



REPUBLIC OF MOZAMBIQUE

MINISTRY OF LAND AND ENVIRONMENT



NATIONAL ADMINISTRATION OF CONSERVATION AREAS



LIMPOPO NATIONAL PARK

MANAGEMENT PLAN

For the Period 2022 - 2032

DRAFT

Version 6, October 2021

Copies of this Report can be obtained from:

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APPROVAL



REPUBLIC OF MOZAMBIQUE
MINISTRY OF LAND AND ENVIRONMENT

DISPATCH

<Add text by Minister>

Ministry of Land and Environment, Maputo, <add date> 2022

Minister of Land and Environment

Honourable Minister Ivete Maibaze

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ACRONYMS

AED	Area of Economic Development
ANAC*	National Administration of Conservation Areas
BNP	Banhine National Park
CLE	Community Legal Entity
CUA	Controlled Use Area
GLTFCA	Great Limpopo Transfrontier Conservation Area
GLTP	Great Limpopo Transfrontier Park
GNP	Gonarezhou National Park
HWC	Human Wildlife Conflict
INE*	Instituto Nacional de Estatística (National Institute of Statistics)
IUCN	International Union for Conservation of Nature
KNP	Kruger National Park
LNP	Limpopo National Park
METT	Management Effectiveness Tracking Tool
M&E	Monitoring and Evaluation
MTA*	Ministry of Land and Environment
NRMC	Natural Resource Management Committee
PIU	Project Implementation Unit
PPF	Peace Parks Foundation
SADC	Southern African Development Community
SOP	Standard Operating Procedure
SPV	Special Purpose Vehicle
SWOT	Strengths, Weaknesses, Opportunities, Threats
TDA	Tourism Development Area
TFCA	Transfrontier Conservation Area
TPA	Total Protection Area
TPC	Thresholds of Potential Concern
ZNP	Zinave National Park

** Throughout this document Portuguese Acronyms are used when referring to Mozambican institutions or legal rights.*

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(Electronic copies of maps available here: <https://www.dropbox.com/sh/rj5fwblfjoga5g2/AACiRognXAPSqi3FnPAm1RuSa?dl=0>)

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1 INTRODUCTION

1.1 Brief Background and Context

The Limpopo National Park (LNP) is a 9,260km² protected area, situated in the Gaza Province of Mozambique, adjacent to Kruger National Park in South Africa and south of the international border with Zimbabwe. It forms an integral element of the almost 100,000km² Great Limpopo Transfrontier Conservation Area (GLTFCA) established in 2002 (Figure 2).

The LNP was established in 2001, formally a hunting zone (Coutada 16), in terms of Decree No. 38/2001 of 27th of November and officially opened in 2005. The proclamation was based on the area's ecological characteristics, diverse ecosystems, scenic landscapes, endemic species, and dangers of species extinction and was aimed at safeguarding the continuation of ecological processes and preservation of the natural values of the area.

The boundary of the Park in the west is the international border with RSA and in the south the middle of the river on the upper reaches of the Elefantos River/Gorge and northern side of the Massingir Dam basin boundary. From the dam it follows a 5km line from the Elefantos River on its left bank and a 5km line from the Limpopo River's right bank until it meets the international border at Pafuri Gate. The area between the Park boundary and the Limpopo and Elefantos Rivers forms the current buffer zone¹ of the Park – an area of 1,720km² (Figure 1).

The LNP is one of five core protected areas in GLTFCA. LNP in Mozambique, Gonarezhou National Park (GNP) in Zimbabwe, and the Kruger National Park (KNP) in South Africa, form the Great Limpopo Transfrontier Park (GLTP) while Banhine National Park (BNP) and Zinave National Park (ZNP) extend the reach and anchor the larger conservation area in Mozambique (GLTFCA, 2014); (Figure 2).

1.2 Purpose of this Plan

This is a ten-year management plan for the LNP and its buffer zone presenting a *status quo* description, future desired state and strategic interventions in the Park for the period 2022 – 2032.

Although building on the 2003 plan for the Park, this management plan was developed in terms of Law No. 5/2017 of 11 May (Law on the Protection, Conservation and Sustainable Use of Biological Diversity) and, as elaborated in Chapter VI of Decree No. 89/2017 of 29 December (regulation to the Law on the Protection, Conservation and Sustainable Use of Biological Diversity), it is a legally binding document.

Law No. 5/2017 defines a protected area management plan as a technical document containing the activities and other measures to be implemented by the various stakeholders involved in the conservation, management and utilisation of wildlife resources. Article 43 of the Regulation to the Law stipulates that the management plan shall cover the park and its buffer zone, including measures to promote their integration into the economic and social life of the local communities. As such, the plan provides a high-level, adaptable decision-making framework for integrating conservation, tourism, and effective engagement with local communities living in and adjacent to the Park while at the same time promoting the integration of the LNP into the social and economic life of the local communities and the GLTFCA. It expresses the commitment of the National Administration of Conservation Areas in Mozambique (ANAC) and the management team, including Peace Park Foundation (PPF), to pursue an approach that seeks to implement best practice conservation of the biodiversity of the protected area while at the same time seeking to improve the financial sustainability of the park and to enhance the value of the park to local communities.

