

Kavango-Zambezi Transfrontier Conservation Area

Botswana Component

Integrated Development Plan



Facilitated by:

"Plans are of little importance, but planning is essential."

Winston Churchill

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Draft v0.1 2011

Compiled for

The Government of Botswana

Facilitated by

Peace Parks Foundation

Supported by

Kreditanstalt für Wiederaufbau

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Citation

Government of Botswana. 2011. *Integrated Development Plan: Botswana Component of the KAZA TFCA*, viii + 145pp

DOCUMENT VERSION CONTROL

Date	Version	Prepared	Revised	Reviewed	Approved
07/08/2011	0.1 (First Draft)	PPF Programme Manager PPF Information Manager MEWT IDP Project Manager			

APPROVALS

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TABLE OF CONTENTS

LIST OF MAPS

LIST OF FIGURES

LIST OF TABLES

ABBREVIATIONS/ACRONYMS

CBNRM	Community Based Natural Resource Management
CEC	Current Environmental Character
CHA	Controlled Hunting Area
CITES	Convention on International Trade in Endangered Species
CPPP	Community Public Private Partnership
DGIS	Netherlands Directorate-General for International Cooperation
DLUPC	District Land Use Planning Committee
DWNP	Department of Wildlife and National Parks
FAO	Food and Agriculture Organization
FEC	Future Environmental Character
FPSG	Fixed Period State Grant
FR	Forest Reserve
HATAB	Hospitality and Tourism Association of Botswana
IBA	Important Birding Area
IDP	Integrated Development Plan
IUCN	International Union for Conservation of Nature
KAZA	Kavango-Zambezi

KfW	Kreditanstalt für Wiederaufbau
MCM	Million Cubic Meters
MDG	Millennium Development Goals
MEWT	Ministery of Environment, Wildlife and Tourism
MFMP	Makgadikgadi Framework Management Plan
MOU	Memorandum of Understanding
NDP10	National Development Plan 10
NEPAD	New Partnership for Africa's Development
NGO	Non-governmental Organisation
NP	National Park
ODMP	Okavango Delta Management Plan
OKACOM	Okavango River Basin Water Commission
PE	Port of Entry
SADC	Southern African Development Community
SAREP	Southern African Regional Environmental Program
TC	Technical Committee
TFCA	Transfrontier Conservation Area
TGLP	Tribal Grazing Land Policy
WG	Working Group
WHS	World Heritage Site
WMA	Wildlife Management Area

1 INTRODUCTION

1.1 Purpose of Document

The Botswana Component of the KAZA TFCA hosts numerous natural and cultural resources that are of critical importance to the regional tourism and economic growth, as well as the creation of sustainable benefits to region and its people. These include the Okavango Delta Ramsar Site, the largest in the world; the Makgadikgadi Pans, the largest in the world; the Tsodilo Hills World Heritage Site and the Chobe National Park.

This document constitutes the Integrated Development Plan (IDP) for the Botswana Component of the Kavango Zambezi (KAZA) Transfrontier Conservation Area (TFCA) (refer Section 1.3).

This IDP together with those of the other partner countries (Angola, Namibia, Zambia and Zimbabwe) will ultimately be harmonised and compiled into a regional plan for the entire TFCA which will establish a regional platform for the mobilisation and allocation of resources for the area and soliciting support for country plans, specifically aimed at the development of people with particular focus on local communities, conservation of natural and cultural resources and promotion of transfrontier tourism as a means of regional socio-economic development.

The main purpose of the IDP is to demonstrate how the Government of Botswana intends managing and developing the Botswana Component of the KAZA TFCA towards meeting its obligations in respect of the KAZA TFCA vision, mission and objectives (refer Section 4.1.2).

Despite the international focus of the IDP, it is based on the national framework provided by *Vision 2016* and the *National Development Plan 10* (NDP10) of the Government of Botswana.

Broadly the IDP will address:

- The protection of the functioning of key ecological processes underlying the Okavango Delta, the Chobe and Makgadikgadi Pan systems
- The promotion of coordinated and integrated environmentally sound development and management as well as harmonisation of legislation and policies
- Identification of opportunities for benefit flow to the communities that host these resources, that currently experience difficulties in accessing the ecotourism and conservation based economy of the resource
- Clarification of institutional relationships that will significantly contribute to participation and beneficiation of relevant stakeholders.

1.2 Overview of Document

The content of the IDP is derived from information contained in existing management, development and land use plans and reports and the needs and expectations of stakeholders as identified through a stakeholder involvement process (refer Section 1.4.3).

The document is organised around four sections (refer Figure 1), each portion addressing different aspects, namely:

- An *Introduction* that provides background to the IDP, the location of the Botswana Component, its significance and the process to prepare the plan
- *The Place* that provides background information necessary for the reader to understand the planning context and covers the natural, cultural, land use, social and governance environments as well as the sensitivities of these environments
- *The People* that provides insight into the specific institutional arrangements regarding the various sector groups – resource managers; business; benefit flow managers; and government – as well as the relationships between these

- *The Plan* that provides details regarding the planning and operational framework including the strategic guidelines for implementation as well as a Concept Development Plan reflecting the Access, Use, Development, and Infrastructure requirements for both Botswana Component of the KAZA TFCA.

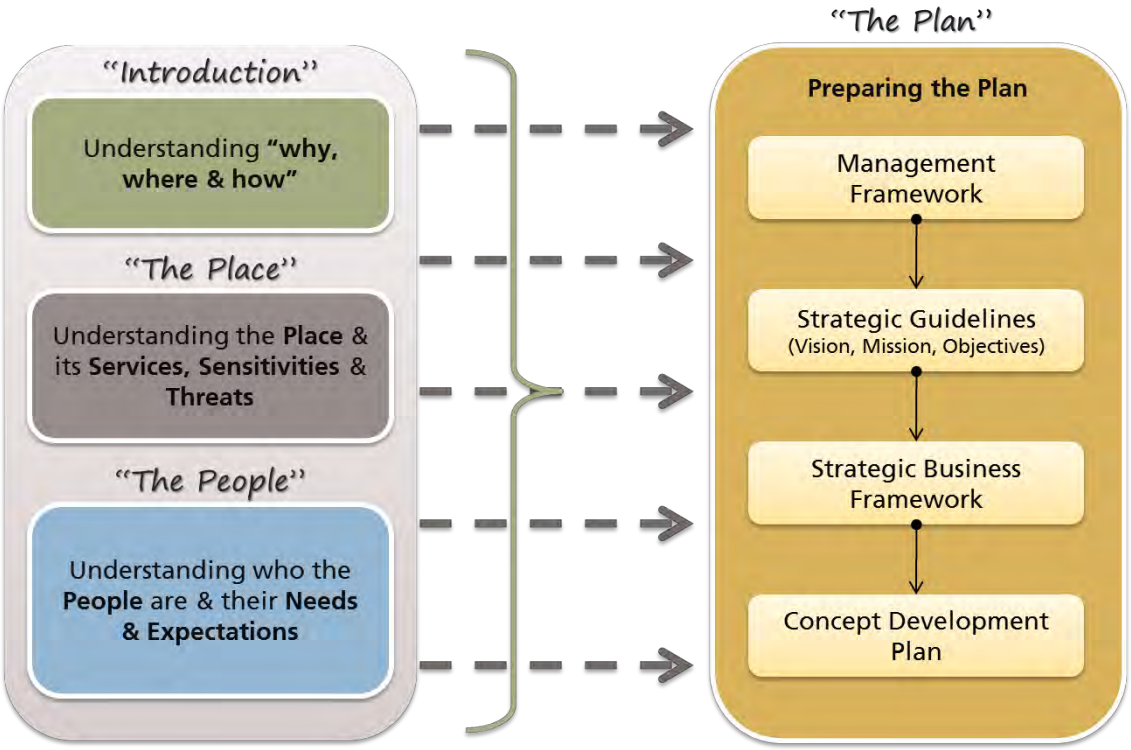


Figure 1: Content of IDP

1.3 Background – the KAZA TFCA

TFCAs are a relatively new conservation paradigm, working to promote biodiversity conservation, socio-economic development as well as peaceful relations and regional cooperation across international boundaries, with several advantages, including, *inter alia*:

Ecological advantages – where a transfrontier or regional approach has significant ecological benefits, such as:

- Consolidating the integrity of natural systems, particularly those that have been disrupted by the arbitrary drawing of international boundaries
- Improving the protection and management of shared natural resources such as watersheds and animal species requiring a large habitat range such as elephants and large carnivores
- Extending the area available to plant and animal species, thereby reducing the risk of biodiversity loss
- Harmonizing land use policies and natural resources management strategies, thereby promoting sustainable development across international boundaries.

Socio-economic advantages – where a regional approach to biodiversity conservation and tourism development will have the following positive socio-economic effects:

- Economic integration brought about by cross-border trade, the development of *"ecotourism hubs"* that disperse tourists over a wider area, and packaged destinations that allow tourists to visit more than one country in one trip
- Direct income to households through employment in the various tourism operations with the multiplier effect created by the extended family system characteristic of most rural communities in the region
- Economic empowerment of rural communities through the establishment of legal entities or trusts, training on enterprise development and creation of an environment for affirmative action for rural communities

- Reduction in the operational costs of law enforcement, marketing, research and monitoring through joint activities and programming.

Organisational advantages – where TFCAs play a major role in:

- Building good relations between partner countries as they strive to cooperate on a range of mutually beneficial activities
- Increased collaboration and cooperation across the borders with equitable geographical distribution of economic activities will limit economic migration and contribute to promoting peace and stability in the region
- Providing economic and social benefits from development activities which in turn are allowed to trickle down to community levels
- Creating stronger collaborative management between agencies responsible for natural resource and wildlife management within the KAZA TFCA, both nationally and regionally.

The governments of the Republics of Angola, Botswana, Namibia, Zambia and Zimbabwe have agreed to work towards the establishment and development of a major TFCA and premier tourism destination that straddles their international boundaries (refer Maps 1 and 2). The KAZA TFCA is situated in the Okavango and Zambezi river basins where the borders of Angola, Botswana, Namibia, Zambia and Zimbabwe converge. It spans an area of approximately 287,132km², almost the size of Italy (300,979km²), and includes no fewer than thirty six (36) formally proclaimed National Parks, game reserves, forest reserves, game/wildlife management areas as well as intervening conservation and tourism concessions set aside for consumptive and non-consumptive uses of natural resources. Most notably the area includes the Bwabwata National Park complex in the Caprivi Strip, Chobe National Park, the Okavango Delta (the largest Ramsar Site in the World) and the Victoria Falls (World Heritage Site and one of the Seven Natural Wonders of the World).

On the 7th of December 2006 the Minister of Hotels and Tourism of Angola, Mr Eduardo Jonatão Chingunji; the Minister of Environment, Wildlife and Tourism of Botswana, Mr Kitso Mokaila; the Minister of Environment and Tourism of Namibia, Mr Willem Konjore; the Minister of Tourism, Environment and Natural Resources of Zambia, Mr Kabinga J. Pande, and the Minister of Environment and Tourism of Zimbabwe, Mr Francis Nhema signed the Memorandum of Understanding (MOU) for the establishment of the KAZA TFCA during a ceremony in Victoria Falls. The signing of the MOU demonstrated the political support of the five partner countries for the TFCA and confirms their interest and willingness to collectively pursue its establishment. The partner countries recognise that by working together they can achieve economic, social and environmental benefits they would not be able to achieve on their own.

The Southern African Development Community (SADC), through the Integrated Committee of Ministers, specifically endorsed the KAZA TFCA as a SADC project in June 2006. The recognition of the KAZA TFCA as a SADC project means it is a programme encapsulating the SADC vision of regional integration and the SADC objectives of achieving sustainable utilisation of natural resources and effective protection of the natural environment. The KAZA TFCA programme compliments the SADC Regional Indicative Strategic Development Plan (RISDP) and because of its multi-faceted nature, the TFCA is one of the most pragmatic approaches for attaining the RISDP goals with a potential to alleviate poverty in rural areas and contribute to achieving the Millennium Development Goals (MDG). Additionally, there are a number of ongoing regional development initiatives focussed on river basin management, more specifically those implemented by the Okavango and Zambezi River Basin Commissions. The KAZA TFCA activities will be coordinated with these initiatives to attain greater synergy and impact.

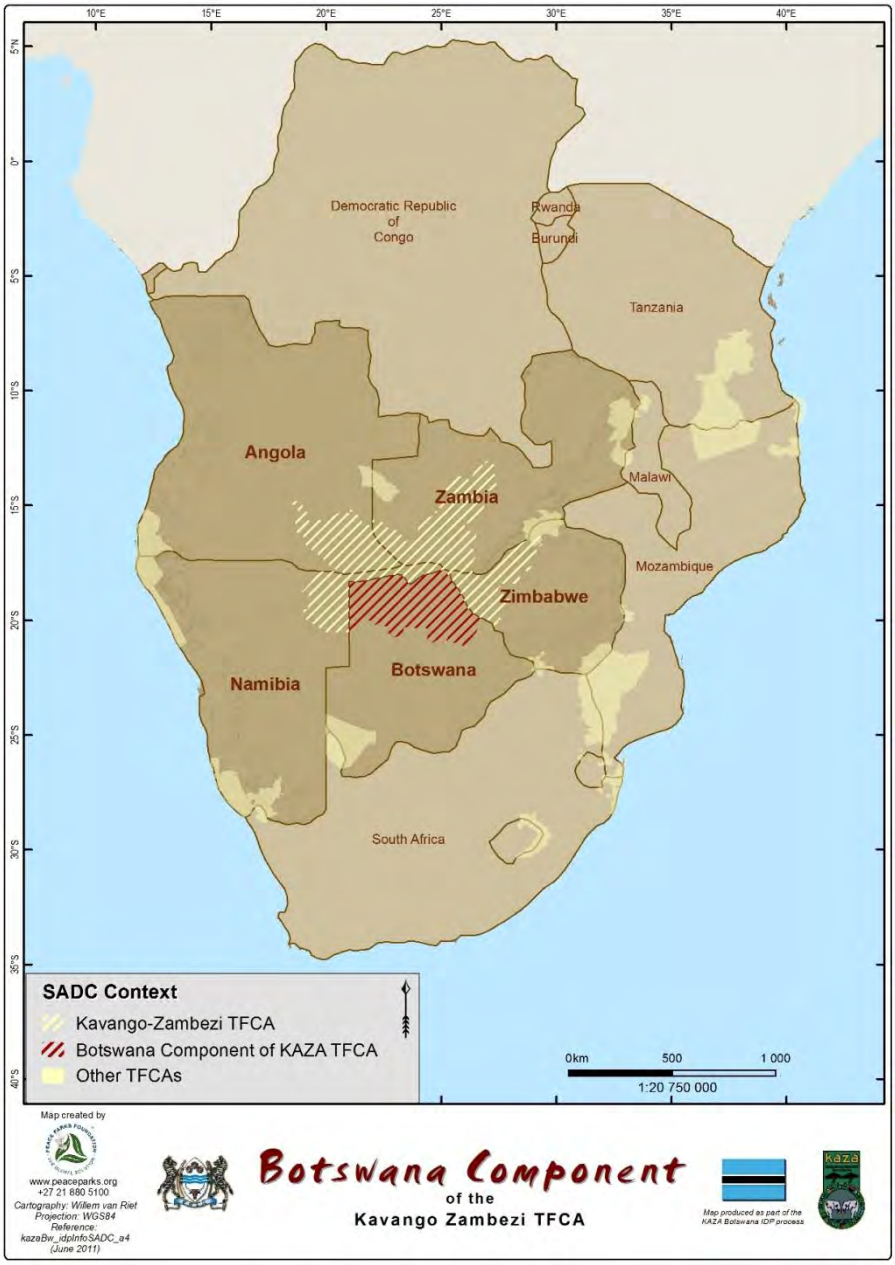
The KAZA TFCA partner countries are all SADC member states and signatories to various SADC protocols, including the Protocol on Wildlife Conservation and Law Enforcement, which was signed by the Heads of State and Government on 18 August 1999. Article 4(f) of the protocol commits members to "Promote the conservation of shared wildlife resources through the establishment of Transfrontier conservation areas." An overview of other SADC protocols of relevance for TFCAs can be found in the pre-feasibility study (2006). The TFCA concept was the central theme at the World Parks Congress of 2003, which is a clear indication of the global acceptance of the significance of TFCAs in modern conservation thinking. One of the major recent successes in TFCA development is embedded in the final resolution of the 2002 World Summit on Sustainable Development Project Implementation Plan, which calls for "support of Africa's efforts to attain sustainable tourism that contributes

to social, economic, and infrastructure development through …. (b) establishing and supporting national and cross-border conservation areas…".

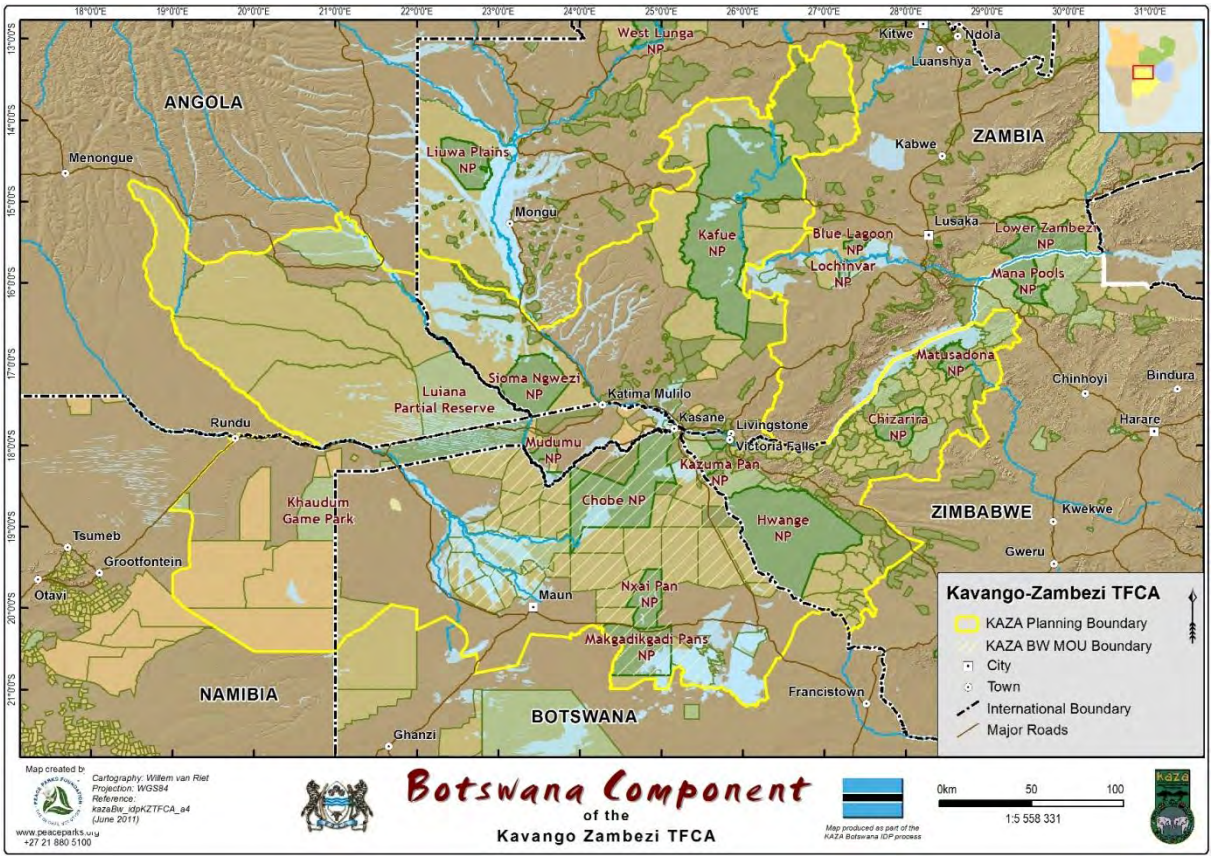
The establishment of the KAZA TFCA will also address some of the New Partnership for Africa's Development (NEPAD) goals, which include recommendations on seeking partnerships across countries to boost conservation and tourism and create jobs. It will also contribute directly to achieving some of the MDGs through creation of cross-border partnerships, by ensuring environmental sustainability and by helping to improve livelihoods and living conditions in the area. In particular the KAZA TFCA, as envisaged, will address MDGs 1, 7 and 8. In addition to the KAZA TFCA MOU and the SADC environmental protocols, a number of international environmental treaties, conventions, protocols and agreements which apply to the KAZA region have been signed and ratified by the five KAZA partner countries. An overview of these can also be found in the pre-feasibility study. Under these agreements the partner countries are, among other things, committed to conserve biodiversity and work towards sustainable development and cooperation across borders. Collectively, these conventions, treaties and protocols advocate for collaboration in the sustainable utilisation of shared natural resources, and the active participation of local communities in the management and equitable sharing of benefits derived from natural resource.

The biological resources of the KAZA TFCA incorporate the largest contiguous elephant population (approximately 250,000) on the African continent. The area is also endowed with an abundance and diversity of wildlife species that are of considerable economic and ecological value. The plant life is equally phenomenal with at least 3,000 species, some 100 of which are endemic to the sub-region, as well as more than 600 species of birds that are characteristic of the southern African savannahs, woodlands and wetlands. The areas included in the KAZA TFCA, in particular the wetlands, are inhabited by sparse human populations who keep herds of domestic stock. The livelihoods of the rural communities revolve around pastoralism, hunting, fishing, harvesting of reeds and sedges, growing of crops (often preceded by burning of the grassland) and employment as skilled and unskilled labour, notably in different sectors of a vibrant tourism industry. It is unquestionable that any programme to promote the conservation of biodiversity must on the other hand sustain and have a positive impact on the standard of living of these rural communities.

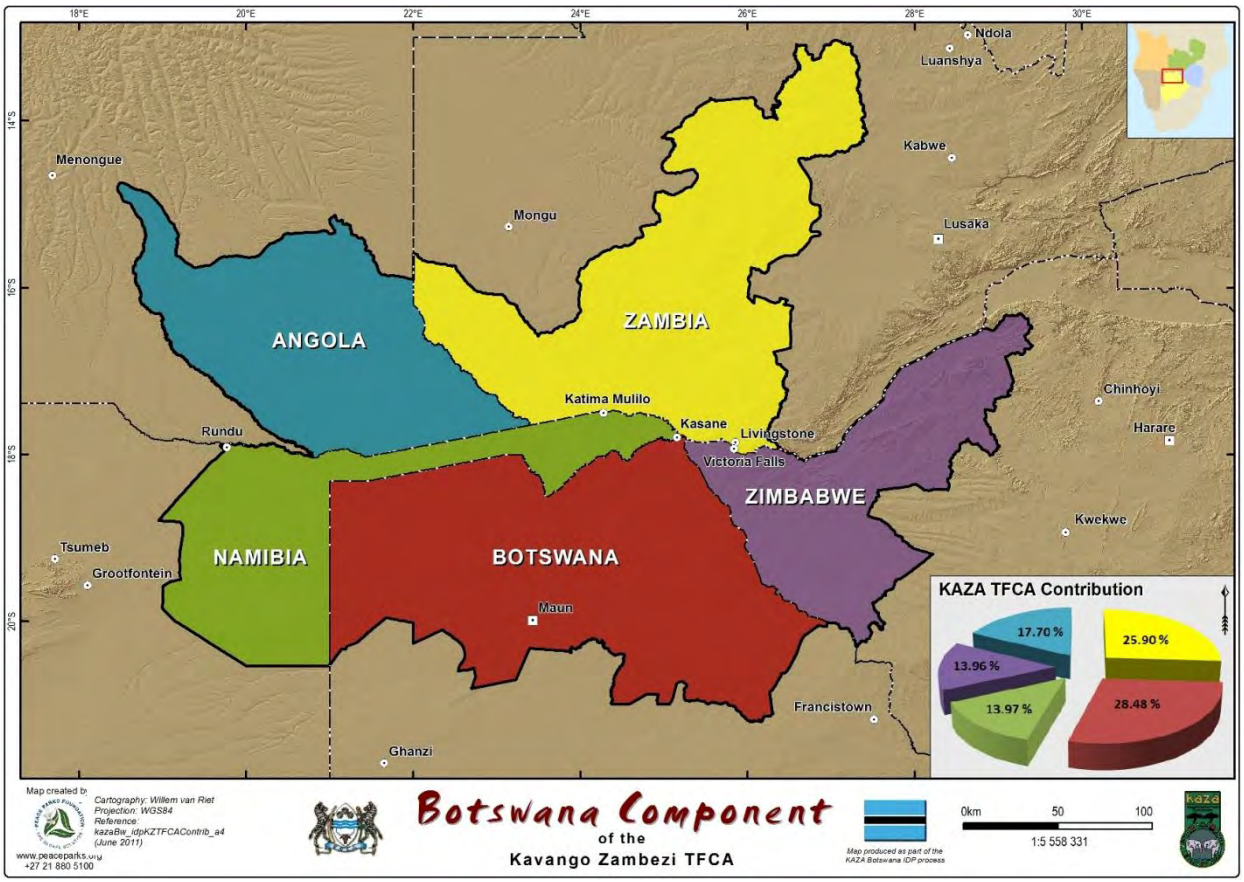
The current tourism infrastructure, comprising hotels, lodges, safari camps, roads, border posts, airports/strips, and the untapped potential to develop more tourism facilities, offer a real window of opportunity for transforming the KAZA TFCA into a world class and premier tourist destination in Africa. It is on the basis of the potential presented by the vast wildlife, tourism and cultural resources in the region that the five partner countries of Angolan, Botswana, Namibia, Zambia and Angolan believe they can derive equitable returns and socio-economic benefits provided they harmonise their land use policies and practices to promote conservation and tourism and use their shared natural resources prudently.



Map 1: SADC Context



Map 2: The KAZA TFCA



Map 3: KAZA TFCA Country Contributions

1.4 Botswana Component of the KAZA TFCA

1.4.1 Location and Delimitation

Located in the most northerly portion of Botswana, the Botswana Component IDP study area comprises the entire Chobe District (14.4% of the total area), the northern parts of Central District (24.4%) and most of Ngamiland - 61.2% of the study area.

As defined through the stakeholder consultation process, the study area (refer Map 2) for the Botswana Component extends beyond the original boundary delineated for the country to include communal areas to the west and south of the Okavango Delta as well as to the east of the Pans National Parks to include the entire Makgadikgadi Pans system including Sua Pan up to the boundary of Hwange National Park in Zimbabwe since these areas form integral part of the ecosystem in respect of both wildlife management and natural resource utilisation. This area now covers a region in excess of 145,000km^2 (i.e. 28% of the total area of the KAZA TFCA and nearly double the original area of approximately 78,200km^2).

1.4.2 Significance

The Botswana Component of the KAZA TFCA hosts significant natural resources such as the Okavango Delta, the Makgadikgadi Pans, and the Chobe National Park, as well as internationally recognised cultural resources such the Tsodilo Hills complex. These resources form the foundation of the regional economy through aspects such as tourism and hunting, as well as livestock production.

The significance of the area has been recognised through processes such as the Ramsar Convention and the World Heritage Convention. The success of Botswana regarding conservation, tourism and community involvement has become a catalyst in regional conservation initiatives and has led to changes in the way communities, investors and operators view Africa appropriate conservation programmes.

Many of the successes are based on the value that has been placed on the role that communities play in conservation, as well as the recognition of the rights of communities to manage their resources. This recognition and cognisance is essential in the effort to conserve natural and cultural resources.

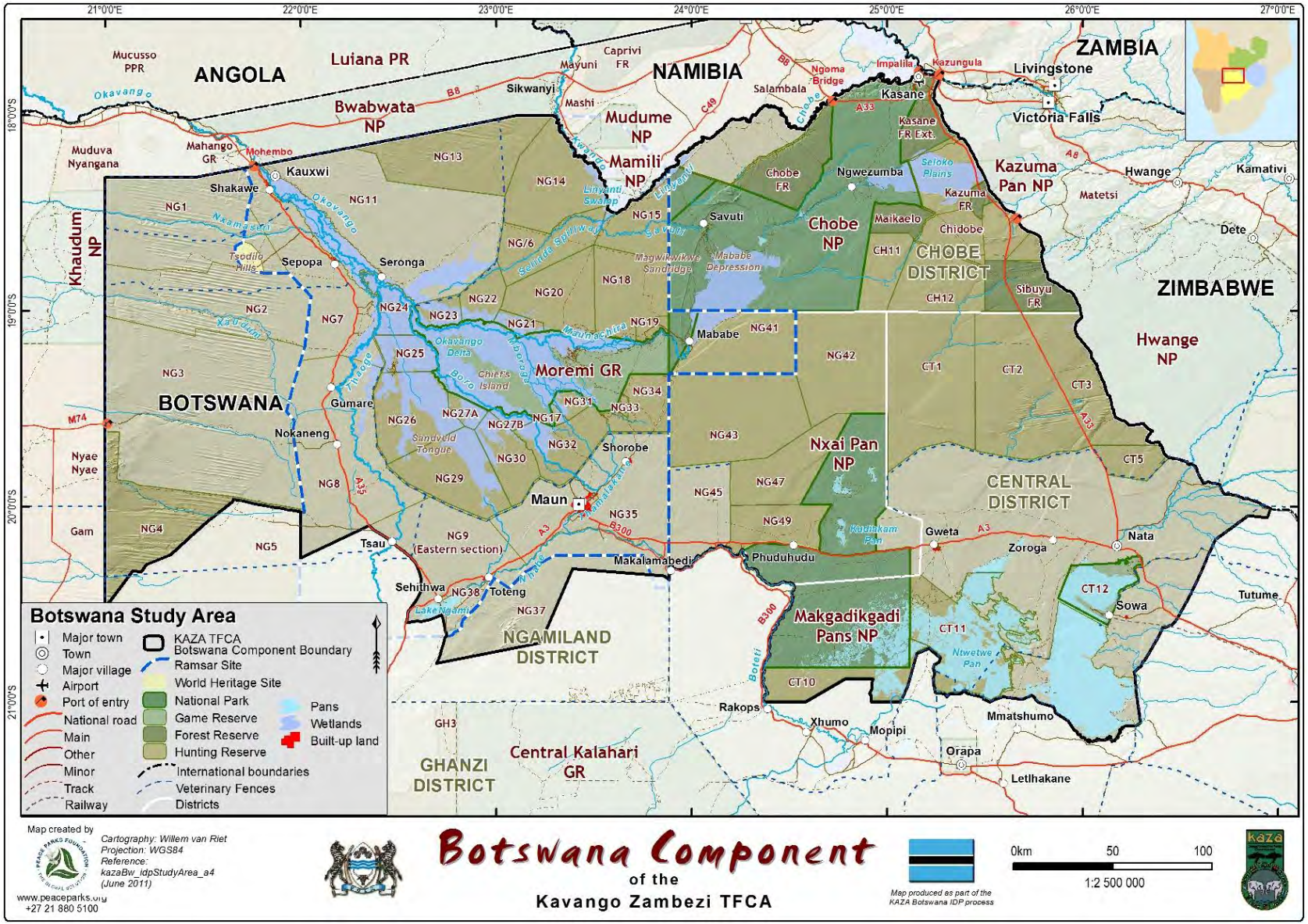
Additionally, the way in which Botswana has unlocked the inherent economic potential of remote and isolated natural resources through innovative approaches, is also significant. Largely dictated by natural inaccessibility due to flooding, the approach of "touching the earth lightly" and limiting infrastructural development, coupled with the use of fly-in options rather than road linkages, that has been used by the Government of Botswana as the approach to regional development, has ensured that the resources have remained largely intact. This approach is significant since it enables the unlocking of economic potential without relying on major infrastructural investments and their associated impacts.

Another significant aspect is the importance that the Government of Botswana places on the consultative nature of resource management, responding to the needs and expectations of communities within the mandate and parameters of public administration and good governance.

The emphasis that the Government of Botswana places on partnerships to unlock the economic potential of wildlife areas, albeit communal or state owned, is an innovative and bold recognition of the role that the private sector brings to the tourism value chain, the role that the community plays as resource custodian, as well as the oversight role that the public sector plays in sustainable development.

1.4.3 IDP Planning Framework

The IDP for the Botswana Component has been prepared based on a stakeholder engagement process and perusal of existing management plans and frameworks (refer Figure 2, Figure 3 and Reading List). This process is set out in further detail in the Botswana Component Integrated Development Plan Consultation and Review Report, 2011.



Map 4: Botswana Component of the KAZA TFCA

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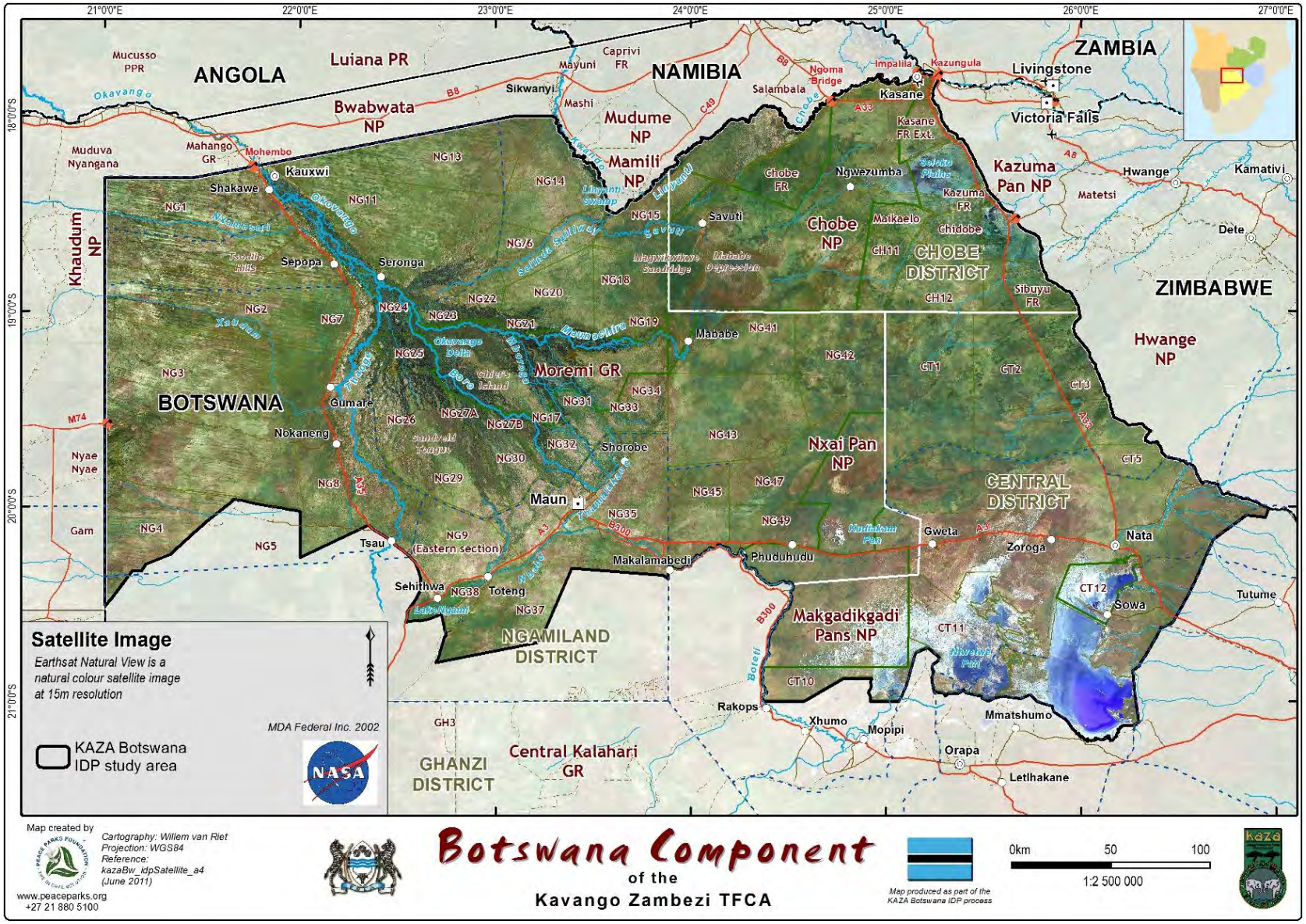


Map 5: Satellite Image of Botswana Component

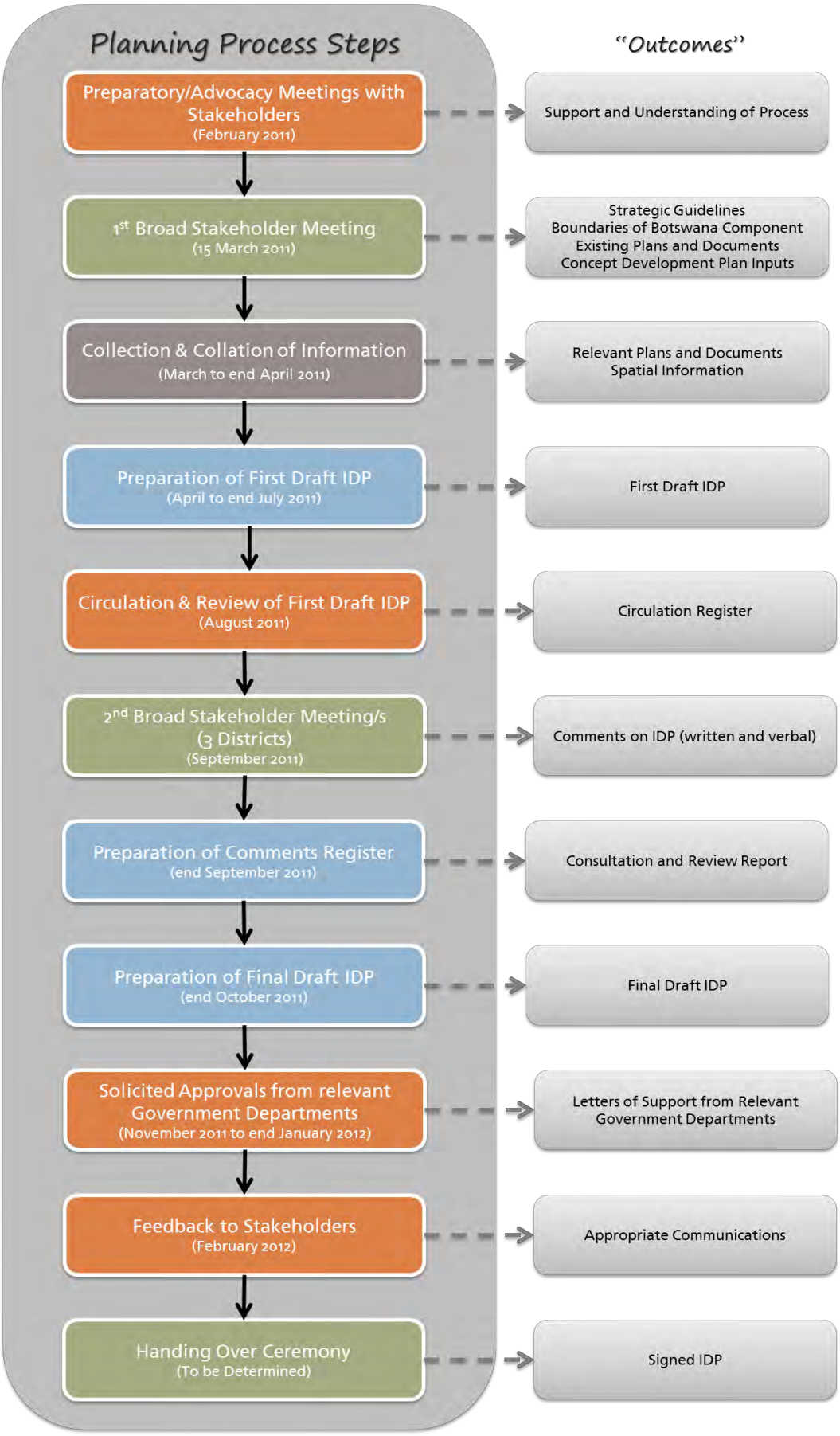


Figure 2: KAZA Botswana IDP Planning Framework

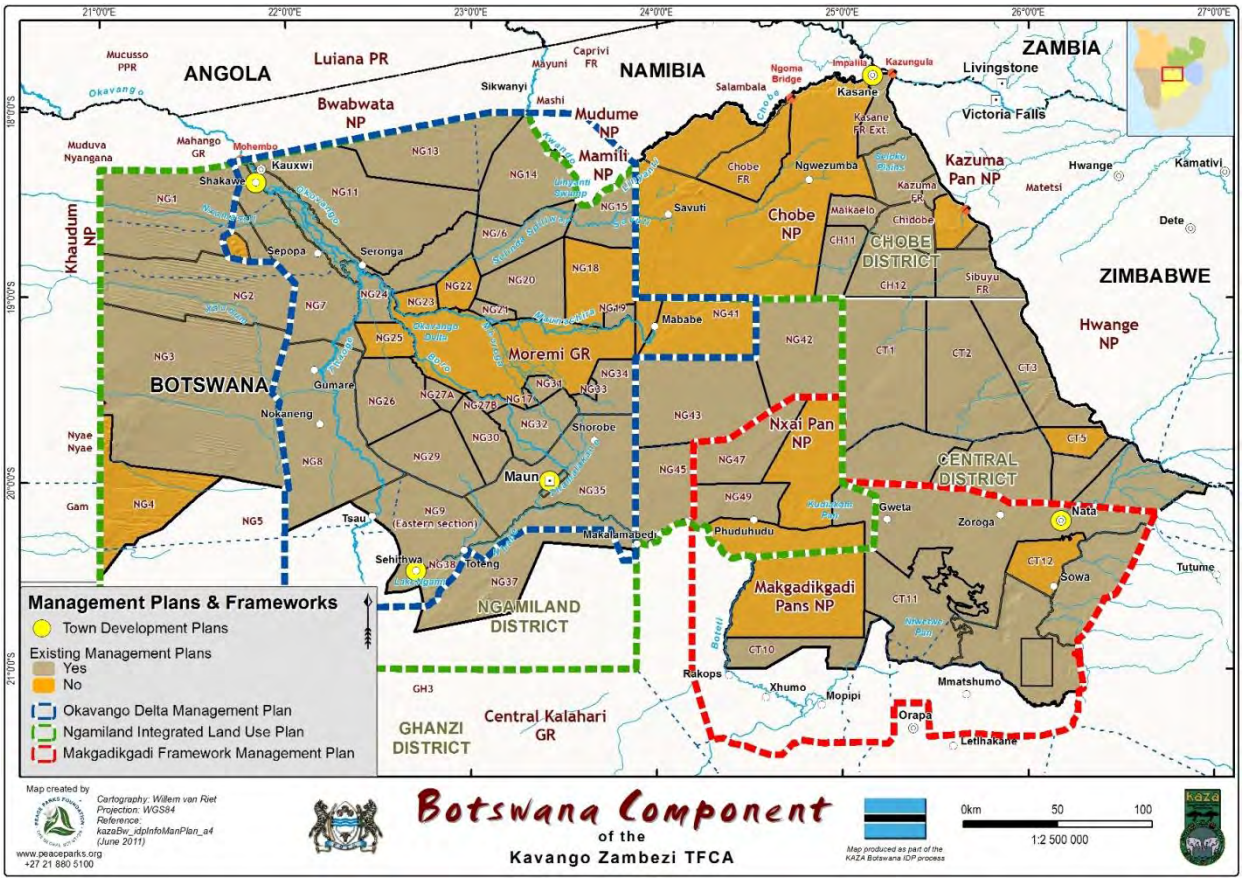


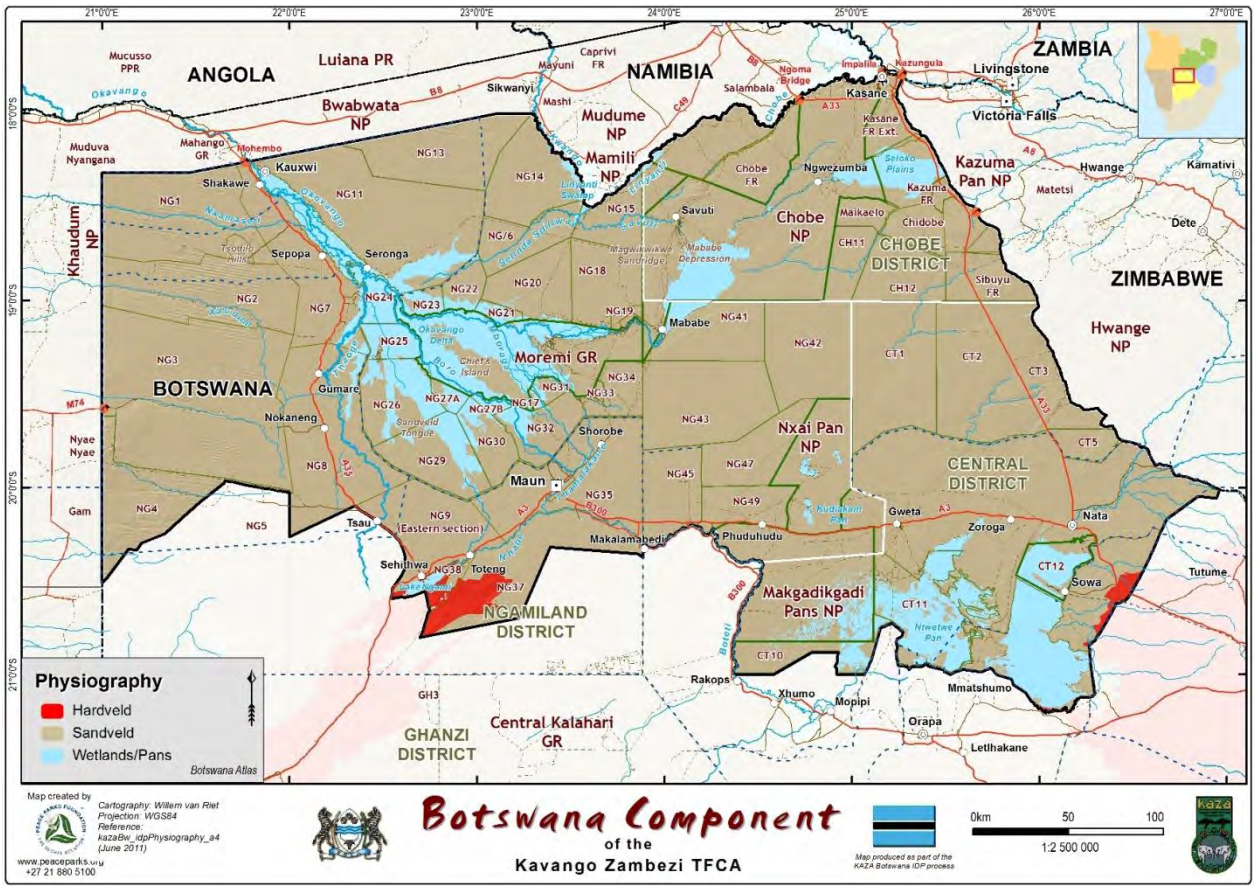
Figure 3: Management Plans and Frameworks

2 THE PLACE

2.1 Natural Features

The study area regarding the Botswana Component of the KAZA TFCA can be divided into three main physiographic regions (refer Map 6):

- The **Wetlands** of the region including the Okavango Delta, Savuti March, Seloko Plains and the Makgadikgadi Pans, which comprise approximately 12% of the area
- The **Hardveld**, where the Basement Complex outcrops in the south-west and south-east (approximately 1%)
- The **Sandveld**, which consists of thick Kalahari Sands and ancient fossil valleys, covering the remaining 87% of the study area.



Map 6: Physiographic Regions

In the following sections this broad landscape will be discussed in detail regarding the following elements:

- **Geology** - as it determines the topography and soils within landscapes
- **Elevation and Slope** – since it influences geomorphological processes such as erosion and drainage
- **Soils** –these determine the vegetative capacity of landscapes
- **Climate** – these factors determine comfort zones and habitable areas
- **Hydrology** – as it determines the availability of water within landscapes
- **Vegetation** – this determines the carrying capacity of a specific landscape
- **Wildlife Movement** – since this ensures sustainable healthy wildlife populations and habitat integrity.

2.1.1 Geology

Botswana lies within the Kalahari Basin, an internal drainage system formed when the breakup of the super-continent, Gondwanaland, occurred over 100 million years ago. After the break-up of the Gondwana Super Continent, roughly 85 million years ago, the Cubango, Quito, Kwando, Upper Zambezi and Kafue rivers all flowed into the area that is today the Okavango Delta and onwards into the Shashe and Limpopo Rivers and out to sea at Nxai Nxai (refer Figure 4).

Roughly 60 million years ago, fault lines forming part of the Great Rift Valley, stretching all the way from Ethiopia, lifted up the area South East of the Delta. After the Lower Zambezi captured the Kafue and Upper Zambezi and eventually the Kwando as well, the Cubango and Cuito Rivers reached a cul-de-sac in the Delta. Wind-blown sands and siltation from the major rivers were deposited into a vast inland sea of approximately 60,000km² (Lake Makgadikgadik), where today it manifests in the vast Kalahari Sands that is the signature landscape of the Botswana Component (refer Map 7 and Map 8).

The rock groups underlying most of the Sandveld appear to belong to the Karoo Super Group formed 135-290 million years ago, elsewhere Precambrian rock formations (Damara Super Group) predominate.

The surface geology of the eastern Hardveld, exposed in its hill ranges, largely consists of igneous and metamorphic Basement Complex rocks (more than 2500 million years old). This complex is known to extend into younger rock formations (1200- 2500 million years old) in the southern Sandveld; while rocks of the Ghanzi and Damara Groups (570-1200 million years old) extend across the western side into neighbouring northern Namibia.

2.1.2 Elevation and Slope

The south-western branch of the East Africa Rift System runs through the centre of the study area. On both sides of this, in the north-west and –east are the higher lying areas.

The spread of the Okavango River into a wetland is the result of entering the Okavango Rift Zone. Lake Ngami, the Makgadikgadi Pans, the Mababe Depression and Lake Liambezi are situated in the depressions. Also clearly visible are the ancient dunes fields in the north-west.

Because surface is predominately an eroded one, the study area is mostly flat or gently undulating, with an average elevation of only a few metres, not exceeding five degrees in slope. The highest points are associated with the rocky outcrops in the east and in the far west, where the Basement Complex reaches the surface.

2.1.3 Soils

The majority of the study area is characterised by deep loose sandy soils (**Arenosols**) but for the Delta which consists of perennial swamp with Fluvisols or alluvial deposits (coarse loamy soils) in the Panhandle (refer Map 11 and Map 12).

Other main features include:

- In the south-eastern corner and southern and south-western parts **Calcisols** which are desert soils or fine loamy soils with high contents of lime
- Bare rock associated with the rock outcrops on the eastern side of the study area
- Salt marches associated with the Pans in the South (**Solonshak** soil which is a pale or grey soil type found in arid to sub-humid, poorly drained conditions with a cracking, fine clayey texture
- The Mababe Depression comprising **Chernozems** which is a black-coloured soil containing a high percentage of humus with a fine loamy to clayey texture
- In the north-eastern side (the Seloko Plains-Kazuma Forest Reserve area) **Vertisols** which are dark expansive fine clayey soils.

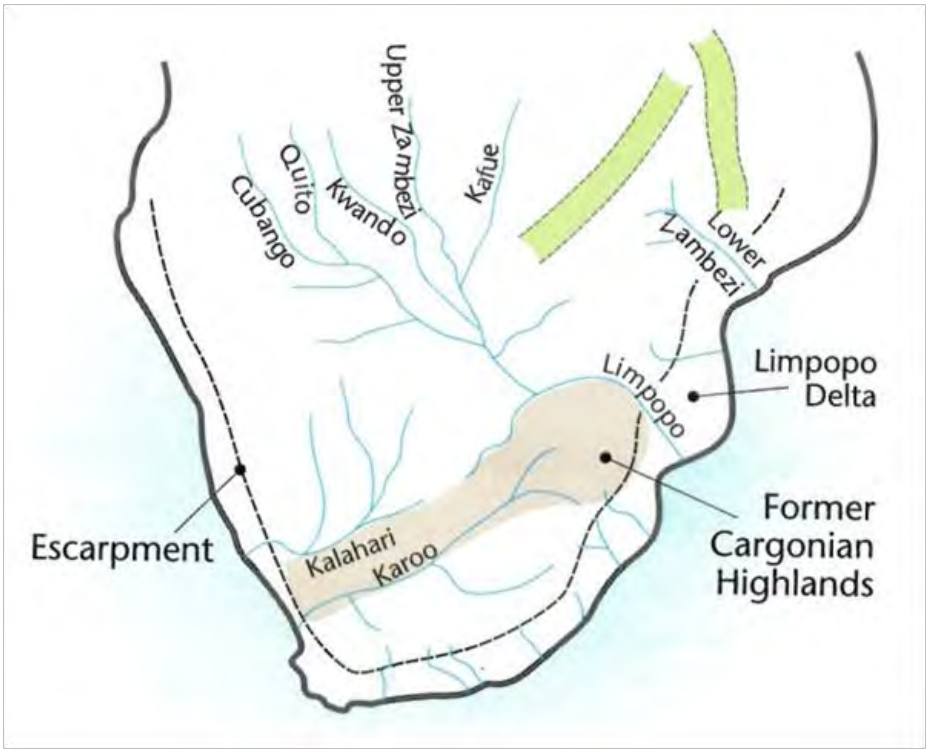
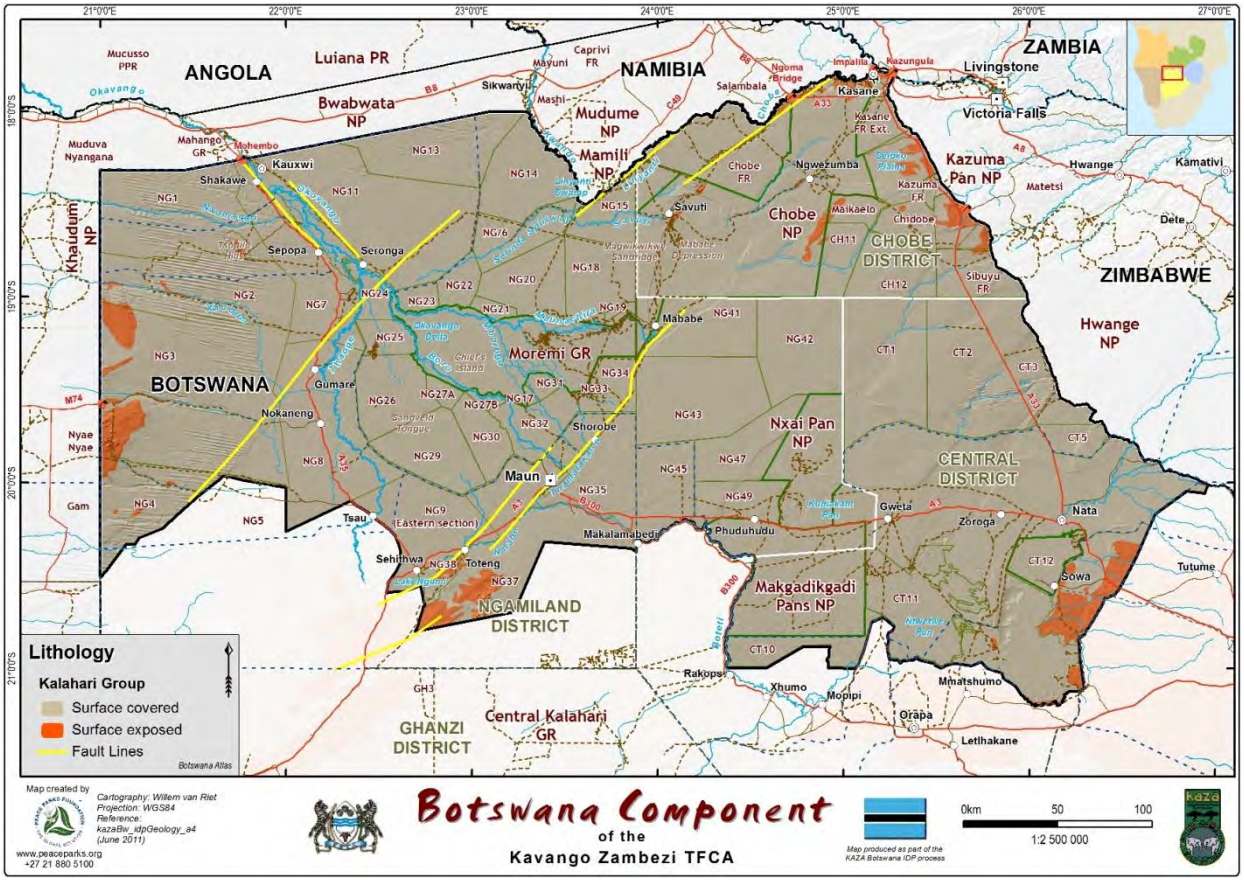
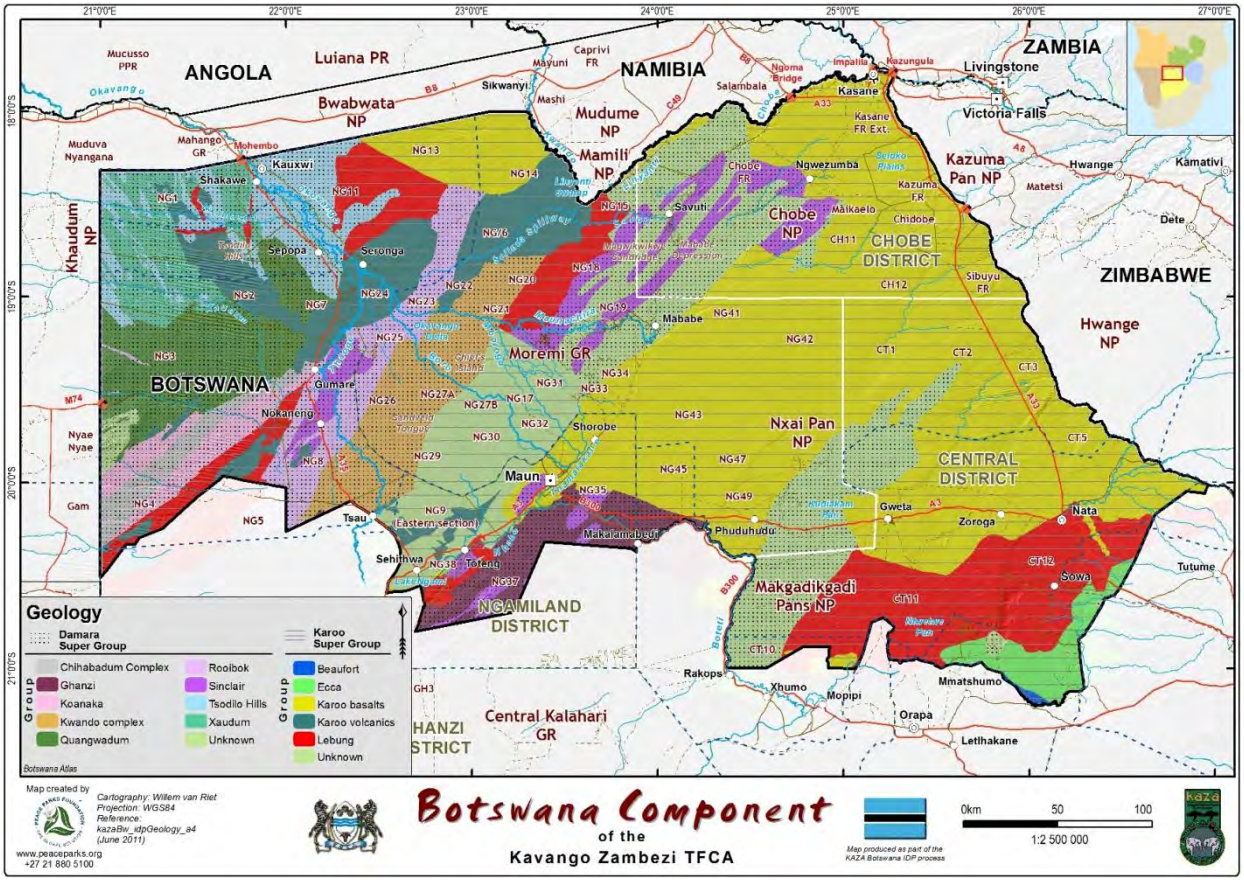


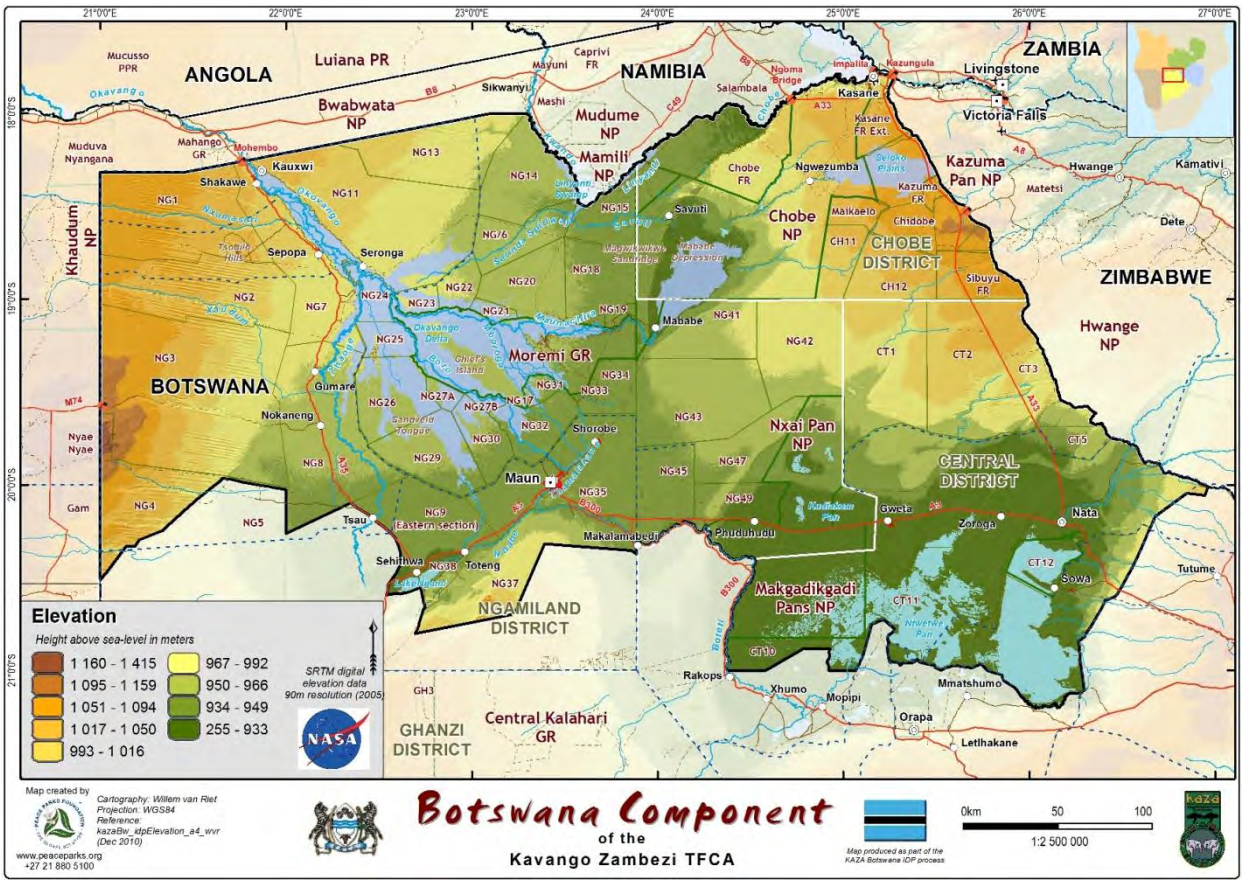
Figure 4: Ancient Highland Rivers



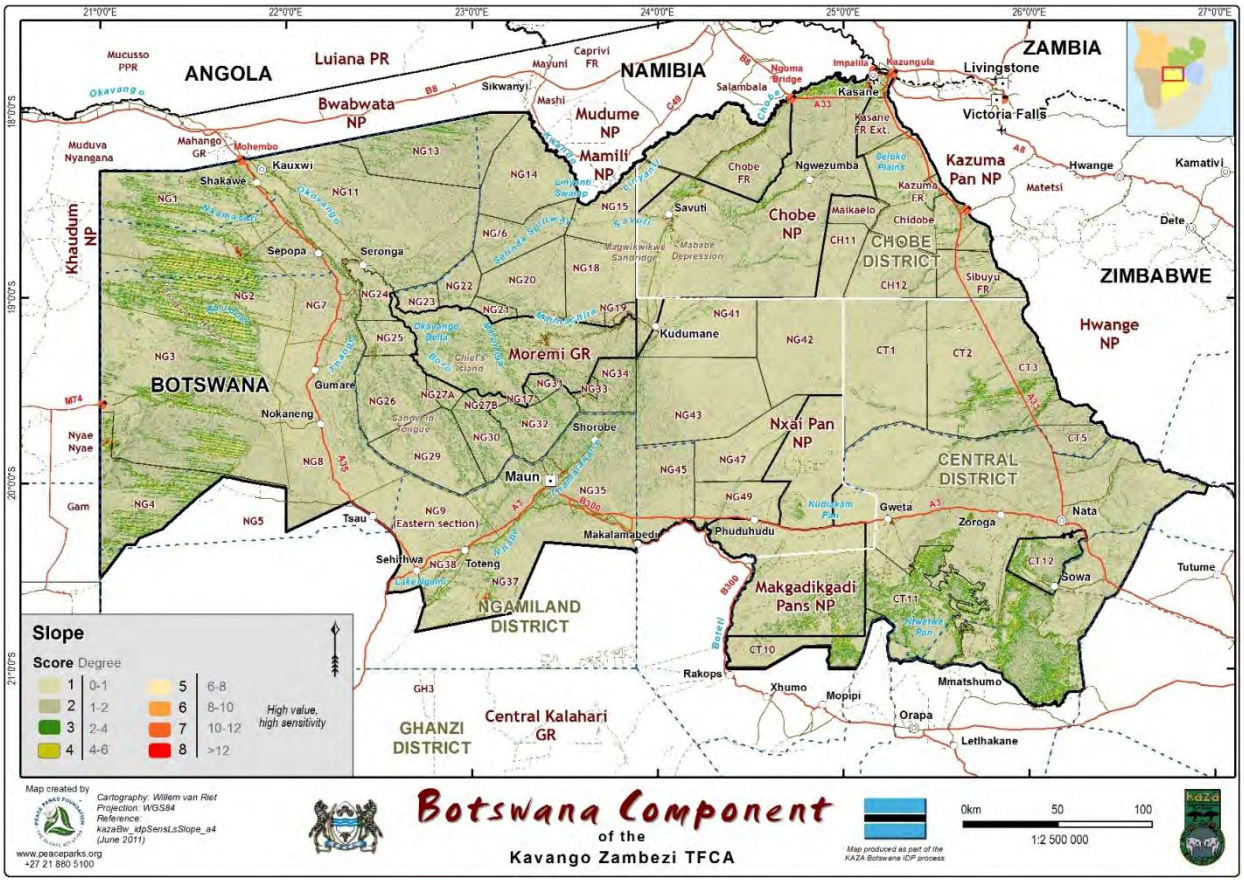
Map 7: Lithology



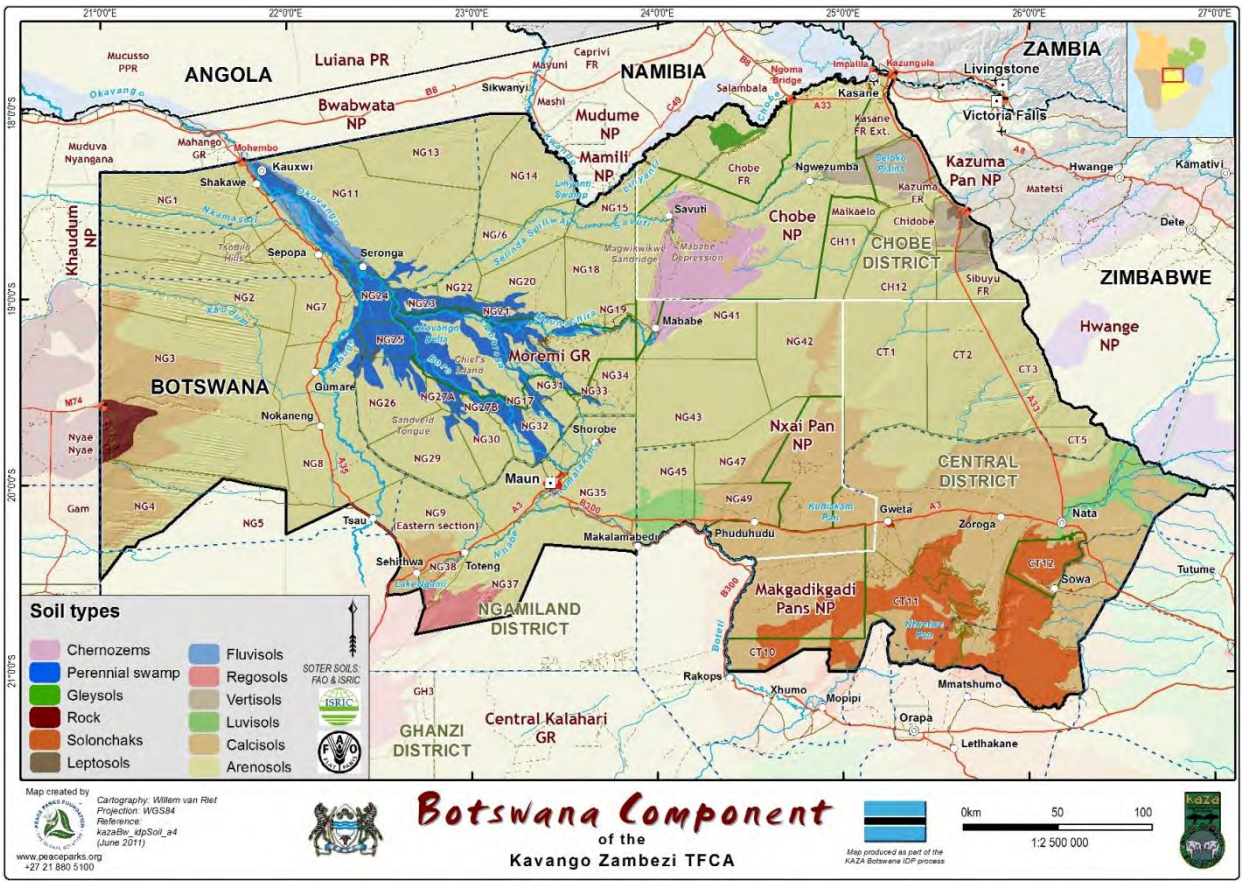
Map 8: Geology



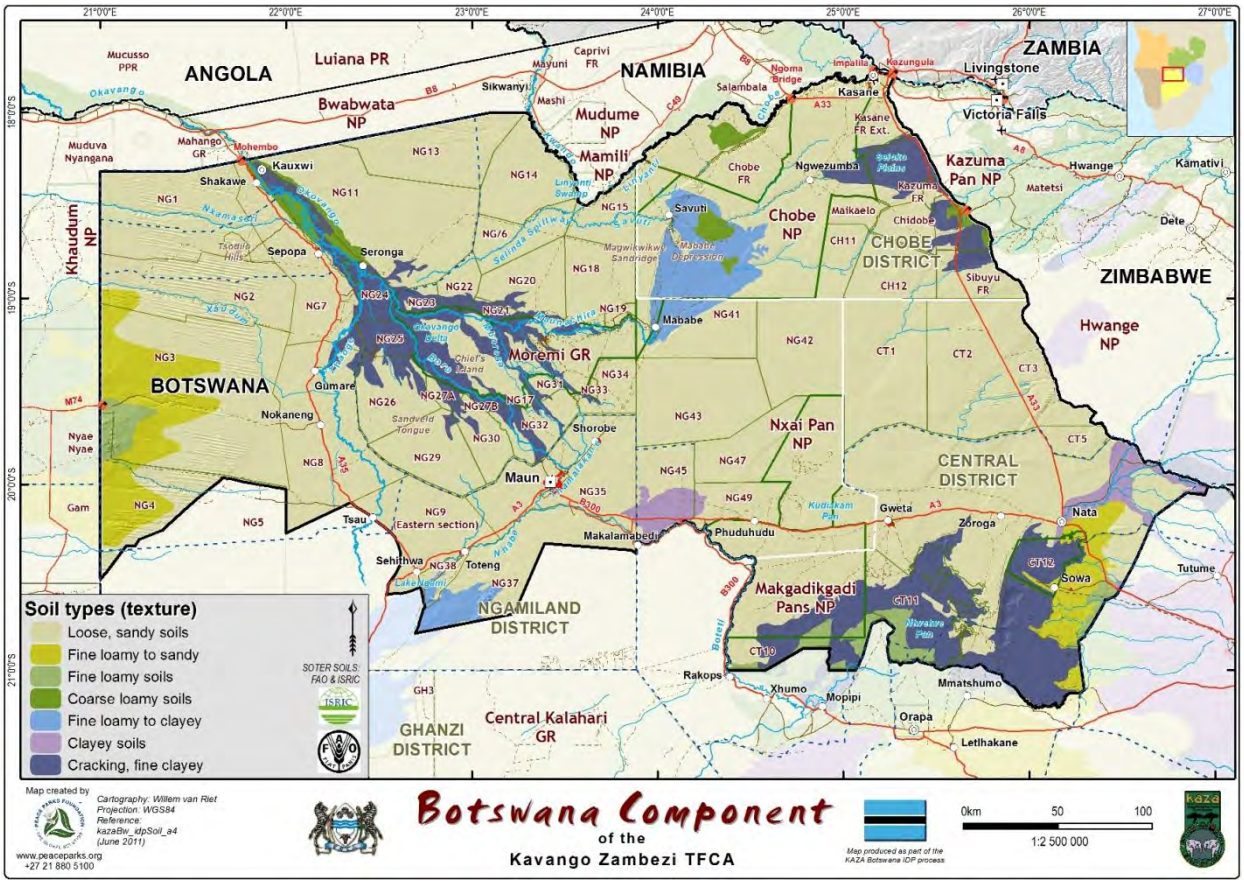
Map 9: Elevation



Map 10: Slope



Map 11: Soil Types



Map 12: Soil Texture

2.1.4 Climate

The study area climatically is arid and semi-arid with low rainfall and high rates of evapotranspiration.

