE were interviewed to get their involvement and personal feelings regarding the TFCA (Appendix Eight). The different land owners were also interviewed to find out how biodiversity is managed and challenges of biodiversity management in NOTUGRE (cf Chapter Four). On the South African side the study focused on the nature of the farms acquired and how they were acquired for purposes of the TFCA. Personal interviews were conducted with manager of Mapungubwe National Park and the conservation coordinator of Venetia Limpopo Nature Reserve (Appendix Nine). The total number of farms that have been acquired, leased and contractual agreements that have been finalized, as well as the current biodiversity management strategies and challenges of biodiversity conservation in the Mapungubwe National Park were obtained from the park manager (cf Chapter Four). Personal interview was also conducted with Conservation Coordinator of Venetia Limpopo Nature Reserve in order to find out their

involvement with the TFCA project and gain understanding of the properties sold and leased to SANParks. A former De Beers wildlife biologist who has been involved with GMTFCA was interviewed to get his opinion regarding land acquisition in the Mapungubwe area (Appendix Nine).

On the Zimbabwe side of the border, the study looked at how the private land owners in Sentinel and Nottingham came into the party to create a bioregion. The owners of Nottingham and Sentinel were both interviewed to get their involvement and personal feelings regarding TFCA (Appendix Ten). The War veterans who currently own a portion of Sentinel 32 ha and Nottingham 15 ha through the land redistribution programme were also interviewed to get their understanding and involvement in the TFCA (cf Chapter Five). The Park official of Tuli Circle Safari Area was interviewed to find out about their involvement in the project and the current biodiversity management strategies and the challenges of biodiversity conservation (cf Chapter Four). The international coordinator of GMTFCA has been interviewed to find out how biodiversity will be managed and the progress that has been made towards the development of biodiversity management plan (Appendix Seven).

(b) Data on economic development

Data on economic development was collected in order to find out if GMTFCA has stimulated any economic development in the region. The research used economic indicators on both sides of the border to assess the space economy of the region, especially tourism and investment trends within and outside the GMTFCA. On the Botswana side of the TFCA, the private land owners were interviewed in order to understand the economic rationales behind their participation in the TFCA (Appendix Eight). The members of NOTUGRE Executive Committee (EXCO) were also interviewed to find out the number of game lodges and restaurants built within NOTUGRE (cf Chapter Six). On the South African side, interview was conducted with the Mapungubwe National Park manager to find out the availability of private concessions, private tour operators and local street vendors selling woodcraft and other product to tourists within and around Mapungubwe National Park. In addition, the private game farmers around Mapungubwe National Park were also interviewed to find out the investment trends in the area. The study particularly targeted private game farms to find out if the concept of TFCA has attracted new

land owners to invest in the Mapungubwe area (Appendix Nine). In addition, I also interviewed game farmers to find out if there are any infrastructural developments like construction of new lodges, guest houses and restaurants in the game farms; and how these developments might be related to the GMTFCA (cf Chapter Six). The study targeted the private game farmers that are within the radius of 30 km from Mapungubwe National Park because they are closer to the park and have potential to benefit from tourists visiting the TFCA. The idea was to interview all the game famers who are within the radius of 30 km from the Mapungubwe National Park. However, the interview was limited to only ten game farmers who were accessible and willing to participate. Some were absentee game farmers whereas others were unwilling to participate in the study.

On the Zimbabwe side of the border, there are private game farms which include Sentinel and Nottingham with revenues generated from tourism and hunting. Personal interviews were conducted with the owners of Sentinel and Nottingham in order to understand the economic rationales behind their participation in the TFCA and how they weighed the economic benefits from the TFCA against other economic incentives (safari hunting and irrigation farming). Similarly, interviews were conducted with the War veterans in order to understand how they valued benefits generated from safari hunting (Appendix Ten). Tuli Circle Safari Area is under the DNPWM with revenues generated from hunting. Personal interviews were conducted with Park officials in order to understand the economic rationales behind their participation in the TFCA and how they weighed the economic benefits from the TFCA against safari hunting (cf Chapter Six).

(c) Data on communities

The communities in this study include the people from communal and agricultural areas that are within or around the TFCA. In Botswana, communities include people from Lentswe Le Moriti, Mathathane and Motlhabaneng village. Lentswe Le Moriti village is within the TFCA whereas Mathathane and Motlhabaneng villages border NOTUGRE on the western side. It is important to note that all communal lands in Botswana are not part of the TFCA. On the Botswana side of the TFCA, the study focused on the main source of livelihoods of community members and the main land use activities in the area, and how such activities are affected by wildlife conservation. In

addition, the study looked at the implications of wildlife conservation on local communities (Appendix Eight). The communities were also interviewed in order to understand their views, knowledge and attitude towards wildlife conservation (cf Chapter Six). On the South African side, the study looked on the fate of farm workers whose livelihoods depended on land that had been incorporated into the TFCA. The land claimants staying in Den Staat farm and current farm workers are considered to be communities on the South African side of the TFCA because they currently live on the farms within Mapungubwe National Park, and some of them are permanent residents in the area. Former farm workers were identified and interviewed to find out their personal experience of land use change in the Mapungubwe area. The study also looked at the farm workers who are currently employed by private land owners in the area. Personal interviews were held with current farm workers in order to understand their views and feelings regarding TFCA (Appendix Nine). Private land owners (agricultural and game famers) that are within the borders of Mapungubwe were also interviewed to find out the number of farm workers that are currently employed in each farm and the total number of farm workers who will be affected by land use change in the Mapungubwe area (cf Chapter Six).

The study also concentrated on the land claims in the Mapungubwe area as they also add another layer of land use change in the area. Representatives from the Machete royal family and Sematla were interviewed to understand the land claim and their views regarding the TFCA and its implication for their land. A general overview of land claims and the status of these claims in Mapungubwe were obtained from interviews with officials from the Office of the Regional Land Claims Commissioner in Limpopo (cf Chapter Five). The land claimants were also interviewed in order to understand the current use of the land that has been acquired and the future plans in the use of claimed land (Appendix Nine).

On the Zimbabwean side, the study focused on the three communal lands that form part of GMTFCA, namely, Maramani, Machuchuta and River Ranch. Interviews with communities were conducted in all these villages. According to PPF maps, Maramani and Machuchuta communal lands are within the core of the proposed GMTFCA. To get informants rich in information from communities, the study purposefully selected and interviewed Maramani communities on the eastern, western and southern side near the confluence of Limpopo and Shashe whereas in the

Machuchuta communal areas, communities on the western side were interviewed because they are within the core of the proposed TFCA and are directly affected by the conservation project. The communities on both villages were interviewed in order to understand their views, attitude, expectations and knowledge about the TFCA. Interviews were also conducted in order to find out their main source of livelihoods and the main land use activities in the area and how such activities are affected by TFCA (Appendix Ten). Communities who were found in irrigation schemes were also interviewed to find out the type of crops that are planted, the irrigation method that area used and how they are affected by wildlife conservation (cf Chapter Six). One agricultural extension officer in Maramani village was also interviewed in order to understand the issue of food security in communal land, total size of irrigation scheme, total area under cultivation, total plot size per family, source of water for irrigation and the challenges they are faced with in irrigation schemes (Appendix Ten). The Chief Executive Officer (CEO) of BBRDC was also interviewed to get the position of the council regarding communities (Maramani and Machuchuta) who are directly affected by the creation of the TFCA (cf Chapter Six).

3.4.2. Observation

Sometimes, the best way to gain a better picture of a setting is to see for yourself what is happening, rather than depending only on your respondents. Observation can be seen as the non-verbal counterpart of the qualitative interview, the former involving observing and the latter involving questioning (Corbetta, 2003). Observation is the technique of obtaining data through direct contact with a person or group of persons chosen for the study (Marshall and Rossman, 2006). As Silverman (1993) has noted, the aim of observation is to gather first hand information about social processes in a naturally occurring context. Observation has the advantage of drawing the observer into the phenomenological complexity of the world where connections, correlations, and causes can be witnessed as and how they unfold. A qualitative observer is not bound by predetermined categories of measurements or responses, but is free to search for concepts or categories that appear meaningful to the subject (Adler and Adler, 1998). Data from observations consist of detailed descriptions of the people's activities, behaviors, actions, and a full range of interpretational interactions and organization processes that are part of observational human experience (Patton, 1990). A description of what has been seen is recorded on field notes.

In this study, observation was done at the time of interviewing. While interviewing participants, their behavior and actions were noted. By spending time with communities and participating in their daily activities, the behavior and actions of communities became clearer to the researcher and were therefore recorded on the data collection note book.

On the Botswana side of the TFCA, observation was used to check any new development, including new game lodges and restaurants within and outside NOTUGRE (cf Chapter Six), and to collect information from communities in Lentswe Le Moriti, Mathathane and Motlhabaneng villages. This method was used in this study to verify communities' responses gathered through interviews. The researcher observed the day to day activities including weaving and selling mats and baskets, brewing and selling of palm wines, looking after the livestock and pumping underground water for livestock (cf Chapter Six). On the South African side, observation was used as a technique to obtain information on the types and the total number of private farms within Mapungubwe National Park, their location, the kinds of produce particularly in irrigation farms and the conditions of farm workers (cf Chapter Six). In addition, observation was also used as a technique to find out the presence of local street vendors selling woodcraft and other products to tourists. The area targeted included the main entrance of Mapungubwe National Park, areas along the R572 road (main road from Messina to Mapungubwe) and the R521 road (main road from Alldays to Pont Drift border gate where travelers depart South Africa for Botswana). The availability of new lodges, guest houses and restaurants were also done through field observation (cf Chapter Six). This method was also used to establish the different land use activities in the Mapungubwe area.

On the Zimbabwe side, observation was used to collect information from communities in Maramani, Machuchuta and River ranch in order to describe their actions and understand their motivations through a process of identification. This technique was used in this study to check against communities' responses gathered through interviews. The researcher observed the day to day activities including harvesting of ilala palms, brewing and selling of palm wines, making sweeping brooms and cultivation in irrigation schemes. The researcher also participated in harvesting of ilala palms, making sweeping brooms and brewing palm wine. The researcher also tested some locally brewed palm (cf Chapter Six). While observing, pictures on different

activities of interest were taken with the permission of participants. This was important to gain a richer picture of daily activities rather than relying only on information provided by respondents.

3.4.3. The use of existing documents

Knowledge of the history and context surrounding a specific setting come in part from reviewing documents. Corbetta (2003) defines documents as any material that provides information on a given social phenomenon and which exists independently of the researcher's action. Documents are produced by individuals or institutions for purposes other than social research, but can be utilized by the researcher for cognitive purposes. They may include personal and institutional documents. Personal documents are produced by a single individual for strictly personal use and it may often be difficult to access them (Hodder, 2000; Corbetta, 2003). They are also called 'expressive' documents because they express the feelings, the affairs and the personality of individual who produced them (Esterberg, 2002; Corbetta, 2003). On the other hand institutional documents are produced by institutions or single individuals within the context of their institutional roles (Corbetta, 2003). Documents represent an irreplaceable source of information for the study of contemporary society because the information provided may differ from, and may not be available, in spoken form. Equally, documents can be used alongside other forms of evidence so that the particular biases of each can be understood and compared (Hodder, 2000). In this study, institutional documents were used as another source of data to obtain background information about the study area, the agreements signed on TFCA, biodiversity management, land use activities, economic and community development, and land ownership in the Limpopo Valley. In addition, documents were also used as a source of information to visually identify the various components of the proposed TFCA during data collection and to understand the official positions on the TFCA project. Furthermore, documents particularly maps were used to delineate the borders of the core and buffer zones of the TFCA. In the section that follows, I explain how the data so collected was analyzed.

3.5. Data analysis

Data can be analyzed either qualitatively or quantitatively; however other research work integrates the two methods. Quantitative analysis emphasizes the measurement and analysis of casual relationships between variables, and not processes (Denzin and Lincoln, 2000).

Accordingly, in the quantitative paradigm, the language of mathematics is taken purely and simply to be the language of science. Consequently, every effort is made to operationalize concepts in mathematically treatable terms; the greatest possible use is made of statistical techniques of data analysis in order to extrapolate generalizations from the sample to population (Corbetta, 2003).

In contrast, qualitative research analysis is a nonmathematical process of interpretation, carried out for the purpose of discovering concepts and relationships in raw data and then organizing these into a theoretical explanatory scheme (Denzin and Lincoln 1998, 2000, 2008). While the quantitative research is variable based, the qualitative research is case-based (Corbetta, 2003). The qualitative approach is holistic, in that the individual is observed and studied as a complete entity, in the conviction that each human being is more than the sum of collection of parts (in this case, the variables). Thus, the objective of the analysis is to understand people and not to analyze the relationship among variables as in quantitative approach. Qualitative data analysis ideally occurs simultaneously with data collection (Glesne, 1998; Roth, 2005; DiCicco-Bloom and Crabtree, 2006). Early analysis of data helps the field worker to cycle back and forth between thinking about the existing data and generating strategies for collecting new data. It makes analysis an ongoing, lively enterprise that contributes to the energizing process of field work (Miles and Huberman, 1994; Neuman, 2000; Lee and Fielding, 2004). Equally, errors encountered during data collection, can be undone next time out; there is always a second chance (Miles and Huberman, 1998). This iterative process of data collection and analysis eventually leads to a point in the data collection where no new categories or themes emerge. This is referred to as data saturation, signaling that data collection is complete (Pidgeon and Henwood, 2004; DiCicco-Bloom and Crabtree, 2006).

The object of analysis in this study is not the variables as in quantitative approach, but individuals ranging from affected communities in Maramani, Machuchuta, River Ranch, Mathathane, Lentswe Le Moriti and Motlhabaneng villages; farm workers; agricultural and game farmers; and private land owners. As a result, in this study, data was analyzed qualitatively. The collection of data and analysis was done at the same time throughout the research process. Data obtained from each group of stakeholders were recorded on a notebook. All the written notes

were typed and summarized in the evening. In instances where there were gaps in the recorded notes, a follow-up interview was arranged in order to understand what the interviewee actually said. The summary of information gathered was compared with the objectives and the research questions. This helped to determine the type of information to be collected in the next field visits. In addition, it also helped to know the groups of people who had been interviewed and those who still needed to be interviewed. This was done throughout the research process until all the groups of stakeholders in each country were interviewed. In cases where there was insufficient information on groups that were interviewed, follow up interviews were organized and more group members were interviewed to gather more information. The notes written during interviews were compared with those written during observation. The pictures that were taken were compared with the interviews and observation notes to validate the data.

Some preliminary findings of the study were presented at the 9th Biannual Conference of the Society South African Geographers held in Cape Town on 20-22 June 2012. The comments from the participants helped to identify gaps in the data, which prompted the researcher to go back and collect more data and while also refining existing data. As a result of this process, the researcher became more familiar with the data. Following on the ideas of Esterberg (2002) and Marshall and Rossman (2006), collected data were organized into categories on the basis of themes, concepts or similar features. Finally, the themes, categories and patterns were interpreted by writing a meaningful story which is presented in this thesis.

The results were presented in accordance with a narrative perspective; episodes were recounted and cases were described, often in the exact words used by the respondents so as to communicate to the reader the vividness of the situation studied without altering the material recorded (after Neuman, 2000; Corbetta, 2003). As Corbetta, (2003) reminds us, the standard procedure is to put forward an argument and an interview extract is reported in order to support and illustrate the point. In this kind of presentation, the researcher's analysis is interwoven with illustrations, examples and empirical support in the form of interview extracts.

3.6. Ethical issues

In South Africa, all researchers who want to conduct research work in national parks are required to register their research project with SANParks. In adhering to this specific rule and the research ethics in general, this research project was registered and approved by SANParks (Appendix Two). Similarly, in Botswana, permission to conduct research was granted by the Ministry of Environment, Wildlife and Tourism (Appendix Three) whereas in Zimbabwe authorization was given by BBRDC. This research project was also discussed in the TTC meeting of the 8th June 2011 and was approved by committee members from Botswana, South Africa and Zimbabwe. Authorization to information about land claims in the Mapungubwe area was obtained from the Office of the Regional Land Claims Commissioner in Limpopo (Appendix Four). Permission to interview key stakeholders at local level was obtained from the District Council, Municipalities, Chiefs and Headmen. Communities were asked for their permission before they were interviewed and before pictures were taken. Individuals who were interviewed were asked for permission to use their names, and those who did not give approval are referred to as anonymous in this research (Appendix Six). A letter showing my affiliation to the University of Cape Town helped to introduce the researcher to key stakeholders that were interviewed (Appendix Five).

3.7. Limitations of the study

Although the study has achieved its intended aim and also answered research questions, there were some unavoidable limitations. First, the GMTFCA between Botswana, South Africa and Zimbabwe is dominated by private land owners. Whereas some of the private land owners stay on their farms, most of them are absentee land owners. As a result, only those private land owners and farm managers who were accessible were interviewed for this study. In addition, other private land owners who were found in the study area were not willing to be interviewed. This limited the number of informants in private land. Second, budget and time was also another limitation in this study. It was too expensive to conduct a study in three different countries and it was also time consuming to interview community members across the border. As a result, the study concentrated only on the communities that are directly affected by the creation of Mapungubwe TFCA. Lastly, the study was conducted before the treaty was signed by the three countries. As a result, some of the processes were still in progress at the time of fieldwork. These limitations nevertheless do not compromise the findings of the study.

3.8. Conclusion

This chapter explained the techniques used in gathering data in Botswana, South Africa and Zimbabwe. The general approach that was followed to gather data across the border involved visiting and interviewing a structured sample of all stakeholders involved in the creation of Mapungubwe bioregion in their natural setting. However, in order to verify the information recorded during interview, some informants, particularly government officials and private land owners, were interviewed more than once. Some were given back the transcripts of interviews and a summary of the analysis to read and comment on them. This approach did not apply to communities on both sides of the border. In addition to interviewing communities in their natural settings, the researcher also spent time with the communities observing them, participating in some of their daily activities and taking pictures with the permission from community members. This was important in order to provide a check on what was reported during the interviews. Methodological techniques used to gather information from government officials, private land owners and NGOs were different from those used in communities across the border. This modification was important in order to get the best possible information from different stakeholders. The discussion in this chapter has shown that doing fieldwork in three countries simultaneously demands the use of key themes during data collection and analysis. This helps to compare the similarities and dissimilarities of activities taking place across the border. I argue in this thesis that a methodological approach and design that pays attention to both sides of the TFCA is necessary for making informed conclusions about these cross-border conservation schemes. In the next chapter, I enlighten the ways in which the process of creating Mapungubwe bioregion unfolds across the frontier and demonstrate the challenges affecting this process.

CHAPTER FOUR
THE CREATION OF MAPUNGUBWE BIOREGION

4.0. Introduction

As highlighted in Chapter Two, this thesis uses bioregionalism and bordering as a theoretical avenue for understanding the creation of Mapungubwe. The focus of this chapter is on how the Mapungubwe region unfolded as a TFCA, and the outcome of that process. In particular, the chapter analyses tactics and strategies for land acquisition and the consequent shift in land uses as the necessary conditions for the creation of the TFCA. Land ownership and acquisition are important aspects in the development of Mapungubwe TFCA in that they determine the pace and geography of the bioregion. The chapter highlights that bioregionalism in Mapungubwe is dependent on buying farms as well as the willingness of land owners to participate in the TFCA project. This chapter is organised into three main sections. The first section provides details of the land ownership and acquisition in Botswana, South Africa and Zimbabwe within the area designated for the Greater Mapungubwe TFCA. The second section focuses on the challenges and threats to the creation of bioregion on both sides of the border, while the last section discusses the outcome of the creation of TFCA on conservation management.

4.1. Land ownership and acquisition

Conventionally, TFCAs are created through integrating existing national parks, nature reserves and other conservation areas across the border. In the case of GMTFCA, it is not only the state land that is involved in the creation of a bioregion; rather the area is dominated by communal and private land. As a result, land acquisition is necessary for integrating Mapungubwe National Park in South Africa and game ranches in Botswana and Zimbabwe. In addition, it is also important to buy land to consolidate the core area and negotiate with private land owners for contractual agreements (Interview, Johan Verhoef, 22/03/2011). Details of land ownership and acquisition in each country and the actors involved are explained below.

4.1.1. Botswana portion of the transfrontier conservation area

The land committed for TFCA on the Botswana side is the NOTUGRE which is entirely owned by private individuals who are all white. The owners of NOTUGRE formed NOTUGRE

Association that was initiated by Dr Attie Von Maltitz in 1964. Dr Von Maltitz, who was also a land owner, records that in 1964 wildlife was extremely scarce both in numbers and variety because of poaching (Cited in Steyn, 2003). Von Maltitz realised that it was necessary for the new owners to get together and jointly employ a warden to counter the poaching of game particularly the antelopes. He convened a meeting of all interested land owners. The invitees included Dr.Willem Coetzer, and the Vosloo brothers, Piet and Thys, who had formed the Limshapo Game Protection Association (LGPA) chaired by Dr. Von Matitz. It was the first attempt at co-ordinated conservation in Tuli (Steyn, 2003; de la Harpe and de la Harpe, 2004). The Association was informal with no constitution or fixed rules, but meetings were held twice a year (before hunting season and after), and decisions were reached and honoured on the basis of a gentlemen's agreement. The costs were divided equally among the members (Steyn, 2003). The late Ted Steyn who was also a land owner became the Chairman of the Association in 1970. In 1975 a formal legal constitution was drawn up for NOTUGRE. Ted Steyn played an essential role in the formation and formalization of the NOTUGRE and protection of the wildlife in the reserve, including the successful re-introduction of Giraffe into the reserve. A total of 36 private land owners joined the Association voluntarily, subsequently making up the NOTUGRE as it is known today (Steyn, 2003; Interviews, David Evans, 19/05/2011; Piet Le Roux, 12/06/2013). The internal fences (borders) between the game ranches were removed voluntarily by private game ranchers in the 1960s. Such removal is akin to de-bordering. De-fencing and the consequent amalgamation of game farms have led to the creation of NOTUGRE. The idea of transforming property borders is to allow free movement of wildlife within NOTUGRE (Interview, various NOTUGRE land owners, 2011). The NOTUGRE is an Association lawfully registered with the Registrar of Societies in accordance with the Society Act of Botswana (Cap 18:01) (MoU, 2006).

When the idea of TFCAs emerged in the Mapungubwe region, the Association found it necessary as they already had a conservancy and decided to be part of GMTFCA in order to increase the habitat size required by large mammals (Interviews, David Evans, 19/05/2011; Piet Le Roux, 12/06/2013). One game farm manager in NOTUGRE commented that:

> *Mapungubwe region has more than 1200 elephants and more than 50% of this occurs in the NOTUGRE. As a result, NOTUGRE has been struggling with the elephant population that has exceeded the carrying capacity...There are two main reasons that made NOTUGRE to join the TFCA. We wanted to create a bigger ecological range for wildlife, particularly elephants to move freely across the border and to improve tourism potential of the area as hunting is not permitted in NOTUGRE* (Interview, Piet Le Roux, 12/06/2013).

The other motives are clear from comments by one NOTUGRE land owner who said:

> *Whilst it was desirable to establish the GMTFCA to create additional rangeland for a burgeoning elephant population, the primary reason was to enhance the future security of the reserve both politically and geographically, to re-establish ancient natural migratory patterns and to enrich the biodiversity of the region and strengthen its economic foundation* (Interview, Anonymous land owner, 18/04/2011).

Some game ranchers in NOTUGRE see the establishment of GMTFCA in the region as providing them with an opportunity to resolve the problem of elephant overpopulation (Interviews, Tanya Mckenzie, 19/05/2011; Jeoff Norris, 07/04/2011; Bruce Patty, 13/06/2013). That is to say the establishment of GMTFCA creates landscape that is free of borders which allows elephants and other wildlife to roam freely across the international borders. As a result, on 21st June 2006, the owners of NOTUGRE and the Botswana government signed a MoU that enabled the government of Botswana to act on NOTUGRE's behalf regarding the establishment of GMTFCA (MoU, 2006b). The MoU is a tool for control and exclusion in the establishment of the TFCA. The signed MoU by the two parties can be understood as a bordering process in that it creates two different camps; one made up of government officials and NOTUGRE land owners and the other made up of local communities who are not involved in the establishment of TFCA.

The main points captured in the MoU are that the parties agreed that the establishment of TFCA should bring considerable benefits to local communities in Botswana and that such local communities should be consulted and participate in the development of Mapungubwe TFCA.

The MoU also spells out that should the government or local communities and land owners wish to extend the TFCA to incorporate further land; the parties commit to facilitate the process. In addition, there will be consultation between the government and NOTUGRE Association on the conservation, management, and utilisation of resources within the TFCA and any construction and maintenance of infrastructure will be the responsibility of the land owner concerned. Furthermore, the management committee of the Botswana side will be composed of representatives from government and NOTUGRE Association. However, the parties agreed that the DWNP in the Ministry of Environment, Wildlife and Tourism will be the national coordinating agency of Botswana component of the TFCA (MoU, 2006a).

The DWNP has been entrusted with the responsibility of establishing Mapungubwe TFCA; as a result this Department has become an important role player. However, since the area committed for the creation of the TFCA is entirely privately owned, this places land owners at the centre of the creation of the TFCA in Mapungubwe. Whereas on one hand the DWNP represents the interest of Botswana government, on the other hand NOTUGRE Association represents the interest of private land owners. As the interests of these two entities are not conflictual, DWNP and NOTUGRE Association are essentially partners in conservation. This partnership suggests that the private sector plays a critical role in the expansion of conservation areas.

4.1.2. South Africa section of the transfrontier conservation area

The land committed for the TFCA on the South African side is Mapungubwe National Park, leased freehold land not owned by SANParks, and Venetia Limpopo National Park. The formation of Mapungubwe National Park has a long history that dates back to 1922 from an initiative of General Jan Smuts, who was Prime Minister of South Africa at the time. A block of 9 farms was set aside as Dongola Botanical Reserve (Carruthers, 1992; Hall-Martin *et al*., 1994; Robinson, 1996). The primary aim of the reserve was to study the vegetation and assess the agricultural and pastoral potential of the area. More farms were acquired and incorporated into the reserve. By 1944 Dongola Botanical Reserve had grown from a small block of nine farms to the considerable area of 27 farms with a total area of 60 000 ha. In 1944 this was extended to the concept of a Dongola Wildlife Sanctuary after it was realized that the area was not suitable for human habitation. The proposed Sanctuary was to promote the conservation of Limpopo River

valley west of Musina and to transform a vast area of 240 000 ha into a National Park (Carruthers, 1992; 2006; 2009). It was at this time that the possibility of linking the Sanctuary with conservation areas in Botswana and Zimbabwe was first mooted. The concept was hotly debated both in parliament and in the press to the extent that it became known as the 'Battle of Dongola' (Hall-Martin *et al*., 1994; Robinson, 1996; Carruthers 2006; 2009). It became the subject of political acrimony, with Smuts' United Party government in favour of the reserve while the opposition (National Party) was against it (Hall-Martin *et al*., 1994; Robinson, 1996). Despite political tension, the governing United Party passed legislation on 28th March 1947 (Dongola Wildlife Sanctuary Act No. 6 of 1947) proclaiming an area of only 92 000 ha reduced from the original plan of 240 000 ha (Hall-Martin *et al*., 1994). The victory of the National Party in the 1948 general elections was a blow to the plan for the Sanctuary. The victorious National Party quickly abolished the national park (Carruthers, 2006; 2009), which is what it had promised its supporters it would do (Carruthers, 1992). The Dongola Wildlife Sanctuary Act was repealed in 1949; money raised was repaid back to donors, farms returned to the original owners, and the farms comprising the Dongola Botanical Reserve were allocated to white farmers by the National Party government.

A similar proposal for creating a National Park in the same vicinity was brought to the attention of the National Parks Board[13] in the form of a Memorandum, which was submitted on 23rd June 1967, in recognition of the valuable archaeological sites around Mapungubwe Hill (Hall-Martin *et al*., 1994; Robinson, 1996). The idea was supported by the University of Pretoria, the Institute for the study of Man in Africa, South African Association for the Advancement of Science, the South African Archaeological Society and the South African Museum Association (Hall-Martin *et al*., 1994; Robinson, 1996). In the same year, a small provincial Vhembe Nature Reserve (8 746ha) consisting of three farms (Greefswald, Samaria and Den staat) was proclaimed. Although Greefswald was state owned, Samaria and Den Staat were privately owned (Berry and Cadman, 2007).

[13] National Parks Board, former name of current SANParks in South Africa.

The farm Greefswald was occupied and managed by the South African Defence Force (SADF) from 1968, and a military base was established (Ralushai, 2002; Berry and Cadman, 2007) to monitor what were regarded by the government then as 'terrorists' intent on destabilising the country (Carruthers, 2006). A razor wire fence along the Limpopo border was constructed by the army and farm Greefswald became a place for 'rehabilitating' conscripted gays and drug offenders. The area was reportedly a private hunting ground for the top brass in the military and a few very senior politicians (Carruthers, 2006; Berry and Cadman, 2007). The army left paintings of military emblems on the rocks which are still to be seen near the confluence. One of such paintings is the insignia of the 44 parachute brigade (Plate 4.1).

Plate 4.1: Army paintings on rocks in the Mapungubwe National Park.

Source: Author, 16/01/2012

The importance of archaeological values discovered in the Mapungubwe area eventually led to site K2 declared a National Monument on 9th September 1983. Mapungubwe and its southern terrace were also declared a monument on 17th August 1984 in terms of the National Monuments Act (Act No. 28 of 1969) (SANParks, 2010a).

In 1986, there was another attempt to re-establish Dongola reserve as a National Park in the region (Hall-Martin, 1988). However, the proposal was opposed by the Administrator of the Transvaal[14], who laid claim to the area for the provincial Department of Nature Conservation and the SADF on the grounds that a national park would not be suitable for what was considered a sensitive security zone (Hall-Martin *et al*., 1994). This claim did not hold water in the early 1990s when political changes swept through the country. For example, the SADF reduced its military presence along the border. In 1992 the management of Greefswald was handed over by SADF to the provincial nature conservation agency, the Transvaal Nature Conservation. The site was then administered by Northern Province[15] Nature Conservation as the Vhembe Nature Reserve (Berry and Cadman, 2007).

In June 1990, De Beers Consolidated Mines established the 36 000ha Venetia Limpopo Nature Reserve. This was a turning point because the idea of a national park was raised anew by De Beers on 30th December 1993 through a letter to the Minister of Environmental Affairs (Hall-Martin *et al*., 1994; Robinson, 1996). At a meeting of the National Parks Board in June 1994, the Board decided to pursue the objective of proclaiming Mapungubwe area as a national park. However the ownership of the farm 'Greefswald' which includes Mapungubwe Iron Age site and K2 was still under the Transvaal Provincial Administration. The matter was brought to the attention of the Premier of Northern Transvaal, Ngoako Ramatlhodi at a meeting with senior national parks staff held in the Kruger National Park on 9th September 1994 (Hall-Martin *et al*., 1994; Robinson, 1996). In the following year, an agreement was reached between the province (formally Northern Province) and the national government which allowed SANParks to take over control and management of farm Greefswald (Robinson, 1996; SANParks, 2010a). The agreement reached between the national government and SANParks is an example of a technical device to control how the farm Greefswald should be utilized. Thus, the agreement had conditions that the farm should be used for conservation purposes (i.e. the farm should become part of the new park and the TFCA). A formal ceremony on 9th June 1995 which was attended by Premier Ngoako Ramatlhodi and Environmental Affairs Minister Dawie de Villiers was held at Greefswald to announce the formation of Vhembe Dongola National Park (Robinson, 1996;

[14] Transvaal - the northern part of Transvaal is represented by the present-day Limpopo Province.

[15] Northern Province is a former name of current Limpopo Province.

Berry and Cadman, 2007; SANParks, 2010a). The Park was officially declared a National Park on 9th April 1998 and the ultimate objective stated at the time of its official opening was that the park should become a major component of the TFCA shared by the three countries (SANParks, 2010a).

The Mapungubwe Cultural Landscape, which follows the footprint of the protected area foot, was proclaimed a World Heritage Site by UNESCO in July 2003, and the park was renamed Mapungubwe on national Heritage Day, 24th September 2004 (PPF, 2006, 2009; SANParks, 2010a). The proclamation of the area as a World Heritage Site was based on the cultural significance of Mapungubwe landscape. Mapungubwe is the home of the famous Golden Rhino, and the landscape demonstrates the rise and fall of the first indigenous kingdom in Southern Africa that flourished on the Limpopo River Valley between 900 and 1300 AD. The rise of Mapungubwe is attributed to the wealth accumulated from trade in gold, glass beads, cotton, ivory and other metals within the Indian Ocean network, as well as the fertile conditions for agriculture whereas the fall of Mapungubwe is generally attributed to climatic change in the region (Tiley-Nel, 2006; Carruthers, 2006).

In South Africa, SANParks is entrusted with the responsibility of managing the country's national parks. This organization reports directly to the Minister of Environmental Affairs. SANParks was established in terms of the National Environmental Management: Protected Areas Act, 57 of 2003. In terms of this Act, the primary mandate of SANParks is to oversee the conservation of South Africa's biodiversity, landscapes and associated heritage assets through a system of national parks (Department of Environmental Affairs (DEA), 2011). SANParks is the National coordinating agency entrusted to facilitate the establishment of TFCA (MoU, 2006a). This makes this organization an important player in the creation of Mapungubwe TFCA. SANParks is using national parks as an important tool in the creation of TFCA in partnership with conservation agencies. The acquisition of the farm Greefswald by SANParks in 1995 was an important step towards the creation of Mapungubwe National Park and the TFCA. The next step was to acquire a number of farms in the core area which were important for the expansion of the Park.

The process of acquiring land to be consolidated into the park started in 1996 when SANParks purchased a portion of Den Staat on the 21st of March (Interview, Fhatuwani Mugwabana, 16/01/2012). The initial approach of SANParks was to buy all the farms in the core area. However this approach ran into difficulties because some private land owners, who claimed to have conserved the land for ages, were not interested to sell their land (Interview, Ferdi Vermeulen, 31/10/2011). One land owner commented that:

> *SANParks approached me to buy this precious piece of land in 1996. I told them that I was not interested in selling my farm because I bought it for farming. You should tell them that I am still not interested to sell this piece of land and this farm has no price. I would like to see my children taking over from me and continue farming than selling this land to SANParks* (Interview, Pieter Boshoff, 23/07/2011).

As a result, this became a stumbling block to further acquire much needed land to be consolidated into the park. This was to change after the formation of the PPF by Dr. Anton Rupert on 1st February 1997. The PPF was created to facilitate the establishment of TFCAs in southern Africa. The formation of PPF played a leading role towards the acquisition of much needed land to be consolidated into Mapungubwe National Park. The PPF, Rupert Family Foundation, De Rothschild Foundation, De Beers, National Parks Trust (NTP) and World Wildlife Fund for Nature in South Africa (WWF-SA) assisted SANParks by facilitating negotiations with landowners to either contract land or purchase properties to consolidate the core area of South Africa's contribution to the proposed TFCA (PPF, 2006). Thus, the creation of Mapungubwe National Park and the TFCA is dependent on two processes, namely, buying of land and negotiation for contractual agreements with private land owners. According to these contractual agreements between SANParks and private land owner, SANParks takes full responsibility for conservation and management of biodiversity whereas the ownership of the land remain with the owner of the land (Interview, Fhatuwani Mugwabana, 22/06/2011; Warwick Mostert, 30/06/2011). In this sense, the agreement between the two parties does not completely remove property borders *per se*, rather it only soften them; meaning that property owners still know where property borders are located even though the management of their land is shared with a government conservation agency.