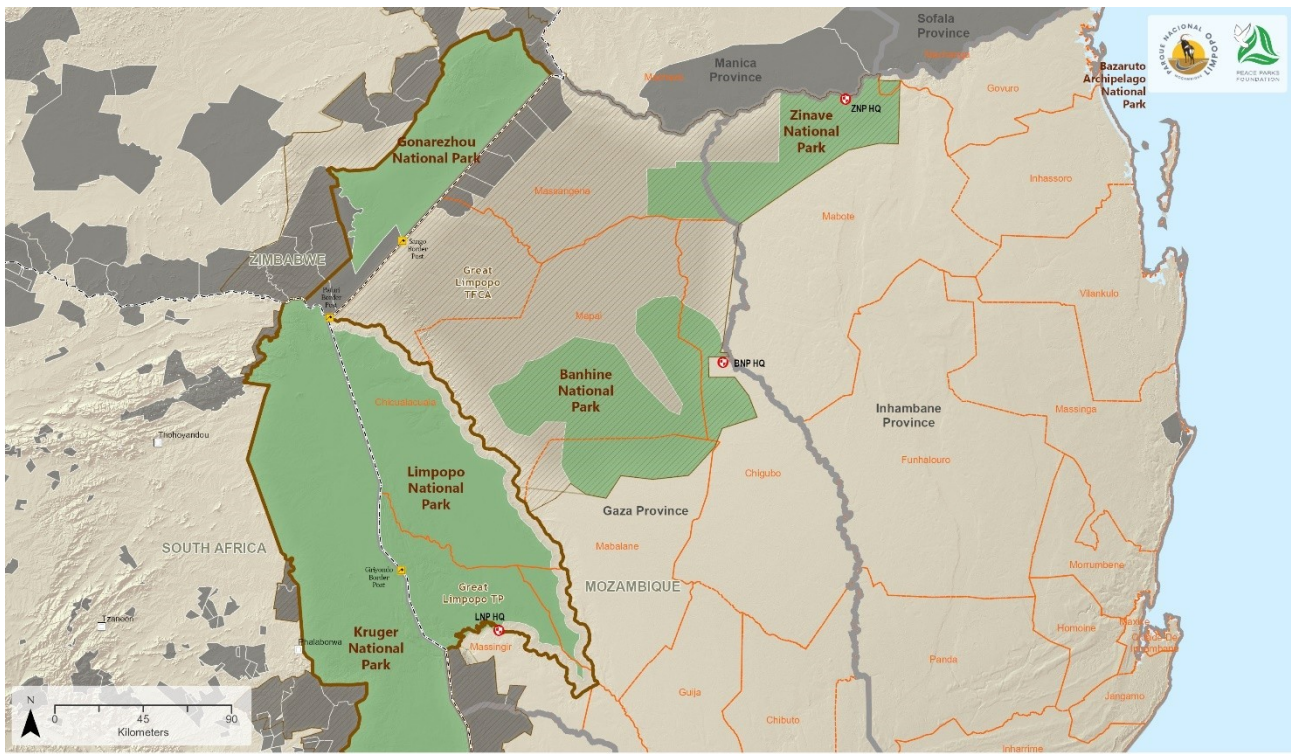
¹ The wording in the Decree differs from that depicted in the map showing the boundaries of the Park. The Park Steering Committee thus decided to implement the 5km buffer zone along both rivers.



LOCALITY



Figure 1. Map of Limpopo National Park and its Buffer Zone



GLTFCA OVERVIEW

- City / Major Town
- Border Post
- Headquarters
- Country Boundary
- Provincial Boundary
- District Boundary
- National Park
- Protected Areas Other
- Transfrontier Park
- ▨ TFCA



Figure 2. Limpopo National Park relative to the other core areas of the GLTFCA

1.3 Enabling Legal Framework and Mandate

The management of LNP is subject to the legal framework of the Government of Mozambique and its international commitments.

Under Mozambican law² the status of National Park confers the highest status of protection on the land, and prohibits certain activities, including prospecting and mining.

In terms of international classification, the Park is an IUCN Category II National Park. The definition of this is:

"An area of land or sea designated to protect the ecological integrity of one or more ecosystems for present and future generations; to exclude exploitation or occupation inimical to the purposes of designation of the area, and to provide a foundation for spiritual, scientific, educational, recreational and visitor opportunities, all of which must be environmentally and culturally compatible" (IUCN, 2013).