It has a distinct gradient regarding rainfall with the highest in the north-east and lowest in the south-east – almost double from north to south on an annual basis. January-February is the highest rainfall months ranging from 48mm to 158mm per month – April and October are the driest months of the year with rainfall as low as 11mm per month (refer Map 13).

Average temperature trends are relatively homogeneous across the study area – the hottest months being October to March with temperature ranging from 23°C to 26°C while the coolest months are June and July with temperature between 11 °C and 18 °C (refer Map 14).

2.1.5 Hydrology

The study area's hydrology consists of two (2) major drainage systems:

- The **Okavango River system**, which includes the Okavango Delta, Selinda Spillway, the Thamalakane and Boteti rivers and the Makgadikgadi Pans
- The **Chobe River system**, which includes the Kwando River and Linyanti Marsh. The water from this system in turn flows into the Zambezi River, immediately east of Kasane.

Both these systems, the Okavango and Chobe, are perennial and have their sources north of Botswana in the highlands of Angola (refer Map 15). Low rates of surface runoff and groundwater recharge are typical. Even during the wet season stream flow is not continuous, with internal rivers only flowing for 10-75 days a year.

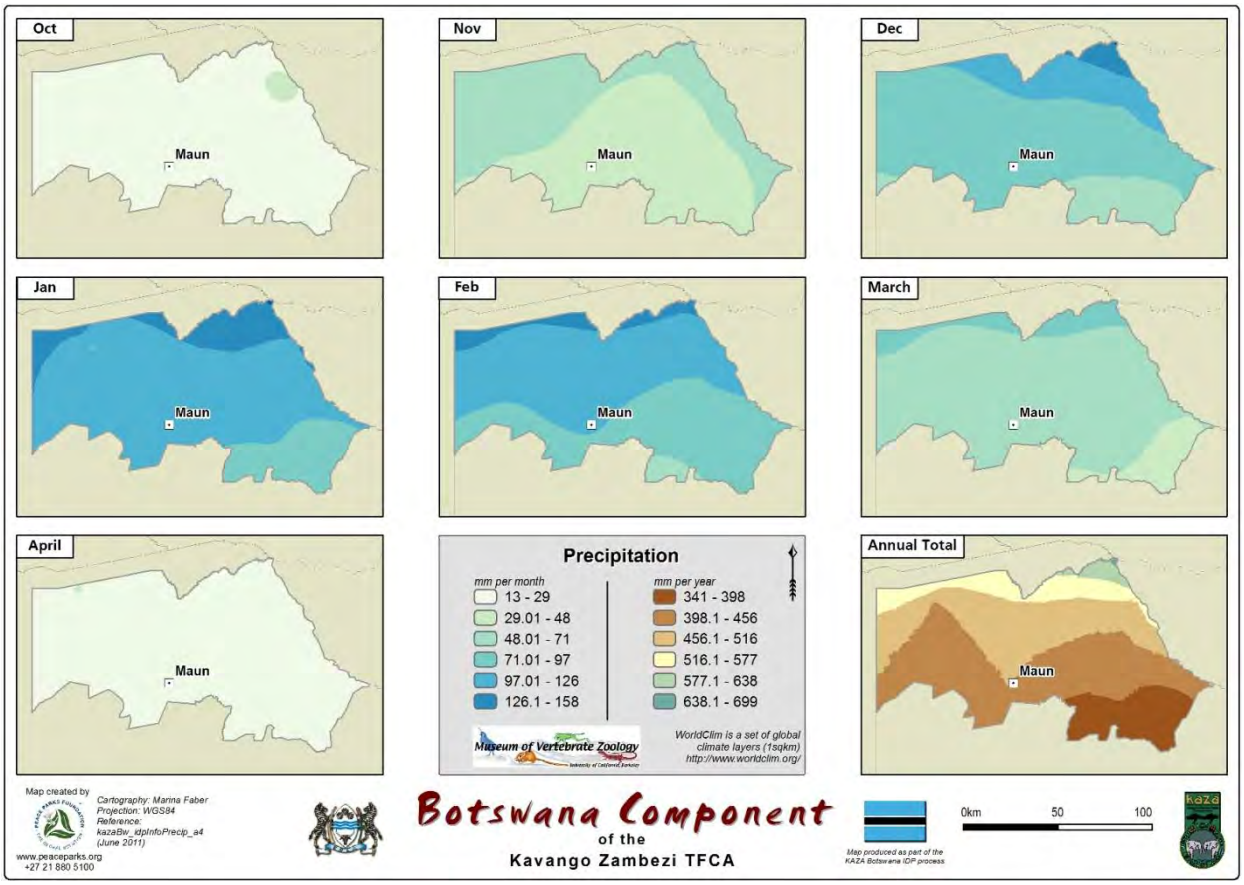
Both these systems are shared river systems - the Okavango River Basin Water Commission (OKACOM) was created in 1994 between Angola, Namibia and Botswana for the Okavango River system.

A key feature of the Okavango River system is the Okavango Delta is a large inland delta including about 6,000km² of permanent swamp and between 7,000 and 12,000km² of seasonally inundated swampland. Together with the Chobe and Linyati rivers, it accounts for 95 percent of all surface water in the country. The delta is conventionally divided into four water and land categories: the Panhandle, upstream permanent swamps, downstream seasonal flood plains, and large islands and Sandveld tongues.

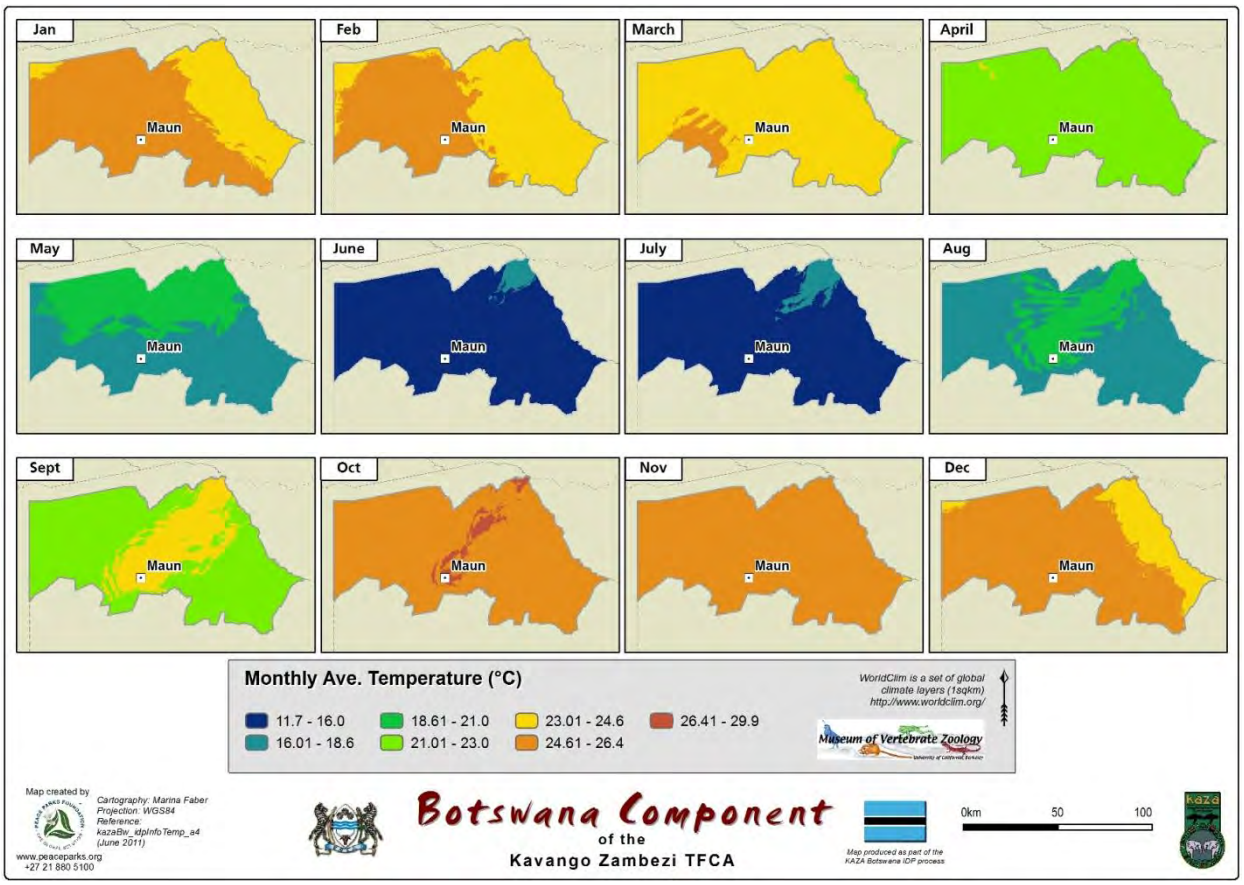
Drainage through the marshes of the Okavango Delta is complex. Most of its water evaporates from the approximate 10,000km² of the delta wetlands. An estimated 11km³ of water flows every year into the delta, but most of it is lost through evapotranspiration. Floodwater reaches down through the eastern side of the marshes to the Boteti River, which flows sporadically to Lake Xau (Dow) and the Makgadikgadi Pans (also roughly 10,000km² in area). Less and less water has been flowing through the western side of the Okavango marshes during the 20th century, so that 180km² Lake Ngami - famous a century ago - is today dry and almost unrecognisable as a lake. Meanwhile, the eastern Makgadikgadi Pans are annually flooded by the otherwise ephemeral Nata River from the Zimbabwe highlands, while the southern tributaries of the pans are now dry fossil valleys. There is a spillway from this area to the Chobe River in the Zambezi basin in periods of high floods.

While the Angolan rainy season is between October and April, the flood waters enter Botswana in December and only reach the bottom of the delta sometime in July. At the southern extremity of the Okavango Delta the last of the flood waters pass through this floodplain channel during August and September, before feeding into the Thamalakane River (refer Map 16).

Groundwater resources are geologically old and quality can be affected by salinity and concentrations of fluorides, nitrates and other elements. Current groundwater recharge rates are equivalent to about 1.7km3/year. Considering an overlap of about 0.1 km3/year between surface water and groundwater, the total internal renewable water resources are 2.4km³/year (Food and Agriculture Organization of the United Nations).

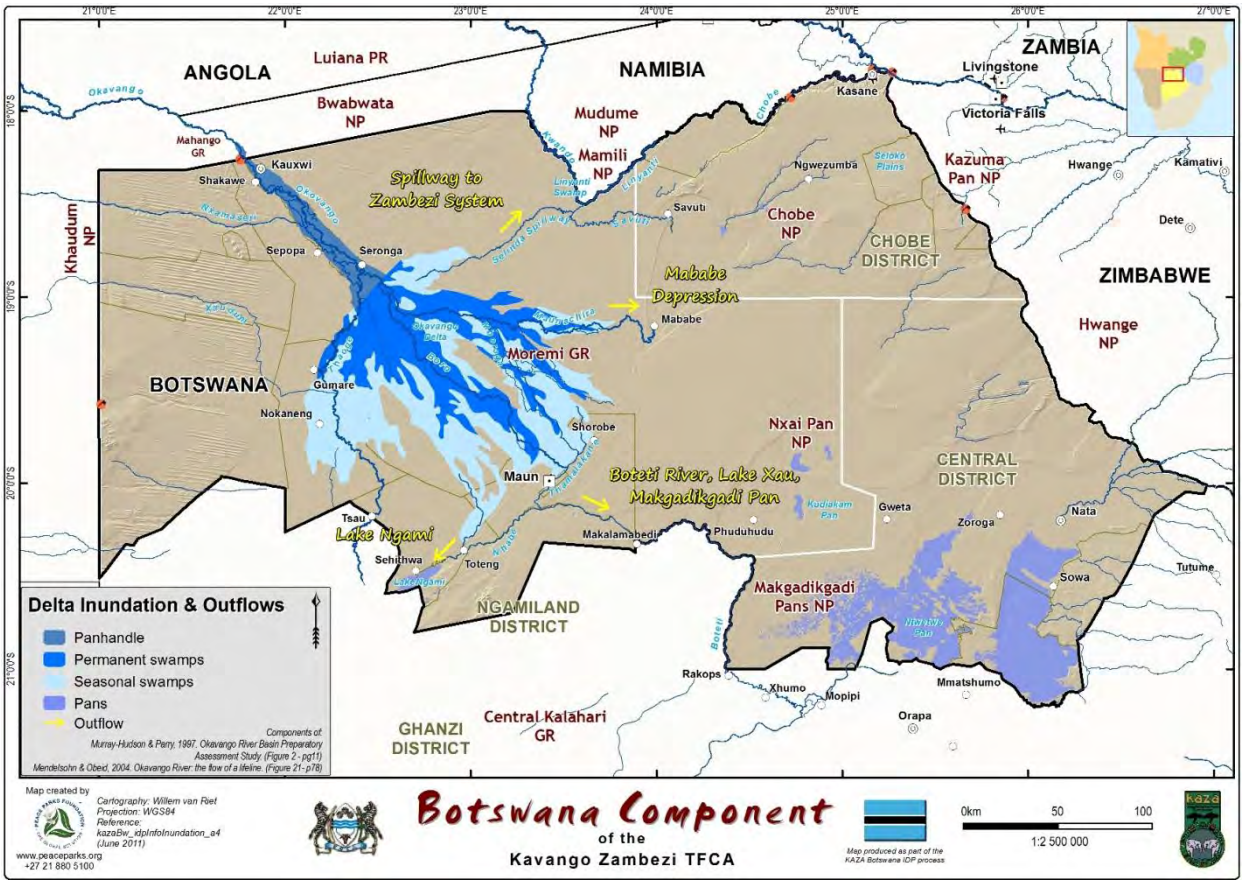


Map 13: Precipitation



Map 14: Temperature

Map 15: Major Okavango Catchments



Map 16: Delta Inundation and Outflows

2.1.6 Vegetation

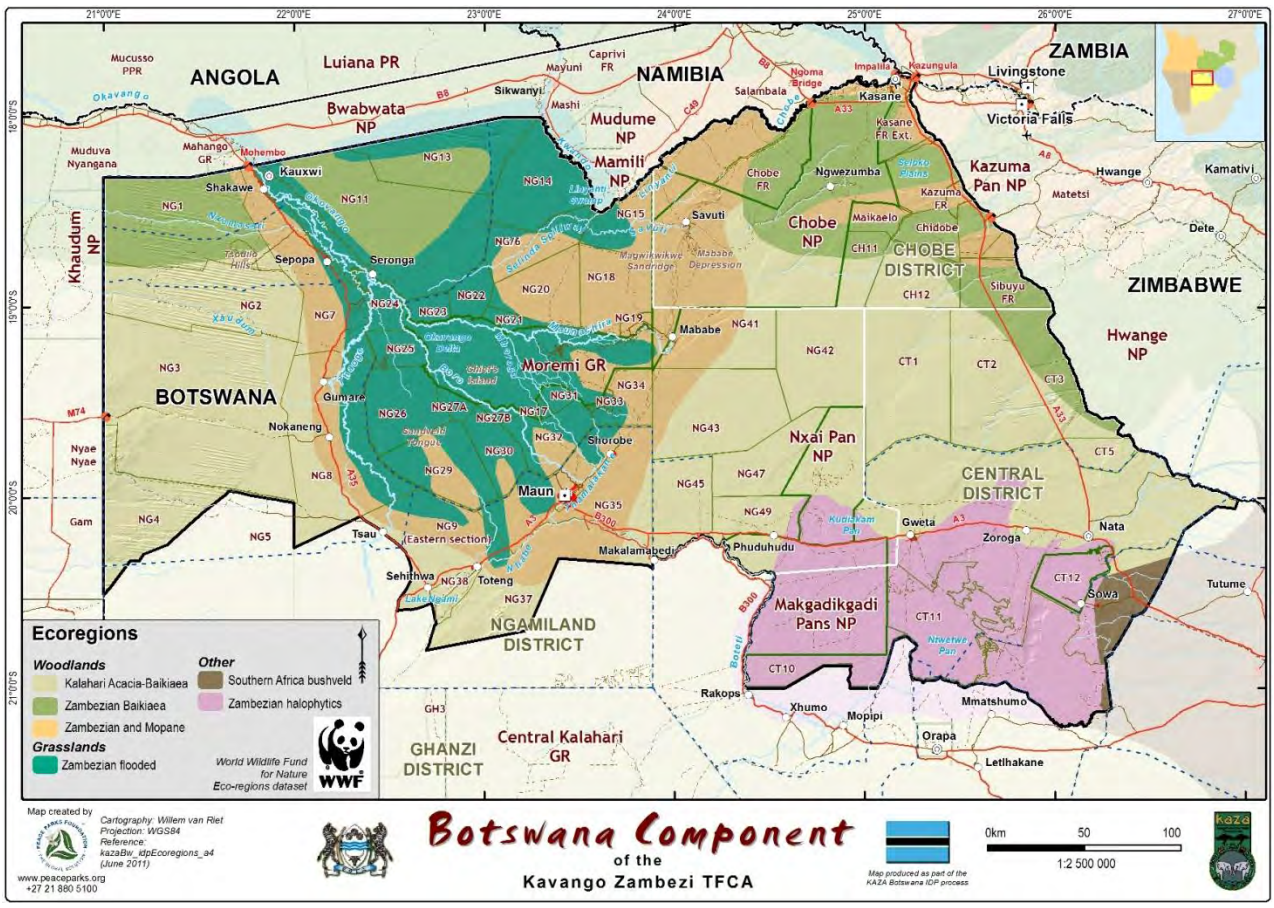
The study area comprises five (5) main eco-regions. **Baikiaea or teak forest** is found in the northern parts of the study area broken up by a wedge of flooded **grassland** associated with the Delta. The Delta grassland is surrounded by a **Mopane Woodland** fringe followed by **dryer woodlands**. Salt loving plants or **halophytics** is found associated with the Pans in the south-eastern parts (refer Map 17). For a detail assessment of vegetation types refer to Map 18.

Broadly mixed or mosaic vegetation land cover characterises the north-eastern section of the study area resulting from the rainfall profile and fire occurrence (refer Map 19 and Map 20). The south-western section is predominantly closed-to-open to sparse grasslands.

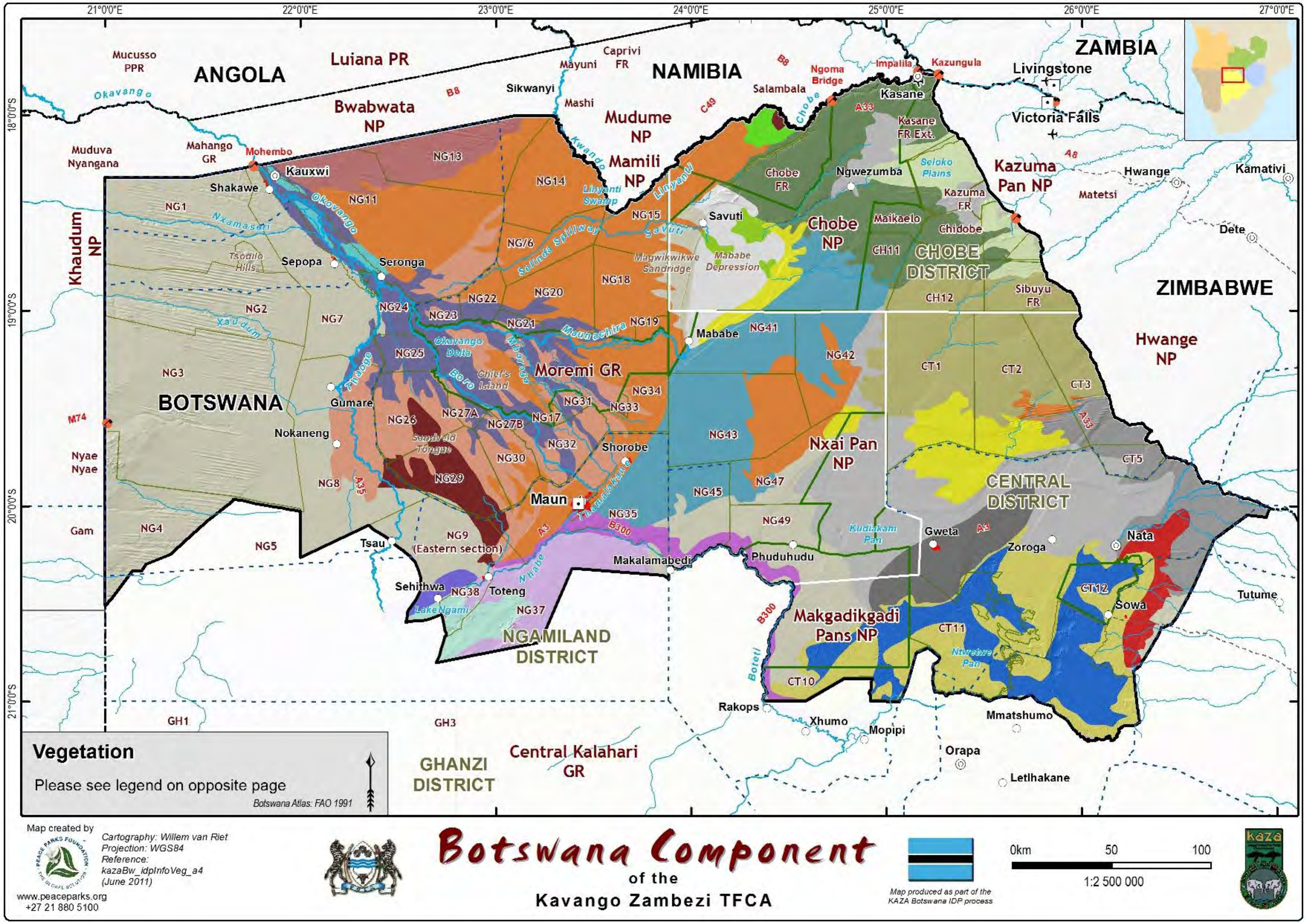
2.1.7 Wildlife Movement

The wildlife occurrence within the study area has been described in detail in the various management and development plans that have been prepared for the area – refer Reading List. Of particular importance in context of the KAZA TFCA and the IDP in particular is wildlife movement patters. The predominant and broad wildlife movement patterns within the study area and within the broad KAZA TFCA context are as follows:

- Botswana and Zimbabwe:
  - Between Seloko Plains/Kazuma Forest Reserve and Kazuma Pan National Park
  - Between Nxai Pan National Park via WMAs and Hwange National Park
- Botswana and Namibia – between the Delta and Chobe National Park and Mamili and Mudumu National Parks
- Within Botswana - between:
  - the Delta and Makgadikgadi Pans National Park
  - the Delta and NG2 and NG3.



Map 17: Ecoregions


ZAMBIA
ANGOLA
NAMIBIA
BOTSWANA
ZIMBABWE
Luiana PR
Bwabwata NP
Mudume NP
Mamili NP
Khaudum NP
Chobe NP
Moremi GR
Nxai Pan NP
Makgadikgadi Pans NP
Hwange NP
Kazuma Pan NP
Central Kalahari GR
CHOBE DISTRICT
CENTRAL DISTRICT
NGAMILAND DISTRICT
GHANZI DISTRICT
Maun
Kasane
Livingstone
Victoria Falls
Nata
Gweta
Shakawe
Seronga
Gumare
Vegetation
Please see legend on opposite page
Botswana Atlas: FAO 1991
Map created by
Cartography: Willem van Riet
Projection: WGS84
Reference:
kazaBw_idpInfoVeg_a4
(June 2011)
www.peaceparks.org
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Botswana Component
of the
Kavango Zambezi TFCA
Map produced as part of the KAZA Botswana IDP process
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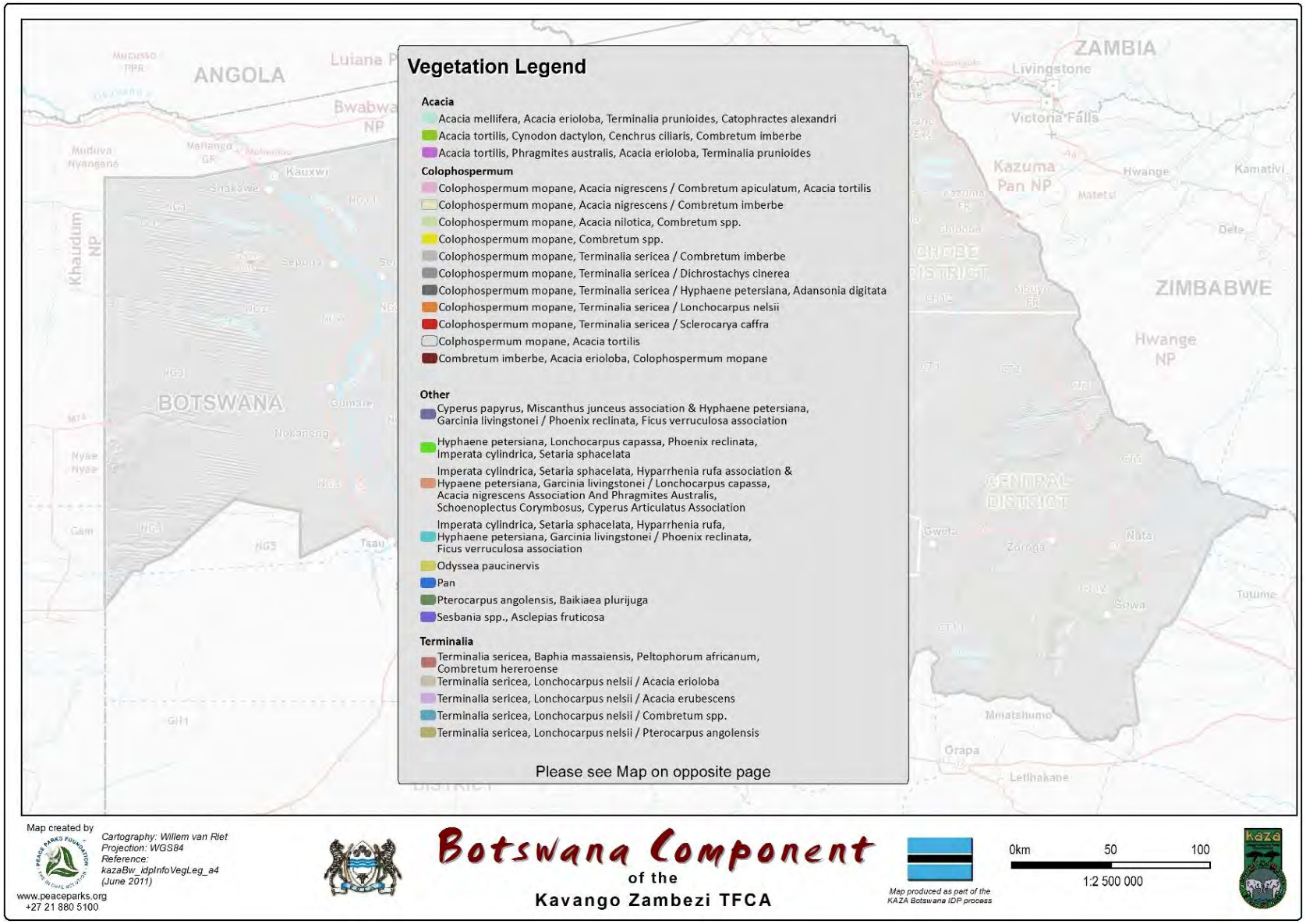

Map 18: Vegetation

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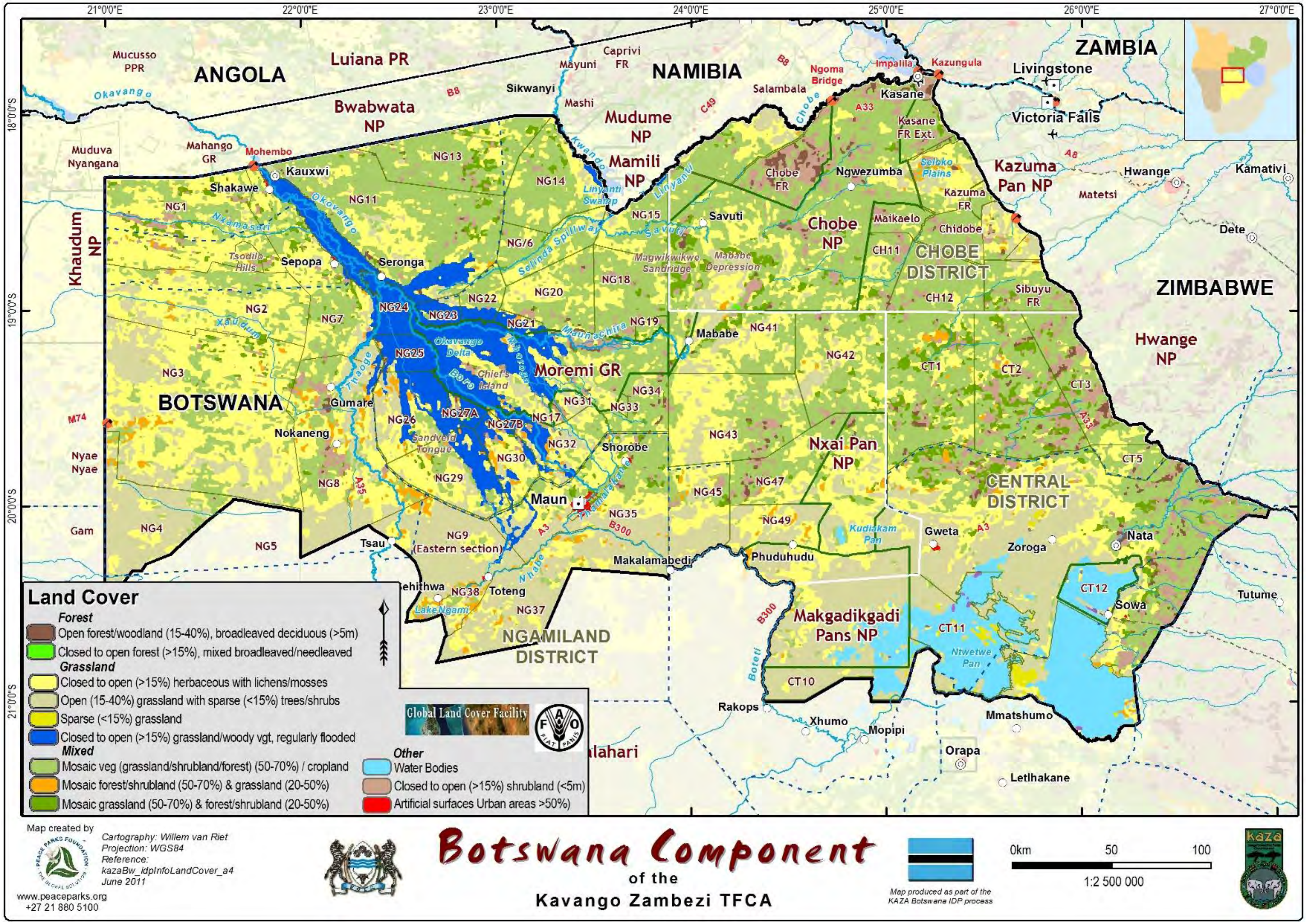
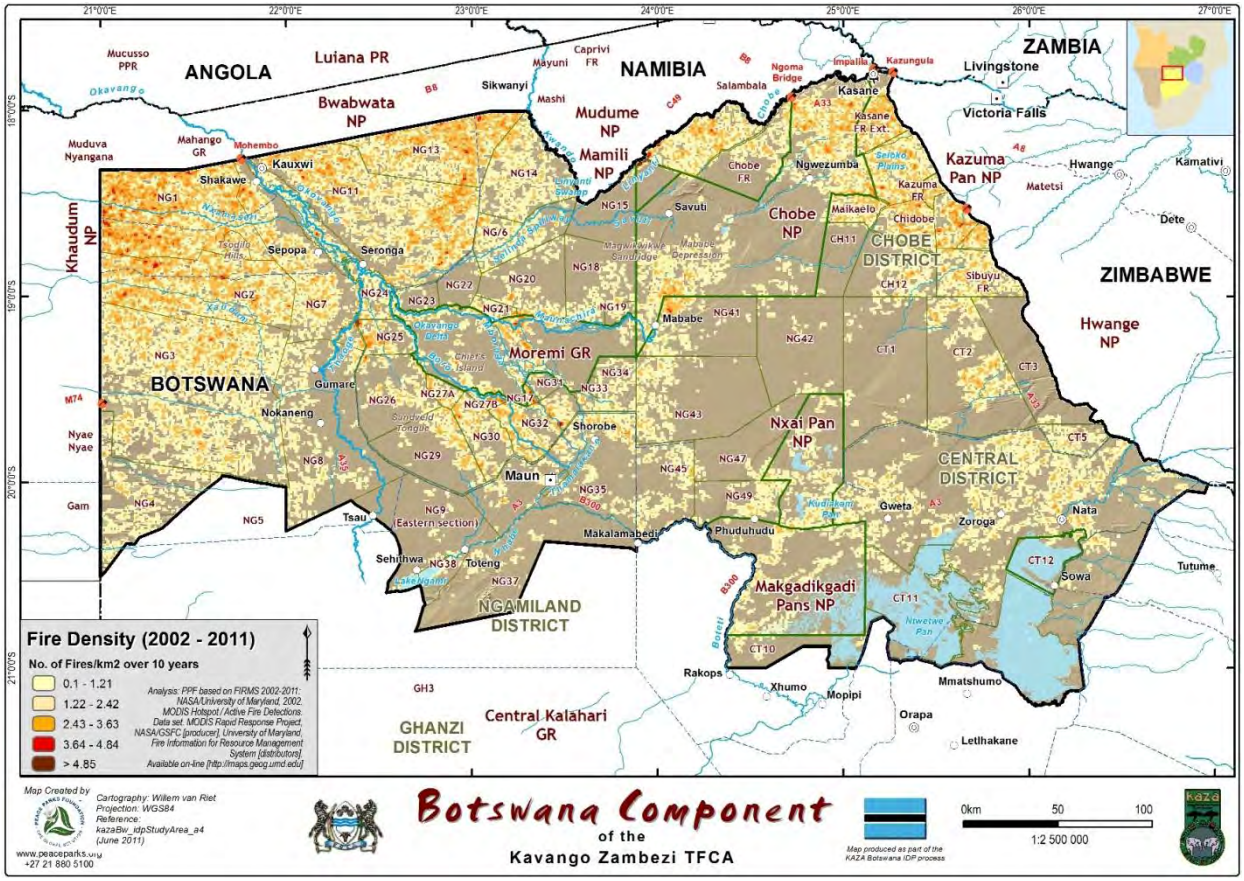


Map 19: Land Cover



Map 20: Fire Occurrence Density

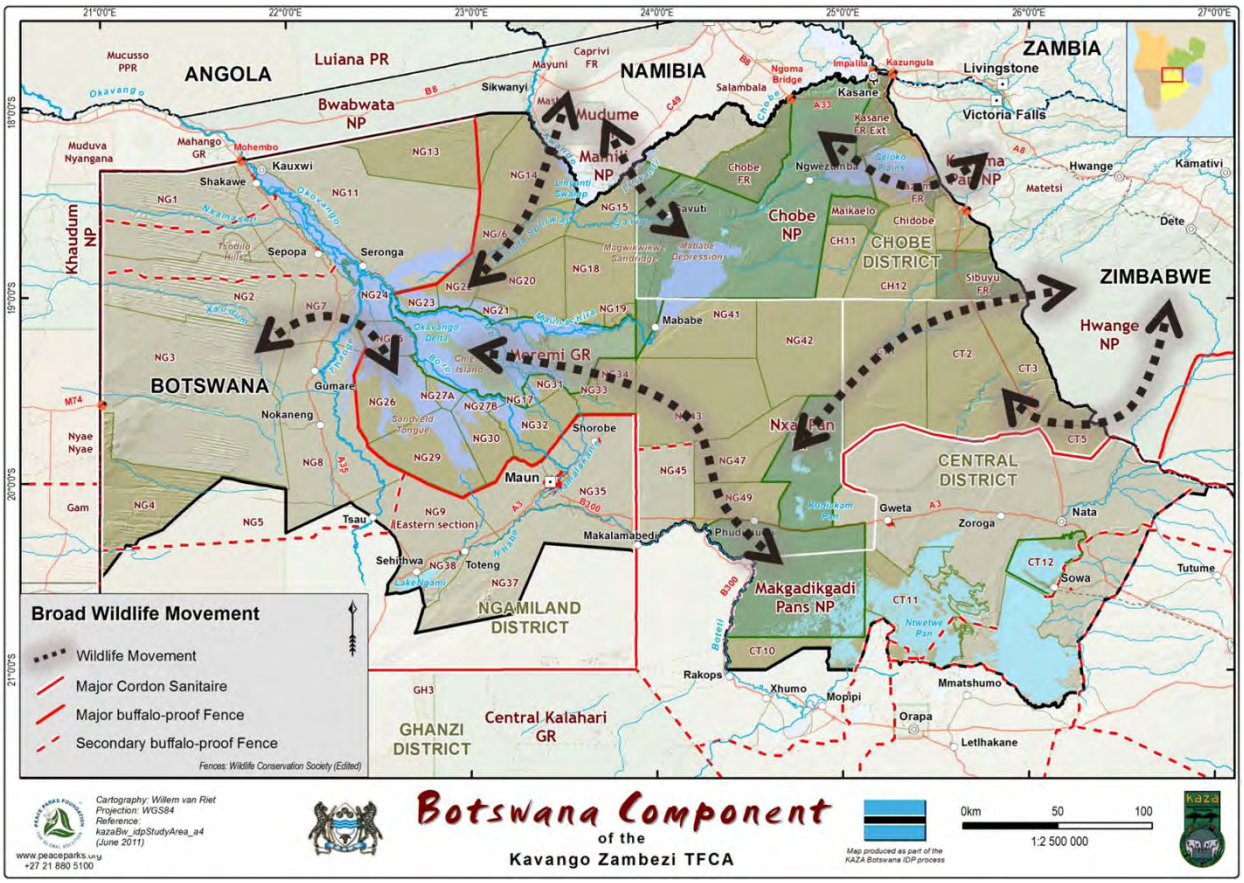


Figure 5: Wildlife Movement

2.2 Socio-Economic Features

2.2.1 Communities and Culture

The original people of the country and much of the surrounding area are purported to be the San (also known as the Basarwa or Khoesan). Nowadays Botswana is inhabited by people of predominantly Tswana origin (collectively called Batswana).

The inhabitants of the study area from most to least representative include the Batswana tribes; Bakalanga; Basarwa; Bakgalagadi; Baherero; Khoisan and non-Africans. None of the groups has remained completely homogeneous as there have been constant integration and assimilation between the groups over the years (Embassy of the Republic of Botswana in China). Cultural and ethnic diversity is however, evident in the numerous language groups, in addition to Setswana, spoken in the study area (Okavango Delta Management Plan Project Secretariat, February 2006):

- In Central District among other the Zezuru, Ndebele, Nambya Shua, Kua and Kalanga speaking people
- The Chobe District the Lozi, Kuhane, Zezuru and Ndebele speaking people
- In the Ngamiland District the Mbukushu, Khwe, Gciriku, Juhoan, Herero, Kxauein, Kgalagadi, Naro, Yeyi and Ani speaking people.

Many sites of archaeological, historical, cultural and natural heritage have been identified and form the basis of the cultural heritage map for the study area (refer Map 21) – these include:

- Stone Age sites:
  - Early or Middle Stone Age: 200,000 – 35,000 years ago including Tsodilo Hills, XaiXai, Liambezi, Qogana, Toteng, Khwebe, Maun, and Loshitshi
  - Late Stone Age: 35,000 – 2,000 years ago
- Early farming sites occupied at least 1,000 years ago
- Natural heritage sites including caves, forests and special trees, and unique rock formations.

2.2.2 Human Footprint

The majority of the human impacts (Human Footprint) occur along the road infrastructure and towns of the study area (refer Map 22), specifically evident to the southeast of the Delta, the Nata/Maun road, Nata/Kasane road, the Pandamatenga area and to the northeast around Kasane.

2.2.2.1 Population Density

The study area's population (in line with the rest of Botswana) is increasing at a declining rate, attributed to among other declining fertility and birth rates, impacts of the AIDS pandemic and family planning awareness .

Based on 2002 FAO data, very low population densities are evident across the majority of the study area (0-1.6 people/km^2) but for higher densities (5.2-8 people/ km^2) in the east along the border with Zimbabwe (Hwange National Park) (refer Map 23) where most of the livestock grazes and most crop production takes place.

2.2.2.2 Tenure

The systems of land tenure prevalent in the study area are state land (~18%) and customary tenure (~82%) derived from tribal land and leasehold, which can be derived from freehold land, state land and tribal land.

State land includes land for state use such as cities and townships, national parks, game reserves and forest reserves. Most land in cities and townships is state land. Individuals gain access to land through the instrument of fixed period state grant (FPSG), a form of a lease that is fully paid up front. FPSGs are transferable in the open market if the conditions for development are complied with.

Some of the characteristics of customary tenure which is the dominant tenure regime in the area, are:

- Every person at the age of majority (18) is entitled to be allocated land for residential, cultivation and grazing by virtue of being a citizen
- Individuals have security of tenure as long as the land is used
- Land rights are inheritable
- Land rights cannot be sold or mortgaged.

The holders of customary rights for residential and ploughing purposes enjoy a variety of rights which are exclusive and inheritable and guaranteed by a customary land grant certificate. Those granted customary rights are entitled to a certificate of customary land grant. According to the Tribal Land Act, once these rights are acquired they cannot be cancelled without just cause.

Up to 1970, tribal land was vested in the chiefs of various tribes, to be held in trust for the members of that tribe. Land administration under the chiefs took the form of land allocation with limited traditional land use zoning and record keeping. The 1968 Tribal Land Act transferred the authority of land administration to the Land Boards. The tribal land is allocated according to customary and common law procedures as stipulated in the Act. Land Boards are 'body corporate' meaning that they are entitled to sue for damages or be sued. Land Boards are autonomous bodies that administer land in Botswana and are responsible for all matters related to the allocation of land in all tribal areas (Programme, 2010). The Land Boards of the study area include:

- Central District – Ngwato Land Board, Serowe
- Chobe Distirct – Chobe Land Board, Kasane
- Ngamiland – Tawana Land Board, Maun.

The study area also includes two (2) Tribal Grazing Lands Policy (TGLP) ranches to the east and west of the Pans National Parks. This land pertains to a Government of Botswana policy where extending individual tenure rights were seen as a key policy instrument for improving range productivity and conservation. The TGLP granted large stockholders exclusive lease rights to what were considered under-utilised and undeveloped grazing lands.

2.2.2.3 Land Use

The land use categories of the study area and size and percentages of surface area are set out in Table 1, also refer Map 25. The dominant land uses are the communal areas comprising (a) settlements and arable and pastoral agricultural land use and (b) communal Wildlife Management Areas (WMAs) followed by the combined state Protected Areas (PA).

The main activities in the communal areas include arable agriculture (dryland farming and molapo or flood recession farming), pastoral agriculture – cattle herds and wildlife management with both consumptive (hunting) and non-consumptive resource utilisation. The WMAs are divided into Controlled Hunting Areas (CHA) which are administrative units used to facilitate wildlife management also serving as buffer zones between incompatible land uses and formal protected areas. The Government facilitates Community-based Natural Resource Management programmes in these areas which are joint approaches towards rural development and natural resources conservation. It is based on the need for the promotion and empowerment of the local communities, by linking economic and social development to natural resource management (Programme, 2010).

Nature conservation and non-consumptive resource utilisation (photographic tourism) are the main activities in the formal PAs.

Botswana is not well endowed with agricultural land. Of the 5% of the land reported to be suitable for arable agriculture, only less than 1% of it is under cultivation. Generally, the soils are thin and of limited fertility while the rainfall is low and erratic with the exception of the Pandamatenga area. Pandamatenga area contains Botswana's only large area of black cotton soils. The soils are inherently fertile and as such have high potential for arable agriculture. Due to a relatively higher average rainfall, the Pandamatenga plains are considered to have the potential to significantly increase the production of cereals (FAO, 2005).

Table 1: Land Use Categories

Land Use Category	Size (~km²)	Percentage
Pastoral/Arable/Residential	51,000	35.21
Wildlife Management Area	50,500	35.05
National Park	18,000	12.36
Pasture/Arable/Residential/WMA	8,900	6.10
Game Reserve	4,900	3.34
Forest Reserve	3,300	2.27
TGLP Ranches	3,000	2.03
BLDC Ranch	2,200	1.53
Nata Sanctuary (not including Flamingo Sanctuary)	1,000	0.66
Forest Reserve and Extension	800	0.55
World Heritage Site	800	0.51
Mainly Commercial Farms (Pandamatenga Arable Farming Project)	600	0.39
TOTAL	**145,000**	**100**

2.2.2.4 Water Use

The total quantity of water currently abstracted by the Department of Water Affairs in the Delta is circa 3.84MCM per annum (0.0038% mean annual flow) although this is predicted to rise to circa 11.04MCM per annum (0.011% mean annual inflow) by 2020-25 (Okavango Delta Management Plan Project Secretariat, February 2006).

Groundwater abstractions from boreholes feature at various points mainly along road infrastructure (refer Map 27) - these resources are used for livestock and municipal watering and for small areas of irrigation. It is estimated that over 1,300 boreholes exist in the study area – these are owned by the government and private individuals. Although the amount of water potentially available is large, it is relatively expensive to exploit and it is saline in many places. Country wide human settlements are consuming an ever-increasing share of water with irrigation, forestry, livestock and wildlife 41%, urban use, villages, settlements and small industry 41% and the mining and energy sector 18%. By the year 2020, total water demands are expected to reach 336 million m^3 annually and the municipal sector and small industry are expected to account for 52% of total consumption (Food and Agriculture Organization of the United Nations).

2.2.2.5 Infrastructure and Facilities

The road network, settlements and towns of the study area are depicted in Map 4 and are also further elaborated in Section Four of the IDP.

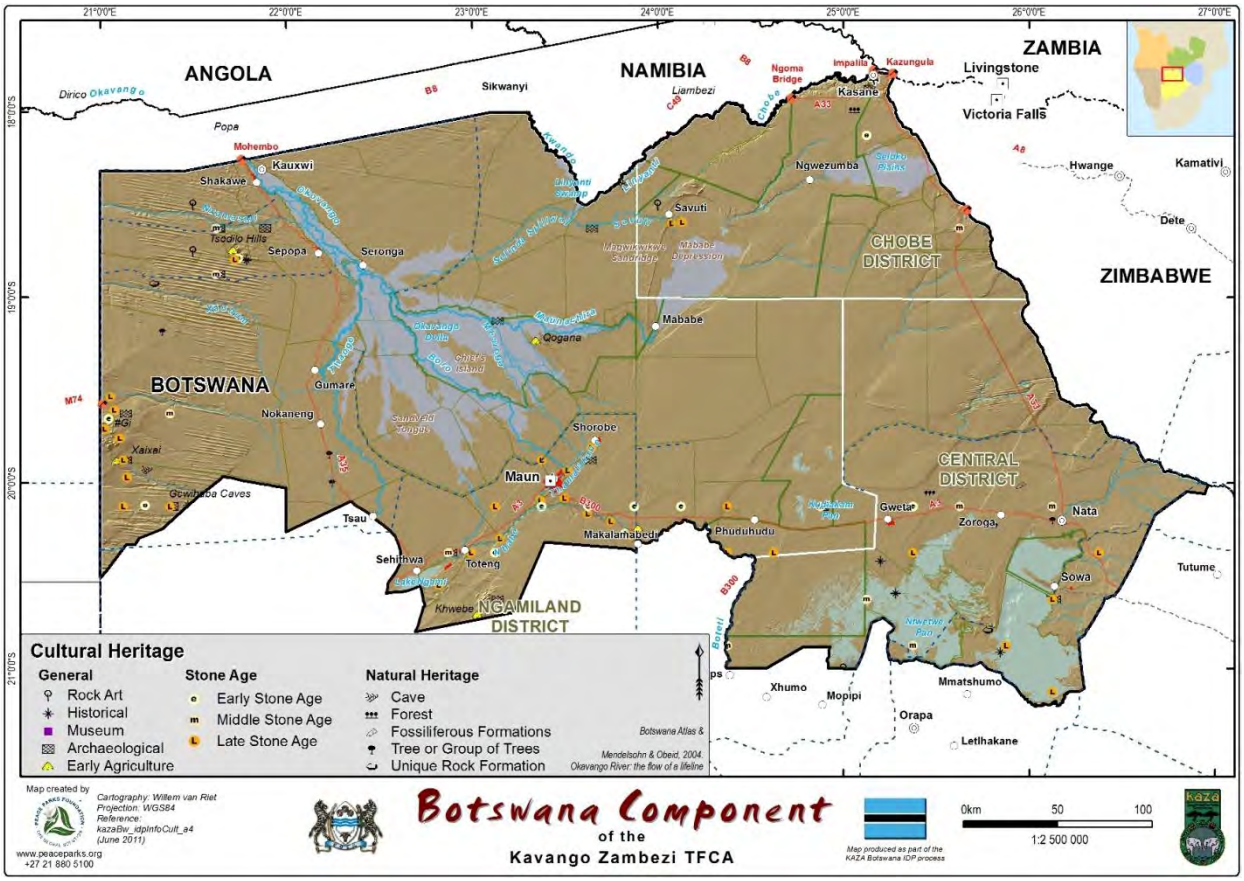
Veterinary Control Fences are delineated in Map 26 and include:

- Major Cordon Sanitaire fences:
  - On the Caprivi Border erected in 1995
  - On the Namibia/Botswana International Border (1960)
  - The Kuke fence (1958) in the southwestern corner of the study area (Ngamiland)
  - The Ngwatsha fence (2000) in the east (Central District)
- Major Buffalo-proof fences:
  - Northern Buffalo Fence (1991-1996) to the north of the delta
  - Southern Buffalo to the south of the delta
- Secondary Buffalo-proof fences – from north to south in the western section of the study area:
  - Samuchima (1995)
  - Ikoga (1995)
  - Setata (1996) (Martin, http://www.wcs-ahead.org/book/chapter04.pdf).

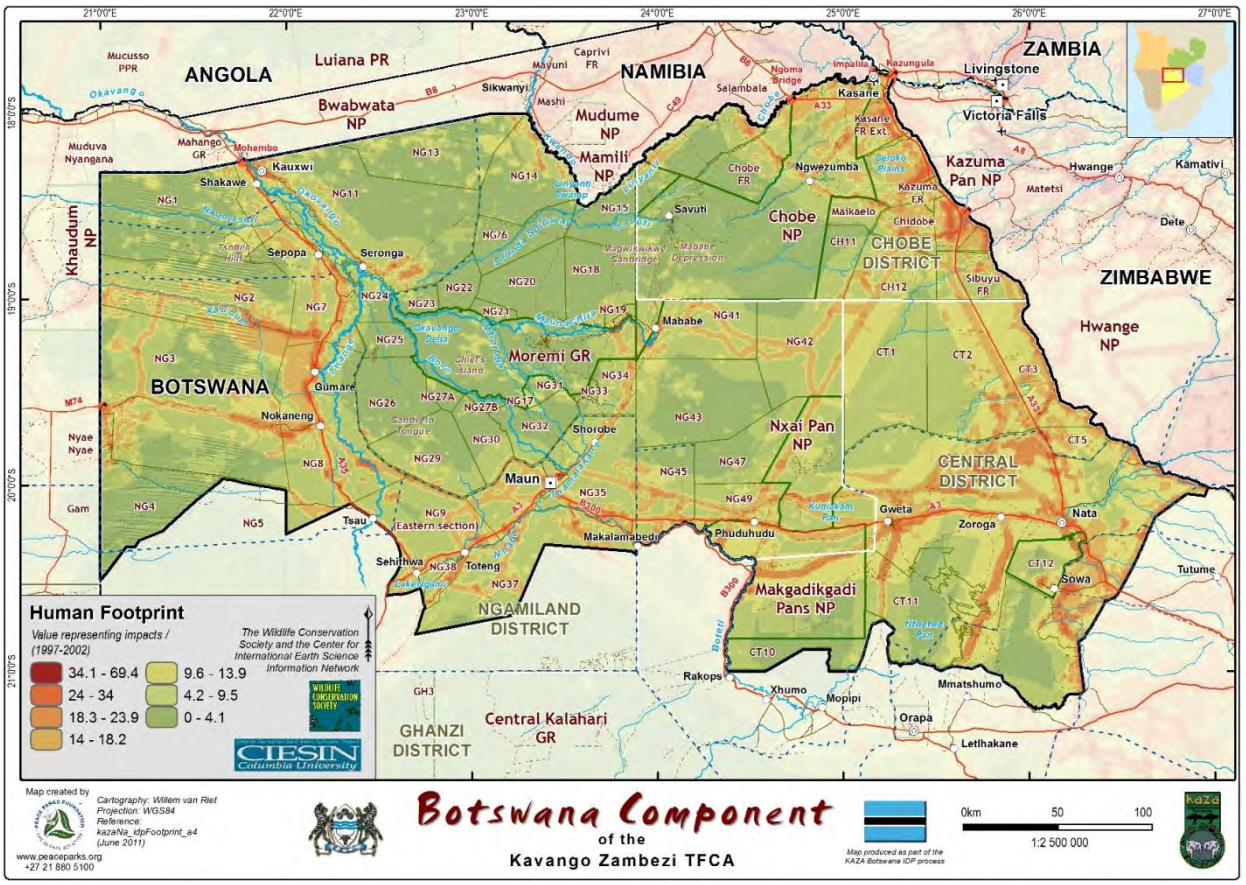
The majority of tourism facilities and activities are focused within the Delta, the Linyanti area and on the Chobe riverfront (refer Map 28).

Tourism facilities include various bush and tented camps, chalets, lodges, rest camps and airstrips with tourism with activities comprising game viewing, bird watching, mokoro trails, recreational fishing, hunting and mobile safaris. A range of tourism categories differentiated by the prices paid for holidays occur in the study area:

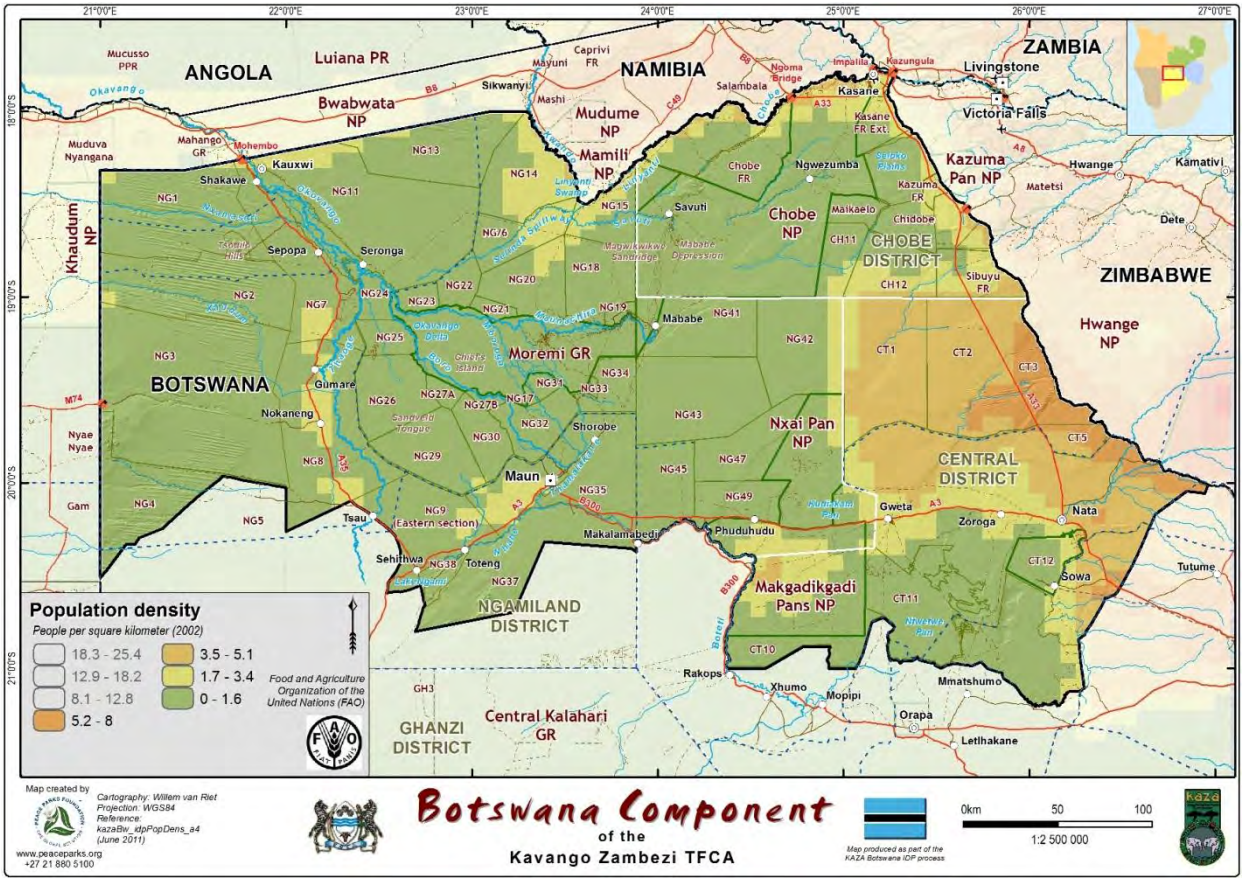
- High Cost - tourists who stay at permanent more luxurious safari camps (normally operated by a private camp operator) and are mostly from Europe, America, New Zealand and Australia
- Mobile Safari – tourists who stay in private, public or HATAB (Hospitality and Tourism Association of Botswana) campsites
- Independent Low Cost - travellers who are basically dependent on their own resources when they are touring, do not normally form part of an organised tour group and generally use public facilities e.g. campsites run by the Department of Wildlife and National Parks (DWNP) in protected areas - such tourists mostly come from the neighbouring countries of South Africa, Zimbabwe and Namibia
- Day Visitors - tourists who does not spend the night in a collective or private accommodation in the place visited is termed a 'day visitor' - their overall expenditure is very low compared to previously discussed categories.