On the 13th of October 1997, SANParks and NTP purchased the farm Welton (Interview, Fhatuwani Mugwabana, 16/01/2012). Around this time, NTP acquired Riedel (Mark Berry *pers. comm.* 2011) which was later leased to SANParks for a period of ninety nine (99) years starting from April 2001 with an option to renew for further 25 years (SANParks, 2008a). On the 15th November 1998, PPF purchased Rhodes drift which was leased to SANParks for a period of 99 years. This development was followed by the signing of Heads of Agreement by Nicky Oppenheimer (chairman of De Beers) and Mavuso Msimang (then CEO of SANParks) on the 8th of July 1999. The agreement allows SANParks a 99 year lease over Schroda farms for a once off payment of R1000 (Berry and Cadman, 2007). The agreement between private land owners and SANParks to lease land can be understood as a form of de-bordering in which property borders are transformed so as to change their functional roles as barriers. The lease agreement is done by land owners on condition that they still get similar benefits they were getting from their farm before the lease agreement (Interview, Elmer Uys, 21/03/2013). This means that property borders are symbolically removed for wildlife but practically they still remain. In the same year, De Beers committed R1.3 million for the purchase of Hamilton and donated R3.1 million to WWF towards the purchase of a portion of Tuscanen farm. In May 2000, Dr. Anton Rupert and De Beers formed a company called Friends of Peace Parks (FPP) to purchase the key properties of Little Muck, Armenia and Mona by R12 million (R6 million each) for inclusion into the park (Mark Berry *pers. comm.* 2011). The Conservation Coordinator of De Beers Consolidated Mines commented that:

> *De Beers is a 50% shareholder of the farm Little Muck 26/0, Armenia 20/0, Armenia 20/1 and Mona 19/0. The other 50% of the same area is owned by PPF. These farms are within Mapungubwe National Park and the TFCA. A formal contractual relationship has not yet been signed between De Beers and SANParks to lease the land but the area is already under the management of SANParks. It is anticipated that the relationship will soon be formalized* (Interview, Warwick Mostert, 30/06/2011).

The Information System Manager of PPF shares the same view:

> *As far as I am aware, SANParks has been responsible to purchase much needed land from private land owners to be consolidated into the Park. In the past PPF offered financial support for the purchase of some crucial farms (Little Muck, Armenia, Mona and Rhodes Drift) that were also consolidated into the park. Most importantly PPF assisted SANParks to facilitate negotiations with landowners to either contract land or purchase properties to consolidate the core area of Mapungubwe National Park* (Interview, Craig Beech, 28/02/2012).

In May 2002, SANParks took over management of Little Muck, Armenia and Mona excluding two lodges and the immediate surroundings. Tuscanen 17/3 was also leased to SANParks by WWF-SA for a period of 99 years starting from October 2003 with an option to renew for further 25 years (SANParks, 2010a). This is a form of de-bordering in which property borders symbolically cease to function as borderlines in order to promote conservation goals. At the request by SANParks, De Beers sold their non-strategic properties of Hamilton and Janberry to SANParks on the 19th January and 31st March 2005, respectively. In March of the same year, SANParks purchased Samaria farm to be included into the park. On the 31st March 2006 SANParks bought Balerno farm to be included into Mapungubwe National Park (Interview, Fhatuwani Mugwabana, 16/01/2012). In addition, De Beers Consolidated Mines committed their 36 000ha Venetia Limpopo Nature Reserve to be part of the TFCA. The IDP document and PPF maps which are GMTFCA technical devices also mark Venetia Limpopo Nature Reserve as part of the TFCA. The Conservation Coordinator of De Beers Consolidated Mines commented regarding Venetia Limpopo Nature Reserve that:

> *De Beers have supported the idea of TFCA from the beginning and we were also involved from the onset and have already made a substantial contribution to conservation in the area. We have agreed in principle of our intention to be part of the GMTFCA but the contractual agreement with SANparks to lease the land has not been formalized and the land is still under the management of De Beers Consolidated Mines* (Interview, Warwick Mostert, 30/06/2011).

SANPark's commitment to the scheme was reinforced when its portion of Den Staat was gazetted as part of the national park on the 9th April 1998 (South Africa, 1998a) followed by Greefswald on the 7th April 2000 (South Africa, 2000). On the 26th April 2001, farm Riedel 48/1, Tuscanen 17/3 and Balerno 18/1 were also gazetted (South Africa, 2001) followed by farm Hamilton on the 30th July 2004 (South Africa, 2004a). The latest to be gazetted into Mapungubwe National Park included the remainder of Samaria 28, Samaria 28/3, Welton 16/3 and Janberry 44/1 (South Africa, 2008). Although Little Muck, Armenia, Mona and Rhodes drift are not gazetted, they are however under the management of SANParks (Table 4.1).

Table 4.1: Land under the management of SANParks.

Farm name and number	Potion	Size (ha)	Owner	Source
Remainder of Den Staat 27	0	1842.1763	SANParks	(South Africa, 1998a; Interview, Fhatuwani Mugwabana, 16/01/2012)
Greefswald 37	0	2503.8386	SANParks	(South Africa, 2000; Interview, Fhatuwani Mugwabana, 16/01/2012)
Riedel 48	1	2569.7720	National Park Trust	(South Africa, 2001; Interview, Fhatuwani Mugwabana, 16/01/2012)
Tuscanen 17	3	1301.0380	WWF-SA	
Balerno 18	1	768.6940	SANParks	
Remainder of Schroda 46	0	929.0942	De Beers	
Schroda 46	4	929.0942	De Beers	
Schroda 46	7	1295.4212	De Beers	
Schroda 46	8	419.9119	De Beers	
Remaining Extent of Hamilton 41	0	359.4617	SANParks	(South Africa, 2004a; Interview, Fhatuwani Mugwabana, 16/01/2012)
Hamilton 41	2	65.1140	SANParks	
Remainder of Samaria 28	0	431.9858	SANParks	(South Africa, 2008; Interview, Fhatuwani Mugwabana, 16/01/2012)
Samaria 28	3	431.9858	SANParks	
Welton No.16	3	708.0486	National Park Trust	
Janberry 44	1	755.5492	SANParks	
Mona 19	0	560.4003	FPP	(SANParks, 2010a; Interview, Warwick Mostert, 30/06/2011)
Armenia 20	0	856.5320	FPP	
Armenia 20	1	69.3806	FPP	
Little Muck 26	0	2147.6169	FPP	
Rhodes Drift 22	0	865.0285	PPF	(SANParks, 2010a)
Total		**19810.1438**		

Source: Author, 2013

Table 4.1 above indicates the land that is currently under the management of SANParks. The total ecological land area covered by Mapungubwe National Park is 19 810 ha which has been formed from a total of 20 properties of varying forms of tenure. The differences in land tenure indicated above demonstrate the existence of property borders in Mapungubwe area. These property borders are examples of simple lines on the map demarcating the beginning and end of a ranch. As a consequence of various kinds of property and tenure regimes in the area, bordering processes in the area largely entail the transformation of property borders between adjacent farms whose owners have agreed to participate in the establishment of the park. This is done by removing property borders that are seen as fragmenting habitats and the entire ecosystem to allow free movement of wildlife across the property borders. This demonstrates that a National Park could be created in partnership with private land owners through consultation and coordination. Unlike the traditional methods of conservation that places ownership and management of conservation land under a single entity/institution, the consolidation of land in Mapungubwe represents a new model of multiplicity of ownership. However, this new model is still shaky in Mapungubwe because there are a number of private lands within the borders of Mapungubwe National Park that fall outside the management of SANParks. Though the process of buying more land from private land owners came to halt in 2009 due to land claims (cf Chapter Five), SANParks continues to negotiate contractual agreement with private land owners (Interview, Fhatuwani Mugwabana, 22/06/2011). As in Botswana, the consolidation of conservation land was made possible by the agreement between private land owners and SANParks as a conservation agency. However, unlike in Botswana, much of the land transactions and negotiations were facilitated by the third party, the PPF. Beyond game ranches explained above, the creation of GMTFCA also entails removing the fences along the South African border so as to create a unitary cross-border space to allow free movement of wildlife across the border. This process of removing the border fence has not officially taken place in the Mapungubwe National Park. However, since the establishment of GMTFCA, SANParks have been reluctant to maintain the fence along the border which has allowed wildlife particularly elephants to move out of the Park and cause damage to irrigation farms. Subsequently, commercial irrigation farmers in the Mapungubwe area see this reluctance as an act of de-fencing the border by default (Interviews, Pieter Boshoff, 23/07/2011; Johan Truter, 09/12/2011).

4.1.3. Zimbabwe part of the transfrontier conservation area

The land committed for TFCA on the Zimbabwe side is made up of a mosaic of land with different forms of tenure. The area covered by the TFCA includes the Tuli Circle Safari Area, Maramani, Machuchuta and River Ranch communal land; and two commercial estates (Sentinel and Nottingham) (Interviews, Albert Mbedzi and Beatrice Ponele, 12/05/2011). As in South Africa, the differences in land tenure demonstrate the existence of two groups of people; propertied individuals and those living on communal land without full ownership of the land. As the literature has shown, property gives power to people with property hence participation on TFCA activities on the Zimbabwean side follows property regimes.

Tuli has been a hunting ground since 1958 and was proclaimed a Safari area in 1975. Tuli Circle Safari Area is a state protected land which forms the core of the conservation area of Zimbabwe's contribution to the TFCA (Interview, Johan Verhoef, 22/03/2011). The area occupied by national parks, safari areas, and wildlife estate is the responsibility of the Ministry of Environment and Tourism and is managed by the Department of National Parks and Wildlife Management (DNPWLM). The DNPWLM is responsible for wildlife resources throughout the country. This Department is the National coordinating agency entrusted to facilitate the establishment of Mapungubwe TFCA (MoU, 2006a).

The communal lands that are also committed for TFCA fall under BBRDC that is entrusted with the responsibility of managing natural resources at local level, which makes this District Council an important stakeholder in the establishment of Mapungubwe bioregion (Interview, Beatrice Ponele, 12/05/2011). The communal areas are committed to the TFCA because they are WMA and CAMPFIRE wards with trophy hunting as the main land use activity. In addition, communal areas are committed to the TFCA in order to encourage cultural tourism (Interview, Beatrice Ponele, 12/05/2011).

In addition to communal lands, the two commercial estates of Sentinel and Nottingham are also included in the GMTFCA. Sentinel Ranch is a private farm which was bought from the Rhodesian government in the 1950s. The farm was used for commercial cattle ranching for nearly 30 years but drought, competitive grazers (wildebeest, zebra), diseases associated with

wildlife (Snotsiekte), predators and elephant pressures on grazing made it very difficult to farm cattle in the area. Cattle were later removed in 1979 because the area was too dry and was considered an unsuitable habitat. As a consequence of these conditions, the area was ideal for wildlife production, as a large variety of antelope, elephant and other animals thrived in the area, despite the attempts to control their numbers. Since 1979, Sentinel has been used as a game farm with trophy hunting and crop farming as the main land use activities (Interviews, Vanessa; Digby Bristow, 13/05/2011).

In the same manner, Nottingham Estate was also acquired from Rhodesian government in 1953. The estate also started as a commercial cattle ranch but drought and lack of rainfall in the 1980s led to the change of land use from commercial livestock to game ranching. Wildlife was found to be the most suitable land use option at the time because unlike cattle that rely heavily on grasses, wildlife feed on the whole spectrum from grasses to trees. The good management of available wildlife in Nottingham led to an increase in the population numbers of game. Since 1980, Nottingham has been used as a game farm with trophy hunting and citrus plantation as the main land use activities (Interview, Keith Knott, 18/08/2011).

Both Sentinel and Nottingham were identified for compulsory acquisition by the Zimbabwean government in 2003 as part of land redistribution programme. The land reform programme in Zimbabwe led to the subdivision of both Sentinel and Nottingham estate into two farms each (Interviews, Beatrice Ponele, 12/05/2011; Vanessa; Digby Bristow, 13/05/2011; Keith Knott, 18/08/2011). The subdivision of Sentinel and Nottingham estate further creates new property borders. This subdivision of the farms has brought another network of actors that are also important in the creation of Mapungubwe bioregion. These include the original owners of Nottingham and Sentinel as well as the War veterans who are the new owners of portions of Nottingham and Sentinel. Details of how the owners are involved in the establishment of Mapungubwe bioregion appear in Chapter Five.

The land committed by participating countries to create TFCAs is done through agreements and treaties signed by participating states. As we noted above, the land committed by Botswana, South Africa and Zimbabwe for purposes of creating GMTFCA were formalised with the signing

of the MoU by the relevant Ministers of the three participating countries on 22nd June 2006 (see MoU, 2006a). The signing of MoU represents a bordering process in which international borders are transformed so as to change their functional roles as a rigid political border. The narrative of de-bordering is clear from Article 6(c) of the MoU, in which it is stated that the objective of the GMTFCA is "to enhance ecosystem integrity and natural ecological processes by harmonizing wildlife management procedures across international borderss and striving to remove artificial barriers impeding the natural movement of animals" (MoU, 2006a, p. 6). In this sense, de-bordering in TFCA suggests doing away with international borders to re-establish ecological systems. In the case of GMTFCA, the signing of MoU transforms the two rivers, Limpopo and Shashe from acting as barriers to wildlife movement to become part of the natural habitat. The removal of these international borders among the three participating countries is to create cross-border spaces for wildlife. As a result, animals circulate and freely pass cross-border spaces without obstructions and this is seen by conservationists as a natural way of life. In this context, it can be said that there is significant border transformation for purposes of conservation. This also restores the attributes of a bioregion. Whereas some progress has been made in the establishment of GMTFCA, there are some hurdles and threats to the creation of TFCA. The section below explains the obstacles in the creation of Mapungubwe TFCA.

4.2. Challenges in the construction of Mapungubwe bioregion

The creation of GMTFCA is not a smooth process. A number of obstacles have to be removed in order to realize the ambitions for the TFCA. These obstacles are of a regional and national nature. They range from mining, commercial agriculture, habitat fragmentation (land consolidation), incompatible land use practices and differences in the utilization of wildlife resources. Details of these challenges are discussed hereunder.

4.2.1. Mining operations

Mining in Mapungubwe generated much publicity over the past four years, because Mapungubwe is a national park and a Word Heritage Site, and also form part of the proposed TFCA. It is therefore necessary to reflect on mining operations in the Mapungubwe area and their implications on the creation of TFCA. The Mapungubwe region possesses a number of important mineral deposits that include calcite, granite, copper, marble, asbestos, diamond and

coal. However, most of the minerals in the region are relatively low-priced and have not been exploited (Robinson, 1996). The Botswana side of the TFCA is currently free from mining activities. That is to say there are no mines in NOTUGRE and surrounding villages. On the South African side, there is Venetia Diamond mine which is within Venetia Limpopo Nature Reserve. In addition to diamond mining, there is also abundance of coal deposit which is associated with the Volksrust shale formation that occurs north of Alldays in the Pontdrift area. The Northern margins of the mineable coal zone are situated about 10-15 km south of the confluence of the Limpopo and Shashe Rivers. The feasibility of mining these coal deposits just east of Pontdrift was evaluated by Southern Sphere in 1983 but to date no exploitation has taken place (Hall-Martin *et al*., 1994).

Another coal deposit worthy to be exploited has recently been discovered by Coal of Africa east of Mapungubwe National Park. In 2010, Limpopo coal, a subsidiary of the Australian company Coal of Africa Limited was granted mineral rights by the South African Department of Mineral Resources (DMR) to mine coal seven kilometers from Mapungubwe National Park and World Heritage Site (Mail and Guardian, 5/08/2010; PPF, 2010b). The initial approval by the DMR which was issued in 2010 was challenged by Mapungubwe Action Group[16], comprising of the Endangered Wildlife Trust, the Association of Southern African Professional Archaeologists, PPF, WWF-SA, Birdlife South Africa and the Wilderness Foundation of South Africa. The formation of Mapungubwe Action Group serves as an example of a technical device for strengthening the border of the TFCA. Mapungubwe Action Group represents a new form of re-bordering, i.e the control land use activities within the area designated for the TFCA. The conservation lobby group is using the IDP document; MoU signed by the three countries and PPF maps as tools to control any development within the borders of the TFCA. These documents show the core and the buffer zones of TFCA which should only be used for conservation purposes. Thus, no other activities should take place within the area set aside for the TFCA. In this sense, re-bordering in the TFCA involves securing space by instruments that determine access and exclusions. Subsequently, mining and any other development activities which are against conservation within the new border of TFCA is prohibited.

[16] Mapungubwe Action Group is a coalition of several leading NGOs to oppose mining of coal in Mapungubwe.

On the 3rd August 2010, Mapungubwe Action Group interdicted Limpopo Coal (Pty) Ltd on the basis that the location of Vele Colliery, mining, and related operations will impact on the unique and sensitive landscape. Conservation lobby groups were also concerned that the mining area is within the buffer zone of the proposed GMTFCA between Botswana, South Africa, and Zimbabwe; there was lack of consultation; the Environmental Impact Assessment (EIA) process on access and fuel storage was still under way; a water license has not been approved; and that there was no integrated regional development plan (PPF, 2010b). The commencement of mining and related activities without prior environmental authorization meant that Coal of Africa Limited contravened the EIA Regulations promulgated in terms of National Environmental Management Act (NEMA) (PPF, 2010b). As a result, on the 5th August 2010, the DEA issued a compliance notice to Coal of Africa to cease with activities that were in contravention of the NEMA. The activities include the construction of roads, the above ground storage of dangerous goods, activities within the 1:10 flood line of the Limpopo River, the construction of a sludge dam and the installation of a water pipeline network (PPF, 2010b). Subsequently, all activities were temporarily stopped while further studies were being conducted to meet NEMA requirements.

In 2011, the government of South Africa reversed its tough stance and agreed that Australian Coal of Africa could carry on with the Vele coal mine near Mapungubwe National Park. This comes after awarding of a new order mining rights and the approval of the environmental management plan for the Vele colliery. Coal of Africa Limited, the DEA and SANParks signed an agreement in August 2011 stating that the integrity of the heritage site would be maintained by comprehensive biodiversity offset programmes, and would optimize benefits to local communities. Not surprisingly, the Mapungubwe Action Group which was opposing mining operation in the Mapungubwe area was excluded from the negotiation that led to the agreement (Mail and Guardian, 2/09/2011; PPF 2012a). Although Mapungubwe Action Group was not involved in the negotiation, they did not object the second approval for Vele Colliery. Instead, on the 24th November 2011, the Save Mapungubwe Coalition and Coal of Africa signed a MoU whereby the parties committed themselves to working together and strengthening cooperation in the interest of sustainable development and the preservation and protection of Mapungubwe

National Park and Cultural Landscape (PPF, 2012b). All the activities in Vele coal mine have resumed and mining is operational.

Anglo American has discovered other coal deposits commendable for exploitation opposite Mapungubwe National Park on the eastern side of Venetia Limpopo Nature Reserve. In March 2013, drilling and exploration of coal was underway with the hope of mining coal in the area in future (Interview, Nico Verhoff, 26/03/2013). If more mining rights are granted in the Mapungubwe area, there is fear both by UNESCO and some private land owners that mining may have detrimental impact to the region, which may affect the status of Mapungubwe as a World Heritage site (Interview, Retha van der Walt, 26/03/2013). Farm owners are divided over the issue of mining in the area. One group is of the view that mining should not be allowed in the Mapungubwe region (Interviews, Quintis Richter, 26/03/2013; Chris Limbach, 03/05/2013). Some two land owners who are against mining commented that:

> *I think mining is unacceptable in the Mapungubwe area because the area is pristine and any mining activities will have implications on the landscape and water of the region. Mining will lead to pollution of water in Limpopo River and in future more mining will change Mapungubwe area into industrial area. I also think that the area do not have sufficient water to maintain both farming and mining* (Interviews, Quintis Richter, 26/03/2013).

> *Whereas I acknowledge that Mapungubwe region has abundance of minerals, I think mining is not an option because the area is a World Heritage Site. If I had power, I would say 'no' to mining in the Mapungubwe region. I think farmers should join together to form a conservancy so that we can speak in one voice to fight mining in the region* (Interview, Retha van der Walt, 26/03/2013).

The other group favours mining on the basis that contractors working in the mine bring good business for their lodges and guest houses (Interviews, Elmer Uys; Johan Volschenk, 21/03/2013). Another land owner in favour of mining commented that:

In this area, mining is currently bringing more business to my lodge than conservation. Conservation has not made any impact in the region because there are no big five which attract tourists. Although my lodge was meant for tourists visiting Mapungubwe area, it is mainly used by contractors from the De beers and Vele coal mine and they are our biggest customers as opposed to tourists. As long as mining is done in a sustainable way, it should continue (Johan Volschenk, 21/03/2013).

These differences of opinion by stakeholders in terms of land use activities to be allowed in the Mapungubwe region threaten the creation of Mapungubwe as a bioregion. Thus, the claim about bioregionalism of integrating society and nature is farfetched.

On the Zimbabwe side of the TFCA, there is River Ranch diamond mine which is in River Ranch on the western side of Beit Bridge Town. The River Ranch diamond mine is fully operational. In addition to diamond mining, there is also an abandoned small coal mine in Nottingham Estate (Plate 4.2).

Plate 4.2: Abandoned coal mine in Nottingham Estate in Zimbabwe.

Source: Author, 18/08/2011

Although there is abundance of coal in the area, it is currently not operational. By the time of field data collection, the mine was filled with water. If mining activities resume, this will also pose a significant challenge to the creation of Mapungubwe TFCA.

4.2.2. Commercial agriculture

There are a number of commercial irrigation farms on both sides of the border. Agricultural activities take place along the Limpopo River due to availability of irrigation water. In Botswana, there is one commercial irrigation farm, Talana. Talana is a vegetable farm within NOTUGRE but not part of NOTUGRE Association and Mapungubwe TFCA. In Talana, commercial farming started in the year 2000 with vast tracts of lands along Limpopo and Motloutse River cleared for agricultural purposes. The total size of Talana is 1 800 ha but only 380 ha is under cultivation and 950 ha is surrounded by electric fence to avoid problem animals entering into the farm (Interview, Jan Willemse, 15/06/2013). The fence forms a border between Talana irrigation farm and NOTUGRE. This fence can be understood as a tool to control the movement of wildlife between NOTUGRE and Talana farm. Talana farm obtains water from Motloutse River and the main vegetables planted include beetroots, tomatoes, butternut, onions, carrots, potatoes, collie flowers, green papers, broccolis and lucerne. The farm is the biggest producer of vegetables and supply 50 % to 60 % demand of vegetables in the country (Jan Willemse, 15/06/2013). The vegetables are supplied locally in Botswana, however when there is a demand, they also export them to South Africa. The farm employs a total of 680 full-time farm workers and some 300 seasonal workers are employed during harvesting periods from August to December. A portion of the farm is used to breed ostrich and the meat and leather is exported to Europe. Subsequently, the owner has no intention of giving up the farm because of good revenue generated from vegetables, and ostrich meat and leather (Interview, Johan Potgieter, 31/10/2012).

In South Africa, commercial agriculture started in the early 1980s with the vast tracts of lands including riparian woodlands in Den Staat and Samaria farms that were cleared for intensive irrigation schemes (Mark Berry *pers. comm.* 2011). To date, Mapungubwe has ten large scale commercial irrigation farms (Table 4.2).

Table 4.2: Commercial irrigation farms within Mapungubwe National Park.

Farm name and number		Portion	Size (ha)	Ownership
Modena 13		0	216.35	Guy Whitaker (Director)
Tuscanen 17		1	875.71	ZZ2
Den Staat 27		1	1835.91	DRDLR (Machete family)
Welton 34		0	186.44	Pieter Boshoff
Weipe 47	Skutwater & Weipe	2-4	400	Piet Esterhyse
	Weipe	5	100	Piet Esterhyse Junior
	Weipe	6-7	700	Fanus van Staden
	Hanaline Boerdery	0	1340	Jacques Willemse
	Depo Weipe	0	1340	Danie Erasmus
	Noordgrens Landgoed	0	2000	Dillman
TOTAL			**8994.41**	

Source: Author, 2013

Table 4.2 shows the total number of commercial irrigation farms that are within the borders of Mapungubwe National Park and World Heritage Site but not part of the Park. Thus, the table shows the existence of commercial irrigation farm borders that are within the borders of Mapungubwe National Park and the GMTFCA. These property borders are examples of simple lines on the map as explained in the literature. The irrigation farms are surrounded by fences which separate them from conservation areas (Plate 4.3). Thus, though border transformation occurred in the Mapungubwe for purposes of conservation, commercial irrigation farms are still bordered by electric fences. The border fences can be understood as affirming the ownership and integrity of commercial irrigation farms. The implication is that irrigation farming has fragmented the habitat in the region. Commercial farming challenges the whole idea of turning Mapungubwe into a bioregion. The ten farms constitute 8 994.41 ha of varying ownership status interested in farming. Tuscanen 17/1, Welton 34/0, Weipe 2-7, Skutwater and Hanaline Boerdery are commercial vegetable farms and the main crops that are planted include tomatoes, onions, sweet potatoes, pumpkins, water melon, butternut and potatoes. Modena 13/0, Depo Weipe and Noordgrens Landgoed are commercial citrus farms (Plate 4.3) whereas Den Staat 27/1 is used for both citrus and vegetable farming.

Plate 4.3: Citrus farming within Mapungubwe National Park.

Source: Author, 17/01/2012

All commercial farmers that were interviewed claims Mapungubwe to be the best agricultural area in the whole of South Africa because soil and climate is considered conducive for growing vegetables and citrus. Citrus fruits and vegetables are not affected by insects because the area is dry and warm and receive little amount of rainfall. Frost is also not common in Mapungubwe, making the area ideal for planting vegetables, particularly tomatoes. In addition the area has abundance of water for irrigation from Limpopo River (Interviews, Pieter Boshoff, 23/07/2011; Tupson Chauke, 23/07/2011; Danie Erasmus, 09/01/2012). As as result of these conditions some farmers in the Mapungubwe region produce the best quality citrus and vegetables in the country. Citrus fruits produced in Modena, Depo Weipe and Noordgrens Landgoed are therefore exported to Europe (Interviews, Tupson Chauke, 23/07/2011; Danie Erasmus, 09/01/2012). Consequently, irrigation farmers in Mapungubwe have no intention of giving up their farms because of favourable farming conditions, and because of good economic return. One commercial irrigation farmer in the Mapungubwe area commented that:

We bought this piece of land with the purpose of farming and we are not interested in doing anything else. Our survival and the life of our employees depend on this piece of land. We are not interested in selling this piece of land no matter how good is the offer. Instead of selling we would prefer to buy more land should it become available in this area to increase our production (Interview, Wellem Van Aswegen, 23/07/2011).

As the comment above shows, commercial irrigation farmers in Mapungubwe area are resisting to selling their land to conservation agencies. Under these circumstances, Mapungubwe National Park is highly fragmented.

All agricultural farms in Mapungubwe depend entirely on the water from Limpopo for irrigation purposes (Plate 4.4).

Plate 4.4: Water extraction from Limpopo River into Den Staat farm.

Source: Author, 22/06/2011

This results in overutilization of groundwater. As Hall-Martin *et al*., (1994) noted, about 150 million cubic meters of ground water is extracted annually for agricultural use by means of

borehole between Pontdrift and Beit Bridge. This figure does not include water use by mining operation and other land use activities in the area. Water extraction is a serious threat to the survival of the floodplain vegetation and the permanent pools that are important habitat for fish, crocodiles, hippo and other aquatic living organism. The impact of larger scale irrigation farming and abstraction of ground water have significant impact on the habitat integrity of the region. These large scale agricultural activities result in competition between land use for agriculture and conservation, which may limit the success of the creation of Mapungubwe TFCA. The battle between conservationists and agriculturalists in Mapungubwe that culminated in the deproclamation of Dongola in 1949 (see Carruthers, 2006) continue in the 21st century.

In Zimbabwe, large scale commercial agriculture is practiced in Nottingham and Sentinel which are also along Limpopo River. The citrus tree plantations, mainly oranges, are grown in Nottingham Estate. Although Nottingham Estate is part of the TFCA, citrus plants bring good revenue to an extent that the property owner has no intention of giving up the irrigation scheme (Interview, Steve Boshoff, 12/05/2011). In Sentinel, the main crops that are planted include maize, wheat and lucerne (Interviews, Vanessa; Digby Bristow, 13/05/2011). These agricultural activities rely entirely on water from Limpopo for irrigation purposes which further put more strain on the Limpopo. The electric fence acts as a border separating commercial agriculture from game farming in Nottingham and Sentinel, in Zimbabwe. In this context, electric fence perfoms a dual function of securing property and restricting the movement of wildlife.

Whereas on one hand conservationists are of the view that conservation is the most suitable land use option in the Mapungubwe region, on the other hand commercial irrigation farmers across the border holds the view that the area is more suitable for agriculture. These differences in opinion threaten the creation of Mapungubwe as a bioregion in the area. Thus, bioregionalism in GMTFCA is affected by social systems that are dissimilar across the border.

4.2.3. Habitat fragmentation

Habitat fragmentation poses a significant threat to the Mapungubwe region. The main aspects of habitat fragmentation in the Limpopo Valley are commercial agriculture, fences and roads. The idea of TFCA in the region is to overcome these barriers to allow free movement of animal from

one country to another. In Botswana, the main public road that passes from the main gate into Pont Drift border post has fragmented NOTUGRE into the northern and southern side. In addition, the veterinary fence on the eastern side of Lentswe Le Moriti has also fragmented the habitat and does not encourage free movement of animals (Plate 4.5). Although much of internal border transformation occurred within NOTUGRE in the 1960s, the veterinary border fence remains as a physical barrier, particularly for wildlife. The veterinary border fence has fragmented NOTUGRE into the eastern and western side.

Plate 4.5: Veterinary disease control border fence in Lentswe Le Moriti.

Source: Author, 17/09/2012

The veterinary fence can be understood as a tool for controling the spread of foot and mouth disease from the red zone area to other parts of the country. The eastern side of NOTUGRE near the border of Zimbabwe is considered red zone area, hence the need for this fence. Any livestock from Lentswe Le Moriti, Mathathane, and Motlhabaneng villages that pass through the veterinary fence into the red zone area is killed and burned because it is believed to have foot and mouth disease. The owner of the livestock is compensated by the Department of Veterinary Services. Red meat from the red zone is not allowed to pass through to communal land. It is for this reason that the Department of Veterinary Service has employed gate keepers to search cars that get in and out of the red zone (Interview, Sipho Sejie, 12/06/2013). As we have noted, the

electric fence that has been erected around Talana irrigation farm to avoid problem animals has also fragmented the habitat in NOTUGRE.

On the South African side, Mapungubwe National Park is fragmented by several privately owned game and agricultural farms. As a result of these farms, it is impossible to consolidate and manage the park as one entity. The fences between the farms and the park prevent the free movement of wildlife (Interview, Fhatuwani Mugwabana, 22/06/2011). It is important to note that fences have not been dropped on the South African side of the TFCA. The implications are that wildlife in Mapungubwe National Park cannot pass through to Zimbabwe or Botswana or vice versa. In addition, fences between Mapungubwe National Park and Venetia Limpopo Nature Reserve have not been dropped. Whereas a number of property borders have been removed on the South African side of TFCA for purposes of conservation, wildlife within nature reserve, game farms and the national park remain constrained by the fences. Similarly, the Zimbabwe component of the TFCA is also fragmented by commercial agriculture in Sentinel and Nottingham. There are electric fences in Sentinel and Nottingham because of irrigation farming and the availability of buffalos in Sentinel. These fences have disjointed the habitat on the Zimbabwe side of the TFCA.

4.2.4. Incompatible land use practices

The proposed GMTFCA is dominated by different land use practices that are not compatible with conservation of biodiversity and management of bioregion. In Botswana side of the TFCA, there is Lentswe Le Moriti village which is within the proposed Mapungubwe TFCA. The communities use the land for worshiping God, livestock farming, harvesting of natural resources particularly wood and as a residential area. These land use activities are not compatible with conservation of wildlife. The land on which Lentswe Le Moriti is located is owned by the Zion Christian Church[17] (ZCC) which holds church services in the open veld. If this land were to be included into the TFCA, the church would find it difficult to hold such services in the presence of dangerous wild animals. Under prevailing conditions, conflict between people, wildlife and livestock is unavoidable (cf Chapter Six). In addition, there is Talana commercial irrigation farm

[17] Zion Christian Church (ZCC) is one of the biggest churches in southern Africa which originated in South Africa with its headquarters in Polokwane, Limpopo Province.

within NOTUGRE which is not compatible with conservation. This results in conflict between conservation and agriculture (cf Chapter Six). In South Africa, there is commercial agriculture, game farming, mining, residential areas for farmers and farm workers which make it difficult to manage the area as a wildlife conservation area. On the Zimbabwean side of the TFCA, there are communal lands (Maramani, River ranch and Machuchuta), commercial agriculture, mining, game faming, subsistence agricultural farming, livestock farming, harvesting of natural resources which are all not compatible with the current conservation model (cf Chapter Six). The incompatible land use practices on both sides of the border may also limit the prospects for creating Mapungubwe as a bioregion.

4.2.5. Differences in the utilisation of wildlife resources

Differences in the utilization of wildlife resources could limit the prospects for the TFCA. In NOTUGRE in Botswana, there are well developed tourism facilities but off-take of game, particularly impalas, is permitted. The principal source of income is photographic tourism (Interviews, Tanya Mckenzie; David Evans, 19/05/2011; Piet Le Roux, 12/06/2013; Bruce Patty, 13/06/2013). The Director of Mashatu Game Reserve in Botswana commented that:

> *There is no trophy hunting in Mashatu Game Reserve and in the entire NOTUGRE. Our property is 25 000 ha that make up 36% of NOTUGRE. We are the biggest commercial lodge in NOTUGRE. We have got 22 rooms and we get tourists from all over the world and revenues are generated only from eco-tourism* (Interview, David Evans, 19/05/2011).

In South Africa, there are also well developed tourism facilities and hunting is not allowed in the Mapungubwe National Park. The revenue is generated mainly from photographic tourism (Interview, Fhatuwani Mugwabana, 22/06/2011). Venetia Limpopo Nature Reserve generates income from tourism, live game capture, trophy and biltong hunting (Interview, Warwick Mostert, 30/06/2011). In Zimbabwe, revenue is generated from trophy hunting (Interview, Beatrice Ponele, 12/05/2011). Two informants in Tuli Circle Safari Area in Zimbabwe commented that:

> *Revenues are generated mainly from hunting. In 2010, we had 26 hunts of which 19 were from local people whereas the other 7 were from international hunters. Our international hunter comes from America, UK and Russia. The animals that are mostly hunted include elephants, leopards, eland, kudu, wildebeest, impala, klipspringer, bushbuck, steenbok, waterbuck, bush pigs, warthog, lions and crocodile. Hunting is done from May to October and November to April is gestation period for animals where hunting is not allowed* (Interviews, Makina and Sifiso Sibanda; 13/05/ 2011).