1.3.1 International

International commitments in relation to the management of biodiversity in Mozambique that are relevant to the management of LNP include:

- United Nations Convention on International Trade in Endangered Species of Wildlife Fauna and Flora (CITES); 1975 (date of entry into force)
- United Nations Convention on Migratory Species of Wild Animals; 1983
- United Nations Convention on Biological Diversity; 1992

² Law No. 5/2017 of 11 May (Law on the Protection, Conservation and Sustainable Use of Biological Diversity)

- African Convention on the Conservation of Nature and Natural Resources; revised 2003
- Southern African Development Community (SADC) Protocol on Wildlife Conservation and Law Enforcement; 1999
- Treaty between the Government of the Republic of Mozambique, the Government of the Republic of South Africa and the Government of the Republic of Zimbabwe on the Establishment of the Great Limpopo Transfrontier Park; 2002
- Memorandum of Understanding on Cooperation in the field of Biodiversity, Conservation and Management concluded between the Government of the Republic of Mozambique and the Government of the Republic of South Africa; 2014.

1.3.2 National

Primary national legislation regulating the conservation of biodiversity and natural resources as well as the management of national parks in Mozambique include the following:

- Law No. 19 of 1997 of 18 July (Land Planning Law)
- Law No. 20 of 1997 of 1 October (Environmental Law) and its regulations
- Law No. 10/1999 of 7 July (Forest and Wildlife Law) and its regulation
- Law No. 15 of 2011 of 10 August (Public Private Partnership Law)
- Law No. 20 of 2014 of 18 August (Mining Law)
- Law No. 5/2017 of 11 May (Law on the Protection, Conservation and Sustainable Use of Biological Diversity)
- Decree No. 89/2017 of 29 December (regulation to the Law on the Protection, Conservation and Sustainable Use of Biological Diversity).

Other relevant regulatory tools applicable to the management of the LNP are/will be contained in Park Standard Operating Procedures (SOP) and operational level subsidiary protocols.

Under the Law for the Protection, Conservation and Sustainable Use of Biological Diversity, ANAC oversees all protected areas in Mozambique. ANAC is a public institute established by the Government of Mozambique which has as mission “*to coordinate and develop a National System of Conservation Areas in Mozambique*”. In so doing, ANAC is responsible for administering all protected areas in a manner designed to ensure the sustainable use of the natural resources encountered at each site. In achieving this goal, ANAC is empowered to develop any infrastructure necessary for the management of biological diversity as well as identified economic activities which contribute to the progressive attainment of financial self-sufficiency by individual protected areas. ANAC currently manages the LNP and is responsible for the development and implementation of this plan which it does in partnership with PPF³.

1.4 Planning Framework and Preparation of this Plan

The Law for the Protection, Conservation and Sustainable Use of Biological Diversity sets the high-level objectives, and thus the planning context, for national parks in Mozambique. These are:

- “To perpetuate, in a state as natural as possible, representative examples of physiographic regions, biotic communities, genetic resources and undamaged natural processes.*
- To protect large-scale ecological processes that would be lost in conservation areas of smaller size.*
- To maintain viable and ecologically functional populations of native species at densities sufficient to maintain ecosystem integrity and resilience in the long term.*

³The partnership is detailed in terms of a contractual agreement signed in 08 May 2018

- d) *To protect and conserve specific species and communities that need extensive areas of undisturbed habitat, regional ecological processes and migratory routes.*
- e) *To support conservation-compatible economic development, mainly through recreation and ecotourism, contributing to the local, regional and national economy with a focus on local communities.”*

In addition to this context, the development of this plan has taken into consideration, and needs to in future, processes and planning documents at:

- Park level including the Security Plan, Buffer Zone Development Plan, Strategic Business Plan (in drafting at the time of preparation of this plan) and Massingir Dam Master Plan (in draft)
- National level including the review of the ZNP and BNP Management Plans; Gaza Province Territorial Development Plan – Territorial Characterization and Provincial Diagnosis; 2005 District Profiles and any District Development Plan
- TFCA level including Park management plans of the various core protected areas such as the Kruger National Park Management Plan (2018-2028); Draft Elephant Management and Game Translocation Plans; border control SOPs; the GLTFCA Livelihoods Strategy
- SADC programmes and guidelines pertaining to TFCAs and tourism.

Additionally, this plan integrates with and is aligned other Park plans, strategies and operational level protocols. The dependency relationships of significance to the LNP are illustrated in Figure 3.