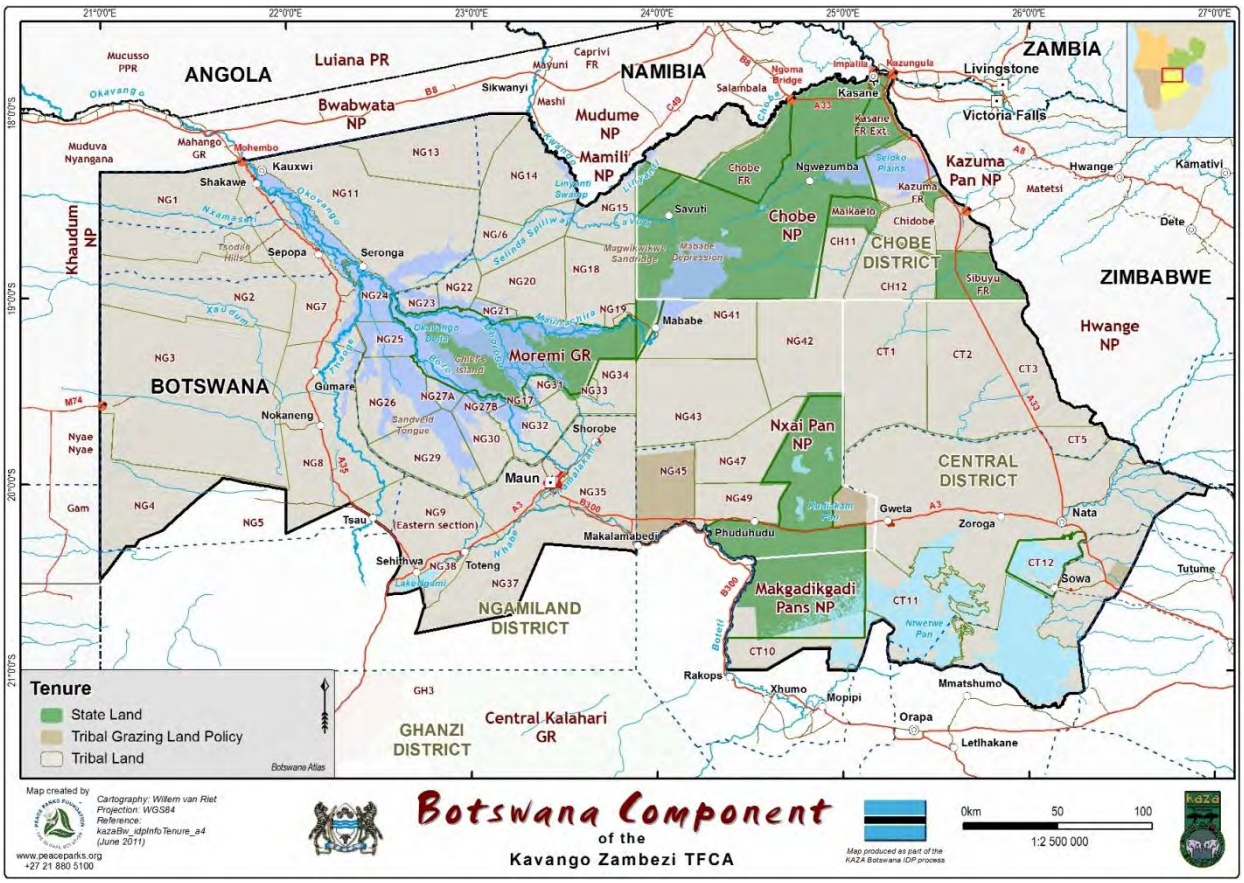
Map 21: Cultural Heritage



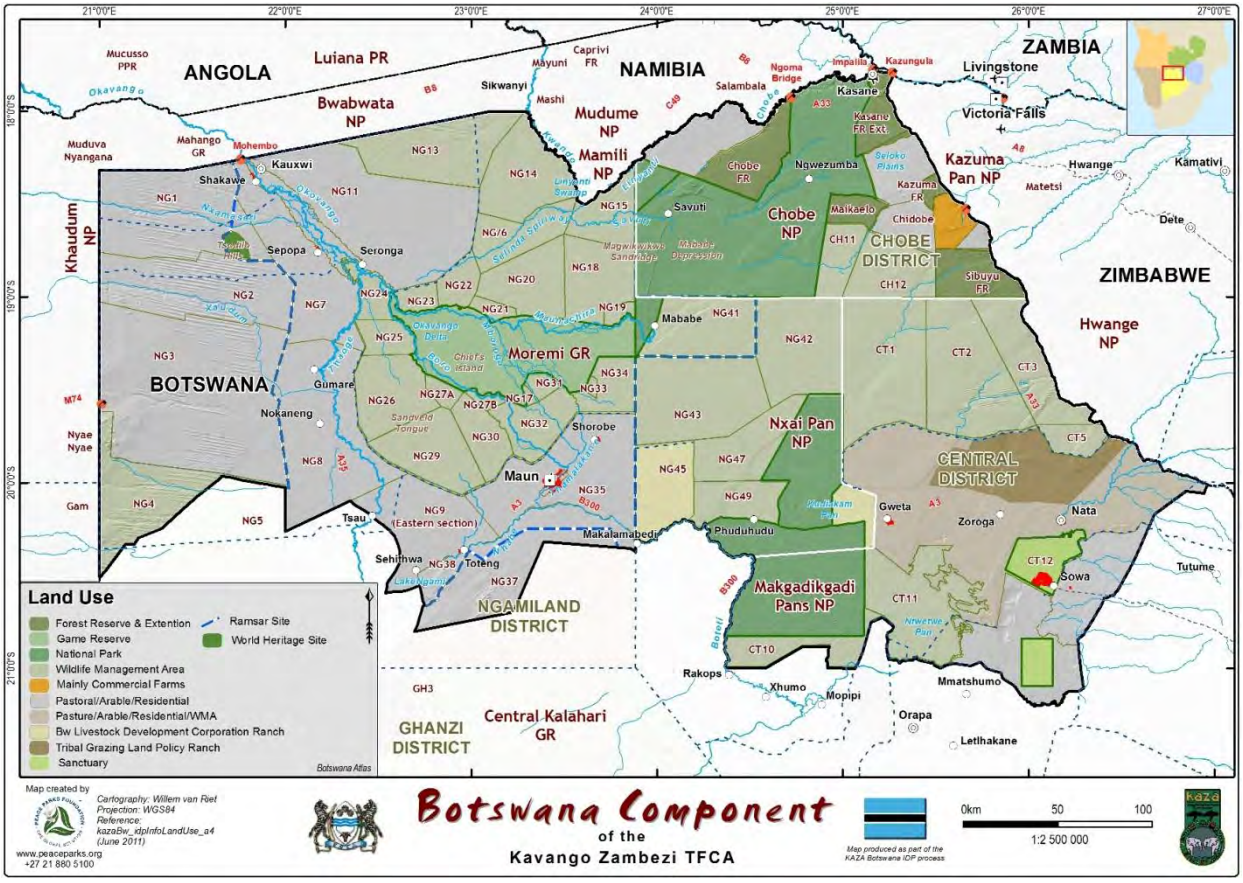
Map 22: Human Footprint



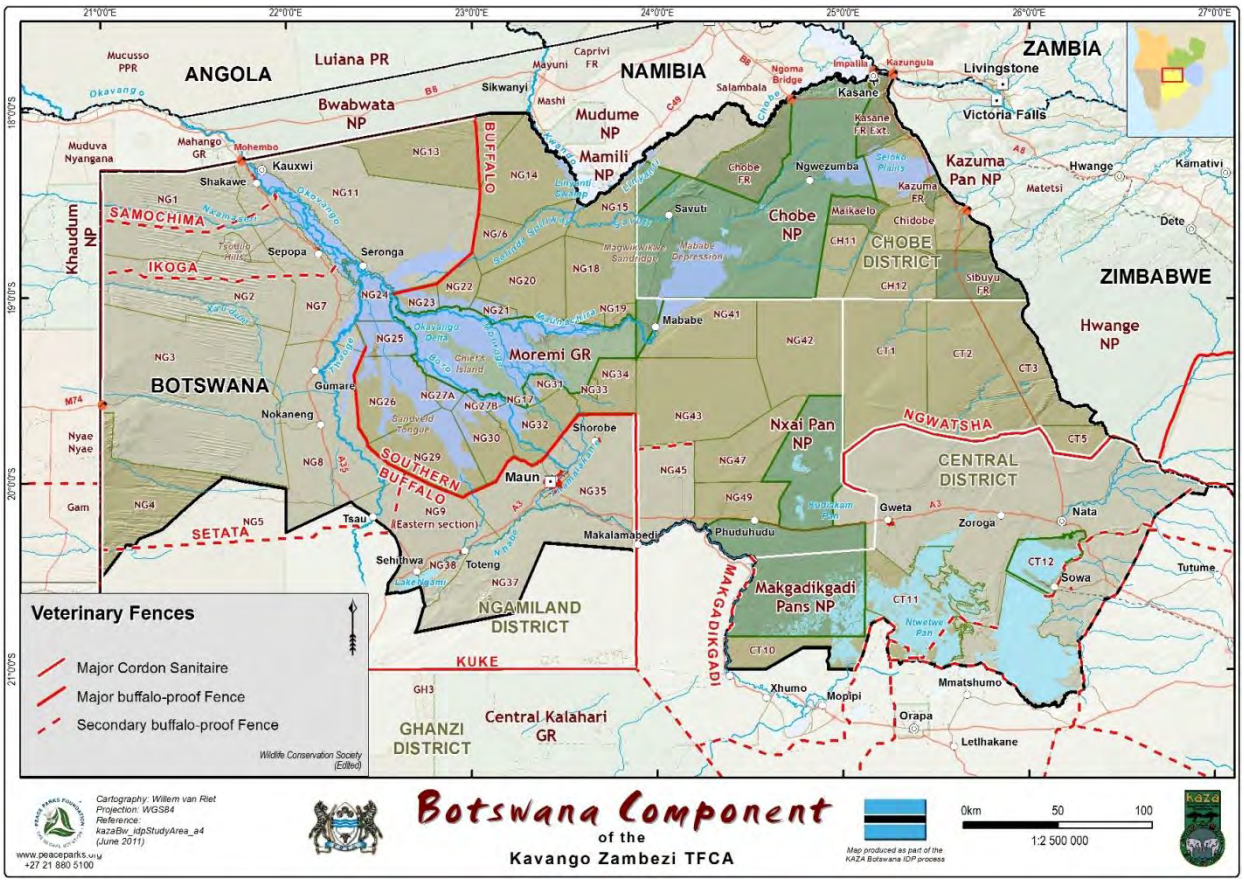
Map 23: Population Density



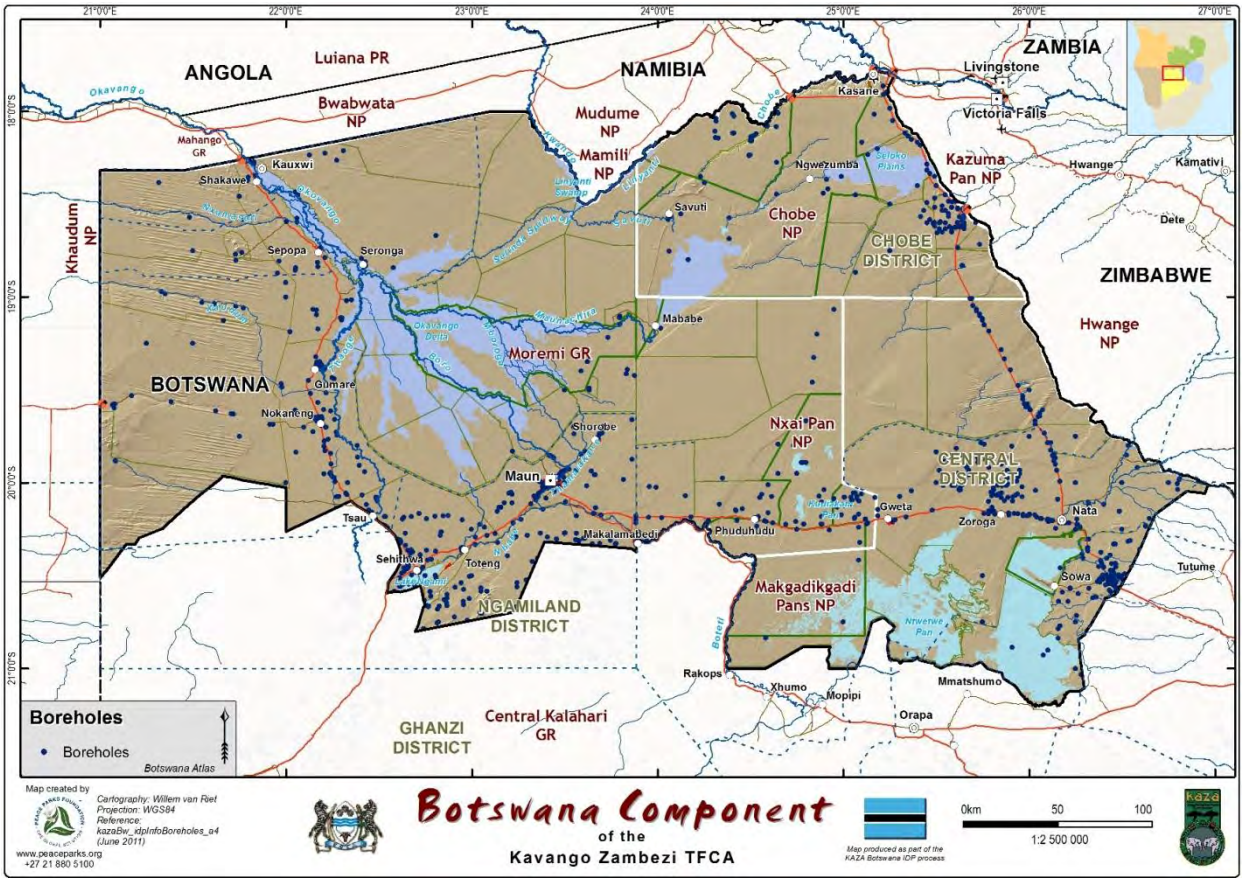
Map 24: Tenure



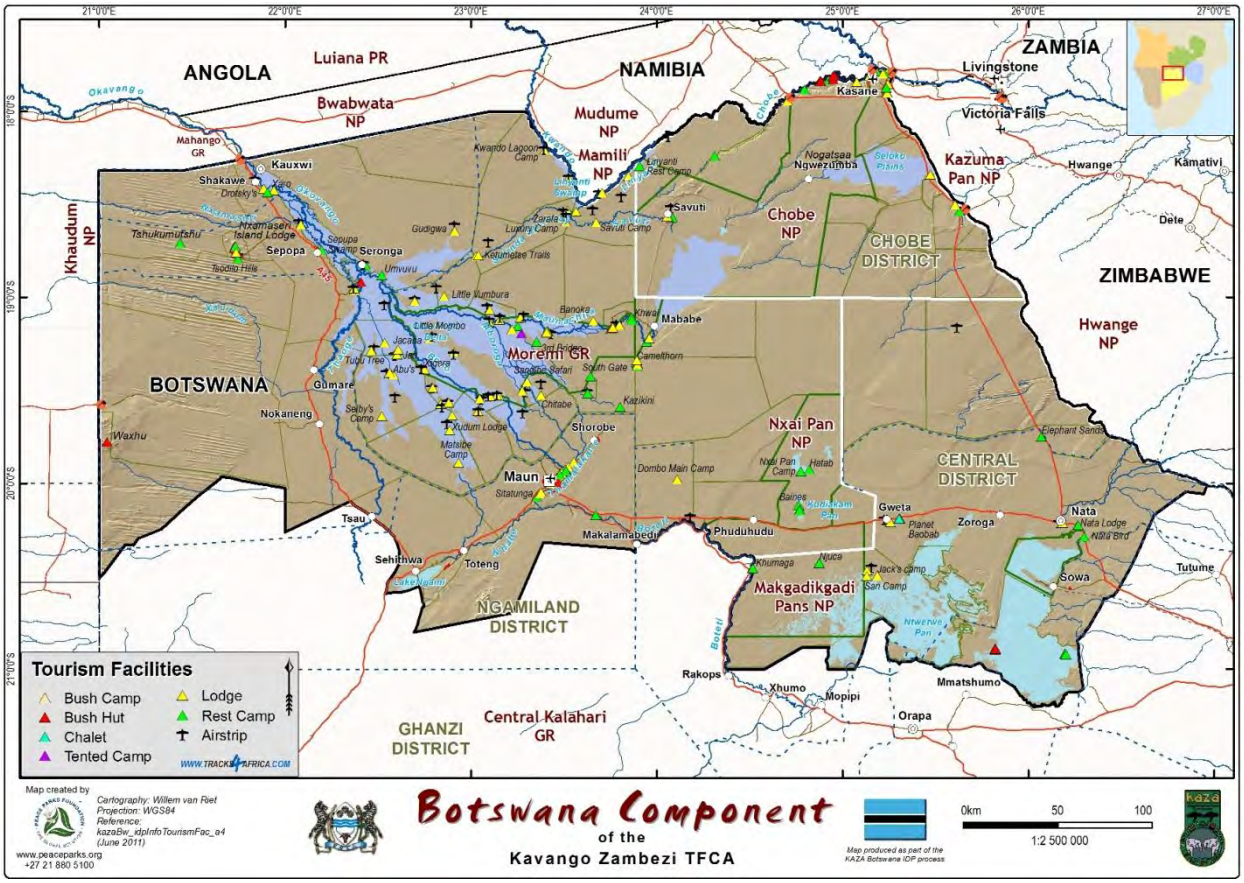
Map 25: Land Use



Map 26: Fences



Map 27: Boreholes



Map 28: Tourism Facilities

2.3 Governance Features

2.3.1 Legal and Policy Framework

Legislation pertaining to the Botswana Component of the KAZA TFCA includes policies and laws at international, African, and SADC level, the most important at international level being:

- Agenda 21:
  - A blue print action plan for a global partnership for sustainable development, to integrate environment and development concerns for the fulfilment of basic needs, improved living standards for all and better protected and managed ecosystems
  - Chapter 15 is most relevant to the KAZA TFCA as it recognizes the value of biodiversity, reflecting in its objectives "the conservation of biological diversity and the sustainable use of biological resources"
- General principles and rules of international law:
  - United Nations Charter of 1945 obliges states to "promote the economic and social advancement of all their people"
  - Although the Charter does not address biodiversity matters, it can be argued that the KAZA TFCA forms a platform such advancements
- The IUCN Convention on Biodiversity 1992:
  - The primary international binding instrument for the conservation of biodiversity with its objectives being: "the conservation of biodiversity, the sustainable use of its components, and fair and equitable sharing of the benefits which arise out of the utilisation of genetic resources"
- The Bonn Convention on Migratory Species of Wild Animals 1983:
  - An important instrument for the conservation of biodiversity as it establishes an international wildlife law which focuses on the management of migratory species
  - The most relevant provisions applicable to the KAZA TFCA oblige range states to provide immediate protection for migratory species by endeavouring to conclude multilateral agreements in order to ensure their conservation and management and undertake joint research activities
  - The conservation and management of migratory species are among the main purposes of Transfrontier Conservation Areas
- The Convention to Combat Desertification:
  - The UNCCD aims to mitigate the effects of drought and to combat desertification with the objective implementing long term integrated strategies that focus simultaneously on affected areas and improved productivity of land resources as well as on the rehabilitation, conservation and sustainable management of land and water resources
  - It follows that the KAZA TFCA can be used as platform to implement the provisions of the UNCCD explained above in order to curb desertification but also conserve biodiversity
- The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) 1975:
  - CITES focuses on regulating the global trade in threatened and endangered species. This regulation restricts trade in rare species and parts of species across state borders
  - The provisions provided by CITES are arguably applicable to the conservation of biodiversity in the KAZA TFCA. This is because halting the international trade in endangered or threatened species cannot be achieved by one state alone. The need for cooperation is advocated in the preamble of CITES
- The World Cultural and Natural Heritage Convention 1972:
  - The objective of the Conventions is the protection of cultural and natural heritage of outstanding universal value
  - It is directly relevant to the KAZA TFCA as parties to this Convention must recognize that they have the primary duty of ensuring the identification, protection, conservation, presentation and transmission to future generations of the cultural and natural heritage and, where appropriate, with international assistance and co-operation
- Ramsar Convention on Wetlands 1971:
  - The Ramsar Convention on Wetlands seeks to conserve and manage wetlands of international importance

- One of the fundamental principles applicable to the KAZA TFCA context obliges states to "consult with each other about implementing obligations arising from the Ramsar Convention especially in the case of a wetland extending over the territories of more than one Contracting Party"
- Parties are further obliged to "coordinate and support present and future policies and regulations concerning the conservation of wetlands and their flora and fauna"

- The 1997 Watercourses Convention:
  - Covering water use between upstream and downstream states, this convention obliges parties to utilize international watercourses responsibly and to take measures of protection and management related to the uses of those watercourses
  - It obliges states to utilize shared water resources in an equitable and sustainable manner. In addition states are obliged not to cause significant harm to the watercourse resources shared by more than one state. Therefore, state parties to the KAZA TFCA are required to consult among themselves in order to establish lists of substances and activities which should be prohibited, limited, investigated or monitored.

The African regional legislative framework includes:

- The African (Banjul) Charter on Human and People's Rights:
  - The Banjul charter is the first binding international human rights-based approach to the environment
  - It provides for the rights of all people to have a generally satisfactory environment which is favourable to their development
- The 2001 New Partnership for Africa's Development (NEPAD):
  - The NEPAD is a "holistic, comprehensive and integrated strategic framework for the socio-economic development of Africa"
  - Promotion of cross-border cooperation and connectivity by utilizing the knowledge currently available in existing centres of excellence on the continent is highlighted which falls in line with the objectives of the KAZA TFCA
- The 1968 African Nature Convention:
  - The objectives of the Convention include the protection of the environment, the conservation and sustainable use of natural resources, as well as the harmonisation and coordination of policies in these fields
  - Article XII can be used to conserve biodiversity in the KAZA TFCA as it obliges states to establish, maintain and extend conservation areas where appropriate. This includes the establishment of additional conservation areas in order to ensure the long-term conservation of biological diversity
- The revised 2003 African Convention on the Conservation of Nature and Natural Resources:
  - States are required to cooperate in the utilisation of mineral and water resources, and coordinate and harmonize their policies and programmes in the areas of energy and natural resources through the adoption of national, regional, and continental policies, strategies and programmes
- The 1991 Treaty establishing the African Economic Community.

At the SADC regional level the relevant legislative framework includes, inter alia:

- The 1992 Treaty of the Southern African Development Community
- The 2003 (Revised) Protocol on Shared Water Courses:
  - The overall objective of the Protocol is to provide closer cooperation for the judicious, sustainable and co-coordinated management, protection and utilisation of shared watercourses
  - It promotes co-coordinated and integrated development and management plans of shared watercourses which are environmentally sound
  - Promotes the harmonisation and monitoring of legislation and policies for the planning, development, conservation, protection of shared watercourses, and allocation of the resources thereof
  - In the context of the KAZA TFCA, the most important provisions oblige states' parties to have sustainable, equitable utilisation of the shared watercourses. In addition the Protocol provides for the 'no significant harm' to the other states' watercourses (Article 2 (b) also Article 7 (a))
- The 1999 SADC Protocol on Wildlife Conservation and Law Enforcement:
  - The Protocol seeks to conserve wildlife and ensure the sustainable utilisation of its resources

- The primary objective is to "establish within the region and within the framework of the respective national laws of each state party, common approaches to the conservation and sustainable use of wildlife resources and to assist with the effective enforcement of laws governing those resources"
- The most relevant applicable to the KAZA TFCA requires state parties to promote the conservation of shared wildlife resources through the establishment of trans-frontier conservation areas
- Contracting states are obliged to harmonize legal frameworks governing wildlife use and conservation

- The 2002 Protocol on Forestry:
  - "Promote the development, conservation, sustainable management and utilisation of all types of forests and trees; promote trade in forest products throughout the Region in order to alleviate poverty and generate economic opportunities for the peoples of the Region; and achieve effective protection of the environment"
  - Article 14 of the Protocol is relevant to the KAZA TFCA as it requires state parties to enter into agreements to promote the co-operative and integrated management of the trans-boundary forests and protected areas
- The Protocol on Fisheries:
  - Set an objective of "[promoting] responsible and sustainable use of the living aquatic resources and aquatic ecosystems of interest to state parties"
  - Such an objective is primarily intended to take effect within national boundaries but where there are shared resources such as in the KAZA TFCA.

Legislation supporting environmental protection and TFCA development in Botswana includes, *inter alia*:

- Agricultural Resource Conservation chap 35:06
- Anthropological Research Act Cap 59:02,
- Aquatic Weeds chap 34:04
- Atmospheric Pollution (Prevention) chap 56:03
- Civil Aviation chap 71:01-03
- Custom and Excise chap 50:01
- Diseases of Animals chap 37:01
- Environmental Impact Assessment Act 2005. Chap 65:07
- Fencing chap 33:04
- Fish Protection chap 38:04
- Forest chap 38:03
- Herbage Preservation chap 38:02
- Immigration Act chap 25:02
- Mines and Minerals chap 66:01
- Mines, quarries Works and machinery chap 44:02
- Monuments and Relics Act. Chap 59:03
- Mutual Assistance in Criminal Matters Cap 08:04
- Plant protection chap 35:02
- Tourism Act 2009. Chap 42:09
- Waste Management Act 1998. Chap 65:06
- Wildlife Conservation and National Parks Act, (Act No. 28 of 1992).

2.3.2 Current Institutional Arrangements

2.3.2.1 Broader Governance Setting

Botswana is governed by a democratic multi-party parliamentary system. Executive power is exercised by the Cabinet. Legislative power is vested in the Parliament. The judiciary is independent of the executive and the legislature. Botswana is geographically divided into 12 districts and eighty town councils - all governed by elected councils (refer Figure 6). The districts relevant to the study area are Ngamiland-, Chobe- and Central District (refer Map 29).

Management of natural resources and PAs as well as tourism resort under the Ministry of Environment, Wildlife and Tourism.

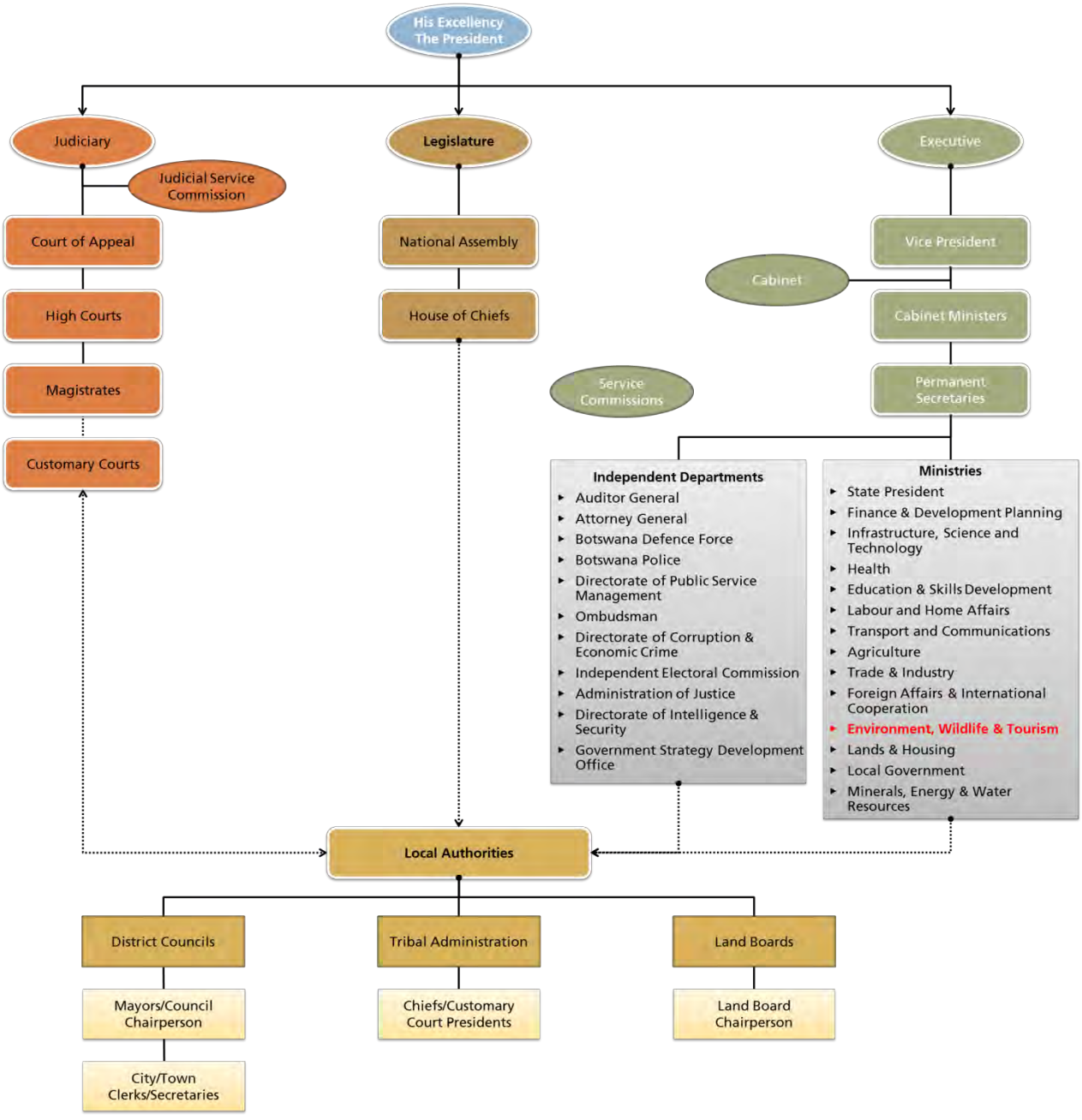
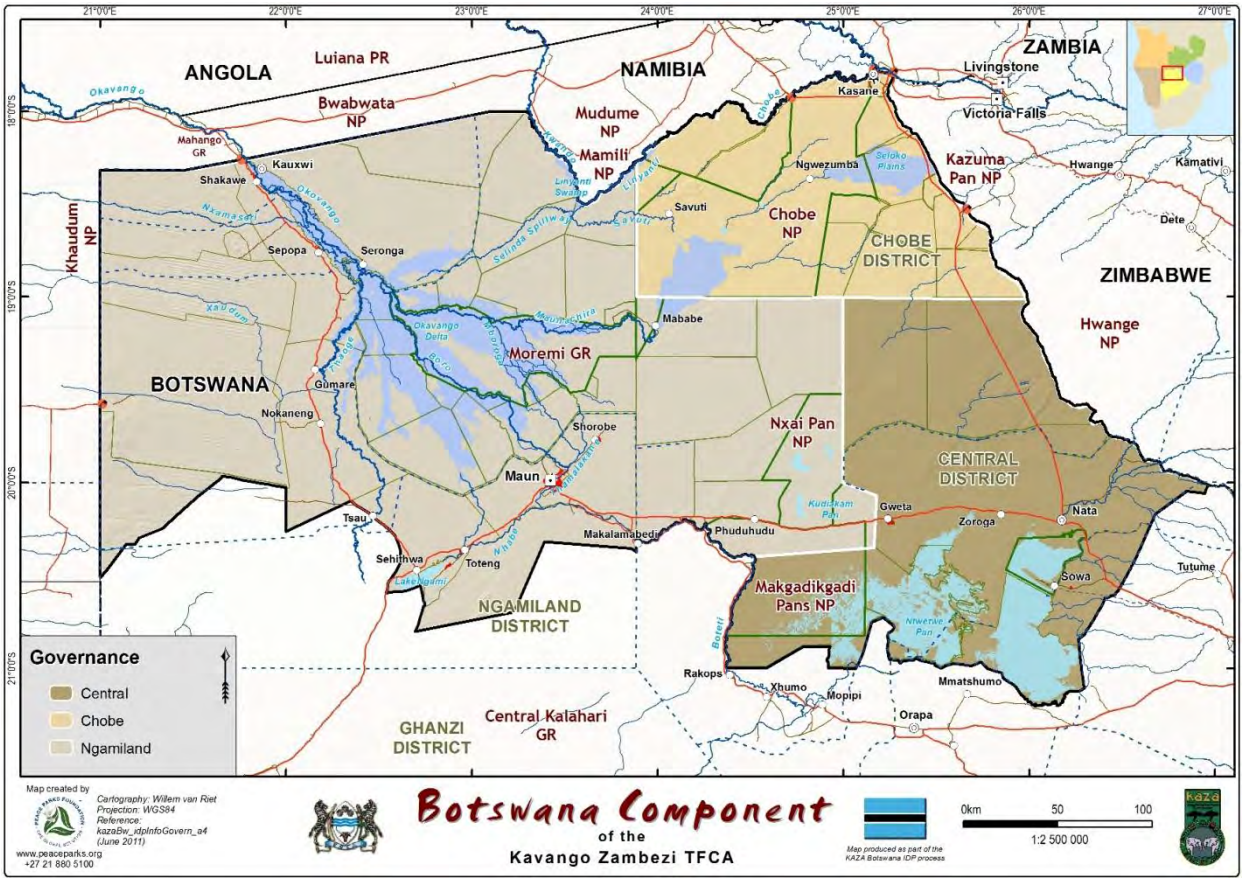


Figure 6: Botswana Government Organisational Chart

Adapted from Government of the Republic of Botswana, December 2009



Map 29: Governance Boundaries

2.3.2.2 Structure for the Implementation of KAZA TFCA

The constituent bodies of the Organisational Structure of the KAZA TFCA comprise the following (refer Figure 7):

- The **Ministerial Committee** made up of Ministers responsible for environment, natural resources, wildlife and tourism in the partner countries represents the highest level of accountability and decision making especially with regards to policy and strategic management of the KAZA TFCA.
- The **Committee of Senior Officials** comprising the Permanent Secretaries of the Ministries responsible for KAZA in the five partner countries along with SADC is responsible for translating the decisions of the Ministerial Committee into operational activities, guidelines and strategies; monitoring overall progress in the KAZA TFCA; providing advice to and clearing all documentation for the Ministerial Committee; and monitoring the management and disbursement of financial resources availed to the KAZA TFCA. It also ascertains that funds to facilitate implementation of different programmes and activities of the TFCA are secured and fully accounted for.
- The **Technical Committee** (TC) of officials from the partner countries and their respective stakeholders – the TC has the dual role of ensuring programme implementation by translating the decisions of the Ministerial Committee into action plans and overseeing the operations and functions of the KAZA TFCA Secretariat. The TC draws its membership from senior government officials of the KAZA TFCA coordinating agencies and – a representative of the SADC Secretariat is also a member of this Committee.
- The **National Steering Committees** - these represent fora which provide the diverse stakeholders of the KAZA TFCA with a voice in the overall planning and development processes. These Committees operate at both national and local levels with the latter represented by sub-committees. At the national level, the composition of the National Steering Committees comprises important role players within the natural resources sectors and other deemed sectors critical to the development of the KAZA TFCA - at local level, the partner countries draw membership of the sub-committees from stakeholder representatives and other interest groups within the geographical areas committed to the KAZA TFCA. National Steering Committees have been established in all five partner countries.

- The **Working Groups** (WG) - the establishment and development of the KAZA TFCA includes sectors that are outside the sphere of natural resources conservation and tourism development. To accord such sectors an opportunity to be involved in the planning processes of KAZA TFCA, the MOU makes provision for the existence of working groups. Five working groups are currently being established – Communications; Community; Conservation (with three sub committees); Safety and Security; and Tourism. Each partner country has nominated a minimum of two individuals to each working group (and four in the Conservation WG) who may be from the public or private sector within the country. These thematic experts meet periodically to guide the activities of the KAZA TFCA in that specific field with an integrated and harmonised approach
- **Coordinating Country** - the primary role of the Coordinating Country is to coordinate KAZA activities on behalf of the other partner countries on a two year rotation following an alphabetic order. The Coordinating Country provides leadership as the focal point in driving the KAZA TFCA planning and development processes and in ensuring that the Secretariat delivers against expected outputs. Botswana coordinated the process for years 2007 and 2008, with Namibia served as Coordinating Country for the KAZA TFCA during the period 2009 and 2010 whilst Zambia took over the role of Coordinating Country in February 2011 for the period 2011 - 2012
- The **KAZA TFCA Secretariat** The day-to-day operations of establishing and developing the KAZA TFCA are driven and coordinated by the Secretariat for the KAZA TFCA. This Secretariat consists of a core team of a Regional Coordinator and country-level support through five Liaison Officers. The core team is based at the head office of the Secretariat, in Kasane, Botswana, whereas the Liaison Officers are based in the respective partner countries. There is no need of including the whole of staff members as this is likely to change as the KAZA structures change (Kavango Zambezi Transfrontier Conservation Area).

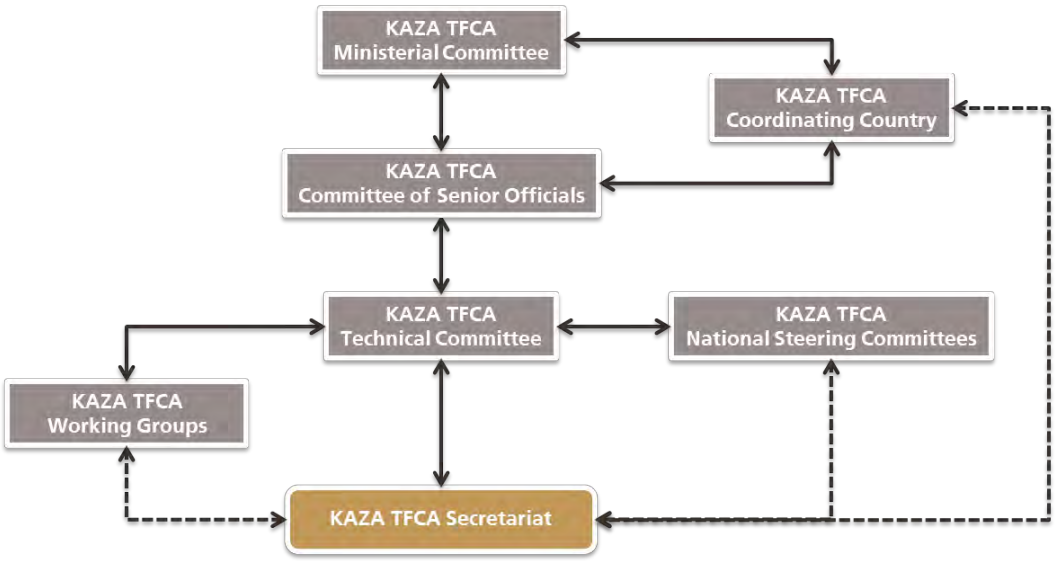


Figure 7: KAZA TFCA Organisational Structure

Adapted from Kavango Zambezi Transfrontier Conservation Area

2.4 Ecosystem Services, Sensitivities and Threats

2.4.1 Ecosystem Services

Ecosystem services are the benefits that human populations obtain from natural environments and ecosystems. Human populations are reliant on their natural environment for the provisioning of food, clean water, air, natural fibres etc. Furthermore, the natural environment also provides a range of intangible benefits such as soil fertility, recreational opportunities, spiritual and aesthetic value.

In summary healthy ecosystems provide:

- The Stuff of Life — food, fresh water, timber, and fibre for clothing
- Protection from extreme weather, floods, fire, and disease
- Regulation of the Earth's climate
- Filtration of wastes and pollutants
- Regeneration of clean air, water, and soil
- Inspiration, recreation and spiritual sustenance, and support for a way of life.

The suite of benefits provided by ecosystem services can be broadly grouped into four categories:

- **Provisioning** services - these include services which produce basic goods, e.g. food, water and wood
- **Regulating** services - these services provide bounds on ecosystem functions, and include the various benefits which accrue as ecosystem processes impact on the physical and biological components of the environment. Examples include flood protection, regulation of air and water quality and climate regulation
- **Supporting** services - these services are necessary for the maintenance of ecosystem services falling into the above categories. Supporting services include the primary production of biomass, soil protection and biodiversity. In other words, these services are essential for the continued delivery of other ecosystem services
- **Cultural** services - these include the non-material benefits which accrue from the natural environment, and can be considered to enrich human existence. Examples of cultural services include recreation, spiritual enrichment, tourism and aesthetic enjoyment.

The ecosystems on which humans depend are not static. The activities of human beings are currently the dominant force for change in ecosystems. In the last 50 years, humans have altered ecosystems at an unprecedented rate. Naturally, these changes have a substantial impact on the provision of services by these altered ecosystems.

There are thus costs to these changes, with the costs disproportionately borne by the poor and marginalised. It is the same poor and marginalised who are most reliant on the effective functioning of ecosystem services. Ignoring the protection of ecosystem services will also limit future development possibilities linked with human well-being and poverty reduction (refer Figure 8) (Peace Parks Foundation, 2009).

The services provided by the natural environments and ecosystems of the Botswana Component of the KAZA TFCA are discussed in the following paragraphs.

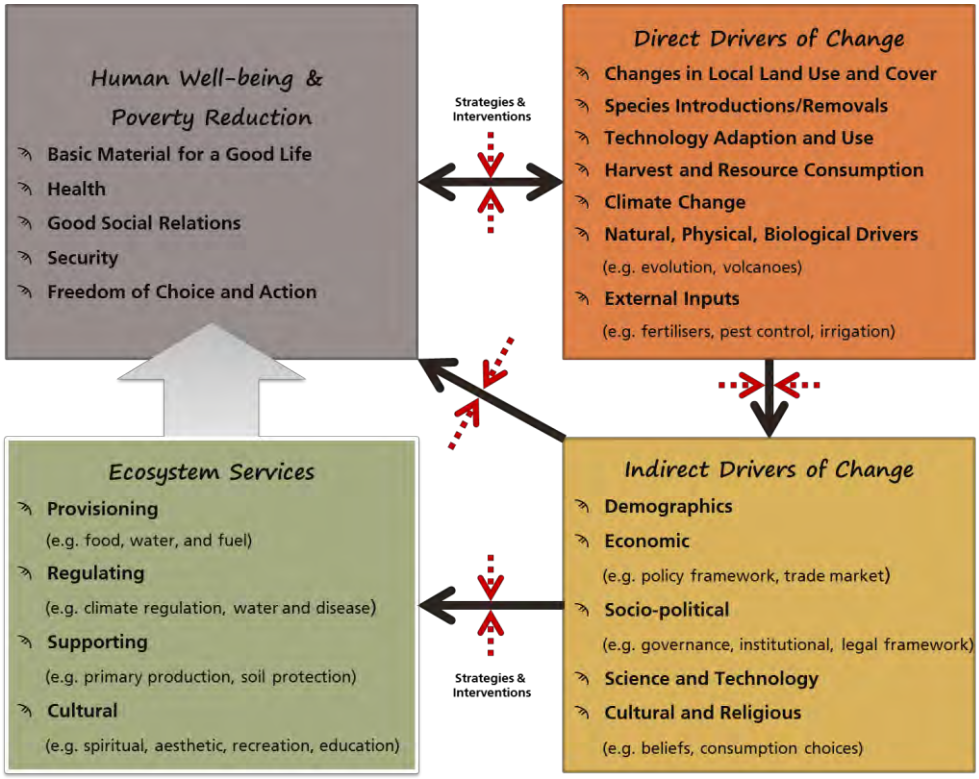


Figure 8: Ecosystem Services with Drivers influencing Human Well-being

Adapted from MA 2005, http://maps.grida.no/go/graphic/millennium-ecosystem-assessment-conceptual-framework.

2.4.1.1 Provisioning

Food

The production and gathering of food is reliant on natural resources. While food production takes place in both natural and agricultural systems, even in the latter productivity is reliant on the natural environment (soils, climate etc.).

Within the study area the following prevalent sources of food are recognised:

- Crop production
- Livestock production
- Fishing
- Hunter-gathering.

This analysis will focus specifically on crop and livestock production. Unfortunately, there is currently no comprehensive data available for the study area describing the current or potential distribution of fish resources. The FAO is, however, currently busy compiling information which would allow for fish resources to be included at a later stage (Peace Parks Foundation, 2009).

The potential of the land to produce food is higher in the northern areas of the study area especially in the most north-west and north-east. This potential decreases southwards (refer Map 30).

Most of the land within the study area is classed as *very low* with regards to the potential for livestock. The area around Maun, the upper reaches of the delta and the area west of Savuti are classed as *low* potential (refer Map XXX). The land potential for pastures are the highest in the north-western corner of the study area, north of the Panhandle, along the Linyanti River and the area below the Seloko Plains (refer Map 32).

Information and maps still to be added: Agricultural Potential for Perennials, Annuals and Pastures

Water

Water is critical to the survival of all biological life-forms, humans included. In addition, the maintenance of many ecosystem processes and the viability of many economic activities rely on water.

This analysis considers both the production of water and the natural systems by which water is made available. Both surface and groundwater "delivery" are considered in this analysis (Peace Parks Foundation, 2009).

The surface water balance within the Botswana Study Area is higher in the northern areas and decreases southwards. The larger portion of this study area has a negative water balance i.e. more water evaporates from the area than is replenished here (refer Map 36).

Surface water production potential is the highest towards the western side of the study area (refer Map 37) with groundwater production potential effectively the inverse (refer Map 38).

Energy

Wood provides the main fuel source for preparing food, providing warmth etc. In southern Africa, it has been estimated that approximately a third of the energy used originates from trees, with four-fifths of the population using biomass energy for heating and cooking.

The form in which wood is used as fuel differs depending on the distance from source. When source and place of consumption are close, wood is used. While, when these are further apart wood converted to charcoal is more commonly used (Peace Parks Foundation, 2009).

The northern parts of the study area has the higher fuel wood production rate of between 12 and 19 tons/km^2/year with a few patches in the Chobe District up to 26 tons/km^2/year. The southern parts have lower potential – between 4 and 12 tons/km^2/year.

Arts, Crafts and Building Material

It has become apparently clear from studies conducted in the past that natural resources form the backbone of community livelihoods in the Okavango Delta even though the quantities being harvested on an annual basis, areas where they are being harvested, who harvest them and the methods of harvesting, have not been satisfactorily documented.

According to the socio-economic survey of the Every River Project of 2001 in 20 villages within the Ramsar site, the most important vegetation resources for arts and crafts as well as building materials include palm shoots for basket weaving, grass, reeds, trees for woodcarving, trees for building and fencing. These activities compared collection of veld products for food and firewood are reflected in Figure 9. The data shows the most important vegetation resource is thatching grass (Okavango Delta Management Plan Project Secretariat, February 2006).

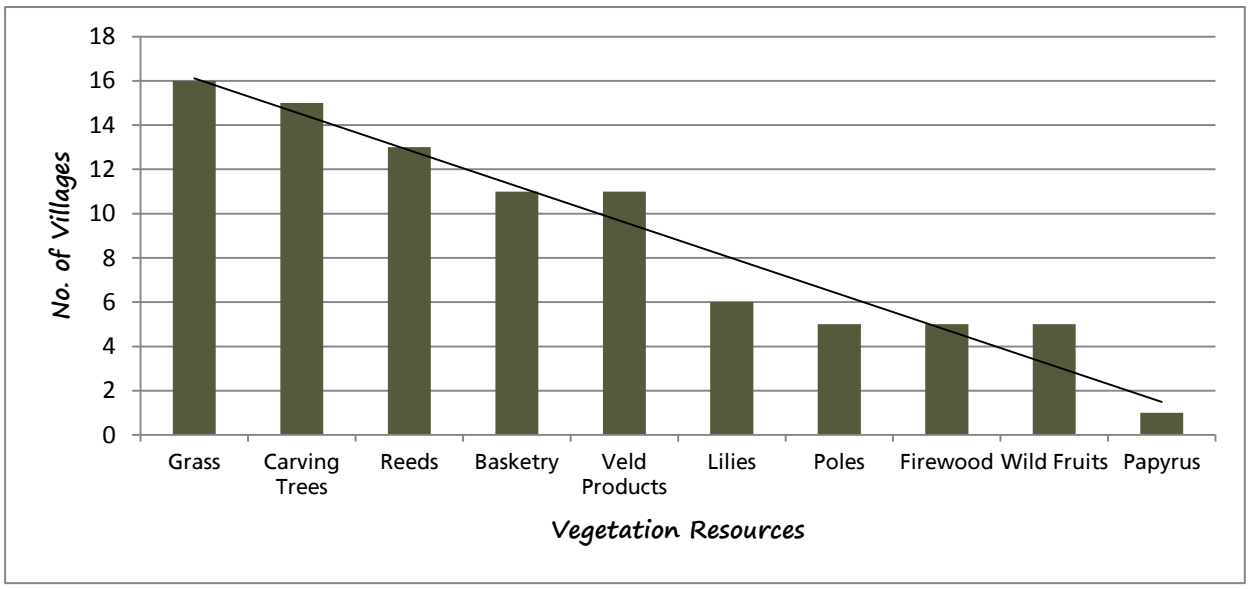
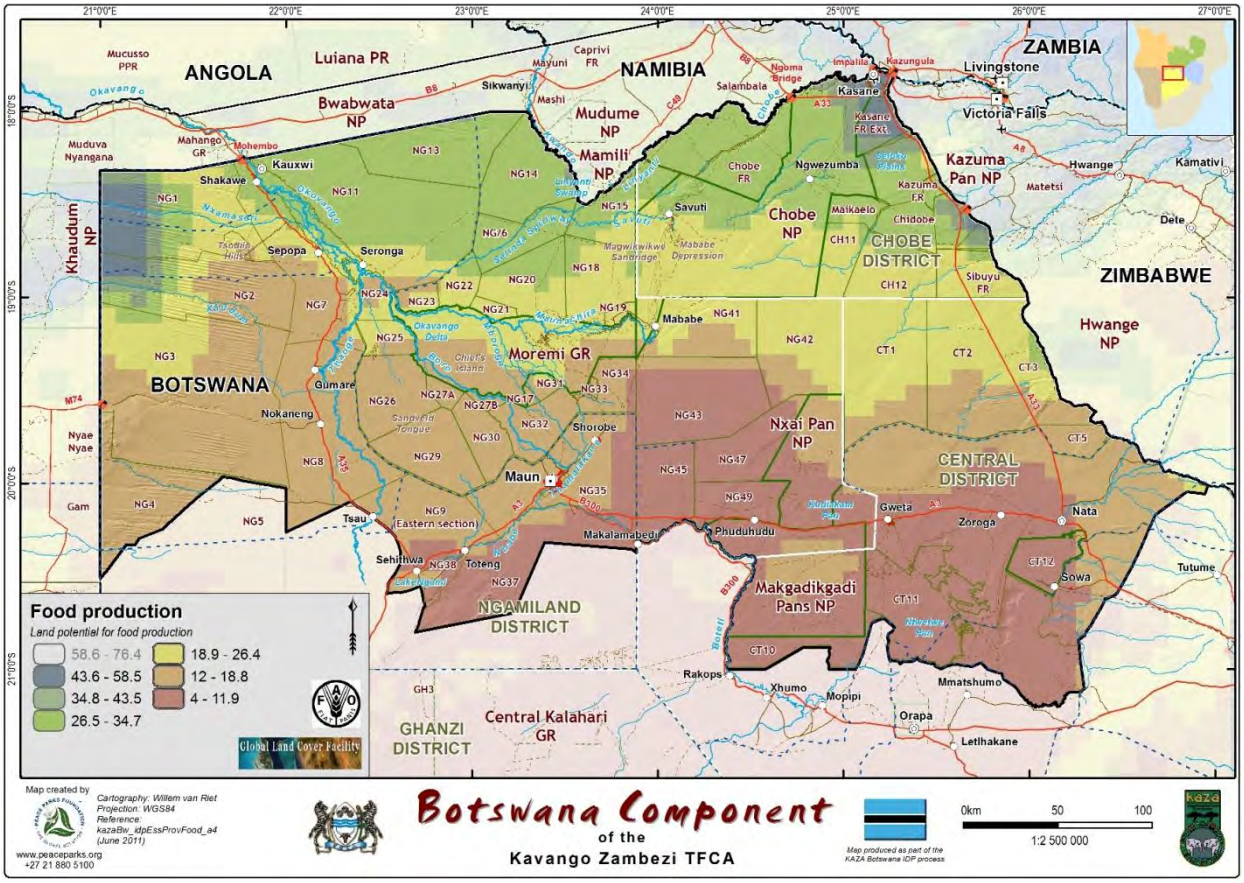
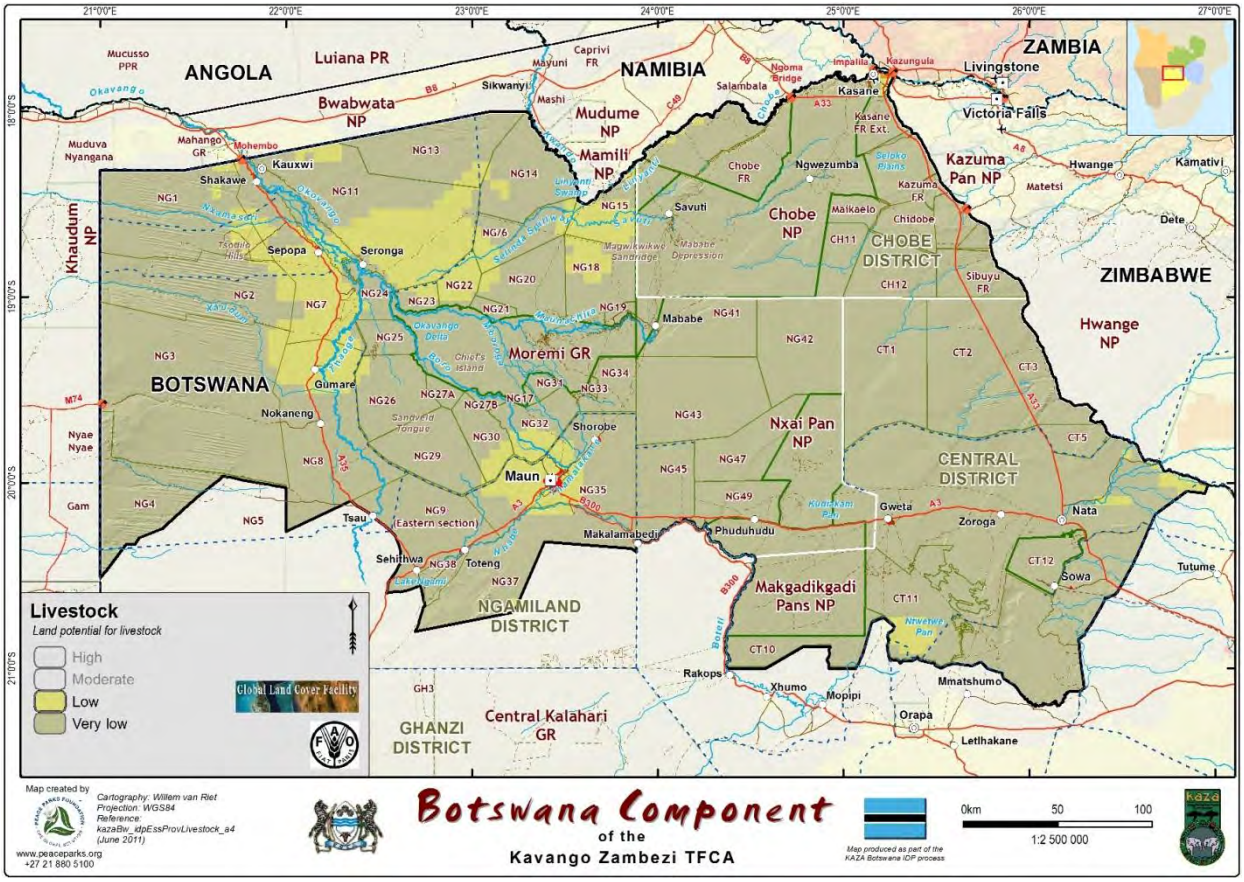


Figure 9: Vegetation Resources Use

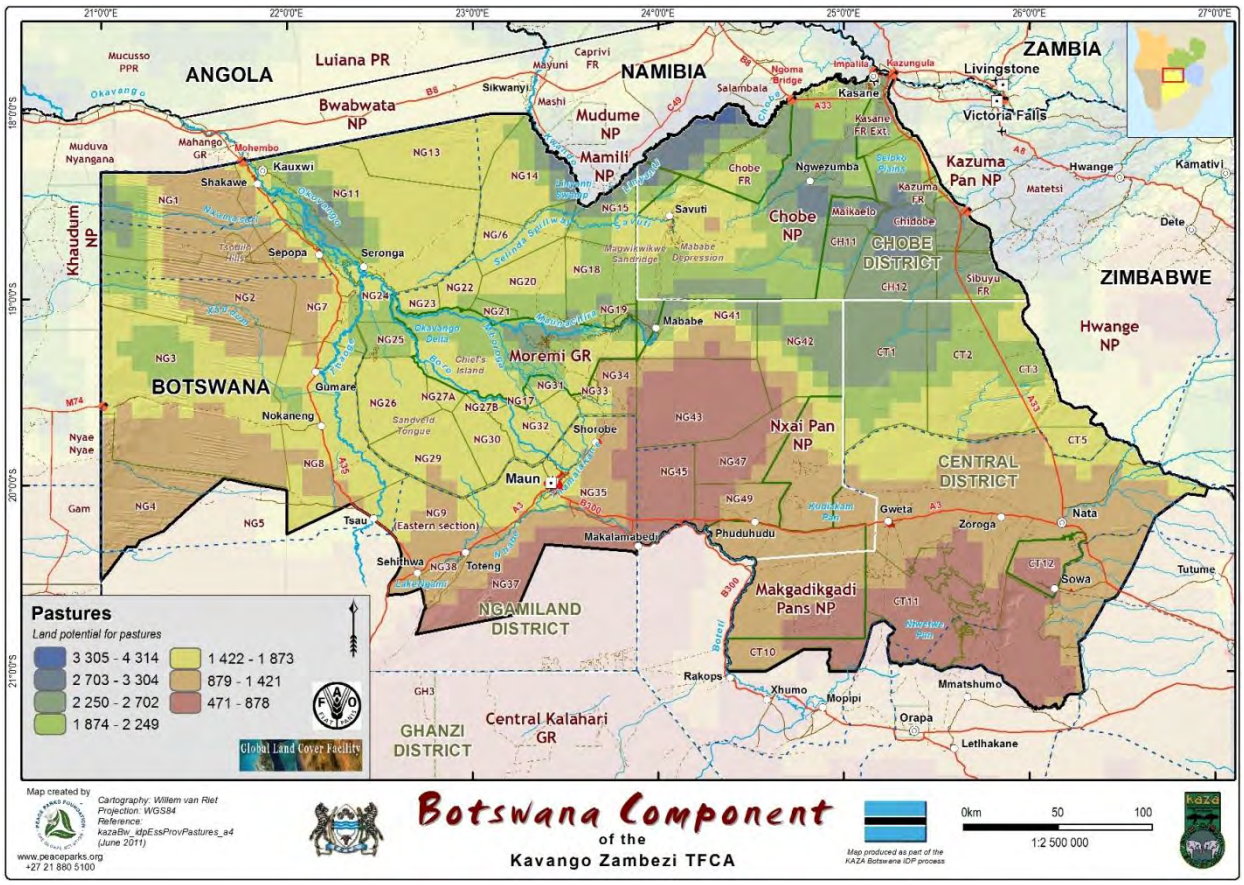
(Okavango Delta Management Plan Project Secretariat, February 2006)



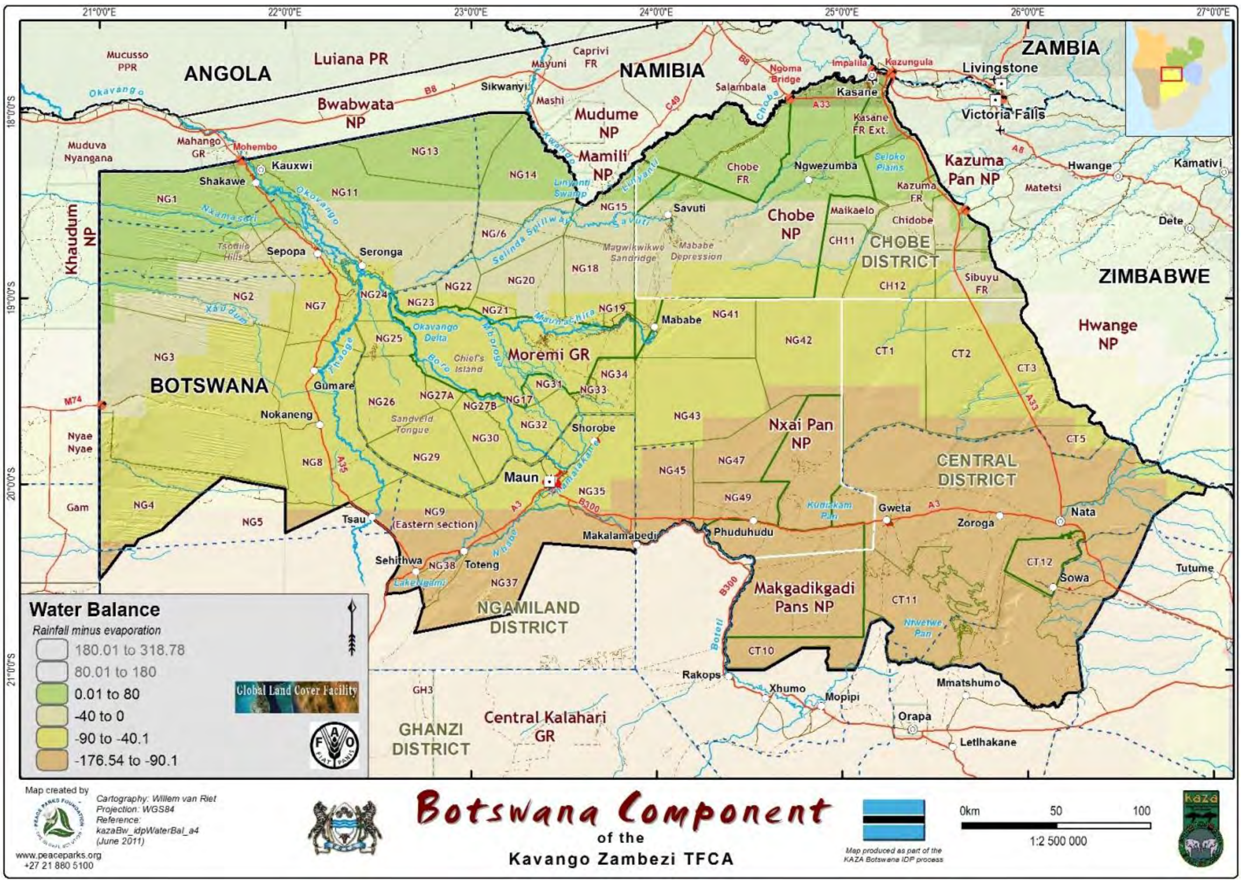
Map 30: Food Production Potential



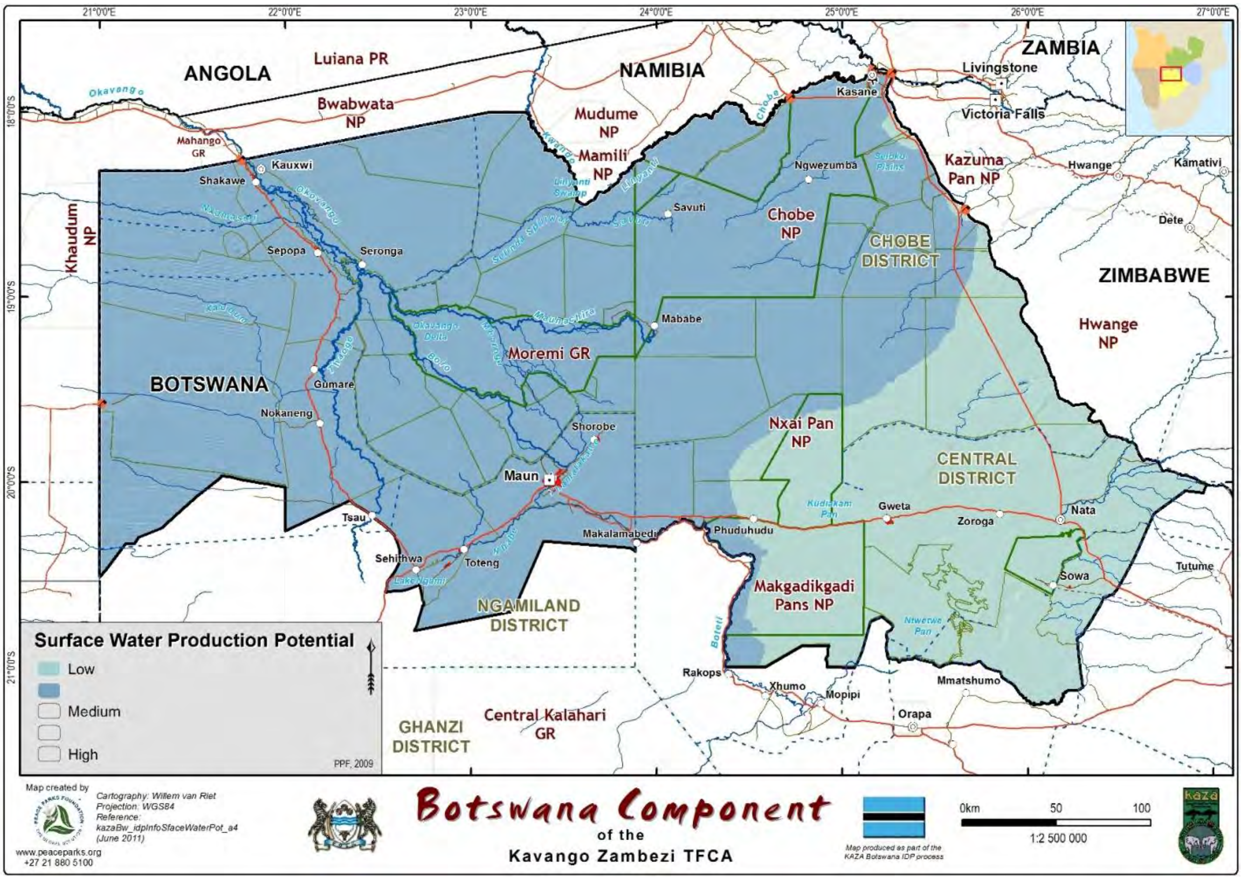
Map 31: Livestock Potential



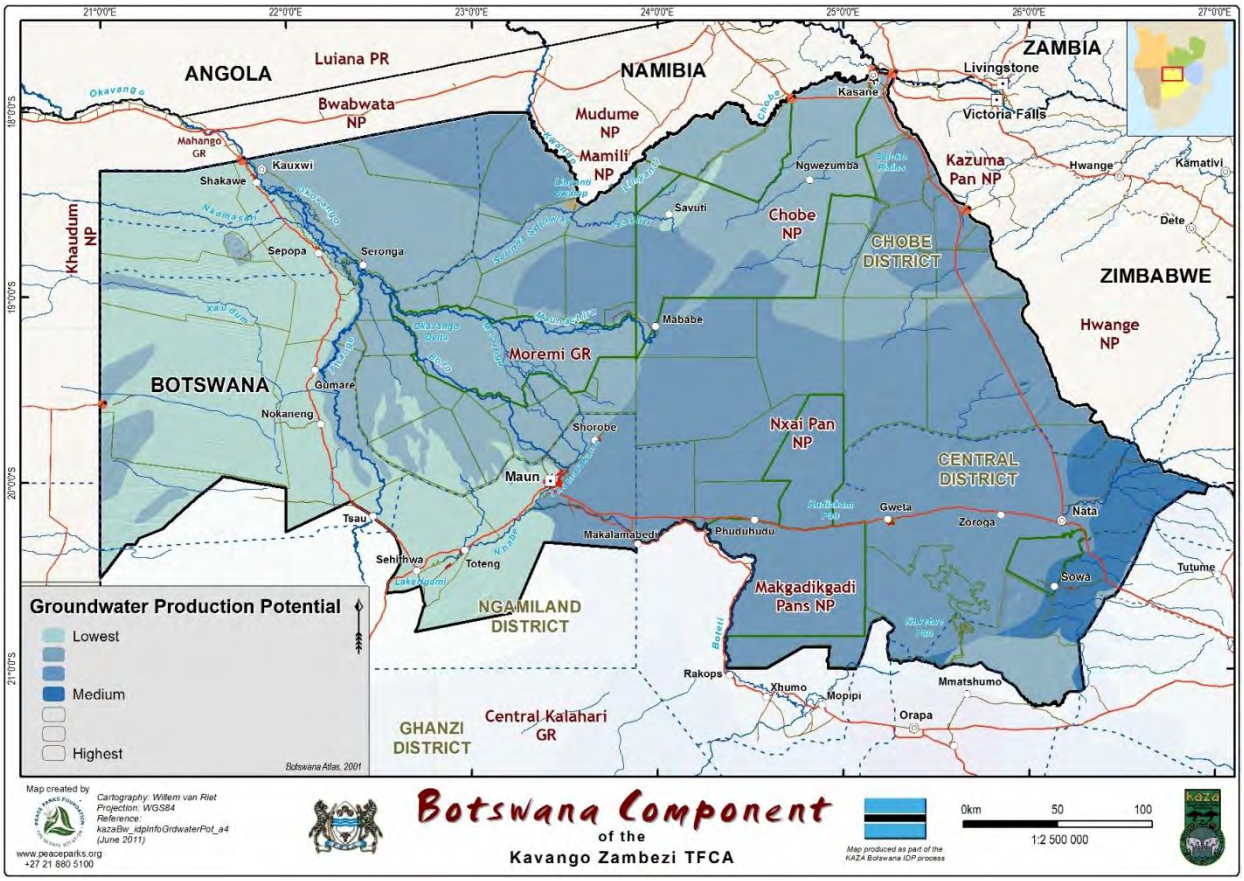
Map 32: Land Potential for Pastures



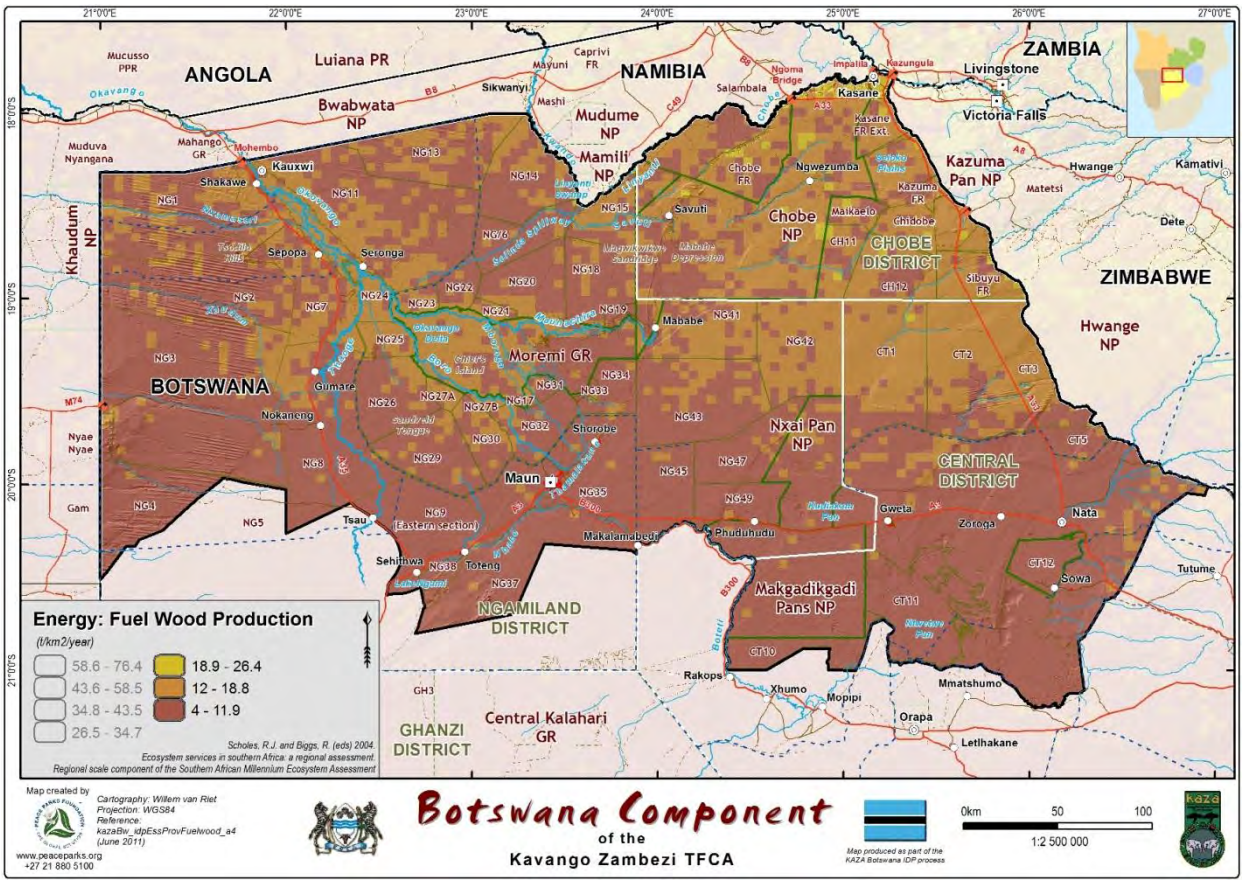
Map 36: Water Balance



Map 37: Surface Water Production Potential



Map 38: Groundwater Production Potential



Map 39: Energy: Fuel Wood

2.4.1.2 Regulating

Climate Regulation

Climate regulation occurs at both local and global scales. Local regulation is largely dependent on vegetation cover which impacts on the surface reflectance of solar radiation and water evaporation rates. Local regulation is not considered in this assessment as the available data does not allow for analysis at the required resolution.