Photographic tourism is currently not an option particularly in Tuli Circle Safari Area and communal land because tourism facilities are not well developed (Interview, Beatrice Ponele, 12/05/2011). These differences in the use of wildlife pose a significant challenge in the development of Mapungubwe TFCA.

The ideals of bioregionalism include the interconnectedness between humans and non-humans. However, the situation in Mapungubwe region is more complex with communities, game farmers, irrigation farmers, conservationists and mining companies all competing for the use of land. This competition together with differences in opinion regarding the use of Mapungubwe region; is yet to be resolved. In the mean time it challenges the integration of society and nature towards the creation of Mapungubwe as a bioregion.

4.3. Management of bioregion and biodiversity conservation

The idea of a region is to combine together fragmented habitat patches across the border to create a bigger habitat for conservation of biodiversity. As captured on the draft treaty, the main biodiversity and conservation thrusts of Mapungubwe TFCA are to foster transnational collaboration and co-operation between the Parties which will facilitate effective ecosystem and cultural heritage resources management in the TFCA; promote alliances in the management of biological natural resources and cultural heritage resources by encouraging social, economic and other partnerships among the Parties and Stakeholders; enhance ecosystem integrity and natural ecological processes by harmonizing environmental management policies and procedures across international borders; and strive to remove artificial barriers impeding the natural movement of wildlife (GMTFCA Draft Treaty, 2011). Consequently, three of the six objectives of

Mapungubwe TFCA are to promote cultural and biodiversity conservation. In an attempt to realize these objectives, each participating country has contributed land devoted to the creation of Mapungubwe TFCA. The government of Botswana has contributed 75 000 ha whereas the governments of South Africa and Zimbabwe have each contributed 55 000 and 130 000 ha of land, respectively. The contribution of the three countries combined together constitute a total of 260 000 ha which forms the core area of Mapungubwe TFCA (GMTFCA TTC, 2010) (cf Chapter One). There are no fences between NOTUGRE in Botswana and Zimbabwe and as a result wildlife has always roamed freely across the border. As we noted above, the fence surrounding Mapungubwe National Park has not been dropped. According to the Park manager, the fence will be dropped after the treaty has been signed by the state presidents of the three countries (Interview, Fhatuwani Mugwabana, 14/01/2013). It is therefore anticipated that the dropping of fences will provide an expanded feeding range which will go far towards relieving overstocked game, particularly elephants (Interview, Johan Verhoef, 22/03/2011).

Mapungubwe TFCA is currently made up of patches of fragmented habitat and the conservation of biodiversity is still the responsibility of individual countries. That is to say there is no joint biodiversity management in Mapungubwe TFCA. NOTUGRE in Botswana has a management plan which is used for the conservation of biodiversity in the area. The game off-take from the NOTUGRE is controlled by the NOTUGRE EXCO. The land owners apply game off-take through the EXCO that has the power to grant or refuse authorization (NOTUGRE, 2010). Similarly, any development activities such as new lodges and other structures within NOTUGRE are also approved by NOTUGRE EXCO. An Environmental Impact Assessment is required before any authorized development can proceed. This is done to ensure that development activities do not have significance impacts on biodiversity. Off-road drives during game drives are also not allowed in NOTUGRE (NOTUGRE, 2010). Selling of excess game and re-introduction of species within NOTUGRE is also controlled by the EXCO (Interviews, Jeoff Norris, 07/04/2011; Anonymous land owner, 08/04/2011). In addition, there are various research projects that are conducted within NOTUGRE which also help in the management of biodiversity (Interviews, Tanya Mckenzie; David Evans, 19/05/2011). NOTUGRE uses game rangers to counter poaching in the reserve (Interviews, Piet Le Roux, 12/06/2013; Bruce Patty, 13/06/2013). One member of anti-poaching unit in NOTUGRE commented that:

We do anti-poaching patrols in Tuli block on a daily basis. We use bicycles to patrol the reserve. Our main duties involve looking for snares in NOTUGRE and free the animals that have been caught by snares. We also arrest people who are caught poaching animals in the reserve. Areas that are closer to communal land are the ones where we get a lot of snares. This includes the area along Shashe River near Zimbabwe, around Lentswe Le Moriti and Talana farm. We think poaching is done on a subsistence basis because the common method that is used to kill animals is snares (Interview, Oupa Mulapisane, 13/06/2013).

As we have noted above, the internal fences between the game farms have been removed voluntarily by the farm owners to create bigger ecological area for wildlife (Interview, various NOTUGRE land owners, 2011). Although internal fences have been removed, private land remains private and can only be used by the owner. There are also some big signs alerting tourists and guest not to enter into private land (Plate 4.6).

Plate 4.6: Sign alerting guest and tourist not to enter into private land in NOTUGRE.

Source: Author, 17/09/2012

Activities like game drives, game-off take is only restricted to own land or property and cannot be done in someone's property (Interviews, Simon Kolobe, 18/09/2012; Piet Le Roux, 12/06/2013). The issue of land ownership is highly respected in NOTUGRE.

The Mapungubwe National Park in South Africa is managed and protected by SANParks. The conservation of biodiversity and cultural heritage in the Park remain the responsibility of SANParks. As in Botswana, SANParks uses game scouts as a strategy for dealing with poaching in the national park (Interview, Fhatuwani Mugwabana, 22/06/2011). The Manager of Mapungubwe National Park commented that:

> *We have a Nature Conservation Division that is responsible for law enforcement within the park. They do anti-poaching controls on a daily basis to ensure that poachers are caught and snares are removed wherever they are found. The team is also responsible for identifying areas that have been eroded and areas that have been heavily invaded by alien plant species. Such identified areas are rehabilitated and the alien plant species are removed* (Interview, Fhatuwani Mugwabana, 22/06/2011).

Mapungubwe National Park has a management plan which is currently used to conserve biodiversity in the park. The management plan encourages the protection and sustainable utilization of biodiversity, maintenance of ecological processes, protection of cultural heritage and landscape characteristics representatives of the area and conservation of riparian forest and floodplain. The plan has a summary of the conservation strategies, programmes and projects that are required to move towards achieving the conservation and protection of biodiversity and cultural heritage. The management plan also provides provision for photographic tourism and no trophy hunting is allowed within Mapungubwe National Park (SANParks, 2010a). Tourism products include endemic birds, Mapungubwe Hill, K2 archaeological site and dry-stone walls, confluence picnic spot viewing deck, historical paintings by apartheid government army personnel, riverine forests along the Limpopo River and Khoisan painting tours offered during the wilderness trails (SANParks, 2010a).

Venetia Limpopo Nature Reserve is under the management of De Beers with its own formalized biodiversity management plan. In addition, it has its own game scouts to counter poaching within the reserve. There is therefore no joint effort to manage biodiversity between Venetia Limpopo Nature Reserve and Mapungubwe National Park. As in Botswana, other areas within Mapungubwe National Park are 'no go areas' and there are signs alerting guest and tourists not to enter a private land (Plate 4.7). These signs inconvenience officials and the tourists who visit Mpungubwe National Park because game drive is not permitted on private land (Interview, Fhatuwani Mugwabana, 22/06/2011). Such game farms are used for hunting as a commercial venture and are protected and managed by the owner.

Plate 4.7: Sign showing private land within Mapungubwe National Park.

Source: Author, 16/01/2012

Unlike in Botswana where game farms are part of NOTUGRE Association and the TFCA, game farms in South Africa are not part of Mapungubwe National Park and the TFCA. Subsequently, there is no joint effort to manage biodiversity between SANParks, Venetia Limpopo Nature Reserve and private game farmers. Private game farms that are within the Park but not managed by SANParks are shown on Table 4.3.

Table 4.3: Private game farms within Mapungubwe National Park.

Farm name and number	Portion	Size (ha)	Ownership
Pont Drift 12	0	2.51	Leif Rahmqvist
Pont Drift 12	1	204.30	
Modena 13	1	1032.59	
Parma 40	0	218.35	
Samaria 28	1	891.77	Michael Moerdyk
Samaria 28	2	881.50	Ferdi Vermeulen
Koaxa bush camp	0	958.84	Duncan MacWhirter
Hackthorne 30	0	1033.73	Pawl Venter
Athens 31	0	532.46	
Riedel 48	0	353.57	Faan Lemmer
TOTAL		**6109.62**	

Source: Author, 2013

Table 4.3 shows a total of ten game farms of varying ownership status which constitute 6100 ha that are within Mapungubwe National Park and World Heritage Site but not managed by SANParks. The table above demonstrates the existence of private game ranches within the borders of Mapungubwe National Park and the GMTFCA. To borrow from Agnew (2008), these property borders are examples of simple lines on the map which show the beginning and the end of a game ranch. This situation poses a serious challenge to manage Mapungubwe National Park because it is fragmented. It also challenges the creation of Mapungubwe as a bioregion (Interview, Fhatuwani Mugwabana, 22/06/2011).

Biodiversity in Tuli Circle Safari Area is protected by the DPWM. The game scouts employed by the DPWM are only responsible for managing biodiversity in the Safari area (Interview, Makina, 13/05/2011). Sentinel and Nottingham are managed as private property and there is a clear separation between private and communal land, and each of these is managed differently. Nottingham has its own game scouts responsible for countering poaching within estate. The estate is patrolled twice a week (Interviews, Steve Boshoff; Muduntswa Ndlovu, 12/05/2011). One game scout in Nottingham commented that:

> *We do anti-poaching patrols in Nottingham Estate twice in a week. Sometimes when we have been informed about planned poaching we also do patrols in the evening. We get snares in the property everyday that we patrol. Sometimes we remove more than 120 snares in a day. The snares are made from telephone wires and the animals that are targeted include Impala, Eiland and Zebra. There are people who poach animals because they are hungry and they want to feed their families. Such people normally kill impalas with snares. Those who poach for commercial purpose target bigger animals like Eland and Zebra. Eland are killed in order to make biltong which is sold to farm workers located far away from towns. Zebra are killed to remove the skin for selling* (Interview, Muduntswa Ndlovu, 12/05/2011).

Similarly, some game scouts have also been employed in Sentinel to counter poaching (Interviews, Vanessa; Digby Bristow, 13/05/2011). In addition, War veterans in Sentinel and Nottingham are responsible for conserving biodiversity in their portions of land. They patrol their land area on a daily basis to counter poaching (Interview, War veterans in Nottingham and Sentinel, 12/05/2011).

Whereas the MoU signed by the Ministers of three participating countries allow wildlife to roam freely across the international borders, the discussion above shows that this is not the case when it comes to officials responsible for conserving biodiversity in the Mapungubwe region. As we have noted, there is no joint effort to conserve biodiversity within a country and across the border. Essentially, this keeps state border alive for officials as they cannot do enforcement in other games farms and across the international border. Thus, conservation officials within and across the border remain divided by the same borders that have been removed for wildlife.

It is clear from the discussion above that conserving and managing biodiversity jointly in the Mapungubwe region is not going to be easy. Each country is not only responsible for managing and conserving its own biodiversity, but is confronted with sets of barriers it has overcomed. At the institutional level, there is a Trilateral Ministerial Committee (TMC), Trilateral Technical Committee (TTC), Advisory Committees (AC), Joint Working Groups (JWG) and the international coordinator. The TMC consists of the ministers of the three countries who are

responsible for monitoring progress, policy guidance and formalising agreement reached including IDP reports, MoU and the Treaty (MoU, 2006a). A TTC and its working groups have been appointed to facilitate the process of TFCAs on both sides of the borders. This involves preparing reports and other documentation for TMC; drafting of the treaty; developing action; and management plans; and monitoring progress. A TTC meets regularly to report on the progress made and discusses aspects that still need to be addressed. The AC is responsible for representing the interest of the different sections of society in each country and collecting and passing on information on issues to be discussed in the TTC meetings. The international co-ordinator is responsible for driving and coordinating the activities associated with the planning and development of the Mapungubwe TFCA (MoU, 2006a). Once the Treaty has been signed, a Joint Management Board (JMB) constituted by the members from the three participating countries will be formally appointed to manage Mapungubwe TFCA. The terms of reference for the JMB are captured on the draft treaty which is yet to be signed by the state presidents of the three countries (Interview, Johan Verhoef, 22/03/2011).

4.4. Conclusion

This chapter has discussed patterns of land ownership and strategies for land acquisition in Mapungubwe. This process is crucial for analyses of bioregions because it impacts on the land available for constructing the TFCA in Mapungubwe. The chapter highlights that the creation of a bioregion depends on the integration of state land (national parks), private land and communal land. This is made possible through transformation of property borders as well as a symbolic removal of international border through the signing of lease agreement and the MoU. Thus, the ideals of bioregionalism have been adopted as the foundation for de-bordering. The chapter has also shown that the creation of Mapungubwe as a bioregion is challenged by activities such as mining, commercial agriculture, land consolidation, and incompatible land use practices and differences in the utilization of wildlife resources. These challenges have the potential to limit the creation of Mapungubwe TFCA. Whereas the objective behind the creation of a bioregion in the Mapungubwe area was to jointly conserve cultural and biodiversity assets in the region, this chapter found that each country is currently responsible for conserving its own biodiversity. Subsequently, this keeps the border alive particularly for officials responsible for conserving biodiversity in the region. However, it is anticipated that there will be a joint effort to conserve

biodiversity once the treaty has been signed. In the next chapter, I explain land reform programme across the frontier and its implications for the creation of bioregion, and how property rights and interests in land in the Mapungubwe region have affected the creation of Mapungubwe TFCA.

CHAPTER FIVE
PROPERTY AND NATURAL RESOURCE RIGHTS

5.0. Introduction

Property is generally understood to refer to personal possession of something (Egan and Place, 2013). The ownership in this sense confers a bundle of rights to the owner, including the right to use the property as desired and to exclude others from its use. In this regard, property owners are seen as self-regarding who are concerned only with their own interests and having limited obligations to those outside of their property borders (Egan and Place, 2013). Property rights and interests in land, which are the focus of this study, are implicated in the conservation of natural resources. Land is a fundamental resource for all living systems and provides opportunities for conservation of natural resources. Thus, without land, it would be impossible to protect or conserve natural resources. In addition, it would also be impossible to have property rights to natural resources without those rights in land. Land is generally held under three main forms of tenure which include state, private and communal land. Property rights in these tenure forms are different and their impacts on land for conservation are not the same. As Heltberg (2002) has noted, state land is formally under state ownership for which the state ideally would enforce both access and conservation rules. In private land, the property rights are vested in the individual. The ideal or perfect type of property rights are complete, secure, transferable and provide the holder with the rights to position, transfer, use, change and destruction of the asset. In communal land, the property rights are under communal ownership where access rules are defined with respect to community membership (Heltberg, 2002).

Land issues are important in Mapungubwe because of the co-existence of land under state, private, and communal ownership. In each one of these tenure forms, the holder has property rights that empower the land right holder to have control over land. Farm workers on commercial farms have neither rights nor control over land, and therefore have no control over land use. The creation of Mapungubwe TFCA requires that various pieces of land under different tenure systems across the border be consolidated under one property management regime. Such a consolidation can be achieved by rearranging property borders. However, this is not easy in Mapungubwe because some commercial and game farms that are within Mapungubwe TFCA are

unwilling to sell their properties or to be part of the nature conservation initiative as explained in Chapter Four. In addition, there are also pending land claims in Mapungubwe National Park. All these complicate the removal of property borders towards the creation of Mapungubwe as a bioregion.

This chapter demonstrates the complexity of land rights issues in the Mapungubwe region. It begins by explaining land reform paths in Botswana, South Africa and Zimbabwe. The review of land reform in these three countries is not intended to engage with land reform *per se*. Rather, the goal is to analyze the implications of land reform on the areas earmarked for the Mapungubwe TFCA.

5.1. Land reform

Generally, protected areas are established on land that is contested by various interest groups. Where land rights are weak, absent or ignored, states tend to exercise their monopoly of power to put land for conservation aside. Southern Africa provides many examples of these practices. For example, under colonial and apartheid rule, policies and legislation were designed to dispossess the native population and to deny them access to land and natural resource rights. As a result, post independence governments embarked on various land reform programmes that sought to redress the past injustices, especially the inequitable distribution of land. Thus, land reform programme in southern Africa is a form of bordering intended to fundamentally transform patterns of ownership, rules governing access and exclusions, and to challenge historical divisions between landed and landless. The land reform process has huge implications on land acquisition and security of tenure in Mapungubwe.

5.1.1. Land reform in Botswana

Land reform in Botswana was not undertaken with the primary objective of redistributing land as in other African countries. It was guided by three objectives, namely, increasing agricultural productivity, conserving range resources and improving social equity in rural Botswana (Malope and Batisani, 2008). At independence in 1966, Botswana inherited three types of land tenure which included tribal land (formerly known as native reserves) which accounted for 48%; State land (formerly known as crown lands) which constituted 47% and freehold land covering 6 %

(Machacha, 1982; Adams, 2003). Since independence, much of State land has been converted into customary land (Machacha, 1982; Kalabamu, 2000; Adams, 2003). Land under the customary tenure system has increased from 48% to 70% of the country's land area while state land has decreased from 47% to 25%. The proportion of freehold land decreased marginally from 6% to 5% during the same period (Malope and Batisani, 2008; Malatsi and Finnstrom, 2011). It is important to note that no freehold land has been created since 1978 (Kalabamu, 2000). This stems from the fact that freehold land allocation based on financial ability to purchase residential plots excludes the majority of the citizens from owning land, or alternatively, permits only the urban elite to afford to buy and develop land (Nkwae, 2008). The policy in Botswana has been to increase the area of tribal land at the expense of both state and freehold ownership. State land is administered according to the *State Land Act* by central government and local government councils. State land in urban areas is allocated on two forms of leases, namely, Fixed Period State Grant (FPSG) and Certificate of Rights (COR) (Kalabamu, 2000; Adams, 2003). Wildlife and forest reserves, research stations, roads, military purposes, large dams are found on state land (Adams, 2003; Malope and Batisani, 2008).

The tribal land is administered by statutory bodies called land boards that were created under the Tribal Land Act of 1968 (Cap.32: 02). Land boards started operating in 1970 (Kalabamu, 2000). The Tribal Land Act marked a major change in the institutional framework that handled the country's land matters. With the enactment of the Tribal Land Act, the allocation of powers to chiefs, sub-chiefs and headmen were ceded over to these land boards, ostensibly to ensure a more equitable distribution of land (Machacha, 1982; Kalabamu, 2000; Adams, 2003; Nkwame, 2008; Malope and Batisani, 2008). Land Boards were created by statutes set up as autonomous bodies to manage tribal land for the benefit of citizens (Kalabamu, 2000; Malatsi and Finnstrom, 2011). In principle, the Tribal Land Board Act allows any citizen of Botswana to qualify for any tribal land anywhere in the country. However, the basic concept of land tenure does not change. The only change is in the method by which land allocation became more centralised (Malope and Batisani, 2008). As Nkwae (2008) has noted, even after 40 years of experimenting with Land Boards, Botswana still describes its land administration system as 'work in progress'. It continues to adjust and adapt its land administration based on traditional land rights and cultural values to meet the needs of a rapidly urbanizing economy and growing land market (Adams,

2003). In addition to land boards, Botswana established a Land Tribunal in 1995 to facilitate speedy processing of appeals against land board decisions. A Land Tribunal is a mobile court presided over by a qualified lawyer. It receives and determines appeals brought to it by land boards as well as appeals against decisions of any land board. Enforcement of the tribunal's decision is the same as that of the Magistrate Court. Any party aggrieved by the decision of the tribunal can appeal to the High Court (Kalabamu, 2000).

The freehold system of land tenure involves perpetual and exclusive ownership of land by individuals (Malope and Batisani, 2008). This includes Tuli, Tati, and Ghanzi farming blocks (Machacha, 1982). Freehold land which comprises of 5% of Botswana's total land area includes some of Botswana's most valuable agricultural land. Commercial beef production takes place in freehold areas where animals are kept on fenced farms (Malope and Batisani, 2008). In the case of freehold land in Botswana, the government has maintained continuity by retaining and respecting the land rights and other tenurial provisions granted by the colonial administration while limiting absolute and relative increase of private land ownership (Kalabamu, 2000). As a result, NOTUGRE which is part of the GMTFCA remains a freehold land and it is not affected by land reform in Botswana.

5.1.2. Land reform in South Africa

The post-apartheid state inherited a highly skewed land distribution in which the majority black population was confined to an estimated 13% of the land with the rest of the land belonging to the white minority. This inequitable distribution of land is ascribed to the passage of the Natives Land Act of 1913 as well as the Native Trust and Land Act of 1936. Together these Acts led to the mass removal of black people and their resettlement on an ethnic basis (Ralushai, 2002; Magome and Murombedzi, 2003). The land set aside for occupation by black people consisted of villages or communal lands that were first called 'native reserves' and later turned into 'homelands'. This land was, with few exceptions, infertile and thus agriculturally unproductive (Magome and Murombedzi, 2003). The dispossession and forced removals of black people under colonialism and apartheid has resulted in extreme land shortages and insecurity of tenure for the majority of blacks (Lahiff, 2001). The transition to democracy in South Africa happens through a

negotiated political settlement of 1992 and 1993 rather than an all-out war of liberation as in other neighboring countries (Lahiff, 2001, 2009).

The settlement sought to address the injustices of apartheid while at the same time promoting national reconciliation (Ramutsindela, 2003). This political compromise secured the property rights of the white minority. Section 25 of the South African Constitution strikes a delicate balance between the interest of existing property owners and the interests of society as a whole. The Constitution provides that no one may be deprived of property except in terms of law of general application, and no law may permit arbitrary deprivation of property (South Africa, 1996a). Property may be expropriated only in terms of law of general application for a public purpose or in the public interest, subject to just and equitable compensation. The public interest is clearly stated in the Constitution to include land reform (South Africa, 1996a). The primary objective of land reform is redistributing land from the white minority to the black majority who were dispossessed of valuable agricultural land under colonialism and apartheid. It is estimated that some 82 million ha of commercial farmland in South Africa were in the hands of the white minority in the early 1990s. At the same time more than thirteen million black people remained crowded into the former 'homelands' where rights to land were generally unclear. On private farms millions of workers and their families faced severe tenure insecurity and lack of basic facilities (Lahiff, 2001, 2009). In 1994, South Africa embarked on land reform programmes in order to redress the racial imbalance in land ownership and to secure the land rights of historically disadvantaged people. The land reform programme in South Africa is explained below.

5.1.2.1. Land reform programmes in brief

According to the White Paper of South African Land Policy of 1997, the government's land reform programme is made up of three broad thrusts. The first component of land reform programme is *land redistribution*; whose purpose is to provide the poor and landless with access to land for residential and productive uses necessary for improving their income and quality of life. The programme aims to assist the poor, labour tenants[18], farm workers, women, as well as emergent farmers. The government committed itself to Settlement or Land Acquisition Grants to

[18] Labour tenants are black people who work and live in privately own farms in South Africa.

eligible individuals and groups to assist them to purchase land in the open market (Department of Land Affairs, 1997). Qualifying household received Settlement or Land Acquisition Grants of R16 000[19]. The government's ambition of land was to transfer 24.9 million hectares of land by 1999. This is equivalent to 30% of white-owned agricultural land, estimated at 83 million hectares (African National Congress, 1994; Lahiff, 2008). The target of 30% has since been shifted to 2014. By March 2011, the land redistribution programme alone, handed only 3 447 228 ha of land to 198 901 beneficiaries (Department of Rural Development and Land Reform, 2011). This figure represents just 4.2% of white-owned land that was transferred to the black population, and is far below the official ambitious target of 30% by 2014.

The second element of land reform is *land tenure reform*. Tenure reform aims to bring all people occupying land under a unitary, legally validated system of landholding. This programme seeks to secure forms of land tenure, help resolve tenure disputes and provide alternatives for people who were displaced (Department of Land Affairs, 1997). Land tenure reform is generally taken to mean the protection, or strengthening of the rights of residents of privately owned farms and state land, together with the reform of the system of communal tenure prevailing in the former homelands (Lahiff, 2001). In privately owned land, labour tenancy existed where black people worked and lived in the farm for a long time as tenants. This tenure system allowed black people to remain on the farm in exchange for their labour. Under these agreements they were allowed a piece of land to farm and could also keep their livestock. In exchange they had to work for commercial farmers without payment. Later the system was changed and every member of the family had to work for the farmer in order to get cash to pay for the land they utilised (Musyoki and Tshatsinde, 2012).

The communal tenure system included communal land in the former 'homelands'. 'Homelands' are the most affected by the problems of insecurity of tenure because of the apartheid-era policies. The majority of rural blacks lives and continues to live in communal land that is legally owned as a property of the state. In many areas of South Africa, most of the communal land is still under the jurisdiction of traditional authorities. In an attempt to address the land tenure

[19] The initial amount was set at R15 000.

reform, government introduced a number of legislations. First, Land Reform (Labour Tenants) Act 3 of 1996 seeks to protect land rights of labour tenants on privately owned land and provides a process where tenants can eventually own the land they occupy (South Africa, 1996b). Second, the Communal Property Associations Act 28 of 1996 enable communities to form juristic persons, known as communal property associations, in order to acquire, hold and manage property on a basis agreed to by members of a community in terms of a written constitution (South Africa, 1996c). Third, the Interim Protection of Informal Land Rights Act 31 of 1996 provides for the temporary protection of certain rights to and interests in land which are not otherwise adequately protected by law, pending future reform (South Africa, 1996d). Fourth, Extension of Security of Tenure Act 62 of 1997 protects the occupants of privately owned land from arbitrary eviction and provides mechanisms for the acquisition of long term tenure security (South Africa, 1997). Fifth, Transformation of Certain Rural Areas Act 94 of 1998 provides for the repeal of the Rural Areas Act 9 of 1987 that applied to the 23 so called coloured reserves in the Western Cape, Northern Cape, Free State and Eastern Cape (South Africa, 1998b). The Act deals with commonage land but also with the transfer of land from townships to municipality. Sixth, Communal Land Rights Act 11 of 2004 provides legal security of tenure by transferring communal land to communities through the application of democratic administration of communal land, the establishment of land rights boards, cooperatives and the use of communal land by municipalities (South Africa, 2004b). The Act was found unconstitutional by the Constitutional Court because the nature and content of 'new order rights' are not clearly defined, and the Minister of Rural Development and Land Reform is given wide and sweeping powers to determine these rights on a discretionary basis. It is also argued that no clear criteria to guide the Minister's decisions are provided by the Act, and few opportunities to participate in making these crucial decisions, or to challenge them, are created (Cousins, 2007).

Despite the introduction of these progressive legislations, Lahiff (2001, 2008) argued that land tenure reform is the most neglected aspect of land reform programme in the country, yet it is likely to impact on more people than all other land reform programme combined. As a result, the state has yet to deal effectively with the two most pressing challenges in the area of tenure in rural areas: the chaotic system of communal land in the former homelands and long term security of tenure for residents of privately owned farms (Lahiff, 2001, 2008).

The third element of land reform is *land restitution*, which aims to restore land and provide other means of compensation to people dispossessed by racially discriminatory legislation passed since 19th June 1913. This is done in such a way as to provide support to the vital process of reconciliation, reconstruction and development. In order to redress the suffering caused by the policy of forced removals, the government passed the Restitution of Land Rights Act 22 of 1994 (South Africa, 1994; Department of Land Affairs, 1997). This Act and the Constitution (Act 108, 1996, Section 25) provide a legal framework for the resolution of land claims against the state, where possible through negotiated settlements. The Land Claims Court (LCC) is responsible for adjudicating all disputed claims. The mere lodgement of a claim does not guarantee its validity. Every claim has to be recorded, screened and investigated in detail. If it is upheld, the claim is finally gazetted and settled (Magome and Murombedzi, 2003; Carruthers, 2007). However, as Ramutsindela (2003) has noted, the complexity of judicial process through the LCC slowed down the process of settling land claims in South Africa. This has led to the Restitution of Land Rights Amendment Act No. 48 of 2003. This Act empowers the Minister of Rural Development and Land Reform to purchase, acquire in any other manner or expropriate land or rights in land for the purpose of restitution awards or for any related land reform purpose (South Africa, 2003).

The amendment of the Act accelerated the settlement of claims (Lahiff, 2001). However, as Kepe (2004) has noted, the shift from a judicial to an administrative approach promoted negotiation of restitution claims between parties which leaves many powerless claimants vulnerable to unfair deals, some of which even compromise their constitutional rights. Since 1995, 2 760 527 ha (3.3% of land) has been handed to blacks via land restitution programmes. In addition, about R6 billion was paid out to restitution claimants who accepted cash payments instead of having land returned to them (Department of Rural Development and Land Reform, 2011). As a result, in 2011, 17 years into democracy, South Africa had redistributed 6.2 million ha or 7.5% of land in all aspects of land reform programme against an ambitious target of 24.9 million hectares or 30% of land. Although there has been a steady increase in the number of settled land claims since 1994, it is highly unlikely that the validations of all land claims will be completed to meet the new time frame of 2014.

5.1.2.2. Land claims in conservation areas

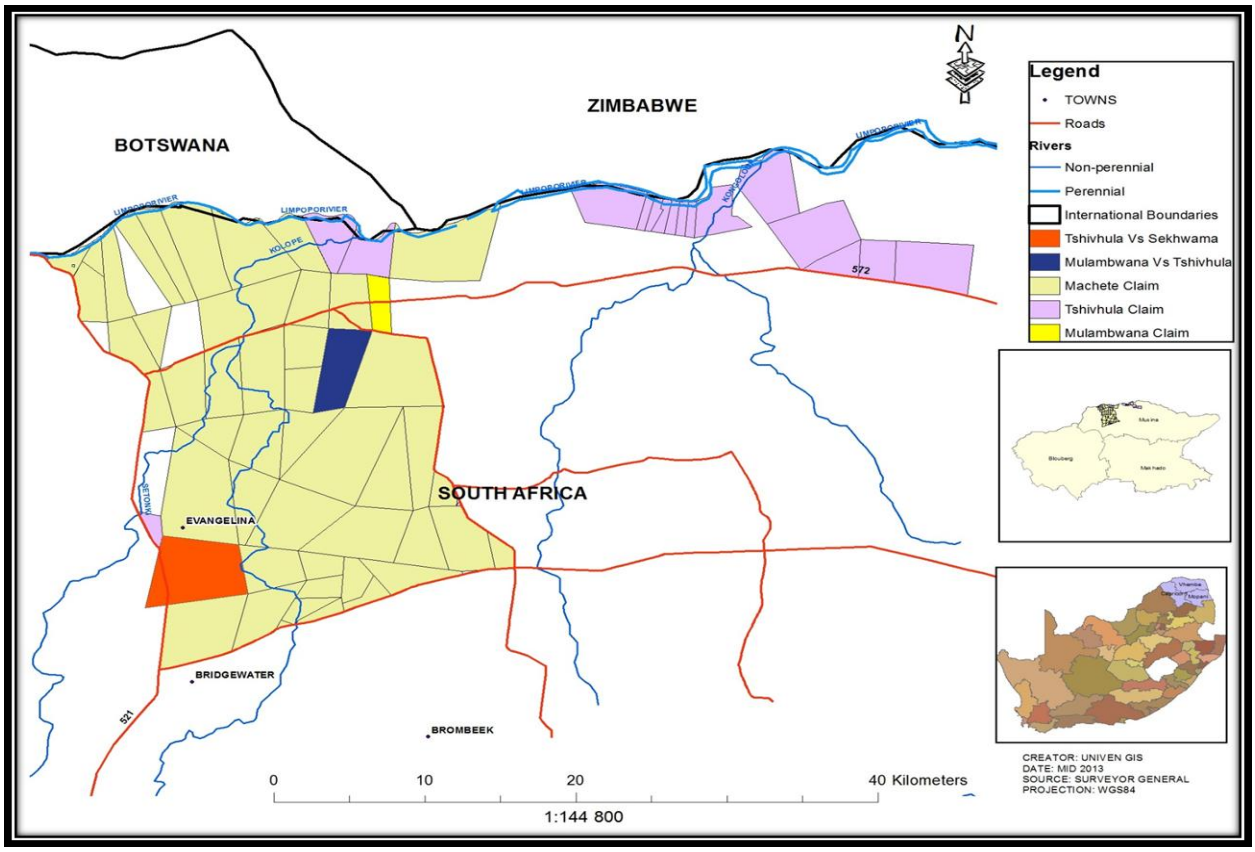
The Restitution of Land Rights Act does not specify the type of land or areas that could be subjected to land claims. The Act only seeks to restore land to those who were forcefully removed from it as a result of past racially discriminatory laws or practices. These include people who were dispossessed from areas that were allocated for National Parks and nature reserves (Ramutsindela, 2003). As a result, national parks and other conservation areas are subject to land claims. Whereas some other environmental groups see land claims in national parks as a threat to conservation, scholars argue that land reform, and land claims in national parks and nature reserves contributed significantly to the actual implementation of new policies, which augurs well for conservation and the human-nature interaction (Ramutsindela, 2003). Unsurprisingly, SANParks initiated the Social Ecology Unit in 1995 in order to facilitate the relationships with local people and national parks. The restoration of land rights to local communities through land claims is an attempt to bridge the gap between communities and conservation. Instead of returning the land back to communities who were forcibly removed in national parks and other conservation areas; land claims are resolved through a joint management of biodiversity between SANParks and communities as is the case with Kruger National Park and the Makuleke communities (cf Chapter Two). Although this approach was well accepted and celebrated as an appropriate model, it was abandoned partly because the conditions under which it was developed have changed and also because of the neoliberalization of protected areas in the country (Ramutsindela and Shabangu, 2013).

5.1.2.3. Land claims on the South African side of the transfrontier conservation area

According to a report produced by Ralushai (2002), former residents of Mapungubwe included the communities of Tshivhula, Lishiba, Musholommbi and Machete. As a result of apartheid policies (Natives Land Act on 1913 and Native Trust and Land Act of 1936), the local black inhabitants of Mapungubwe area were turned into a community of labourers or labour tenants on their own land. These two acts were the foundation of apartheid spatial borders which were created on racial ground. As a result, these acts created racial borders between whites and non-whites. The acts can also be understood as a bordering process in that they separated black people from white in terms of accessing and owning productive agricultural land. Thus, only the white population could own and access productive land for agriculture. These racially

discriminatory laws and practices had over the period of time eroded the rights of the communities in the Mapungubwe region and induced them to vacate the area (Ralushai, 2002). In addition, the residents of Mapungubwe were forced out of the area because of the mass removal of the late 1960s when black people were resettled on an ethnic basis. Most of the former residents settled in Alldays, Taaibosch, Musina, Makgato, De Frede, Sekgosese, and some are scattered in many parts of Venda (Ralushai, 2002). Former residents of Mapungubwe region who were forcibly removed used the provisions of the Restitution of Land Rights Act 22 of 1994 to seek restitution. This act is an example of a technical device that was introduced by a democratic government to redraw new borders in line with the ideals of a non-racial democratic dispensation. The two major claims filed by the Machete and Tshivhula communities cover the Mapungubwe National Park and Venetia Limpopo Nature Reserve and the claims were gazetted in 2006 (Figure 5.1) (Interview, Semakaleng Selby Mabeba, 23/01/2012).