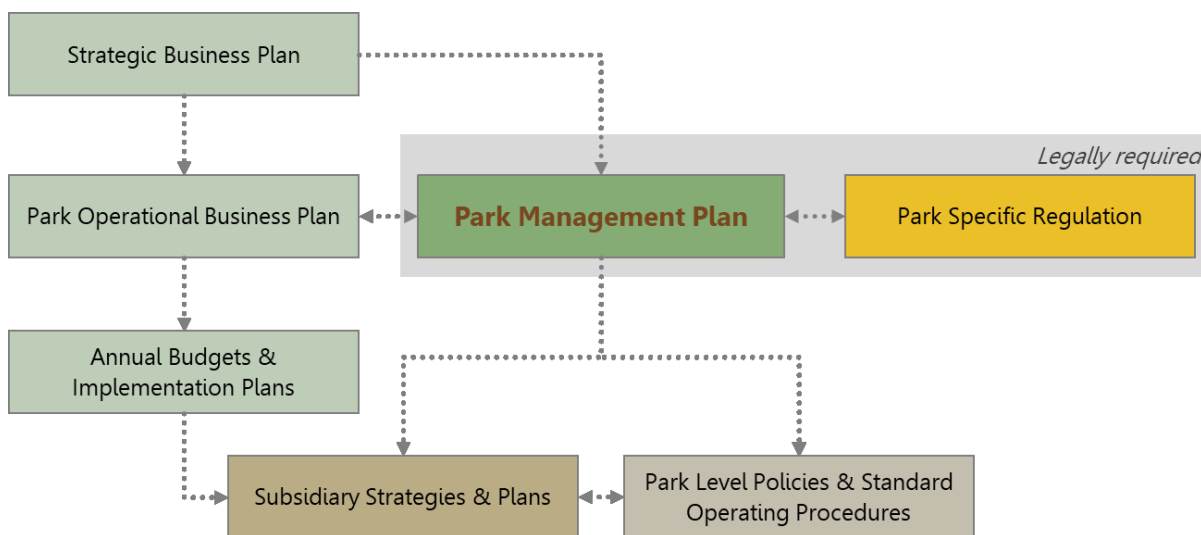


Figure 3. Dependency relationship between plans, strategies, and operational protocols

The development of this plan, followed the process summarised below, which was Park Management driven and elaborated in Annexure A.

<Add a summary when the planning and stakeholder review process has been completed>.

1.5 Monitoring and Reporting on Progress

There are several different plans structured in a hierarchical and functional manner (Figure 3) which collectively contribute to guiding the management of the LNP. Each plan has its own review and reporting interval. The ten-year implementation cycle of this plan, together with the associated Strategic Business Plan, provides the framework for all other planning processes. It is the responsibility of Park Management to ensure that the LNP is managed in a manner consistent with the collective plans and strategies. In addition, it is the responsibility of Park Management to periodically review and update the plans and strategies, including the monitoring components, in an adaptive manner. Monitoring, evaluation and reporting on progress in relation to these plans and strategies will be led by the Park Administrator and the Park Implementation Unit (PIU) and will be Park goal focused.

The departments within the park organisational structure will be required to report monthly to the Park Administrator. The Park Administrator will report quarterly to ANAC and bi-annually to the Steering Committee (see section 2.4.2). These reports will form the basis for Annual Reviews that will be widely circulated to stakeholders. Two 5-yearly State of the National Park reports will be prepared during the Management Plan period, also to be circulated widely. Reports to donors and support organisations will be submitted as per funding agreements. Park Management will also report on projects where other organisations or affiliated partners are delivering projects or associated actions on its behalf.

1.6 Structure of this Plan

This Management Plan for the LNP contains six substantive sections:

Section 1: Introduction

This section explains the purpose, structure and focus of the management plan for LNP and provides a brief overview of the legal and planning framework governing the park and how progress will be reported.

Section 2: Description

This section provides a brief overview of the LNP and the surrounding region in terms of historical, governance, biophysical, and socio-economic characteristics and context.

Section 3: Situation Analysis

This section constructs an integrated picture of the conservation, cultural heritage and economic significance of the LNP, its strategic opportunities and the various challenges and threats currently facing it with a view to guiding activities and interventions over the period 2022 to 2032.

Section 4: Strategic Planning Framework

This section discusses the strategic plan and future desired state for the LNP and presents the vision, mission, strategic management objectives; theory of change and adaptive management framework.

Section 5: Implementation Plan

This section fleshes out the priority management programmes to achieve the strategic management objectives for the next decade (2022 to 2032).

Section 6: Zonation

This section details the spatial zonation of the LNP and how this aligns to tourism and other management activities as well as in relation to neighbouring communities and the integration of the LNP into the GLTFCA.

2 DESCRIPTION

2.1 Proclamation History of the Park and Responsible Authority

The area proclaimed as LNP in November 2001 was formerly used as a hunting zone (Coutada 16). As early as 1938, the linking of KNP, Coutada 16 and GNP in Zimbabwe was mooted. After the Mozambique Peace Accord of 1992, on the recommendation of the Mozambican Council of Ministers, the Global Environment Facility, through the World Bank, funded feasibility analyses, which culminated in a series of recommendations contained in a 1996 report. The long-held vision of linking the three national parks, as well as key interstitial areas, became reality with the formal agreement of the Governments of Mozambique, South Africa and Zimbabwe on 10th November 2000, to establish the Great Limpopo Transfrontier Park and Conservation Area. One of the first steps taken by the Mozambican Government to implement the formal agreement was to change the legal status of Coutada 16 to that of a National Park. A formal treaty establishing the Transfrontier Park was signed by the Heads of State in December 2002.