On a global scale, carbon sequestration (the uptake of atmospheric carbon dioxide and transformation into plant biomass) controls atmospheric levels of carbon dioxide, which regulates global climate through the "greenhouse effect". A portion of the sequestered carbon is lost back to the atmosphere through respiration by plants and decomposers. The portion left represents the contribution of primarily plants to the containment of carbon dioxide. In addition, some plant litter is converted into recalcitrant humus which enhances the soil organic carbon pool (Peace Parks Foundation, 2009). Carbon storage in soils is thus the balance between the input of dead plant material (leaf and root litter) and losses from decomposition and mineralisation processes. Soil contains more carbon than all terrestrial vegetation and the atmosphere combined. (FAO Corporate Document Repository).

The above and below ground carbon sequestration potential of the study area is depicted in Map 40 and Map 41. The highest above carbon sequestration potential is evident in the areas north of the delta, Moremi and to the east of Moremi. Below carbon sequestration potential is generally fairly low with the highest being the south-western portions of the study area and the north and north-eastern side.

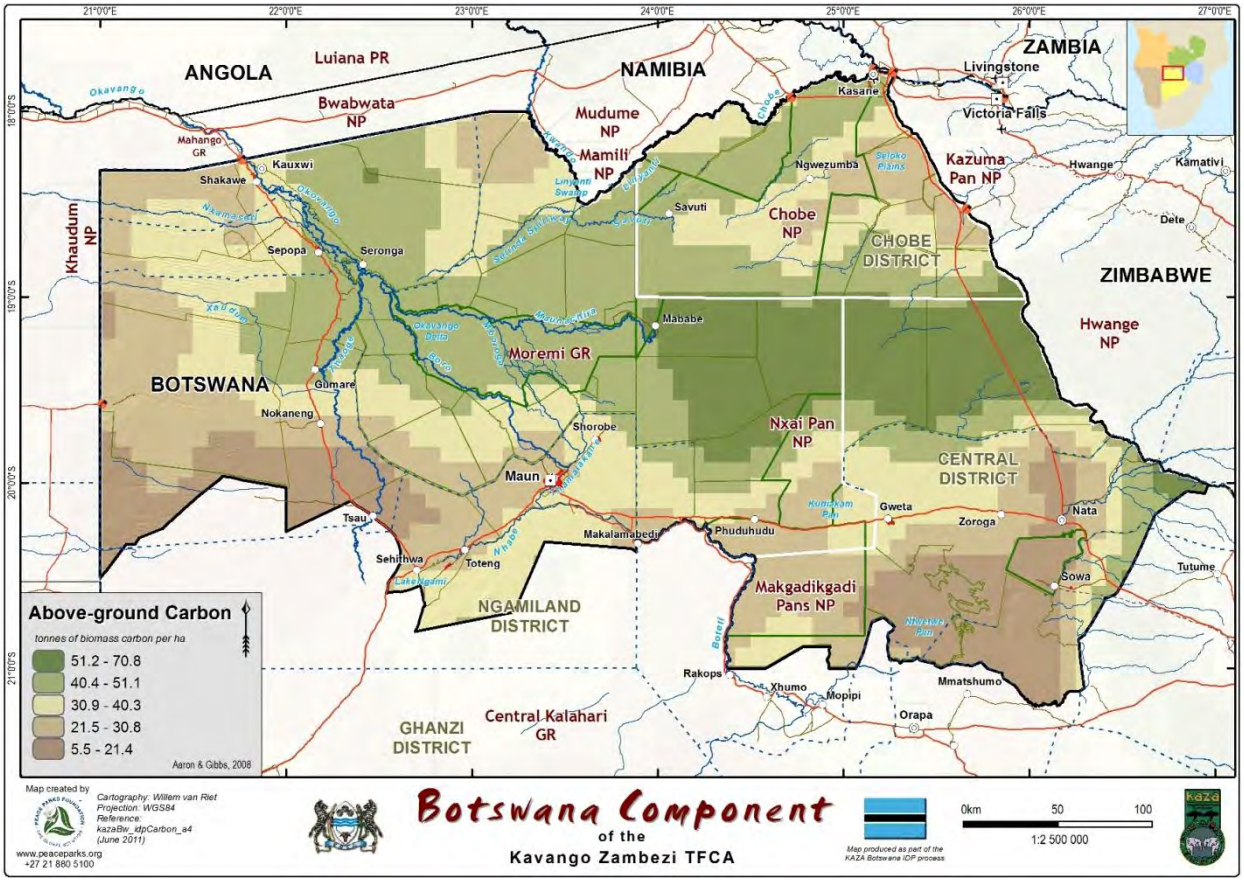
Water Regulation

As previously stated in the discussion on water production, water is a critical resource for a number of reasons. As a result the regulation of this resource is equally critical. Water regulation influences the availability of water for:

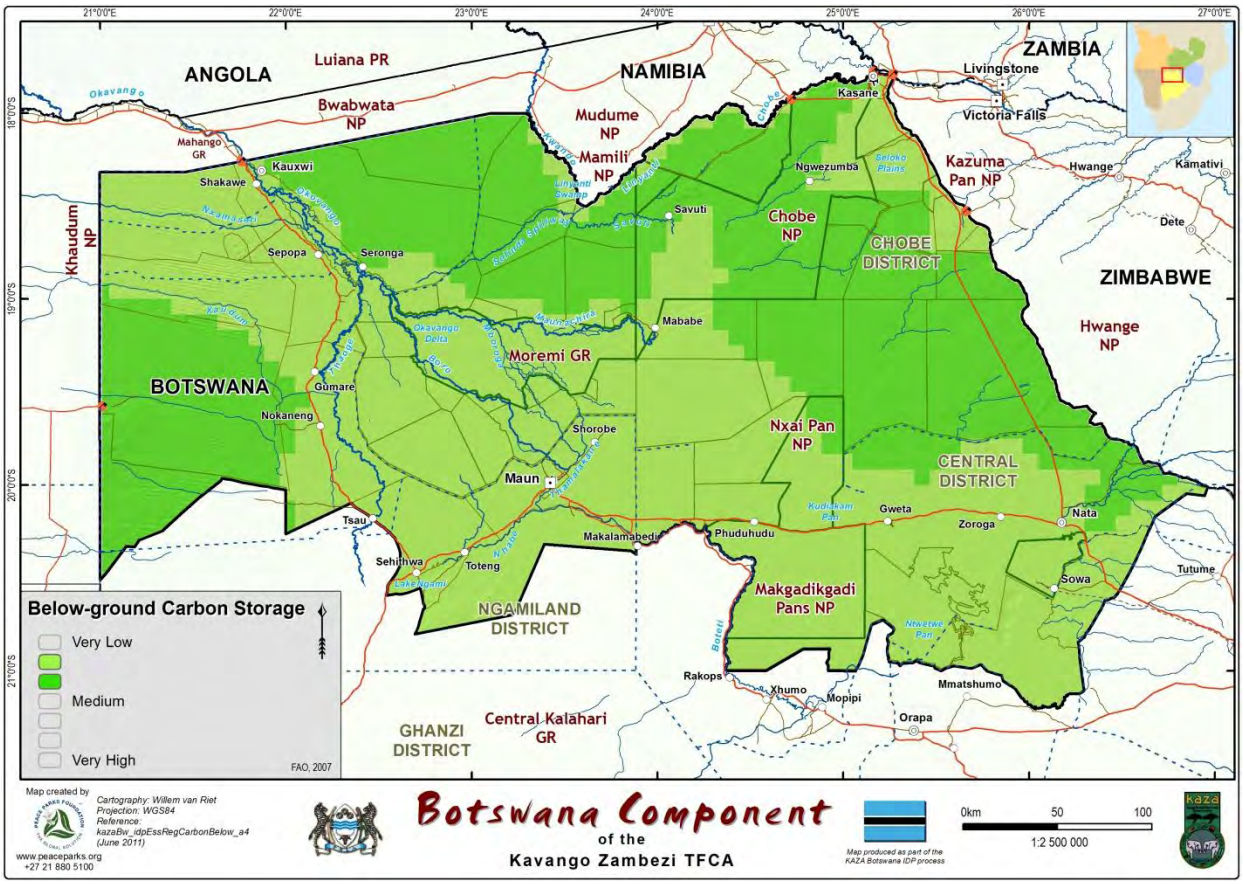
- Primary production
- Irrigation
- Consumption
- The occurrence of flash floods and the damage caused
- Groundwater recharge
- Silt and clay loads in downstream water systems.

Vegetation cover modulates the water regulation service, and its efficiency in intercepting rainfall determines the fraction available for human use. Vegetation cover also prevents soil loss, and in so doing prevents the reduction of water quality through increased siltation (Peace Parks Foundation, 2009).

The freshwater ecosystems of the study area thus provide a range of water regulating services such as natural flood control, water filtering and water storage (refer Section 2.1.5 and Map 16).



Map 40: Carbon: Above-ground



Map 41: Carbon: Below-ground

2.4.1.3 Supporting

Primary Production

Primary production is the production of organic compounds from atmospheric or aquatic carbon dioxide, mainly through the process of photosynthesis (which "consumes" water). All life on earth is either directly or indirectly reliant on primary production. In terrestrial environments, the vast majority of primary production is conducted by vascular plants. Primary production is a critical supporting service to other ecosystem services, e.g., food production and fuel-wood provisioning (Peace Parks Foundation, 2009).

Primary production potential of the study area is the highest in and around the delta, the Kazane area and to the north of Nata (refer Map 42).

Biodiversity

Biodiversity is the full diversity of life on earth. Biodiversity is not limited to the diversity of species, but also includes the variation in genes and ecosystems. Biodiversity provides the underlying conditions necessary for the delivery of ecosystem services, and influences both the quality and quantity of ecosystem services. For example, biodiversity provides the basis for the following:

- Crop varieties grown for foods and fibre
- Plants and animals used as traditional medicines
- Spiritual, cultural and aesthetic considerations
- Key attractions in nature-based tourism (Peace Parks Foundation, 2009).

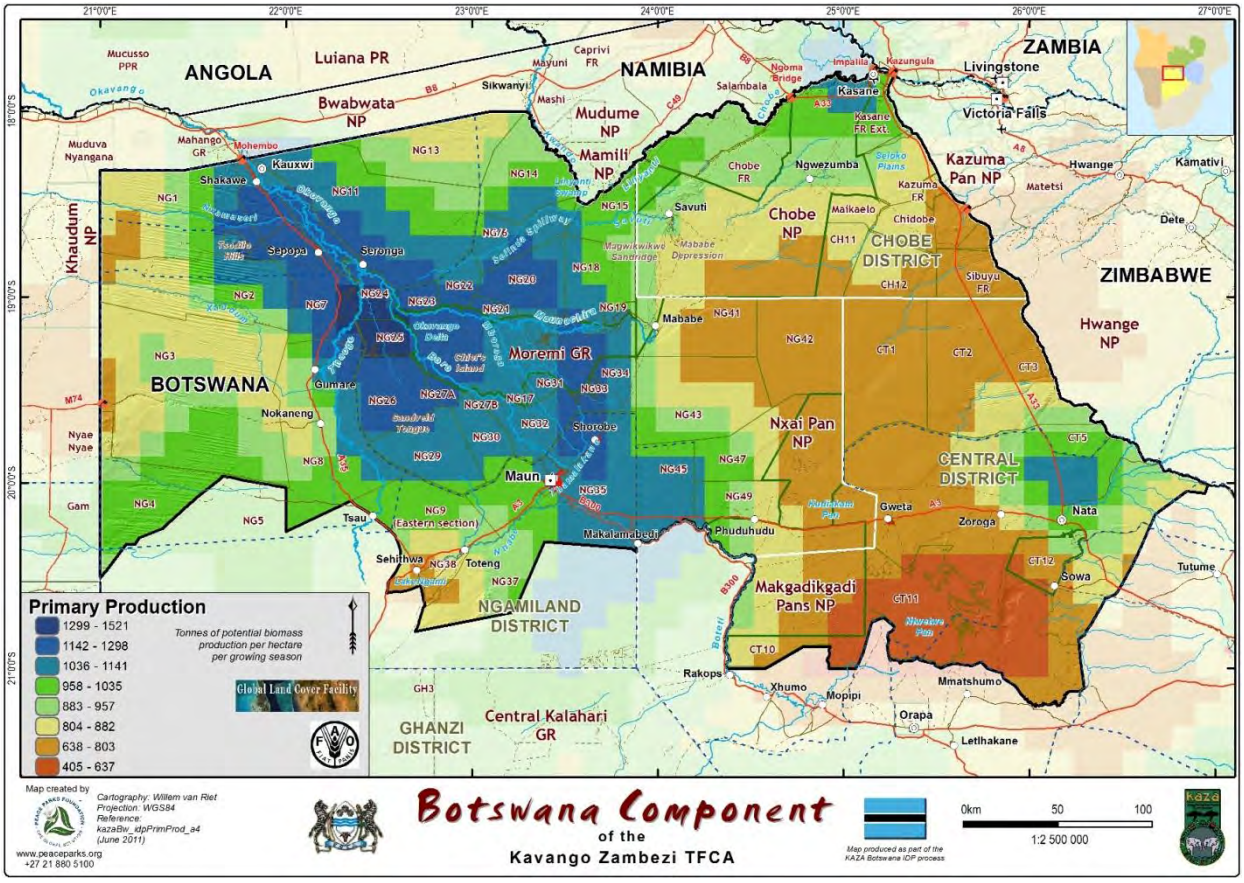
The combined fauna and flora; flora; mammal; amphibian and bird biodiversity of the study area are depicted in Map 43 to Map 47. The highest fauna and flora biodiversity is found around the delta and in the northern parts of the study area. Higher bird biodiversity is however, found in the southern sections of the study area (i.e. the Pans National Parks and sanctuaries) as well. The five (5) Important Birding Areas (IBA) falling within the study area are also indicated.

Soil Protection

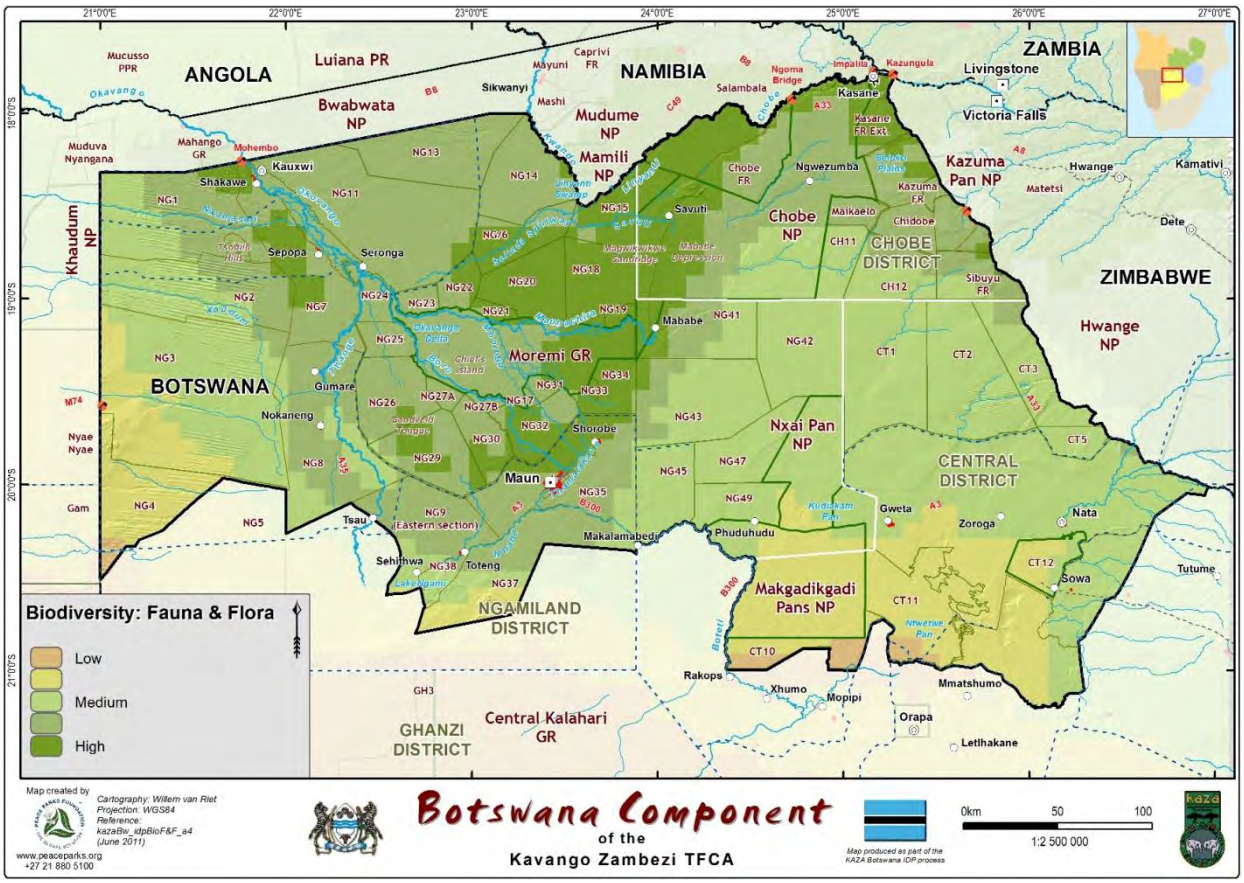
The process of soil formation is frequently countered by the much faster process of soil loss and degradation. Soil protection is therefore critical to the rate of soil formation and the quality of the soils produced. Naturally, this supports provisioning services like food and fuel-wood production. Vegetative cover plays a significant role in preventing soil loss and degradation. Vegetation cover protects soils in the following ways:

- The canopy intercepts rainfall, thus reducing the energy rain drops reaching the ground
- The provision of leaf litter/mulch which provides a surface protective layer retarding soil erosion and provides nutrients through decomposition
- The provision of basal cover which reduces the energy of horizontal water flows, especially during extreme rainfall events
- The shading effect of vegetation which reduces soil water evaporation (Peace Parks Foundation, 2009).

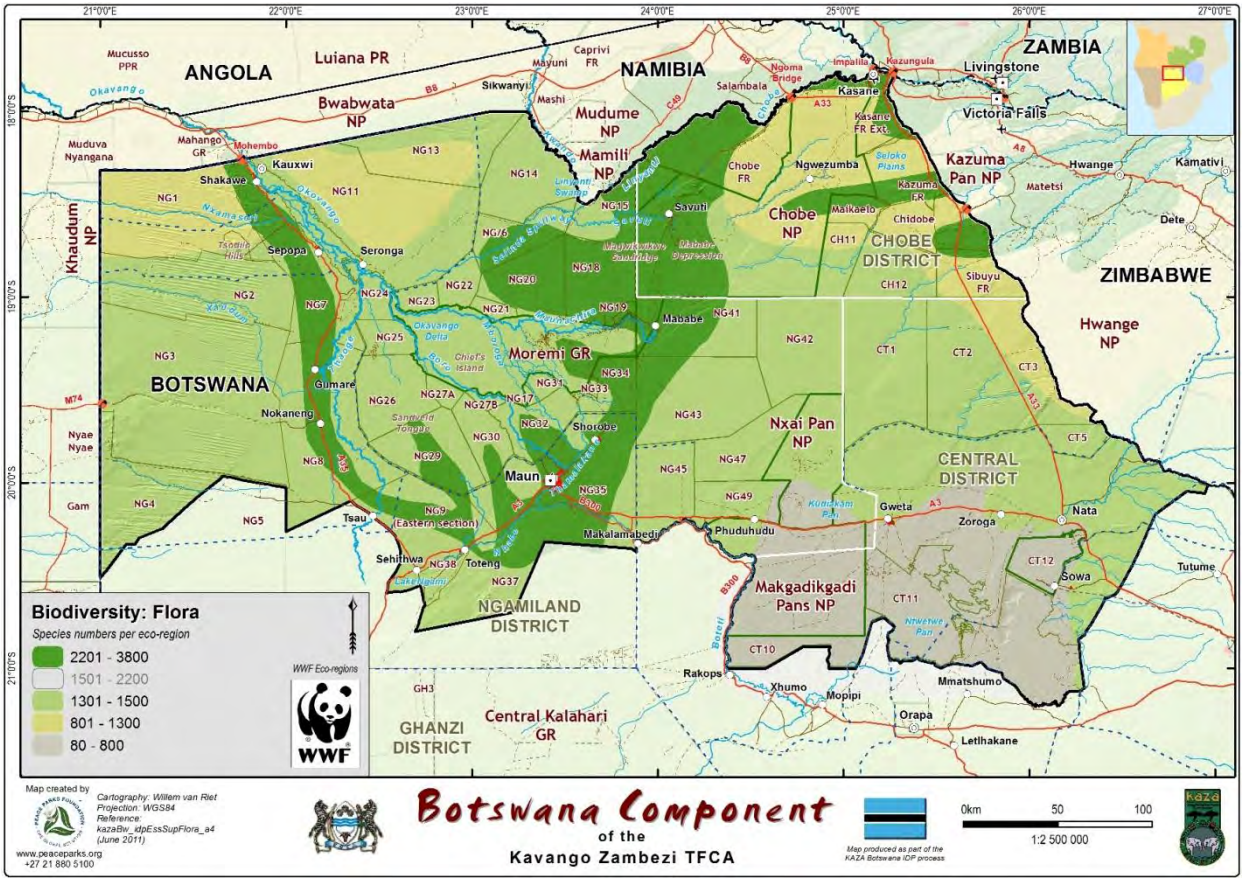
As a result of the vegetation coverage (woodlands and grasslands) the majority of the study area is well protected but for the area in the south associated with the salt marches and pans (refer Map 48).



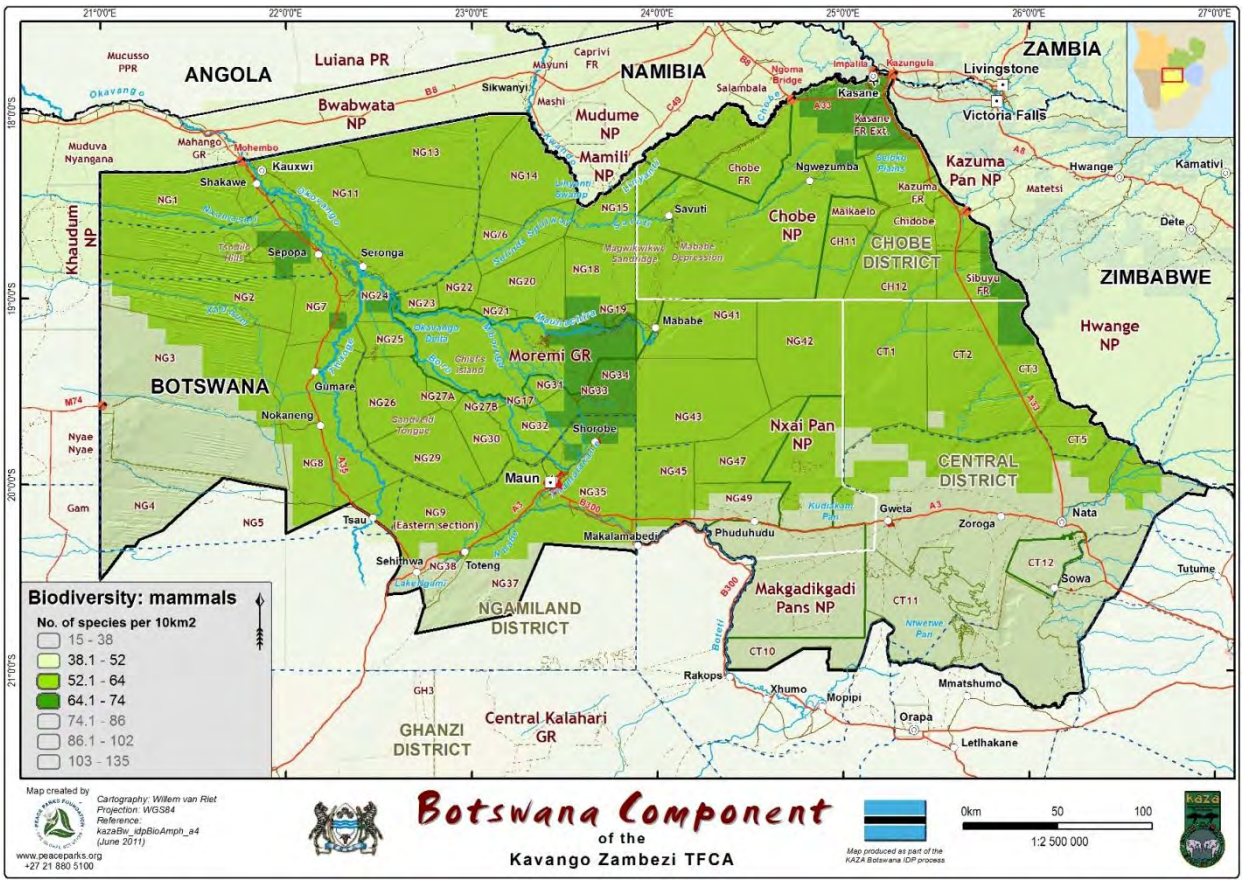
Map 42: Primary Production



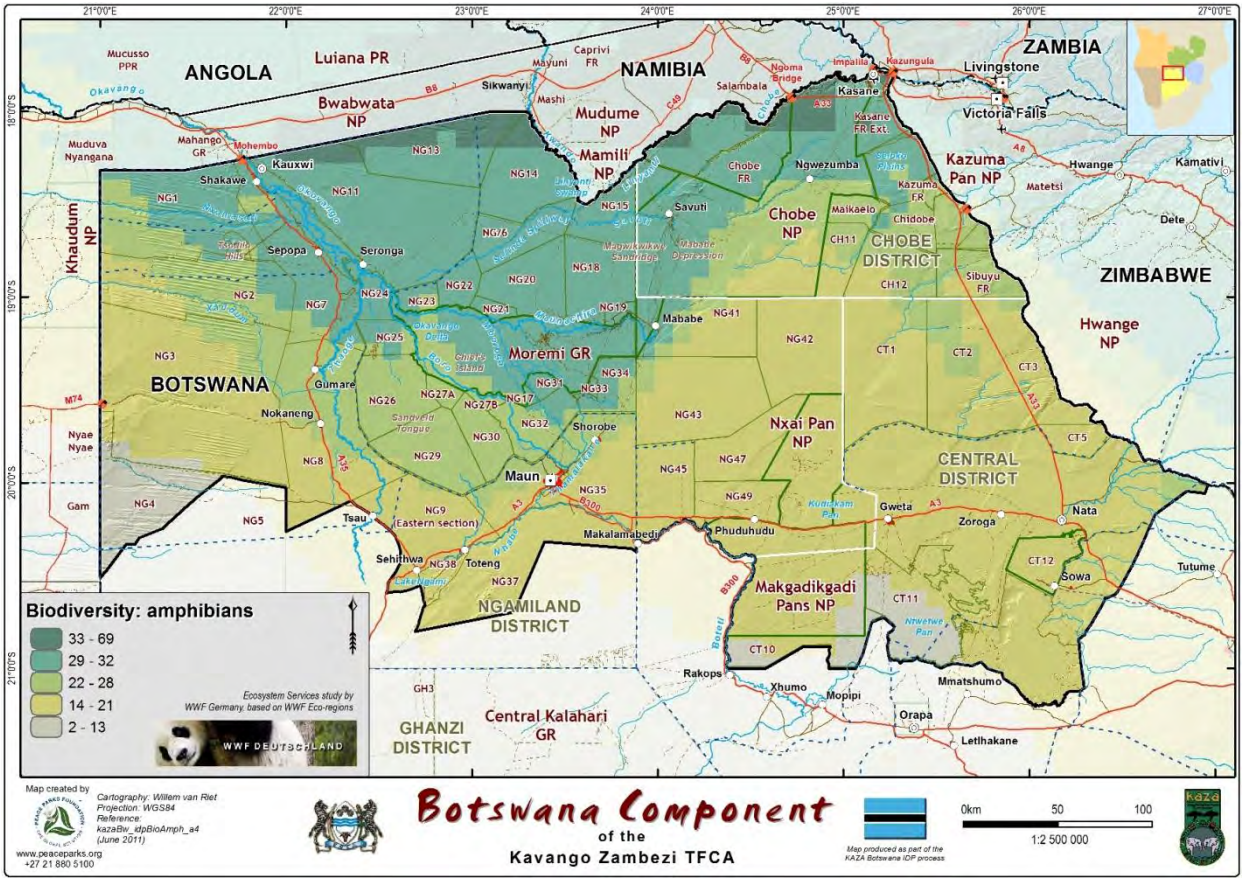
Map 43: Biodiversity: Fauna & Flora



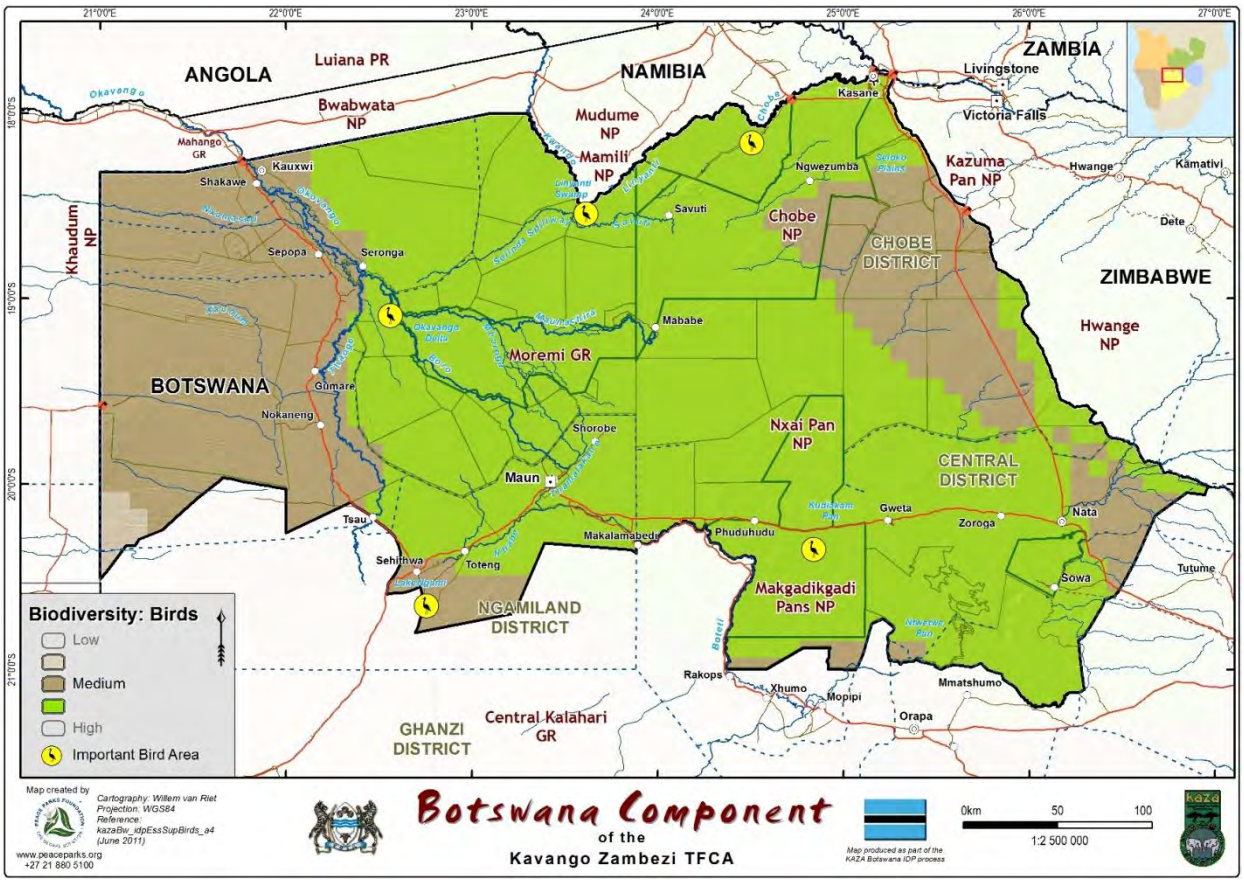
Map 44: Biodiversity: Flora



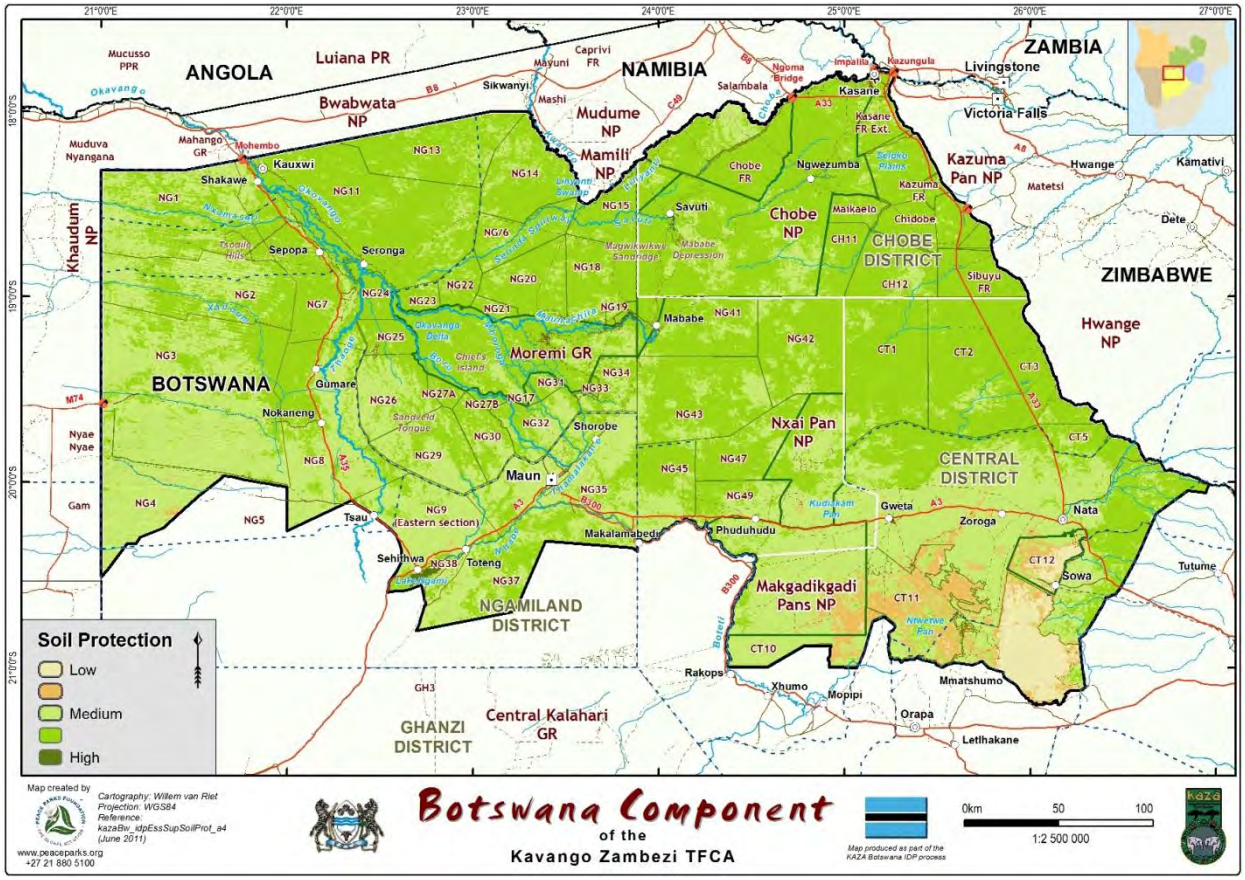
Map 45: Biodiversity: Mammals



Map 46: Biodiversity: Amphibians



Map 47: Biodiversity: Birds



Map 48: Soil Protection

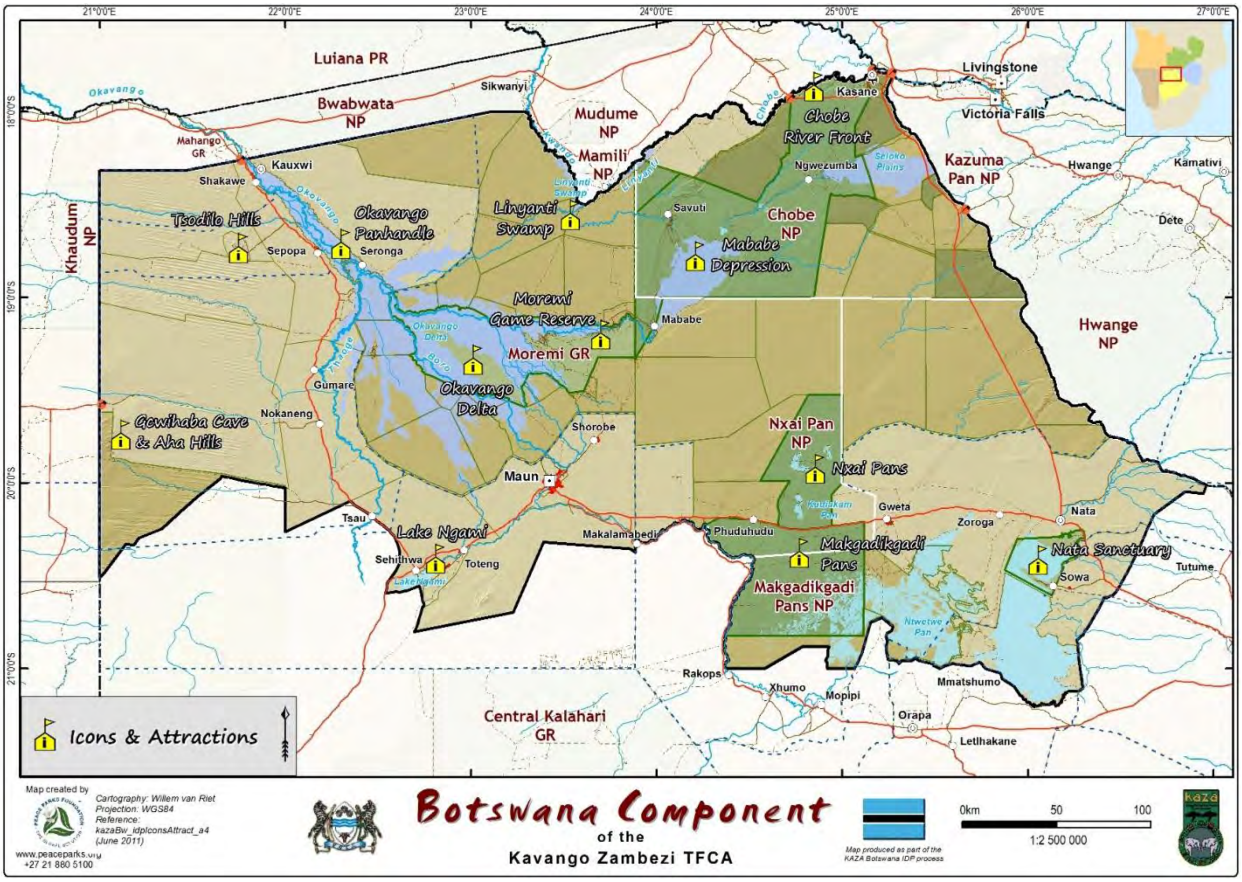
2.4.1.4 Cultural

The Millennium Ecosystem Assessment (2005) defines cultural services as "non-material benefits people obtain from ecosystems through spiritual enrichment, cognitive development, reflection, recreation and aesthetic experience". Bahr and Marga n.d classify cultural ecosystem services according to the following aspects:

- Spiritual and Religious Values
- Cultural History
- Educational and Social Value
- Inspiration and Aesthetics
- Recreation and Tourism.

These services and aspects become most evident when seen in terms of cultural landscapes, specifically use of thereof for tourism and recreation (Bieling, Berlin-Brandenburgische Akademie der Wissenschaften). The *Strategic Framework for Tourism Development of KAZA TFCA* and the *ODMP* identifies the Okavango Delta as one of the flagship destinations for the KAZA TFCA that should be developed to attract significant benefits to the region and promote nature-based tourism as means conserving biodiversity and wildlife. However, the delta is but one of the significant icons and attractions of the study area – others include (refer Map 49):

- The Chobe River Front
- Gcwihaba Caves and Aha Hills
- Lake Ngami
- Moremi Game Reserve
- Nata Sanctuary
- Savuti Marsh and the Mababe Depression
- The Linyanti Swamp
- The Pans National Parks (Nxai and Makgadikgadi)
- Tsodilo Hills World Heritage Site (WHS).



Map 49: Tourism: Icons & Attractions

THE PLACE

2.4.2 Sensitivity Analysis

To ensure accountability regarding decisions pertaining to the acceptability and appropriate placement of the interventions within the Botswana Component of the KAZA TFCA pertaining to the access, use, development, and infrastructure, decisions need to be based on ecosystem sensitivity. The sensitivity analysis for the Botswana Component was undertaken as set out in Figure 10 and is described in the following sections.

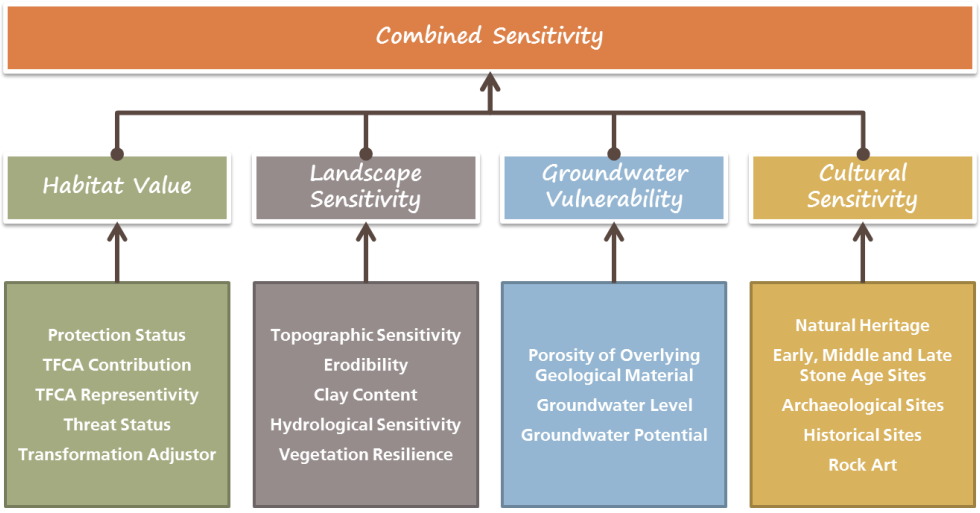


Figure 10: Sensitivity Analyses

2.4.2.1 Combined Sensitivity

Combined Sensitivity is determined by examining:

- Habitat Value
- Landscape Sensitivity
- Groundwater Vulnerability
- Cultural Sensitivity.

The Combined Sensitivity layer cascades from low values with no specific value and/or sensitivity to areas with the highest value and/or sensitivity. Areas standing out as particularly valuable for land uses pertaining to ecotourism and wildlife are the:

- Okavango Delta
- Makgadikgadi Pans
- Seloko Plains
- Lake Liambezi
- Boteti Floodplain (not clearly visible in map)
- Mababe Depression.

The Okavango Delta and the Makgadikgadi Pans stand out as having the highest combined sensitivity. These areas have a high Habitat Value and high Groundwater Vulnerability with the Makgadikgadi Pans having a greater Landscape Sensitivity (see Map 50).

While the Mababe Depression and the Seloko Plains do not have a high Habitat Value, they both have a high Landscape Sensitivity contributing to the elevated combined sensitivity. Conversely, the Boteti Floodplain and Lake Liambezi both have a high Habitat Value but low Landscape Sensitivity.

Derivation:

Combined Sensitivity is the sum of Habitat Value, Landscape Sensitivity, Cultural Sensitivity and Groundwater Vulnerability. Habitat Value and Landscape Sensitivity are derived from a number of other layers (refer Appendix 1):

Combined Sensitivity = [Habitat Value] + [Landscape Sensitivity] + [Cultural Sensitivity] + [Groundwater Vulnerability]

Where:

Habitat Value = [Protection Status] + [Study Area Contribution] + [Study Area Representivity] + [Threat Status] + [Transformation Adjustor]

And:

Landscape Sensitivity = [Slope] + [Soil Erodibility] + [Clay Content] + [Hydrological Sensitivity] + [Vegetation Resilience].

2.4.2.2 Habitat Value

Habitat Value is determined by examining:

- Protection Status
- Study Area Contribution
- Study Area Representivity
- Threat Status
- Transformation Adjustor.

The Habitat Value analysis highlights the *Imperata cylindrica* dominated vegetation in the Okavango Delta Pan Handle and the *Hyphaene petersiana* dominated vegetation type in the area of Lake Liambezi as the critical areas. These areas are not represented in the National Parks and Game Reserves of Botswana and the study area contributes the entire extent of this vegetation type to Botswana. They also form less than 1% of the study area thereby elevating their sensitivity even further (See Map 51).

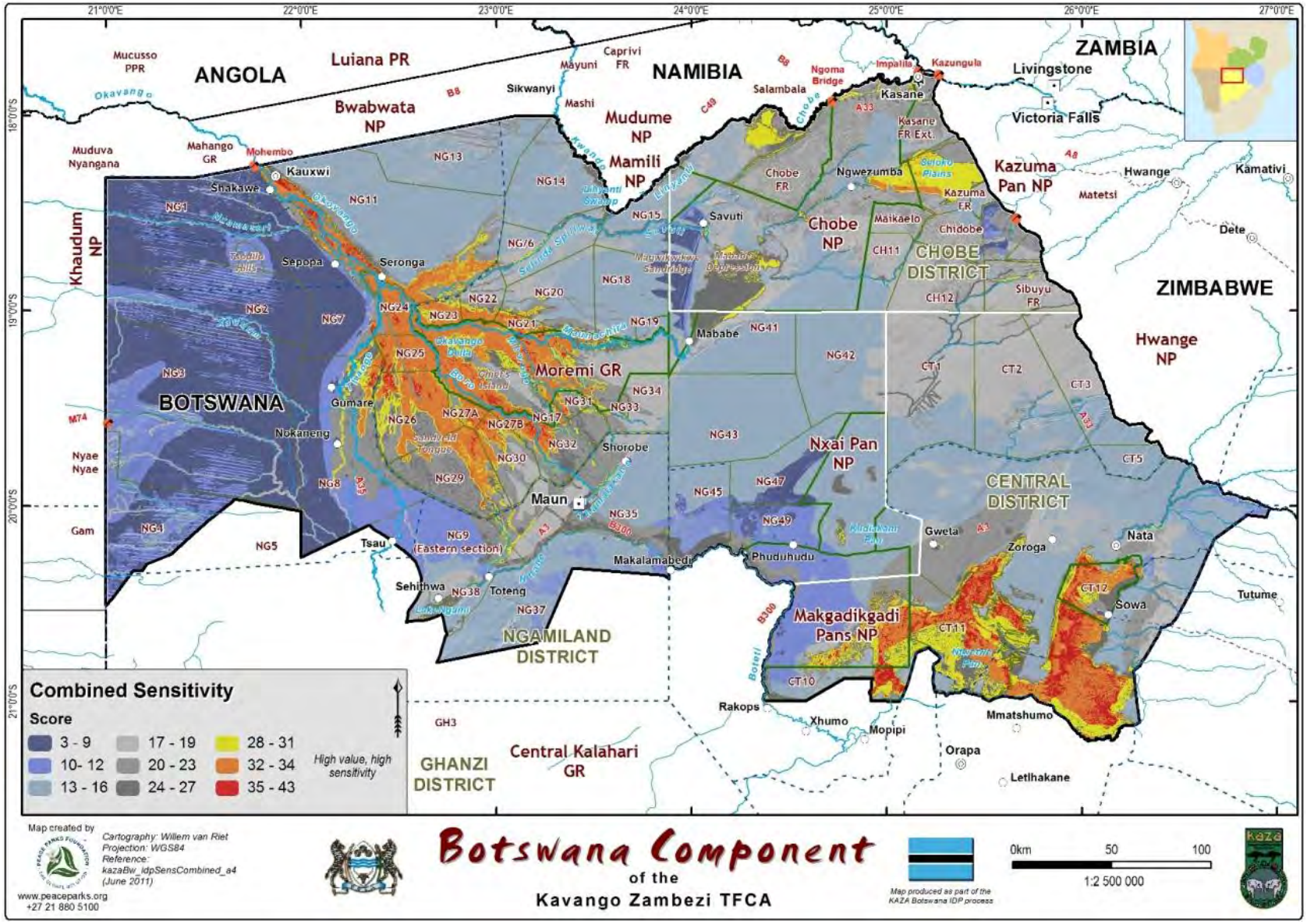
Additional habitats with a high ranking include the entire Okavango Delta, Boteti Floodplain, the Makgadikgadi Pans as well as the area around the Sibuyu Forest Reserve in the east. The areas scoring zero are those that are transformed due to urbanization- very small areas mostly around towns- and the Pandamatenga agricultural area.

Derivation:

Habitat Value is the sum of Protection Status, Study Area Contribution, Study Area Representivity and Threat Status. From this the Transformation Adjustor is subtracted. For more details on how these components were calculated see Appendix 1.

Habitat Value = [Protection Status] + [Study Area Contribution] + [Study Area Representivity] + [Threat Status] + [Transformation Adjustor]*

*The Transformation Adjustor is a negative value



Map 50: Combined Sensitivity

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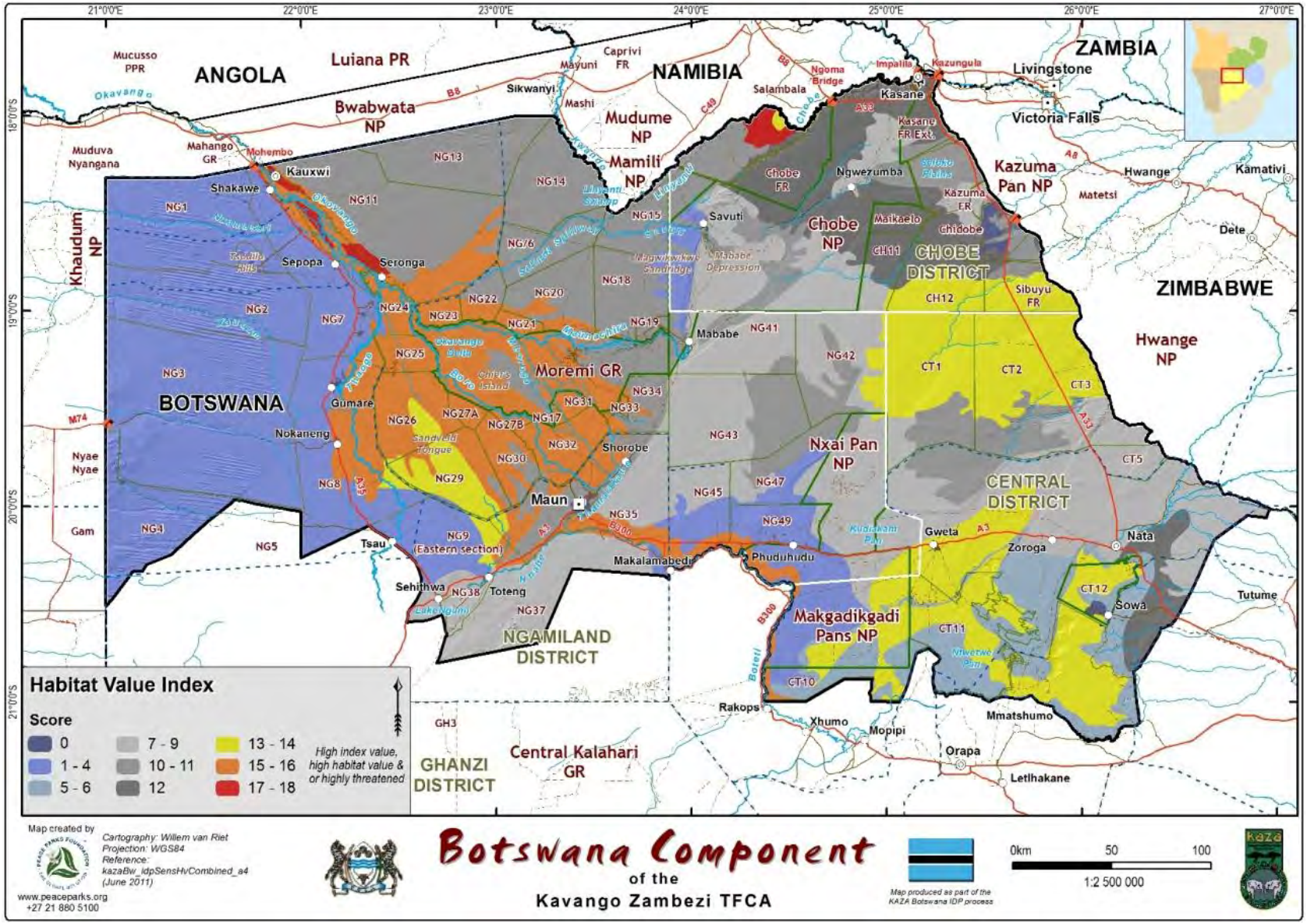

Map 51: Habitat Value

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2.4.2.3 Landscape Sensitivity

Landscape Sensitivity is determined by examining:

- Slope
- Soil Erodibility
- Soil Clay Content
- Hydrological Sensitivity
- Vegetation Resilience.

Each of these input layers is scored according to their sensitivity where a high value indicates a high vulnerability and a low value, a lower vulnerability (refer Appendix 1). Within the study area, the Makgadikgadi Pan Complex, the Seloko Plains, the Mababe Depression and Okavango Delta have a heightened landscape sensitivity value relative to the rest of the study area (See Map 52). While none of these areas scored particularly high with regards to vegetation resilience and slope, they are all considered hydrologically sensitive. The Makgadkigadi Pan soil properties further contributed to their higher sensitivity.

Derivation:

Landscape Sensitivity is the sum of the Topographic Sensitivity (Slope), Soil Erodibility, Soil Clay Content, Hydrological Sensitivity and Vegetation Resilience. For more details on how these components were calculated see Appendix 1.

Landscape Sensitivity = [Slope] + [Soil Erodibility] + [Clay Content] + [Hydrological Sensitivity] + [Vegetation Resilience]

2.4.2.4 Groundwater Vulnerability

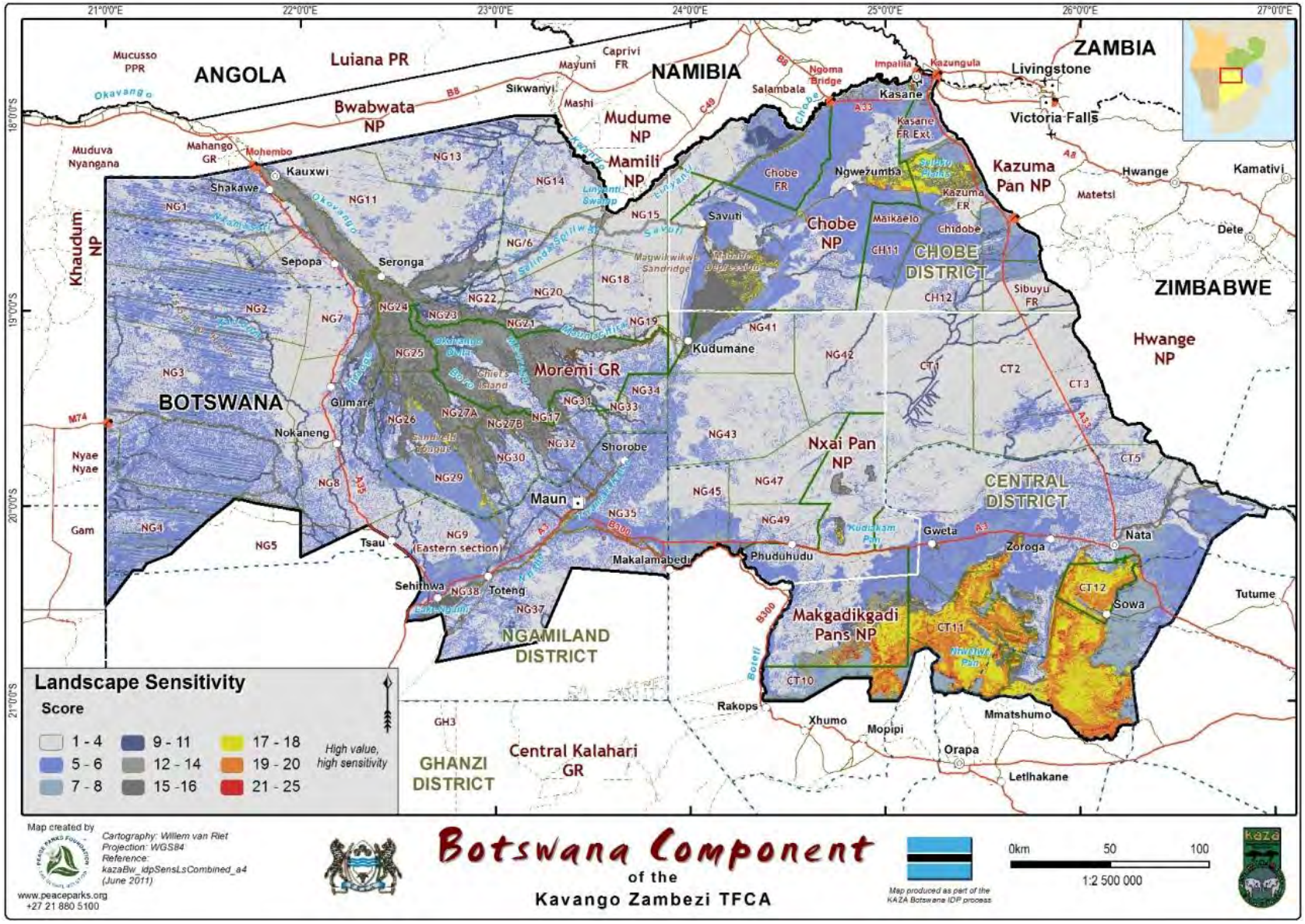
The groundwater recharge rates in Botswana are typically low. Despite this, two-thirds of the country's water consumption is supplied by groundwater (Food and Agriculture Organization of the United Nations). Areas where the groundwater is most vulnerable to pollution include the Okavango Delta; Selinda Spillway; Makgadikgadi Pans; Boteti River; Seloko Plains; Aha and Gcwihaba Hills (See Map 53).

Derivation:

Groundwater vulnerability was assessed on a number of features some of which include the porosity of the overlying geological material, groundwater level and groundwater potential (Malomo & Wint, 2003). Negligible vulnerability may indicate a water table naturally protected by the geological strata whereas areas of high vulnerability may show highly significant aquifers and or little natural protection to these. These vulnerabilities were given a rating; high for extreme vulnerability and low for little vulnerabilities (See Table 2).