Figure 5.1: Land claims on the South African side of the TFCA.

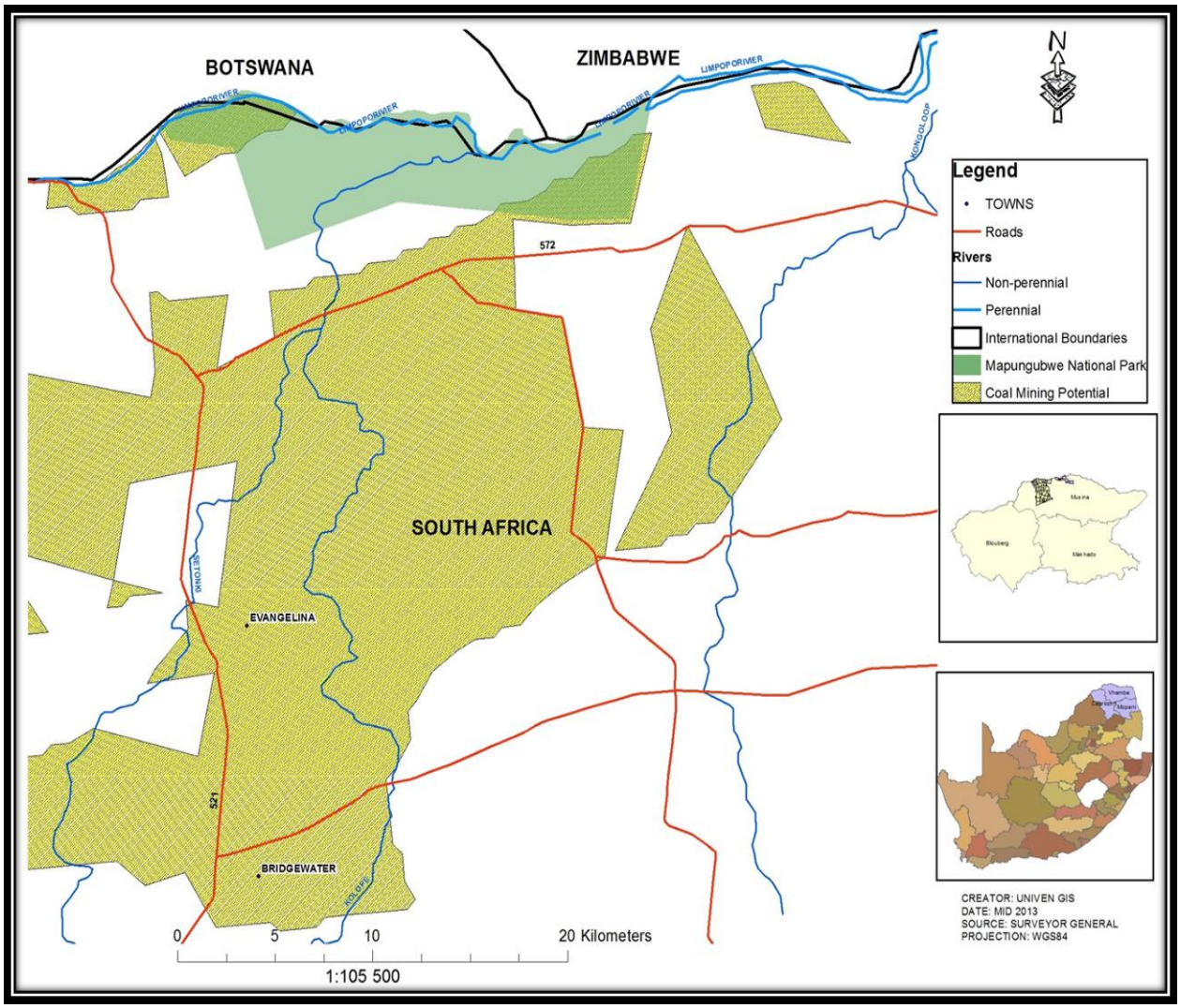


Source: Author, 2013 with the help of data from DRDLR

In addition, there is another small land claim by Mulambwana community as well as contested areas by Tshivhula and Sekhwama and Tshivhula and Mulambana indicated in Figure 5.1. The map above shows land claims that are within the borders of TFCA. If successful, these land claims will alter the borders around private property, and will also change the geography of Mapungubwe. The office of the Regional Land Claims Commission in Limpopo has contracted a team of researchers from the University of Venda to conduct further research in order to verify the legitimate owners of the land under claim (Interview, Semakaleng Selby Mabeba, 23/01/2012). According to one of the lead researchers, Dr. Chauke, claims overlap as a result of the use of different names for farms by white farmers when they occupied the Mapungubwe area. One farm stretched over to border land that was occupied by more than one family. When the land owners who were dispossessed of their land were given an opportunity to claim back their land, they did not claim the area where they stayed before eviction; rather they claimed the farms based on the names given by white farmers. This has led to overlapping of claim between the land claimants (Interview, Phineas Chauke, 17/05/2013). Machete land claim incorporates Venetia diamond mine which is currently operational. Furthermore, the area claimed has the greatest potential of coal (Figure 5.2).

Figure 5.2 shows that coal reserves spread to Venetia Limpopo Nature Reserve, Mapungubwe National Park, and Vhembe Game Reserve. The map shows coal reserves and their borders along Venetia Limpopo Nature Reserve, Mapungubwe National Park, and Vhembe Game Reserve. The area claimed by Tshivhula community on the eastern side of Mapungubwe National Park also has coal which is currently mined by Coal of Africa Limited (cf Chapter Four). All the land claims in Mapungubwe have not been settled. It is anticipated that the claims will be finalized once the research on overlapping claims is completed. It remains to be seen how the land claims particularly in the Mapungubwe National Park and World Heritage site will be resolved, and more coal mining might be opened in the Mapungubwe area.

Figure 5.2: Coal potential areas on the South African side of TFCA.

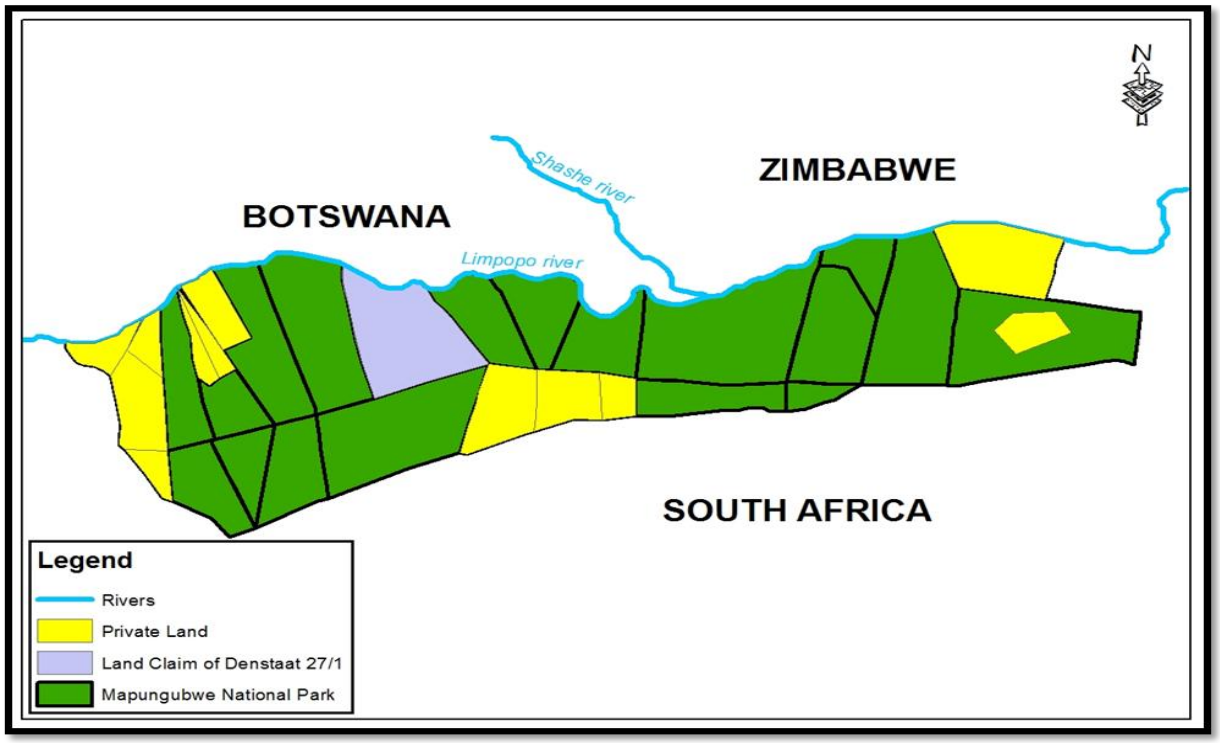


Source: Author, 2013

5.1.2.4. Land claim of Den Staat farm in Mapungubwe area

Den Staat farm is one of the farms that are found within the borders of Mapungubwe National Park but not part of the park as indicated on the map below (Figure 5.3). The map below shows land claim borders of Den Staat farm which is within the borders of Mapungubwe National Park and the World Heritage Site. The land claim of Den Staat farm has been treated separately because it was privately owned (Interview, Semakaleng Selby Mabeba, 23/01/2012).

Figure 5.3: Land claim of Den staat farm in the Mapungubwe National Park.



Source: SANParks, 2010a

Machete Royal family filed a claim on Den Staat farm in 1998, on the grounds that they were evicted from Den Staat because of apartheid legislation. The Machete people gradually started losing their land from 1913 as a result of Native Land Act. Subsequently they were forcibly removed from Mapungubwe between 1965 and 1970 when blacks were resettled on an ethnic basis. Those who remain in the Mapungubwe area did not last for long (Interviews, Patrick Machete, 11/08/2012). A representative of Machete clan commented that:

> *When more whites occupied the area, the Machete community became labour tenants in return for staying on the land. They worked in white farms as slaves without getting paid. Some communities who were regarded as being in excess of the number allowed were given trekpasses*[20] *to move out of the land. The issuing of trekpasses resulted in the majority of Machete family leaving the area* (Interview, Patrick Machete, 11/08/2012).

[20] Trekpas is an Afrikaans word which generally means to be retrenched or fired. During apartheid, the term trekpas meant eviction of black people by white farm owners who were no longer required to stay or work in the farm (Interview, Sole Sematla, 22/06/2011).

Former residents of Den Staat farm who were forcibly removed used the provisions of the Restitution of Land Rights Act 22 of 1994 as a technical device to seek restitution. The Office of Regional Land Claim Commission in Limpopo found that the Machete were the rightful claimant of Den Staat (Interview, Semakaleng Selby Mabeba, 23/01/2012). The presence of Machete community in Mapungubwe has also been confirmed by the report written by Prof. Ralushai in 2002. The claim was finalized in favour of Machete Royal family and was gazetted on 8 September 2006. As part of the settlement of the land claim the DRDLR bought Den Staat from George Hodgson in 2009 with the purpose of handing it back to Machete Royal family. Whilst the Department was preparing to hand over the land to the Machete family, there were conflicts among the Machete family. The family was divided over the issue of Den Staat. One group was of the view that the land should be leased to a private company. The other group was against the idea and preferred to use their own land for farming (Interviews, Patrick Machete, 11/08/2012; Semakaleng Selby Mabeba, 23/01/2012). To make matter worse, there was also conflict between Sematla clan and Machete Royal family. The Sematla clan also claimed that Den Staat farm belonged to them and that they too were turned into labour tenants when whites settled in Mapungubwe. The elder of Sematla clan commented that:

> *Den staat is our fathers and forefathers' land. They were born here and they were also buried in this land. I was born in this area in 1940 before the land was subdivided into smaller farms by whites. This area is my childhood playground and no one can tell me about this area. I have 16 children who were all born in this land. When whites arrived, we were forced to remove our livestock from this land and we were turned into labour tenants in our forefathers' land* (Interview, Sole Sematla, 22/06/2011).

The counter argument by Machete Royal family is that Sematla clan lived in Den Staat under the Machete chieftaincy and does not make them the owner of the land (Interview, Patrick Machete, 11/08/2012). Although there is evidence such as graveyard to prove that Den Staat was once occupied by Sematla clan, the claim was submitted by Machetes Royal family and not by Sematla clan (Interview, Semakaleng Selby Mabeba, 23/01/2012). As a result of the conflict, the land remains the property of the state and it is administered by the state until such time that the land is officially handed over to the rightful claimant. The claimants have not been given a

restitution grant, however, Machete family and Sematla clan are using the land for agricultural farming (Interview, Semakaleng Selby Mabeba, 23/01/2012; Field observation, 2011-2013).

5.1.3. Land reform in Zimbabwe

Prior to colonization, the people of Zimbabwe lived in communities where the traditional chiefs were the recognized land authorities. This customary law was ignored by British settlers in Zimbabwe who, since their arrival in 1889, sought to mine gold and diamonds. Once it became apparent that the country did not possess mineral wealth, the settlers focused on the fertile land and its high prospects for agriculture (International Crisis Group, 2004; Moyo, 2009; Pazvakavambwa and Hungwe, 2009). The settlers identified land suitable for commercial agriculture and large scale ranching; and they displaced local people and resettled them with their chiefs in what are now known as 'communal lands'. These lands therefore are a creation of the very early land redistribution program carried out by the colonialists (International Crisis Group, 2004; Moyo, 2005; Pazvakavambwa and Hungwe, 2009).

As documented by many scholars, the land distribution pattern in Zimbabwe is the product of a colonial strategy to empower white settlers at the expense of the indigenous people (Palmer, 1990; Moyo, 2000; Cliffe, 2002; Magaramombe, 2001; International Crisis Group, 2004). The colonial government employed policies and legislation designed to deprive the indigenous population access to land and natural resource rights. The Land Appointment Act of 1930 divided all land into black and white reserves. The Act prohibited indigenous people from owning land or occupying land in the white areas (Magaramombe, 2001; International Crisis Group, 2004). The 1951 Native Land Husbandry Act imposed and enforced state-based conservation practices on land owned by blacks while the Land Tenure Act of 1969 confined the majority black population to infertile areas (Pazvakavambwa and Hungwe, 2009; Moyo, 2009). As a result of these Acts, over six million people lived in Zimbabwe's marginal rural lands, restricted from access to the bulk of the nation's natural resources. Inequitable access to these resources meant that 4 500 mainly white large-scale farmers dominated Zimbabwe's agrarian economy (Moyo, 2000). As Moyo (2000) has noted, the increase in poverty, unemployment and income disparities was the main factor which fueled land reform in Zimbabwe. In order to redress the racially skewed agricultural land ownership pattern inherited from colonial

government that ruled Zimbabwe from 1890 until 1979, the government of Zimbabwe adopted the early land redistribution program at the time of independence.

As we shall see, Zimbabwe's land reform went through three main phases which reflect both shift in government policy and resources allocations, and changing economic and political conditions in the country (Moyo and Yeros, 2005). The first phase was between 1980 and 1990, and was characterized by a market driven approach. This phase was in line with the Lancaster House Agreement (LHA). The second phase was between 1990 and 1999, and marked the beginning of an official challenge of the market based approach. The third phase of radical compulsory acquisition was between 2000 and 2002. The three phases are discussed in detail in the section below.

5.1.3.1. Market driven land redistribution approach (1980-1989)

Land reform in Zimbabwe between 1980 and 1990 was pursued within a 'predominantly market-based' approach. The main legal mechanism for redistribution was conducted on a willing seller willing buyer principle, as had been agreed to in the signing of LHA settlement in 1979. Thus, whites who wished to keep their farms were free to do so; there would be no expropriation of land. Only 'under-utilized' land which was required for resettlement or other public purposes could be compulsorily acquired by the new government, but this would have to be paid for immediately and at the full market price (Palmer, 1990; Moyo, 1990; Stoneman, 2000; International Crisis Group, 2004; Moyo, 2005; Pazvakavambwa and Hungwe, 2009). The new government of Zimbabwe was tied up by the LHA which was to last until April 1990. The British Government had agreed to assist financially as they were convinced that an orderly and planned programme of land resettlement would promote political stability and allow people to normalize their lives as quickly as possible (Palmer, 1990). During this phase, Britain contributed US$44 million to land reform in Zimbabwe (Moyo and Yeros, 2005). The state played a dominant role in acquiring the land for the poor in this phase and supported resettlement schemes. By June 1989, about 52,000 families (416 000 beneficiaries) had been resettled which is 32% of the notional 162 000 target (Palmer, 1990; International Crisis Group, 2004; Pazvakavambwa and Hungwe, 2009), although some scholars considered the land acquired as of low agro-ecological value (Moyo 1995; Moyo and Yeros, 2005). The number of commercial

farmers decreased from 6 000 to 4 319, and the share of land they owned decreased from 42% to 29% (Palmer, 1990). As Pazvakavambwa and Hungwe (2009) have noted, the transfer of land from the large scale commercial farming sector to the small scale sector did not have any negative impact on agricultural production. Overall, the early land redistribution program between 1980 and 1989 was well executed with the majority of beneficiaries falling into the category of people with the greatest need (International Crisis Group, 2004; Pazvakavambwa and Hungwe, 2009).

5.1.3.2. The quiet phase (1990-1999)

Despite the notable progress of the 1980s, the need for further land redistribution remained evident. With 68% of the families yet to be resettled, the program was far from complete. By the early 1990s, the circumstances that had made possible the acquisition of land on a voluntary basis had faded away. The willing seller willing buyer principle was no longer delivering even on most marginal land (Pazvakavambwa and Hungwe, 2009). The pressure exerted on white commercial farmers to release land for the purpose of land redistribution was extremely weak at this phase. This situation was worsened further by the British government's refusal to support a program based on land expropriation (Pazvakavambwa and Hungwe, 2009). The government of Zimbabwe regarded the LHA as a major obstruction to the resolution of the land question and in particular as a major constraint on the government's land reform and redistribution programme. Accordingly, after the entrenched provisions of the LHA expired on 18th April 1990, the government amended the constitution to release the government from the willing seller willing buyer formula. The amendment of the constitution enabled the state to acquire land compulsorily (International Crisis Group, 2004; Moyo and Yeros, 2005; Moyo, 2009). This was followed by the new Land Acquisition Act of 1992 (a slight revision of the 1985 Land Acquisition Act) which enabled the state to expropriate land (International Crisis Group, 2004; Moyo and Yeros, 2005; Moyo, 2005; Pazvakavambwa and Hungwe, 2009). At that time, the Zimbabwean government remained confident that a deal to unlock the impasse could be struck with the British government. In 1997, the British government stopped paying for land compensation in Zimbabwe (Pazvakavambwa and Hungwe, 2009).

The constitutional amendments and the accompanying Land Acquisition Act were highly contested both in the political and legal arenas as they were viewed by many (in particular white commercial farming sector) as constituting a serious threat to the security of tenure and agricultural investment, as well as to the viability of commercial agriculture in the country (Moyo, 2009). This period was marked by increased activity in the courts which slowed down the redistribution process and increased anxiety and agitation among the landless particularly, War veterans (Moyo, 2001; Pazvakavambwa and Hungwe, 2009). Between 1990 and 1997 only 800 000 hectares were acquired, the bulk of which was in less fertile regions (Moyo and Yeros, 2005; Pazvakavambwa and Hungwe, 2009). The demands by War veterans in 1997 for pensions and the compulsory acquisition of 1 471 farms represented a new framework and created new momentum and prospects for radical land reform (Moyo, 2001). At the end of 1997, Zimbabwe was in serious political and economic crises (International Crisis Group, 2004). Between 1998 and 2000, no progress was made on the land question, despite the international donor's conference organized by government. The conference reached an agreement on the principles of effective land reform, and on the beginning of a two-year funded Inception Phase. The government prepared an Inception-Phase Framework Plan for 24 months covering one million ha. Unfortunately, the Plan floundered shortly after its launch (Sachikonye, 2003; Pazvakavambwa and Hungwe, 2009). Instead, national politics continued to boil ever more fervently, especially with the launch of the Movement for Democratic Change (MDC)[21] and the excitement over the prospect of defeating the ruling party at the millennium elections (Moyo and Yeros, 2005).

5.1.3.3. Fast track land reform

The year 2000 marked the beginning of fast track land reform and tamper of the landless people had reached boiling point at this phase. As a result it meant that the mode of land redistribution had to be different from that of the first and second phases. This phase was therefore characterized by mass land invasion or occupation led by War veterans (Moyo and Yeros, 2005). This entails communities squatting on the land identified for redistribution with the expectation

[21] Movement for Democratic Change (MDC) is a political party which was founded in 1999 by Morgan Tsvangirai as an opposition party to the Zimbabwe African National Union-Patriotic Front.

that the government would regularize the transfer, either by purchasing such land at market prices or by expropriating it (Moyo, 2005). The elements of orchestration, coercion and violence were dominant in this phase (Sachikonye, 2003; Moyo and Yeros, 2005). The white commercial farmers saw these occupations as illegal, and many of the owners tried to reverse them in court. However, the Rural Land Occupiers (Protection from Eviction) Act of 2001 was passed to protect people who had occupied land not yet acquired by the government (Pazvakavambwa and Hungwe, 2009).

The major emphasis during the fast track phase was on acquiring and allocating land to as many people as possible, regardless of the land's agricultural potential (Pazvakavambwa and Hungwe, 2009). As a result, planning was minimal and there was not enough time to do proper assessments, so settlement was haphazard (International Crisis Group, 2004). Unlike in the first phase where the program was driven by technical assessments and proper administrative procedures, the fast track phase was highly politically charged (Pazvakavambwa and Hungwe, 2009). During this phase, the government amended the Constitution and the amendments freed the government from responsibility for compensating owners if land was acquired compulsorily for resettlement purposes (International Crisis Group, 2004; Pazvakavambwa and Hungwe, 2009). In May 2000, the Temporary Powers Amendment Act (1986) was used to amend the Land Acquisition Act (1992) so as to clarify and streamline the land acquisition process and to prescribe new compensation rules. In November 2000, the Land Acquisition Act was amended further to vest the ownership of land in the state as the acquiring authority upon the serving of acquisition orders, notwithstanding any challenges in the courts (Pazvakavambwa and Hungwe, 2009). In the end, the Fast Track program gave access to land to a large number of people who had been deprived of land rights through historical injustices. The precise figures on the number of farms and amount of land acquired and redistributed during the fast track program vary from one source to another. According to Moyo and Yeros (2005), by the end of 2002, 'fast track' land reform had compulsorily acquired some 10 million hectares of land which is approximately 90 percent of white commercial farmland and redistributed most of it to 127 000 peasant households and 8 000 middle capitalist farmers.

5.1.3.4. Land reform on the Zimbabwean side of the transfrontier conservation area

The Zimbabwean side of the TFCA is under BBRDC. Land reform in this district started in the early 80s after Zimbabwe attained its independence. The land reform in Zimbabwe did not only affect the agricultural areas but also affected game farming areas that were under the ownership of the white minority. The farms affected on the Zimbabwean side of the TFCA include River Ranch, Nottingham Estate and Sentinel Ranch. These farms were acquired from colonial government as a result of colonial legislations which divided all land into black and white reserves and confined the majority black population to infertile areas. As shown in the literature above, of noteworthy is the Land Appointment Act of 1930, the 1951 Native Land Husbandry Act, and the Land Tenure Act of 1969. Collectively, these Acts were the cornerstone of colonial borders in Zimbabwe. These colonial legislations also reflect other forms of bordering, namely, the creation of an exclusive white nation-state. Thus, the legislation divided Zimbabweans on racial ground and did not allow native Zimbabweans to own and live in productive land. In this sense, the introduction of colonial legislations created racial borders in Zimbabwe. As a result, land reform programme targeted these farms with the purpose of redressing the colonial legacy.

a) River Ranch

River Ranch is a resettlement area which was acquired by the government of Zimbabwe in the 1985 as part of land reform programme. As we have noted, in 1985 the LHA which was signed in 1979 which encouraged land acquisition through a willing-seller willing-buyer principle was the main technical device used to control land redistribution in Zimbabwe after independence. Thus, River Ranch was acquired on a willing-seller willing-buyer principle based on the LHA. The farm covers an area of 22 000 ha and is located on the eastern side of Nottingham Estate and on the western side of Beit Bridge Town. The ranch falls under ward 6 and has a total of 5 villages which are: Mudzinwane, Mtetengwe, Malala, Makakabule, and River Ranch resettlement. River Ranch is a CAMPFIRE ward and revenue is generated from Safari hunting. One part of the ranch is a resettlement area and the other is reserved for domestic and wildlife grazing (Interview, Johannes Muleya, 15/05/2011). River Ranch has a total population of 8 931 with a total household of 1 820, and a total of 52.88% females compared to 47.12% males (Census, 2002). The main land use activities are livestock farming and agriculture (Interviews, Johannes Muleya, 15/05/2011; Sarah Mulilo, 15/05/2011). In terms of livestock, River Ranch

holds about 5 002 cows, 13 423 goats; 11 172 sheep and 1 836 donkeys (Department of Veterinary Services, 2009). Cows, goats and sheep serve as an important food security. Subsistence farming is also dominant but unfortunately the area is too dry and rainfall is unreliable. There is one irrigation scheme at River Ranch in Makakabule village and the main crops that are planted include wheat and maize. The irrigation scheme has a total of 40.5 ha but only 20 ha were under cultivation because of shortage of water supply. There were 2 of the 4 pumps that were functioning but the engines often breakdowns, which makes it difficult to get sufficient water to irrigate the 20 ha (Interview, Silvia Ngulube, 18/08/2011).

b) Sentinel Ranch

Sentinel Ranch covers 32 000 ha and adjoins Nottingham estate on the eastern side and Maramani communal area on the western side. The ranch was identified for compulsory acquisition by Zimbabwe government in 2003 as part of the land redistribution programme, and was earmarked for three-tier resettlement model allocating land to 150 beneficiary families (War veterans) by the government. The three-tier model is targeted for the drier areas where livestock ranching is the most suitable form of land use, usually in the absence of developed irrigation facilities. Under this model, communal area farmers are granted commercial rights on the new land, whilst simultaneously effecting communal area reorganization on existing land (CESVI, 2003). As demonstrated by the literature, the amendment of constitution and the Land Acquisition Act of 1992 are examples of technical devices that were used by the government of Zimbabwe after independence to compulsorily transfer land from the white minority to the black majority. The idea was to redress injustice created by colonial legislation and to ensure that black Zimbabweans have access to productive land. The compulsory acquisition of Sentinel Ranch happened during the country's fast track land reform. As a consequence of land reform, the farm was divided into two portions, Sentinel Ranch and Sentinel Lot 1 (aka Border Ridge). In this logic, subdivision of Sentinel Ranch through land reform programme created new property borders which transform the size, form and content of original farms. The 32 000 ha Sentinel Ranch is owned and managed by beneficiaries (War veterans) and the original owner retains the 460 ha Sentinel Lot 1 (aka Border Ridge) which is within Sentinel Ranch (Interviews, Vanessa; Digby Bristow, 13/05/2011; Beatrice Ponele, 12/05/2011). The 32 000 ha area is patrolled and controlled by War veterans (Interviews, War veterans in Sentinel, 12/05/2011; Beatrice Ponele,

12/05/2011). The Sentinel hunting camps were occupied by War veterans (committee of 6 members) who represent the beneficiaries of the farm. Since the area was initially used for wildlife management, War veterans and BBRDC agreed that the farm will not be resettled by people but will continue to be used for wildlife management or as a game farm. Sentinel Ranch is currently used for Safari hunting (Interviews, War veterans in Sentinel, 12/05/2011; Beatrice Ponele, 12/05/2011). After War veterans and the BBRDC realized that they do not have the capacity, skills and expertise to market the hunting concession, Digby Bristow (original owner of the farm) was invited to tender for the hunting concession on Sentinel Ranch. The tender was finally awarded to Digby's company called Sentinel Limpopo Safaris which is responsible for hunting concession in Sentinel Ranch (Interview, Vanessa; Digby Bristow, 13/05/2011).

> *We have been given a mandate by BBRDC to make things work in the farm. We are responsible for Safari hunting in Sentinel and BBRDC is the responsible authority. The money generated by concession in a year is shared equally between War veterans and BBRDC. The Bristow family who make up the shareholders of Sentinel Ranch which holds the title deed does not get any share from the money generated through Safari hunting* (Interviews, Vanessa; Digby Bristow, 13/05/2011).

The Bristow family makes a living out of a 460 ha Sentinel Lot 1 (aka Border Ridge). The main land use activities in Sentinel Lot 1 include breeding foot and mouth disease free buffalo, sable, waterbuck, and nyala which are hunted on a quota system along with other wildlife occurring on the property. Sentinel Lot 1 also offer limited photographic safari and as we have noted in Chapter Four, they plant maize, wheat and lucerne. A total of 15 people are permanently employed to run the day to day activities in Border Ridge and some 30 seasonal workers are employed for a period of 3 to 6 month. There is a hunting camp in Border Ridge that accommodates a total of 8 guests. The camp is normally used for six month during hunting and remains unoccupied for most of the time when there is no hunting (Interviews, Vanessa; Digby Bristow, 13/05/2011).

c) Nottingham Estate

Nottingham covers 24 000 ha and adjoins Sentinel on the western side and River Ranch on the eastern side. The estate was also identified for compulsory acquisition by the Zimbabwean government in 2003. As in Sentinel, the amendment of constitution by the government of Zimbabwe and the Land Acquisition Act of 1992 was used as technical devices to alter the borders of the farms. A three-tier resettlement model is in place, and the government has allocated land to 80 beneficiary families (War veterans). It is divided into two portions; a 15 000 ha portion owned by War veterans, and another portion of 9 000 ha remains with the original owner (Interviews, Steve Boshoff, 12/05/2011; Beatrice Ponele, 12/05/2011). Just like in Sentinel Ranch, the subdivision of Nottingham Estate through land reform programme created new property borders. A 15 000 ha farm is owned and managed by War veterans (committee of 5 members) representing beneficiaries of the farm. As we have noted in Chapter Four, the second portion under the previous owner is mainly used for commercial citrus farming, trophy hunting and photographic tourism. This portion has a total of 300 permanent employees and some 1000 seasonal workers are employed during harvesting periods for a period of 3 to 6 month (Interview, Steve Boshoff, 12/05/2011). In addition to citrus plantation, there are two camps; the Kuduland camp along Limpopo River which has a total of 12 beds and Mtshilashokwe camp along Mutshilashekwe dam with a total of 21 beds. The two camps are used mainly by tourists who visit the farm as well as Safari hunters (Interview, Steve Boshoff, 12/05/2011).

The subdivision of farm Sentinel and Nottingham into two portions has introduced another set of land owners that are equally important in the creation of Mapungubwe bioregion. The claim of TFCA is that all stakeholders who have direct interest in the creation of the TFCA will be involved. In the case of Mapungubwe TFCA, the original land owners of Sentinel and Nottingham, War veterans and BBRDC are all important stakeholders that needed to be involved in the creation of Mapungubwe bioregion. During fieldwork the original private land owners in Nottingham and Sentinel and War veterans as well as the BBRDC (who is the leading authority) were all interviewed to get their views, knowledge and their involvement in the establishment of Mapungubwe TFCA. Surprisingly, the War veterans who are legitimate land owners because of the land reform programme have no idea of the concept of TFCA. They commented by saying:

We do not know about TFCA and we were never informed by BBRDC of what it is all about. Whites used to come with a lot of maps and we once demanded to see the maps but they refused. We are not sure how we will benefit because we do not know anything about TFCA. We don't oppose the idea if it is a government initiative but we should be involved and informed how we will benefit because we have no intention of moving out of this land (Interview, War veterans in Sentinel, 12/05/2011).

We only see whites passing with big cars but they have never informed us about the TFCA. We don't even know what it is all about and how we will benefit if there will be any benefit…We make a living out of this land…We will never move out of this area because we are beneficiaries of this land (Interview, War veterans in Nottingham, 12/05/2011).

Whilst War veterans are a key stakeholder because they are land owners and have direct interest in the resources within the TFCA, they have largely been ignored in the process of establishing GMTFCA. Furthermore, War veterans are not members of the TTC meetings and as a result, they are not able to participate and influence decision on the establishment of Mapungubwe bioregion (Interview, War veterans, 12/05/2011; Observation in the TTC meeting, 08/06/2011). In contrast to this experience by War veterans, the white owners of the two commercial estates (Sentinel and Nottingham) and BBRDC have representatives in TTC meetings. In this context, the planning for the GMTFCA can be understood as a bordering process in that it separates War veterans from other land owners. Though the TFCA is conceptualised as a landscape that is free of borders, in this situation racial borders are created between those who should be involved in the creation of TFCA and those who should not be involved. This is an example of imaginary lines that are produced during the creation of a TFCA. It was found that the knowledge of TFCA is only skewed towards government officials and the private sector (Sentinel and Nottingham). This demonstrates that some stakeholders are more important than others in the creation of Mapungubwe bioregion (cf Chapter Six). This has negative implication in the establishment of TFCA and does not encourage the amalgation of nature and society. Subsequently, the claim of bioregionalism is doubtful in the Mapungubwe region.

5.2. Conclusion

This chapter has demonstrated that property rights in land affect and are also affected by nature conservation schemes. The availability of land and possibilities for consolidating land largely depend on the willingness of title holders to release land for conservation of biodiversity. The chapter has shown that land reform has implications on the areas earmarked for the Mapungubwe TFCA. The chapter observes that the land reform programme in Botswana does not impact on the NOTUGRE. However, on the South African side, the conditions are likely to become complicated were land claims to be resolved by giving claimants the same land rights as their white counterparts. Land claims have the potential to delay the creation of Mapungubwe bioregion. Land distribution in Zimbabwe has introduced War veterans as the new land owners of portions of Sentinel and Nottingham. The War veterans who are black property owners of Sentinel 2 and Nottingham 2 have not been involved and informed about the incorporation of their land into a bioregion whereas white property owners of Sentinel 1 and Nottingham 1 are aware of the TFCA and are part of TTC. Thus, the establishment of Mapungubwe TFCA reinforced racial borders. This may have negative implication on the process leading towards the creation of Mapungubwe TFCA. The prospects of bioregionalism, i.e the interconnectedness between society and nature are dim. The chapter concludes that the creation of Mapungubwe TFCA depends on the outcome between competing land uses such as agriculture and conservation, and the ability of stakeholders to respond to the imperatives of land reform and biodiversity conservation simultaneously. In the next chapter, I discuss the relationship between TFCA and local communities and how the creation of Mapungubwe bioregion has affected communities living within and around the TFCA.

CHAPTER SIX
TRANSFRONTIER CONSERVATION AREA AND LIVELIHOODS

6.0. Introduction

The claim that TFCAs will involve local communities is used in the promotion of these projects in post-apartheid southern Africa. Proponents of TFCAs insist that local people living in or close to TFCAs will benefit from the opportunities for economic growth that these areas offer, and that they will participate in the establishment and management of TFCAs (Sandwith *et al*., 2001; Van der Linde *et al*., 2001; Hanks, 2003). This chapter uses the empirical data to assess the validity of this claim in the creation of Mapungubwe TFCA. The first section of the chapter deliberates on the current livelihoods base of local communities in the areas earmarked for the TFCA. The second section focuses on the economic development in the study area. In the third section, some evidence of land use conflict is provided. This is followed by discussion on the effects of land use change on local communities in the Mapungubwe region.