In terms of the published Government Gazette (Boletim de Republica) containing Decree number 38/2001, dated 27th November 2001, the area formerly known and proclaimed as Coutada 16 became the Limpopo National Park (Parque Nacional do Limpopo). The proclamation was based on the area's ecological characteristics, diverse ecosystems, endemic species and dangers of species extinction. The boundary of the Park and the delineation of the buffer zone have been implemented slightly differently from the Decree as the depiction of this in the text and the map is opposing and unclear. As such, a decision was taken by the Park Steering Committee to define the Park and buffer zone as follows: The western perimeter of the Park is formed by the border with South Africa and stretches in a north-south direction for a distance of nearly 200km. The Zimbabwean border touches on the most northerly tip of the area and then extends to the north-east. A line 5km from the right bank of the Limpopo River floodplain forms the eastern boundary, whilst a 5km line from the left bank of the Olifants (Elefantes) River forms the southern boundary, below the Massingir Dam wall. Upstream of the dam wall, the Park boundary follows the dam basin property boundary and up to the South African border, the talweg of the Elefantes River (see Figure 1). The Park together with its buffer covers a vast area of 10,980km² (Park – 9,260km² and buffer zone 1,720km²).

2.2 National and International Significance of the Park

The LNP is a part of the GLTFCA which also includes KNP in South Africa, GNP in Zimbabwe, and ZNP and BNP in Mozambique. It also incorporates private and communal land in South Africa and other state land in Zimbabwe as well as the interstitial land between the parks in Mozambique. The planning and development of this greater area is the subject of ongoing work in which the three governments and various support organisations are involved. It is potentially therefore a huge area over which ecological functions can effectively operate and species diversity, especially genetic diversity, can be achieved for species which require large home ranges and/or occur at low densities. Furthermore, the large east to west transect from Zinave to the western Greater KNP includes many diverse habitats including seasonal wetlands, floodplains, savanna, forest, rocky and broken country and several large perennial river systems. The LNP is anchored in the west by the internationally known KNP, the most visited iconic wildlife area in Africa.

KNP, lying immediately to the west of LNP, has an important bearing on the planning and development of LNP. This is so for a number of reasons, but perhaps most importantly because of the need to fulfil one of the primary objectives of TFCAs, that being to manage ecosystems holistically. The KNP itself has in the past, been zoned as if it were an island, with no consideration having been taken of neighbours on either side. Whilst the thinking on this has changed over the past few years, it has yet to be practically implemented. It is intended that from here on, both parties co-operate to harmonise their respective management and development plans with the intention of improving the ecological management of the area. The zoning of the two areas will be complementary and supportive and will be based on natural (e.g. habitat types, distribution of wildlife populations) and existing man-made (e.g. rest camps, development nodes) features.

GNP is not contiguous with either LNP or KNP. It is separated from the northern part of KNP (owned by the Makuleke Communal Property Association and managed as an integral part of KNP as a Contract Park) by a corridor of tribal land. The Zimbabwe authorities have initiated a process of engagement with people living in and near the corridor with a view to future planning of the region and incorporation into the TFCA activities.

The GLTFCA provides important context for the LNP which is one of core protected areas of the GLTFCA. The strategic objectives of the GLTFCA are to:

- a) *“Foster transnational collaboration and cooperation among the parties which will facilitate effective ecosystem management in the area comprising the GLTP*
- b) *Promote alliances in the management of biological natural resources by encouraging socio-economic, and other partnerships among the parties including private sector, local communities and Non-government Organisations*
- c) *Enhance ecosystem integrity and natural ecological processes by harmonising environmental management procedures across international boundaries and strive to remove artificial barriers impeding the natural movement of wildlife*
- d) *Facilitate the establishment and maintenance of a sustainable sub-regional economic base through appropriate development frameworks, strategies and work plans*
- e) *Develop trans-border ecotourism as a means of fostering regional socio-economic development*
- f) *Establish mechanisms to facilitate the exchange of technical, scientific and legal information for the joint management of the ecosystem.”*

2.3 Governance Context and Stakeholder Engagement

2.3.1 TFCA

LNP is an integral component of the GLTFCA and thus needs to align with the governance of the GLTP Treaty. The GLTP Treaty is governed by the Trilateral Ministerial Committee - through which the Minister of Land and Environment engages counterparts in South Africa and Zimbabwe at a political level. Under this body is a technically orientated Joint Management Board which is attended by Directors General from the three countries and which is responsible for overseeing the achievement of the objectives of the Treaty and advising the Ministerial Committee.

The Joint Management Board can and has established Working Groups as well as a Partners Forum to address the development and implementation of component programmes, plans and projects.

At operational and implementation level, Joint Park Management Committees (JPMC) have been established to promote and coordinate joint and collaborative operational level actions and interventions with a view to better coordinating the establishment of functional and operational transfrontier protected areas. JPMC 2 – Pafuri-Sengwe and JPMC 3 – KNP-LNP are relevant to the Park and the LNP Park Administrator participates in these and in Working Group meetings as a key member of the GLTFCA structure.

In terms of the Treaty, the three participating partner countries-

- recognise their mutual responsibility to protect and preserve the natural resources for the common good of all
- embrace this responsibility and undertake to develop a wildlife sanctuary across political boundaries, where animals may freely roam and flourish in keeping with natural ecological processes
- understand that the well-being of humankind is bound to effective custodianship of the natural heritage entrusted to them
- undertake to uphold high ideals and standards in jointly managing this natural treasure, for the spiritual and social upliftment of our people, and for succeeding generations to come.