Table 2: Groundwater Vulnerability Scores

Water Vulnerability	Rating
Extreme	3
High	3
Moderate	2
Low	1
Negligible	0



Map 52: Landscape Sensitivity

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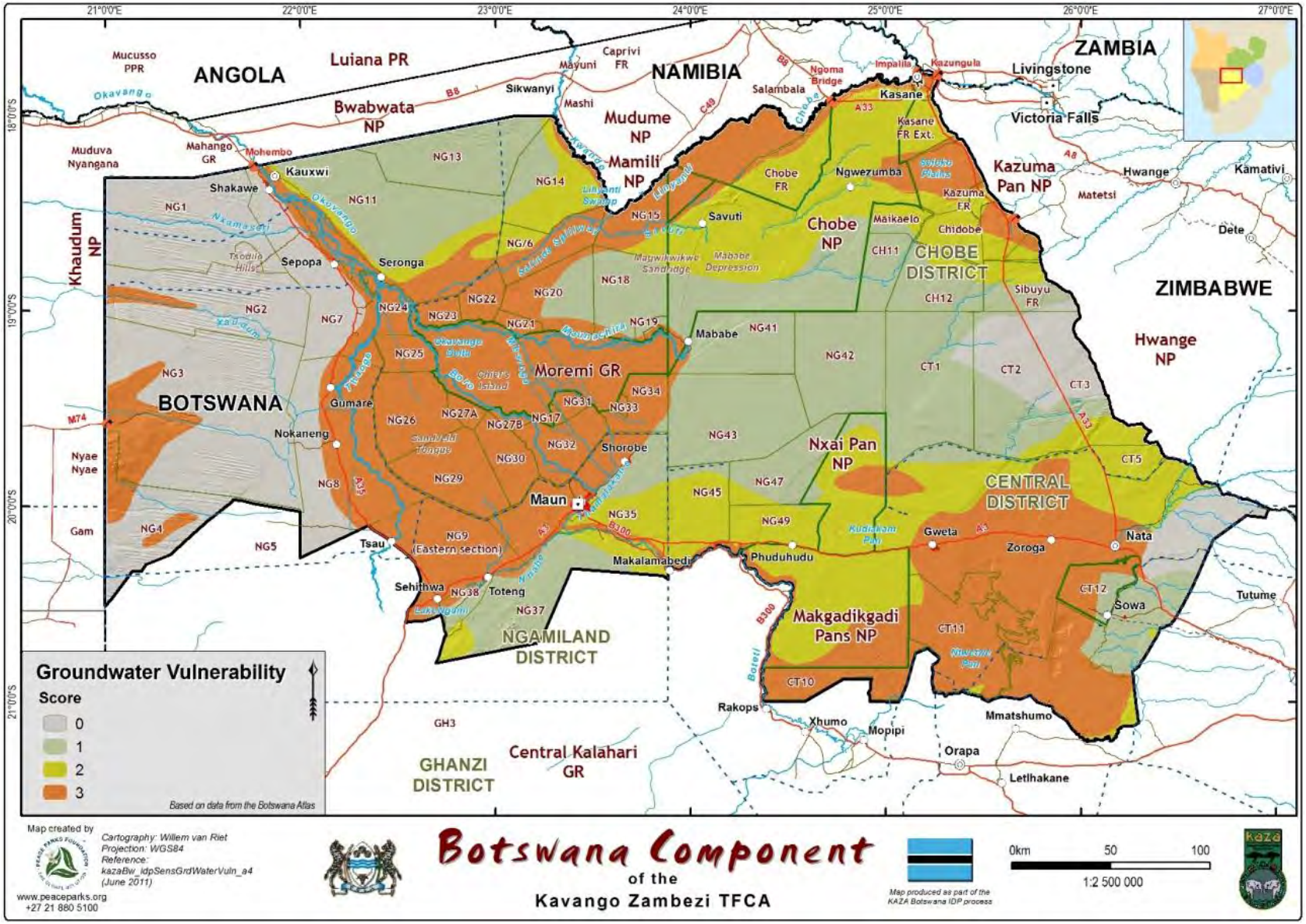

Map 53: Groundwater Vulnerability

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2.4.2.5 Cultural Heritage Sensitivity

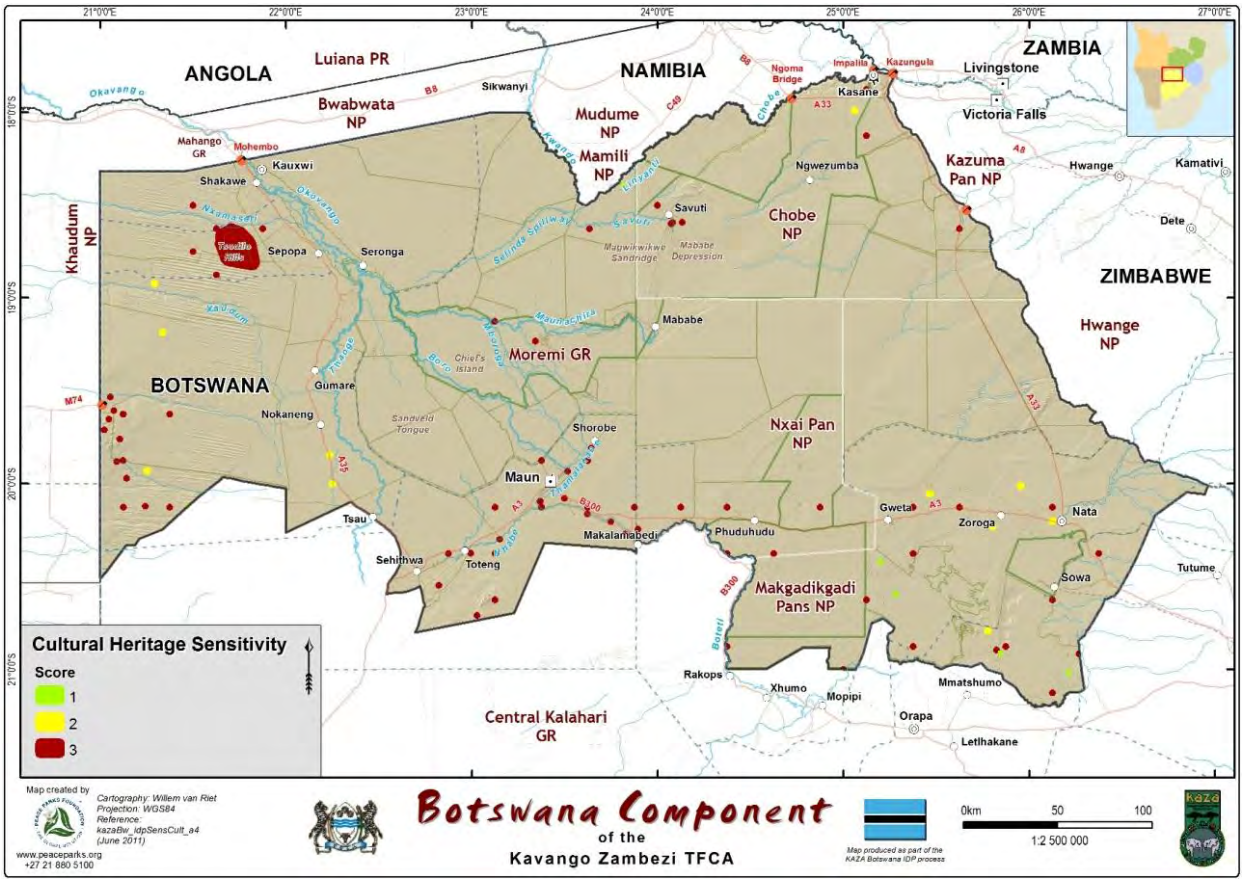
Botswana has a number of sites with cultural significance; these may be archaeological, historical and or sites of natural heritage. The Cultural Heritage Sensitivity layer indicates the sensitivity or value of these culturally significance areas (See Map 54). Clearly highlighted are the Tsodilo Hills which are a declared World Heritage Site. Further south there is a concentration around the Gcwihaba Caves and Aha Hills and a number of sites are found along the Sehitwa-Nata road.

Derivation:

Existing Cultural Heritage data was categorized as Archaeological, Historical or Natural Heritage. These were buffered and scored according to Table 3.

Table 3: Cultural Heritage Scores

Cultural Heritage	Rating	Buffering
Archaeological	3	2000
Natural Heritage	2	1000
Historical	1	500



Map 54: Cultural Heritage Sensitivity

2.4.3 Threats

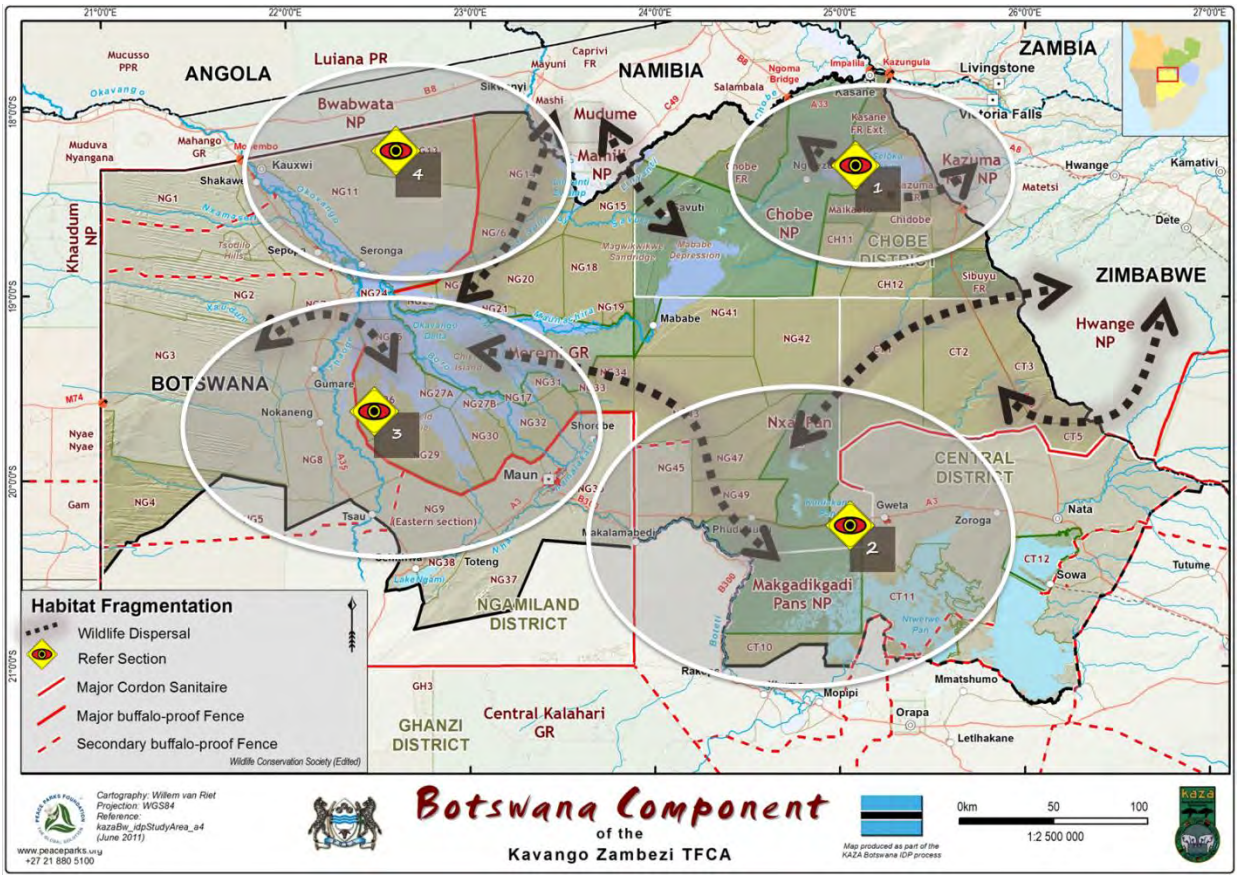
Habitat fragmentation, as a result of fences and incompatible land uses, is probably the biggest threat to the effective functioning of the ecosystem that supports the Botswana Component of the KAZA TFCA (refer Map 55). Areas where this threat regarding habitat fragmentation is most obvious, is within the identified wildlife movement areas between Botswana and Zimbabwe, the first being across the Seloko Plains in the vicinity of the Kazuma Forest Reserve in Botswana and Kazuma Pan National Park in Zimbabwe. This is a critical habitat that features strongly within the habitat sensitivity analyses of both the Zimbabwe and Botswana Components of the KAZA TFCA.

The second area where fences and incompatible land uses could impact on the movement of wildlife is within the larger Pans national Park area. The existing fences, both on the eastern and western side of the national park, impact on significant wildlife movement from Hwange National Park in Zimbabwe and from the core area of the Delta to the Pans National Park. The Ngwatsha Fence is an important fence separating buffalo and other wildlife from livestock in the area surrounding Nata and Gweta, while the northern fence of the BDLC Ranches (NG45) significantly impacts on livestock, especially zebra movement, between the Delta and the Pans National Park.

The third area that is fragmented by the presence of fences is along the western side of the delta. Wildlife movement along the west-east drainage is separated from the core area of the Delta.

The Northern Buffalo Fence fragments the habitat that supports wildlife movement between the Delta, Kwando/Linyanti and the Bwabwata National Park in Namibia.

Other threats that could influence the attainment of the KAZA TFCA objectives are related to the perceived lack of benefits from wildlife and tourism, especially individual benefits as opposed to collective benefits, as well as changes in the way the value of the unique resources are perceived. Environmental threats such as pollution, damming of either the Okavango or Kwando Rivers remains a latent threat.



Map 55: Habitat Fragmentation

3 THE PEOPLE

3.1 Stakeholders and Role Players

The following stakeholders participated in the development of the IDP and will play a role in its implementation through involvement in the proposed institutional arrangements (refer Section 4.1.2.2):

For the each of the Districts the following **Ministries, Departments** and **Parastatal Organisations**:

- State President - Department of Broadcasting Services
- Ministry of Agriculture:
  - Department of Crop Production
  - Department of Veterinary Services
- Ministry of Defence Justice and Security - Botswana Police Services
- Ministry of Environment Wildlife and Tourism:
  - Department of Forestry and Range Resources
  - Department of Meteorological Services
  - Department of Tourism
  - Department of Waste Management and Pollution Control
  - DWNP
- Ministry of Labour and Home Affairs - Department of Immigration
- Ministry of Lands and Housing:
  - Department of Lands
  - Department of Surveys and Mapping
  - Department of Town and Regional Planning
- Ministry of Local Government:
  - District Commissioner
  - District Council
  - Land Board
  - Tribal Administration
- Ministry of Mineral Energy and Water Affairs - Department of Water Affairs
- Ministry of Transport and Communications - Department of Roads
- Ministry of Youth Sports and Culture - Department of Youth and Culture
- Botswana Tourism Organisation.

For the **Boteti Sub-district** the Gumakutshaa Conservation Trust and Gaing-O Community Trust

For the **Tutume Sub-district** the Gwezotshaa Community Trust

For the **Chobe District** the Seboba Community Trust

Non-governmental and **International Organisations** include:

- African Wildlife Foundation
- Biokavango Project
- Birdlife Botswana
- Botswana Predator Conservation Trust
- Botswana Wildlife Management Association
- HATAB
- Kalahari Conservation Society
- OKACOM
- SADC
- Southern African Regional Environmental Programme (SAREP).

Media Houses include:

- Guardian/ Midweek Sun
- Mmegi
- Ngami Times.

Research Institutions include the Okavango Research Institution.

3.2 Needs and Expectations

Through a broad stakeholder workshop held in Maun, during March 2011, participants identified the following as important aspects (listed from most to least importance) that should be addressed in the preparation and implementation of the IDP. The critical areas most stakeholders referred to were around consultation, communication, education and training; with planning, policy and decision-making being second. Emphasis was also placed on the conservation of resources, socio economic development and community beneficiation.

The details of each category are provided below, and the statistics are summarised in Figure 11:

- **Consultation; Communication; Education; and Training**, (33%) e.g.:
  - Improve the lives of the poor by involving them
  - Hold more workshops to educate the communities within the TFCA about the importance and advantages of the KAZA
  - Respect the views of the communities
  - Educate people about the effects of wildland fires
  - Honest and impartial consultation and communication
  - Training of heritage professionals to manage heritage resources in KAZA area
- **Planning; Policy; and Decision-making**, (28%) e.g.:
  - Facilitate more devolution of powers to communities in resource management
  - Formulate policies concerning KAZA
  - Provide an enabling legislative framework
  - Recognise the need for informed decision-making
  - Stop giving directives and make decisions based on thorough research
  - Decentralisation of regulatory bodies (Government) to Non-governmental Organisations (NGO) and Community Based Organisations
  - Formulate policies that guide the custodians of the resources
  - Create a conducive environment
  - Flexible and put people first
  - Implement existing management plans
  - Integrate KAZA into NDP10
  - Implement the KAZA mandate / strategy
  - Benchmarking with other countries concerning TFCAs
  - Accept people's ideas and knowledge in planning
  - Integrate 5 Important Birding Areas (IBA) into KAZA
  - Recognition of Botswana's outstanding universal value of heritage resources in KAZA and accord them international recognition
- **Conservation of Natural and Cultural Resources**, (13%) e.g.:
  - Harmonise policies that relates to conservation issues
  - Respect and support Community Based Natural Resource Management (CBNRM) Policy
  - Guidelines for the Flamingo Sanctuary
  - Co-management for PA Systems, involving other players, e.g. private sector, communities, NGOs
  - Harmonise biosecurity issues
  - Incorporate heritage resources in KAZA and recognise their value
  - Species stocktaking
  - Waste management plans
- **Socio Economic/Community Beneficiation**, (12%) e.g.:
  - Agree/support the KAZA initiative so as to create employment opportunities
  - Maximum community benefits from the initiative

- Centralise benefit distribution through district offices
- Encourage Batswana to form Community Development Trusts
- Improved marketing for community tourism products
- Make sure that local communities have direct benefit that will make them appreciate the concept easier
- Adopt direct performance payment for communities co-existing with wildlife within KAZA
- Reduce human/wildlife conflicts
- More efforts on poverty reduction using nature and cultural based tourism
- Construct barriers between wildlife and communal areas
- Review compensations for crop damage by wildlife and animal (livestock) predation by wildlife within the Botswana Component of the KAZA TFCA

- **Land Use General**, (3%) e.g.:
  - Integrate Government Land Use Policy with Land Dispensation (Land Boards)
  - Harmonise land use zones
  - Secure rights
  - Sustainable use instead of protection
- **Financing**, (3%) e.g.:
  - Re-invest Tourism Revenue within Specific Districts
  - Investment in the development and management of heritage resources in the KAZA area
- **Access and Infrastructure**, (3%) e.g.:
  - Open skies for easier air access
  - Build roads to access the TFCA
- **Safety and Security** - solidify security measures (2%)
- **Agricultural Land Use**, (2%) e.g.:
  - Identify and gazette agriculture land within the Botswana Component
  - Zone agricultural land for arable production
  - Conserve agricultural land
- **International Co-operation** - shared responsibilities across borders (1%).

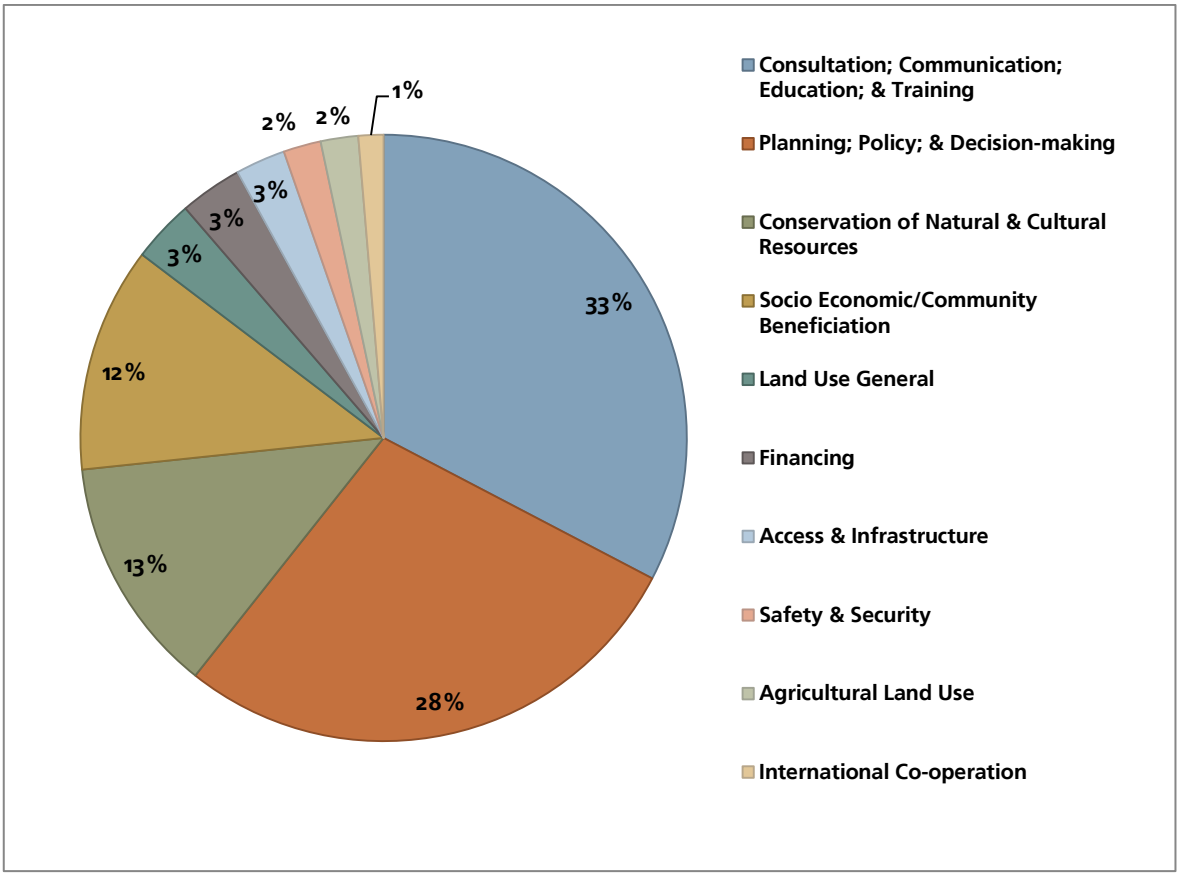


Figure 11: Stakeholder Needs and Expectations

4 THE PLAN

4.1 The Management Framework

The sustainable development of the Botswana Component of the KAZA TFCA depends on achieving a harmonious balance between human impacts, albeit from tourism, commercial or subsistence use, and resource quality objectives. Ecotourism requires relatively undisturbed natural and cultural resources, necessitating careful planning and decision making to ensure that this balance can be attained and sustained. Any negative impacts either from a resource management, tourism development or local utilisation perspective could result in fundamental flaws which could negate any beneficiation.

4.1.1 Methodology

The framework for management and implementation of the Botswana Component IDP is based on a process-based management system approach consisting of a set of strategic guidelines that guides spatial interventions as well as a strategic business framework (refer Figure 12).

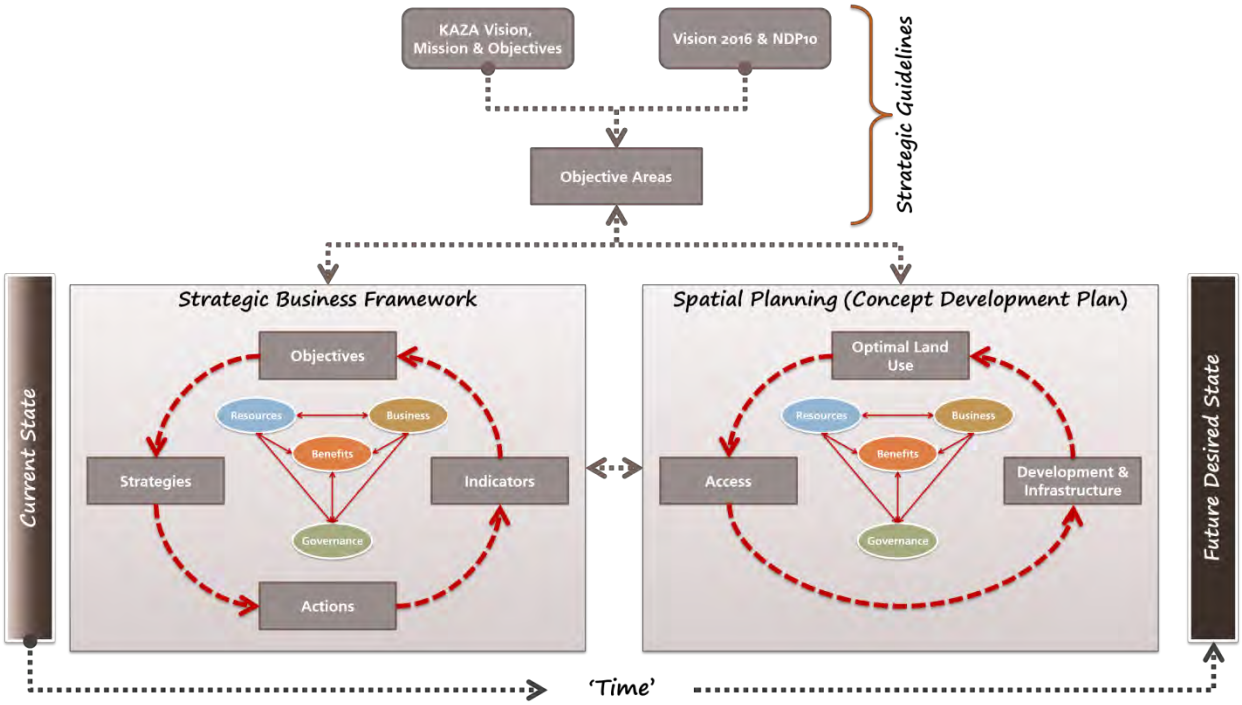


Figure 12: Management Framework

The **Strategic Guidelines** for the Botswana Component IDP consist of a Vision, Mission, Long-term Goal and Objectives in response to those for the KAZA TFCA and the Country in terms of Vision 2016 and NDP10.

The **Objectives** are categorised into four areas - Biodiversity and Resource Management, Business Management, Benefit Flow Management and Governance (refer Figure 13).

These objective areas are critical to the attainment of sustainability based on the principles underlying ecotourism. It is imperative that a harmonious balance is attained between environmental resources, both natural and cultural; the industries which utilise these resources and the communities which host these resources. Attention must be provided to all three these sectors simultaneously if this delicate balance is to be achieved. If one sector is neglected it is impossible to maintain the balance, requiring a completely new approach to the management of resources thus necessitating an integrated and aligned methodology.

If the focus of management remains on resource protection, as has historically been done within the field of conservation, both the host communities and the industry are neglected resulting in illegal and uncontrolled use

of any available resources, creating a negative spiral necessitating an increased focus on resource protection. However, if the focus is on the industry, resources tend to be neglected, and communal benefits remain an afterthought, if addressed at all. Conversely, if the focus is on community benefits, resources can become degraded and the investors dissatisfied with the available opportunities resulting in reduced investment and related benefits.

Even when two of these objective areas are addressed simultaneously balance can and will not be achieved. Additionally, the fallacy that within conservation it is possible to initially focus on resource management and then fast track both industry involvement and benefit flow management, skews important strategic decisions regarding conservation areas.

Only by placing equal importance on all four areas can sustainability be achieved, and this is where the pivotal role of Governance becomes important. By guiding resource management, industry involvement and benefits to host communities, Government creates the enabling environment for each of these individual areas to function independently yet in an integrated and interrelated manner. This oversight role of Government is critical to achieving sustainability, and necessitates clarity regarding sector specific issues within the context of integrated planning and management.

These objective areas inform the spatial planning and the strategic business framework.

The spatial planning in turn also informs the objective areas by highlighting sensitive areas – collective (overall) and individual sensitivities – habitat; landscape; cultural.

To ensure accountability, each of these areas has been incorporated into a strategic business framework aimed at providing collective insight into the broad objectives as set by the stakeholders, as well as the policy framework and guiding principles within which these objectives will be managed, and provides both the rationale and strategies to attain the objective. The specific action projects, to be implemented within each Objective Area, based on the strategies provided, the identification of the responsible parties, as well as document cross references are also provided.

Both the spatial planning component and the Strategic Business Framework will guide progress from a current state to a future desired state for the Botswana Component of the KAZA TFCA.

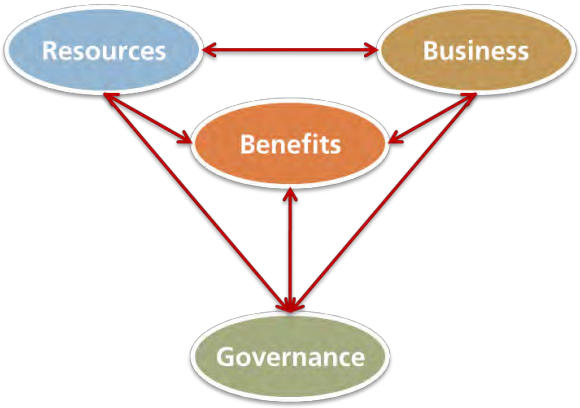


Figure 13: Objective Areas

4.1.2 Operationalisation

4.1.2.1 Implementation Framework

The Botswana IDP has both an integrated planning and an operational component (refer Figure 14).

Integrated Planning Component

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 Botswana Component within the constraints of the receiving environment. The Concept Development Plan constitutes the spatial component of the IDP and provides clarity of the location and placement of developmental programmes and action projects.

Operational Component

The IDP is operationalised through the following:

- A medium term Implementation/Business Plan, based on the Strategic Business Plan of the IDP, that actions the management objectives and any projects identified in the IDP – this plan identifies the activities and tasks that need to be undertaken in the achievement of the IDP's objectives and attaches responsibilities, timeframes, budgets and resources to each activity. It informs the Annual Budgeting Estimates and provides information for Annual Reports.
- Operational plans, programmes and procedures that support the Implementation Plan.

The IDP should be reviewed both annually and on a 5-yearly cycle to ensure that management objectives remain relevant and management actions are continually improved.

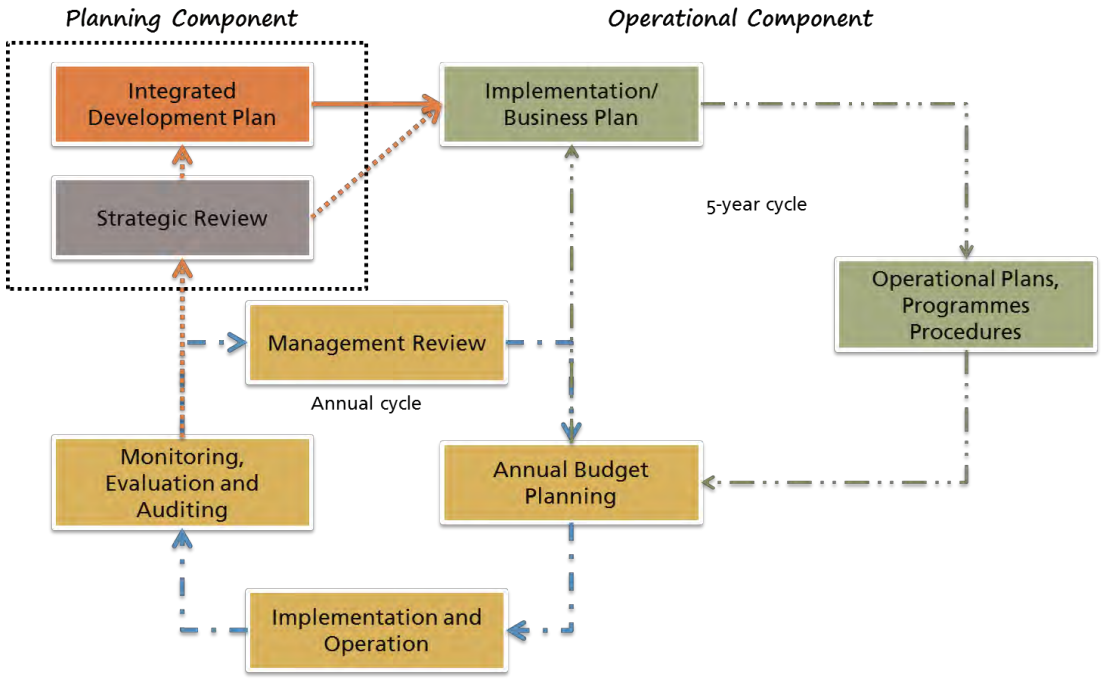


Figure 14: Operationalisation of the IDP and Strategic Business Framework

4.1.2.2 Institutional Framework

Link to the KAZA Structure (refer Section 2.3.2.2), the institutional arrangements to facilitate, coordinate and integrate implementation of the Botswana Component IDP is set out in Figure 15.

For the Botswana Component the National Steering Committee draws membership from the following institutions (the functioning of this committee at both national and local level is based on what is prescribed for the KAZA TFCA Structure:

At National Level-

- Ministry of Environment, Wildlife & Tourism (Lead Agent)
- Other relevant Ministries and Departments including:
  - Agriculture
  - Defence, Justice and Security
  - Labour and Home Affairs
  - Lands and Housing
  - Local Government
  - Minerals, Energy and Water Resources
  - Transport and Communications
  - Youth, Sports and Culture
- Chairpersons of Sub-committees
- Chairpersons of Working Groups.

At Local Level for each of the relevant District Level Sub-committees (i.e. Central, Chobe and Ngamiland)-

- Relevant Ministries and Departments represented at District level
- Relevant Parastatal Organisations such as Botswana Tourism Organisation
- District Commissioner
- District Council
- Land Board
- Tribal Administration
- NGO
- NGO and International Organisations
- District Land Use Planning Committee (DLUPC)
- Research Institutes
- Other interest groups.

Working Group membership will be sourced from both the public and private sector. The Working Groups will advise on the actions and priorities per objective area, as well as recommendations regarding financial and human resources. In this manner the IDP and its objective areas will be converted in to manageable projects which will either be on national or local level.

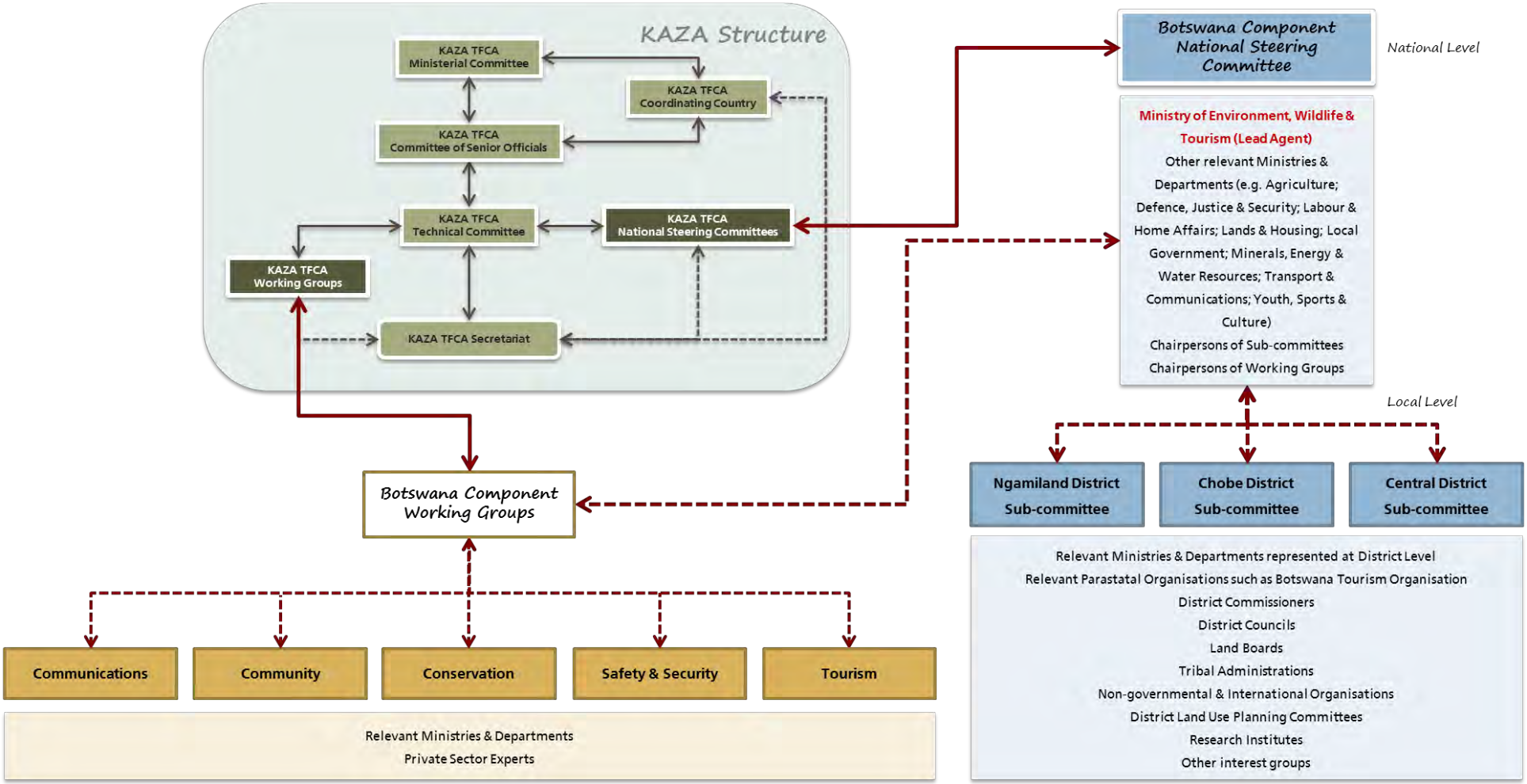


Figure 15: Institutional Arrangements for Implementation of the ID

4.2 Strategic Guidelines

4.2.1 Vision 2016 and NDP10

The KAZA TFCA vision, mission and objectives (refer Section 4.2.2) are fully accommodated within the framework created by *Vision 2016 and NDP10* and will thus enable the implementation of the Botswana Component IDP as it asserts and provides for strategies and programmes regarding although not limited to the following:

Education and Skills Development

- An educated and informed nation which will form an important foundation and basis for enhancement of national productivity, innovation and competitiveness
- Resilient individuals and communities which will drive their own development.

Information Management and Systems

- Efficient information management systems and networks which will support research, education, development and communication.

A Conducive Environment for Business, in particular Tourism

- A conducive environment which will encourage and support business and entrepreneurial activities in partnership with the private sector and other stakeholders, emphasising the sustainable and efficient use of resources. For tourism specifically:
  - Further development and product diversification and expansion of product attractions and experiences, specifically in the field of cultural and heritage tourism
  - Encouraging foreign investment through among other enhanced land use planning
  - Marketing and promotion of tourism internationally and locally
  - Strengthening the regulatory framework, specifically environment management processes
  - Managing environmental and cultural resources to support sustainable tourism.

Infrastructure and Utilities

- A well developed and reliable system of infrastructure and utilities as this will contribute to the growth of other sectors.

Sustainable Development and the Protection of the Environment

- The importance of sustainable development and the protection of the environment, putting particular focus on the development of the rural economy, conservation and sustainable management of natural resources (one measure being improved biomass management through spreading of TFCAs) and the integration of this in development planning processes with the emphasis on sustainable resource utilisation.

Effective Law and Order

- Effective law and order, substantial reduction of crime, improved road transport safety, reduced incidences of pollution and enhanced security of the country.

International Relations and Implementing International Agreements

- Managing relations with the international community with a view on contributing to national development and making Botswana an effective and a respected player as well as implementing international agreements in the global interest.

Good Governance

- Good governance which will enable the country to implement most appropriate policies to achieve sustainable development by mobilising, using and coordinating all available resources in the public, private and civil society sectors domestically and internationally in the most effective, efficient and open and transparent way.

Stability, Peaceful Co-existence and Espousing Social Values

- Enhancing the sharing of common goals based on common heritage, national pride and a desire for stability and peaceful co-existence and continuing the espousing of social values that engender cohesion and embrace diversity and increase transparency to remove practices that facilitate corruption (Ministry of Finance and Development Planning, Government of Botswana, December 2009).

4.2.2 KAZA TFCA Vision, Mission and Long-term Goal

Based on the Vision 2016 and NDP10, the Botswana Government is thus in a position to subscribe and contribute to the KAZA TFCA vision, mission and long-term goal for its component of the KAZA TFCA.

The Vision for the KAZA TFCA

The KAZA TFCA being the premier transfrontier conservation area and ecotourism destination of the world:

- With diverse, viable and functioning ecosystems and cultural heritage comprised of socially, economically and environmentally secure communities anchored on the principles of sustainable utilisation and development
- Characterised by world class infrastructure, harmonised legislation and policies; cross border cooperation and collaboration; easy movement of tourists; with integrated planning and management of shared natural resources, technology and renewable energy for development
- Driven by a financially independent, responsive, proactive and representative management authority which promotes a spirit of partnership amongst the KAZA countries.

The Mission for the KAZA TFCA

Facilitating, coordinating and providing momentum in the planning, implementation and sustainable development of the KAZA TFCA for the benefit of its peoples and other stakeholders.

Long-term Goal

Facilitating the sustainable environmental management of the KAZA TFCA so that socio-economic development provides benefits to its communities and the partner countries at large.

4.2.3 Botswana Component of the KAZA TFCA Management Objectives

To attain the vision, mission and long-term goal of the KAZA TFCA, the Botswana Government acknowledges the following broad management objectives of the KAZA TFCA as being critical to attain both the national and regional objectives. These have been categorised into four Objective Areas aligned with the Management Framework:

Objective Area 1: Biodiversity and Resources Management

- To protect, maintain and manage those parts of the shared natural resources and biodiversity of the KAZA TFCA forming part of the Botswana Component to support healthy and viable populations of plant and animal species
- To protect, maintain and manage those parts of the shared cultural heritage resources of the KAZA TFCA forming part of the Botswana Component
- To promote and facilitate the development of a complementary network of protected areas within the KAZA TFCA linked through corridors to safeguard the welfare and continued existence of migratory wildlife species

- To cooperate to develop common approaches to natural and cultural resources management.

Objective Area 2: Business Management

- To provide opportunities, facilities and infrastructure that shall transform the Botswana Component of the KAZA TFCA into a premier tourist destination in Africa made up of a range of independent yet complementary and integrated sub-regional tourism development nodes
- To facilitate tourism across international borders in the KAZA TFCA
- To facilitate a healthy and competitive economic environment which promotes and enables public-private-community partnerships, private investment and regional economic integration
- To ensure that the development of tourism facilities and conservation management activities in Botswana will not cause adverse effects in areas beyond the limits of national jurisdiction
- To cooperate to develop common approaches to tourism development.

Objective Area 3: Benefit flow Management

- To develop and implement programmes that shall enhance the sustainable use of natural and cultural heritage resources to improve the livelihoods of local communities within and around the Botswana Component of the KAZA TFCA and thus contribute towards poverty reduction.

Objective Area 4: Governance

- To share Botswana experiences, resources and expertise across international borders in areas including indigenous knowledge, tourism management, border control, technology and renewable energy to facilitate development
- To build capacity within Botswana for the KAZA TFCA through training, enterprise development and mentoring programmes thus increasing the skills and knowledge associated with the management of natural and cultural heritage resources and facilitate stakeholder participation in the KAZA TFCA planning and development processes
- To promote and facilitate the harmonisation of relevant legislation, policies and approaches in:
    - Natural and cultural heritage resources management across international borders and ensure compliance with international protocols and conventions related to the protection and sustainable use of species and ecosystems
    - Transboundary animal disease prevention, surveillance and control within the Botswana Component of the KAZA TFCA
- To ensure stakeholder engagement at the national and local level with the involvement of governmental authorities, communities, non-governmental organisations and private sector
- To ensure that the rights of stakeholders recognisable under the domestic laws of the Government of Botswana shall be respected
- To mobilise resources for the development and management of the Botswana Component of the KAZA TFCA.

4.3 Strategic Business Framework

To attain the objectives of the Vision 2016, the NDP10, and the KAZA TFCA, it is critical that the objectives are aligned, motivation provided (rationale) for striving to attain the specific vision within the Botswana Component of the KAZA TFCA, strategies provided and action projects identified and prioritised, described and appropriate responsibility apportioned.

Undertaken in this manner it will be possible to ensure the necessary synergies between the various Ministries within the Government of Botswana, solicit support from the affected communities hosting critical natural and cultural resources and provide the private sector with the necessary confidence to partner with both the Government and communities in an attempt to unlock the economic potential of the area in an equitable and sustainable manner.

4.3.1 Objective Area 1: Biodiversity and Resources Management

Table 4 to Table 6 below sets out specific objectives and action projects pertaining OBJECTIVE AREA 1 – a summary of the various actions projects is provided in Table 7.

4.3.1.1 Maintenance and Management of Shared Natural Heritage Resources and Biodiversity

Table 4: Maintenance and Management of Shared Natural Heritage Resources and Biodiversity

Objective	To maintain and manage the shared natural heritage resources and biodiversity of the KAZA TFCA forming part of the Botswana Component to support healthy and viable populations of plant and animal species
Rationale	Habitat fragmentation has been identified as one of the major threats to the effective functioning of the ecosystems, environmental protection and natural resource management within Botswana. The impacts of habitat fragmentation extend beyond the boundaries of the country and include shared resources such as the wildlife movements between Hwange National Park in Zimbabwe and the Pans National Park and Chobe National Park in Botswana, as well as the movement of wildlife from the Chobe/Linyanti area of Botswana to and through Bwabwata National Park, Mamili National Park and the Mudumu Complex in Namibia.
Strategy	The strategy will entail: ↝ Identifying critical wildlife corridors and movement patterns within the broader landscape ↝ Identifying the threats to the corridors and movement patterns ↝ Deciding on compatible land use practices that will ensure the viability and sustainability of these resources ↝ Focussing on CBNRM as a critical component of the natural resource management strategy for the Botswana Component of the KAZA TFCA ↝ Ensure that the core area of the Okavango Delta be proclaimed as a WHS.

Action Project 1.1	***Responsibility***	***Cross Reference***
Seloko Plains Habitat Fragmentation Mitigation Project		Figure 20
Description		
Identifies within the overall sensitivity analysis as one of the critical areas requiring protection both from a habitat and wildlife movement perspective, the Seloko Plains Habitat Fragmentation Mitigation Project should aim to ensure compatible land uses enabling wildlife movement between Kazuma Pan National Park in Zimbabwe and Chobe National Park in Botswana. This could be done through the establishment of game farms, ecotourism enterprises, lodges and camps, or agriculture that does not necessitate the use of fences. Areas requiring specific protection from wildlife could be secured, yet this should be well planned, and the impacts adequately addressed in the Environmental Impact Assessment.		

Action Project 1.2	Responsibility	Cross Reference
The Pans National Park Fencing Strategy		Figure 21 - Figure 23
Description		
The wildlife movement within the Makgadikgadi Pans System is in a West-East direction whereas the property boundaries follow a distinct north-south delineation. Critical areas such as CT11 could be isolated if the eastern fence proposed for the Pans National Park follows the property boundary and not the ecosystem boundary. Through a negotiated co-management arrangement the CT11 area could be incorporated ecologically into the protected area, yet the management and tourism should be directly linked to the respective community. This will enable the successful maintenance of the wildlife migration within the ecosystem, provide substantial opportunity for benefits to flow to the affected community, and attract private sector interest and investment into the area. The fence line along the northern boundary of NG45 significantly disrupts wildlife movement from the Delta to the Pans. Through the removal of this encumbrance the wildlife movement can be ensured, and significant benefits provided to the affected community. The approach to NG45 should be similar to what is being proposed for game farm development along the western Delta and NG3		

Action Project 1.3	Responsibility	Cross Reference
Western Delta-NG3 Wildlife Corridor		ODMP Figure 27
Description		
The western portion of the Delta has been proposed for game farm development, effectively establishing a buffer for the core area of the delta, as well as enabling benefits to flow from wildlife management to the affected communities along this portion. Additionally, NG3 has also been proposed as a game farm development to benefit from wildlife within the area and movement from the Delta. A proposal has also been made to establish an ecotourism park/Eco Park close to Gumare to showcase the wildlife and landscape in the area thus diversifying business opportunities and options for the affected community. By approaching these three individual wildlife based projects as a collective whole, it would be possible to ensure that the entire region benefits from the abundance of wildlife, and that the natural wildlife movement to and from the Delta be continued in an unhindered manner. This approach will significantly boost wildlife based ventures within the proposed game farms along the western Delta, the Gumare EcoPark and NG3, as well as NG4.		

Action Project 1.4	Responsibility	Cross Reference
Panhandle NG11 and NG13 (Panhandle East) Habitat Fragmentation Project		Figure 28
Description		
Currently the potential of NG11 and NG13 are not being optimised, largely due to the veterinary fence fragmenting the habitat within this area. The core livestock area is approximately 20km from the Panhandle, with wildlife utilising the remainder of the area. The fence cuts through this area negating wildlife movement between the Linyanti/Kwando area and the broader area, both towards the Panhandle and Bwabwata National Park in Namibia. By developing the core livestock and agricultural area along the Panhandle, establishing strategically placed boreholes and livestock watering points, and realigning the fence, not only could the agricultural potential be realised, but the wildlife movement between Botswana, Namibia and Angola significantly improved. This approach would enable the NG11 and NG13 areas to optimise the wildlife revenue, while still retaining and maximising the livestock and agricultural potential of the core area along the Panhandle.		

Action Project 1.5	Responsibility	Cross Reference
Okavango Delta WHS Nomination		(New Proposal)
Description		
As a recognised Ramsar site, the world's largest wetland, the Okavango Delta, has several attributes that could qualify the core area as a World Heritage Site. This would add significant value to the WMAs and Moremi Game Reserve that make up the core area, enhancing both its protection status and tourism value, as well as boosting the benefit flow opportunities for the region and its people. The Government of Botswana would need to drive the process regarding tentative listing and nomination and this should be done in close consultation and collaboration with the affected communities. This would address numerous of the NDP10 objectives regarding resource management.		

Action Project 1.6	Responsibility	Cross Reference
Linyanti-Mudumu/Mamili Joint Management Plan (JMP)		Figure 29
Description		
Even though the heart of the Linyanti area is the wetland along the river, the colonial era boundary divides this shared natural resource into two. Effective management is only possible if undertaken jointly between Botswana and Namibia. By compiling a Joint Management Plan for this area it would be possible ensure the sustainable management of the natural resources and biodiversity of the area. Namibia has established two national parks – Mudumu and Mamili – in the area, yet the area is managed as a wildlife complex in association with community conservancies that have been established between and surrounding the national parks. Botswana has a small portion of the Chobe National Park along the Linyanti with the core area actually falling into NG14 and NG15 respectively, as well as the southern portion of the Chobe enclave. By establishing a national structure consisting of Department of Wildlife and National Parks staff, with the management teams from NG14, NG15 and the Chobe enclave, which can work with the MET and Conservancy managers in Namibia, effective management could be initiated and implemented in this shared area.		

Action Project 1.7	Responsibility	Cross Reference
Chobe River Front JMP		Figure 19 Chobe River Front Management Plan Chobe National Park Management Plan
Description		
Botswana developed a management plan to manage visitors entering the High Density Tourism Zone of the Chobe National Park in 2000, covering the area between Kasane and Ngoma falling between the river and the main road. Cognisance was taken of the transfrontier nature of the river front ecosystem and its interdependence on the regional tourism circuit. At the time discussions were centred around ensuring the quality of guest experiences in general, and specific reference was made regarding boating along the river front. Subsequent to the plan, Namibia has developed a tourism industry in the area based on Impalila and Kasika Conservancies. The number of boats has increased, as has the presence of houseboats, and activity allowed in Namibia but not Botswana. The management of wildlife, tourism and benefits differ across the international border, and an attempt should be made to establish synergies where possible. By establishing a Joint Management Plan for the entire Chobe River Front area, focusing on the needs and expectations of both countries it will be possible to align aspects such as a policy on house boats, game viewing boats, fishing and development. This will enable collective benefits to be generated and shared across the area, irrespective of sovereignty. The compilation of a Joint Management Plan should be based on the various SADC protocols that exist, such as the Revised SADC Protocol on Shared Water Courses. Broader aspects such as viewshed analyses will also inform the two countries about the impacts of planned developments on the tourism experiences within either country, as well as the use of EIA procedures that transcend the international border and include the neighbouring country. Combined into a single JMP both countries can utilise the plan as a guideline for sustainable development, and guide joint management initiatives between the two countries, even though the management authorities are vastly different. Coordinating this as a co-managed portion of the KAZA TFCA will allow the collaboration and joint management between the countries. The possibility exists that the area be declared a transboundary Ramsar site and the managed as a truly shared resource.		

4.3.1.2 Maintenance and Management of Shared Cultural Heritage Resources

Table 5: Maintenance and Management of Shared Cultural Heritage Resources

Objective	To maintain and manage the shared cultural heritage resources of the KAZA TFCA forming part of the Botswana Component
Rationale	As a country Botswana has committed itself to monument development, including heritage sites, such as the Tsodilo Hills WHS, as well as undertaking research and documentation of cultural heritage of the country. As the custodians of heritage of international significance in the form of the Tsodilo Hills complex, a World Heritage Site, as well as several other sites of significant cultural heritage value, Botswana is obliged to share this shared cultural heritage with the KAZA TFCA partner countries, as well as the world. These resources are inextricably intertwined into the broader KAZA TFCA cultural landscape and require commitment and management to ensure that they remain well protected, accessible and managed.
Strategy	The strategy will entail: ➢ The development and maintenance known sites of cultural heritage significance ➢ Inclusion of these sites into regional tourism routes through the area.

Action Project 1.8	**Responsibility**	**Cross Reference**
Tsodilo Hills WHS		Integrated Management Plan for the Tsodilo Hills WHS Figure 41 (refer Section 4.3.2)
Description		
Already established as a WHS the development plans for the Tsodilo Hills complex include an Interpretative Centre, improved road access, accommodation and the establishment of a dedicated wildlife area around the core area of the WHS.		

Action Project 1.9	**Responsibility**	**Cross Reference**
Gwcihaba Hills Complex		NG 4 Management Plan, May 2010 (Cgaecgae Tlhabololo Trust) Figure 40 (refer Section 4.3.2)
Description		
Linked to the Tsodilo Hills WHS, the Gwcihaba Hills complex can contribute significantly to the development of cultural tourism route in the western portion of the Botswana Component of the KAZA TFCA. This could be linked to the cultural experiences and tourism products offered within the Tsumkwe Conservancy in Namibia.		

Action Project 1.10	**Responsibility**	**Cross Reference**
Hunters Road		Figure 36 (refer Section 4.3.2)
Description		
Following one of the early pioneer routes through the region the Hunters Road follows the border between Botswana and Zimbabwe and is thus ideally placed to be developed as a KAZA TFCA Tourism Product.		

4.3.1.3 Promotion, Facilitation and Development of a Complementary Network of Protected Areas

Table 6: Promotion, Facilitation and Development of a Complementary Network of Protected Areas

Objective	To promote and facilitate the development of a complementary network of protected areas within the KAZA TFCA linked through corridors to safeguard the welfare and continued existence of migratory wildlife species
Rationale	Lying at the centre of the KAZA TFCA, Botswana has several links with protected areas surrounding the country. These include linkages between The Pans National Park and Chobe National Park with Hwange and Kazuma Pan National Parks in Zimbabwe; Chobe National Park with the Bwabwata; Mamili and Mudumu National Parks in Namibia. Within the Botswana core area of the KAZA TFCA several areas of significant wildlife importance, as well as important birding areas, are linked inclusive of the Moremi Game Reserve in the Okavango Delta with both Chobe and The Pans National Parks, as well as wildlife migrations between the eastern and western portions of the Makgadikgadi Pans system linking the national park to CT11.
Strategy	The strategy will entail: ➢ The consolidation of areas along the known and identified wildlife corridors through appropriate conservation status and management practices being applied to the land, in close collaboration with the land owners ➢ Establishing mechanisms needed to elevate the status of the land to ensure the conservation and effective functioning of the ecosystem, inclusive of community conservancies and game farm initiatives ➢ the use of existing tools, such as the IUCN classification and wilderness zonation methodologies to ensure that the conservation objectives are met.

Action Project 1.11	**Responsibility**	**Cross Reference**
Consolidation of key wildlife dispersal areas (wildlife corridors)		Figure 16
Description		
Key conservation areas exist, yet many of these do not formally include critical wildlife dispersal areas. Moremi Game Reserve and the Pans National Park are connected by a network of WMAs. Wildlife, especially zebra migrate between the core areas of the delta and the pan system within the Pans National Park. To secure this wildlife dispersal area it is essential that the intervening WMA be well managed as a wildlife management area. The same argument holds for the area between Hwange National Park in Zimbabwe and the Pans National Park in Botswana, as well as the wildlife dispersal between Kazuma Pan National Park in Zimbabwe and the Chobe National Park in Botswana, via the Seloko Plains. Wildlife movement within the Kwando/Linyanti system is of an international nature and has been discussed under the shared natural resource area. At a national level the wildlife dispersal is between Moremi game Reserve and Chobe National Park and WMAs such as NG14; NG15; NG16; NG18; NG19; NG20; NG21; NG22 and NG23, as well as the southern portion of the Chobe Enclave. Collectively, this network of protected areas should be supported and enhanced to ensure that the wildlife dispersal patterns remain intact and functional, and where possible are enhanced. This could be attained by proclaiming the core area of the Okavango Delta a WHS.		

Action Project 1.12	Responsibility	Cross Reference
Establishing and promoting effective establishment and functioning of WMAs and the establishment of game farm initiatives within these WMAs.		ODMP Figure 16 Figure 21 Figure 26 Figure 27
Description		
As described above the effective functioning of the WMAs within the Botswana component of the KAZA TFCA must be enhanced to ensure the maintenance of a healthy functional ecosystem. Since these WMAs are recognised within the national legislation as protected areas clarity should be attained as to what IUCN classification these WMAs carry. Currently this is not clear. Support could be provided to the WMAs through Community Private Partnerships where appropriate. Several areas within NG8 and NG9 have been proposed to be developed as game farms, effectively serving as a buffer along the western edge of the Delta – NG24; NG25; NG26; NG 29; NG30 –as has been the proposal for NG3. These initiatives will significantly contribute to effective wildlife management and the unlocking of the economic potential associated with this. It has been proposed that the eastern portion of NG11 be developed as a WMA, while the western portion be developed and managed as an agriculture support node for both livestock and crop farming. To enhance ecosystem function and broaden the economic base of the region, it has been proposed that NG45 and NG51 both be converted into game farms, effectively establishing these areas as part of the protected area system within Botswana.		

Action Project 1.13	Responsibility	Cross Reference
Maun Eco Park		ODMP Figure 38 (refer Section 4.3.2)
Description		
As one of the most important hubs regarding wildlife based tourism in southern Africa, Maun lacks a high quality wildlife experience. Currently most visitors merely use Maun as a gateway for experiences further afield, or use the town for resupplies en route to other destinations. Establishing the Maun Eco-Park was identified as a possible mechanism to establish an attractive wildlife product close to the town, one that could benefit local investors and operators, and also encourage longer visitations by guests to the area. An area just north east of Maun was proposed for the establishment of the park.		

Action Project 1.14	Responsibility	Cross Reference
Nxamaseri Eco Park		ODMP Figure 42 (refer Section 4.3.2)
Description		
Similar to the Maun Eco-Park, the area along the Panhandle attracts a lot of passing traffic, yet fails to maximise of the presence of this intervening opportunity. By establishing the Nxamaseri Eco Park near Seropa on the western side of the Panhandle, it is believed that opportunities will be created through which benefits from wildlife and tourism can be gained, broadening and diversifying the economic opportunities in the area. Despite being a small area, this would be the only dedicated wildlife area along the Panhandle within Botswana and attract a focused market. This protected area, could be used as a benchmark regarding riparian vegetation, and if managed similar to the Mahungu Portion of the Bwabwata National Park in Namibia – excluding large numbers of elephant – truly protect the biodiversity of the area.		

Action Project 1.15	Responsibility	Cross Reference
Lake Ngami		ODMP Figure 25
Description		
Lake Ngami is situated at the intersection of the A35 and A3 near the village of Sehithwa, and is a popular bird watching tourist destination. The strategic location, historical importance, and the presence of exceptional numbers of birds, makes Lake Ngami suitable as a low order, low intensity tourism development area. To ensure that the economic and regional development benefits of this area are sustainable, it is critical that the natural resource remains protected. By providing various levels of protection, such as formal recognition as an Important Birding Area, and possibly even recognition as a Wildlife Management Area, despite not being a traditional WMA focused on large mammals, the Lake Ngami area could be protected, and provide the necessary benefits as envisaged within the ODMP.		

Action Project 1.16	Responsibility	Cross Reference
Moremi East		ODMP Figure 24
Description		
Strategically located close to Moremi Game Reserve and Chobe National Park, the area surrounding Mababe Village is critical to ensure effective wildlife movement between these areas, and includes NG19; NG33; NG34; NG 40 and NG 41. The purpose of the Moremi-East action project is to stimulate increased participation by citizens in the tourism industry of Ngamiland; and to establish an off-road link for self-drive safari enthusiasts and mobile safari operators between Maun and Kasane via the Moremi-East area. Interventions include aspects such as the zonation and utilisation of the area for tourism and ensuring aspects such as improved wildlife management. The proposal includes several aspects associated with improved opportunities regarding access for the community to tourism opportunities, and details are contained in the ODMP on how this is to be attained. It is envisaged that through these interventions the wildlife movement, management and guest experiences can be improved and therefore protected.		

Action Project 1.17	Responsibility	Cross Reference
Effective zonation classification of protected areas		Figure 16
Description		
Despite promoting the wilderness atmosphere of Botswana, very few areas within the Botswana Component of the KAZA TFCA could be classified as Wilderness within the IUCN classification of protected areas. A few areas that could attain this status are not formally recognised as such within the management plans of the National Parks or associated protected areas. Where these areas do occur, efforts should be made to zone these as such, formally recognising the value of wilderness, and enshrining these areas for future generations of park planners and managers, visitors and guests. To protect and secure the rest of the areas from overdevelopment, encroachment and other unsustainable practices, each of the protected areas within Botswana Component of the KAZA TFCA should be zoned utilising the methodology used in the IDP, yet at a finer scale.		

4.3.1.4 Summary of Biodiversity and Resource Management Priority Projects

The following table summarises the priority action projects for OBJECTIVE AREA 1 and refers where appropriate to elaborating figures or supporting documentation.