6.1. Communities in the Mapungubwe region

The creation of TFCAs has been well received by both governments as well as NGOs. There has been massive channeling of funds by donor agencies, particularly the PPF, to encourage the creation of TFCAs (Duffy, 2006). However, TFCAs are not created on empty lands; rather they are established on some areas occupied by communities, farms and areas with diverse land use activities. All these groups of people have interest in the land and its resources. This section focuses on the dependence of local communities on natural resources, particularly in areas within or near the Mapungubwe TFCA. The discussion on the Botswana side of the TFCA focuses on Lentswe Le Moriti village which is within the NOTUGRE. As we noted in Chapter Four, Lentswe Le Moriti is a freehold property that is owned by the ZCC in Moria, Limpopo Province, South Africa. Thus, the property is owned by Engenas Lekganyane who is the leader of the main ZCC in South Africa. According to the secretary of the ZCC in Lentswe Le Moriti,

Lentswe Le Moriti is a residential area for ZCC members. All people are church members except few teachers and nurses who are government employees. The farm is 2 650 ha with an estimated population of 250 people. The main activity includes worshiping God which is done on a daily basis at 7H00 in the morning, 14H00 in the afternoon and 17H00 in the evening. The majority of people in the village are unemployed. However, there are 28 people who are employed by Botswana government's relief programme to clean up the village (Interviews, Ofentse Moleofe, 19/09/2012).

The livelihoods base for other Lentswe Le Moriti communities is livestock farming (Plate 6.1). The livestock that are found include cows, goat and sheep and depends on grazing material in the farm (Interviews, Ofentse Moleofe, 19/09/2012; Mashape Nkoloi Kobe, 22/09/2012). There are three households in Lentswe Le Moriti that have posts for cows, goats and sheep whereas only one household has a post for goats, and the total number of cows in the village is 125. In addition to cows, the village has approximately 470 goats and 20 sheep (Fieldwork, 2011-2013). The livestock owners use branches of trees to fence the kraal of their livestock (Plate 6.1).

Plate 6.1: Livestock farming in Lentswe Le Moriti village.

Source: Author, 19/09/2012

The livestock serve as an important food security to the community and is also an important source of income. People sell their livestock when there are funerals, parties, weddings while butcheries buy livestock from local communities. A cow cost P2000-P7000 whereas goats and sheep cost P200-P700[22]. Livestock are therefore highly valued in Lentswe Le Moriti village (Interviews, Lebogang Tsheole, 19/09/2012; Ofentse Moleofe, 19/09/2012; Mashape Nkoloi Kobe, 22/09/2012). Women make a living out of weaving baskets and mats from ilala palms which are collected from Motlhabaneng village, and sell these in the village. One woman who weaves baskets and mats in Lentswe Le Moriti said that:

> *We do not have jobs. We only rely on weaving baskets and mats from ilala palm…Unfortunately we do not have ilala palm in Lentswe Le Moriti. As a result, we hire transport to go to Motlhabaneng village where we harvest ilala palm in bulk and load them into the car. We produce mats and baskets on a daily basis and this is our full time job. However, the biggest challenge is that we do not have market to send our products. We only rely on tourists and other people like you who visit the village* (Interviews, Wendy Molefe, 19/09/2012).

The village does not have electricity and as a result people rely on fuel-wood as the main source of energy. Fuel-wood is collected from the farm (Interview, Ofentse Moleofe, 19/09/2012). There are also two villages of Motlhabaneng and Mathathane which are closer to NOTUGRE. These villages are the last two settlements on the western side before entering the NOTUGRE main gate. Motlhabaneng village started as a cattle post hence livestock serves as the principal source of income in the village (Interview, Mphale Kanono, 18/09/2012). The main land use activity in both villages is livestock and dry-land farming. The dry-land cropping is practiced along NOTUGRE fence. The livestock that is found in the villages include cows, goats, sheep and donkeys. The cows, goats and sheep serve as the source of income whereas donkeys serve as the mode of transport like in Lentswe Le Moriti. Women also make an income out of weaving baskets and mats from ilala palms which are sold to tourist and other people who visit the village (Plate 6.2).

[22] P is an abbreviation for Pula which is a Botswana currency and 1Pula is equivalent to 0.11 United States Dollar (as of August 2013).

Plate 6.2: Baskets made from ilala palm on display in Mathathane village.

Source: Author, 19/09/2012

Other makes a living out of brewing ilala palm wine which is normally sold to villagers and tourist who visit the village. Ilala palm wine is produced by cutting the stem of ilala palm and the drips of water that comes out are channeled into a container. After fermentation, the water becomes wine. One palm wine brewer stated that:

> *I have been brewing ilala palm wine for the past four years. Since then I never stopped because of the demand of wine by my customers and the returns are also good. Brewing palm wine is my full time job and my main source of income. I am able to support my family and to pay school fees for my kids. I make 5-6 liters of wine in a day and I brew wine throughout the month. A 750 mayonnaise bottle cost 4 pula and I am able to make about 115 pula per day* (Interview, Thetshelesani Seshoka 18/09/2012).

There are no villages on the South African side of the TFCA that are within or near Mapungubwe National Park. The area is dominated by private game and commercial agricultural farms. In the farms, there are farm workers some of whom are permanent resident in the area because they were born on the farm (Interview, Johannes Sematla, 17/01/2012). These farm

workers are considered local communities on the South African side of the TFCA. They work on farms which are within the Mapungubwe National Park but not part of the park (cf Chapter Four). It is important to note that the majority of commercial farms in South Africa are mostly owned by whites. Many black farm workers have worked and lived on privately owned white farms for ages and this trend continues even today despite recent attempts by the government to transform land tenure through legislation. A study conducted in Limpopo Province found that farm workers and dwellers living on privately owned farmland lacked opportunities for independent use of land to support their precarious livelihoods (Hall *et al*., 2013). In addition, the historical trajectory of displacement of farm workers and dwellers from white-owned land and expulsion into rural reserves or towns and cities appears to have continued and accelerated in the democratic era (Hall *et al*., 2013). Thus, democracy has produced limited changes in the conditions of farm workers and farm dwellers in South Africa.

Plate 6.3: Cows grazing in Den Staat farm.

Source: Author, 09/12/2011.

In Mapungubwe, farm workers depend entirely on commercial irrigation farms because they are the main employers as compared to game farms and the national park. This makes commercial irrigation farms in the area an important source of livelihoods to farm workers. The selling of

commercial irrigation farms directly affects farm workers because they become jobless and can no longer have a source of income. They also have to relocate from the farm to another area because their services will no longer be required once the farm has been sold. Evidence of the effects of land use change on communities is discussed later in section 6.4. In addition to farm workers, the land claim has allowed the Machete and Sematla clan to move back into Den Staat farm (cf Chapter Five). Den Staat farm is within the borders of Mapungubwe National Park but is not part of the park. The Sematla clan moved back into the farm in 2009 with all their belongings, including livestock (Plate 6.3). The livestock that are found in the farm include cows, goats and sheep. The farm is used as a grazing land for livestock and livestock serve as a source of income (Interview, Sole Sematla, 22/06/2011).

The Sematla clan also use the farm as a residential area for about 70 people who live on the farm and another 86 people who work and also stay on the farm (Interview, Michael Sematla, 06/06/2013). Most importantly, the farm is also used for agricultural farming which is the major source of income (Interviews, Sole Sematla, 22/06/2011; Patrick Machete, 18/08/2012). The elder of Sematla clan commented that:

> *We plant vegetables particularly tomatoes, potatoes, sweet potatoes, cabbages and watermelon. We also have oranges in the farm which are harvested for processing. The challenge is that we currently do not have market to supply most of these products. We rely on people who come to collect these products with their cars and trucks* (Interview, Sole Sematla, 22/06/2011).

Whereas one portion of the farm is used for agricultural farming by the Machete family, the other portion is used by the Sematla clan. The farm is surrounded by an electric fence and wildlife does not have access to the farm. The electric fence therefore acts as a border.

The area designated for the TFCA in Zimbabwe is largely dominated by communal lands, namely, Maramani, River Ranch and Machuchuta. These communal lands to the western side of Beit Bridge Rural District are among the poorest in Zimbabwe (CESVI, 2001). There is no tourist infrastructure in these communal areas. People who live on these communal areas depend

mainly on intensive crop production and extensive livestock production. In addition to these activities, the Maramani community has settled near the confluence of Limpopo and Shashe Rivers in order to access resources such as ilala palms, drinking water, fish, grazing materials for domestic animals and river bank cultivation. Their survival depends entirely on these natural resources. The dependence of each natural resource is detailed here-under.

a) Ilala palms (*Hyphaenepetersiana*)

The principal livelihood base of Maramani communities is ilala palms which are harvested along Limpopo and Shashe Rivers (Plate 6.4). The leaves of ilala palms are harvested to make sweeping brooms and mats which are sold, and the income generated is used to support families. One community member who specializes in making sweeping broom had this to say:

> *The presence of ilala palm makes this area very special to me. I harvest the leaves of ilala palm on a daily basis and this is my full-time job. I dried them in the sun and make sweeping brooms out of them. When I have made enough sweeping brooms, I take them to Maramani Craft Centre. I am able to make little money to support my family and to take my children to school. I don't know how I would survive if it wasn't making sweeping brooms because I don't have livestock* (Interview, Robert Sibanda, 14/05/2011).

Sweeping brooms are made on a daily basis including Saturdays and Sundays in order to have as many brooms as possible. On average, a total of around 25 brooms are made per day for 30 days. The brooms are taken to Maramani Craft Centre where they are bought in bulk at a price of R2[23] per broom by regular customers who come from South Africa (Interviews, Shonisani Bale, 16/08/2011; Hendrick Ndou 19/08/2011; Mahopulo Nare, 19/08/2011). This translates to a total of R1 500 per month per family.

[23] R is an abbreviation for Rand which is a South Africa currency and 1 Rand is equivalent to 0.10 United States Dollar (as of August 2013). Since 2009, Zimbabwe abandoned its currency (Zim Dollar) because of hyperinflation and the country does not have its own national currency. The currencies that are currently used in Zimbabwe are South African Rand and United State Dollar.

Plate 6.4: Preparation of ilala palm leaves to make sweeping brooms in Maramani village.

Source: Author, 16/08/2011

Amongst the customers who buy brooms in bulk (about 3500 brooms) from Maramani area is Simon Doni who transports them to Thohoyandou in South Africa. He stocks sweeping broom from Maramani at the end of every month and has been doing business since 2008. Through this enterprise he is able to make enough income to support his family. The brooms are sold in bulk to hawkers in South Africa at a price of R6 (Interview, Simon Doni, 24/08/2011). Details of the expenditure and profit of the middle man (supplier) appear on the Table 6.1.

Table 6.1: Expenditure, income and profit for selling sweeping broom.

Expenditure	**Prices**
Buying of brooms from Maramani	3500 @ R2 =R7000.00
Fee paid at the Craft centre	R105.00
Transportation of brooms to South Africa	R3000.00
Declaration and tax fees at the border	R2500.00
Total expenditure	**R12605.00**
Income=3500 brooms @ 6.00	R21000.00
Total profit= Income-Expenditure	**R8395.00**

Source: Author 2013

It is clear from the table above that the middle man is able to make more profit per month than the producer of the broom. Finally the brooms are sold by hawkers in towns and villages to communities at a price of R10. Hawkers are able to make a profit of R4 for each broom. The more brooms the hawker buy, the more profit they get. It is important to note that some community members make brooms in Zimbabwe and cross the border (Limpopo River) illegally to South Africa where they sell them at a price of R10 (Interview, Anonymous, 20/08/2011). As a result, those Zimbabwean who cross the border to South Africa make more income than those who follow the normal Beit Bridge border gate.

People also make income from brewing palm wine from ilala palms (Plate 6.5). As in Botswana, this involves cutting the stems of ilala palms and the water that drips out of the stem is channelled into a container or bottle. After fermentation which takes two to three days, it becomes wine which is very popular in Maramani area. Approximately 15 or more ilala palm stems are cut to produce 5 to 6 litres of wine on a daily basis (for 30 days in a month). The wine is only sold to customers in the bush where it is brewed and not in the village. This is because it is considered illegal in Zimbabwe. Each two litres of wine is sold at a price of R10 and the income generated is used to support families (Interviews, Shonisani Bale 16/08/2011; Hendrick Ndou, 19/08/2011). This translates to a total of R900.00 per month. One ilala palm wine brewer in Maramani commented that:

> *I spend my life in the bush brewing wine. I arrive here at five in the morning and leave this place at six in the evening. My wife prepares food at home and delivers it to me in this area. It is worth it because I am able to make sufficient money to survive…The demand of this wine is very high in this area. During the week; I have regular customers who come to buy my wine. On weekends, all my wine is bought by people who have parties in Maramani village* (Hendrick Ndou, 19/08/2011).

The process of brewing wine from ilala palms is destructive because it involves cutting off the whole tree in order to get sufficient wine. This is not sustainable as compared to harvesting of

leaves for making brooms. More and more ilala palms are destroyed on a daily basis by wine brewers in order to make a living.

Plate 6.5: Drops of palm wine from ilala palm stem into a bottle.

Source: Author, 16/08/2011

b) Grazing materials for domestic animals

Domestic farming is one of the main land use activity in Maramani area. Maramani area is dominated by domestic animals such as cows, goats, sheep and donkeys (Interview, Mahupulo Nare, 17/08/2011; Field observation, 2011). The area is so special to the people because it has good grazing land for their domestic animals along Limpopo and Shashe Rivers. Maramani area is closer to the border in which their domestic animals are able to pass through the Shashe Rivers to graze in Botswana (Interview, Anonymous, 20/08/2011; Observation by researcher, 2011). Maramani communal area has a total of about 3 363 cows, 5 950 sheep, 15 221 goats and 1 003 donkeys (Department of Veterinary Services, 2009). Livestock farming serve as the most important component of food security to Maramani community because livestock owners are able to generate income to feed their families from selling some of their domestic animals during auctions (Interview, Mahupulo Nare, 17/08/2011). The price of cows during auction ranges from

US$500 to US$1100 depending on the size of the cow whereas the price of goats and sheep ranges from US$20 to US$30. The auctions are held on a monthly basis. Whilst cows, goats and sheep are important component of food security to communities, donkeys are the main mode of transport.

c) Cultivation

Agriculture is the main source of food for the people of Maramani. People who have settled on the southern side near the confluence of Limpopo and Shashe Rivers cultivate their crops along these rivers because the area is fertile and their crops rely on rainfall as there are no irrigation schemes. However, the area is dry and rain-fed agriculture is unreliable. The main crops that are cultivated include maize in summer and wheat in winter, but unfortunately communities do not harvest because of lack of rainfall. The area only received sufficient rainfall in the year 2000 in which communities where able to harvest crops. Since then, there has never been any harvest (Interviews, Zakaria Ndou, 14/05/2011; Den Mosipa, 14/05/2011). In addition, the crops are destroyed by elephants that transit through Maramani. The agricultural fields are not surrounded by an electric fence; rather they are surrounded by poles and branches of trees. As a result, elephants that pass through agricultural fields break in and feed on crops. Subsequently, communities do not harvest because of drought and the presence of elephants in Maramani village. In the northern side of Maramani area there are three irrigation schemes as shown in Table 6.2.

Table 6.2: Irrigation schemes in Maramani village.

Name of Scheme	**Full Capacity area (ha)**	**Present operating Area (ha)**	**Plot size per family (ha)**	**Plot holders on operating area**
1. Shashe	89	35	0.25	**140**
2. Jalukanga	42	22	0.5	**44**
3. Bili	21	18	0.5	**36**

Source: Author, 2013

Shashe, Jalukanga and Bili irrigation schemes offer some hope in terms of food security to Maramani communal area. These irrigation schemes are bordered by an electric fence which

serves as a tool to control the movement of wildlife into the area. The main crops that are planted include maize, wheat and sugar beans. The total potential area of the three irrigation schemes in ward 8 is 152 ha. The irrigation schemes could support a total of 482 families with the current allocation of 0.25 ha per household for Shashe and 0.5 ha per household for Jalukanga and Bili. All the three irrigation schemes are not fully operational because of shortage and break down of pumps. This results in the shortage of water for irrigation. As a result, the bigger potion remains uncultivated (Interview, Innocent Pagwiwa, 16/08/2011). The three irrigation schemes in ward 8 are however currently serving a total of 220 families which is far below the total number of household (759) in Maramani area. This leaves the rest of the families to depend on rain-fed agriculture, which is unreliable. Although it is the responsibility of the BBRDC to maintain the irrigation schemes, however the schemes rely on donor funding for the maintenance and purchase of new pumps because of the current economic situation in Zimbabwe (Interview, Beatrice Ponele, 12/05/2011).

d) Drinking water

Water is also a big challenge to the communities in Maramani communal area. People rely on water from the boreholes which is salty. However, the southern side of Maramani village near the confluence of Limpopo and Shashe Rivers do not have boreholes and as a result people rely on water from rivers for domestic purpose. The water from the rivers is also preferred because, unlike the borehole water that is salty, it is free of salt (Interview, Alice Dube, 14/05/2011). Although the Shashe River does not maintain the surface flow of water for long periods because of too much sand, water is obtained by abstraction from the sandy beds of the rivers. Donkeys are used to transport water from the river to household area. The rivers are so special to the communities because they not only provide water to people, but they also provide water for domestic animals in Maramani village (Interviews, Raina Ndlovu, 14/05/2011; Albert Nare, 14/05/2011).

e) Fishing

Fishing in Limpopo has also been identified as another source of food to some of the people in Maramani village (Interview, Raina Ndlovu, 14/05/2011). Although fishing is a risky activity because of the abundance of Hippopotamus and Crocodiles, people are forced to take the risk in

order to feed their families. The fish are not meant for commercial but rather for household consumption (Interview, Raina Ndlovu, 14/05/2011).

6.2. Economic development in the Mapungubwe bioregion

This section focuses on the economic development in the Mapungubwe region. The research has used economic indicators on both sides of the border to assess the space economy of the region, especially tourism and investment trends within and outside the GMTFCA. On the Botswana side of the TFCA, the NOTUGRE has well developed tourism facilities and generate revenue from photographic tourism. Trophy hunting is not permitted in NOTUGRE, rather it is only off-take of impalas that is allowed which has to be done through NOTUGRE EXCO (Interviews, David Evans, 19/05/2011; Gloria Badubi, 17/09/2012). In NOTUGRE, there are no new developments activities like game lodges and guest houses that were constructed within or outside NOTUGRE since the signing of the MoU between the three countries in 2006. It is only Limpopo Valley Airfield that that were constructed in NOTUGRE in 2001. The idea for the construction of the airfield was to improve access to the TFCA. However, Limpopo Valley Airfield does not accommodate scheduled airline and can only be used by private airline. In addition, international flights cannot land in the Airfield (Interview, David Evans, 15/01/2013). Nevertheless, it is anticipated that the concept of TFCA will increase tourism potential in NOTUGRE and Mapungubwe region (Interviews, Anonymous land owner, 08/04/2011; David Evans; Tanya Mckenzie, 19/05/2011). This is because Mapungubwe is a cultural TFCA which makes it different from other TFCA in the region. In addition, there is also a diversity of tourism in Mapungubwe TFCA, which includes but not limited to cultural history, Boer war history, paleontology, San and Khoikhoi rock art, wildlife tourism, adventure tourism, living culture tourism, geological interest tours as some of the oldest rocks on the planet is situated in GMTFCA, topographical including the confluence of the Shashe and Limpopo Rivers, astronomy, botanical tours and birding (Interview, David Evans, 19/05/2011). It is hoped that the concept of TFCA will create a destination involving more than one stop and this may encourage people to stay longer on both side of the border. This may improve the tourism potential and the economy of the region (Interviews, Anonymous land owner, 08/04/2011; David Evans; Tanya Mckenzie, 19/05/2011; Bruce Patty, 13/06/2013). It is generally agreed that the number of people who visit NOTUGRE has not gone up to the satisfactory level. This is because the access

roads to NOTUGRE are not tarred; making it difficult to access NOTUGRE (Interviews, David Evans, 19/05/2011; Piet Le Roux, 12/06/2013).

So far, the idea of Mapungubwe TFCA has not brought the much needed investment, and there are no private concessions within Mapungubwe National Park. The manager of Mapungubwe National Park noted that:

> *The size of the Mapungubwe National Park is small as compared to other Parks under SANParks management. In addition the Park does not have the big five like Kruger National Park which attract tourists all over the area… Mapungubwe National Park accommodate 136 visitors, however, the current bed occupancy of existing camps is below 50 percent and Mapungubwe does not attract large numbers of tourists throughout the year* (Interview, Fhatuwani Mugwabana, 14/01/2013).

The study found that there are no new lodges, guest houses and restaurants that have been constructed within or outside the Mapungubwe National Park since the signing of the MoU between the three countries. It is only Mapungubwe Interpretation Centre near the main gate of Mapungubwe National Park that has been constructed in 2009. Within the Interpretation Centre, there is a restaurant operated by a private company. Unlike in other parks such as the Kruger National Park, there are no private tour operators in Mapungubwe National Park. The game drives and other tours in the park are only conducted by park officials (Interview, Fhatuwani Mugwabana, 22/06/2011). In addition, there are no local street vendors selling woodcraft at the main entrance gate and in areas along the R572 road (main road from Messina to Mapungubwe) and areas along the R521 road (main road from Alldays to Pont Drift border gate where travelers depart South Africa for Botswana).

The study also investigated investment trends in game farms around Mapungubwe National Park. It found that of the ten farms that were visited, three farms were acquired after the signing of MoU (after 2006). Of the three farms acquired after 2006, one farm was bought by the owner with the purpose of investing in game farming and ecotourism in the area (Interview, Elmer Uys, 21/03/2013). The other two farms were acquired with the purpose of mining coal in the

Mapungubwe area (Interviews, Nico Verhoff; George Luis, 26/03/2013). One farm manager commented that:

> *We bought the property in 2009. The property is composed of the farm Sadina, Lucca and Coila and it belongs to Anglo American. We bought the farm because there is abundance of coal which is of good quality, particularly in Sadina and Lucca farms. We are currently doing exploration of coal in the farm with the hope of mining coal in future. It is going to be an underground mine, so we will have less impact on the environment* (Interviews, Nico Verhoff, 26/03/2013).

In addition, of the ten farms, it was found that seven do ecotourism and it is generally agreed that the number of tourists has not increased since the idea of the TFCA was promoted in Mapungubwe. As a result, four of seven farms rely heavily on mine contractors who visit Venetia Diamond Mine and Vele Colliery to fill the lodges and guest houses. This is because the number of guests who visit Mapungubwe is considered to be low, which makes the lodges and guest houses to remain empty most of the time. Nevertheless, some game farmers believed that if Mapungubwe can be marketed as a region, tourism numbers may increase which may improve the economy of the region (Interviews, Andrew Rae; Elmer Uys, 21/03/2013).

On the Zimbabwe side of the TFCA, it is also anticipated that the concept of TFCA will increase the tourism potential which may also boost the economy of the country. However, at the time of fieldwork, there were no well-developed tourism facilities in Zimbabwe. Informants held the view that the political situation make it difficult to attract tourists into the country (Interviews, Beatrice Ponele, 12/05/2011; Steve Boshoff, 12/05/2011; Vanessa; Digby Bristow, 13/05/2011). In Nottingham Estate there is a well-developed tourism infrastructure. However, tourism has been very limited and citrus plants remain the principal source of income. As we have noted, the 2000 ha near Limpopo River is used for intensive irrigation for citrus plants. The estates is able to produce 20 000 to 25 000 tonnes of oranges a year. The citrus plants that are grown in Nottingham are exported to overseas markets and bring good revenue (Interview, Steve Boshoff, 12/05/2011). That is to say the citrus are more important because they are able to generate good economic returns. The resident wildlife populations in Nottingham has gone down tremendously

because of poaching and as a result, no hunting has taken place in the past two years to allow the population of wildlife to increase (Interview, Steve Boshoff, 12/05/2011). In Sentinel, there is also a well developed tourism infrastructure. Although there is tourism infrastructure, the main source of income is trophy hunting and crop plantation because the number of tourists who visits Sentinel is very limited. Here trophy hunting and irrigation farming are more important and will continue to be the main sources of income (Interview, Vanessa; Digby Bristow, 13/05/2011). The land owners in Sentinel commented that:

> *We don't see why we should be stopped to do trophy hunting because this has been a major source of income to sustain conservation efforts on the property for ages and we will still continue to do safari hunting. We entered into the TFCA process as willing participants, but we were never going to be prescribed what to do* (Interview, Vanessa; Digby Bristow, 13/05/2011).

For their part, War veterans in both Sentinel and Nottingham earn a living from income generated from trophy hunting. There is no tourism infrastructure in the land obtained through the land reform programme (Sentinel and Nottingham). Although the resident wildlife populations in Nottingham and Sentinel are low trophy hunting is the principal source of income for the War veterans. The administration work related to hunting concession including preparation for a hunting quota and hiring of a safari operator is done by the BBRDC. The income generated is shared equally between the War veterans and the BBRDC (Interviews, Beatrice Ponele, 12/05/2011; War veterans in Nottingham, 12/05/2011). For example, in 2010, after 4% of CAMPFIRE Association subscription and 50% of BBRDC were taken, a total of US$7188 was shared among the War veterans in Nottingham. Similarly, in 2010 after 4% of CAMPFIRE Association subscription and 50% of BBRDC were taken out, a total of US$10804.80 was shared among the War veterans in Sentinel Ranch. Trophy hunting will continue to be the main source of income (Interview, War veterans in Nottingham and Sentinel, 12/05/2011). In Tuli Circle Safari Area, there is a hunting camp which is used by safari hunters for the duration of their hunt. They do not get tourists who visit the area for photographic tourism, but trophy hunting is the major source of income. Taken together, the establishment of Mapungubwe TFCA has yet to stimulate economic development in the Mapungubwe region.

6.3. Land use conflicts in the Mapungubwe region

The term land use conflict is not clearly defined. However, based on the review of conflict literature, a conflict exists whenever incompatible land use activities occur in the same area (von der Dunk *et al*., 2011). In the case of Mapungubwe region, there are a number of land use activities within the area earmarked for the TFCA. This includes livestock farming, commercial agriculture, mining, harvesting of natural resources and residential areas or communal lands. These land use activities are not compatible to wildlife conservation and results in conflict over the use of the land. This section looks at land use conflict in the Mapungubwe TFCA; and begins on the Botswana where the conflict is more common in Lentswe Le Moriti, Motlhabaneng and Mathathane village (Interview, Emmanuel Kgokilwe, 29/10/2012). In Letswe Le Moriti, there are ongoing conflicts between wildlife and livestock. The conflicts take two form; wildlife-livestock and human-wildlife conflicts (Interview, Ofentse Moleofe, 2012). As you enter Lentswe Le Moriti farm from the main gate on the western side, there are boards alerting tourists and visitors about the presence of livestock in the farm (Plate 6.6).

Plate 6.6: Board alerting visitors about the presence of livestock in Lentswe Le Moriti.

Source: Author, 19/09/2012

The livestock graze together with wildlife because there are no electric fences that separate wildlife from livestock. Thus, there is no border fence to control livestock from grazing with wildlife. This creates wildlife-livestock conflict. As a result, the livestock are often killed by dangerous wildlife animals. One livestock farmer in Lentswe Le Moriti village commented that:

> *I do not have a job. My job is to look after my livestock. I worked for the Ministry of Finance and Development Planning in Gaborone since 1987. When my father died in 2009 I resigned on the 29th May 2010 from the Ministry of Finance and Development Planning to come and look after the livestock. I resigned because I like this area more than the city. I currently have 63 goats and 67 cows and I make an income from my livestock. The money I generate from selling livestock is used to support my family. It is sad to see wildlife killing our livestock. In 2011, 8 of my cows were killed by lions and 1(one) goat was killed by an elephant. In 2012, only 1(one) goat was killed by a cheater. I like wildlife but the problem is that they are killing my livestock. We are also losing a lot of our livestock because of drought. In 2012, a total of 10 cows have died because of drought. We only pray that God should protect our livestock from wildlife because we cannot live without them* (Interview, Mashape Nkoloi Kobe, 22/09/2012).

The livestock that are killed by wildlife are reported to the DWNP for compensation. Although NOTUGRE is privately owned, wildlife remains the responsibility of DWNP. Thus, private land owners are custodian of the land and not wildlife (Interviews, Emmanuel Kgokilwe, 29/10/2012; Piet Le Roux, 12/06/2013). In terms of Conservation and National Parks Act Cap, 1992, (Act No.28 of 1992), it is the responsibility of the DWNP to compensate the damage caused to property by wildlife. According to this act, the animals that attract compensation include leopards, lions, elephants, rhino, hippo, buffalo, crocodile, wild dog and cheetah. This is because some of these animals are dangerous and a farmer alone cannot control them; others are threatened with extinction; a percentage of them are vulnerable and are likely to move into endangered category if causal factors for decline continue to prevail; and proportion of them are fully protected species and therefore cannot be hunted except under exceptional circumstances (Interviews, Malatsi Mamani, 29/10/2012; Mable Bolele, 30/10/2012). Any other animal that may cause damage to property are not compensated. Once the claim has been reported, the

Department sends its official to the scene where the incident happened to investigate the validity of the claim. If the claim is valid, the owner or a community member is compensated for the damage caused by wildlife (Interviews, Emmanuel Kgokilwe; Malatsi Mamani, 29/10/2012). The Minister of Environment, Wildlife and Tourism has determined the following rates for compensation to be paid in respect of claims made for the damage caused to property by wild animals from 1st April 2009 (Table 6.3).

Table 6.3: Compensation of livestock killed by wildlife in Botswana.

Livestock	**Amount paid**
Bull	P1925
Ox	P1050
Cow	P1050
Calf	P350
Goat/sheep	P157.50
Horse	P875
Donkey	P70

Source: DWNP, 2011a

Although the DWNP compensates the communities for the damage caused by wildlife, communities complain that the compensation is insufficient as compared to the income that is made by selling cows, sheep or a goat (Interviews, Mphale Kanono, 18/09/2012; Ofentse Moleofe, 19/09/2012; Mashape Nkoloi Kobe, 22/09/2012). In addition to killing of livestock, the lives of people are also in danger because the animals roam freely all over the village land. In the words of the secretary of the ZCC in Lentswe Le Moriti,

> *We settled at this property in 1953 from Gaborone where we were removed by government against our will. When we arrived here, there was dense vegetation with a lot of wildlife all over the area. 5 people were killed by elephants in Lentswe Le Moriti since we moved into the farm in 1953. We have already stayed for more than 50 years with animals and we do not have a choice but to continue to live with wildlife because this is where we call our home* (Interview, Ofentse Moleofe, 19/09/2012).

The killing of people by wildlife has social impact on individuals who have lost their friends and relatives. In Motlhabaneng and Mathathane villages, there is also conflict between livestock and wildlife. Furthermore, the wildlife animals also cause damage to crops in agricultural areas near NOTUGRE. The border fence on the western side of NOTUGRE was not electrified at the time of fieldwork and therefore wildlife had free access to Motlhabaneng and Mathathane villages. The main gate in NOTUGRE is always open with no ranger or guard at the entrance and this also allows free entry of wildlife into two villages. All these have allowed wildlife animals to cause serious damages with very little compensation from the DWNP (Interviews, Mphale Kanono, 18/09/2012; Gabalebe Maroba, 13/06/2013). The economic implications on the livelihoods of local communities are the loss of livestock that are an important source of income to the villagers. One community member in Motlhabaneng commented that:

> *I inherited 8 ha farm from my parents which I use for farming. I currently have 8 cows and 20 goats. During the day my livestock graze in Tuli block. I know that they are not suppose to graze in Tuli block but because of drought and shortage of grazing material in communal land, I am forced to take my livestock into Tuli block. Sometimes my livestock are eaten by leopards and lions inside NOTUGRE but most of the time they are eaten by lion, leopards, crocodiles, hyena and jackal in the evening while they are in the kraal. Though, I report any killing of my livestock to the DWNP for compensation, the money we are given is too little. Sometimes we are not even compensated at all if there is no sufficient evidence or if our livestock are killed by wildlife while inside Tuli block* (Interview, Mr. Kelapile Machete, 13/06/2013).

In addition, crops serve as a source of food to many rural villagers. As we have noted, communities of Motlhabaneng and Mathathane villages plant their cops along Tuli block. The main crops that are planted include maize, groundnuts, beans, watermelon and sorghum. These crops rely on rainfall. The crops are affected by wildlife that comes out of Tuli block. One community member who has a farm along Tuli block commented that:

Our farm is only 9 ha and it is our main source of food as both of us do not work. We only have six cows and at least sixty goats which also serve as a source of income and food. We plant maize and pumpkin but most of the time we do not harvest because of lack of rainfall but most importantly, elephants from Tuli block cause a lot of damages in our farm. When they get into the farm, they harvest for us and we have no energy to fight them because they are dangerous. Other wildlife that is also problematic includes impalas, steenbok and kudu (Interview, Hubonetsi and Kelennetse Maemo, 14/06/2013).

The land use conflict is so intense in the three villages that in 2011, a total of 283 cases were reported to the DWNP by communities of Lentswe Le Moriti, Motlhabaneng and Mathathane villages as indicated by Table 6.4.

Table 6.4: The number of reports that were received, species involved as well as the amount paid for the damage in each month.