2.3.2 Provincial and District Context

The LNP is situated approximately between the latitudes of 24° 10'S and 22° 25' in the Gaza Province of Mozambique (Figures 1 and 2). The town of Massingir is on the southern boundary while Mapai is on the eastern boundary mid-way along the Limpopo River boundary.

The Park and buffer zone fall within three Districts – Chicualacuala, Mabalane, and Massingir and borders on Mapai (see Figure 2).

Population distribution and number

According to the National Census (INE, 2017) statistics for 2017 the following is a breakdown of the number of households, families and people in the four Districts. There were approximately 138,400 people living in and around the Park in 2017.

Table 1. District Population Statistics

DISTRICT	NO OF PEOPLE	NO OF HOUSES	NO OF FAMILIES
Chicualacuala	27,456	4,886	5,099
Mabalane	43,883	7,702	7,503
Mapai	29,833	5,367	6,217
Massingir	37,300	7,123	7,243

Most of the inhabitants are rural and poor. Poverty is a multidimensional concept and is measured across various indicators. According to the World Bank, 2018, while multidimensional poverty has fallen in Mozambique, it remains generally high. Nearly one in two Mozambicans are trapped in chronic poverty and close to 25% of the population is highly vulnerable to fall into poverty. Gaza's poverty rate⁴ in 2014/15 was 51.2% as measured by the Mozambican Ministry of Economy and Finance and 43.6% by World Bank methods. The Province ranks fourth out of the 11 provinces in Mozambique in terms of poverty (World Bank, 2018).

Regional land use patterns and tenure

The regional economy is entirely based on agriculture with families' livelihoods 83% reliant on farming and 17% on livestock.

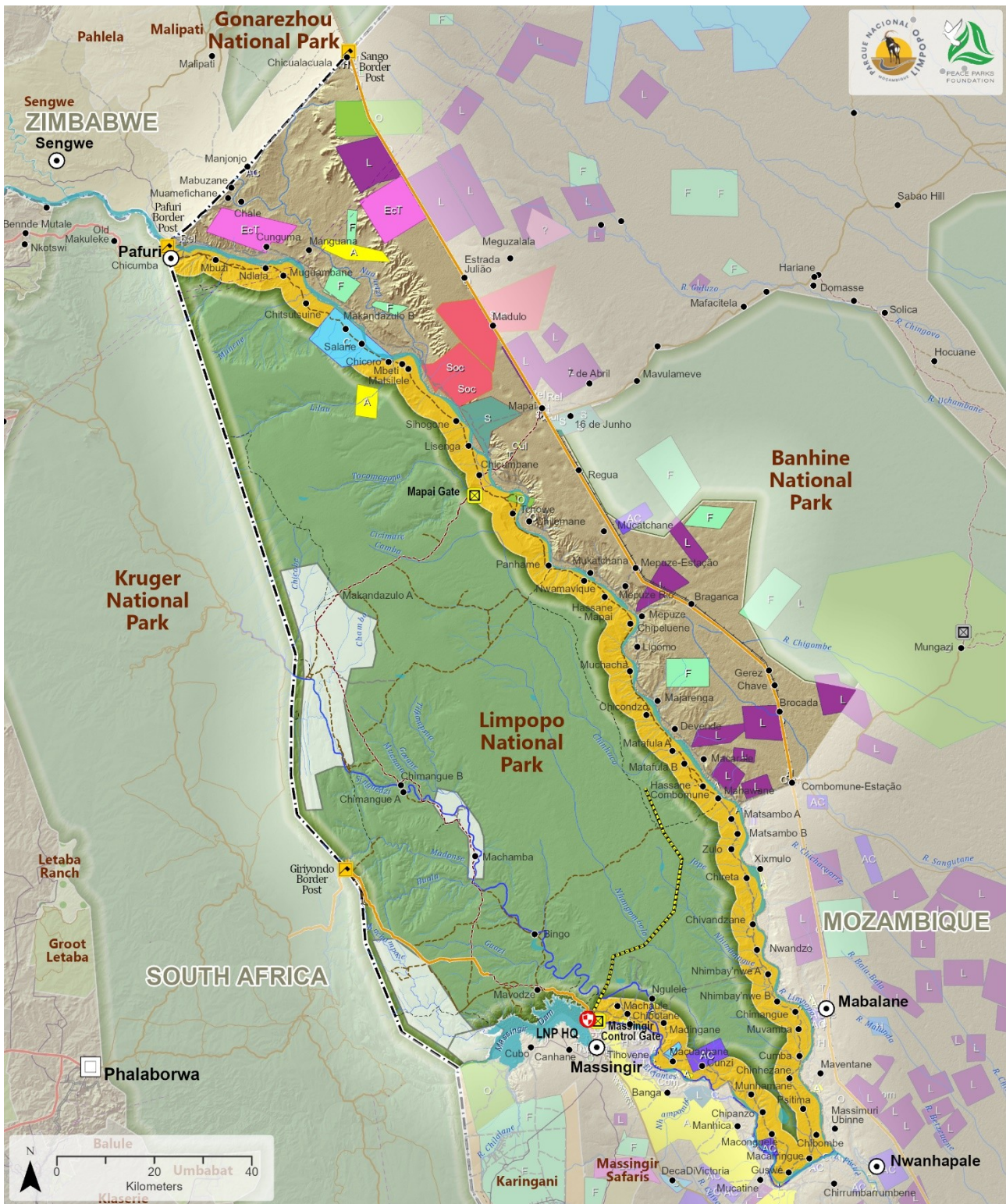
Under Mozambican law, all land is owned by the State⁵. However, the Constitution recognises the right of all citizens to enjoy, use and exploit land as determined by the State through DUATs (which are rights of use and exploitation of land) or Special Licences in the case of protected areas. Depending on the size of an area covered by a DUAT, it is either issued by the Provincial Governor (smaller than 10km²), the Minister of Land and Environment (10 to 100km²) or the Council of Ministers (greater than 100km²). Special Licences are issued by the Ministry of Land and Environment (MTA).