Table 7: Summary of Biodiversity and Resource Management Priority Projects

No.	Action Project	Cross Reference
1.1	Seloko Plains Habitat Fragmentation Mitigation Project	Figure 20
1.2	The Pans National Park Fencing Strategy	Figure 17 Figure 21 - Figure 23
1.3	Western Delta -NG3 Wildlife Corridor	Figure 26
1.4	Panhandle-NG11 and NG13 (Panhandle East) Habitat Fragmentation Project	Figure 28
1.5	Okavango Delta WHS Nomination	(New Proposal)
1.6	Linyanti-Mudumu/Mamili JMP	Figure 29
1.7	Chobe River Front JMP	Chobe River Front Management Plan Chobe National Park Management Plan Figure 19
1.8	Tsodilo Hills WHS	Integrated Management Plan for the Tsodilo Hills World Heritage Site Figure 41 (refer Section 4.3.2)
1.9	Gwcihaba Hills Complex	NG 4 Management Plan, May 2010 (Cgaecgae Tlhabololo Trust) Figure 40 (refer Section 4.3.2)
1.10	Hunters Road	Figure 36 (refer Section 4.3.2)
1.11	Consolidation of key wildlife dispersal areas (wildlife corridors)	Figure 16
1.12	Establishing and promoting effective establishment and functioning of WMAs and the establishment of game farm initiatives within these WMAs: NG3; NG11 & NG13; NG45; NG51; and Okavango Delta buffer farms	ODMP Figure 16 Figure 21 Figure 26 Figure 27
1.13	Maun Eco Park	ODMP Figure 38 (refer Section 4.3.2)
1.14	Nxamaseri Eco Park	ODMP Figure 42 (refer Section 4.3.2)
1.15	Lake Ngami	ODMP Figure 25
1.16	Moremi East	ODMP Figure 24
1.17	Effective zonation classification of protected areas	Figure 16

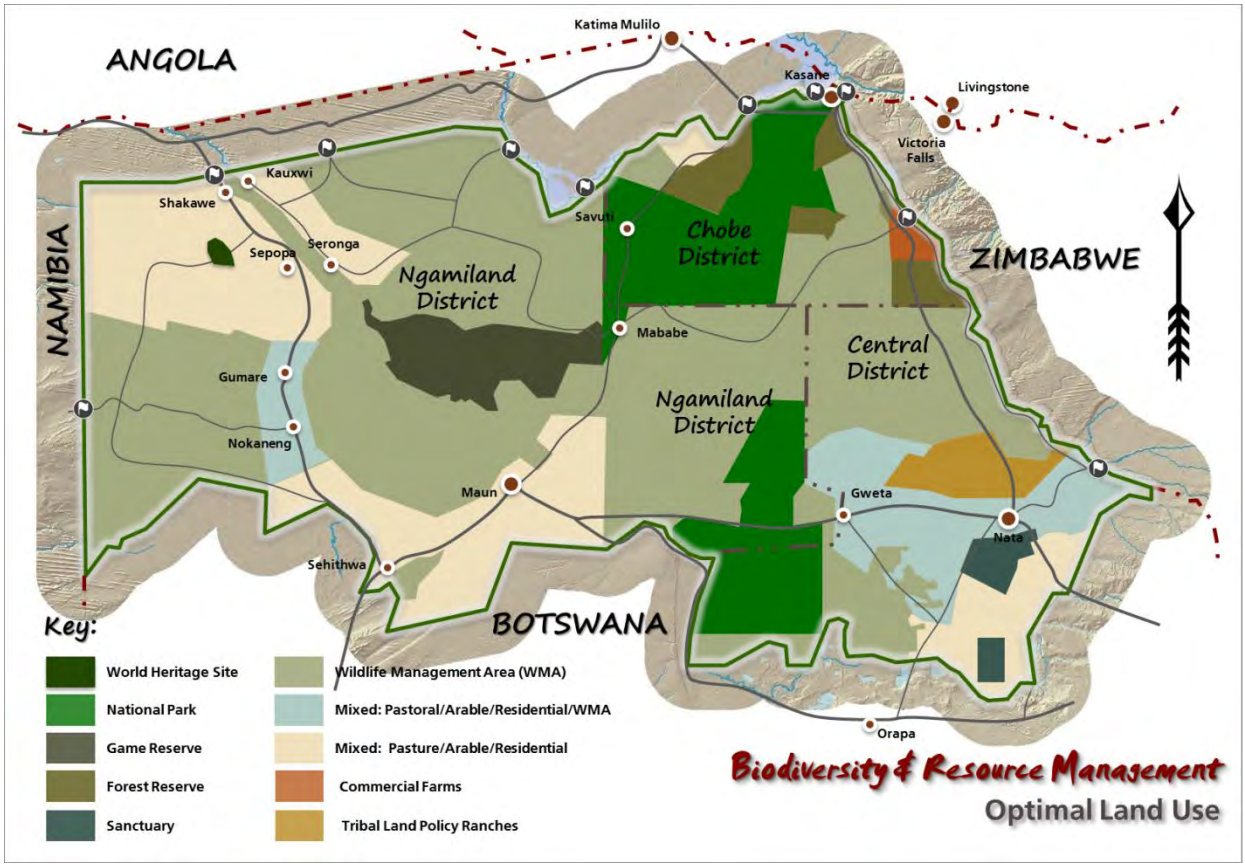


Figure 16: Optimal Land Use

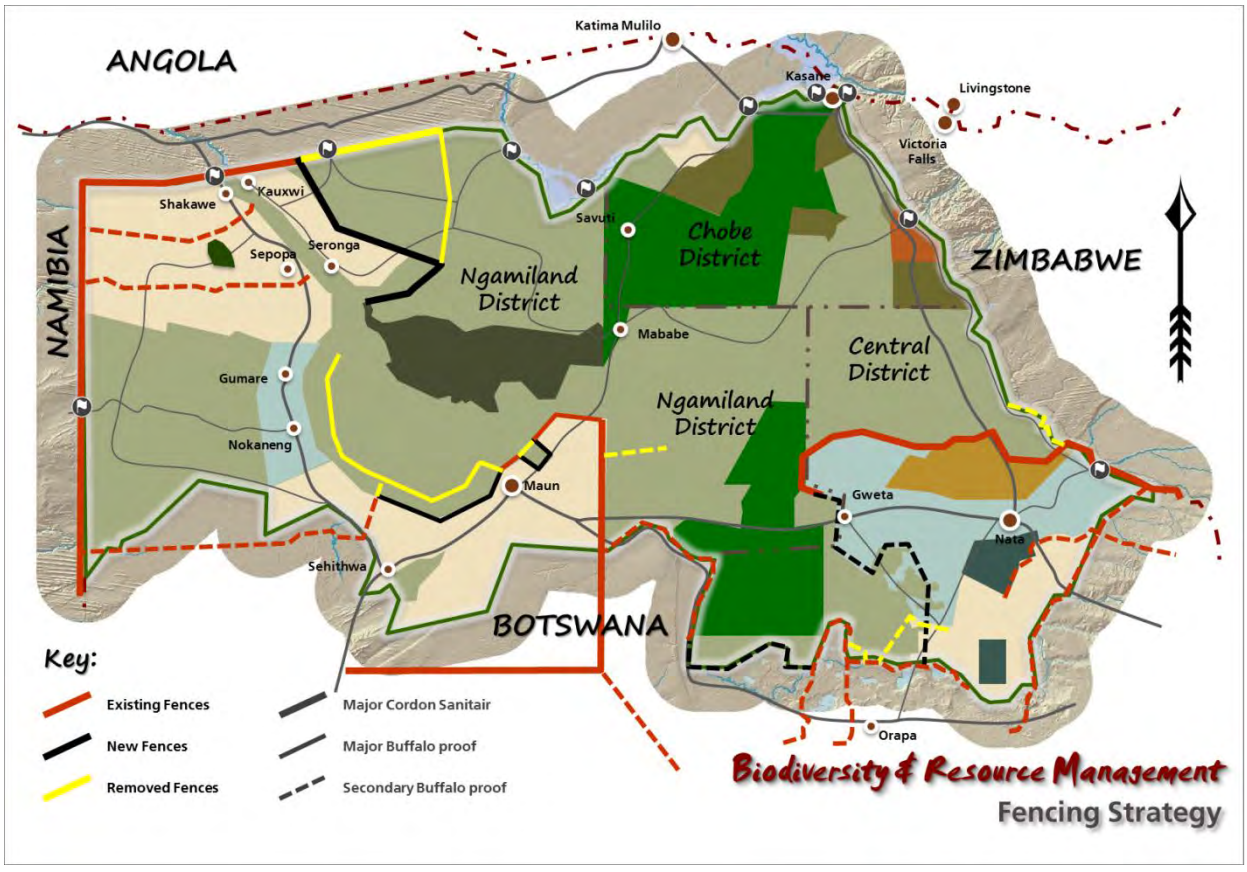


Figure 17: Fencing Strategy

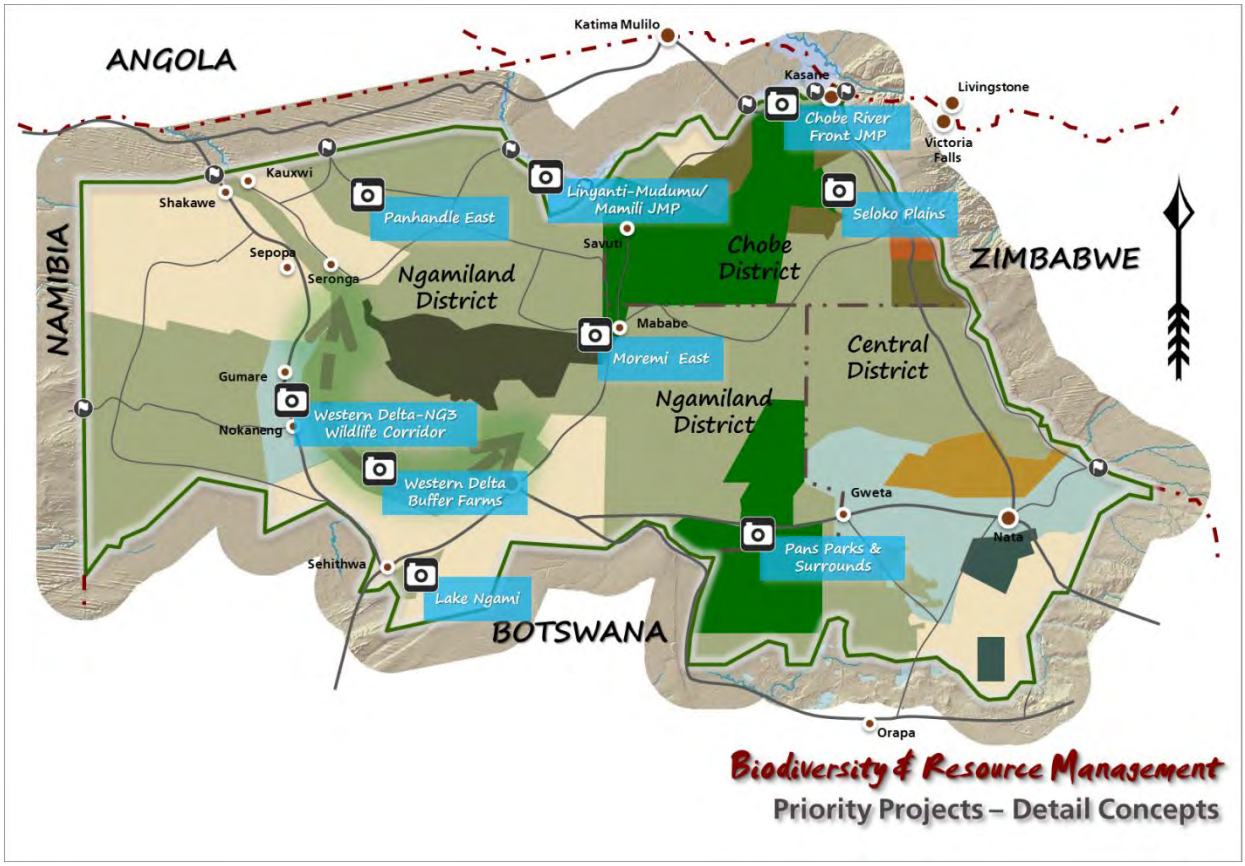


Figure 18: Biodiversity and Resource Management Priority Projects – Detail Concepts

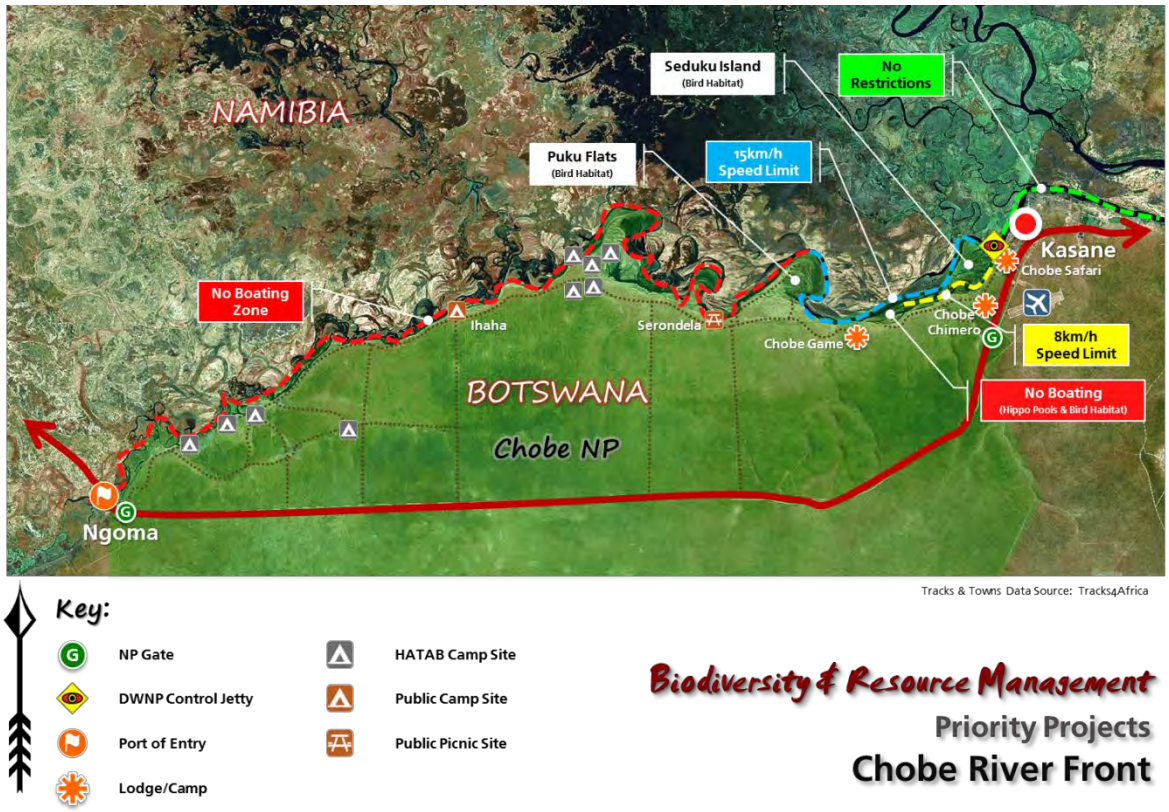


Figure 19: Chobe River Front JMP

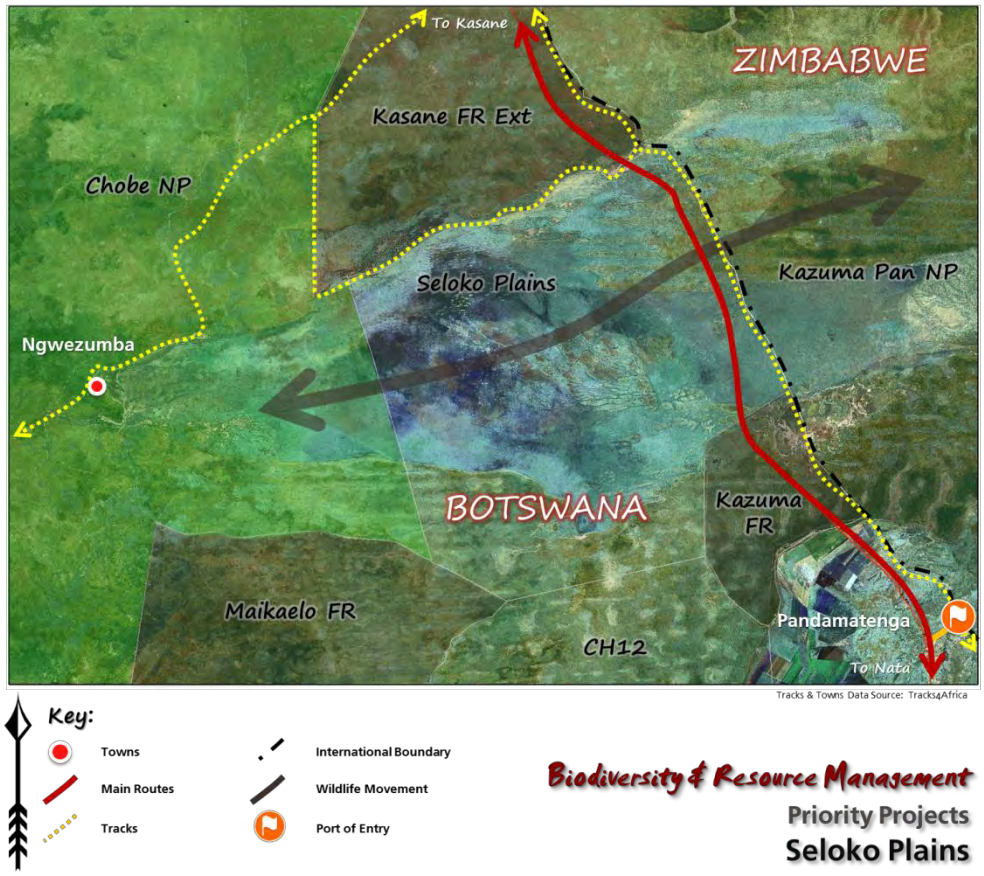


Figure 20: Seloko Plains

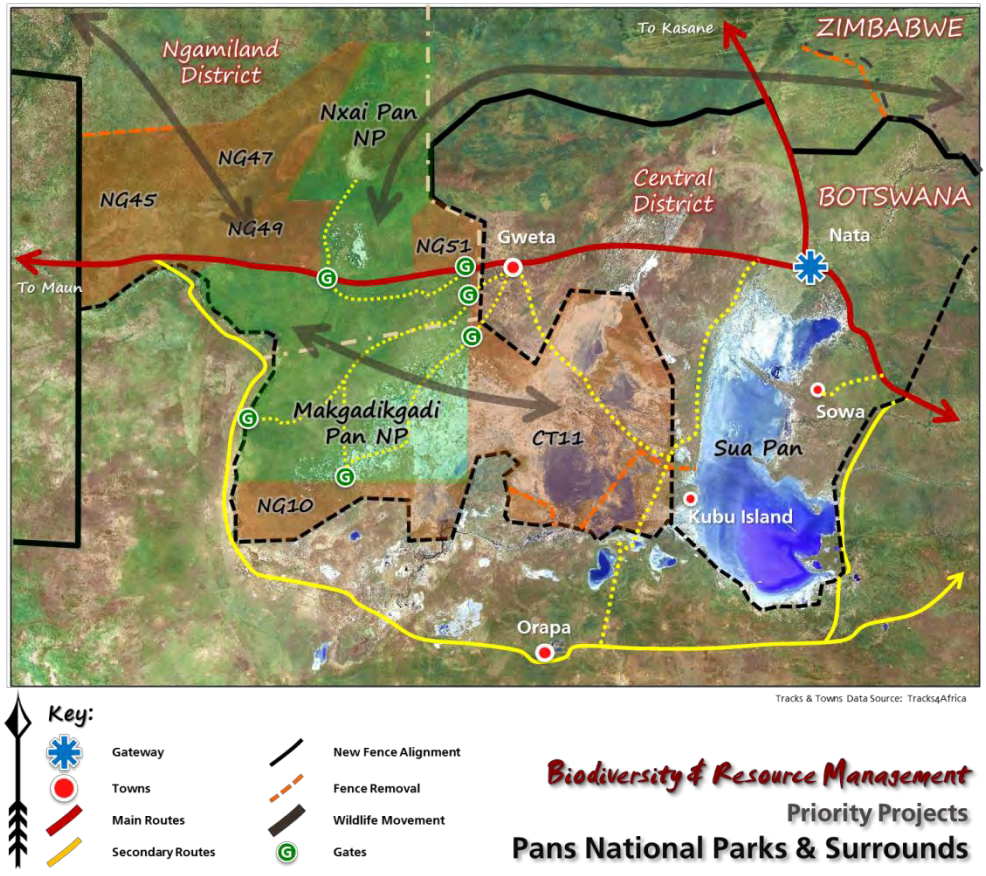


Figure 21: Pans National Parks & Surrounds

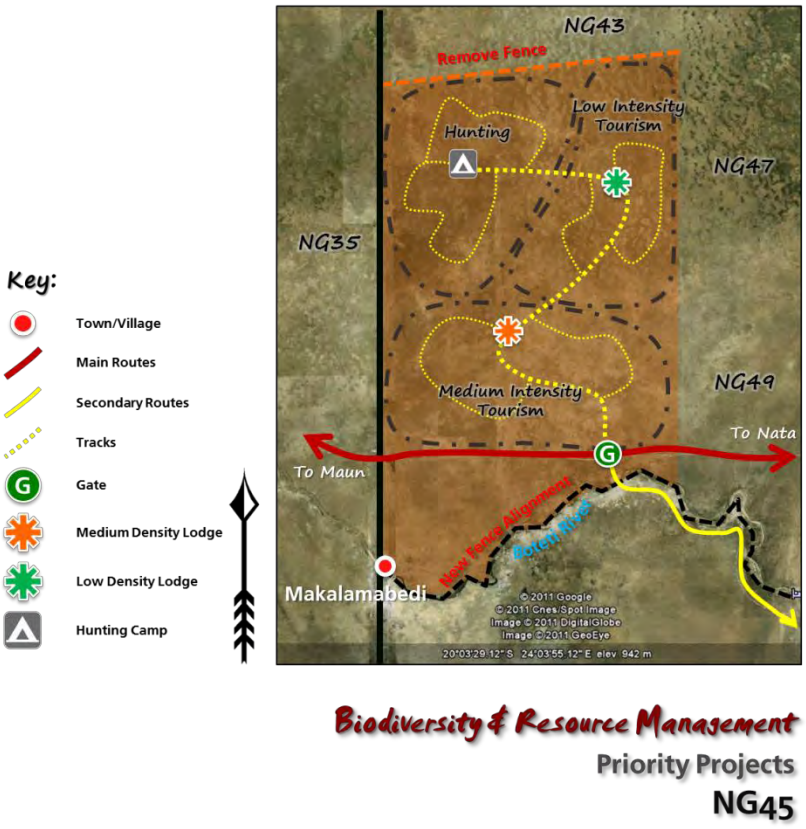


Figure 22: NG45

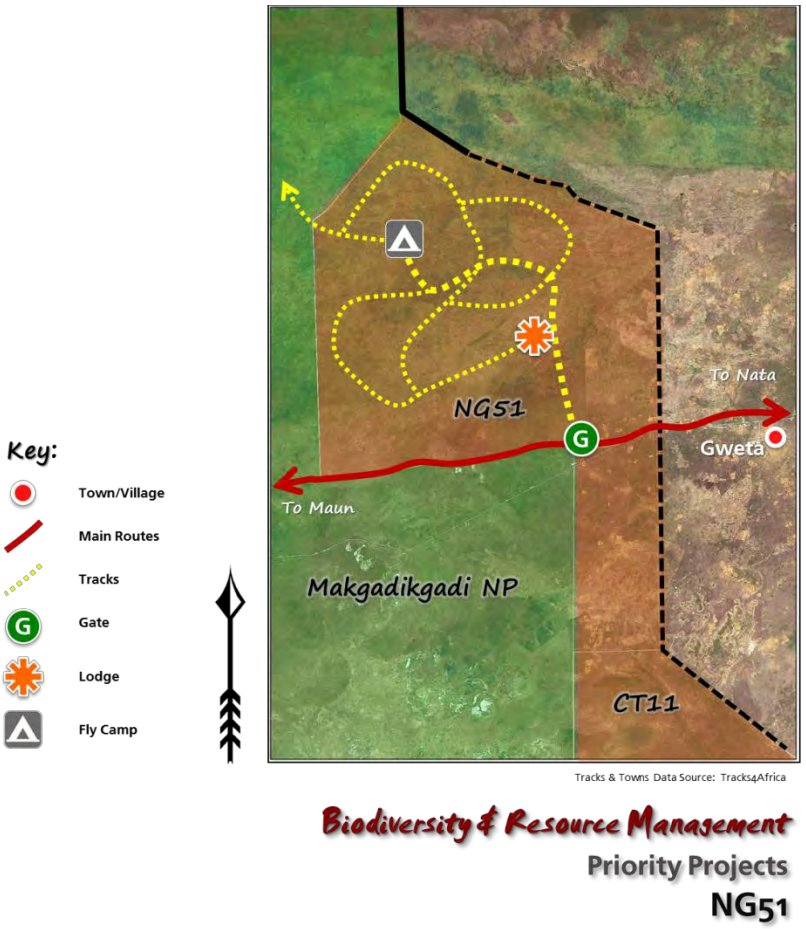


Figure 23: NG51

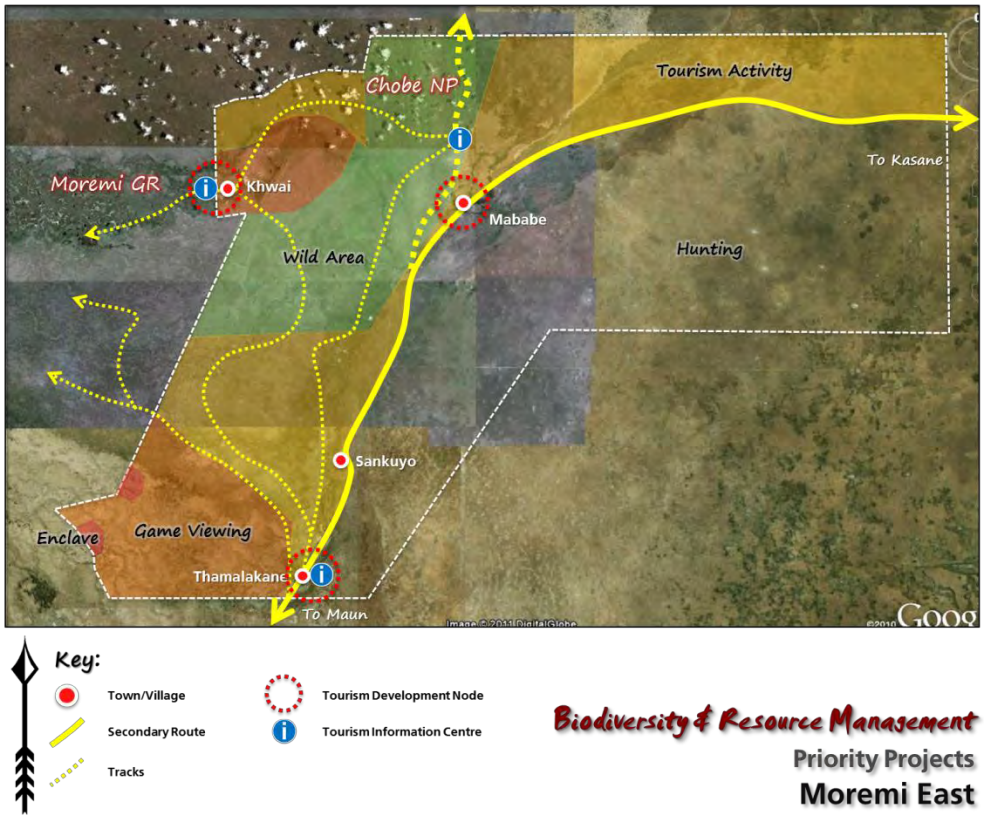


Figure 24: Moremi East

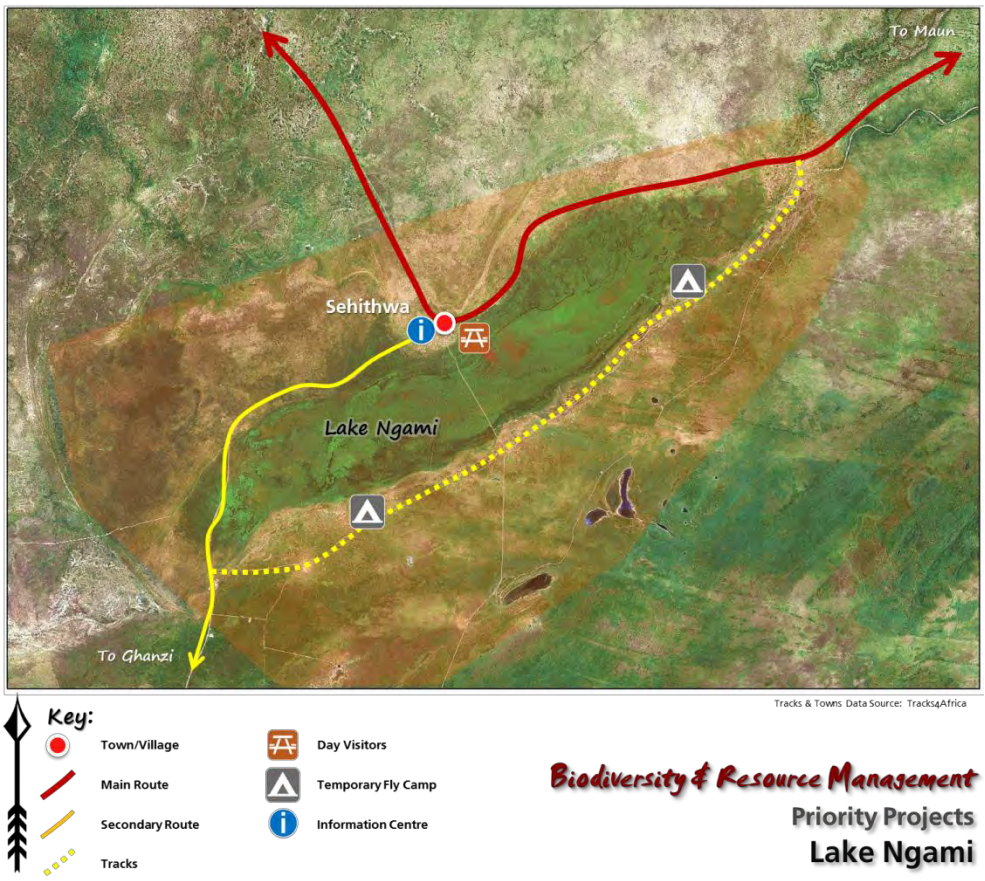


Figure 25: Lake Ngami

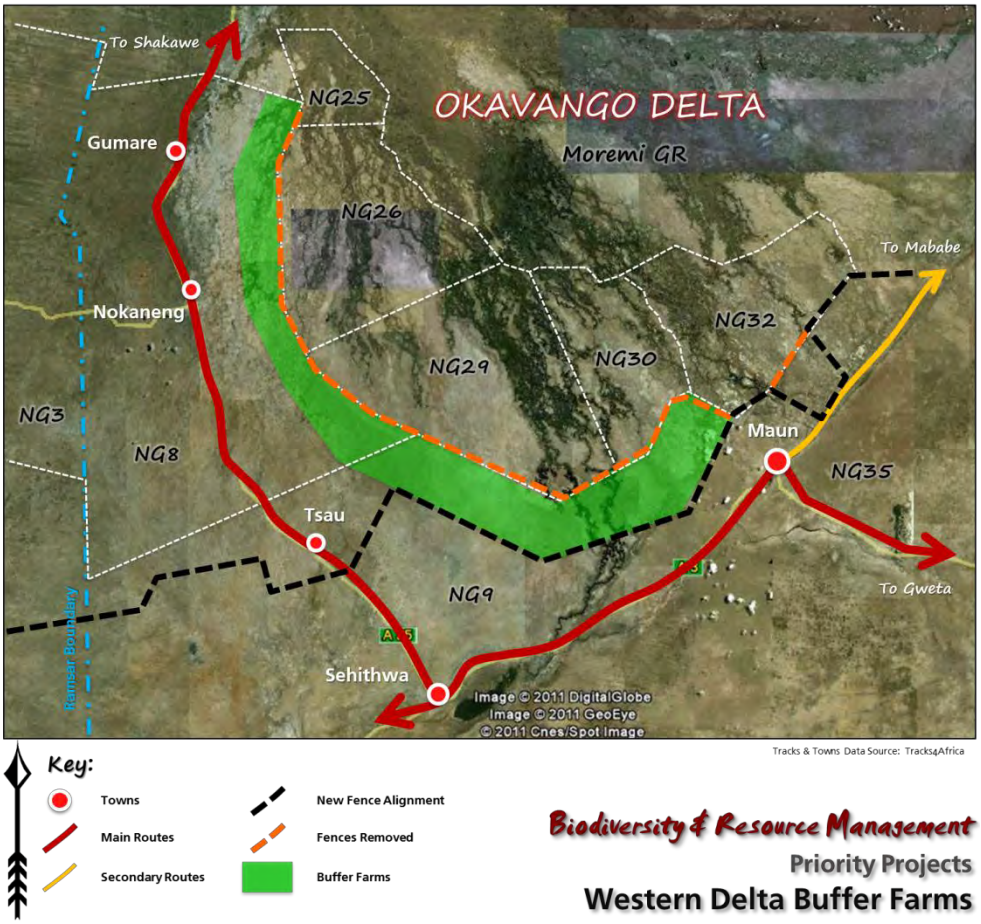


Figure 26: Western Delta Buffer Farms

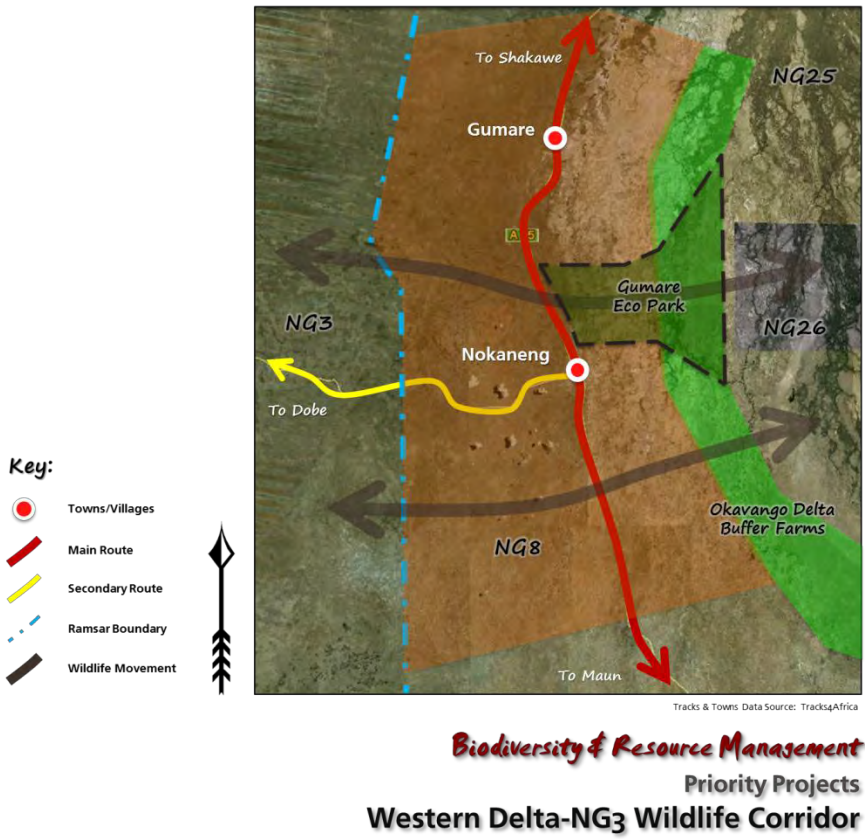


Figure 27: Western Delta-NG3 Wildlife Corridor

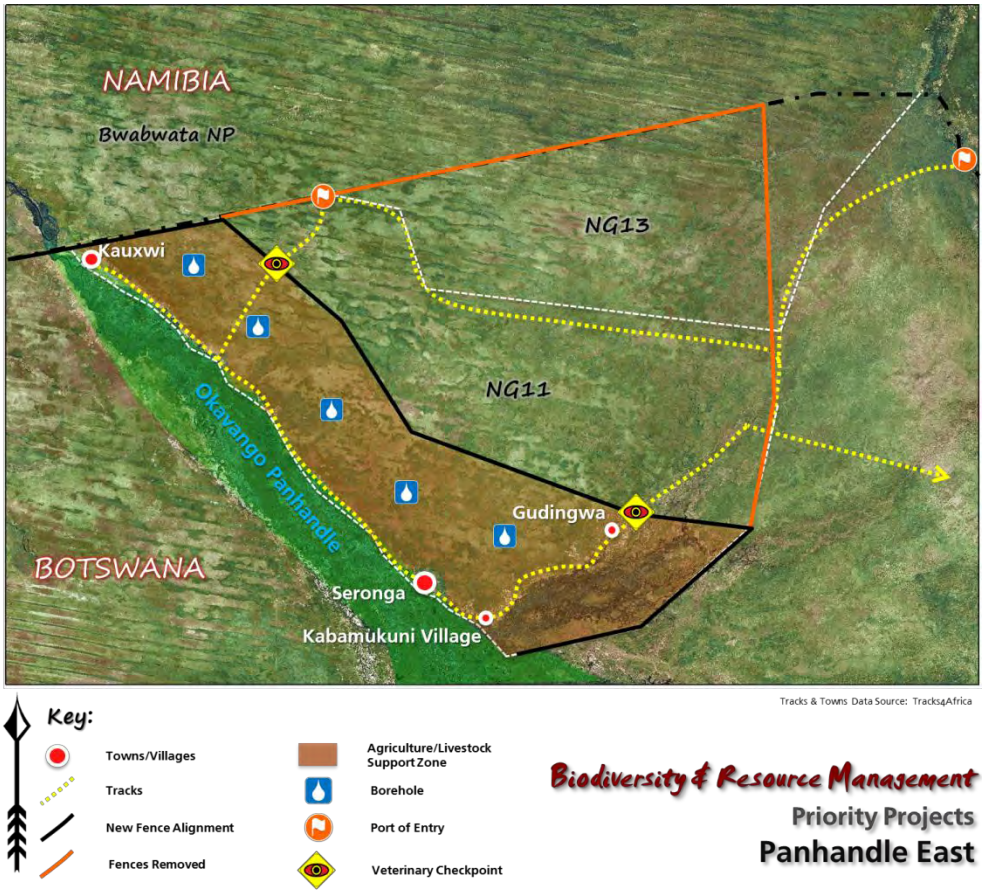


Figure 28: Panhandle-East

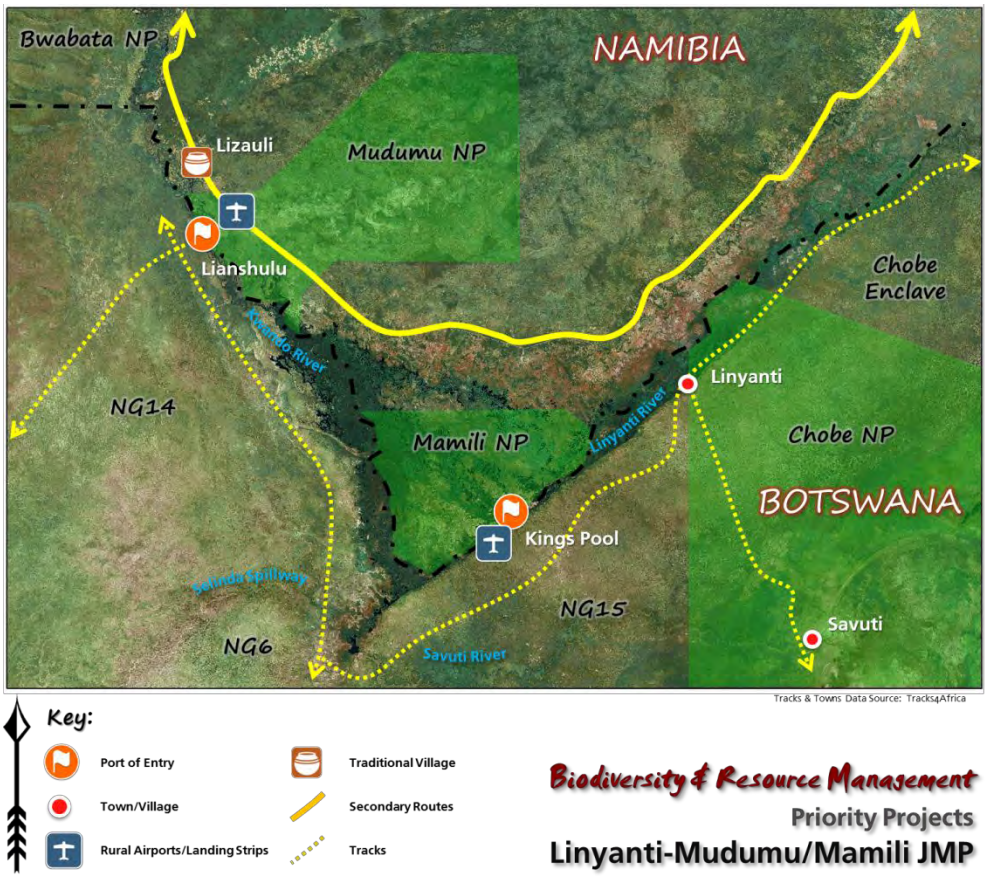


Figure 29: Linyanti-Mudumu/Mamili JMP

4.3.2 Objective Area 2: Business Management

Table 8 to Table 10 below sets out specific objectives and action projects pertaining OBJECTIVE AREA 2 – a summary of the various actions projects is provided in Table 11.

4.3.2.1 Facilitating Tourism across International Borders

Table 8: Facilitating Tourism across International Borders

Objective	To facilitate tourism across international borders in the KAZA TFCA
Rationale	Numerous benefits from tourism will only be able to accrue if the approach is based on regional development and in collaboration with the partner countries within the TFCA. Numerous of the priority areas for TFCA Tourism development are based on the periphery of the country, necessitating close and joint approaches, such as those currently being used in the Linyanti-Mudumu area between Botswana and Namibia. Through the facilitation of TFCA tourism products, the potential of marginal and isolated areas can be attained in an environmentally sound, cost effective and socially acceptable manner. Many areas along the Namibia-Botswana border within Botswana are poorly developed, yet the neighbouring areas within Namibia are relatively well developed. This includes the entire Caprivi Strip, the Mudumu-Mamili Complex and the Tsumkwe area. Conversely, areas in Botswana such as the Botswana-Zimbabwe Border and the Chobe River Front area are well developed, while the areas in both Namibia and Zimbabwe are prroly developed. By collaborating the potential of these areas can be unlocked in a responsible manner.
Strategy	The strategy will entail: ↝ The promotion of four Gateways through which the Botswana Component of the KAZA TFCA are accessed ↝ The upgrading and development of Ports of Entry, with the associated upgrading of roads in key areas ↝ The upgrading of the international airports and surrounding areas within the Botswana Component of the KAZA TFCA, and ↝ The development of TFCA Tourism Products in collaboration with the neighbouring TFCA partner countries.

Action Project 2.1	*Responsibility*	*Cross Reference*
Promotion of KAZA TFCA Gateways – Kasane; Nata; Maun; Shakawe		ODMP Figure 32
Description		
Kasane is the northeast gateway into the Botswana Component of the KAZA TFCA, primarily for visitors entering from Victoria Falls on single or multi-day itineraries. The tour route linking Kasane to Maun through Chobe is currently only accessible to 4x4 vehicles, yet the planned bypass route via Pandamatenga and Mababe would improve general access without impacting on the quality of guest experiences within Chobe National Park. **Nata** is the southwest gateway effectively the split with some movement northwards to Kasane, or westwards to Maun. This junction can also serve as the adventure link between the Makgadikgadi Pans and Hwange in Zimbabwe. **Maun** is the southwest gateway and serves as both a gateway and international Port of Entry, as well as a dispersion point into the Okavango Delta and surrounding area for tourists. This is probably one of the most important gateways for Botswana, for KAZA TFCA and for the region as a whole. **Shakawe** is the northwest gateway. It is currently a minor gateway but rapid tourism expansion north of the border in Namibia is likely to stimulate further development, as would the development of the western delta route.		

Action Project 2.2	Responsibility	Cross Reference
Ports of Entry and associated road upgrades ↗ Dobe ↗ Mahangu ↗ Lianshulu ↗ Impalila ↗ Kazungula ↗ Pandamatenga		Figure 30
Description		
These existing Ports of Entry link key areas, yet, besides Lianshulu and Impalila, these are not dedicated tourism facilities, and require some upgrading to better serve the needs of this and other markets. Roads within the region exist, yet would require some upgrading, such as the short section from Dobe Port of Entry and the all-weather road linking the village of Xai Xai with the western route around the Delta.		

Action Project 2.3	Responsibility	Cross Reference
Development of new Ports of Entry with associated infrastructure (e.g. roads and airstrips): ↗ Caprivi (Bwabwata) ↗ Kings Pool ↗ Hwange		Figure 30 Figure 43 - Figure 45
Description		
Three new Ports of Entry are proposed, the first being along the Namibia Border, enabling tourism access directly from the NG11 and NG13 to the Bwabwata National Park in Namibia. This will also enable the increased tourism flow in the region between the Panhandle and the Linyanti, an area that is currently relatively inaccessible. The second being at Kings Pool within the Linyanti area, opposite the Mamili National Park in Namibia, which could be based on the arrangements currently being used at Lianshulu. The third is along the Botswana-Zimbabwe border enabling direct access from Nata to Hwange National Park in Zimbabwe, benefiting both countries by increasing tourism flow in the region by linking two major attractions – Hwange NP and the Makgadikgadi Pans System. Associated infrastructure required to ensure the effective implementation of these new Ports of Entry include a new road for Caprivi Port of Entry from the Panhandle area to the border; an upgrade of the existing road from Nata to the Hwange Port of Entry; and the upgrading of the airstrip at Kings Pool to serve as the main hub for both Botswana and Namibia on the eastern side of the Linyanti, and should operate in an similar manner to Lianshulu.		

Action Project 2.4	Responsibility	Cross Reference
Improved Aerial Access to the area		ODMP Figure 30 - Figure 31
Description		
Both Maun and Kasane currently receive international and local flights, with the majority being from Johannesburg, the regional hub. With the expected rise in tourism to the region both airports could become important hubs, and it has been proposed that the area around Maun airport be developed as a tourism precinct within the town. To truly unlock the potential of Kasane airport an upgrade of the facilities would be required so that it can truly function as an aerial Port of Entry as well as a distribution hub to serve the various lodges within the area. The rural airports at Shakawe and Nata could also be addressed to ensure that all the Gateways can have some form of aerial access. Generally, the Okavango Delta area is well serviced by landing strips, most of which serve up-market safari lodges that are dependent on fly-in visitors. Standards at these airstrips should be maintained to ensure that popularity of aerial access to lodges is maintained, and thereby ensuring the infrastructure pressure from road access can remain minimal.		

Action Project 2.5	Responsibility	Cross Reference
KAZA TFCA Tourism Products Development - Lianshulu - Kings Pool - Hunters road - Nata-Hwange TAF		Figure 36 - Figure 37 Figure 44 - Figure 45
Description		
TFCA Tourism Products truly illustrate the essence of TFCA collaboration between the partner countries. By developing some initial TFCA tourism products the barriers that borders pose to regional development can slowly be removed and be replaced by functional ecologically based tourism regions, rather than follow colonial boundaries. The successes of Lianshulu in serving its immediate region should be replicated at Kings Pool. By having an appropriate airstrip close to the border and utilising innovative immigration methodologies it would be possible unlock the economic potential of the area without necessitating additional infrastructural development. The historic Hunters Road along the Botswana-Zimbabwe border has been used for centuries and could effectively be packaged and controlled as a TFCA tourism product, improving the control and experience from its current uncontrolled form. Providing access directly from Nata to Hwange National Park in Zimbabwe will require the construction of a new Port of Entry and Tourist Access Facility (park entry gate) in Zimbabwe. The benefit of this is that the Nata area would be provided with another major international attraction, and that tourism flow could increase if tourists from Hwange NP can be attracted to the Makgadikgadi Pans System, a link that is currently very difficult due to the vast distance between Plumtree and Pandamatenga Ports of Entry.		

Action Project 2.6	Responsibility	Cross Reference
Chobe River Front Management		Chobe River Front Management Plan Chobe NP Management Plan Figure 19 (refer Section 4.3.1)
Description		
As the most important tourism revenue stream for the DWNP, the Chobe River Front is an essential part of the national conservation estate. This small area attracts vast numbers of tourists, and the impact within the tourism industry is felt much wider than just the Park. Effective management interventions are required to ensure that the quality of the guest experience within this area is sustained and enhanced. To attain this it is imperative that the management plan that was compiled for the High Intensity Tourism Zone of the Chobe National Park be revisited and revised, and that this be done in a consultative and collaborative manner with Namibia given the transboundary nature of the Chobe River Front. This should address the aspect of houseboats, gameviewing boats, and fishing, as well as national aspects such as vehicular access, and the completion of the cleanup campaigns regarding the old camps in the Park, as well as implementation of activities such as trails. The revised plan should be aligned with the benefit flow management policy of the Botswana Government and aim to redress some of the past imbalances regarding access to opportunities within the tourism industry.		

4.3.2.2 Providing Tourism Opportunities, Facilities and Infrastructure

Table 9: Providing Tourism Opportunities, Facilities and Infrastructure

Objective	To provide opportunities, facilities and infrastructure that shall transform the Botswana Component of the KAZA TFCA into a premier tourist destination in Africa made up of a range of independent yet complementary and integrated sub-regional tourism development nodes
Rationale	Currently the Botswana Component of the KAZA TFCA has a number of distinct tourism areas, such as the Okavango Delta, Chobe National Park, the Makgadikgadi Pans System and Tsodilo Hills. These function largely independent of each other, although various tourism markets do link these together in packages. Various community driven initiatives have identified opportunities to develop tourism facilities and related infrastructure within and between several of these major tourism attractions. These include linking the Gwcihaba Hills (NG4) with the Tsodilo Hills; establishing Moremi East as a tourism hub linking Moremi Game Reserve with Chobe National Park; and various linkages surrounding the Pans National Park. Additional opportunities exist for boosting wildlife tourism within areas such as NG11 and NG13; the southern portion of the Chobe Enclave, and the development of game farms within NG3; along the western Delta, within NG45, and at the Seloko Plains area. Other tourism related opportunities have been identified at places like Commissioners Kop area in Kasane, at Lake Ngami and at strategic areas like Namaxeri; Gumare and Maun, enabling benefits to flow as a result of wildlife based tourism. The economic mainstay is trending towards wildlife tourism and ecotourism ventures are leading the way. Successful partnerships between local communities and private sector operators are providing substantial benefits to accrue to marginalised communities where livestock farming is either not viable or stressed due to veterinary diseases. The distance to market and value of stock also pose challenges. Providing collective benefits from wildlife and tourism the skewed patterns of individual benefits associated with livestock can be redressed in an equitable and sustainable manner.
Strategy	The strategy will entail: ↗ Providing clear guidelines on how the Government of Botswana will assist communities in unlocking the tourism potential of areas by providing the requisite government services, and creating an enabling environment within which tourism opportunities, facilities and infrastructure can be established by either the community or private sector partners ↗ Establishing tourism routes throughout the area to act as catalyst for increased tourism flow from known to unknown areas ↗ Soliciting support for key priority projects within the Botswana Component of the KAZA TFCA.

Action Project 2.7	**Responsibility**	**Cross Reference**
Policy clarification regarding Government support programmes		
Description		
Without a clear policy regarding the type, levels and magnitude of the support that the Government of Botswana will provide to community structures regarding tourism support, it will be difficult to coordinate and collaborate on tourism development in these regions. Ideally the policy should address the roles that the community, Government and private sector will play in the development process, as well as support programmes that would be needed by the community structures from Government.		

Action Project 2.8	Responsibility	Cross Reference
Tourism Route establishment: Main Routes and Linkage Routes		ODMP Figure 32 - Figure 33

Description

Main Routes:

- **Western Delta Wildlife Route:** the current route from Nata through Maun to Shakawe and onto Namibia traverses several areas that stakeholders (community structures) have identified potentially part of a wildlife tourism showcase through the area. These include the area surrounding Gumare and the Namaxeri Eco Parks near Shakawe. This will enable these communities to benefit from the existing tourism traffic through the area. Lake Ngami is strategically situated at the junction and offers excellent intervening tourism opportunities along this route
- **Caprivi Route** linking Victoria Falls to Runda and Etosha via the Caprivi Strip - it skirts the north of Ngamiland without entering Botswana, but it has a significant impact on the flow of tourists in the region. Two main accesses along this route are Kazungulu and Mahembo, with the possibility of secondary tourism links within Bwabwata, at Lianshulu and Kings Pool.
- **Nata-Kasane Route:** traditionally a direct tourism link from Francistown to Kasane, this route has become a major trucking route for traffic that avoided Zimbabwe. As the fastest and most convenient link with the Kasane, Chobe and Victoria Falls area, this route still attracts many overland tourists and should be promoted as such.

Linkage Routes:

- **Tsodilo Hills Cultural Route**: based on the Tsodilo Hills WHS this 4x4 adventure route should deviate off the main Shakawe-Sehithwa road and utilise the sandy tracks between Tsodilo Hills, the Aha Hills and the Gwcihaba Hills effectively linking these sites of cultural heritage together. The route should also link up with the Tsumkwe Community Tourism Structure in Namibia and create a circuit utilising Dobe and Mahembo Ports of Entry. This will enable the Botswana cultural heritage components to be linked with the Namibian attractions establishing mutually beneficial opportunities.
- **Moremi East Wildlife Route:** situated around the Mababe Village area, the proposal is to maximise tourism traffic through the area either travelling from Maun to Chobe National Park, or from Moremi Game Reserve via Kwai Village. The current benefits are mainly remaining within the two protected areas – Moremi GR and Chobe NP – with very little benefit to the communities that host some excellent wildlife areas. Once the bypass route between Mababe Village and Pandamatenga is established as an alternative to the Maun-Nata-Kasane route, the tourism numbers and importance of this area is expected to increase.
- **Northern Delta Route:** Currently very little tourism traffic utilises the Senanga-Mababe route. This route could be established as a way to experience the Selinda Spillway and the wildlife dispersal area between the core area of the Delta and the Linyanti. This could become an important 4x4 route once the Port of Entry between Botswana and Namibia within the Bwabwata NP is established in the NG11 area since this will enable relatively easy access to several conservation areas, such as Bwabwata NP in Namibia and the proposed Liuana NP in Angola. This will benefit the communities in the region quite substantially since the existing western and Chobe routes completely bypass the area.
- **Makgadik**
- **gadi Pans Route:** the peninsula between the Sowa Pan and Ntwetwe Pan is an ideal and recognised route through which tourists can experience some elements of the Makgadikgadi Pans System. This route benefits community developments such as Kubu Island, and could also become critical for the CT11 area and Gweta town.
- **Hunters Road Route:** following a historical route that traverses the boundaries of Botswana and Zimbabwe, the Hunters Road Route currently is an uncontrolled and uncoordinated tourism route that features on the 4x4 route scene within southern Africa. Through better control this route could benefit both countries and should be developed and managed as a KAZA TFCA Tourism Product, providing an alternative to the Nata-Kasane road for tourists who would like to experience more than just the main routes, with the associated truck traffic.

Action Project 2.9	Responsibility	Cross Reference
Soliciting Support for key Community Tourism Programmes, including: ↰ Gwcihaba Hills (NG4) area ↰ Namaxeri; Gumare and Maun Eco Parks ↰ Commissioner's Kop.		ODMP Management Plan for Community Utilisation of Sebobo/Commissioner's Kop NG4 Management Plan Figure 35 Figure 38 - Figure 39 Figure 40 Figure 42
Description		
Numerous priority tourism development programmes have been identified throughout the Botswana Component of the KAZA TFCA. These include, but are not limited to, the Gwcihaba Hills (NG4) area; the Nxamaseri; Gumare; and Maun Eco Parks; Commissioners Kop development in Kasane; and the various game farms throughout the area. Critical to the success of conservation, community beneficiation and poverty alleviation, is the soliciting of support for these tourism initiatives, both as direct support to communities and as support regarding the securing of private sector partners for the community structures. Support can be financial, technical and operational and would be dependent on the specifics of the project. (Ministry of Environment Wildlife and Tourism (MEWT) as the lead agent should develop an overarching Support Programme to which community structures can direct requests for support based on clear critieria. Examples such as the Community Enterprise Fund in Mozambique could be used as examples.		

4.3.2.3 Facilitating a Healthy and Competitive Economic Environment

Table 10: Facilitating a Healthy and Competitive Economic Environment

Objective	To facilitate a healthy and competitive economic environment which promotes and enables Community Public Private Partnerships, private investment and regional economic integration
Rationale	Within business the best aspect to ensure good service and fair market value is competition. Creating an environment in which healthy competition can take place regarding Community Public Private Partnerships (CPPP) will be of substantial benefit to the affected communities, and ensure that effective private investment can be secured for the region and its people. This should be based on the principle of regional economic integration, through which the objectives of the KAZA TFCA can be attained.
Strategy	The strategy will entail: ↝ Clarify the policy regarding CPPPs ↝ Investigate acceptable private investment opportunities within the Botswana Component of the KAZA TFCA ↝ Investigate regional strategies regarding partnerships, ecotourism and resource utilisation and align the Botswana approach to these where necessary and appropriate.

Action Project 2.10	**Responsibility**	**Cross Reference**
CPPP Policy (Economic Environment Policy Clarification)		
Description		
The success of the Botswana component of the KAZA TFCA largely depends on the degree to which effective relationships with the private sector regarding resource management, tourism and agriculture will be established. By clarifying the approach that the Botswana Government will utilise regarding CPPPs an environment in which the private sector can approach community structures regarding resources utilisation and be certain of investment opportunities and standards can be established. The absence of such a policy leaves both the affected communities and potential private sector partners uncertain.		

Action Project 2.11	**Responsibility**	**Cross Reference**
Investment Portfolio		
Description		
Numerous opportunities exist for private sector investors within the Botswana Component of the KAZA TFCA. Only by clarifying the opportunities and preparing a portfolio regarding these opportunities can the Government of Botswana truly solicit support for these interventions in a structured and controlled manner.		

Action Project 2.12	**Responsibility**	**Cross Reference**
Regional Investment Policy Harmonisation		
Description		
Within the KAZA TFCA partner countries, numerous opportunities exist to share experiences and skills regarding the establishment of CPPPs. By aligning and discussing the policies and where necessary adapting the policies within Botswana to reflect the lessons learnt and experience of the other TFCA partner countries, Botswana will be able to ensure that the benefit flow mechanisms are optimised within the KAZA TFCA, and within Botswana in particular.		

4.3.2.4 Summary of Business Management Priority Projects

The following table summarises the priority action projects for OBJECTIVE AREA 2 and refers where appropriate to elaborating figures or supporting documentation.

Table 11: Summary Business Management Priority Projects

No.	Action Project	Cross References
2.1	Gateways: Kasane; Nata; Maun and Shakawe	ODMP Figure 32
2.2	Ports of Entry and associated road upgrades: - Dobe - Mahangu/Mohembo - Lianshulu - Impalila - Kazungula - Pandamatenga.	Figure 30
2.3	Development of new Ports of Entry with associated infrastructure (e.g. roads and airstrips): - Caprivi (Bwabwata) – proposed - Kings Pool - proposed - Hwange – proposed.	Figure 30 Figure 43 - Figure 45
2.4	Aerial Access: - International Airports at Maun and Kasane - Rural Airports - Shakawe and Nata - Landing Strip standards.	ODMP Figure 30 - Figure 31
2.5	TFCA Tourism Products: - Lianshulu - Kings Pool - Hunters road - Nata-Hwange TAF.	Figure 36 - Figure 37 Figure 44 - Figure 45
2.6	Chobe River Front Management	Chobe River Front Management Plan Chobe NP Management Plan Figure 19 (refer Section 4.3.1)
2.7	Policy clarification regarding Government support programmes	
2.8	Tourism Route establishment (Main Routes and Linkage Routes)	ODMP Figure 32 - Figure 33
2.9	Soliciting Support for key Community Tourism Programmes, including Gwcihaba Hills (NG4) area; Nxamaseri-, Gumare- and Maun Eco Parks; and Commissioner's Kop	ODMP Management Plan for Community Utilisation of Sebobo/Commissioner's Kop NG4 Management Plan Figure 35 Figure 38 - Figure 39 Figure 40 Figure 42
2.10	CPPP Policy (Economic Environment Policy Clarification)	
2.11	Investment Portfolio	
2.12	Regional Investment Policy Harmonisation	