Month	Number of Reports	Species involved	Amount Paid
January	9	Elephant, hyena, leopard, warthog, zebra and wild dog	P1,680.00
February	12	Elephant, wild dog, leopard, springhare, giraffe, crocodile, kudu, civet and zebra	Nil
March	18	Elephant, hyena, leopard, cheetah, hyena, porcupine, kudu, giraffe and impala	Nil
April	20	Elephant, cheetah, leopard, warthog, porcupine, hippo and kudu	Nil
May	48	Elephant, hyena, leopard, warthog, baboon and impala	Nil
June	38	Elephant, hyena, leopard, warthog, porcupine, impala, cheetah and wildebeest	Nil
July	18	Elephant, hyena, leopard, warthog, porcupine, kudu, cheetah, python & wildebeest	P1,295.00
August	23	Elephant, hyena, leopard, warthog, porcupine and lion	Nil
September	21	Elephant, impala, lion, African civet, leopard, porcupine, warthog, springhare, zebra, gemsbok and cheetah	Nil
October	26	Leopard, hyena, elephant, springhare, porcupine, warthog, wildebeest, impala, lion, mongoose and steenbok	P3,625.85
November	27	Elephant, hyena, leopard, warthog, springhare, kudu, zebra, impala and lion	P14,510.00
December	23	Elephant, cheetah, leopard, springhare, impala and lion	P4,795.00
TOTAL	**283**		**P25,905.85**

Source: DWNP, 2011b

The table above indicates the total number of cases that were reported to the DWNP in 2011 in Botswana. A total of P25 905.85 was spent by the DWNP on compensation for the damage caused by wildlife on livestock and crops in irrigation farms. The main animals involved in killing livestock include leopards, cheetah, wild dogs, hyena and leopards whereas elephants, baboons, warthogs, porcupine, impalas, springhare, kudu, zebra, mongoose, giraffe and wildebeest are the main culprit in agricultural areas particularly in Motlhabaneng and Mathathane villages. Land use conflict is also a serious threat in Talana farm since the farm is within the borders of NOTUGRE but not part of NOTUGRE and the TFCA. Wildlife, particularly baboons and elephants in NOTUGRE, cause serious damage in Talana agricultural farm, which the Farm Manager describes in the following words:

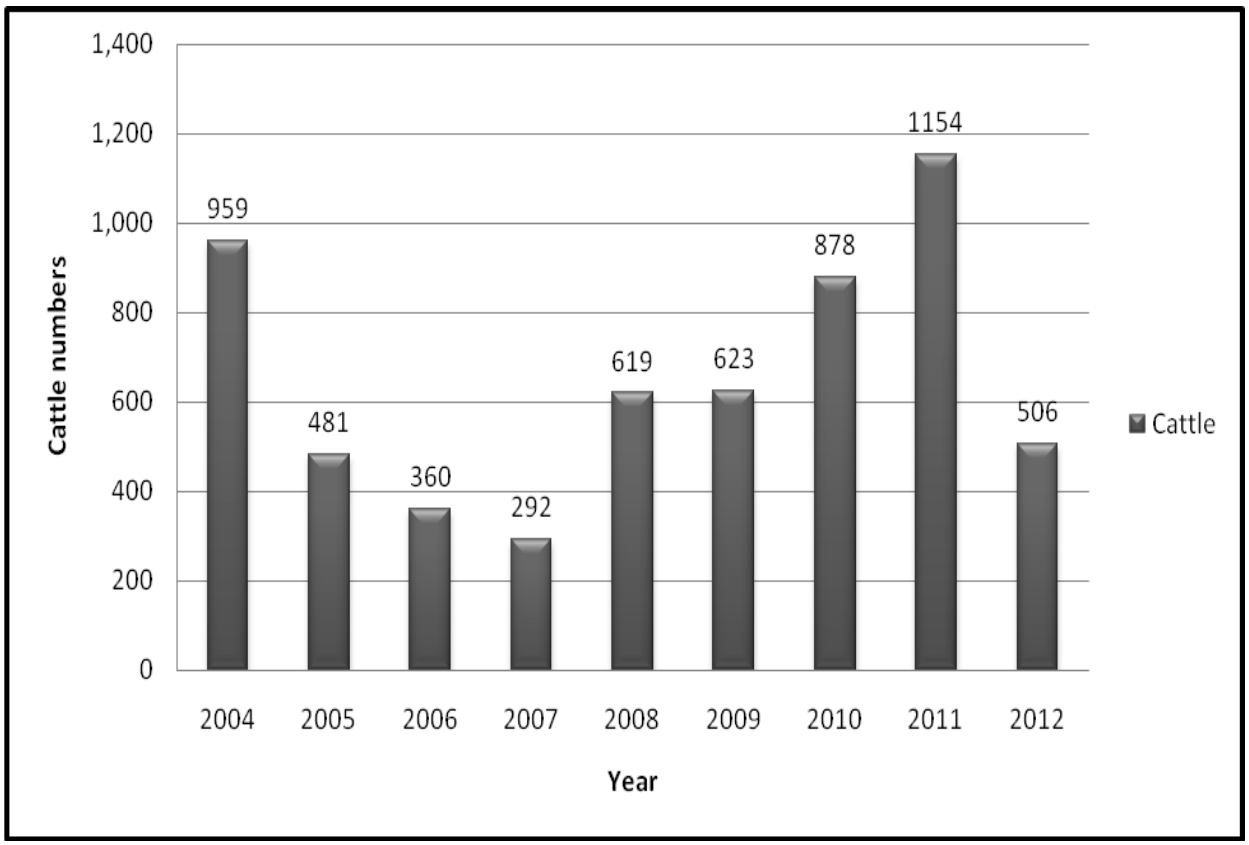
> *Our biggest challenge in this area is baboons. They get into the farm regularly and cause considerable damage to our crops. We spend huge amount of money every month to pay our employees who guard baboons day and night. In addition, when there is drought, wildlife particularly elephants and warthogs also get into the farm and feed on our crops and this has serious economic implications* (Interview, Johan Potgieter, 31/10/2012).

On the eastern side of NOTUGRE, there is also conflict between livestock and wildlife. The livestock from Maramani in Zimbabwe frequently pass through Shashe River into NOTUGRE to access grazing. As a result, livestock graze together with wildlife; with the consequent competition over grazing material that also leads to overgrazing and soil erosion in NOTUGRE, particularly near Shashe River. It also results in conflict between wildlife and domestic animals leading to death of livestock (Interview, Bruce Patty, 13/06/2013). As a mechanism for dealing with livestock in NOTUGRE, any domestic animal that enters into NOTUGRE from Zimbabwe is impounded (Figure 6.1).

Figure 6.1 shows that more than 250 cows are impounded in NOTUGRE from Zimbabwe every year. The highest numbers of cows were impounded in 2011 whereas the lowest were confiscated in 2006. The owners of the livestock are identified with the help of Veterinary officials from Zimbabwe. The livestock are released on condition that the owner of livestock pays a fine of US$10 per cow to the government of Zimbabwe. However, this strategy has run

into problems because most of the community members are poor and cannot afford the required fees. As a result, the owners of the cows are required to pay a fine of at least US$1 per cow. This is done to ensure that the owners take care of their cattle all the time. Nevertheless, cattle invasion into NOTUGRE continue to be a threat (Interview, Bruce Patty, 23/06/2013).

Figure 6.1: Annual number of cows from Maramani village impounded in NOTUGRE from 2004 to 2012.



Source: Pitsani Game Reserve in NOTUGRE, 2013

Whereas on one hand there are statistics of number of cows from Zimbabwe that are impounded in NOTUGRE, on the other hand there are no statistics of increased presence of wildlife particularly elephants, lion, jackal and hyena causing damages to communal land in Zimbabwe. Animals invading communal land in Zimbabwe are not impounded and if community members try to impound or chase wildlife, they are considered poachers. Furthermore, there are no fees

that NOTUGRE or any other conservation bodies compensate agricultural and livestock farmers in Maramani village who are continuously affected by wildlife as explained below.

On the South African side of the TFCA, the conflict is between conservationist and irrigation farmers. The current Mapungubwe National Park is a fragmented landscape with a number of commercial irrigation farms that are within the borders of the park. The commercial irrigation farming and conservation are two types of land use activities that are not compatible. As a result there is conflict between conservationist and commercial irrigation farmers. The conflict is as a result of elephants causing damage to irrigation farms in the Mapungubwe area. The irrigation farmers complain that SANParks does not maintain the fence between the Botswana-South Africa border. In addition, the border (military) fence is no longer maintained by government. As a result, elephants coming from Botswana, Zimbabwe and Mapungubwe National Park cause considerable damage in their farms with no compensation (Interviews, Pieter Boshoff, 23/07/2011; Johan Truter, 09/12/2011). One farmer commented that:

> *The bloody elephants are a big problem in this area. They break the fence and get into my farm to destroy my vegetables. When I report them to SANParks they tell me that they are coming from Botswana. I am no longer calling them rather I call the DEA to come and shoot the stubborn elephants. I do not have any problem with conservation as long as they prevent their bloody animals from getting into my land (farm)* (Interview, Pieter Boshoff, 23/07/2011).

SANParks on the other hand argue that it maintains the fences regularly; but officials concede that elephants that cause damage to irrigation farms come from Botswana through Limpopo River because the border (military) and veterinary fences are no longer maintained (Interview, Fhatuwani Mugwabana, 16/01/2012). This means that the idea of TFCA is far from being a reality because SANParks is only responsible for managing the animals that are within the park and this keeps the border alive.

On the Zimbabwe side of the TFCA, the conflict is more common in Maramani village. The Maramani communities occupy the central position within the proposed TFCA. The village

borders wildlife conservation areas on three sides. On the western side there is Tuli Circle Safari Areas and NOTUGRE, Sentinel Ranch on the eastern side and Mapungubwe National Park on the southern side. There is no fence that separate Maramani communal area from adjacent conservation areas. Resident wildlife population in Maramani village is low but animals moving out of Tuli Circle Safari Area, Sentinel Ranch and NOTUGRE in Botswana cause human-wildlife conflict. The conflict takes two forms, (a) damage to domestic animals, and (b) damage to crops.

(a) Damage to domestic animals

This conflict involves wildlife and domestic animals. Communal areas west of Beit Bridge are dominated by domestic animals. The survival of livestock depends on rainfall patterns with numbers crashing in serious drought years and then taking several years to recover. The grazing lands in communal areas are overstocked leading to problems of overgrazing and soil erosion. As a result some cows are found grazing within Safari Area which results in competition for grazing material between livestock and wildlife. This also results in conflict between wildlife and domestic animals (Interview, Mahupulo Nare, 17/08/2011). There are also problem of wildlife that hunt domestic animals in the evening (Interview, Johannes Muleya, 14/05/2011). One community member in Maramani commented that:

> *I make a living out of my livestock. There is no other job that I do except looking after my livestock. I have donkeys, goats, cows and sheep but unfortunately I have lost a lot of goats and sheep. They are not killed during the day while grazing; rather they are killed by Hyena and Jackals in the evening while they are in the kraal. These animals are a biggest threat to our livestock* (Interview, Setha Ncube, 13/05/2011).

The killing of domestic animals by wildlife has already created some antagonism and hatred towards wildlife because domestic animals are an important component of food security in communal areas of Zimbabwe.

The potential for livestock farming in the area is minimal because of frequent losses of animal by drought. As we have noted, cattle ranching on commercial farms were phased out in the early

1980s on both Nottingham Estate and Sentinel Ranch because it was realised that the area was dry and prone to extreme drought conditions with decades of unsuccessful livestock ranching (cf Chapter Four). Both commercial farms switched from cattle ranching to game farming because it was found to be the most suitable land use option in the area (Interviews, Vanessa; Digby Bristow, 13/05/2011; Keith Knott, 18/08/2011).

(b) Damage to crops

Although wildlife is the major source of income in Zimbabwe through trophy hunting, they are however also a major source of destruction for agricultural produce in communal land. There is on-going conflict between wildlife and people along the Limpopo and Shashe Rivers and two informants commented on conflict that:

> *I have a plot along Shashe River where I plant maize. Elephants are the biggest problem in this area because they destroy our crops each and every year and we do not harvest anything. During growing season I spend most of my time in the agricultural field chasing away the elephants* (Interview, Grace Ndou, 14/05/2011).

> *We cultivate maize, watermelon and pumpkin to feed elephants and baboons in this area. A lot of elephants coming from Botswana and Tuli destroy our crops every year. After drinking water from Limpopo and Shashe rivers, they come to destroy our farms. We don't harvest anything and we are not compensated by government for the damage caused by baboons and elephants* (Interview, Nare Albert, 14/05/2011).

Animals particularly elephants that transit through Maramani raid crops in communal farms along Limpopo and Shashe leaving the community stranded with no compensation from government. This results in economic losses which significantly jeopardise the food security of communities. Whereas the establishment of TFCA was to bridge the gap between communities and conservation, the gap is only becoming wider because of the conflicts that continue to threaten the livelihoods of local communities. In addition, instead of communities benefiting from opportunities created by TFCA, communities only suffer from the effects of conservation. These conflicts have already created some suspicions and antagonism among community

members. Despite the popular TFCA idiom that no forced removal of communities will take place, the increased presence of wildlife in communal land and frequent destruction of livestock and crops may in future frustrate community members and persuade them to move out of the TFCA. Similarly, the increased incursion of baboons and elephants to commercial irrigation farms may induce farmers to sell their land.

6.4. Effects of land use change on local communities

There are costs as well as benefits when the area shifts from one type of land use to another. For example, the use of land for conservation purpose can improve the ecological condition of the area or restrict access to resources on which people inhabiting such land depend. A common outcome from such land use change has been land dispossession and forced removals. This section uses empirical evidence to paint a picture of how the creation of Mapungubwe has or might in future impact on local communities on both sides of the border.

Land use change in Botswana has direct implication for people living in Lentswe Le Moriti. The church organization and its village communities have not been informed about and involved with the creation of Mapungubwe TFCA even though they are within the TFCA area. Though the community is within the borders of Mapungubwe TFCA, the village does not form part of the TFCA (Interview, Ofentse Moleofe, 19/09/2012). As a result residents have no representation in TTC meetings. By implication, it means that local communities in Botswana are excluded from participating in the TTC on the basis that their land is not part of TFCA. As we noted above, they continue to suffer from the effects of wildlife conservation which include killing of livestock and people. Similarly, conservation of wildlife also has direct implications on Motlhabaneng and Mathathane communities. These communities have also been sidelined in the creation of Mapungubwe TFCA though they are closer to Mapungubwe TFCA. Residents participating in the TFCA are private land owners in NOTUGRE who are whites. The actual planning for the GMTFCA can be understood as a bordering process in that it separates local communities from private land owners in the pretext of establishing TFCA. The MoU signed by NOTUGRE and Botswana government is an example of a technical device to exclude communities in the creation of TFCA. There is no reason why local communities (Lentswe Le Moriti, Motlhabaneng and Mathathane) who are within and around the TFCA in Botswana should be separated from

participating in the establishment of the TFCA. In this scenario, property and racial borders fuse together towards a common goal, i.e the establishment of a TFCA. This separation is an example of invisible lines on TFCA maps. The division of residents in terms of participation shows that conservation continues to sideline local communities in the 21st century. Marginalized communities do not have property rights in the area committed to the TFCA. Without these rights, they cannot build and operate any tourism infrastructure in the said area. This limits their potential to extract benefits from tourism in the area, despite the popular TFCA narrative that communities stand to benefit from nature-based tourism that the TFCA brings. The community is unable to participate and influence decision on the creation of Mapungubwe TFCA, but bear the cost of conservation which includes destruction of crops and killing of domestic animals and people by wildlife.

The powerless farm workers who have neither property rights nor control over land in South Africa have not been informed and involved in the establishment of TFCA (Interview, Joseph Samu; Thidziambi Ndou, 17/01/2012; Jakobus Mokwena, 09/01/2012). As a result, they are not aware of the TFCA and are not part of the TTC. It is only the powerful white private land owners who have property rights to land who know about TFCA and who are also members of the TTC. The planning for the TFCA in the region entrenches borders in that it divides farm workers from private land owners. Similarly, property rights to land also highlight bordering process as they separated farm workers from land owners.

The change of land use from irrigation farming to wildlife management in South Africa directly affects farm workers. When land owners sell their property, farm workers lose their jobs and remain without income. When Rhodesdrift farm, which was a commercial irrigation farm, was incorporated into Mapungubwe National Park, the farm manager Hezekiel Mathatha and the rest of the farm workers were left without jobs. He explained his personal feeling about land use change in the Mapungubwe area in these words:

> *Rhodesdrift was my home and I have worked for more than 30 years. It was like a dream when our boss Wellie Syman told us that he had sold the farm to SANParks. We were given a six month notice to pack our staff and move out of the farm. I was stranded; devastated; I did not know where to go because all my life was based in the farm. It was the most painful thing that ever happened to me because it happened so fast and I did not expect it. We did not get an opportunity to meet the new owner as we were no longer required in the area* (Interview, Hezekiel Mathatha, 17/01/2012).

Hezekiel Mathatha who is now the permanent resident of Alldays was still unemployed and staying in a government house at the time of research. The change in land use also contributes significantly to the reduction in the number of people in the Mapungubwe region. Rhodesdrift farm had more than 50 permanent employees and more than 50 temporary workers hired during peak seasons (Interview, Hezekiel Mathatha, 17/01/2012). When the farm became part of Mapungubwe National Park, all the houses in the farm were demolished and the majority of farm workers I have interviewed moved from Mapungubwe to Alldays (50 km from Mapungubwe), while others moved to Musina, Makhado and Taaibosch. The buying of farms has contributed and will continue to contribute to the decline in population numbers in Mapungubwe because conservation requires fewer people compared to irrigation farming. In addition, the type of employment in National Parks such as cleaning, game wardens, administration work and game drives require some skills and qualification, which the majority of the people who are employed by irrigation farmers do not have. This makes it very difficult for such people to be employed in a conservation area.

In 2007 SANParks bought portion of Samaria which is a citrus farm from Hennie Heyns. During fieldwork, it was found that none of the farm workers who were under Samaria were employed by SANParks (Interview, Joseph Samu, 17/01/2012). This situation changed in 2008 when SANParks leased Samaria (farm) to South African Fruits Exporters (SAFE) on a five year contract. The contract ended in October 2012 but was renewed; giving farm workers an opportunity to continue working. SAFE has employed a total of 60 people on a permanent basis and during harvesting it is able to employ 300 casual workers (Interview, Rouen Gouses, 08/12/2011). However, the future of employees in Samaria farm is uncertain because if the

contract is not renewed and Samaria becomes part of Mapungubwe National Park, it will mean that the 360 people will become jobless because SANParks does not have the capacity or the interest to employ such a huge number of people.

The loss of employment by farm workers also means dislocation from the area. Farm workers have to move from farm areas to their home villages. Unfortunately some of the farm workers were born in the area and are permanent residents on the farm and do not have any other place to go to. One farm worker in Samaria commented that:

> *I was born in Samaria farm; grow up in the farm and became a farm worker. I am among the employees to plant the first citrus plant in Samaria in the early 1980s. When the owner (Hennie Heyns) sold the farm to SANParks, I remained on the farm because there was no other place to go until the farm was leased to SAFE* (Interview, Johannes Sematla, 17/01/2012).

Some other farm workers make farming area their permanent residence, as is evident from comments from a former farm worker of Den Staat, who said,

> *I was born in Zimbabwe in 1948. I started working for George Hodgson in Zimbabwe in 1968. When he moved into Den Staat farm in South Africa in 1980, I moved with him. We started to plant the first citrus in Den Staat farm in 1986. I was a farm manager with my own house in the farm. George Hodgson helped me to get a South Africa identity document. When my boss sold Den Staat farm in 2009, I had nowhere to go. When he left, he asked the land claimants to take care of me because he knew that there is no other place I can go to. I am still staying in the farm because I do not have another house elsewhere* (Interview, Robert Sikani, 17/01/2012).

In the same manner, when Rhodesdrift farm was integrated into Mapungubwe National Park, Sophie Tshifhumulo Mmbadaliga who was a foreman became homeless. She did not have a house of her own outside the farm. She had a three room house in Rhodesdrift hoping that she was going to stay on the farm forever. All her 4 children were also born in Rhodesdrift. The

change in land use from farming to conservation came as a shock to her (Interview, Sophie Tshifhumulo Mmbadaliga, 17/01/2012).

The ultimate intention of SANParks is to consolidate the park by incorporating privately owned farm in order to create a contiguous functioning system devoted primarily to wildlife conservation on the confluence of Limpopo and Shashe Rivers. This ambitious transnational scheme for environmental management will have serious implications for many farm workers. Specifically, the livelihoods of irrigation farmers as well as farm workers who are depended on these farms for ages will be seriously affected. The private farms in the Mapungubwe area have been providing and continue to provide sustainable jobs to thousands of communities. Table 6.5 indicates the total number of people who are employed by private farms in the Mapungubwe.

Table 6.5: Approximate numbers of farm workers on private land within Mapungubwe Park.

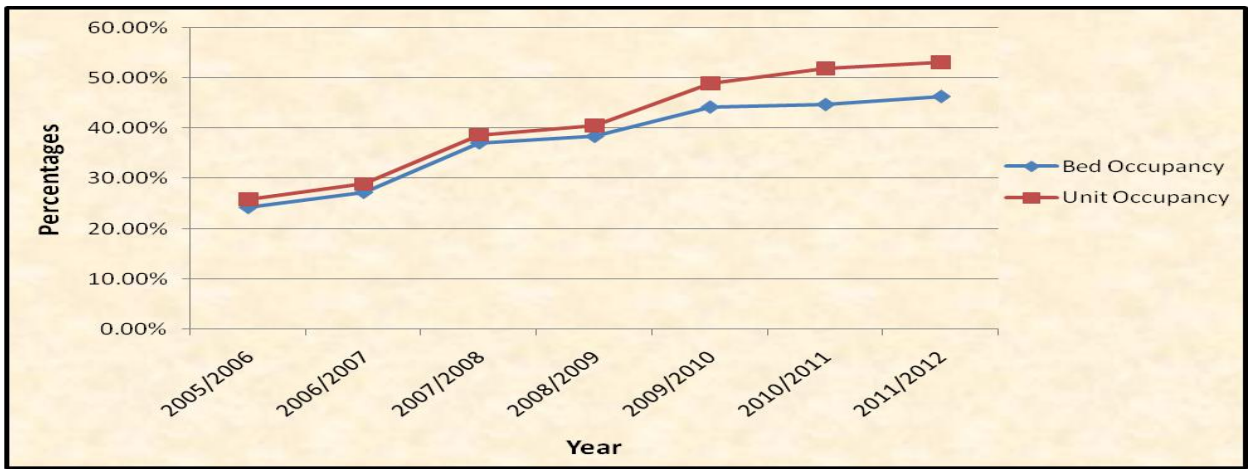
Farm name and number		Portion	Type of Farm	Permanent workers	Temporary workers
Pont Drift 12		0	Game Reserve	00	00
Pont Drift 12		1		00	00
Modena 13		1		00	00
Parma 40		0		00	00
Modena 13		0	Citrus farm	36	120
Tuscanen 17		1	Vegetable	68	400
Den Staat 27		1	Citrus & vegetable	86	150
Samaria 28		1	Game farm	01	00
Samaria 28		2	Game farm	02	00
Koaxa bush camp		0	Game farm	03	00
Hackthorne 30		0	Game farm	00	00
Athens 31		0	Game farm	00	00
Welton 34		0	Vegetable	50	160
Weipe 47	Skutwater & Weipe	2-4	Vegetable farms	150	250
	Weipe	5		90	100
	Weipe	6-7		100	400
	Hanaline Boerdery	0		227	200
	Depo Weipe	0	Citrus	92	580-600
	Noordgrens Landgoed	0	Citrus	200	700
Riedel 48		0	Game	00	00

Source: Author, 2013

Table 6.5 shows that more permanent workers are employed in irrigation farms (citrus and vegetable farms). Irrigation farms also employ temporary labours during harvesting periods for a period of 3 to 6 months. The number of temporary workers ranges from 100 to 700 workers per farm. The number of people employed in irrigation farms is high because a total of 5 to 15 workers per hector is required for harvesting (Interview, Rouen Gouses, 08/12/2011). The bigger the farm the more number of workers are required. As a result, irrigation farms have the highest number of workers per hector. Game farms and national parks employ fewer people compared to irrigation farms, and the number of employees in game farms and national parks depends on the number of rooms available. Unfortunately all the game farms listed on the table above do not provide accommodation to visitors or tourists. As a result all the game farms in the area have employed a total of only 6 people. It is only Mapungubwe National Park that is able to provide accommodation to tourists.

In 2011, Mapungubwe National Park could accommodate a total of only 136 visitors with a total of 67 employees (Interview, Fhatuwani Mugwabana, 22/06/2011). The number of people employed by game farmers and Mapungubwe National Park is only 73, which is far below the total number of people that are employed by irrigation farmers. The number of people employed also depends on the size of the park. The bigger the park the more number of employees required for scouting, game drives and cleaning. Mapungubwe National Park is only 19 810 ha which is too small compared to other national parks in the country. As a result, additional employees may not be required because the park is too small. In the case of game farms, they are too small in size and most of them generate income from hunting as a commercial enterprise. Thus, they do not rely on tourists as they do not have lodges or guest houses. Consequently, game farms employ few people. The number of people employed in a park or reserve also depends on the number of tourist visiting the park. From an economic point of view, it is not wise to have more employees when the number of people visiting the park is low. Although there has been an increase in the number of people visiting Mapungubwe National Park, the average bed occupancy remains below 50%. Of the 136 rooms available in the Mapungubwe National Park, the average bed occupancy from 2005 to date remains below 50% (Figure 6.2).

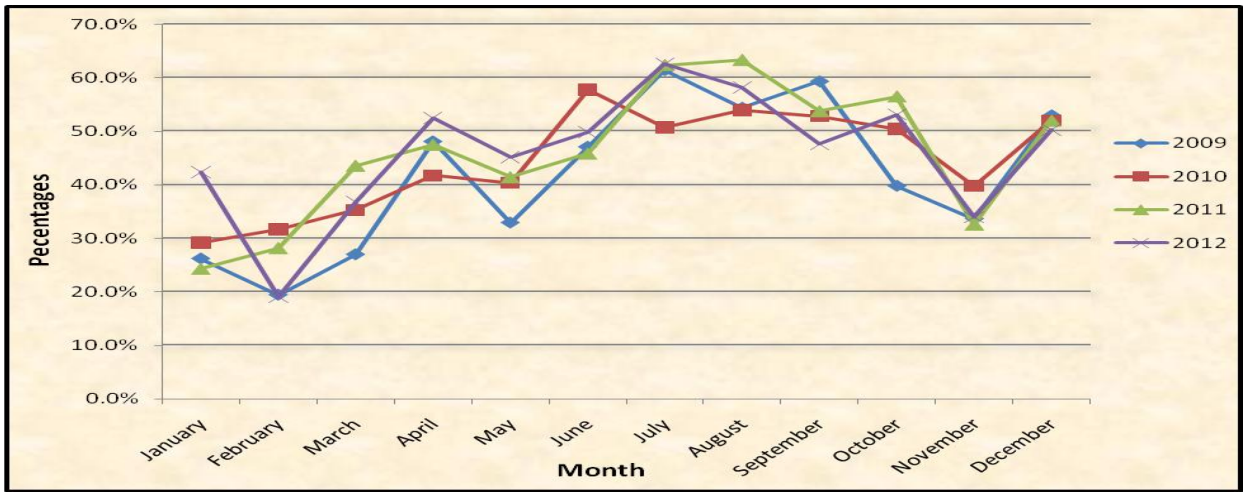
Figure 6.2: Average occupancy percentage of Mapungubwe National Park.



Source: SANParks, 2005; 2006; 2007; 2008b; 2009; 2010b; 2011; 2012b.

Furthermore, the number of tourist visiting Mapungubwe National Park is not constant throughout the year but fluctuates from one month to another (Figure 6.3). The graph (Figure 6.3) shows that the number of people visiting Mapungubwe National Park is below 40% from January to March. In April, there is an increase in the number of people visiting the park to an average of around 47% but the number drops to an average of around 40% in May, and averages above 50% from June to October. In November, the number of guests visiting the Park is below an average of 40% while the figure is above 50% in December due to a festive season.

Figure 6.3: Bed occupancy percentage of Mapungubwe National Park per month from 2009 to 2012.



Source: SANParks, 2009; 2010b; 2011; 2012b

As in Botswana and South Africa, people living on communal land in Zimbabwe were not consulted about the creation of Mapungubwe TFCA. During fieldwork, communities from all communal land that forms part of the TFCA were interviewed to get their views and knowledge regarding the TFCA. Key informant interviewees included the headman, ward councilors, CAMPFIRE committee members, individuals in households, and on irrigation farms (cf Chapter Three). Of 39 community members interviewed, 36 people had never heard about the concept of TFCA and only 3 people knew about it. This translates to 92% of the people who had no knowledge of the TFCA. Those who heard about the concept do not know what it entails and how they will benefit from it. Surprisingly, CAMPFIRE committee members in different wards were also not aware of the TFCA. The treasurer of CAMPFIRE in Maramani village commented that.

> *I have never been informed about TFCA by BBRDC so I do not know about it. Maybe we are still going to be informed about it. What is it all about? I only know about CAMPFIRE programme of which I am the treasurer. When the programme started in the early 90s, we were able to build this sawmill. We are no longer getting enough money to start another project. In recent years, we have not been getting money after hunting by the chairperson of CAMPFIRE programme* (Interview, Melton Sibanda, 19/ 08/2011).

In addition, important stakeholders such as community members who have direct interest in the resources within the TFCA have largely been ignored in the process of establishing GMTFCA. It was found that the knowledge of TFCA is only skewed towards government officials and the private sector (Sentinel and Nottingham). One community member commented that:

> *I do not have knowledge about the TFCA and I am not sure how I will be affected. I only see whites passing with bicycles every year but I have never heard about the TFCA* (Interview, Alice Dube, 14/05/2011).

The people she was referring to in this case are the cyclists of Tour de Tuli which is an annual 4 day mountain bike expedition that encompasses South Africa, Botswana and Zimbabwe. This adventure, which started in 2009, takes cyclist through the wilderness areas and allows them to

have first-hand encounters with African Wildlife and expose them to the finest places that the GMTFCAs has to offer. This is a marketing tool for the wildlife sanctuaries to promote business tourism in the GMTFCA. The funds generated from the tour benefit the 'Children in the Wilderness,' a non-profit organisation in Botswana, which helps to facilitate sustainable conservation to rural children who live in the peripheries of wildlife areas (Interviews, Tanya Mckenzie; David Evans, 19/05/2011). It is clear that GMTFCA is marketed internationally because participants of Tour de Tuli come from all over the world whereas the local communities on the ground are not consulted and informed about the TFCA.

Although a large area of Zimbabwe's contribution to the TFCA is communal land, the communities do not have representatives in the TTC meetings (Observation in the TTC meeting, 8/06/2011). This limits the potential of local communities to participate and influence decision in the establishment of Mapungubwe TFCA. They are instead represented by the chairperson of the Community Development Working Group (CDWG) in Zimbabwe, who is also the CEO of BBRDC. They are represented by a government official. A Zimbabwean who is also a member of TTC observed that:

> *Zimbabwe is effectively a totalitarian state and its citizens must do what the government wants them to do. Local government structures dance to the tune of their masters. The orders come from the top, and the representation system is very much cosmetic and a sham. It seems to me that BBRDC decides what is best for the people. The TFCA committee is forced to accept Zimbabwe stance on issues for the sake of 'progress' toward the TFCA, despite the inequalities they may have* (Interview, Anonymous, 16/11/2011).

According to another anonymous member of the TTC, CDWG of Zimbabwe has little influence on TFCA matters because its representatives are the biggest sleepers at meetings with very little drive and effective input. Although there is a firm TTC decision that communities should represent themselves and PPF has offered to carry additional costs, this has not yet happened in Zimbabwe and as such Zimbabwe has not yet used the said funds. The bulk of Zimbabwe TTC working group representatives are from Harare and Beit Bridge (Observation in the TTC

meeting, 8/06/2011). Although BBRDC claims that it informs communities about the TFCA, on the ground communities are clueless about the concept of TFCA. It is therefore clear that TTC representatives from Zimbabwe decide what is best for the resident communities. The decisions about the idea and plans for TFCA are taken at a higher level without consultation with communities on the ground. The dissemination of information and decision to communities is also weak. As a result there is a serious knowledge gap in the communities about TFCA. As we have noted, the white private land owners in Nottingham 1 and Sentinel 1 are members of TFCA and TTC. The planning for the GMTFCA reflect bordering process in that it separates black communities who are land owners from white private land owners in the establishment of TFCA even though communal land is part of the proposed TFCA. In this context, racial borders have been created in the establishment of Mapungubwe TFCA. This is an example of imaginary line in the establishment of TFCA. This is not surprising because the establishment of Mapungubwe TFCA is top-down pushed by government, NGOs and donor agencies. Since, communities are not involved in the establishment of bioregion; there is no interconnectedness between human and non-human. This may lead to disagreement with community members which may prolong the process of establishing the TFCA. In addition, the lack of involvement of local communities may also limit the potential of the success of the establishment of Mapungubwe as a bioregion.

6.5. Conclusion

This chapter has demonstrated that the claim that communities are involved in the establishment and management of TFCA is not realized in the Mapungubwe bioregion. Instead, local communities whose land forms part of the TFCA are not consulted or involved in the creation of Mapungubwe bioregion. Thus, black local communities are sidelined in the creation of Mapungubwe TFCA. This limits their potential to participate and influence decision. Those who are involved in the creation of bioregion are the white property owners who have powers. In contrast to claims by conservationists that TFCA represents a landscape that is free of borders, the creation of such space leads to new forms of bordering by which local communities are separated from other stakeholders. In the case of Mapungubwe, the establishment of the TFCA has re-created racial borders. This situation does not encourage society-nature integration in Mapungubwe as a bioregion. The chapter has shown that economic development, particularly tourism and investment trends within and outside the GMTFCA, has been minimal since the

signing of MoU between the three countries. This chapter has also shown that the establishments of TFCA in areas where there are people create land use conflict between conservationists, communities and farming. Communities on communal land are the main losers and farm owners are the major winners. The change in land use leads to job losses and forced relocation. This situation is likely to become worse were SANParks to succeed in acquiring the remaining irrigation farms in the Mapungubwe area. The next chapter reflects on the contribution of this study to research on TFCA and also provides answers to the specific research questions that have guided the study.

CHAPTER SEVEN
CONCLUSION: WISDOM FROM MAPUNGUBWE

7.0. Introduction

Mapungubwe is a place of wisdom that has been uncovered by archaeologists; hence the culture of Mapungubwe is being celebrated in the form of a TFCA. This thesis has shown that a TFCA that seeks to bring culture and conservation together is complex and that it can only be achieved if a number of obstacles are achieved. The study is guided by the need to weigh the claims made by proponents of TFCAs against the unfolding of Greater Mapungubwe TFCA. It focuses on three main claims in particular. The first is that TFCAs go beyond the colonial relations between conservation areas and local communities by taking communities as an important stakeholder. The second claim is that TFCAs play a critical role in the protection and management of biodiversity. Finally, it is claimed that TFCAs spur local economic development beneficial to local residents and the regional economy. The study evaluates these claims by asking why and how land use changed in the Greater Mapungubwe region and with what implications for biodiversity, the local economy and local communities. This chapter summarises answers to these questions and also reflects on the contribution of the study to research on TFCAs. The chapter is divided into three broad sections that begin with key insights on TFCAs from the study. This is followed by a reflection on the research questions posed in this thesis after which some concluding thoughts on Mapungubwe TFCAs are given.

7.1. Key insights on transfrontier conservation area from Mapungubwe

Key insights that can be gleaned from the study of Mapungubwe relates to bioregionalism and bordering process as in the TFCA context, methodologies for researching bioregions and the relevance of bioregionalism as a theoretical lens for TFCA research. These three insights are presented here as a contribution of this study to scholarship on TFCAs.

7.1.1. Bioregionalism and bordering processes in the transfrontier conservation areas

The creation of TFCAs is premised on erasing states borders. The rationale behind the removal of state borders is that they are political rather than natural. As a result, they are out of line with ecological systems (Sandwith *et al*., 2001; Hanks 2003; Munthali, 2007). Accordingly, political

borders are referred to as unnatural, artificial, wrong, undesirable, and inappropriate in contrast to natural and organic ones (Alesina *et al*., 2006 cited by Fall, 2010). Furthermore, proponents of TFCAs blame colonialism for imposing international borders on Africa hence the call for the removal of borders as a pre-condition for creating TFCAs. The removal of borders is considered a necessary condition for re-establishing natural ecological systems that were disrupted by human imposed borders. Essentially, the idea is to create a borderless landscape. In comparison to the claims by conservationists that TFCA represents a borderless landscape, the study found that the creation of GMTFCA as a cross-border space leads to new forms of bordering, especially the twin processes of de-bordering and re-bordering. Understanding the ways in which bordering processes unfold is important for research on TFCAs.