The categories of DUATs that currently apply to the area surrounding and within LNP (in the north and south) include commercial agriculture, agriculture and community. Tourism concessions or Special Licences have been issued to GAZA Safaris for four concession developments sites in the Park. The spatial context of these and the DUATs are shown in Figure 4. Special Licences approve activities and developments but do not afford rights over land.

In addition to Special Licences in the Park, resident communities (communities living inside the Park) have tenure rights over the areas in which they reside. The Park currently has four resident communities: Bingo, Mavodze, Machamba and Chimangue (see Figure 1).

⁴ Ration of number of people whose income falls below the poverty line

⁵ The Land-use Planning Law (Law no. 19/2007)



LAND TENURE

- A** Agricultura / Agriculture
- AC** Agro-Indústria / Agriculture – Commercial
- L** Avicultura / Agro-Indústria / Agriculture – Livestock
- C** Comunitários / Community
- Com** Comércio / Commercial
- Ho** Condomínio / Housing
- Cul** Culturas Permanentes / Permanent Cultural
- Est** Eco.Turismo / Eco tourism
- F** Fauna Bravia / Wildlife
- H** Habitação / Habitation
- Mix** Habitação e Serviços / Habitation and Services
- L** Habitação-Agro-Pecuária / Habitation – Agriculture Livestock

- Com** Habitação-Comércio / Habitation – Commercial
- L** Habitação-Pecuária / Habitation – Livestock
- H** Hotel
- I** Indústria / Industrial
- O** Outros / Other
- L** Pecuária / Livestock
- ?** Planejado DUAT / Planned DUAT
- S** Serviços / Services
- Rel** Serviços Religiosos / Religious Services
- Soc** Serviços Sociais / Social Services
- T** Turismo / Tourism
- Special License Area**



Figure 4. Land tenure in the areas surrounding the Limpopo National Park

Regional infrastructure and services

To the east of the Limpopo River is the main access road to Zimbabwe from Chokwe, running adjacent to this is the railway line also entering Zimbabwe. Other roads include the secondary road between Pafuri, Mapai and Massengena and in the south of the Park, the tertiary road between Giryondo and Massingir.

There are several health facilities in and around the Park including seven health centres and about nine health posts (all southeast of Mapai where a district hospital is located). Secondary schools are located at Chicualacuala and Mapai and various (about 23) primary schools in the Park as well as in or along the buffer zone.

Water supply and sanitation services are limited with rural communities sourcing water largely from abstraction points along the rivers for domestic consumption without proper treatment in most cases. Formal waste management services are also not available.

Currently Gaza Province is powered by the energy of the National Electricity grid, however, there is still a large deficit in the supply of energy to the rural population who rely on alternative sources. A 400Kv electricity line passes through the Park in the Pafuri area and various substations are placed at Massingir and east of Mapai linked to Chokwe (110Kv lines).

Telecommunication network, specifically mobile broadband provides for medium coverage in this part of the Province with antennas located at Chicualacuala, Mapai, Mabalane and Massingir (Vedor, 2020 and Vedor, 2021).

Buffer zone and its management

The current buffer zone of the Park entails a 5km strip west of the Limpopo River and to the north of the Elefantes River (Figure 1) and covers an area of 1,720km². Based on 2020 statistics, there are 51 communities living in the buffer zone, consisting of about 5,155 households – approximately 22,748 people with about 38,280 head of cattle.

The most significant part of the buffer zone from an ecological perspective is the section along the Limpopo River. This is very important habitat for the productivity, diversity, and reliance of the LNP ecosystems and their species, especially the large mammals. It is also heavily settled and farmed, unsurprisingly as this is the most productive habitat in this area consisting of an important floodplain, river and pans. It provides both water and productive alluvial soils.