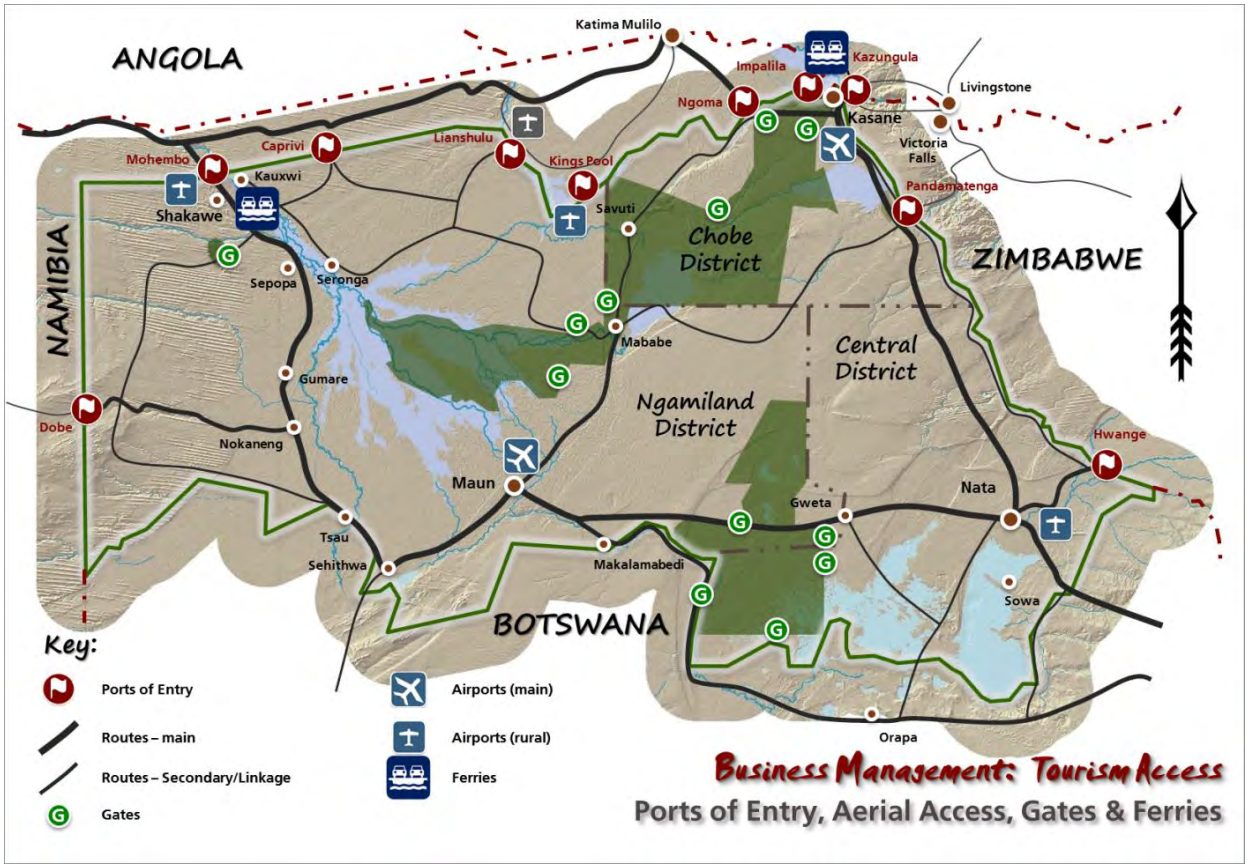


Figure 30: Ports of Entry, Aerial Access, Gates and Ferries

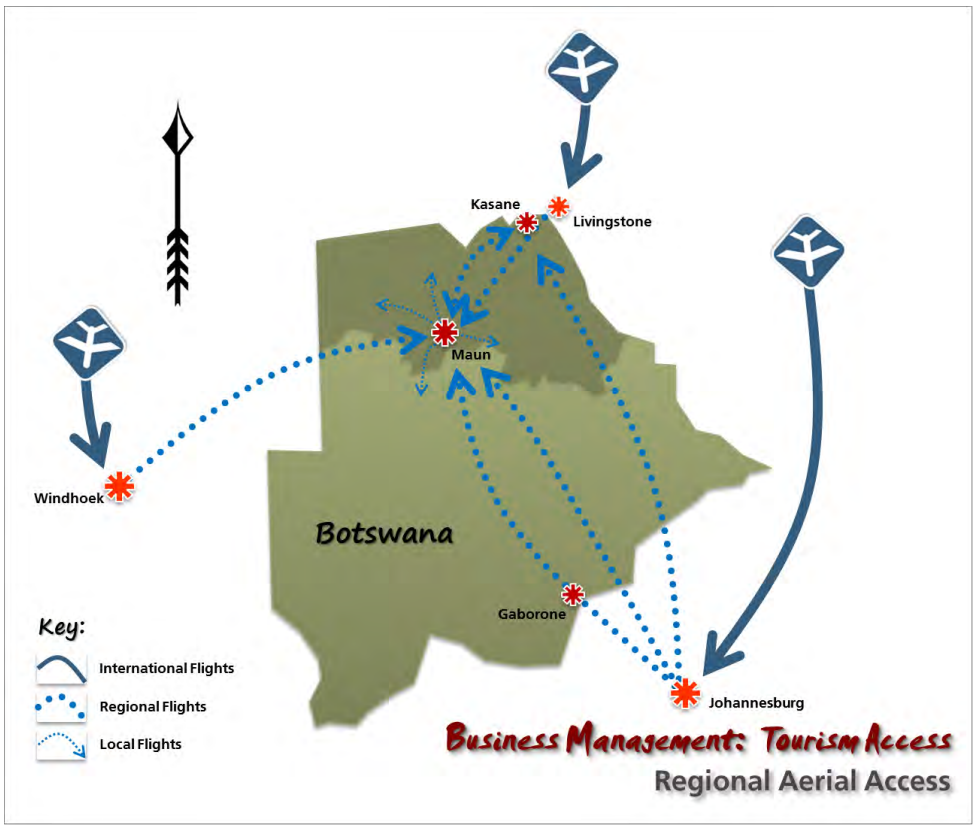


Figure 31: Regional Aerial Access

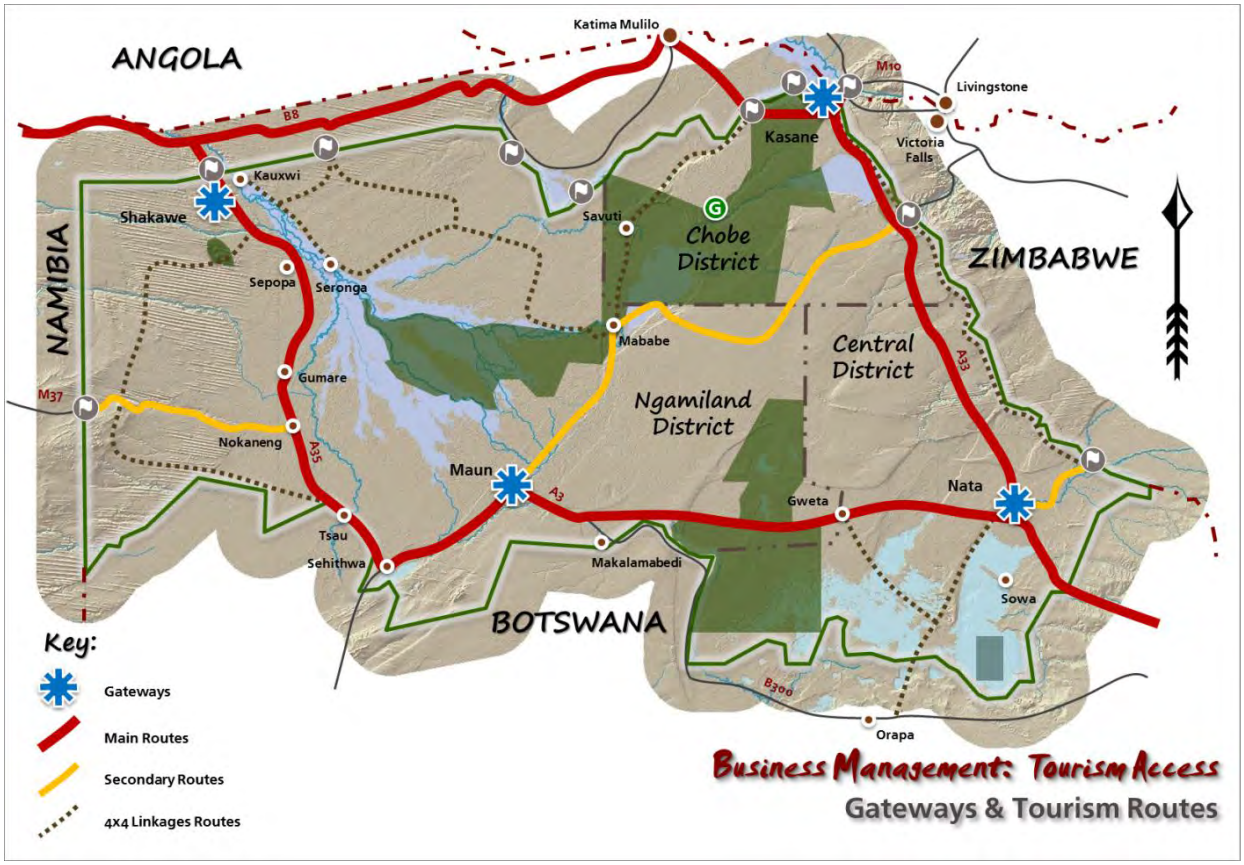


Figure 32: Gateways and Tourism Routes

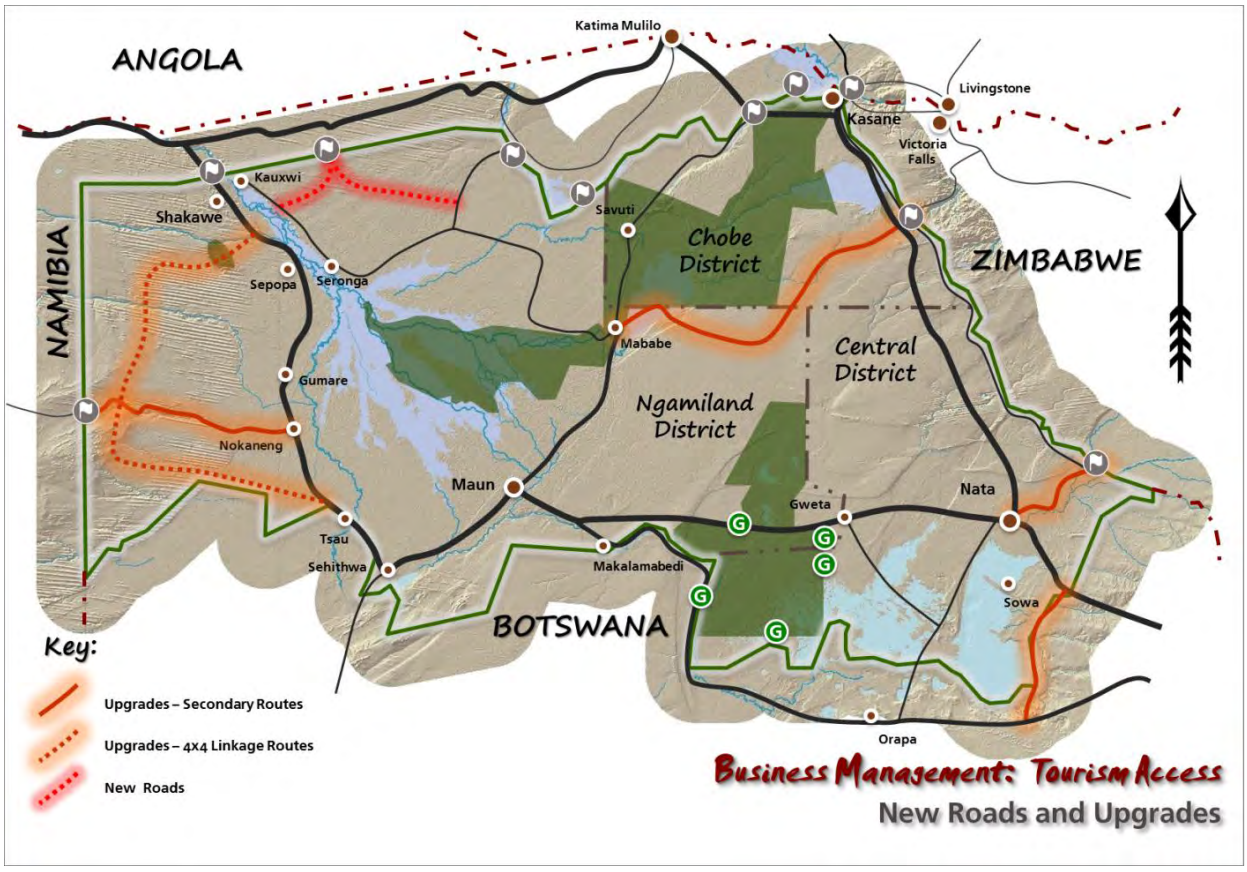


Figure 33: New Roads and Upgrades

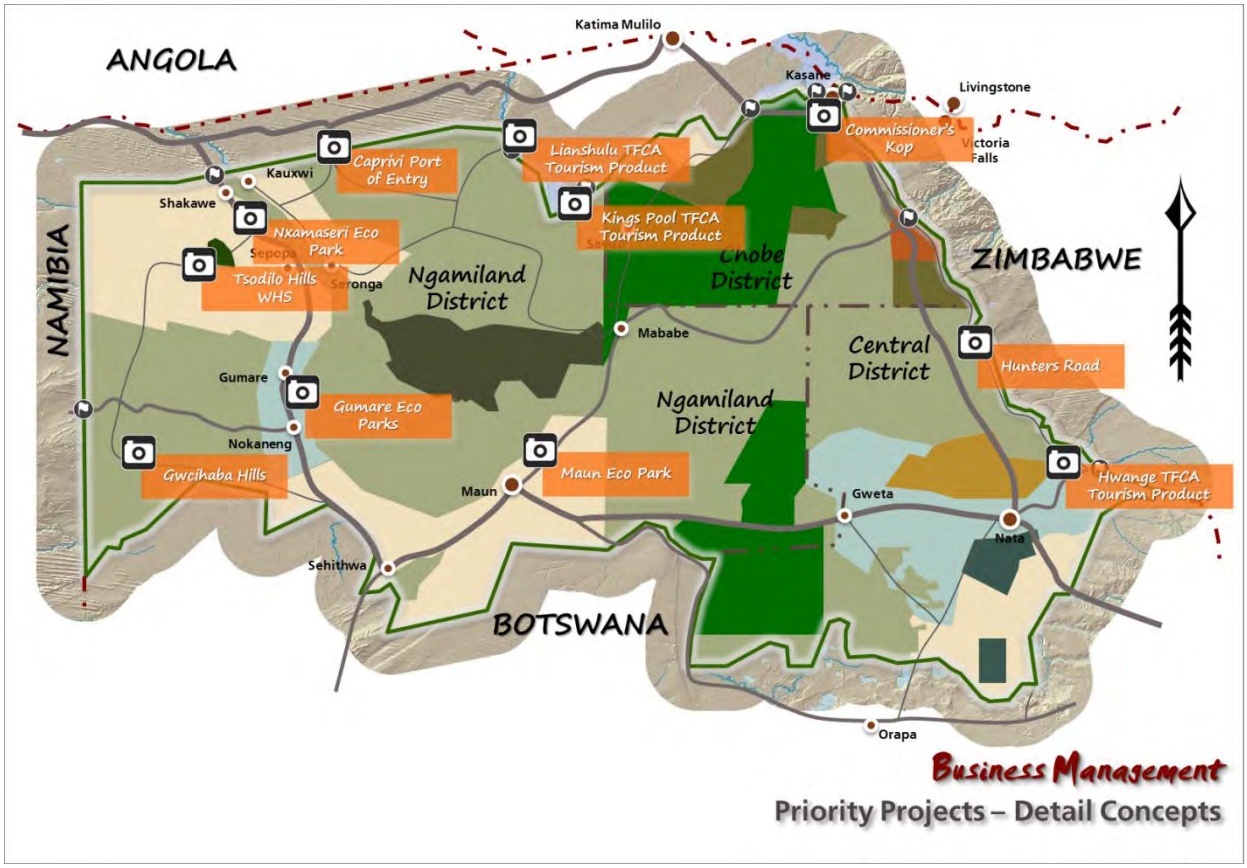


Figure 34: Business Management Priority Projects – Detail Concepts

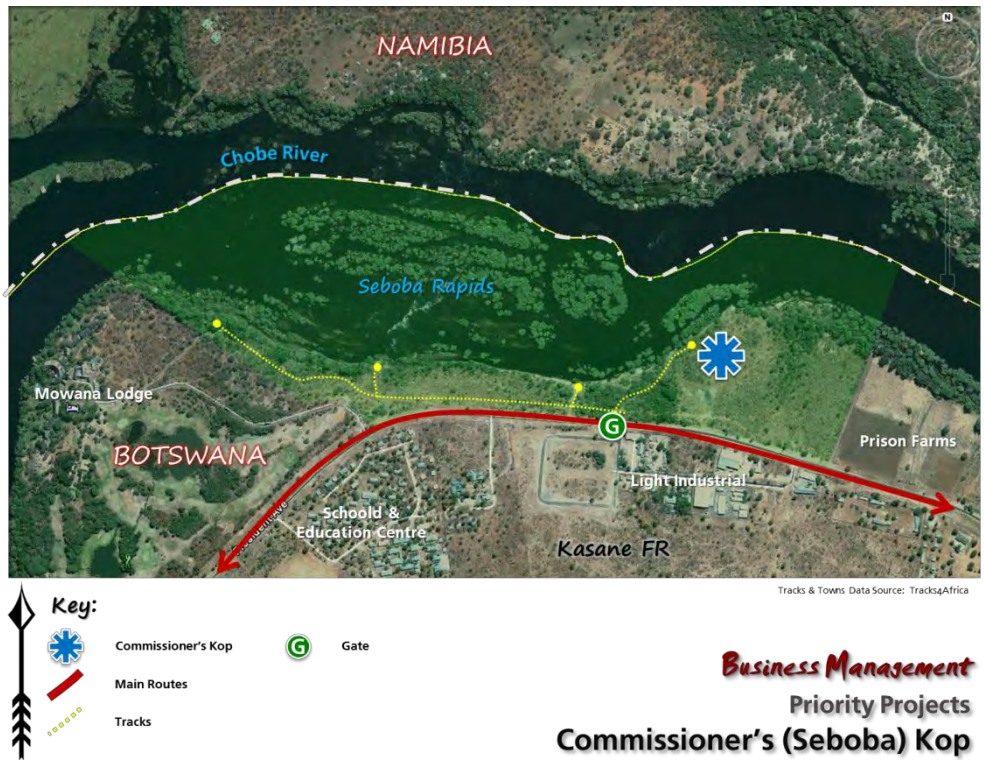


Figure 35: Commissioner's Kop

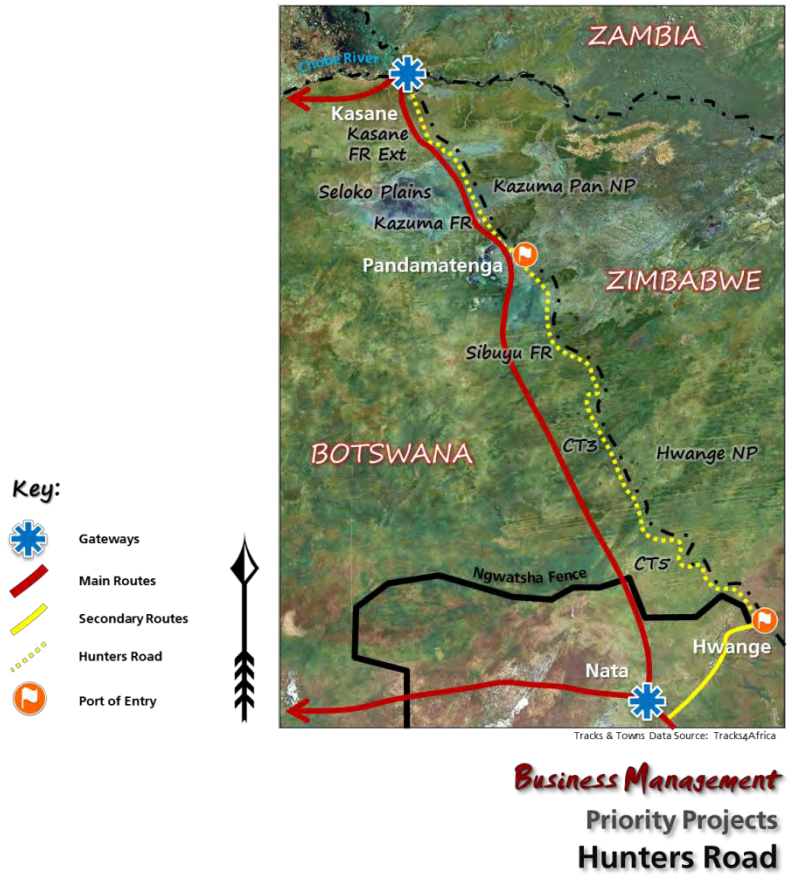


Figure 36: Hunters Road

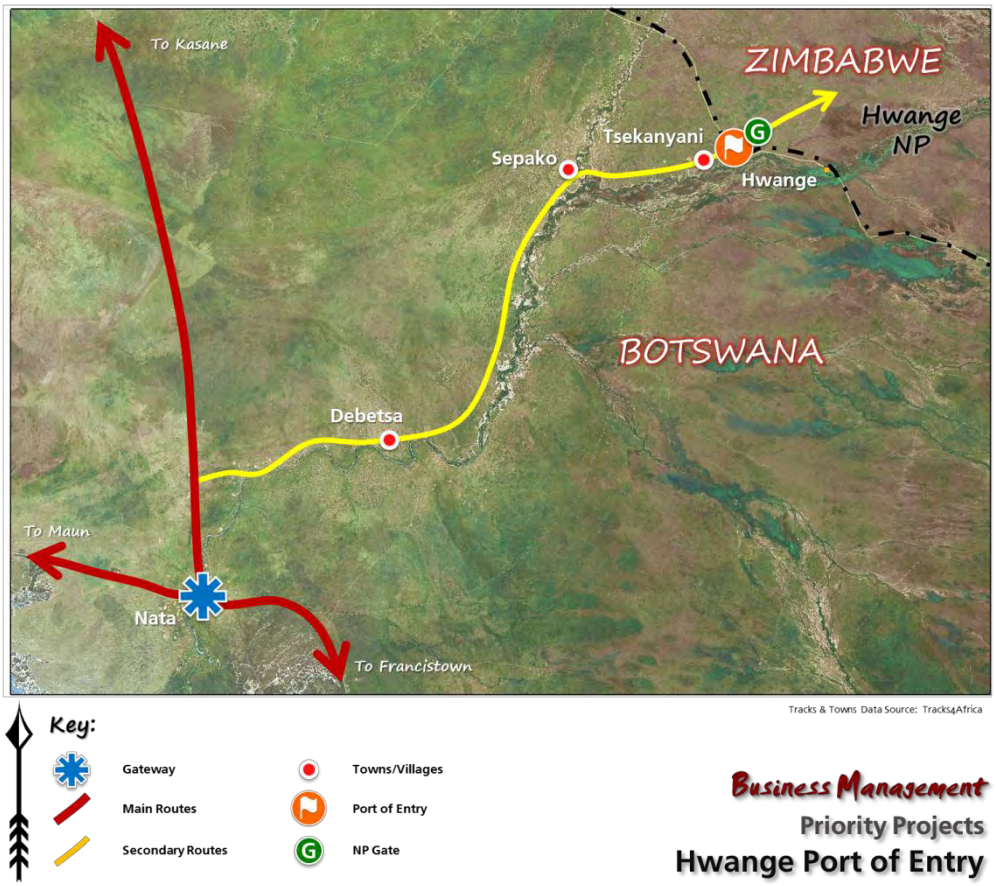


Figure 37: Hwange TFCA Tourism Product

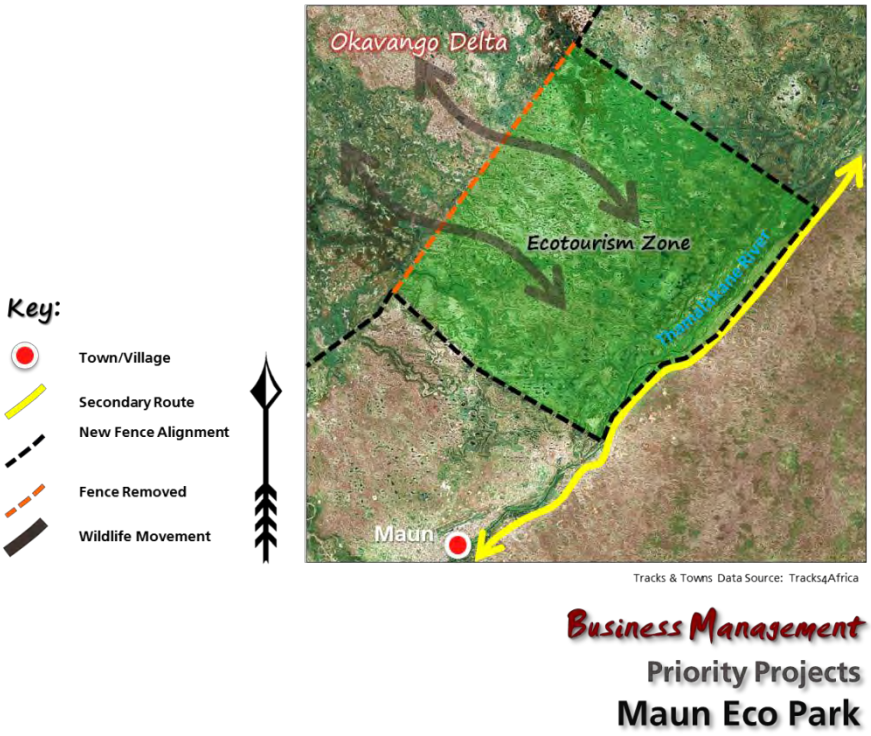


Figure 38: Maun Eco Park

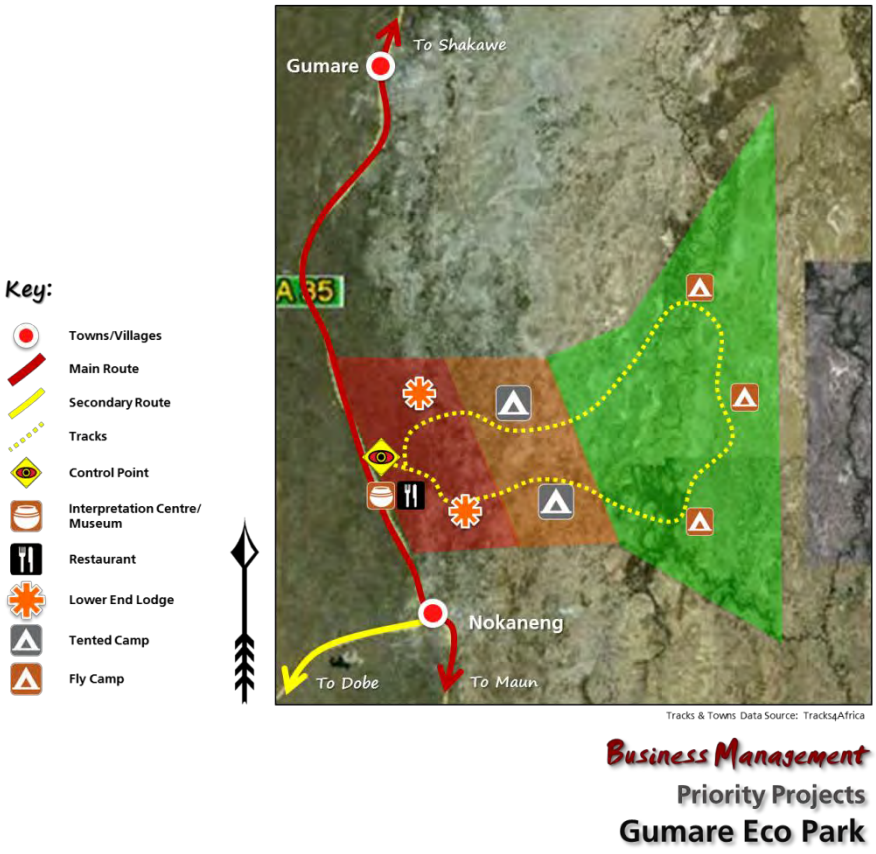


Figure 39: Gumare Eco Park

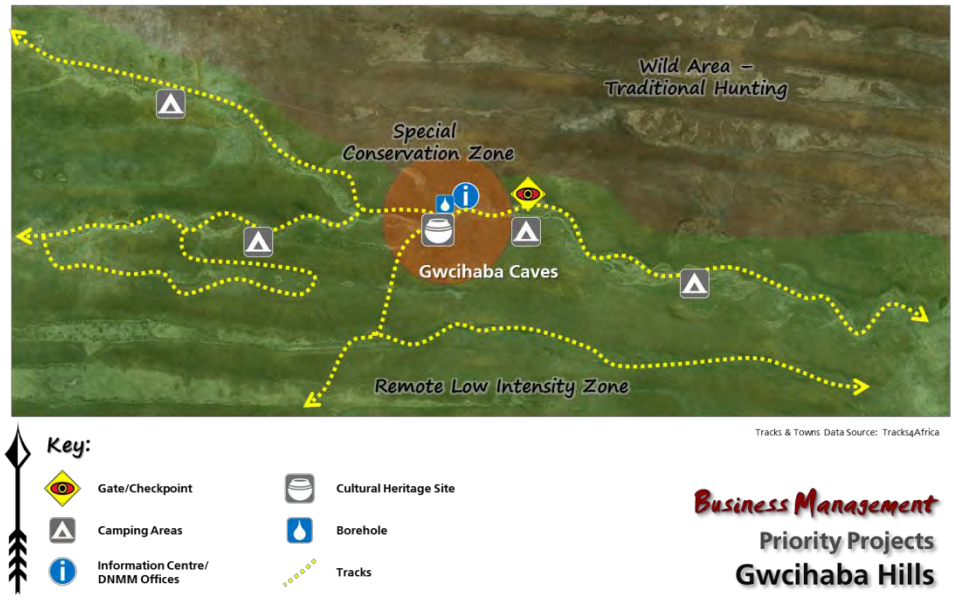


Figure 40: Gwcihaba Hills

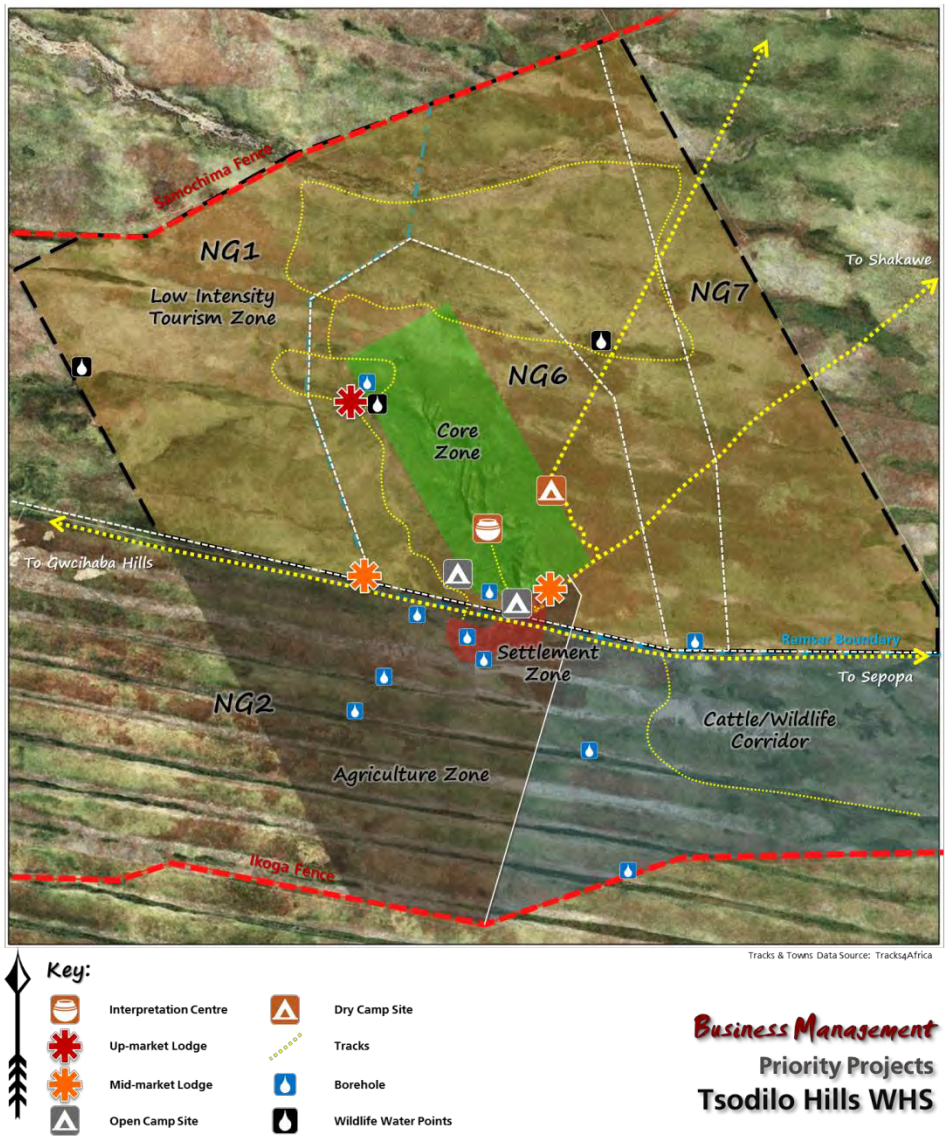


Figure 41: Tsodilo Hills WHS

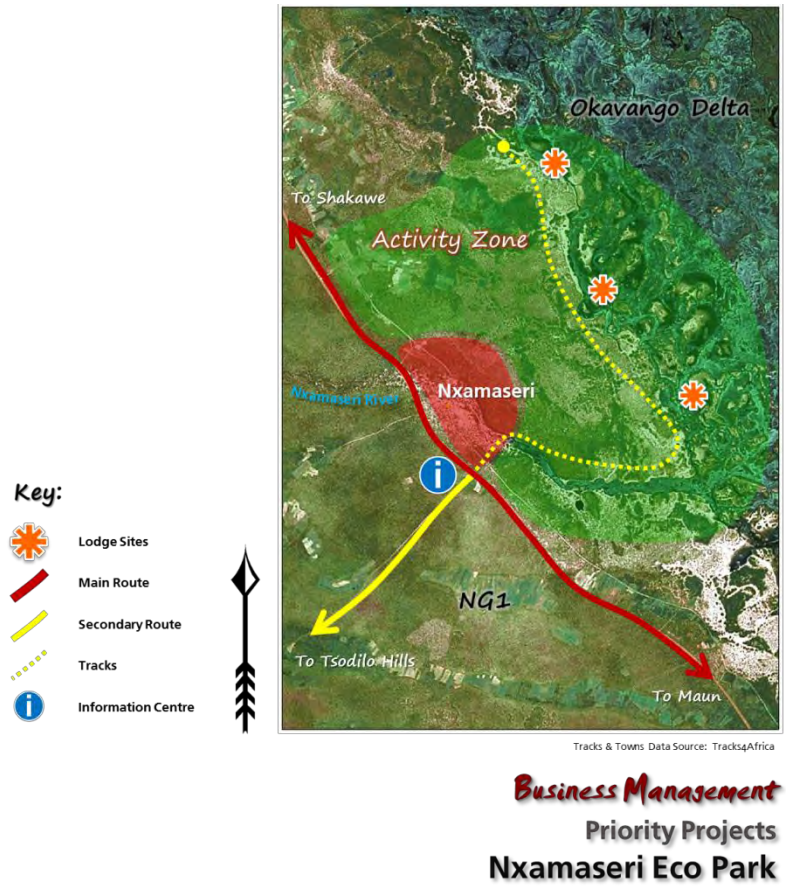


Figure 42: Nxamaseri Eco Park

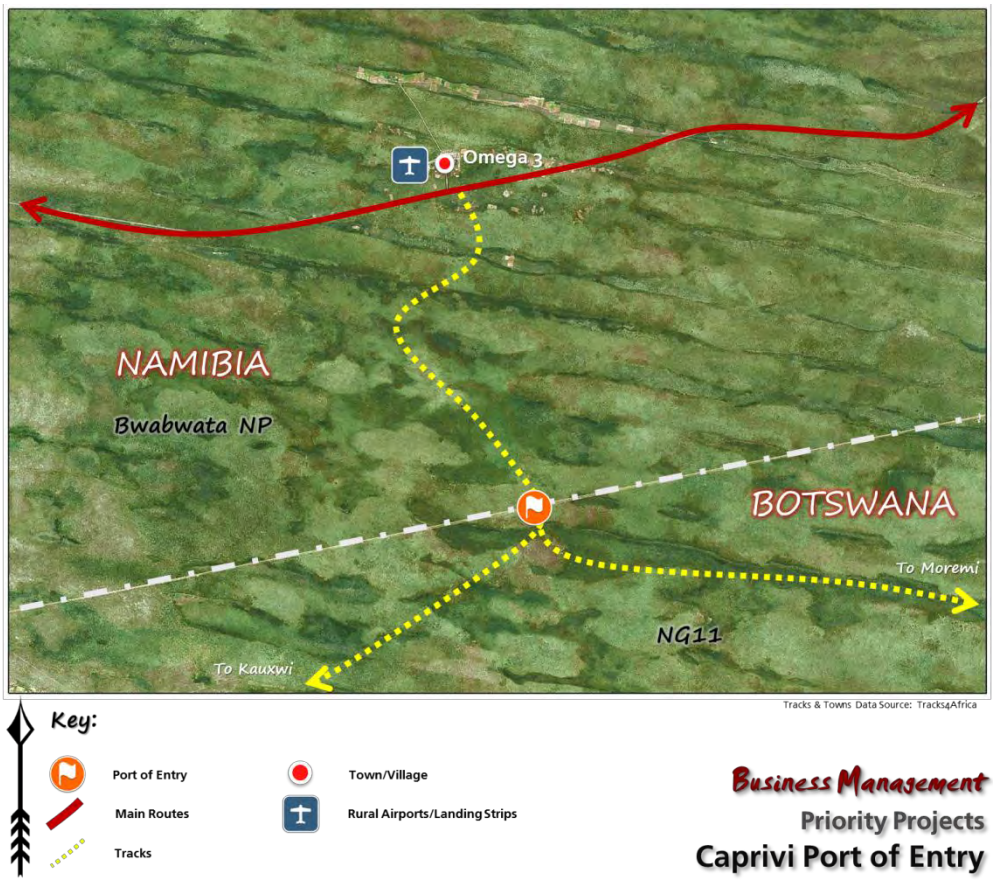


Figure 43: Caprivi Port of Entry

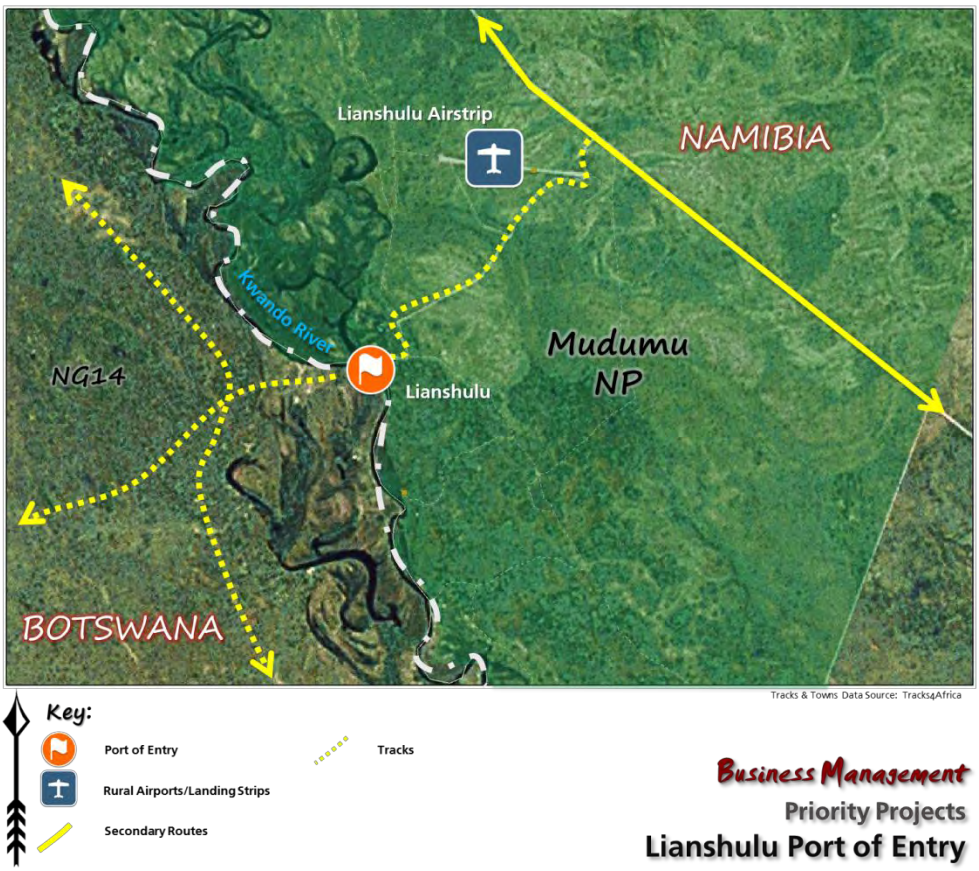


Figure 44: Lianshulu Port of Entry

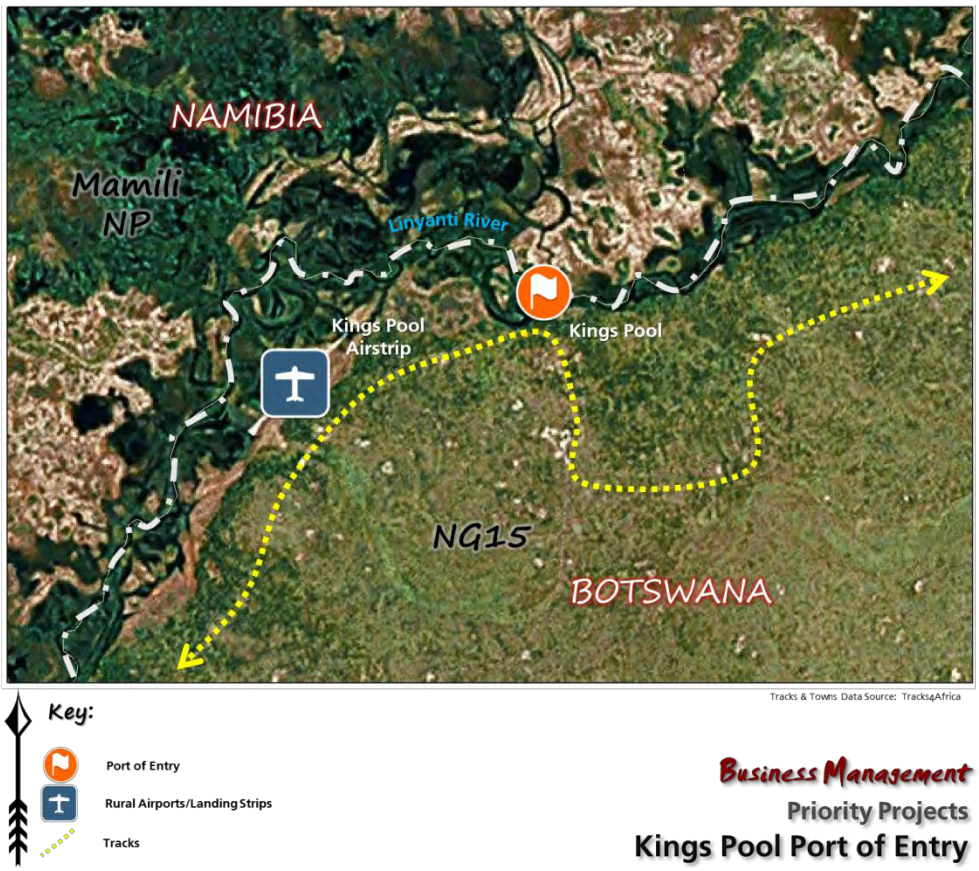


Figure 45: Kings Pool Port of Entry

4.3.3 Objective Area 3: Benefit Flow Management

Table 12 below sets out specific objectives and action projects pertaining OBJECTIVE AREA 3 – a summary of the various actions projects is provided in Table 13.

4.3.3.1 Developing and Implementing Programmes for Sustainable Use of Resources

Table 12: Developing and Implementing Programmes for Sustainable Use of Resources

Objective	To develop and implement programmes that shall enhance the sustainable use of natural and cultural heritage resources to improve the livelihoods of local communities within and around the Botswana Component of the KAZA TFCA and thus contribute towards poverty reduction
Rationale	Based on the NDP10 social and community programmes are essential to reduce poverty and alleviate the vulnerability of communities. To effectively implement these programmes it is critical that the rights of these communities are respected, and that the approach truly benefits the entire community and not just specific individuals or user groups. This collective approach will address the poverty gaps and social vulnerability of these communities. The programmes should be based on mitigating the impacts of Human Wildlife Conflict, and thereby increasing the acceptance of wildlife as an essential, rather than inconvenient, part of the economic value chain, ideally suited to addressing poverty and economic development objectives. Essential to the successful implementation of these programmes aimed at ensuring the sustainable use of natural resources will be the benchmarking of current socio-economic levels, individual and household incomes, and measuring the actual changes to these communities as a result of interventions within the way resources are utilised. Reporting on the impacts in an open and transparent manner will ensure that the affected communities, donors, private sector partners and the Government of Botswana are able to measure and monitor the impacts of sustainable use of resources on the well-being of their communities and environment.
Strategy	The strategy will entail: ↗ Soliciting support for identified Community Conservation Priority Projects ↗ The preparation of Benefit Flow Action Plans ↗ The undertaking of Socio-economic benchmarking exercises ↗ The preparation of annual benefit flow reports

Action Project 3.1	*Responsibility*	*Cross Reference*
Solicit support for identified Community Conservation Priority Projects		
Description		
The project would entail soliciting direct support for the following projects, and any others as they are identified: ↗ NG3 Game Farm Development ↗ Gumare Corridor ↗ Western Delta Game Farm Development ↗ Namaxeri Eco Park ↗ Panhandle / NG11&13 CHA ↗ Maun Eco Park ↗ Moremi East ↗ The Pans NG ↗ The Pans CT11 ↗ CT5 ↗ NG45 Game Farm Development ↗ Chobe Enclave ↗ Seloko Plains ↗ Pandamatenga Agricultural Support Node ↗ Linyanti JMP		

Action Project 3.2	Responsibility	Cross Reference
Benefit Flow Action Plans		
Description		
Benefit Flow Action Plans for each of the Community Conservation Priority Projects need to be prepared stating exactly what the individual components will entail, what the estimated benefits will be, how these will be measured, and what will the costs associated with these projects be, both initially and in the long term. How the benefits will be measured also needs to be determined, as well as decisions made on how these will be reported on. MEWT should develop a methodology for preparing benefit flow action plans, and partner with structures such as Botswana Tourism Organisation to develop these for communities, before soliciting the necessary support.		

Action Project 3.3	Responsibility	Cross Reference
Socio-economic benchmarking exercise		
Description		
Without verifiable baselines against which the impacts of community based conservation initiatives can be measured, it is impossible to claim successes or failures within the field of wildlife management. Undertaking socio-economic benchmark exercises within communities will be essential to be able to determine whether the projects are having the desired impact, and if so why and to what extent, and if not, why and what can be done to improve these. The three districts are ideally positioned to undertake the detailed benchmarking exercises, whereas MEWT should combine this information into an overarching socio-economic benchmark for the entire Botswana Component of the KAZA TFCA.		

Action Project 3.4	Responsibility	Cross Reference
Annual benefit flow reporting		
Description		
The success of the Namibian Conservancy programmes is succinctly captured within annual reports which are made available to donors, supporters and collaborating partners. These clearly illustrate the improvements within individual projects, provide financial accountability for the costs incurred, and show the environmental benefits of these programmes. By utilising a similar reporting structure it will be possible to report on the various WMAs, game farms and related programmes within the Botswana Component of the KAZA TFCA.		

4.3.3.2 Summary of Benefit Flow Management Priority Projects

The following table summarises the priority action projects for OBJECTIVE AREA 3 and refers where appropriate to elaborating figures or supporting documentation.

Table 13: Summary of Benefit Flow Management Priority Projects

No.	Action Project	Cross Reference
3.1	Solicit support for identified Community Conservation Priority Projects	
3.2	Benefit Flow Action Plans	
3.3	Socio-economic benchmarking exercise	
3.4	Annual benefit flow reporting	

4.3.4 Objective Area 4: Governance

Table 14 to Table 19 below sets out specific objectives and action projects pertaining OBJECTIVE AREA 1 – a summary of the various actions projects is provided in Table 20.

4.3.4.1 Sharing Experiences, Resources and Expertise

Table 14: Sharing Experiences, Resources and Expertise

Objective	To share Botswana experiences, resources and expertise across international borders in areas including indigenous knowledge, tourism management, border control, technology and renewable energy to facilitate development
Rationale	The greatest benefit that Botswana can get from the KAZA TFCA is the sharing of experiences and expertise with colleagues from the region. In some cases Botswana has performed exceptionally well, while in other the neighbouring TFCA partner countries have done well regarding elements that Botswana is lacking in. By strengthening the regulatory framework, specifically for land administration and environment management processes Botswana would be able to ensure substantial benefits to the affected communities within the KAZA TFCA, while the leadership that the government of Botswana can show regarding aspects related to the management of World Heritage Sites and the largest Ramsar Site in the world would significantly assist the TFCA partner countries in managing similar resources according to internationally accepted standards. Botswana has committed itself to the establishment of a monitoring and evaluation framework, and will strive to establish processes and systems to enable accurate and timeous reporting regarding its interventions regarding resource management, tourism development and benefit flow management to the region and its people.
Strategy	The strategy will entail: ↝ Establishing the Delta as a WHS ↝ Developing Tsodilo Hills WHS ↝ Expanding WHS Satellite status to Gwcihaba Hills ↝ Sharing agricultural programme knowledge and skills from Pandamatenga with TFCA partner countries

Action Project 4.1	**Responsibility**	**Cross Reference**
Okavango Delta WHS nomination Process		
Description		
Establishing the core area of the Okavango Delta as a WHS, given its various attributes, importance and uniqueness, needs to follow the processes and procedures of the world Heritage Committee, which clearly spell out the sequence of events. Initially this would entail a tentative listing, followed by the preparation of a nomination dossier, and the development of a management plan. Since the Okavango Delta is already a Ramsar site, and many aspects of the work have been covered by the ODMP, or the work done by OKACOM, and many of the detailed plans have been captured and summarised in this IDP, it should be relatively easy to comply with the requirements. Attaining this status will be hugely beneficial to the region and its people, and Botswana should reap the benefits of this in the short, medium and long term. As a tool to assist with the coordination and management of the core area of the Delta, WHS status would enable all the differing components to be jointly managed, and would enable significant support to be garnered for this.		

Action Project 4.2	**Responsibility**	**Cross Reference**
Active participation in WGs and KAZA Structures		
Description		
Based on the KAZA TFCA Institutional Structures, Botswana can ensure active stakeholder participation in the technical structures and working groups, and thereby share their experiences and knowledge regarding resource management.		

Action Project 4.3	Responsibility	Cross Reference
Tsodilo Hills WHS		
Description		
One of the only sites of recognised international significance, together with the Victoria Falls WHS, the Tsodilo Hills WHS obligates Botswana to interact with the neighbouring countries and international structures. The lessons learnt from the Tsodilo Hills WHS could also benefit Botswana with the proposed WHS incorporating the core area of the Delta.		

Action Project 4.4	Responsibility	Cross Reference
NG4 / Gwcihaba Hills		
Description		
Linked to the Tsodilo Hills WHS, the Gwcihaba Hills Complex within NG4 is an area of cultural significance that necessitates support and cooperation between the community, the Government and private sector operators to maximise the benefits and opportunities within the area.		

Action Project 4.5	Responsibility	Cross Reference
Pandamatenga Agricultural Support Node		Figure 47
Description		
As one of the most successful agricultural projects in the region, benefiting numerous small scale farmers, including women, the Pandamatenga Agricultural Support Node should be used as a case study for the Botswana component of the KAZA TFCA, as well as for the entire TFCA, enabling the sharing of experiences in selecting the site, capacitating farmers, and establishing a conducive environment within which agriculture can take place. Areas that could benefit tremendously include the Katima Mulilo area in both Namibia and Zambia, since both of these areas have been identified as areas requiring agricultural support. Botswana should share this experience and knowledge with the neighbouring countries through the KAZA TFCA structures, as well as through the hosting of site visits by groups from the TFCA Partner countries.		

4.3.4.2 Building Capacity

Table 15: Building Capacity

Objective	To build capacity within Botswana for the KAZA TFCA through training, enterprise development and mentoring programmes thus increasing the skills and knowledge associated with the management of natural and cultural heritage resources and facilitate stakeholder participation in the KAZA TFCA planning and development processes
Rationale	Without legal, technical, financial and operational capacity it will not be possible to attain the objectives contained within the Vision 2016, the NDP10 and the KAZA TFCA.
Strategy	The Capacity Building strategy will entail: ↗ Establishing a CPPP Unit within the Government of Botswana to specifically address community owned wildlife initiatives ↗ Establishing clear guidelines regarding Community Private Partnership ↗ Creating an enabling framework and empowering communities to optimise opportunities within the wildlife and ecotourism sectors through partnerships with the private sector ↗ Assisting communities in brokering the deals regarding ecotourism enterprises ↗ Soliciting support, both financially and technically, for the various community conservation initiatives ↗ Monitoring progress and achievements, and reporting openly on these.

Action Project 4.6	Responsibility	Cross Reference
CPPP Unit establishment		
Description		
Establish a CPPP Unit within MEWT aimed at coordinating partnerships within the community wildlife sector.		

Action Project 4.7	Responsibility	Cross Reference
Policy on ecotourism		
Description		
Establish clear policies on partnerships regarding wildlife and ecotourism within the core conservation areas identified for the Botswana component of the KAZA TFCA.		

Action Project 4.8	Responsibility	Cross Reference
Capacity Building Strategy		
Description		
Develop a capacity building strategy regarding Community Centred Conservation Initiatives, inclusive of a mentoring programme, based on communally owned wildlife areas within the Botswana Component of the KAZA TFCA.		

Action Project 4.9	Responsibility	Cross Reference
Community Engagement Process		
Description		
Engage with communities regarding key conservation priority areas aimed at securing key wildlife areas through ecotourism enterprise development: ↝ Gumare ↝ Panhandle ↝ Delta-Pans ↝ Pans/CT11 ↝ Seloko Plains ↝ Linyanti ↝ Moremi East		

Action Project 4.10	Responsibility	Cross Reference
Monitoring and reporting		
Description		
Monitoring progress and achievements, both internally within the Government of Botswana and externally within the communal areas, regarding the objectives of the conservation initiative. MEWT should assume responsibility for the monitoring and reporting, yet the details regarding this should be solicited from and provided by the various communities that are active within the Botswana Component of the KAZA TFCA.		

4.3.4.3 Promotion and Facilitation of Policy Harmonisation

Table 16: Promotion and Facilitation of Policy Harmonisation

Objective	To promote and facilitate the harmonisation of relevant legislation, policies and approaches in: - Natural and cultural heritage resources management across international borders and ensure compliance with international protocols and conventions related to the protection and sustainable use of species and ecosystems - Transboundary animal disease prevention, surveillance and control within the KAZA TFCA
Rationale	Ensuring that the relevant legislation, policies and approaches within resource management are aligned and harmonized will significantly assist the Government of Botswana in strengthening the regulatory framework, specifically for land administration and environment management processes and lead to an improvement of policy and legislative frameworks regarding heritage resource management. Besides resource management this policy harmonization will also have to include immigration control (passport policies, service delivery, corruption) and the management of tourism and support programmes. Critical to the unlocking of the ecotourism potential in the area will be clear policies on the movement of livestock, and especially fresh meat through the area. Currently this is an aspect that significantly affects tourism development in the western portion of the study area, since it is not possible to move meat over the various veterinary fences, and it is not possible to buy local meat due to the absence of easily available shops and tourism facilities. By clarifying this policy and ensuring that tourists to the area are aware of the various control measures, eg direction of flow, availability of fresh produce, restrictions etc, tourism flow to the area could be increased, especially after the development of the various tourism routes through the area.
Strategy	The strategy will entail: - The compilation of a policy and legislation database for the entire area - The review of existing policies and legislation within Botswana and between Botswana and the neighbouring TFCA partner countries - The alignment of policies and reform of legislation within Botswana and between the TFCA Partner countries

Action Project 4.11	**Responsibility**	**Cross Reference**
Policy and Legislation Database Compilation		
Description		
To effectively align policies and legislation it is essential that a database be compiled of all the relevant policies and legislation within Botswana that could impact on the effective management of the natural and cultural resources within the Botswana component of the KAZA TFCA, as well as between the TFCA partner countries. MEWT should assume the responsibility for the compilation and maintenance of this in close association with the Ministry of Justice.		

Action Project 4.12	**Responsibility**	**Cross Reference**
Review of existing policies and legislation		
Description		
Once the database is compiled, a process of reviewing the relevant policies and legislation against the objectives of the KAZA TFCA needs to be undertaken. This will entail the identification of key areas, such as the movement of people and goods through the area and across the borders between the countries.		

Action Project 4.13	Responsibility	Cross Reference
Alignment of policies and legislative reform process		
Description		
The project entails the identification of policy and legislative synergies and gaps between Ministries and between the TFCA partner countries, as well as the facilitation of discussions regarding these aspects to discuss possible adaption and reform processes. Once agreement has been reached regarding the policy and legislative reform to enable more effective management and implementation of interventions, as well as initiatives aimed at attaining the objectives of the KAZA TFCA, a process of policy amendment and law reform must be undertaken.		

4.3.4.4 Ensuring Stakeholder Engagement at National and Local Level

Table 17: Ensuring Stakeholder Engagement at National and Local Level

Objective	To ensure stakeholder engagement at the national and local level with the involvement of governmental authorities, communities, non-governmental organisations and private sector
Rationale	The largest portion of the land within the Botswana Component of the KAZA TFCA is communally owned, with the exception of the state owned protected areas, the national parks, game and forest reserves. To effectively attain the objectives of the KAZA TFCA the Government of Botswana must ensure the active engagement of these communities as stakeholders throughout the planning and development phases regarding the TFCA, through aspects such as public participation processes and fora, the establishment of Community Public Partnerships, and where possible and feasible Community Public Private Partnerships. This approach will illustrate to the affected communities the commitment of the Government of Botswana to improving their livelihoods, assisting these communities to unlock the economic potential of their land, and creating an environment within which effective partnerships can be established to optimize the value of resources in an equitable and sustainable manner, cognizant of communal rights and responsibilities.
Strategy	The strategy will entail: ↝ Compile a database of all the WMA management plans ↝ Ascertain the degree to which the management structures of the WMAs are engaged at the District level ↝ Determine the most appropriate fora at which these WMA structures should be engaged ↝ Prepare annual reports on the activities, successes and challenges facing the WMA management structures ↝ Lobby for additional support to these structures where appropriate.

Action Project 4.14	Responsibility	Cross Reference
WMA Management Plan Database		
Description		
To effectively engage with the stakeholders within the Botswana Component of the KAZA TFCA it is essential that a database be compiled regarding the management plans for each WMA stating the zonation, agreements, partnership arrangements etc.		

Action Project 4.15	Responsibility	Cross Reference
District Level Engagement Strategy Assessment		
Description		
An assessment needs to be undertaken by MEWT regarding the engagement strategies at the Central, Ngamiland and Chobe District levels. This will enable an assessment of the effectiveness of stakeholder engagement at these levels and any amendments if necessary to increase efficacy.		

Action Project 4.16	Responsibility	Cross Reference
WMA Fora Assessment		
Description		
An assessment needs to be undertaken as to what additional fora exist through which the WMAs and other stakeholders can be engaged. This would include tourism, agriculture, development and other related aspects that the stakeholders use to attain their objectives.		

Action Project 4.17	Responsibility	Cross Reference
Annual Stakeholder Engagement Reporting		
Description		
Linked to the benefit flow reporting alluded to earlier, an Annual Stakeholder Engagement Report should be Prepared by MEWT addressing aspects such as the various platforms through which the Government of Botswana engaged stakeholders and the degree to which these engagements contribute to the attainment of the KAZA TFCA objectives.		

Action Project 4.18	Responsibility	Cross Reference
Lobbying for Support Programme		
Description		
Through the various engagements with stakeholders the Government of Botswana will be able to assess the levels of support needed within each of the WMAs, and then launch a campaign to lobby for the appropriate support, albeit financial, technical or operational.		

4.3.4.5 Ensuring Stakeholder Rights are respected

Table 18: Ensuring Stakeholder Rights are respected

Objective	To ensure that the rights of stakeholders recognisable under the domestic laws of the Government of Botswana shall be respected
Rationale	Given the degree to which stakeholders have an influence on the successful attainment of the objectives of Vision2016, the NDP10, and the KAZA TFCA it is imperative that the rights of stakeholders in general, and the owners of the land specifically be respected and recognized. This pertains to all aspects inclusive of issues such as public participation, the conclusion of partnership arrangements, and the decisions regarding the status and utilization of the land. Conversely, the recognition and respect shown to these stakeholders should culminate in the assumption of the responsibility by these stakeholders and communities regarding the management of resources according to agreed standards and principles.
Strategy	The strategy will entail: ↝ Clarifying the policy regarding the rights of communities regarding the WMAs and other resources under their direct control ↝ Recognition of these rights in engagement processes ↝ Apportionment of responsibility according to recognised rights

Action Project 4.19	Responsibility	Cross Reference
Policy clarification regarding stakeholder rights		
Description		
Based on the legislative framework within Botswana the rights of stakeholders, especially communities responsible for managing key natural and cultural resources, wildlife dispersal areas and habitats must be ascertained and described. MEWT together with the Ministry of justice, and the Attorney General's Office, should investigate these rights and prepare a policy regarding these rights.		

Action Project 4.20	Responsibility	Cross Reference
Recognition of rights in engagement processes		
Description		
Whenever stakeholders are engaged, the rights of these stakeholders need to be recognised and respected within the process of engagement. This should be based on the policy discussed in Action Project 4.19.		

Action Project 4.21	Responsibility	Cross Reference
Apportionment of responsibility based on rights		
Description		
Clarity needs to be attained regarding the responsibility of stakeholders based on the recognised rights of the communities, operators and investors, and systems implemented to measure the degree to which the responsibility is being assumed regarding. This responsibility can form part of the annual reporting regarding the management of natural and cultural resources by communities, in partnership with government and the private sector.		

4.3.4.6 Mobilisation of Resources for Development and Management

Table 19: Mobilisation of Resources for Development and Management

Objective	To mobilise resources for the development and management of the Botswana Component of the KAZA TFCA
Rationale	Without adequate funding the various national and international projects within the Botswana Component of the KAZA TFCA will not be possible nor effective, negating the possibility of attaining the objectives of the TFCA, as well as the country as envisaged within the NDP10 and Vision 2016.
Strategy	The strategy will entail: - The preparation of detailed costing for the various individual projects, at both national and international level - The preparation of a fundraising strategy aligned with the priorities of the KAZA TFCA and lobby for support for these projects within the current framework with development partners such as KfW and DGIS - The embedding of the national projects within the budgets of the relevant national Ministries - Ensuring that synergies between the KAZA TFCA initiatives and regional initiatives such as the ODMP and the Makgadikgadi Framework Development Plan (MFMP) are aligned - The alignment of fundraising strategies at local, regional, national and international level

Action Project 4.22	Responsibility	Cross Reference
Detailed costing of priority projects		
Description		
Without an accurate assessment of the costs associated with the development of the various biodiversity, resource management, tourism, infrastructure, and community beneficiation projects, it will not be possible for the Government of Botswana to raise funds, support, or coordinate initiatives aimed at attaining the objectives of the KAZA TFCA. These projects should be prioritised by MEWT, and detailed costing done for each of these projects in sequence of priority. The results should be used during the funding support discussion at the KAZA TFCA level to ensure that the necessary support of leveraged and that the priorities of the country are recognised.		

Action Project 4.23	Responsibility	Cross Reference
Fundraising strategy aligned with KAZA TFCA priorities		
Description		
The KAZA TFCA is attracting a lot of interest from donors and international support agencies. By aligning the national fundraising strategy with that of the KAZA TFCA, Botswana will be able to benefit significantly from the momentum that is being generated through the TFCA as a regional development initiative. If Botswana can present bankable project proposals to the various supporting and development partners, many of the projects would be able to obtain support, either as a national or as a regional initiative.		

Action Project 4.24	Responsibility	Cross Reference
Embedding of projects within relevant Ministry Budgets		
Description		
Many of the proposed interventions could be supported by Ministries within Botswana, yet this would require careful planning to ensure that the interventions are aligned with the budget cycles of the ministry and government as a whole. The lead Ministry regarding the KAZA TFCA – MEWT – should ascertain which projects are best suited for which Ministry and then actively engage with these Ministries to ensure that the necessary support can be garnered by embedding the projects within that Ministry's annual and three year budget cycles.		

Action Project 4.25	Responsibility	Cross Reference
Alignment and synergies between KAZA TFCA and regional initiatives		
Description		
Within the Botswana Component of the KAZA TFCA, other regional initiatives are being implemented such as the ODMP or the MFMP. Efforts need to be made by MEWT to ensure that synergies are investigated for the alignment of initiatives to ensure that efforts such as fundraising are not duplicated. Where these regional initiatives are actively undertaking conservation or resource management interventions within the Botswana Component of the KAZA TFCA, these efforts should be supported. Certain areas of the Botswana Component of the KAZA TFCA have been exceptionally well planned, while others lack this depth of planning. Where these gaps are evident the Government of Botswana should strive to fill these.		

Action Project 4.26	Responsibility	Cross Reference
Alignment of Fundraising strategies		
Description		
Fundraising efforts should be aligned since the collaborating partners would typically be approached from various authorities and agencies for similar projects. It is suggested that a coordinating body be established to align and coordinate fundraising strategies within the Botswana Component of the KAZA TFCA. This structure should be linked to the National Steering Committee for the KAZA TFCA within Botswana as one of its working groups or task teams.		

4.3.4.7 Summary of Governance Priority Projects

The following table summarises the priority action projects for OBJECTIVE AREA 4 and refers where appropriate to elaborating figures or supporting documentation.

Table 20: Summary of Governance Management Priority Projects

No.	Action Project	Cross Reference
4.1	Okavango Delta WHS Nomination Process	
4.2	Active participation in WGs and KAZA Structures	
4.3	Tsodilo Hills WHS	
4.4	NG4 / Gwcihaba Hills	
4.5	Pandamatenga Agricultural Support Node	Figure 47
4.6	CPPP Unit establishment	
4.7	Policy on ecotourism	
4.8	Capacity Building Strategy	
4.9	Community Engagement Process	
4.10	Monitoring and reporting	
4.11	Policy and Legislation Database Compilation	
4.12	Review of existing policies and legislation	
4.13	Alignment of policies and legislative reform process	
4.14	WMA Management Plan Database	
4.15	District Level Engagement Strategy Assessment	
4.16	WMA Fora Assessment	
4.17	Annual Stakeholder Engagement Reporting	
4.18	Lobbying for Support Programme	
4.19	Policy clarification regarding stakeholder rights	
4.20	Recognition of rights in engagement processes	
4.21	Apportionment of responsibility based on rights	
4.22	Detailed costing of priority projects	
4.23	Fundraising strategy aligned with KAZA TFCA priorities	
4.24	Embedding of projects within relevant Ministry Budgets	
4.25	Alignment and synergies between KAZA TFCA and regional initiatives	
4.26	Alignment of Fundraising strategies	

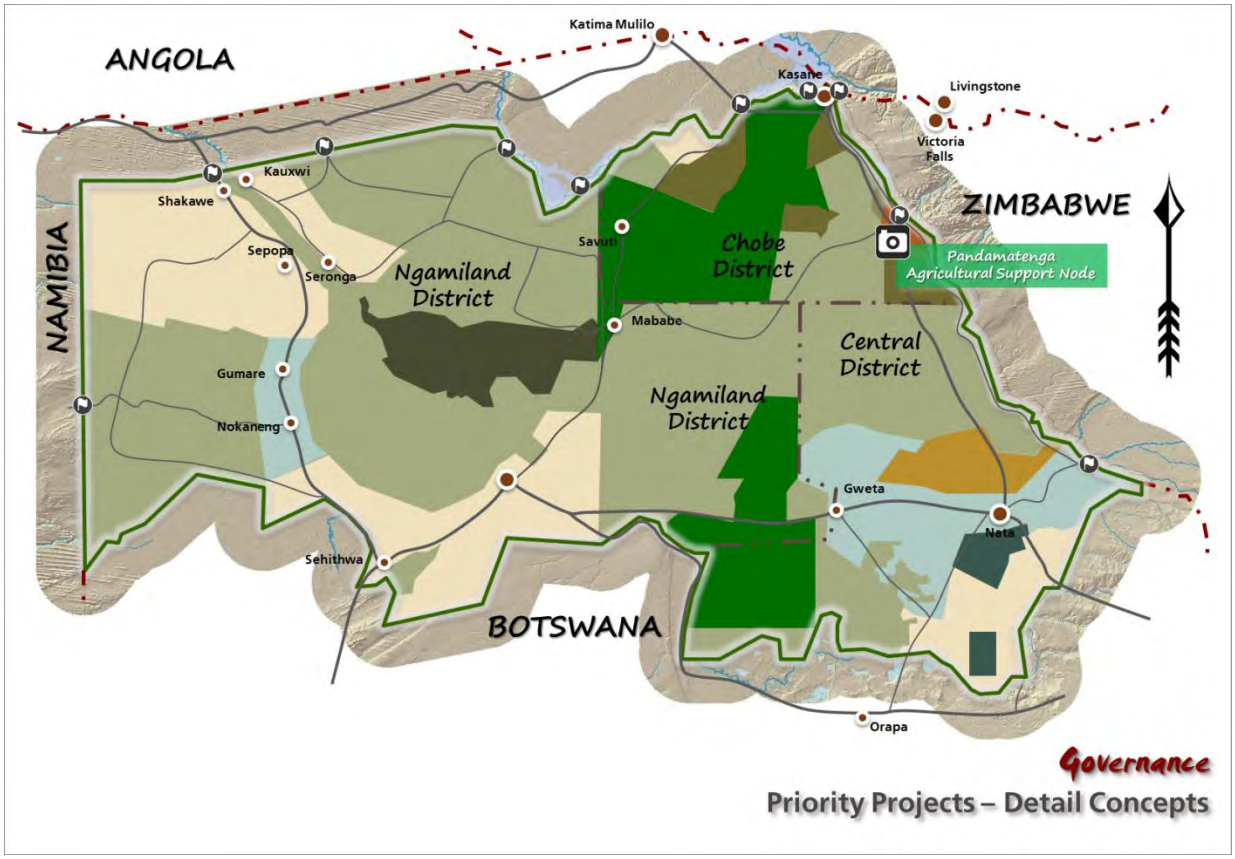


Figure 46: Governance Priority Projects – Detail Concepts

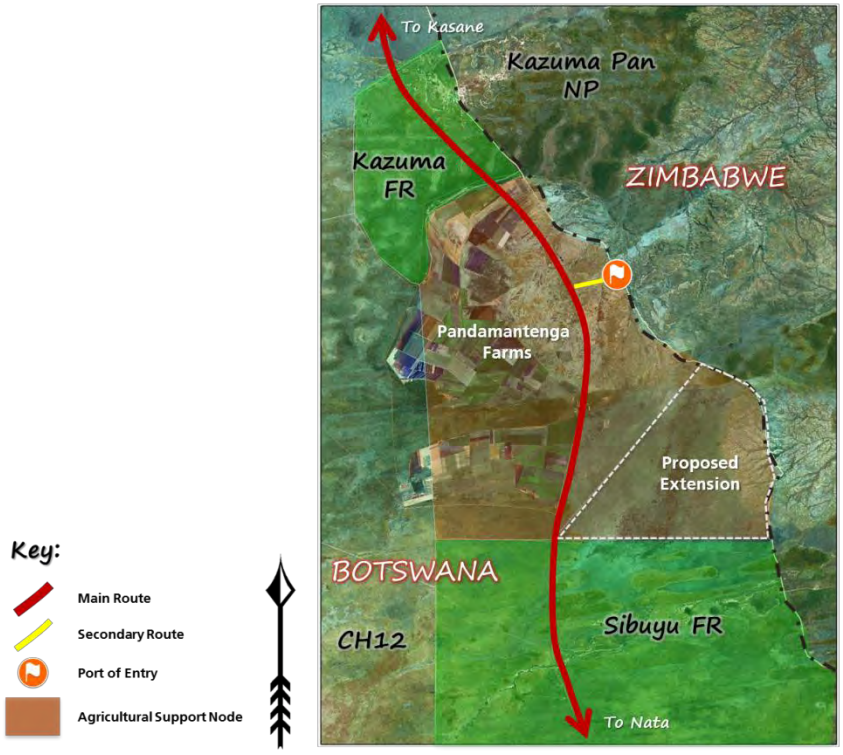


Figure 47: Pandamatenga Agricultural Support Node

4.4 Concept Development Plan: Moving from a Current to a Future Desired State

4.4.1 Approach

The approach to attain the vision, as expressed in a future desired state, is determined by knowing what the current situation is and then assessing the impact of proposed interventions, tempered by the environmental sensitivities of the area.

Determining the current situation is largely based on existing land uses, impacts and the status of the land. Impacts include aspects such as roads, settlements, and associated infrastructure, effectively summarising the impacts that man has had on the environment. These current land uses and impacts provide the inputs necessary to determine the current environmental character, described along a continuum ranging from fully developed urban environment through degrees of rural and natural to pristine wilderness, compliant with the IUCN classification of wilderness.

The approach is based on an objective evaluation and description of impacts, summarising the character of the environment into four categories – Urban; Rural; Natural; Wilderness – each with a description of the development within these categories. Refer to Appendix 2 for Zoning Definitions.

When deciding on the optimal land use and interventions required to attain the vision set for the area, accountable decisions must be taken based on the environmental sensitivities of the area, as well as the impact that the proposed intervention will have on the effective functioning of the ecosystem and the degree to which these functions will be threatened by the proposed activities. Once the interventions have been decided upon, it would be possible to ascertain the type of Future Environmental Character that will be attained when all interventions and activities have been undertaken.

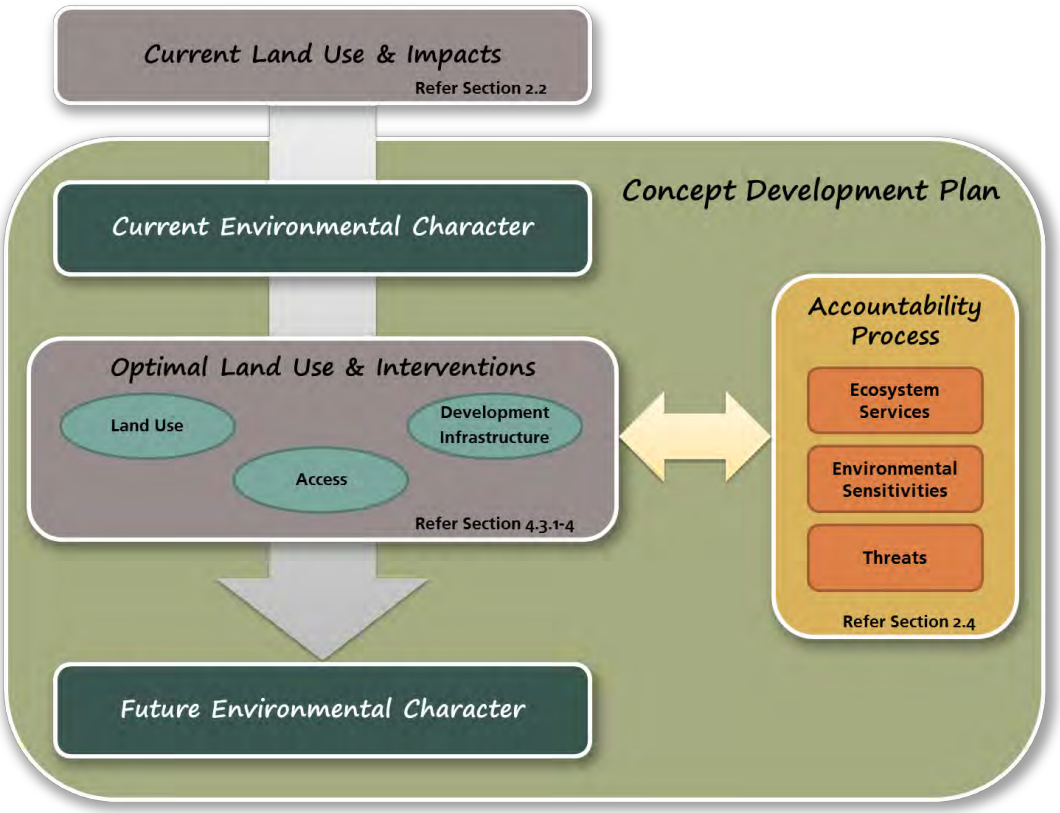


Figure 48: Spatial Planning Process

4.4.2 Current and Future Environmental Character

The development planning process (refer Figure 48) seeks to incorporate the inherent character of the environment, while guiding decisions regarding access, use, development and infrastructure within planning constraints, derived from an analysis of the ecosystem in terms of the value of habitats, sensitivity of landscapes, and the value of the cultural elements in the study area.

An analysis of the environmental character in its current state is made, which is a reflection of audio and visual impacts within a landscape. This provides a benchmark against which planning decisions can be made, culminating in guidelines towards the attainment and maintenance of a future desired state or future environmental character.

The environmental character of an area is described by ascertaining the environmental experience that can be gained in a specific area, and then checking whether any measures are in place to ensure the long term protection measures – formal conservation status – of the area.

The Current Environmental Character (CEC) of the Botswana Component of the KAZA TFCA shows a distinct split between the areas east of the Okavango Delta, which are currently mostly natural in character, with a few areas having a wilderness edge or wilderness character, and the areas to the west which are mostly rural in character, as does the area around Nata.

Anomalies to this pattern occur at NG4 which has a natural character with a wilderness core, and the area around Pandamatenga and the Chobe Enclave that have rural characters despite the surrounding land use in the area (refer Map 56).

The Future Environmental Character (FEC) spatially contextualises the future spatial vision of the Botswana Component of the KAZA TFCA (refer Map 57) based on the various interventions and initiatives that have been discussed. The main character of the area remains largely intact except for changes to the core area of the Panhandle, the NG3 area, a portion of NG11; the Chobe Enclave, the Seloko Plains area, and areas to the east and west of the Pans National Park all of which change to natural to reflect the optimal and preferred land use as identified by the stakeholders.

The decisions are largely based on optimizing benefits through dedicated land use rather than shared land use, as is seen in the NG11, the Chobe Enclave area, and the buffer zone along the western portion of the Delta, where neither the livestock nor the wildlife potential was being optimized through multiple land use practices, and the communities have opted for dedicated land use zones focusing on either livestock or wildlife production, rather than a mix of both.

4.4.3 Ensuring Accountable Decisions

All the proposals regarding land use have been tested against the ecosystem services and sensitivities of the environment and considering the threats to the effective functioning thereof (refer Section 2.4). Areas of significance that should be highlighted include critical aspects that were considered regarding the proposed projects and interventions.

The Concept Development Plan incorporates the various projects as Land Use, Access, Development and Infrastructure components which could be measured against the sensitivities to ensure accountable decisions regarding the proposals. Critically sensitive areas that required consideration included the Panhandle, the Seloko Plains, and the areas within the core area of the Delta and the Makgadikgadi Pans.