The creation of Mapungubwe TFCA results in the symbolic transformation of borders. It is important to recall that de-bordering involves transforming a border from being a barrier to become a bridge. In the case of Mapungubwe, borders which are seen as fragmenting habitats and the entire ecosystem were removed to allow movement of wildlife across the border. For instance, the creation of NOTUGRE Association in Botswana by 36 land owners was followed by the removal of property borders. In South Africa, the buying of farms and the lease agreement between SANParks and adjacent private land owners who have agreed to participate in the establishment of the park was also followed by the removal of property borders. In Zimbabwe, no removal took place because the properties are not surrounded by fences. The removal of property borders was followed by the signing of the MoU by the Ministers of Botswana, South Africa and Zimbabwe. The signing of the MoU symbolically erased international borders among the three partner countries and created cross-border spaces which allowed wildlife to roam freely across international borders. Thus, wildlife circulates freely across states border without impediments and this is seen by conservationists as a re-emegence of natural habitats.

As the literature has demonstrated, bordering process in cross-border areas produces two but separate transversal bordered spaces that both cut across state borders (Sassen, 2013). In the case of Mapungubwe, on one hand, there is a cross-border space for wildlife. In this category, animals circulate and freely pass cross-border spaces without impediments. Thus, animals are in spaces that allow them to roam freely across the borders. On the other hand is a cross-border space for

society who needs to justify their entry into a geographic location. In this category, state borders remain a barrier for communities to move from one state to another. For instance, in GMTFCA, the local communities (e.g. Maramani, Lentswe Le Moriti, Farm workers) who are seen crossing the same borders that have been removed for wildlife are criminalized as poachers. In this sense, a transversal bordered space in the TFCA can be understood as a space in which there is a separation between nature and society. This separation works against the integration of nature and society and the creation of a bioregion. Under these conditions, the claim of bioregionalism is unlikely to materialize. In the same manner, borders still remain for conservation officials who can only enforce conservation within the borders of the property on which they work (i.e. park, safari area, game reserve or game farm) and within the borders of their country. Thus, there is no joint effort to conserve and manage resources within the TFCA. As a result, this keeps borders alive for people. Looking at these two transversal cross-border spaces, animals are in a space that separates them from people in terms of cross-border movement.

Though much of border transformation has happened for the purpose of conservation, a number of borders still remain in Mapungubwe region. There are irrigation and game farms within the borders of the TFCA. Commercial irrigation farmers are of the view that Mapungubwe is suitable for agriculture particularly citrus and vegetables. It is for this reason that they are not interested in selling their land for conservation purpose. As a result, there are eleven irrigation farms within the borders of TFCA. In the same manner, game farmers also do not want to sell their land and ten game ranches are within the borders of TFCA but are not part of the TFCA. Instead, they prefer to remove fences to be part of TFCA. In this way, bordering process will create extra space which will encourage movement of wildlife across property borders. Conservationists deem Mapungubwe region as the most suitable region for conservation of biodiversity. Differences in opinion regarding land use lead to different land-use and consequent borders within the TFCA. This is to say commercial irrigation farmers cultivate citrus and crops and have put up fences which separate them from the conservation area. In the same manner, game farms continue to do game ranching and have erected fences which separate them from commercial farms and the Park. The presence of border fences within the TFCA threatens the establishment of Mapungubwe as a bioregion. Whereas efforts are being explored to integrate game farming into conservation, the differences in land use, particularly conservation and

agricultural activities in Mapungubwe, accentuate the human and no-human divide. This division in turn undermines the ideals of bioregionalism in Mapungubwe area.

As we have noted, literature suggests that re-bordering involve exercising border control away from the border itself (De Giogi, 2010). Whilst property and state borders are removed for conservation purpose, new types of borders are introduced away from the border itself. In Botswana, only the white owned NOTUGRE is integrated into the TFCA whereas communal lands within and around the TFCA are not incorporated into the TFCA. This is despite the popular claim by proponents of TFCAs that community within and around TFCA will be involved in the establishment of the TFCA. Subsequently, the NOTUGRE has representatives in the TTC whereas communities do not have. The actual planning for the GMTFCA highlights bordering process in that it separates communities from private land owners. In this context, racial and property borders have been re-created through the establishment of the TFCA. The land claimants in South Africa are not part of the TFCA and do not attend the TTC. Similarly, farm workers who are powerless and who do not have property rights to land are also not part of the TFCA and the TTC. It is only the powerful white land owners who have property rights to land who are members of the TTC. Property rights to land reflect bordering process in that it separates communities from private land owners.

In Zimbabwe, though communal land is part of the TFCA, communities are neither informed nor involved in the creation of TFCA. In the same manner, War veterans who are land owners in Nottingham 2 and Sentinel Ranch 2 are not aware of TFCA and do not have representatives in the TTC. Their powerful white neighbours in Nottingham 1 and Sentinel Ranch 1 are aware of TFCA and are members of TTC. Essentially, planning for Mapungubwe TFCA can be understood as a bordering process as it has divided communities and War veterans from other stakeholders (land owners) in the creation of Mapungubwe TFCA. Collectively, the establishment of Mapungubwe TFCA between Botswana, South Africa and Zimbabwe are imbued with racial and property borders. This has negative implications for communities because they cannot participate and influence decisions regarding the TFCA. Furthermore, the separation of communities from other stakeholders creates further divisions within society.

7.1.2. Bioregional approach to the study of transfrontier conservation areas

The history of the conservation movement is more about treating society and its biophysical environment as separate entities. In recent years attempts have been made to strike a middle ground by reconciling nature and human activities within one area. As a result, concepts such as bioregion (Miller, 1996; Fall, 2003; Brunckhorst, 2002; Hughes, 2005), community-based natural resource management (Taylor, 2009) and joint or co-management (Magome and Murombedzi, 2003; Grossman and Holden, 2009) are common themes in conservation research. TFCAs that are largely an expression of the philosophy of bioregionalism and the need for international collaboration in biodiversity protection (cf Chapter Two) should be understood as an addition to conservation strategies. Proponents of TFCA have adopted the concept of bioregions as the most appropriate conservation units (Miller, 1996; Brunckhorst, 2001; Brunckhorst, 2002; Ferreira, 2006). There are two main schools of thoughts on bioregionalism. The first school relates to a social movement that encourages the creation of a bioregion at small scales (Sale, 1985, 2000; Aberley, 1999; Berg, 2002). The second school emphasizes regional landscape scale or conservation planning that promotes the establishment of bioregions at larger scale (Miller, 1996; Brunckhorst, 2002; Ferreira, 2006). This regional landscape makes bioregionalism a useful avenue for understanding TFCAs.

It should be emphasized that TFCAs are based on regional landscape scale or conservation planning that encourages bioregion at larger scale (Miller, 1996; Brunckhorst, 2002; Fall, 2003). The main objective behind regional landscape scale remains to protect biodiversity wherever it is found, from parks to farms, commercial forests, coastal zones, fishing areas, and people's backyards (Miller, 1996). In support of the regional landscape scale, Brunckhorst (2000) defines bioregion as areas of land or water whose limits are set by the geographical distribution of biophysical attributes, ecological systems and human communities. In this logic, the idea of bioregion encourages the re-establishment of natural ecological systems that had been interrupted by administrative borders (cf Chapter Two). In addition, it stresses the integration of social, economic and ecological factors thereby allowing for the variously defined and tenured areas of land or sea to be managed together. This means that bioregion aims to address environmental issues by integrating human societies with their ecological support systems, working within ecological rather than administrative borders (Miller, 1996; Brunckhorst, 2001;

Wolmer, 2003). The basic principle of bioregionalism is integration of biodiversity with communities and landscape as organic, continuous system in which humans should live 'in harmony' with nature (cf Chapter Two). This means that the bioregion concept is implicitly based on the assumption that bioregion is a uniform process all over and therefore will yield similar results. However, this assumption is problematic. This study has found that neither bioregionalism nor its product (i.e. bioregion) is uniform in Mapungubwe TFCA. From the ecological point of view, the ecological landscape in this TFCA is disrupted by different land use types that compromise the ecological integrity of the area. The concept of TFCAs is meant to reclaim this integrity hence the reclamation of ecological integrity across the border has become an important argument in the promotion of TFCA in post-apartheid southern Africa.

The context under which GMTFCA unfolds requires attention. For a start, conditions in the three countries are different. In terms of political stability, Botswana and South Africa are more stable than Zimbabwe, at least for the past two decades. Zimbabwe's political instability is associated with the country's radical land reform programme (cf Chapter Five). Political instability is a matter of concern regarding the success of Mapungubwe TFCA. I argue in this thesis that the notion of a bioregion as uniform space of conservation is contestable in Mapungubwe for a number of reasons. First, the three countries respond to the issue of land reform in conservation areas differently. For example, land reform in South Africa is pursued through, among others, land claims. As a result, Machete and Tshivhula communities have filed claims on farms that form part of Mapungubwe National Park, and the claims were gazetted in 2006. Land reform in Zimbabwe does not involve restitution as an official policy. Rather, after 2000, land reform was done through compulsory acquisition of the farms owned by the white minority. The land acquired is redistributed to the black majority including War veterans. The farms that are affected on the Zimbabwean side of the TFCA include River Ranch, Nottingham Estate and Sentinel Ranch. The land reform has led to the subdivision of Nottingham Estate and Sentinel Ranch into two, with one portion from each managed by the original owner and the other portion is managed by War veterans (cf Chapter Five). In Botswana, the land reform programme does not affect the TFCA.

Second, with regard to the source of revenue generated from conservation, the main source of income in Botswana is photographic tourism and no trophy hunting is permitted in NOTUGRE (Interview, David Evans, 19/05/2011). Similarly, photographic tourism is also the main source of income in South Africa and no trophy hunting is allowed in the Mapungubwe National Park (Interview, Fhatuwani Mugwabana, 16/01/2012). The revenue on the Zimbabwe side of the TFCA, which include Tuli Circle Safari Area, Nottingham, Sentinel and communal land, is generated from trophy hunting (Interview, Beatrice Ponele, 12/05/2011) (cf Chapter Four). These activities highlight the diversity of land uses in the area that is marketed as a common conservation area on which the protection of biodiversity is supreme.

Third, concerning the exploitation of mineral resources in the Mapungubwe region, there is mining of mineral resources both in South Africa and Zimbabwe and this is not the case on the Botswana side of the TFCA. In South Africa, there is Venetia diamond mine and Vele coal mine whereas in Zimbabwe, there is River Ranch diamond mine and an abandoned coal mine in Nottingham estate (cf Chapter Four). Mining is the backbone of South Africa's economy (DMR, 2012). Similarly, mining has also emerged as Zimbabwe's major economic driver after agricultural output fell as a result of the controversial fast track land reform programme of 2000 (Zimbabwe Independent, 2012). Such being the case, any new discoveries of mineral deposits worthy to be exploited in the Mapungubwe region may be given favourable attention as compared to tourism. This is evident in South Africa where the DMR has granted Coal of Africa Limited mining rights to extract coal despite the proximity of the coal mine to Mapungubwe National Park and World Heritage Site. These differences, together with unresolved land claims and mining in South Africa complicate the creation of Mapungubwe as a bioregion.

7.1.3. Research methods and transfrontier conservation areas

It is common knowledge that the establishment of TFCAs requires the involvement of two or more countries. The question of how one research more than one country simultaneously raises intriguing methodological issues. As we have noted, there are two main methodological approaches that are used in the study of TFCAs. The first approach is to study both sides of the border. Some studies on TFCAs have followed this methodological approach. Findings of studies on the KTFP between Botswana and South Africa are drawn from both sides of the border

(Ramutsindela, 2004a; Herbst and Mills, 2010). Similarly, research on the MDTP between Lesotho and South Africa also reported on both sides of the border (Büscher, 2010). The conclusions of these cross-border studies are applicable to the entire TFCA in question. The second approach may be to study individual countries to understand how conservation matters are handled from a country perspective. This approach comes closer to that commonly used in studying national parks. Most current studies on TFCAs tend to follow this methodological approach. I recount the examples referred to in this chapter to emphasize the need for innovative methodological approaches. As we noted, research on the GLTFP between Mozambique, South Africa and Zimbabwe is dominated by research on one side of the TFCA. Findings on the Mozambican side of this TFCA are reported in RRP (2002), Ferreira (2006), Milgroom and Spierenburg (2008) and Lunstrum (2010, 2013). Others have covered the South African side of this TFCA (Whande, 2007; Dressler and Büscher, 2008; Whande and Suich, 2009) whereas some reported on the Zimbabwe side (Wolmer, 2003; Sibanda, 2010). Similarly, in the study of Selous-Niassa TFCA across the Tanzania-Mozambique border, Noe (2010) only studied the Tanzanian side of the TFCA. Though scholars report on one side of the border, the statements they make relate to the TFCA as a whole. Looking at the two approaches above, this study used the first approach in order to understand the possible similarities and differences arising from the TFCA process. This approach was also used as the basis from which to argue that reporting on one side of the border is similar to studying a national park in a particular country. Yet conceptually, TFCA are different from a national park because a national park covers one country whereas a TFCA straddles political borders of two or more countries. Thus, there is lack of holistic approach in the study of TFCA, and as a result, insight into possible similarities and differences arising from the TFCA process are often ignored or missed.

It is important to know the similarities and differences in order to understand whether they are outcomes of the process of creating TFCA or are inherent in the existing social systems. Meanwhile, the process of establishing TFCAs is to create ecological conditions that are similar across the border. However, as Ramutsindela (2004a) has noted, there is no legal framework that enables social system across the border to negotiate and pursue common interest. It remains the responsibility of each government to address social problems. Thus, the similarities and differences can only be understood by asking similar questions on both sides of the border. They

also demand investigating a category of themes in countries participating in the TFCA project; something which this thesis has tried to do.

By investigating common themes on both sides of the border, the study found that Botswana, South Africa and Zimbabwe share some clear similarities. For example, game farming and commercial irrigation farming in all three countries show conflict over land use (cf Chapter Six). Similarly, in terms of stakeholders involved in the establishment of Mapungubwe TFCA, the study found that all three countries do not involve local communities in the establishment of Mapungubwe TFCA, and as a result these communities are not aware and knowledgeable about TFCA in the region (cf Chapter Six). This is also evident by their exclusion from the TTC meetings held by the three countries. The study found that the knowledge of TFCA in the Mapungubwe region is skewed towards government officials, private land owners, donor agencies such as De Beers, WWF, Dutch Postcode Lottery and Swedish Postcode Lottery, and NGOs such as PPF (cf Chapter Six). The study established that each country has employed game scouts as a strategy for dealing with poaching. NOTUGRE in Botswana has its own scouts to counter poaching in the property. Mapungubwe National Park and Venetia Limpopo Nature Reserve in South Africa have their own game rangers. On the Zimbabwe side of the TFCA, Tuli Circle Safari Area, Sentinel Ranch and Nottingham Estate each have its own game wardens. Lastly, the study also found that commercial irrigation farming within Mapungubwe TFCA is the major employer of local communities in all three countries. In Botswana, local irrigation farm (Talana) employs 680 full time employees and some 300 seasonal workers are employed during harvesting periods for a period of 3 to 6 month (cf Chapter Four). In South Africa, irrigation farms have employed a total of 1099 full time employees and up to 3080 temporary workers are employed during harvesting periods (cf Chapter Six). In Zimbabwe, irrigation farms (Nottingham and Sentinel) have employed 315 full time workers and an additional 1030 temporary workers are employed during harvesting period (cf Chapter Five).

There are also some obvious differences in the parts committed to Mapungubwe TFCA. One area of difference is on land committed to TFCA. In Botswana, the land dedicated to TFCA is entirely owned by private land owners, whereas in South Africa, the land committed is both government land and contractual freehold land. In Zimbabwe, the land committed is government,

private and communal land (cf Chapter Four). The differences in land tenure systems across the border privilege some stakeholders over others. In the case of Mapungubwe TFCA, private land tenure privileges the private land owners as compared to communal land which is owned by communities. Thus, private land owners have a special status in Mapungubwe TFCA hence they have representatives in the TTC meetings as compared to communities who do not have representatives. The reasons for privileging private land owners are that these owners derived their power from private property and that access to private land is a necessary condition for the TFCA.

With regard to livelihoods, communities in Botswana depend on livestock farming, weaving baskets, employment in irrigation farms, lodges and on government relief programmes. In South Africa there are a large number of farm workers who depend entirely on commercial irrigation farms while communities in Zimbabwe make a living from livestock farming, dryland farming, brewing palm wine, making sweeping brooms and remittance from relatives working in neighbouring countries such as South Africa (cf Chapter Six). Concerning land use conflict, there is human-wildlife conflict leading to killing of livestock and destruction of crops in communal lands in Botswana and Zimbabwe, but this is not the case in South Africa because there are no communal lands (cf Chapter Six).

The construction of Mapungubwe bioregion is affected by a number of challenges across the border. In Botswana, communities, livestock and irrigation farming within conservation area are the main challenges. In South Africa, mining and habitat fragmentation caused by irrigation farming within conservation area are the main challenges whereas in Zimbabwe, communities and their livestock within conservation area and poor tourism infrastructure pose serious challenges (cf Chapter Four). The similarities and differences would have been obscured had the study not used a methodological approach encompassing both sides of the TFCA.

7.2. Answers to research questions

According to GMTFCA TTC (2010), the change in land use has occurred in the Mapungubwe region because the area is considered to be rich in biodiversity, has scenic beauty and, most importantly, it is home to the archeological treasures of Mapungubwe. This necessitated the need

for integrating protected areas that were in close proximity yet separated by international borders to be managed as a TFCA. This study has looked at the process of land use change as a necessary condition towards the creation of Mapungubwe TFCA. It specifically focused on the change in land use from 1994 to 2010 because this is the period of the establishment of TFCA in southern Africa. The change in land use that has occurred in the Mapungubwe region is mainly from farming (cattle, game and irrigation) to conservation area. A total of 15 farms bought by SANParks, PPF, WWF, National Park Trust and Friends of Peace Parks which constitute 13 732.7837 ha, has been turned into conservation area. The first move was the acquisition of farm Greefswald (2503.8386 ha) by SANParks from the provincial government in 1995. In addition, SANParks and De Beers signed a 99 year lease agreement over four portions of farms in Schroda which constitute 3573.5215 ha (cf Chapter Four). A total of 20 properties of varying ownership status (19 810. 1438 ha) have been turned into Mapungubwe National Park. Although the process of buying more farms has been stopped because of the problem of land claims, SANParks is still in the process of negotiating contractual agreements with private land owners (Interview, Fhatuwani Mugwabana, 16/01/2012). On the Botswana and Zimbabwe side of the TFCA, there was no land use change. Rather existing game farms, government land and communal land are incorporated into the TFCA (cf Chapter Four). The Mapungubwe National Park has been combined with NOTUGRE in Botswana and Tuli Circle Safari Area, Sentinel, Nottingham, River Ranch, Maramani and Machuchuta communal area in Zimbabwe to form Greater Mapungubwe TFCA. This has been formalized through the signing a MoU by the Ministers of the three partner countries on the 22nd June 2006. Since then, there has been major development including the change of interim name Limpopo/Shashe to GMTFCA, the finalization of IDP and a draft treaty which is yet to be signed by the state presidents of Botswana, South Africa and Zimbabwe.

The establishment of Mapungubwe TFCA has implications on communities, biodiversity and the economy of the region. With regard to communities, the idea of TFCA is to involve and improve the livelihoods of local communities living within or near the TFCA area. The establishment of Mapungubwe TFCA has led to land use conflict between wildlife and livestock as well as wildlife and people in Botswana. The conflict is common in Lentswe Le Moriti, Motlhabaneng

and Mathathane villages. The livestock graze together with wildlife and are often killed by lions, leopard and cheater. One community member in Mathathane village had this to say:

> *I acquired my farm in the year 2000 and the size of the farm is 4km^2. My plan was to build a lodge in the farm for tourist as it is near Tuli block. However, this did not happen because of financial problems. I am currently using the land for farming. I have divided the farm into two portions; one piece of land is used for grazing purpose by my livestock. However, sometimes wildlife particularly lions, leopards and hyena come out of Tuli block and feed on my livestock. The other portion is used for dryland cropping. The main types of crops that are planted include maize meal, beans, watermelon and sorghum. However, these crops are affected by wildlife particularly elephants. Elephants cause considerable damage into the area and once they get inside they harvest for us and we don't get anything* (Interview, Rexon Peter Mabelebele, 13/06/2013).

The conflict is so serious that a total of 283 cases of conflicts between wildlife and farming were reported to the DWNP in 2011 in Lentswe Le Moriti, Motlhabaneng and Mathathane village (DWNP, 2011b). In addition, the lives of people particularly in Letswe Le Moriti which is within NOTUGRE, and not surrounded by the fence, are also in jeopardy because wildlife wander freely all over the village land. The conflict has led to five people being killed by elephants since communities moved into the area in 1953. The communities of Botswana were also not consulted and involved as part of Mapungubwe TFCA even though they are within and near the jurisdictional zones of the TFCA. Thus, Lentswe Le Moriti, Motlhabaneng and Mathathane communities were sidelined in the establishment of Mapungubwe TFCA (cf Chapter Six). The Botswana side of the TFCA is therefore only composed of NOTUGRE (cf Chapter Four).

On the South African side of the TFCA, the establishment of Mapungubwe TFCA has led to loss of jobs by farm workers. When Rhodesdrift farm became part of Mapungubwe National Park, a total of 50 permanent workers and 50 temporary workers lost their jobs (Interview, Hezekiel Mathatha, 17/01/2012). The loss of employment by farm workers also means dislocation from the area even though some of the farm workers were the permanent residents of the region (cf Chapter Six). One informant expressed her feelings by saying:

> *I started working in Rhodesdrift farm when I was still a young girl. Rhodesdrift was my home. I have got four children who were all born in Rhodesdrift farm. I also build a three room house in the farm for me and my children. I was later promoted to be a foreman and life was good. When Rhodesdrift farm was sold to SANParks, we were given six month to demolish all houses and vacate the farm. It was hard and difficult to believe that the farm has been sold. I was forced to move out of the farm and I did not know where to go because all my life was based in the farm. Our boss gave us transport to remove all our belongings to our homes but I did not have a home outside the farm. Fortunately, I got a stand in Alldays and I used the Zink of my demolished house to build a two room house. Since then, I never had an interest to work again in the farm. It is something that I will never forget in my life* (Interview, Sophie Tshifhumulo Mmbadaliga, 17/01/2012).

Sophie Tshifhumulo Mmbadaliga is now a permanent resident of Alldays and was jobless at the time of the interview. There is also ongoing conflict between conservationists and irrigation farmers. The conflict is as a result of elephants destroying the fence and causing damage to irrigation farmers within Mapungubwe National Park (Interview, Pieter Boshoff, 23/07/2011) (cf Chapter Six). On the Zimbabwe side of the TFCA, the establishment of Mapungubwe TFCA has also created conflict between wildlife and people. The conflict takes two forms; which is killing of livestock by wildlife particularly Jackals and Hyena and damage to crops by wildlife, particularly elephants along Limpopo and Shashe River. The conflict is particularly common in Maramani village. One community member in Maramani said that:

> *We live with wildlife in this area but elephants are the most problematic animal. Elephants own this area and as a result they are all over this village land. Some of them come from Botswana via Shashe River. You won't like them when you see big herds of elephants with their young ones in this area. They are more aggressive when they walk around with their young ones. Though we have fenced our farms with poles and branches of trees, it is like we have done nothing. This is because they break the fence and when they get into our agricultural field, they eat whatever they want from maize to watermelon and you cannot control them. We put a lot of effort cultivating in our farms but we do not harvest anything* (Interview, Staffnes Nyathi, 13/05/2011).

In addition, although the communal land of Zimbabwe is part of the TFCA, the communities have not been consulted. The study found that 92% of community members were not consulted about the project and as a result they do not know anything about the concept of TFCA (cf Chapter Six). Thus, the establishment of Mapungubwe TFCA has negative implications for local communities. A community member commented that:

> *I have never been informed about the TFCA by BBRDC or any other person dealing with TFCA. I think it will be good to run a workshop to inform all community members* (Interview, Michael Muleya, 15/05/2011).

The claim that local communities living close or within the TFCA are consulted and engaged in the early discussion about concept, process and implications of TFCAs has not been realized in the creation of Mapungubwe TFCA. As highlighted in Chapter Six, community members in Mapungubwe TFCA have not been consulted or informed about the project, and are not aware of Mapungubwe TFCA. Local communities who have been 'conservation refugees' during colonial and apartheid eras continue to be the victims of conservation in the 21st century as demonstrated in this study.

Conservation and management of biodiversity is high on the agenda of TFCA. The idea of TFCA is to combine together fragmented habitat patches across the border in order to have a bigger ecological range for conservation of biodiversity. According to GMTFCA TTC (2010), Botswana contributed 75 000 ha whereas South Africa and Zimbabwe each contributed 55 000 ha and 130 000 ha of land respectively. Thus, a total of 260 000 ha forms the core area of Mapungubwe TFCA. As we have noted above, there are no fences between Botswana and Zimbabwe and this allows free movement of wildlife across the border. This is helping to relieve the pressure of more than 1400 elephants in the Mapungubwe region. The fences in South Africa will only be removed after the treaty has been signed by the state presidents of the three countries (Interview, Fhatuwani Mugwabana, 14/01/2013). Concerning biodiversity management, it is still the responsibility of each country to manage its own biodiversity. Currently, there is no joint effort when it comes to managing biodiversity. However, it is anticipated that once the treaty has been signed, a JMB constituted by members from the three

participating countries will be formally appointed to manage Mapungubwe TFCA (Interview, Johan Verhoef, 22/03/2011) (cf Chapter Four).

The great expectation from TFCAs is that these projects will improve or promote economic development in the region. There are some developments that have started to emerge in the Mapungubwe region. On the Botswana side of the TFCA, Limpopo Valley Airfield on the southern NOTUGRE was established in 2001. Limpopo Valley Airfield is used for domestic and regional flights on an unscheduled basis. Thus, the airfield does not accommodate scheduled airline rather as is used only by private airline. International flights from the overseas cannot use the airfield (Interview, David Evans, 15/01/2013). The reason for the introduction of the Limpopo Valley Airfield is to ensure easy access to the park by tourists thereby improving tourism in the region. Although it is generally agreed that the number of people who visit NOTUGRE has not gone up to the satisfactory level, it was anticipated that the introduction of the Limpopo Valley Airfield will change the situation (Interview, David Evans, 19/05/2011) (cf Chapter Six). On the South African side of the TFCA, the Mapungubwe Interpretation Centre near the main gate of Mapungubwe National Park was constructed and completed in 2009. The Interpretation Centre was officially opened in 2012 and it is currently operational. Within the Interpretation Centre, there is a restaurant which was opened in 2012 which is currently under the leadership of Sefapane, which is a private company. There are currently no private concessions operating in the Mapungubwe National Park. This is because the current occupancy of existing camps is low (below 50%); the park does not receive tourists throughout the year but tourism is mostly busy during Easter holidays, June/July school holidays and in December (cf Chapter Six). The size of the park is small (only 19810.1438 ha**)** compared to other National Parks in the country, and there are no big five animals which mostly attract tourists and investors in protected areas. All these factors taken together have not attracted concessionaires in the park (Interview, Fhatuwani Mugwabana, 14/01/2013). As a result, there are no new lodges and guest houses that have been constructed in the Mapungubwe National Park since the signing of MoU in 2006 (cf Chapter Six). In addition, there are no local street vendors selling woodcraft at the main entrance gate and areas along the R572 and R521 roads. The absence of local street vendors could be attributed to low number of tourists who visit the park. On the Zimbabwe side

of the TFCA, there is currently no new infrastructural development since the signing of MoU in 2006 (cf Chapter Six). This could be attributed to the struggling economy of the country.

7.3. Concluding remarks on Mapungubwe

This study has demonstrated that in contrast to the claims by conservation lobby groups that TFCA represents a landscape that is free of borders, the creation of GMTFCA as a cross-border space leads to new forms of bordering. Thus, the creation of TFCA is accompanied by conflicting and simultaneous processes of de-bordering and re-bordering. In addition, this research work has tried to approach the TFCA area as whole rather than in parts. Although the studies that have reported on one side of the border are useful to understand conservation of natural resources in a country, they however remain insufficient to understand communities as a regional group, issues of governance, stakeholders, and the process of creating TFCA. This is so because studies covering only one side of a TFCA provide partial conclusions about TFCAs. It is therefore false to assume that the results obtained in one country will apply on both sides of the international border because the social systems are different across the border as demonstrated in this study. The analysis presented in this study shows that the methodological approach of looking at both sides of the border holds much promise for understanding differences and similarities across the border. These cannot be understood through studies that report on one side of the border. Furthermore, the study shows that bioregionalism in TFCA is affected by social systems that are dissimilar across the border. This makes the creation of bioregion difficult as illustrated by the case of Mapungubwe TFCA. In concluding this research work, I revisit the question of whether TFCAs can meaningfully contribute to sustainable biodiversity conservation while also involving impoverished rural people and improving local economic development. The study found that these claims are overstated and are far from being realized in the creation of Mapungubwe TFCA. Thus, TFCA do not live up to the expectations of their proponents. As Ramutsindela (2004b) has noted, TFCA are only instrumental to win the support of local communities, civil society, donor agencies and governments.

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LIST OF APPENDICES

Appendix One: Transfrontier conservation areas in southern Africa.

Transfrontier conservation areas in southern Africa

Treaty signed		
No.	**Name**	**Countries involved**
1.	Ai/Ais-Richtersveld TP	Namibia and South Africa
2.	Kgalagadi TP	Botswana and South Africa
3.	Greater Limpopo TP	Mozambique, South Africa and Zimbabwe

Memorandum of understating signed		
No.	**Name**	**Countries involved**
4.	Greater Mapungubwe TFCA	Botswana, South Africa and Zimbabwe
5.	Lubombo TFCA	Mozambique, South Africa and Swaziland
6.	Maloti-Drakensberg TFCA	Lesotho and South Africa
7.	Iona-Skeleton Coast TFCA	Angola and Namibia
8.	Kavango-Zambezi TFCA	Angola, Botswana, Namibia, Zambia and Zimbabwe
9.	Malawi-Zambia TFCA	Malawi and Zambia
10.	Chimanimani TFCA	Mozambique and Zimbabwe

Memorandum of understating pending		
No.	**Name**	**Countries involved**
11.	Liuwa Plains- Mussuma TFCA	Angola and Zimbia
12.	Lower Zambezi-Mana Pools TFCA	Zambia and Zimbabwe

Conceptual phase		
No.	**Name**	**Countries involved**
13.	Niassa-Selous TFCA	Mozambique and Tanzania
14.	Mnazi Bay-Quirimbas TFCMA	Mozambique and Tanzania

Source: PPF, 2010

Note: *TP-Transfontier Park
** TFCA-Transfrontier Conservation Area
*** TFCMA- Transfrontier Conservation Marine Area

Appendix Two: Approval to conduct this research in the Mapungubwe National Park.

South African
NATIONAL PARKS

AGREEMENT

BETWEEN

SOUTH AFRICAN NATIONAL PARKS

herein represented by **Mr. Fhathuwani Mugwabana**

in his capacity as **Park Manager: Mapungubwe National Park**

(hereinafter referred to as "SANParks")

AND

Mr. NI Sinthumule

780203 5767 088

Id/Reg No _____

(hereinafter referred to as "the Researcher")

WHEREAS the Researcher submitted a research application to SANParks to conduct a research on **"Land use change and the creation of Greater Mapungubwe Transfrontier Conservation Area"** ("research") in the Mapungubwe National Park ("the Park");

Appendix Three: Approval to conduct this research in Botswana.

TELEPHONE: 3647900
TELEGRAMS: MEWT
TELEX:
TELEFAX: 3908076
REFERENCE: EWT 8/36/4 XXI (13)

REPUBLIC OF BOTSWANA

MINISTRY OF ENVIRONMENT,
WILDLIFE AND TOURISM
PRIVATE BAG BO 199,
GABORONE
BOTSWANA

ALL CORRESPONDENCE MUST BE ADDRESSED TO

THE PERMANENT SECRETARY

22 October 2012

NDIDZULAFHI INNOCENT SINTHUMULE
P O BOX 3380
THOHOYANDOU, 0950
LIMPOPO PROVINCE
SOUTH AFRICA

Email: innocent.sinthumule@univen.ac.za

APPLICATION FOR RESEARCH PERMIT: LAND USE CHANGE AND THE CREATION OF GREATER MAPUNGUBWE TRANSFRONTIER CONSERVATION AREA: EWT/ 8/36/4 XXI (13)

We are pleased to inform you that you are granted permission to conduct a research entitled: **"Land use change and the creation of Greater Mapungubwe Transfrontier Conservation Area"**

The research will be conducted at the **Northern Tuli Game Reserve** which forms part of Greater Mapungubwe Transfrontier Conservation.

This permit is valid for a period effective from **22nd October 2012 to 29th February 2013.**

This permit is granted subject to the following conditions:

1. Signing and submission of an Agreement between Government of Botswana and Independent Researchers.
2. Progress should be reported periodically to the **Department of National Museum and Monuments.**
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. Failure to comply with any of the above conditions will result in the immediate cancellation of this permit.

7. The research team comprises of **Mr Innocent Sinthumule.**

8. The applicant should ensure that the Government of Botswana is duly acknowledged.

9. Copies of 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 National Museum and Monuments,** National Archives, National Library Service, and the University of Botswana Library.

Thank you.

Yours faithfully

Mable Bolele
For/Permanent Secretary

CC. Department of National Museum and Monuments

Appendix Four: Authorization to use information about land claims in the Mapungubwe area.

rural development & land reform
Department:
Rural Development and Land Reform
REPUBLIC OF SOUTH AFRICA

OFFICE OF THE REGIONAL LAND CLAIMS COMMISSIONER: LIMPOPO

Private Bag 9552, Polokwane, 0700, 61 Biccard Street: (015) 284 6300 Fax No: (015) 295 7404/7403, E-mail address clientrelations@ruraldevelopment.gov.za. Also at 96 Kagiso House Cnr. Rissik and Schoeman Street Tel: (015) 287 2600 and Andrea Building Tel: (015) 287 9460

Enquiries: Rirhandzu Shilote

SINTHUMULE N.I
STUDENT NUMBER: SNTNDI001
UNIVERSITY OF CAPE TOWN
DEPT. ENVIRONMENTAL AND GEOGRAPHICAL SCIENCE

Dear Sir,

RE: INFORMATION ON LAND CLAIM IN MAPUNGUBWE AREA

The Office of the Regional Land Claims Commissioner: Limpopo hereby acknowledges receipt of your letter dated 19 October 2011.

The letter serves to confirm that the office is granting you the permission to have access to information relating to the Mapungubwe area.