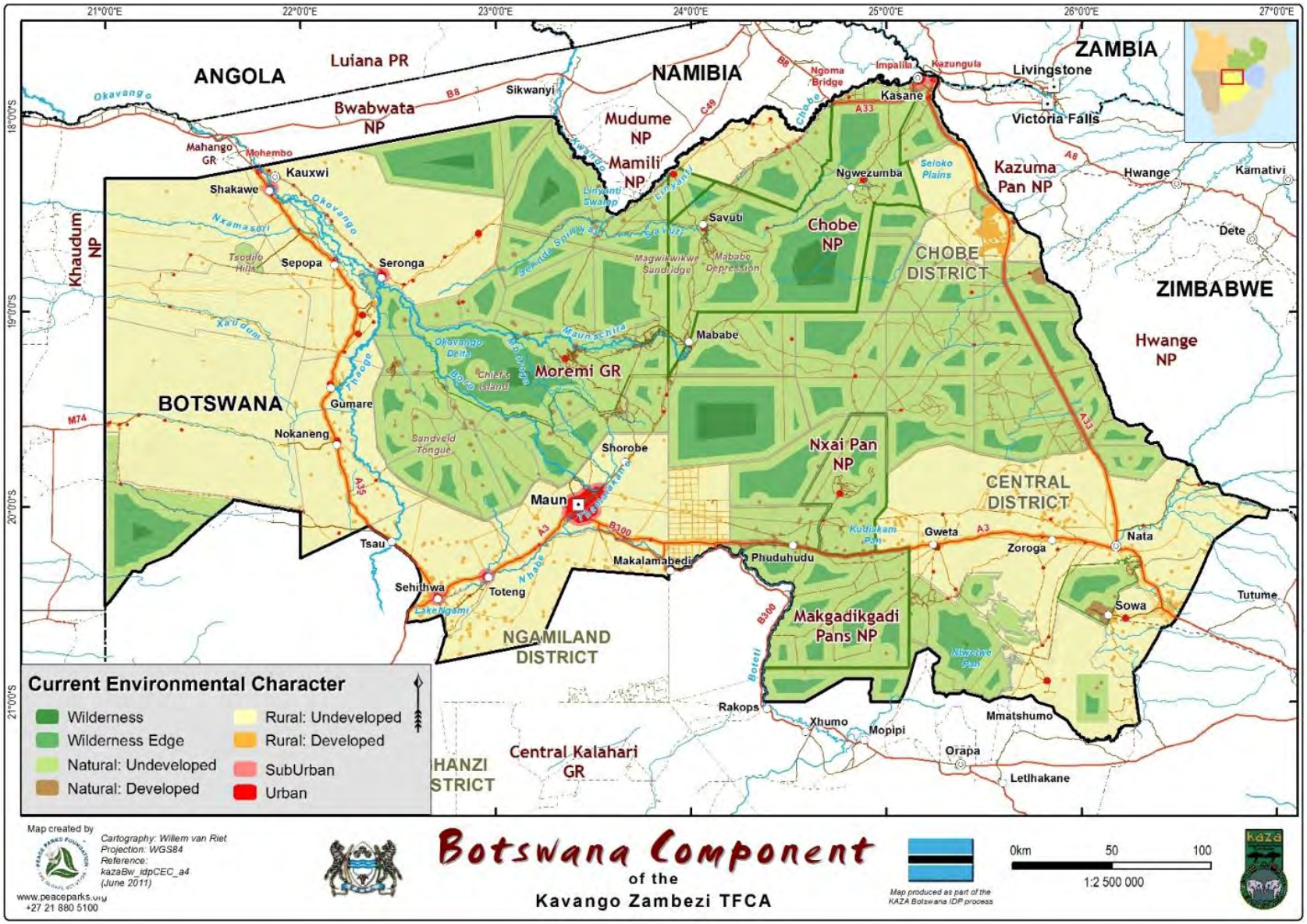
An area that was identified as sensitive, from both a habitat and landscape perspective, yet has not changed land use is the northern portion of the Chobe Enclave.

4.4.4 Optimal Land Use and Interventions

The Strategic Business Framework addresses the following interventions, broadly summarised under the following:

- **Optimal Land Use** (refer Figure 16, Section 4.3.2) – which combines the requests of the stakeholders aligned with the sensitivities of the environment;
- **Access** (as illustrated in Figure 30 - Figure 33, Section 4.3.2) – where and how do visitors gain access to the KAZA TFCA component within Botswana
- **Development and Infrastructure** (illustrated in Section 4.3.2) – specifically fences and roads.

Regarding the optimal land use; key issues are related to the proposed changes to NG3; the establishment of a buffer along the western Delta, as well as wildlife corridors between the Delta and NG3; the recognition of the conservation value of the Panhandle; the consolidation of the areas surrounding the Pans National Park; the recognition of the sensitivity and importance of the Seloko Plains area; and the zoning changes within NG11 and the Chobe Enclave.



Map 56: Current Environmental Character

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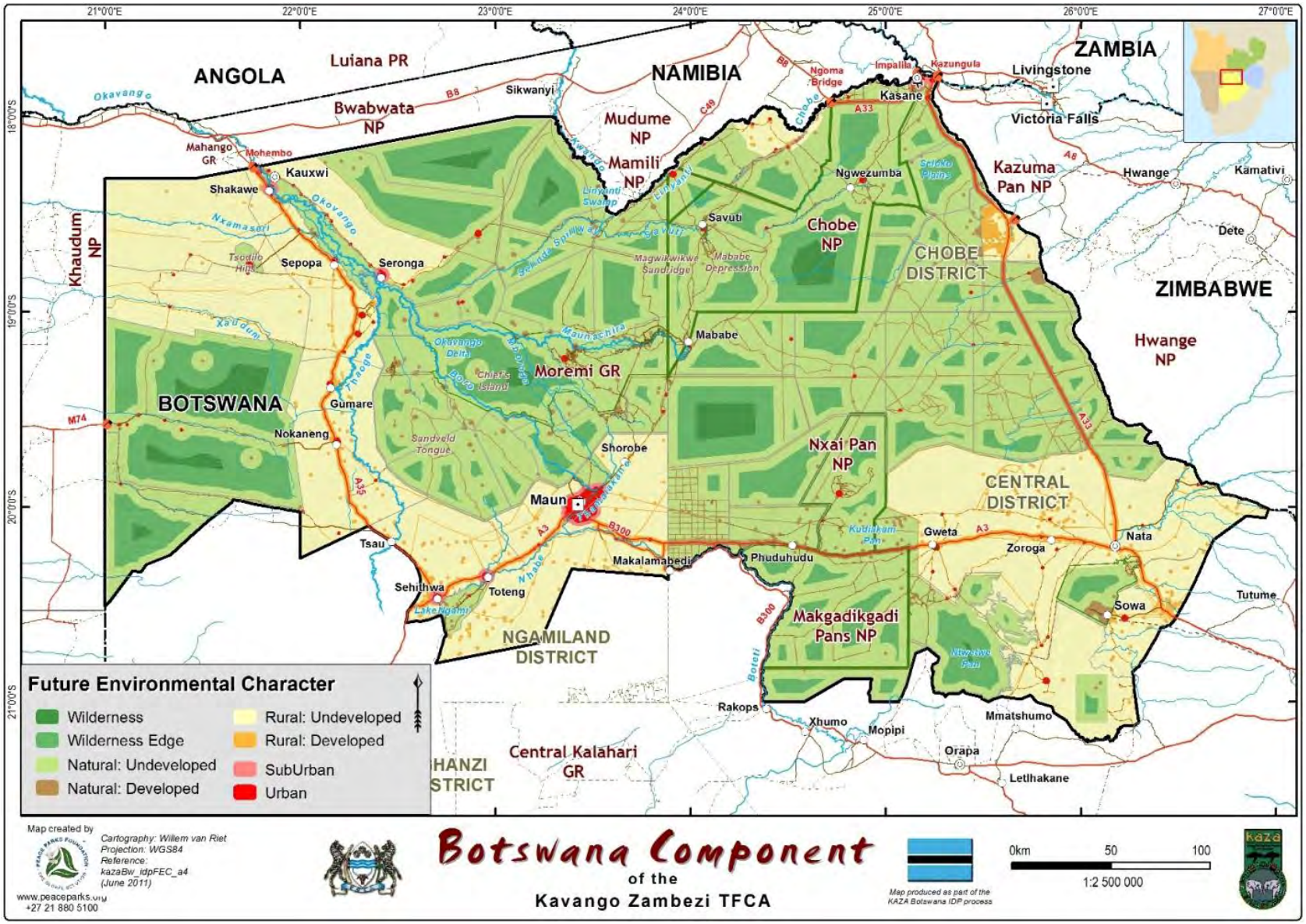

Map 57: Future Environmental Character

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Umbrella Documents

- National Development Plan 10 (NDP10), April 2009-March 2016
- Vision 2016 Towards Prosperity for All

Biodiversity Policies, Strategies and Reports

- 2008 Status Report for Protected Important Bird Areas in Botswana
- Botswana Biodiversity Strategy and Action Plan, Revised 2007
- Botswana Wetlands Policy and Strategy
- Final Report on a Base Survey of the Slaty Egret in the Okavango Delta Ramsar Site, Botswana, January 2005

Ecotourism Policies, Strategies and Reports

- Botswana Ecotourism Best Practices Manual
- Issues and Options Report – Development of the Botswana Guidelines for Utilisation of Forest Reserves for Ecotourism Activities, April 2009

Community Based Natural Resource Management Policies, Strategies and Reports

- Community Based Natural Resource Management in Botswana Practitioners Manual, 2010
- Community Based Natural Resources Policy Guidelines, June 2007

Settlement Policies, Strategies and Reports

- Draft Report on the Usufruct Rights Framework for the Upper Panhandle of the Okavango Delta, July 2008
- Revised National Settlement Policy, March 2004

Agriculture Policies, Strategies and Reports

- Agricultural National Development Policy 1991
- Okavango Delta Aquaculture Guidelines, March 2008
- Pandamatenga Agricultural Infrastructural Development Appraisal Report

Protected Area and Forest Reserve Management Plans

- Chobe National Park Management Plan
- Makgadikgadi Framework Management Plan (MFMP), Volumes 1 and 2
- Management Plan for the Pans Parks (Makgadikgadi Pans National and Nxai Pan National Park), 2005
- Moremi Game Reserve Management Plan
- Okavanga Delta Ramsar Site Land Use and Land Management Plan (2005-2029)
- Okavango Delta Management Plan (ODMP)
    - An Introduction to the Okavango Delta Management Plan
    - Final Framework Management Plan, February 2006
    - Component 3: Policy, Planning and Strategy, October 2006
    - Dialogue, Communication and Networking
    - Research, Data Management and Participatory Planning
    - Hydrology and Water Resources
    - Wildlife Management
    - Component 5: Wildlife Management – Human Elephant Conflict, January 2007

- ODMP Wildlife Management Component Leopard and cheetah baseline inventory in the Okavango Delta particularly in relation to areas ofHuman Wildlife Conflict
- Sustainable Tourism and CBNRM
- Sustainable Fishery Utilisation and Management
- Vegetation Resources Management
- Settlement Development and Planning
- Sustainable Land Use
- Waste Management Strategy
- Component 12: Sustainable Livestock Management, July 2007

- Okavango River Basin TDA technical reports focused on the country of Botswana
- Okavango River Panhandle Management Plan, Volume 1, July 2001 (Tawana Land Board)
- Okvanga Delta Ramsar Site Land Use and Land Management Plan (2005-2029)
- Panhandle Management Plan
- Tsodilo Hills Management Plan

Town Development Plans

- Kasane Kazungula Development Plan, Proposed Structure Plan (map only)
- Maun Growth Area Development Proposals (map only)
- Nata Development Plan, 2010-2034
- Sehithwa Development Plan, 2010-3034
- Shakawe and Mohembo West Development Plan, 2006-2030
- Tutume Development Plan, 2002-2026, Development Proposals (map only)

Wildlife Management and other Areas Management Plans

- Chobe River Front Management Plan, October 2000
- Chobe Enclave Land Use and Management Plan, December 2003
- Management and Business Plan for NG 22, January 2011 (Okavango Community Trust)
- Management and Business Plan for NG 23, January 2011 (Okavango Community Trust)
- Management and Development Plan for Community Multi-purpose CHA NG 41, February 2005 (draft) (Mababe Zokotsama Community Development Trust)
- Management Plan for Community Utilisation of Sebobo/Commissioner's Kop
- Management Plan for CT5
- Management Plan for NG 18 and Tsaro Lodge, November 2007 (Khwai Development Trust)
- NG4 Management Plan, May 2010 (Cgaecgae Tlhabololo Trust)
- Ngamiland Integrated Land Use Plan, March 2009
- Report on the Survey Management and Business Plan, April 2010 (NG 4), April 2010 (Cgaecgae Tlhabololo Trust)
- Tubu Community Conservation Area Management Plan 2009-2018 (NG 25), July 2009 (draft)

OKACOM Documents

- Okavango River Basin TDA technical reports focused on the country of Botswana

APPENDICES

APPENDIX 1: Sensitivity Analysis Methodology

Habitat Value Derivation

Protection Status

The below vegetation types are those which are present in the study area but are ***not*** protected at all within the National Parks and Game Reserves of Botswana. These are displayed as red areas on the map:

- *Acacia mellifera, Acacia erioloba, Terminalia prunioides, Catophractes alexandri*
- *Colophospermum mopane, Acacia nigrescens / Combretum imberbe*
- *Colophospermum mopane, Terminalia sericea / Dichrostachys cinerea*
- *Combretum imberbe, Acacia erioloba, Colophospermum mopane*
- *Hyphaene petersiana, Lonchocarpus capassa, Phoenix reclinata, Imperata cylindrica, Setaria sphacelata*
- *Imperata cylindrica, Setaria sphacelata, Hyparrhenia rufa, Hyphaene petersiana, Garcinia livingstonei / Phoenix reclinata, Ficus verruculosa association*
- *Sesbania spp., Asclepias fruticosa*
- *Terminalia sericea, Baphia massaiensis, Peltophorum africanum, Combretum hereroense*
- *Terminalia sericea, Lonchocarpus nelsii / Acacia erubescens*
- *Colophospermum mopane, Terminalia sericea / Sclerocarya caffra.*

Similarly, the vegetation listed below are those that are ***not well*** protected within Botswana i.e. less than 7% of these are found in protected areas. They too are displayed as red areas on the map:

- *Terminalia sericea, Lonchocarpus nelsii / Pterocarpus angolensis*
- *Colophospermum mopane, Acacia nigrescens / Combretum apiculatum, Acacia tortilis*
- *Colophospermum mopane, Terminalia prunioides.*

Derivation:

This layer calculates the percentage of each vegetation type under protection in the national extent. Calculations are based on the National Parks (IUCN category II) and Game Reserves (IUCN category IV). Vegetation types that are well represented within these protected areas are scored the lowest while those that are represented poorly or not at all are scored highest (See Table 21). For specific vegetation scoring details, see Table 22.

Table 21: Protection Status Scores

Protection Status (%)	Rating
<10	3
10-20	2
20-30	1
>40	0

Table 22: Hectares & Scores of Vegetation Associations

Vegetation Type	Hectares			Scores				
	National	Protected	Study Area	Protection Status	Contribution	Representivity	Resilience	Threat Status
Acacia Erubescens, Acacia tortilis, Boscia albitrunca	114 412	-	-	3	0	3	1	5
Acacia haematoxylon, Rhigozum trichotomum	120 832	-	-	3	0	3	0	0
Acacia mellifera, Acacia erioloba, Terminalia prunioides, Catophractes alexandri	1 005 772	-	123 888	3	0	3	1	3
Acacia mellifera, Acacia luederitzii, Boscia albitrunca	10 868 936	1 851 982	-	2	0	3	0	0
Acacia tortilis, Combretum erythrophyllum, Lonchocarpus capassa	43 499	-	-	3	0	3	0	0
Acacia tortilis, Cynodon dactylon, Cenchrus ciliaris, Combretum imberbe	42 568	42 568	42 568	0	3	3	1	5
Acacia tortilis, Phragmites australis, Acacia erioloba, Terminalia prunioides	232 651	34 208	161 352	2	1	2	2	10
Catophractes alexandri, Rhus tenuinervis	157 092	152 184	-	0	0	3	0	0
Colophospermum mopane, Acacia nigrescens / Burkea africana	1 098 173	-	-	3	0	3	0	6
Colophospermum mopane, Acacia nigrescens / Combretum apiculatum, Acacia tortilis	3 086 636	75 228	2 715	3	0	3	1	5
Colophospermum mopane, Acacia nigrescens / Combretum imberbe	878 186	-	38 963	3	0	3	1	6
Colophospermum mopane, Acacia nilotica, Combretum spp.	212 014	30 915	212 002	2	2	2	1	5
Colophospermum mopane, Combretum spp.	374 142	70 599	374 142	2	3	2	1	4
Colophospermum mopane, Terminalia prunioides	537 733	36 022	1 119	3	0	3	1	5
Colophospermum mopane, Terminalia sericea / Combretum imberbe	1 233 752	353 254	1 053 663	1	2	1	1	5
Colophospermum mopane, Terminalia sericea / Dichrostachys cinerea	539 174	-	358 559	3	1	2	1	3
Colophospermum mopane, Terminalia sericea / Hyphaene petersiana, Adansonia digitata	260 323	49 980	260 323	2	3	2	2	6

Vegetation Type	Hectares			Scores				
	National	Protected	Study Area	Protection Status	Contribution	Representivity	Resilience	Threat Status
Colophospermum mopane, Terminalia sericea / Lonchocarpus nelsii	2 082 406	236 705	2 082 406	2	3	0	1	5
Colophospermum mopane, Terminalia sericea / Sclerocarya caffra	1 097 313	1	119 264	3	0	3	1	6
Colphospermum Mopane, Acacia tortilis	228 037	211 066	228 037	0	3	2	1	4
Combretum imberbe, Acacia erioloba, Colophospermum mopane	196 446	-	196 445	3	3	2	3	6
Cyperus papyrus, Miscanthus junceus association & Hyphaene petersiana, Garcinia livingstonei / Phoenix reclinata, Ficus verruculosa association	698 441	205 130	698 441	1	3	2	1	10
Hyphaene petersiana, Lonchocarpus capassa, Phoenix reclinata, Imperata cylindrica, Setaria sphacelata	37 484	-	37 480	3	2	3	3	10
*Imperata cylindrica, Setaria sphacelata, Hyparrhenia rufa association & Hypaene petersiana, Garcinia livingstonei / Lonchocarpus capassa, Acacia nigrescens Association And Phragmites Australis, Schoenoplectus Corymbosus, Cyperus Articulatus Associ**	824 030	125 468	824 030	2	3	1	1	9
Imperata cylindrica, Setaria sphacelata, Hyparrhenia rufa, Hyphaene petersiana, Garcinia livingstonei / Phoenix reclinata, Ficus verruculosa association	41 744	-	41 744	3	3	3	1	9
Odyssea paucinervis	940 464	105 246	669 377	2	2	2	1	0
Pan	550 483	134 155	527 214	1	2	2	0	8
Peltophorum africanum, Acacia tortilis / Acacia karroo, Ziziphus mucronata	1 826 690	-	-	3	0	3	0	0
Pterocarpus angolensis, Baikiaea plurijuga	821 663	331 733	821 646	0	3	1	3	8
Sesbania spp., Asclepias fruticosa	53 338	-	35 527	3	1	3	0	2
Terminalia sericea, Acacia tortilis, Acacia mellifera	778 656	-	-	3	0	3	3	3
Terminalia sericea, Acacia tortilis, Ziziphus	330 560	-	-	3	0	3	0	0

Vegetation Type	Hectares			Scores				
	National	Protected	Study Area	Protection Status	Contribution	Representivity	Resilience	Threat Status
mucronata								
Terminalia sericea, Baphia massaiensis, Peltophorum africanum, Combretum hereroense	283 855	-	283 853	3	3	2	1	3
Terminalia sericea, Lonchocarpus nelsii / Acacia erioloba	22 517 223	5 862 366	3 557 332	1	0	0	1	3
Terminalia sericea, Lonchocarpus nelsii / Acacia erubescens	1 508 890	-	264 093	3	0	2	1	3
Terminalia sericea, Lonchocarpus nelsii / Acacia tortilis, Catophractes alexandri	677 474	556 538	-	0	0	3	1	3
Terminalia sericea, Lonchocarpus nelsii / Combretum spp.	904 662	143 430	904 662	2	3	1	1	3
Terminalia sericea, Lonchocarpus nelsii / Pterocarpus angolensis	840 835	2 354	840 832	3	3	1	1	7

TFCA Contribution

A large portion of the study area contributes greatly to the national extent (See Map 59). 15 vegetation types fall completely within the study area, four of which are ***not protected*** at all at a national extent:

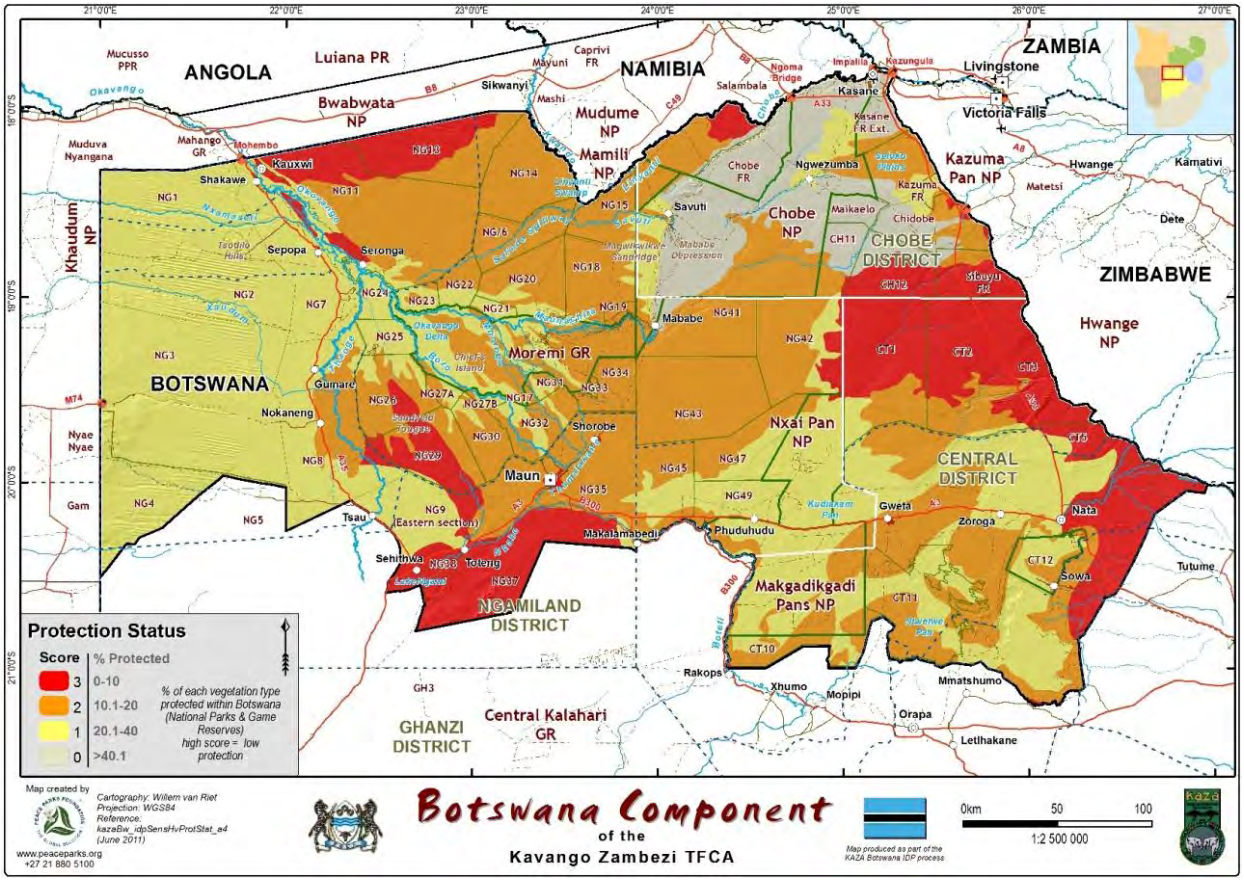
- *Terminalia sericea, Baphia massaiensis, Peltophorum africanum, Combretum hereroense*
- *Combretum imberbe, Acacia erioloba, Colophospermum mopane*
- *Imperata cylindrica, Setaria sphacelata, Hyparrhenia rufa, Hyphaene petersiana, Garcinia livingstonei / Phoenix reclinata, Ficus verruculosa association*
- *Terminalia sericea, Lonchocarpus nelsii / Pterocarpus angolensis* (0.28% fall within the PAs).

Derivation:

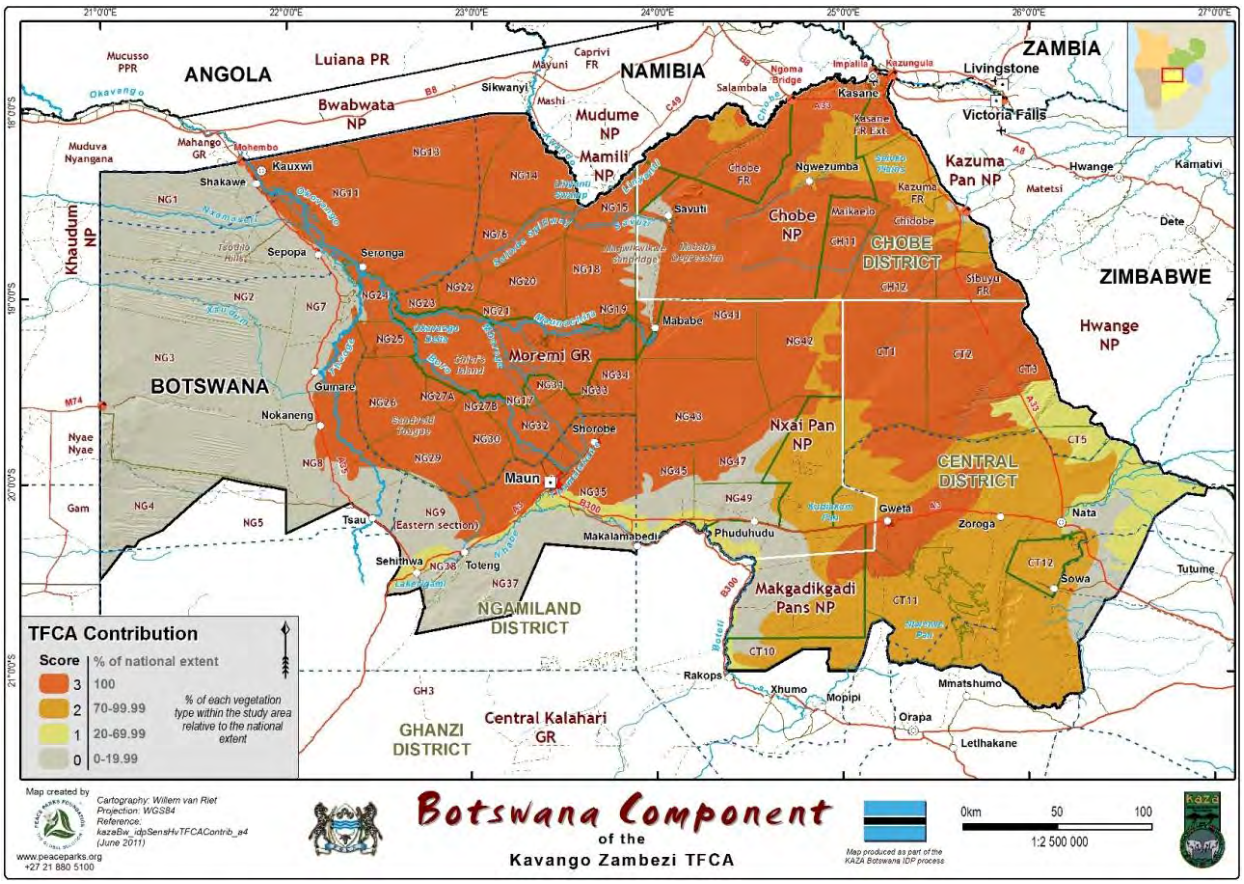
The layer calculates the extent of each vegetation type occurring in the study area, as a percentage of its national extent. A high contribution percentage is scored highly (See Table 23). This determines whether the study area carries an above average responsibility towards the protection of a specific type of vegetation. For specific vegetation scoring details, see Table 22.

Table 23: Study Area Contribution Scores

Study Area Contribution (%)	Rating
<20	0
20-70	1
70-99.99	2
100	3



Map 58: Protection Status



Map 59: Study Area Contribution

Study Area Representivity

The Botswana IDP study area contains 28 vegetation types with 9 of these covering less than 1% each:

- *Colophospermum mopane, Terminalia prunioides*
- *Colophospermum mopane, Acacia nigrescens / Combretum apiculatum, Acacia tortilis*
- *Sesbania spp., Asclepias fruticosa*
- *Hyphaene petersiana, Lonchocarpus capassa, Phoenix reclinata, Imperata cylindrica, Setaria sphacelata*
- *Colophospermum mopane, Acacia nigrescens / Combretum imberbe*
- *Imperata cylindrica, Setaria sphacelata, Hyparrhenia rufa, Hyphaene petersiana, Garcinia livingstonei / Phoenix reclinata, Ficus verruculosa association*
- *Acacia tortilis, Cynodon dactylon, Cenchrus ciliaris, Combretum imberbe*
- *Colophospermum mopane, Terminalia sericea / Sclerocarya caffra*
- *Acacia mellifera, Acacia erioloba, Terminalia prunioides, Catophractes alexandri.*

The dominant vegetation groups covering 14.11% and 24.10% respectively are *Colophospermum mopane, Terminalia sericea / Lonchocarpus nelsii* **and** *Terminalia sericea, Lonchocarpus nelsii / Acacia erioloba* (See Map 60).

Derivation:

Each vegetation type is calculated as a percentage of the study area extent. Higher scores are given to the vegetation types which are poorly represented (See Table 24). Increased focus can then be given to types with low percentages. For specific vegetation scoring details, see Table 22.

Table 24: Study Area Representivity Scores

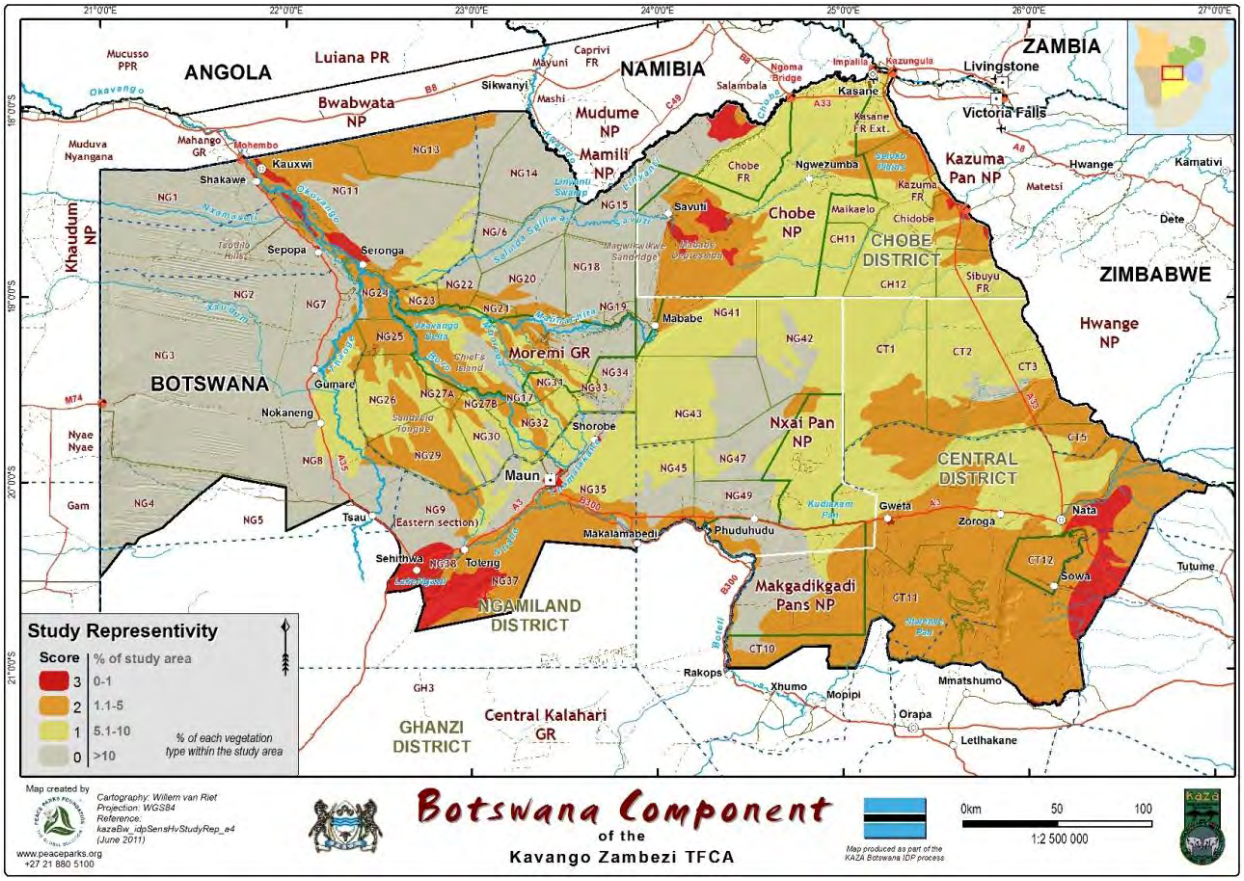
Study Area Representivity (%)	Rating
<1	3
1-5	2
5-10	1
>10	0

4.4.4.1 Threat Status

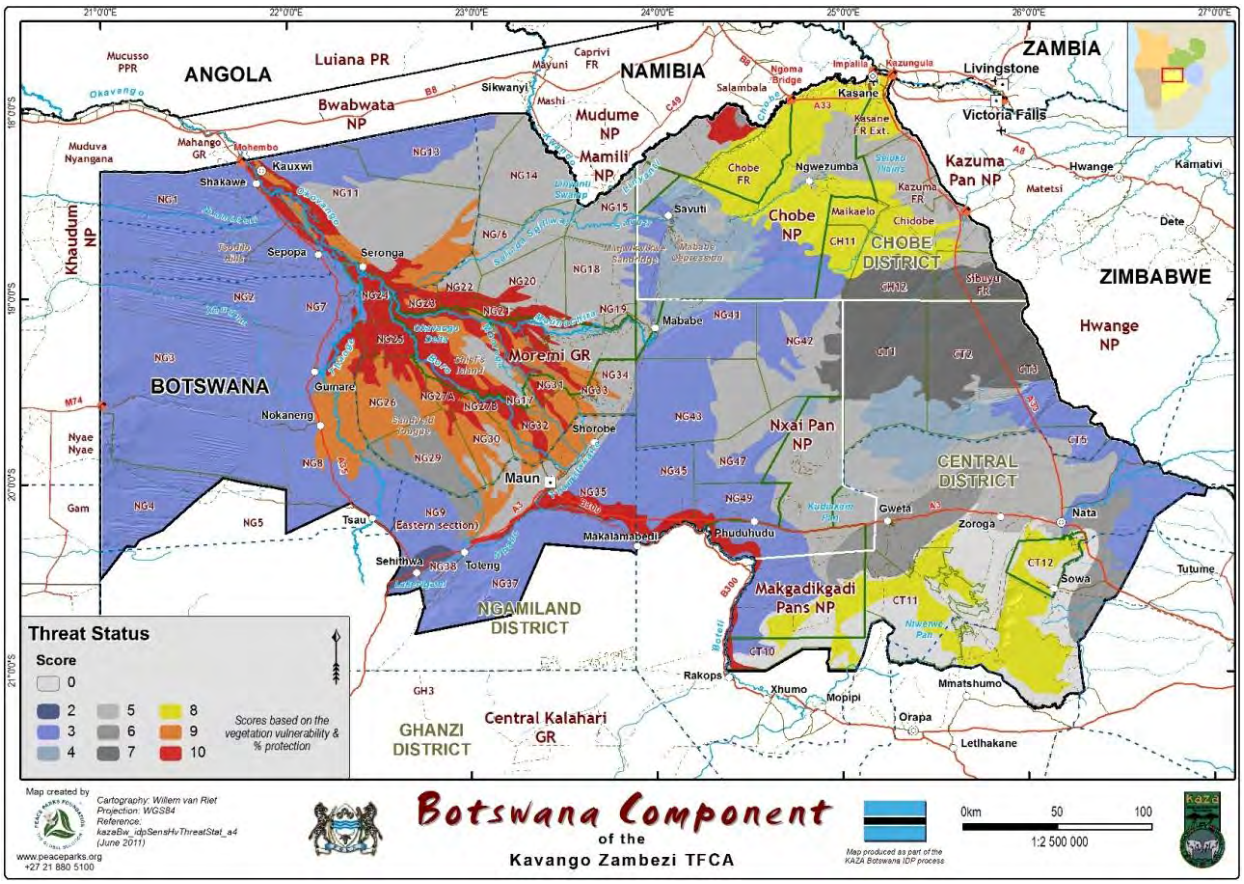
The layer indicates the threat status of each vegetation type. The Okavango Delta, Lake Liambezi, the Boteti flood plain, the teak dominated vegetation types of north-eastern Botswana and the Makgadikgadi Pan System area highly threatened (see Map 61).

Derivation:

Two things are taken into account: the level of protection and the anthropological threats to the vegetation type. Each is then scored accordingly (See Table 22).



Map 60: Study Area Representivity



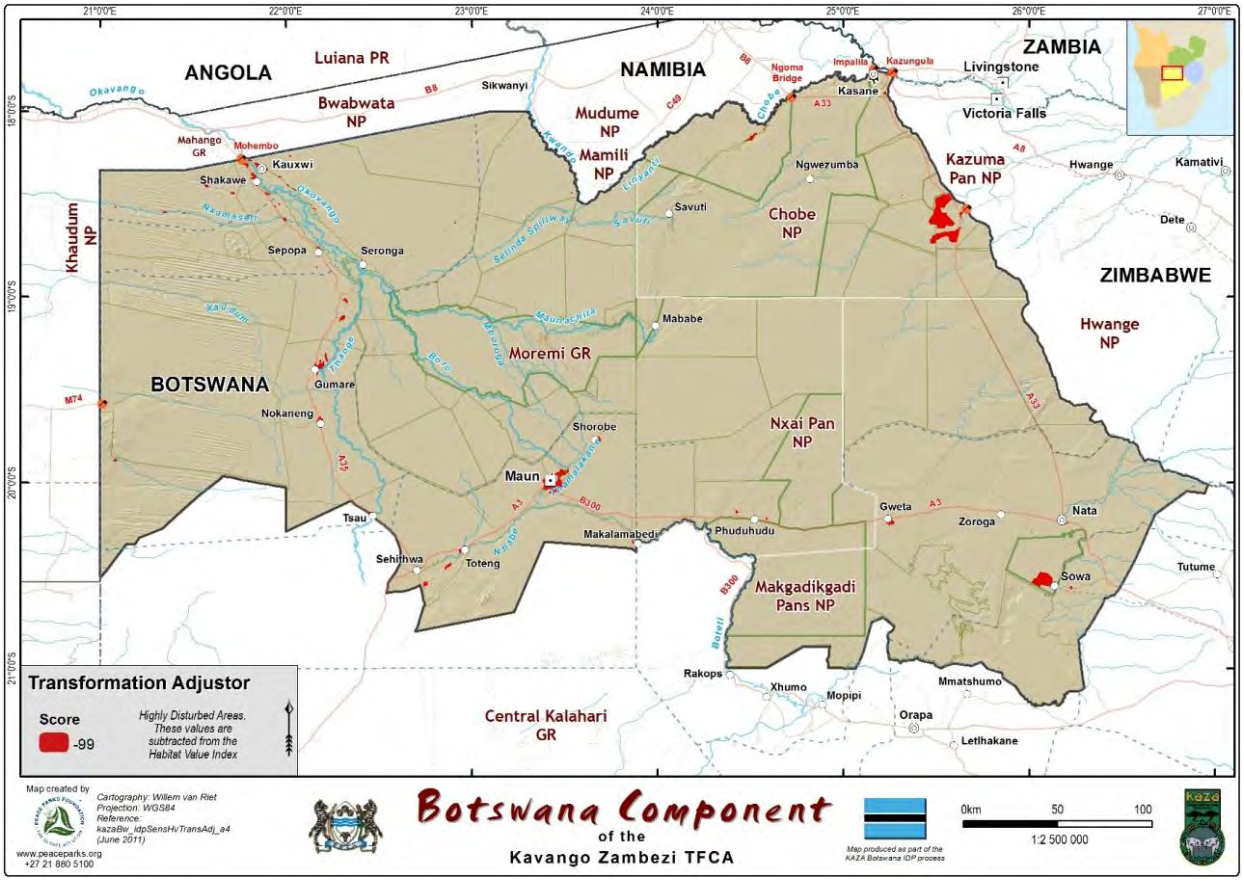
Map 61: Threat Status

Transformation Adjustor

Varying levels of impacts, transforming vegetation through subsistence and intensive agriculture, urbanisation, resource extraction, and infrastructure development, are scored and subtracted from the Habitat Value to reflect current conditions. Most of the impacts within the study area reflect the urban footprint typically occurring along the main roads. Highly visible from the map is the town of Maun, the Sua Pan Soda Ash Mine south of Nata and the Pandamatenga agricultural land in the north-east corner (See Map 62).

Derivation:

Disturbed areas - agricultural, urban and mining - were digitised off satellite imagery and scored negatively. Many of these areas have been irrevocably transformed and therefore hold no habitat value or sensitivity.



Map 62: Transformation Adjustor

Landscape Sensitivity Derivation

Topographic Sensitivity (Slope)

This layer highlights steep slopes which may be vulnerable to increased erosion activity if disturbed. It also emphasizes areas that would require cut and fill interventions that can destabilise gradients and cause eyesores in the landscape. As the study area is very flat with most areas having a slope of less than 2 degrees, this is not foreseen as a problem.

The highest sloping areas can be found at Tsodilo Hills; Ngwanalekau Hills, south of Toteng; the Ghoha Hills just north of the Mababe Depression; and the Aha Hills. Also, accentuated are the ancient dunes in the west; the river courses; and areas in the pan system.

Derivation:

The slope of the study area is categorized and scored according to Table 25.

Table 25: Slope Scores

Slope (Degrees)	Rating
0-1	1
1-2	2
2-4	3
4-6	4
6-8	5
8-10	6
10-12	7
>12	8

4.4.4.2 Soil Erodibility

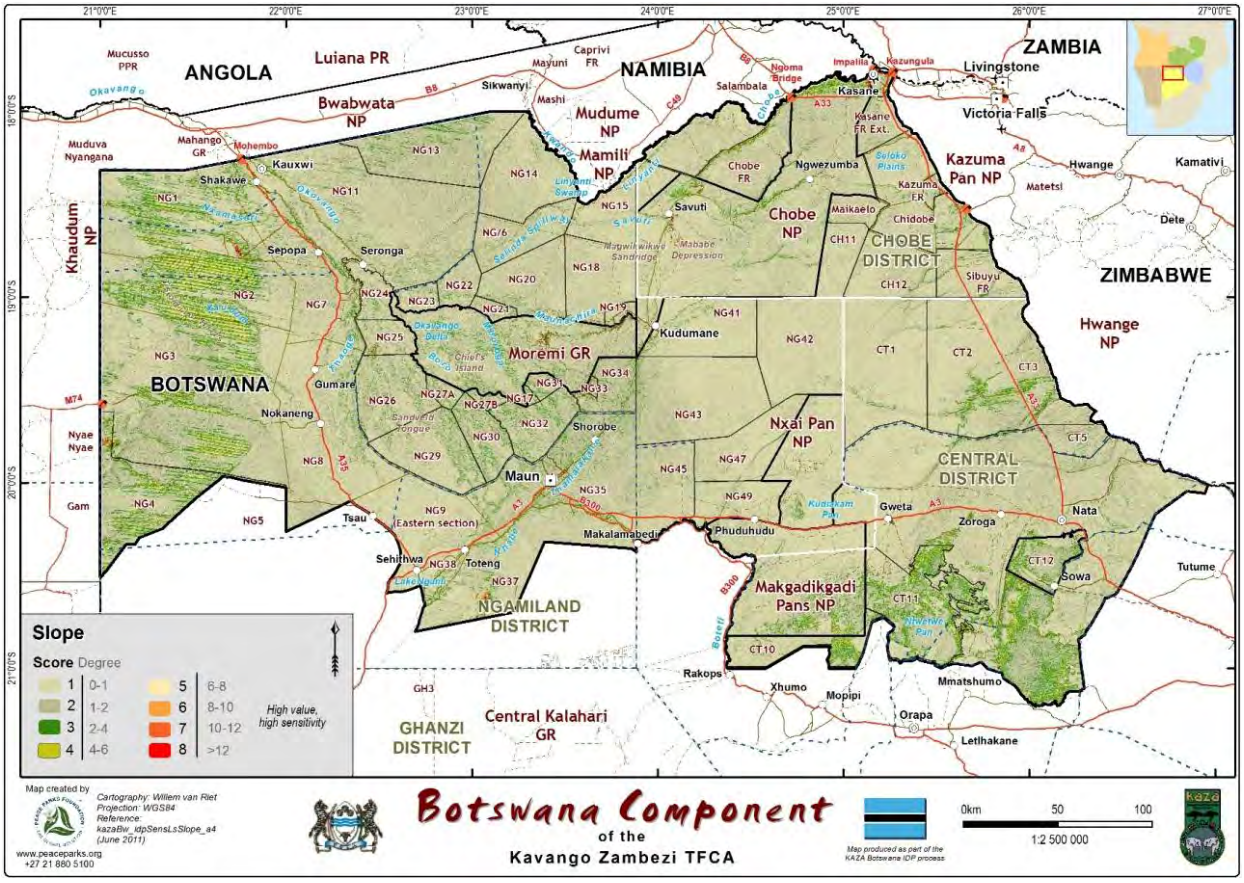
Erosion is a natural process, but it can be increased or triggered by human activities and land use. Slope, vegetative cover and soil texture also play a part. The soils of the pan system in the south-east are susceptible to erosion due to the low vegetative cover while the far eastern and southern side of the Okavango Delta, mostly covered by herbaceous and or grasslands (Loraine to add: refer to land cover map), are less erodible. A small area in the Lake Liambezi area is more likely to suffer soil erosion due to the low vegetative cover and the high rainfall. Lastly, the other more sheltered soils of the northern areas have less chance of erosion.

Derivation:

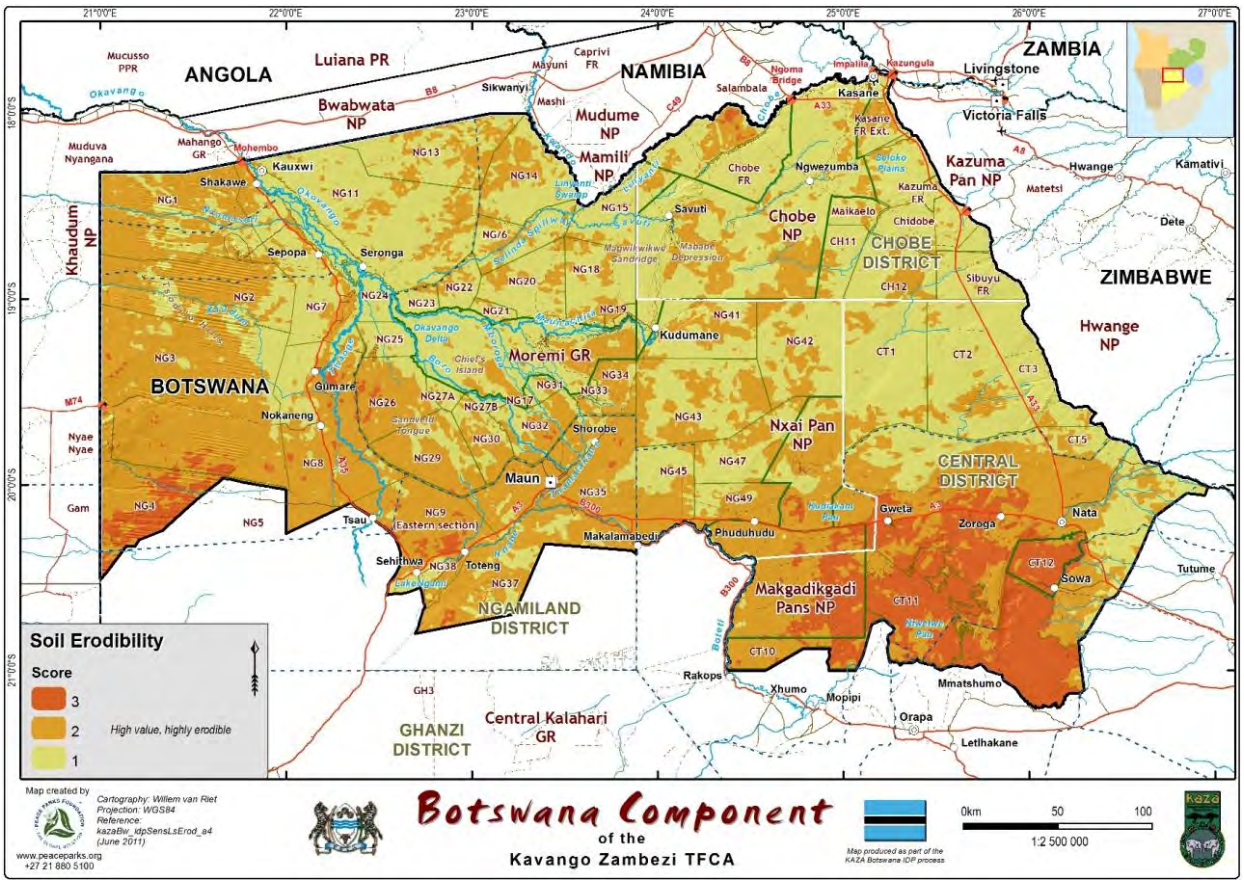
The erodibility of the soils within this study is based on the percentage vegetative cover and rainfall patterns. It is assumed that where there is a thicker vegetative cover/canopy and low rainfall, it is less likely that erosion will take place and similarly where the vegetative cover is sparse and the rainfall higher, a higher potential for erosion to take place exists.

Table 26: Soil Erodibility Breaks

Score	Rating
0-75	3
75.01-90	2
90.01-100	1



Map 63: Slope and Topographic Sensitivity



Map 64: Soil Erodiblity

4.4.4.3 Soil Clay Content

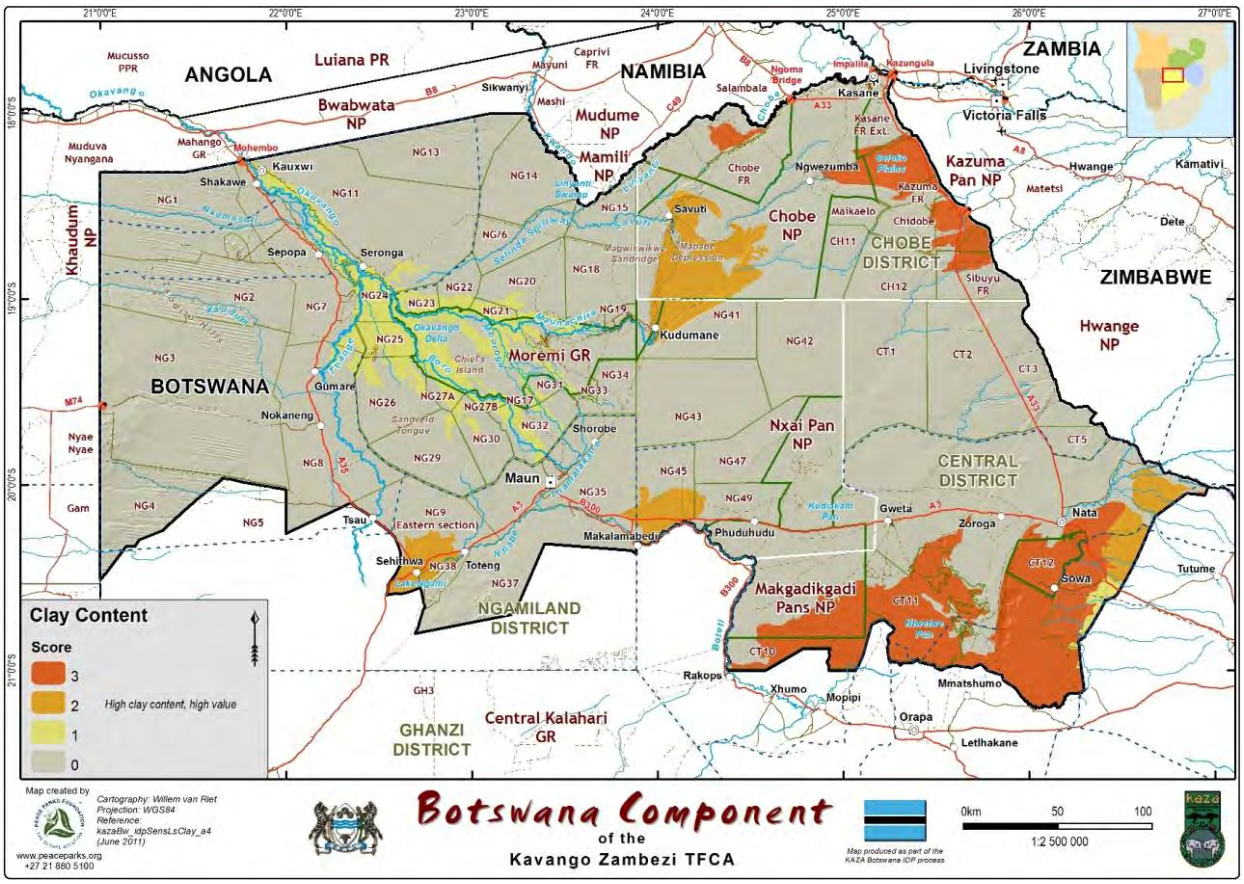
This layer provides an indication of the clay content of soils, dependant on the relevant proportion of grain size particles. It provides an indication of the suitability for all weather road development and details pertaining to building construction techniques. The little or no clay content arenosols and calcisols dominate the study area. The clayey soils are found in the Lake Liambezi, the Kazuma Forest, Seloko Plains and the Makgadikgadi Pan Complex areas.

Derivation:

The clay content of the soils, ranging from clayey to extremely sandy, was scored high to low respectively. The values can be seen in Table 27.

Table 27: Soil Clay Content Scores

Soil Clay Content	Rating
Clayey	3
Loamy	2
Sandy	1
Extremely Sandy	0
Rock	0



Map 65: Clay Content

4.4.4.4 Hydrological Sensitivity

This layer highlights areas vital to the maintenance of hydrological processes, as well as areas where infrastructure could be damaged by fluvial action. Prominent is the entire Okavango Delta, the Mababe Depression, the Seloko Plains, and the Makgadikgadi Pans System in the south-east. The major rivers in the area, Thamalakane, Boro, Selinda Spillway are all accentuated (See Map 66).

Derivation:

The footprint within which hydrological sensitivity is determined is defined by buffering river and wetland features by pre-determined distances (See Table 28).

Table 28: River & Water Body Scores

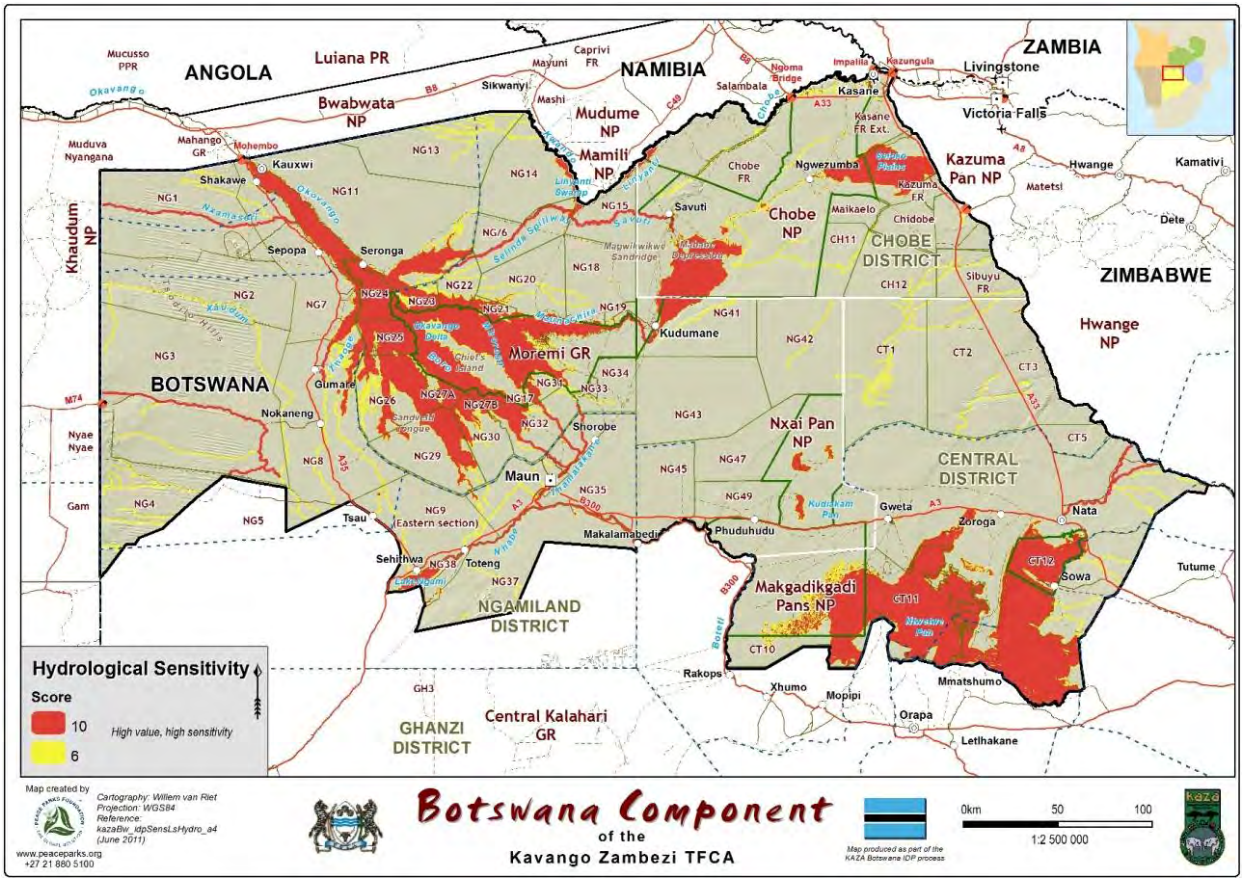
Water Bodies	Rating	Buffering
Perennial Rivers	10	750
Non-perennial Rivers	6	500
Water bodies (wetlands, pans)	10	-
	6	500

4.4.4.5 Vegetation Resilience

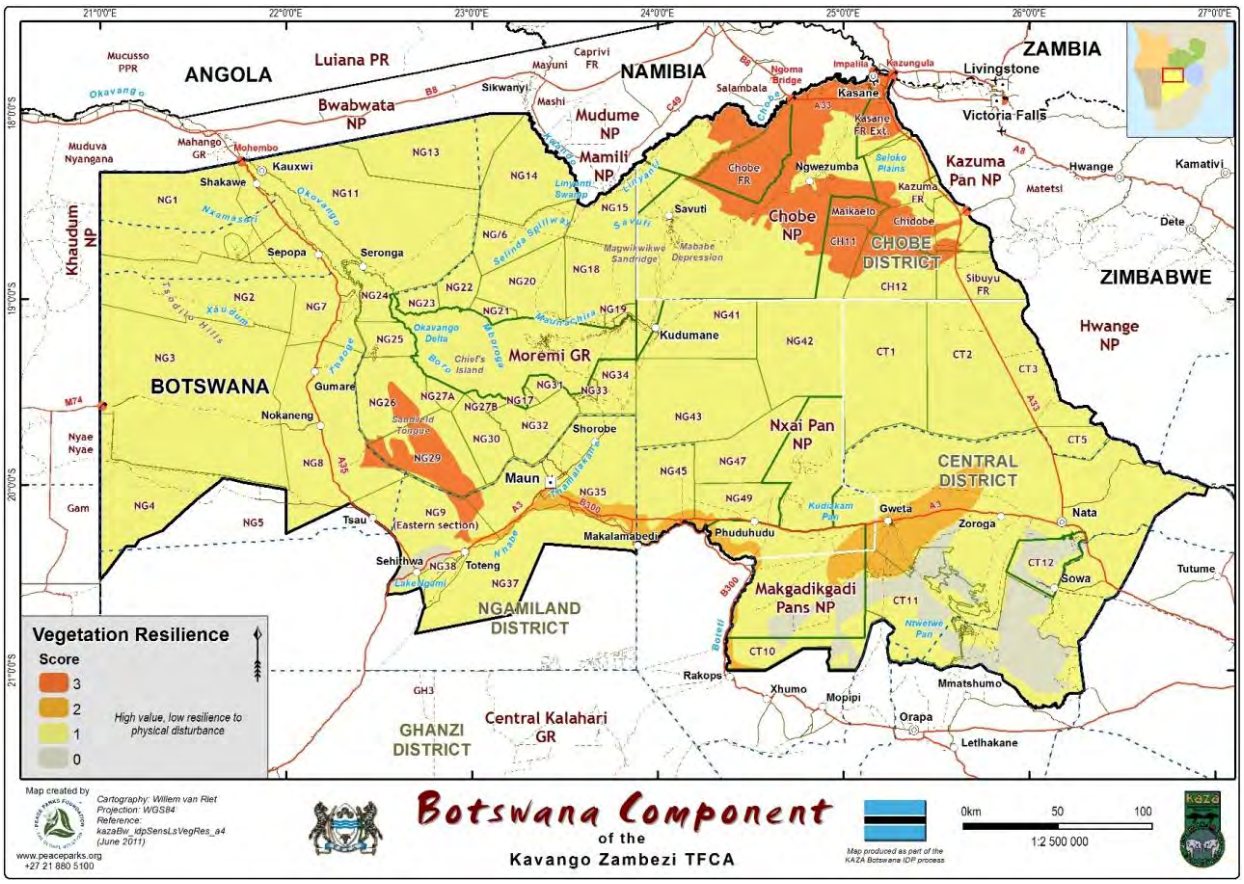
The ability of vegetation to recover influences how susceptible a landscape is to change as a result of human impacts. If a vegetation type is robust, it will recover quickly after being disturbed. If it scores high in this evaluation, it is vulnerable to man-induced impacts and recovers slowly or not at all. Access to water plays a role but certain species simply have a slow rate of growth and propagation. The least resilient vegetation includes the Teak dominated areas of north-eastern Botswana and the Leadwood dominated south-west corner of the delta. Most of the study area landscape however is fairly resilient (See Map 67).

Derivation:

This layer examines the vulnerability of vegetation at a physical disturbance. The key questions asked are: How quickly does this vegetation type recover after disturbance and what is the rehabilitation potential of this area? Drier landscapes take longer to recover once impacted, whereas wetter areas recover quicker. Each vegetation type was scored accordingly and these values can be seen in Table 22.



Map 66: Hydrological Sensitivity



Map 67: Vegetation Resilience

APPENDIX 2: Zoning Definitions for CEC and FEC

Table 29: Zoning Definitions used in CEC and FEC

Landscape Character	Description & Criteria	Opportunities		
		Access	Use	Development & Infrastructure
Wilderness	↝ No infrastructure ↝ No external audio-visual impacts ↝ Large in size ↝ Outstanding opportunities for solitude and isolation	↝ Ideally limited to single groups but not necessarily ↝ Very strict access conditions	↝ Low intensity ↝ 'Pack it in, pack it out' principles ↝ 'No trace left' principle ↝ Research ↝ Nature and heritage based activities ↝ Non-motorised	None
Wilderness Edge	↝ Formally protected ↝ No infrastructure except for cultural heritage resources of historic and archaeological significance ↝ Very limited external audio-visual impacts, >10km ↝ Relatively large in size ↝ High probability of isolation	↝ Ideally limited to single groups but not necessarily ↝ Very strict access conditions	↝ Low intensity ↝ 'Pack it in, pack it out' principles ↝ 'No trace left' principle ↝ Research ↝ Nature and heritage based activities ↝ Non-motorised	None
Natural Undeveloped	↝ Formally protected ↝ Infrastructure limited to cultural heritage resources of historic and archaeological significance, guest experience facilities and limited management infrastructure ↝ Limited external audio-visual impacts ↝ Size irrelevant ↝ Moderate sense of isolation	↝ Limited groups, more than one group may be in this area at one time ↝ Strict access conditions	↝ Nature based activities ↝ Motorised/non-motorised ↝ Guided/self-guided ↝ Low intensity and low impact	Small, low impact, environmentally sensitive developments

Landscape Character	Description & Criteria	Opportunities		
		Access	Use	Development & Infrastructure
Natural Developed	↝ Formally protected ↝ Infrastructure appropriate to protected areas ↝ Limited external audio-visual impacts ↝ Size irrelevant ↝ Moderate sense of isolation	↝ Nature and size of groups linked to carrying capacity assessment, industry norms and standards and objectives ↝ Less restrictive access conditions	↝ Nature-based activities ↝ Motorised/non-motorised ↝ Guided/self-guided ↝ High or low intensity, low impact	Infrastructure and facilities appropriate to intensity of utilisation minimize impact
Rural Undeveloped	↝ Largely natural setting not formally protected ↝ Infrastructure is rural in nature ↝ External audio-visual impacts limited ↝ Size irrelevant ↝ Moderate sense of isolation	↝ Nature and size of groups linked to carrying capacity assessment, industry norms and standards and objectives ↝ Less restrictive access conditions	↝ Any activities based on objectives ↝ Motorised/non-motorised ↝ Guided/self-guided ↝ High or low intensity, low impact	Infrastructure and facilities appropriate to intensity of utilisation to minimise impact
Rural Developed	↝ Prevalence of agricultural practices such as lands, fields, orchards, vineyards, avenues and windbreaks ↝ Infrastructure is rural in nature ↝ External audio-visual impacts limited ↝ Size irrelevant ↝ Moderate sense of isolation	↝ Nature and size of groups linked to carrying capacity assessment, industry norms and standards and objectives ↝ Less restrictive access conditions	↝ Any activities based on objectives ↝ Motorised/non-motorised ↝ Guided/self-guided ↝ High or low intensity, low impact	Infrastructure and facilities appropriate to intensity of utilisation to minimise impact
Sub-urban	↝ Low to medium density residential development ↝ Audio-visual impacts prevalent ↝ Size is irrelevant	↝ Nature and size of groups linked to carrying capacity assessment, industry norms and standards and objectives ↝ Less restrictive access conditions	↝ Any activities based on objectives ↝ Motorised/non-motorised ↝ Guided/self-guided ↝ High or low intensity, low impact	Infrastructure and facilities appropriate to intensity of utilisation to minimise impact
Urban	↝ High density development ↝ Audio-visual impacts significant ↝ Size is irrelevant	↝ Nature and size of groups linked to carrying capacity assessment, industry norms and standards and objectives ↝ Less restrictive access conditions	↝ Any activities based on objectives ↝ Motorised/non-motorised ↝ Guided/self-guided ↝ High or low intensity, low impact	Infrastructure and facilities appropriate to intensity of utilisation to minimise impact