For specific information, kindly make an appointment with Messrs Semakaleng Mabeba @ 082 827 6026 and Tshinetisa Moila @ 082 827 6179.

Yours in Restitution of Land Rights

MR.TELE MAPHOTO
OFFICE OF THE REGIONAL LAND CLAIMS COMMISSIONER: LIMPOPO
DATE: 02/12/2011

Appendix Five: Introduction letter used during fieldwork.

Department of Environmental and Geographical Science
University of Cape Town
RONDEBOSCH 7701
South Africa

e-mail: maano.ramutsindela@uct.ac.za
phone: + 27 21 650 2783/2873
fax : +27 21 650 3456

17 June 2011

TO WHOM IT MAY CONCERN

SUBJECT: REFERENCE LETTER FOR INNOCENT SINTHUMULE

This letter serves to introduce Mr Innocent Sinthumule who is studying for his PhD in environmental and geographical science under my supervision. Mr Sinthumule is currently researching the establishment of the Greater Mapungubwe Transfrontier Conservation Area and his PhD project covers areas which fall within this conservation area in Botswana, South Africa and Zimbabwe. I would appreciate it very much if you could give him the assistance he needs to carry out his research successfully. I would be happy to provide any further information that you may require.

Sincerely,

Associate Professor Maano Ramutsindela

Appendix Six: List of informants and their institutional affiliation in Botswana, South Africa and Zimbabwe.
Botswana side of the TFCA

No	**Name**	**Institution and position held**	**Date and place of interview**
1.	Mr. Johan Verhoef	International Coordinator of Greater Mapungubwe Transfrontier Conservation Area	22 March 2011, University of Pretoria
2.	Mr. Craig Beech	Information System Manager of PPF	28 February 2012, PPF offices in Stellenbosch
3.	Mr. Jeoff Norris	Land owner and chairperson of Northern Tuli Game Reserve Land owners	07 April 2011, Honeydew, Johannesburg
4.	Mrs. Tanya Mckenzie	Land owner and Secretary of Northern Tuli Game Reserve Land owners	19 May 2011, Johannesburg
5.	Mr. David Evans	Director of Mashatu Game Reserve in Botswana and GMTFCAs sub-committee chairperson	19 May 2011, Johannesburg; 15 January 2013.
6.	Anonymous	Land owner in Northern Tuli Game Reserve	08 April 2011, Sandton, Johannesburg
7.	Mr. Piet Le Roux	General Manager of Mashatu Game Reserve	12 June 2013, Mashatu Game Reserve
8.	Mr. Bruce Patty	Managing Director of Pitsani Game Reserve	12 June 2013, Pitsani Game Reserve
9.	Mrs. Dollina Malepa	Former coordinator of Botswana component of TFCA and member of Trilateral Technical Committee	O8 June 2011, Burgers park hotel, Pretoria
10.	Mrs. Mable Bolele	Coordinator of Botswana component of TFCA and member of Trilateral Technical Committee	30 October 2012, Gaborone, Botswana
11.	Mr. Malatsi Mamani	Chief Wildlife Warden, Department of Wildlife and National Parks	29 October 2012, Bobonong village, Bobirwa district, Botswana
12.	Mr. Emmanuel Kgokilwe	Senior Wildlife Warden, Department of Wildlife and National Parks	29 October 2012, Mathathani village, Bobirwa district, Botswana
13.	Mr. Jan Willemse	Owner of Talana irrigation farm	12 June 2013, Talana farm in Botswana
14.	Mr. Johan Potgieter	Production Manager, Talana Farm	31 October 2012, Talana farm in Botswana
15.	Mrs. Gloria Badubi	Tuli safari lodge camp manager	17 September 2012, Tuli safari lodge, Botswana; 28 September 2012
16.	Mr. Simon Kolobe	Tuli safari lodge tour guide and a community member	18 September 2012, Tuli safari lodge, Botswana
17.	Mr. Isaac Mampane	Tuli safari lodge tour guide and a community member	18 September 2012, Tuli safari lodge, Botswana
18.	Mr. Mphale Kanono	Headman of Motlhabaneng village	18 September 2012, Motlhabaneng village

19.	Mrs. Thetshelesani Seshoka	Ilala palm wine brewer	18 September 2012, Motlhabaneng village
20.	Mr. Ofentse Moleofe	Secretary of the ZCC church in Lentswe Le Moriti	19 September 2012, Lentswe Le Moriti;
21.	Mr. Mashape Nkoloi Kobe	Lentswe Le Moriti community member	19 September 2012, Lentswe Le Moriti; 22 September 2012
22.	Mrs Wendy Molefe,	Lentswe Le Moriti community member	19 September 2012, Lentswe Le Moriti
23.	Mrs. Lebogang Tsheole	Lentswe Le Moriti community member	19 September 2012, Lentswe Le Moriti
24.	Mrs. Matlhodi Tsae	Lentswe Le Moriti community member	14 June 2013, Lentswe Le Moriti
25.	Mrs. Moserwa Tsheole	Lentswe Le Moriti community member	14 June 2013, Lentswe Le Moriti
26. *	Mrs. Maria Tsheole and Mrs. Nkele Tsheole	Lentswe Le Moriti community member	14 June 2013, Lentswe Le Moriti
27.	Mrs. Mothofela Kwapa	Lentswe Le Moriti community member	14 June 2013, Lentswe Le Moriti
28.	Mrs. Keneilwe Dintwe	Lentswe Le Moriti community member	14 June 2013, Lentswe Le Moriti
29.	Mr. Kelapile Machete	Motlhabaneng Village	13 June 2013, Motlhabaneng village
30.	Mr. Gabalebe Maroba	Motlhabaneng Village	13 June 2013, Motlhabaneng village
31.	Mr. Rexon Peter Mabelebele	Mathathane village	13 June 2013, Mathathane village
32.	Mr. Frank Kamogelo	Mathathane village	13 June 2013, Mathathane village
33.	Mrs. Kelebigile Molisa	Mathathane village	13 June 2013, Mathathane village
34. *	Mr. Hubonetsi Maemo and Mrs. Kelennetse Maemo	Mathathane village	13 June 2013, Mathathane village
35. *	Mrs. Anonymous and Mr. Sipho Sejie	Lentswe Le Moriti cordon Gate	12 June 2013, Lentswe Le Moriti Gate
36.	Mr. Oupa Mulapisane	Anti-poaching unit, NOTUGRE	13 June 2013, NOTUGRE
37. *	Mrs Tsepo Simon and Mr. Kagisano Keoemetsi	Talana Farm	15 June 2013, Talana Farm

Source: Author, 2011-2013

South African side of TFCA

No	Name	Institution and position held	Date and place of interview
1.	Mr. Johan Verhoef	International Coordinator of Greater Mapungubwe Transfrontier Conservation Area	22 March 2011, University of Pretoria
2.	Mr. Craig Beech	Information System Manager of PPF	28 February 2012, PPF offices in Stellenbosch
3.	Mr. Fhatuwani Hendrick Mugwabana	Park Manager, Mapungubwe National Park	22 June 2011 and 16 January 2012,14 January 2013 in Mapungubwe National Park
4.	Mrs. Mpho Madima	Deputy Director, Department of Environmental Affairs and Tourism, TFCA unit	28 June 2013, Pretoria
5.	Mr. Samuel Dagada	People and Conservation, Mapungubwe National Park	08 December 2011, Mapungubwe National Park
6.	Mr. Pieter Boshoff	Owner of Welton 34/0 Farm	23 July 2011, Welton farm
7.	Mr. Wellem Van Aswegen	Farm manager, Tuscanen (ZZ2)	23 July 2011, Tuscanen farm
8.	Mr. Tupson Chauke	Farm Manager, Modena 13	23 July 2011 and 08 December 2011, Modena farm
9.	Mr. Vanus Van Staden	Farm owner, Weipe 6 and 7	23 July 2011
10.	Mr. Rouen Gouss	Farm Manager, Samaria	08 December 2011 and 17 January 2012, Samaria farm
11.	Mr. Johan Truter	Assistant farm manager, ZZ2	09 December 2011, Tuscanen farm
12.	Mr. Piet Esterhyse Junior	Farm Owner, Weipe 5	09 January 2012, Weipe farm
13.	Mr. Danie Erusmus	Farm owner, Depo Weipe	09 January 2012, Depo Weipe farm
14.	Mr. Jacques Willemse	Farm owner, Hanaline Boerdery	09 January 2012, Hanaline Boerdery
15.	Mrs. Maryna Dillman	Co-owner, Noordgrens Landgoed	09 January 2012, Noordgrens Landgoed farm
16.	Mr. Ferdi Vermeulen	Owner, Samaria farm (Email correspondents)	31 October 2012
17.	Mr. Duncan MacWhirter	Owner, Kaoxa Bush Camp (Email correspondents)	7 July 2011
18.	Mr. Jugen Elbertse	Manager: Marketing, sales and development, Mapungubwe Nature Reserve	15 December 2012
19.	Mr. Warwick Mostert	Conservation coordinator, De Beers Consolidated Mines	30th June 2011, Johannesburg De Beers office
20.	Mr. Mark Berry	Former De Beers Wildlife Biologist and current Board member of De Beers consolidated mine	03 September 2011, Mmabolela farm
21. *	Mr. Sole Sematla, Mr. Josiah Sematla and Mrs. Sophie Sematla Mr. Michael Sematla	Land claimants	22 June 2011, 09 December 2011and 06/06/2013, Den Staat Farm

22.	Mr. Patrick Machete	Land claimant	18 August 2012
23.	Mr. Jakobus Mokwena	Farm worker, Samaria	09 January 2012, Samaria farm
24.	Mr. Johannes Sematla	Former employee of Henny Heins (Samaria) and current employees of SAFE	17 January 2012, Den Staat farm
25.	Mr. Joshua Moyo	Former employees of Den Staat farm	16 January 2012, Den Staat farm
26.	Mr. Robert Sikani	Former employees of Den Staat farm	17 January 2012, Den Staat farm
27.	Mr. Joseph Samu	Former employee of Henny Heins (Samaria) and current employees of SAFE	17 January 2012, Samaria farm
28.	Mrs. Thidziambi Ndou	Former employee of Henny Heins (Samaria) and current employees of SAFE	17 January 2012, Samaria farm
29.	Mrs. Theso Jeanette Lehong	Former employee, Samaria farm	17 January 2012, Samaria farm
30.	Reverend Hezekiel Mathatha	Former employees, Rhodes Drift farm	17 January 2012, Alldays
31.	Mrs. Sophie Tshifhumulo Mmbadaliga	Former employees, Rhodes Drift farm	17 January 2012, Alldays
32.	Mr. Semakaleng Selby Mabeba	Manager, Rural Development and Land Reform	23 January 2012, Polokwane
33.	Mrs Rox Brummer	Co-owner, Corea Game Ranch	21 March 2013, Corea Game Ranch
34.	Mr. Johan Volschenk	Owner, Evangelina farm	21 March 2013, Evangelina farm
35.	Mr Andrew Rae	General Manager, Mopani Bush Lodge	22 March 2013, Mopani Bush Lodge
36.	Jamie	Manager Venetia Limpopo NR	22 March 2013, Manager Venetia Limpopo NR
37.	Mr. Elmer Uys	Owner of Klein Bolayi game farm	21 March 2013, Klein Bolayi game farm
38.	Dr. Quintis Richter	Owner of Evelyn Game Ranch	26 March 2013, Evelyn Game Ranch
39.	Mr. Nico Verhoff	Assistance Manager, Anglo coal, Mapungubwe	26 March 2013, Sadina farm
40.	Mrs. Retha van der Walt	Farm manager: Ludwigslust farm	26 March 2013, Ludwigslust farm
41.	Mr. George Luis	Manager of Dongola lodge	26 March 2013, Dongola lodge
42.	Mr. Chris Limbach	Owner, Dongola Private Nature Reserve	03 May 2013, Messina
43.	Dr. Phineas Chauke,	Subcontracted by Department of Rural Development and Land Reform and Senior Lecturer at University of Venda	17 May 2013, Thohoyandou

Source: Author, 2011-2013

*** Informants who were interviewed together or as a group**

Zimbabwe side of TFCA

No.	Name	Institution and position held	Date and place of interview
1.	Mrs. Ponele Beatrice	Beitbridge Rural District Council, Campfire Coordinator	12 May 2011 and 15 August 2011, Beitbridge
2.	Mr. Mbedzi Albert	Beitbridge Rural District Council, Chief Executive Officer & TTC member	12 May 2011 and 18 August 2011, Beitbridge
3.	Mr. Jafta Muleya	Villager- Maramani	13 May 2011, Maramani Village
4.	Mrs. Khwathelani Ngulube	Villager- Maramani	13 May 2011 and Maramani irrigation scheme
5.	Mrs. Mulevhuwe Gumbo	Villager- Maramani	13 May 2011 and 16 August 2011, Maramani irrigation scheme
6.	Mrs. Ndimangadzo Moyo	Villager- Maramani	13 May 2011, Maramani Village
7.	Mr. Setha Ncube	Villager- Maramani	13 May 2011, Maramani Village
8.	Mrs. Sfelopulu Ndou	Villager- Maramani	13 May 2011, Maramani irrigation scheme
9.	Mr. Staffnes Nyathi	Villager- Maramani	13 May 2011, Maramani Village
10.	Mrs. Alice Dube	Villager- Maramani	14 May 2011and 20 August 2011, Maramani Village
11.	Mrs. Belida Mbedzi	Villager- Maramani	14 May 2011, Maramani Village
12.	Mr. Den Mosipa	Villager- Maramani	14 May 2011and 20 August 2011Maramani Village
13.	Mrs. Grace Ndou	Villager- Maramani	14 May 2011, Maramani Village
14.	Mrs. Josphinah Tlou	Villager- Maramani	14 May 2011and 20 August 2011,Maramani Village
15.	Mr. Mpho Sibanda	Villager- Maramani	14 May 2011, Maramani Village
16.	Mr. Albert Nare	Villager- Maramani	14 May 2011, Maramani Village
17.	Mrs. Raina Ndlovu	Villager- Maramani	14 May 2011, Maramani Village
18.	Mr. Robert Sibanda	Villager- Maramani	14 May 2011, Maramani Village
19.	Mr. Zakaria Ndou	Villager- Maramani	14 May 2011, and 20 August 2011, Maramani Village
20.	Mr. Muleya Johannes	Councilor of ward 6 (River Ranch)	15 May 2011, Mudzinwane Village(River ranch)
21.	Mr. Michael Muleya	Chairperson of CAMFIRE Programme, River Ranch	15 May 2011 and 18 August 2011, Malala Village (River ranch)
22.	Mr. Joseph Muleya	Villager-River Ranch	15 May 2011, Mtetengwe Village (River ranch)

23.	Mrs. Mulevhuwe Muleya	Villager-River Ranch	15 May 2011, Mudzinwane Village, River ranch
24.	Mrs. Nonia Sibanda	Villager-River Ranch	Mtetengwe village, River ranch , 14 May 2011
25.	Mrs. Sara Mulilo	Villager-River Ranch	15 May 2011, Mdzinwane Village, River ranch
26.	Mrs. Thompheni Sibanda	Villager-River Ranch	15 May 2011, Malala village, River ranch
27.	Anonymous	Villager-River Ranch	15 May 2011, Malala village, River ranch
28.	Mr. Shonisani Bale	Ilala palm wine brewer	16 August 2011, Maramani Village
29.	Mr. Mahupulo Nare	Headman of ward 8	17 August 2011, Maramani Village
30.	Mr. Rodney Mbedzi	Councillor of ward 9 (Machuchuta)	17 August 2011, Machuchuta village
31.	Mrs. Gladys Sizivha	Villager-Machuchuta	17 August 2011, Machuchuta village
32.	Mrs Sezowina Mbedzi	Villager-Machuchuta	17 August 2011, Machuchuta village
33.	Mr. William Mbedzi	Chairperson of CAMPFIRE in ward 9 (Machuchuta)	17 August 2011, Machuchuta village
34.	Anonymous	Villager-Machuchuta	17 August 2011, Machuchuta village
35.	Mrs Silvia Ngulube	Secretary of CAMPFIRE in Makakabule village (River ranch)	18 August 2011, Makakabule village (River Ranch)
36.	Mr. Duncan Moyo	Treasurer of CAMPFIRE in Makakabule village (River ranch)	18 August 2011, Makakabule village (River Ranch)
37.	Mr. Melton Sibanda	Treasurer of CAMPFIRE in ward 8	19 August 2011, Maramani Village
38.	Mr. Mahupuwa. Nare	Officer of Maramani Craft Centre	19 August 2011, Maramani Craft Centre
39.	Mr. Hendrick Ndou	Ilala palm wine brewer	19 August 2011, Maramani Village
40.	Anonymous	Villager- Maramani	20 August 2011, Maramani Village
41.	Anonymous	Villager- Maramani	20 August 2011, Maramani Village
42.	Mr. Simon Doni,	Seeping broom seller	24 August 2011, Thohoyandou, South Africa
43. *	Mrs. Rozy Mapfumo and Mrs. Petty Masera Moyo	War veterans	12 May 2011, Nottingham estate
44. *	Mrs. Rebecca Chauke, Mr. Kabelo Moyo and Mr. Rapson Moyo	War veterans	12 May 2011, Sentinel ranch
45.	Mr. Muduntswa Ndlovu	Nottingham Ranger	12 May 2011, Nottingham
46.	Mr. Steve Boshoff	Nottingham Farm Manager	12 May 2011 and 18 August 2011, Nottingham

47.	Mr. Innocent Pagwiwa	Agricultural Extension worker in Shashe Irrigation Scheme in ward 8	13 May 2011 and 16 August 2011, Maramani Village
48.	Mr. Makina	Manager on duty, Tuli Circle Safari Area	13 May 2011 and 15 August 2011, Tuli Circle Safari Area
49.	Mrs. Sibanda Sifiso	Field Ranger, Tuli Circle Safari Area	13 May 2011 and 15 August 2011, Tuli Circle Safari Area
50. *	Mrs. Vanessa and Mr. Digby Bristow	Owners of Sentinel 1 (aka Border Ridge) and TTC member	13 May 2011 and 18 August 2011, Sentinel
51.	Mr. Keith Knott	Nottingham owner and TTC member	18 August 2011, Nottingham

Source: Author, 2011-2013

*** Informants who were interviewed together or as a group**

Appendix Seven: Guiding questions for qualitative interview for the international Co-ordinator of Greater Mapungubwe transfrontier conservation area and Peace Parks Foundation.

Semi-structured guiding questions for the international Co-ordinator of GMTFCA

1. What is the process that has been followed to acquire land on both sides of the border to be committed for TFCA?
2. How is the land acquired from farmers on the South African side?
3. What has happened to the farm workers who used to work on farms that are now part of the Greater Mapungubwe Transfrontier Conservation Area?
4. How did you acquire land from private land owners in Botswana and Zimbabwe and how will they benefit from Greater Mapungubwe Transfrontier Conservation?
5. What are the components of Greater Mapungubwe TFCAs on both sides of the border?
6. How will biodiversity in the Greater Mapungubwe be managed?
7. What will be the implications that such management regimes might have on the biodiversity of the area?
8. What are the future biodiversity management plans in the area and how will that benefits all stakeholders involved?
9. How will you deal with the communities in the Zimbabwe and Botswana who are directly affected by the creation of Greater Mapungubwe Transfrontier Conservation?
10. What is your position regarding land claim in the Mapungubwe area and how is this affecting the process of creating Mapungubwe TFCA?
11. What is your position regarding mining in the Mapungubwe region?
12. How will the establishment of Greater Mapungubwe Transfrontier Conservation contribute towards upliftment and empowerment of communities?
13. How will you deal with the question of governance considering the fact that a number of stakeholders are involved in this venture?
14. What are the arrangements for power sharing in GMTFCA?
15. What have you achieved so far?
16. What are the challenges that you are faced with at the moment?
17. May you share any other information that I did not cover about the creation of Mapungubwe TFCA that you feel are important?

Semi-structured guiding questions for PPF

1. How does your institution participate in TFCA and where do you get funds?
2. What are the other institutions that are involved in the establishment of TFCA?
3. How do you relate National Parks with TFCA and why did you choose to be involved in TFCA and not in National Parks?
4. What is the process that has been followed to acquire land on both side of the border?
5. Why did you become involved in the purchase of the land and which farms have been purchased by PPF and when did this happen?
6. What has happened to farmers and farm workers who used to work on farms that have now been purchased to form part of the Greater Mapungubwe Transfrontier Conservation Area?
7. What are the plans to deal with the communities in the Zimbabwe and Botswana who are directly affected by the creation of Greater Mapungubwe Transfrontier Conservation?

8. What is your position regarding land claim in the Mapungubwe area and how is this affecting the process of creating Mapungubwe TFCA?
9. What is your position regarding mining in the Mapungubwe region?
10. What will happen to countries that generate revenues through trophy hunting?
11. What will happen to Citrus and vegetables farmers in South Africa and Zimbabwe who are within the TFCA but not part of the TFCA?
12. What is the anticipated total land area for GMTFCA?
13. What have you achieved so far in GMTFCA?
14. What are the challenges that you are faced with now?
15. May you share any other information that I did not cover about the creation of Mapungubwe TFCA that you feel are important?

Appendix Eight: Guiding questions for qualitative interview on the Botswana component of the transfrontier conservation area.

Semi-structured guiding questions for the private land owners

1. You are a member of NOTUGRE association, how and when did this association formed and what was the reason behind the formation of the association?
2. How big is your farm or game reserve and how is revenue generated?
3. Do you do trophy hunting in your farm?
4. How many employees have been employed in your farm?
5. How does your farm contribute towards the upliftment and empowerment of communities of Botswana?
    a. Contracts awarded to communities (Maintenance of the fence, game drives, number of people employed)
    b. Number of jobs created and the value added to local and national economy
    c. Land managed in partnerships with communities
6. Has there been any increase in the number of people visiting your farm or reserve since you become part of GMTFCAs?
7. What are the current benefits you get from your farm or reserve?
8. What benefits do you anticipate to get from GMTFCAs?
9. Do you allow private tour operators into NOTUGRE? If so how many private tour operators do you have in NOTUGRE?
10. Are there any lodges, guest houses, restaurants and any other infrastructural development that have been constructed in NOTUGRE since the signing of the Memorandum of Understanding?
11. How is biodiversity managed in your farm and NOTUGRE in general?
12. What are the challenges you are faced with in your farm and NOTUGRE in general?
13. How did NOTUGRE become part of Greater Mapungubwe Transfrontier Conservation (GMTFCAs) and was it necessary?
14. How will the establishment of GMTFCAs improve biodiversity of the area?
15. How will the inclusion of NOTUGRE into GMTFCAs address some of the challenges you are faced with in your reserve and in NOTUGRE in general?
16. How will the inclusion of NOTUGRE into GMTFCAs impact upon the day to day running of you farm and NOTUGRE in general? Will you still be allowed to perform all the activities that you currently perform?
17. What is your position regarding domestic animals (Cows, goats, sheep and donkeys) in conservation area?
18. What is your position regarding mining in the Mapungubwe region?
19. What have been achieved so far?
20. May you share any other information that I did not cover about your farm and NOTUGRE which you feel are important?

Semi-structured guiding questions for the Department of Wildlife and National Parks in Botswana

1. What is the mandate of the Department of Wildlife and National Parks regarding the establishment of TFCA in Botswana?
2. What is the process that has been followed to acquire land to be committed for TFCA?

3. Which land has been committed for TFCA on the Botswana side of the TFCA?
4. Why communities within and around NOTUGRE not part of the TFCA?
5. How will the inclusion of NOTUGRE into Greater Mapungubwe TFCAs contribute towards the economy of the region?
6. How did you become part of the GMTFCA since you are not a member of NOTUGRE?
7. How are communities within and around the NOTUGRE compensated for the damage caused by wildlife?
8. How will the establishment of Greater Mapungubwe Transfrontier Conservation contribute towards the upliftment and empowerment of communities of Botswana (particularly those who live within and around the park)?
9. How will the government of Botswana benefit from this venture?
10. What have been achieved so far?
11. How do you deal with land use conflict in NOTUGRE?
12. What are the conservation challenges you are faced with in NOTUGRE?
13. May you share any other information that I did not cover about GMTFCA which you feel are important?

Semi-structured guiding questions for communities in Botswana

1. When did you settle at this area?
2. What makes this area so special to you?
3. What are the main land use activities in this area?
4. What are the problems you experience in this area?
5. What is your livelihood base in this area?
6. Where does your livestock graze?
7. What is your opinion about wildlife and conservation in general?
8. Do you like wildlife?
9. What is the main source of meat in this area?
10. How do you feel about poaching?
11. How do you benefit from conservation in this area?
12. How have you been consulted regarding the establishment of GMTFCA?
13. What benefits do you anticipate to get from TFCA?
14. What are the challenges you are faced with in this area?

Semi-structured guiding questions for farm workers

1. Where do you come from and where do your family stay?
2. When did you start working in this farm?
3. What is your job description?
4. How do you value your Job?
5. How do you feel about conservation and the establishment of TFCA in this area?
6. What is the main source of meat in this area?
7. How do you feel about poaching of animals for meat?
8. What are the challenges you are faced with in this area?

Semi-structured guiding questions for anti poaching unit in NOTUGRE

1. When did you start working in NOTUGRE?
2. What are your daily duties?

3. How often do you patrol the reserve?
4. How do you deal with livestock inside the reserve?
5. What are the challenges you are faced with in this area?
6. Where do you mostly get a lot of snares and what could be the reason behind that?
7. Is poaching done on a commercial or subsistence basis?
8. How do you deal with poachers?

Semi-structured guiding questions for the Department of Veterinary services

1. What are the roles and responsibilities of this Department in creation of Mapungubwe TFCA?
2. What is the purpose of this veterinary fence?
3. What happens to domestic animal that passes through veterinary fence into the red zone?
4. What are the roles of gate keepers?
5. What are the challenges you are faced with?

Appendix Nine: Guiding questions for qualitative interview on the South African component of the transfrontier conservation.

Semi-structured guiding questions for SANParks

1. How big is Mapungubwe National Park and how is revenue generated?
2. How many employees do you have in Mapungubwe National Park?
3. What are the relationship between SANPARKS and the surrounding private game and irrigation farms?
4. What is the process that is being followed to acquire more land from private land owners?
5. Which farms have been formally acquired at the moment which is under the management of SANParks?
6. What happened to farmers and farm workers who used to work for farms that have been integrated into Mapungubwe National Park?
7. Which farms are under contractual agreement and are now managed by SANParks?
8. What are the farms that still need to be acquired and when do you plan to obtain them?
9. Why did you lease some farms to private organization that are now part of Mapungubwe National Park?
10. How are you currently managing Biodiversity in Mapungubwe National Park?
11. How will the inclusion of Mapungubwe into GMTFCA improve biodiversity of the area?
12. Are there any lodges, guest houses, restaurants and any other infrastructural development that have constructed within and around Mapungubwe National Parks since the signing of the Memorandum of Understanding?
13. How are you dealing with the issue of land claims within the park?
14. How are you dealing with land claimants living in Den Staat farm and what are the implications of their stay within a conservation area?
15. What is your position regarding mining in the Mapungubwe region?
16. What is your position regarding livestock within a conservation area?
17. What are the challenges you are faced with at the moment?
18. What has been achieved so far regarding Mapungubwe TFCA?
19. May you share any other information that I did not cover about the creation of Mapungubwe TFCA that you feel are important?

Semi-structured guiding questions for former farm workers

1. When did you start working in the farm?
2. Why did you preferred to work in the farm?
3. How long did you work in the farm and what were your job descriptions?
4. Why did you stop working?
5. How did you feel after losing a job?
6. What happen to you and your family?
7. What happen to the rest of farm workers after losing their jobs?
8. What are you currently doing?

Semi-structured guiding questions for current farm workers

1. Where do you come from and where do your family stay?
2. When did you start working in this farm?
3. What are your job descriptions?

4. How do you value your Job?
5. How do you feel about conservation and the establishment of TFCA in this area?
6. What is the main source of meat in this area?
7. How do you feel about poaching of animals for meat?

Semi-structured guiding questions for private land owners

1. What is the background information about this farm?
2. What are the main land use activities?
3. How many people have been employed in this farm?
4. How big is your farm and what makes this piece of land so special to you?
5. What are your plans for expanding the farm?
6. What are the implications of farming in a conservation area?
7. How do you feel about conservation and the establishment of TFCA in this area?
8. What are the challenges you are faced with at the farm and how do you deal with those challenges?

Semi-structured guiding questions for Non-governmental organisation and consultants

1. What is your background information regarding your organization?
2. How does your organisation contribute towards conservation?
3. How did you become involved in GMTFCA?
4. Why did you become involved in this project?
5. How does this project fit into the mandate of your organisation?
6. How do you feel about the idea of TFCA in the Mapungubwe area and in general?
7. What contribution did you make in this project?
8. What benefits do you anticipate to get from the project?
9. What are the challenges you are faced with in this project?

Semi-structured guiding questions for land claimants

1. Which farms did you claim and why did you claim them?
2. How did the farms taken from you?
3. What is the status of your land claim now?
4. When did you return into Den Staat farm?
5. Why did you return to Den Staat farm?
6. What are the main land use activities in Den Staat farm?
7. What are your feeling regarding conservation and the establishment of GMTFCA?
8. What are the challenges of living in a conservation area?
9. What are your future plans regarding this piece of land you have acquired?
10. What is your future plans regarding the land that has been claimed?
11. What are the challenges you are faced with?

Semi-structured guiding questions for Department of Rural Development and Land Affairs

1. How many farms have been claimed in the Mapungubwe area?
2. Who are the land claimants in the Mapungubwe area?
3. How was the land claimants removed from the area?
4. What is the status of the land claim in the Mapungubwe area?
5. How did Den Staat farm in the Mapungubwe area acquired from the owner?

6. Why did you allow the land claimants to move back into a farm that is within a conservation area?
7. When will the Department formally hand over the land back to the land claimants?
8. What are the challenges you currently faced with regarding land claim in the Mapungubwe area?
9. What are the challenges of resolving all land claims in the province?

Semi-structured guiding questions for Department of Environmental Affairs and Tourism

1. What is the mandate of the Department of Environmental Affairs regarding the establishment of TFCA in South Africa?
2. What is the process that has been followed to acquire land to be committed for TFCA on the South Africa side?
3. Which land has been committed for TFCA on the South African side of the TFCA?
4. What are the future plans of adding more land into the TFCA?
5. How will the inclusion of Mapungubwe National Park into Greater Mapungubwe TFCAs contribute towards the economy of the region?
6. How will the establishment of Greater Mapungubwe Transfrontier Conservation contribute towards the upliftment and empowerment of communities of South Africa?
7. How will the government of South Africa benefit from this venture?
8. What have been achieved so far regarding the establishment of GMTFCA?
9. What are the challenges you are faced regarding the establishment of GMTFCA?
10. May you share any other information that I did not cover about GMTFCA which you feel are important?

Appendix Ten: Guiding questions for qualitative interview on the Zimbabwe component of the transfrontier conservation areas.

Semi-structured guiding questions for Beit-Bridge Rural District Council

1. What is your role as the district council in conservation and TFCA establishment?
2. Why did you start CAMPFIRE programme in Beit-Bridge?
3. What have been the achievements of CAMPFIRE in Beit-Bridge?
4. How do you generate income from CAMPFIRE?
5. How does the money generated from CAMPFIRE contribute to rural development?
6. Why are you involved with TFCA?
7. Which areas have been committed for TFCA and why?
8. Why did you include communal areas to be part of the TFCA?
9. What benefits do you anticipate to get and how will communities benefit from TFCA?
10. How do you weigh the economic benefits from the TFCA against economic incentives from safari hunting?
11. How did you consult the communities and war veterans regarding TFCA and how are they involved?
12. How are the local communities involved in the planning and implementation of this project?
13. How does communities and war veteran's interest represented in the TTC meetings?
14. How are you dealing with communities who are directly affected by the establishment of TFCA?
15. How does the district council support the TFCA project?
16. What has been archieved so far?
17. What is your position regarding mining in the Mapungubwe region?
18. What is your opinion regarding livestock grazing in conservation areas?
19. What are the conservation challenges you are faced with at the moment?

Semi-structured guiding questions for Department of Parks and Wildlife Management in Zimbabwe

1. What is the role of Parks and Wildlife Management in this country?
2. Which areas have been committed for TFCA in Zimbabwe and why?
3. How big is Tuli Circle Safari Area and how many people are currently employed?
4. What benefits do you anticipate to get from TFCA?
5. How is revenues generated in Tuli Circle Safari Area?
6. How do communities and district council benefit from Tuli Safari hunting?
7. What are your relationships with the neighboring communities?
8. How is biodiversity managed in the Tuli Circle Safari Area?
9. What is the future biodiversity management plan?
10. How do you weigh the economic benefits from the TFCA against economic incentives from safari hunting?
11. What are the long term objectives of Tuli Circle Safari Area?
12. What has been achieved so far?
13. What is your position regarding mining in the Mapungubwe region?
14. What is your position regarding livestock in conservation areas?
15. What are the challenges you are faced with at the moment?

Semi-structured guiding questions for communities in Zimbabwe

1. When did you settle at this area?
2. What makes this area so special to you?
3. What are the main land use activities in this area?
4. What are the problems you experience in this area?
5. What is your livelihood base in this area?
6. What is the significance of wildlife in this area?
7. What is the main source of meat in this area?
8. How do you feel about poaching?
9. How do you benefit from CAMPFIRE programme?
10. How have you been consulted regarding the establishment of TFCA?
11. What benefits do you anticipate to get from TFCA?
12. What are the challenges you are faced with in this area?

Semi-structured guiding questions for private land owners in Zimbabwe

1. What is the background information about this farm?
2. How big is the farm?
3. What are the current land use activities in this farm?
4. How is revenue generated from the area?
5. How many people are currently employed in this farm?
6. What are the tourism facilities available in this farm?
7. What makes this farm so special to you?
8. What is your relationship with the war veterans?
9. How are you involved in TFCA?
10. How did you become part of the TFCA?
11. What is your opinion regarding TFCA?
12. How do you weigh the economic benefits from the TFCA against other economic incentives (safari hunting and irrigation farming)?
13. What are the challenges you are faced with at the moment?

Semi-structured guiding questions for War veterans in Zimbabwe

1. When and how did you acquire this piece of land?
2. How big is this farm?
3. How is revenues generated in this farm?
4. What are the benefits you get from this area?
5. How is your relationship with the former owner of the farm?
6. What are your daily activities in this area?
7. What is your position regarding TFCA?
8. How do you weigh the economic benefits from the TFCA against economic incentives from safari hunting?

Semi-structured guiding questions for Department of Agriculture

1. How do communities acquire plots in irrigation schemes?
2. How many irrigation schemes are available in Beit-Bridge and how big are they?
3. What is the total number of people who currently have plots in irrigation schemes?
4. How do the rest of the people who do not have plots get their daily food?

5. Where do the irrigation schemes get water from?
6. Why are all irrigation schemes not fully operational?
7. What is the total plot per family?
8. What are the main crops that are planted in irrigation schemes?
9. What is the significance of irrigation scheme in Beit-Bridge?
10. How do you help communities in irrigation schemes?
11. What are the challenges you are faced with in irrigation schemes at the moment?