The buffer zone along the Elefantes River is less important, ecologically, as the park zoning on the left bank below the Massingir dam is for economic development and therefore activities in the buffer zone are likely to be aligned with the zonation. The Massingir Dam functions as a further buffer to the east of the dam wall, although not formally part of the buffer zone, and the alignment of land use to the south is less relevant where the dam is very wide. Closer to the KNP and the Gorge, the land use is wildlife in Karangani.

The buffer zone is established outside the boundary of a Park. In terms of Law No. 5/2017 of 11 May, Section V - Clause 39 and 40 and Article 37 of the associated regulations, the purpose of a buffer zone includes “...*establishing a transition strip between the Conservation Area’s perimeter and the neighbouring multiple use area(s), with the objective of controlling and reducing the impacts arising from activities which are inconsistent with the conservation of biological diversity, either from the inside out or outside into the Conservation Area*”⁶.

The purpose of a buffer zone can extend to conservation measures which promote the sustainable use of natural resources and to provide ecological corridors aimed at ensuring connectivity of habitats and the movement of genetic material between conservation areas. A buffer zone is also intended as an area where any potential negative impacts of the Park on communities living outside the park can be mitigated and reduced. Although the superseded or old regulations stipulated that a buffer zone should be 5km wide, under current law the dimensions (e.g., width) of a buffer zone is not prescribed and can vary from zero to substantially larger, based on the context.

⁶ English version of Article 37 of Decree 89/2017

Proposed revisions to the current buffer zone are described in sections 5.3 (Community Programme) and 6 (Zonation).

The management of the buffer zone around LNP is a shared responsibility between the affected communities, Park Management, and specifically the relevant district and provincial authorities.

Any activity in the buffer zone that may negatively affect biodiversity must first be approved by the Park Administrator and subjected to any legally required environmental licensing and environmental impact assessment. Once permitted, these activities in the buffer zone will be incorporated in this plan for the Park.

Specific activities that are undertaken in the buffer zone, and that are identified in the regulations to the law, together with the associated limitations, which are the responsibility of the Park Administrator to manage, include:

- Erection of signposts at main entrances and strategic locations, in order to clearly indicate the boundaries of the conservation area and the buffer zone
- Monitoring of activities undertaken by local communities and ensuring compliance with the stipulations in the approved management plan and Specific Regulation including agriculture and livestock management; fishing; hunting; exploitation of forest resources and beekeeping.

A buffer zone management plan was prepared in 2012 for the current extent of the buffer zone through an extensive consultation process with communities and local authorities.

2.3.3 Park

The overarching responsibility for the management and development of the Park rests with ANAC. At the time of preparation of this second edition of the Management Plan, the Park is being managed by a PIU and reports to a Steering Committee (chaired by the Director General of ANAC) comprising representatives of MTA, the Provincial Directorate of Land and Environment, ANAC and PPF – other donors are involved as observers (see below figure).

This arrangement is based on a Project Execution Contract between Government and PPF which assists with funding and other agreed project support. The PIU consists of the Park Administrator (appointed by ANAC) and a Project Manager and Financial Manager appointed by PPF in terms of the agreement between the two entities.

The **Park Administrator**, however, has overall responsibility and accountability for the development and implementation of this plan and the Park Operational Business Plan (Figure 3) and oversees and coordinates the following departments as well as chairs the PIU:

- Protection
- Conservation, including Research and Monitoring
- Community Support
- Resettlement
- Administrative and Financial, including Human Resources
- Infrastructure Development
- Tourism Development.

The **PIU** is responsible for preparing and implementing workplans, technical and financial reports relating to the development of the Park, monitoring and managing technical and financial implementation, implementing key strategic recommendations from the Steering Committee, and ensuring institutional collaboration with government entities (see below table) and key stakeholders.

The **Steering Committee** meets at least twice annually to, amongst others:

- Approve the appointment of PIU members
- Review and approve workplans and budgets, or material change requests, presented by the PIU
- Review and approve key strategic documentation

- Stimulate private sector and donor interest in the development of the LNP, including its tourism opportunities
- Ensure the necessary support for cost efficient and effective development and management of LNP
- Monitor the development and management of the LNP
- Ensure compliance with financial procedures.

Additional to these Park level structures, and pursuant to the Law for the Protection, Conservation and Sustainable Use of Biological Diversity, a **Management Council** is being established as an advisory body to Park Management. The Management Council (also chaired by the Park Administrator) will comprise representatives from local communities, private and social sector associations, and Administrators of the respective Districts. Their deliberations and advice focus on the following functions as defined in Chapter II, Article 7 of the foregoing Law:

- Oversight supervision of the activities of the LNP
- Implementation of this plan
- The developmental needs of communities legally residing in the LNP and buffer areas
- Contributing to the preparation of strategic plans for the development of the LNP
- The pursuit of new income generating activities to reduce pressure exerted by local communities on biodiversity
- Supervision of the implementation of concession contracts with operators and the development of public private and community partnerships
- Strengthening local conservation capacity.

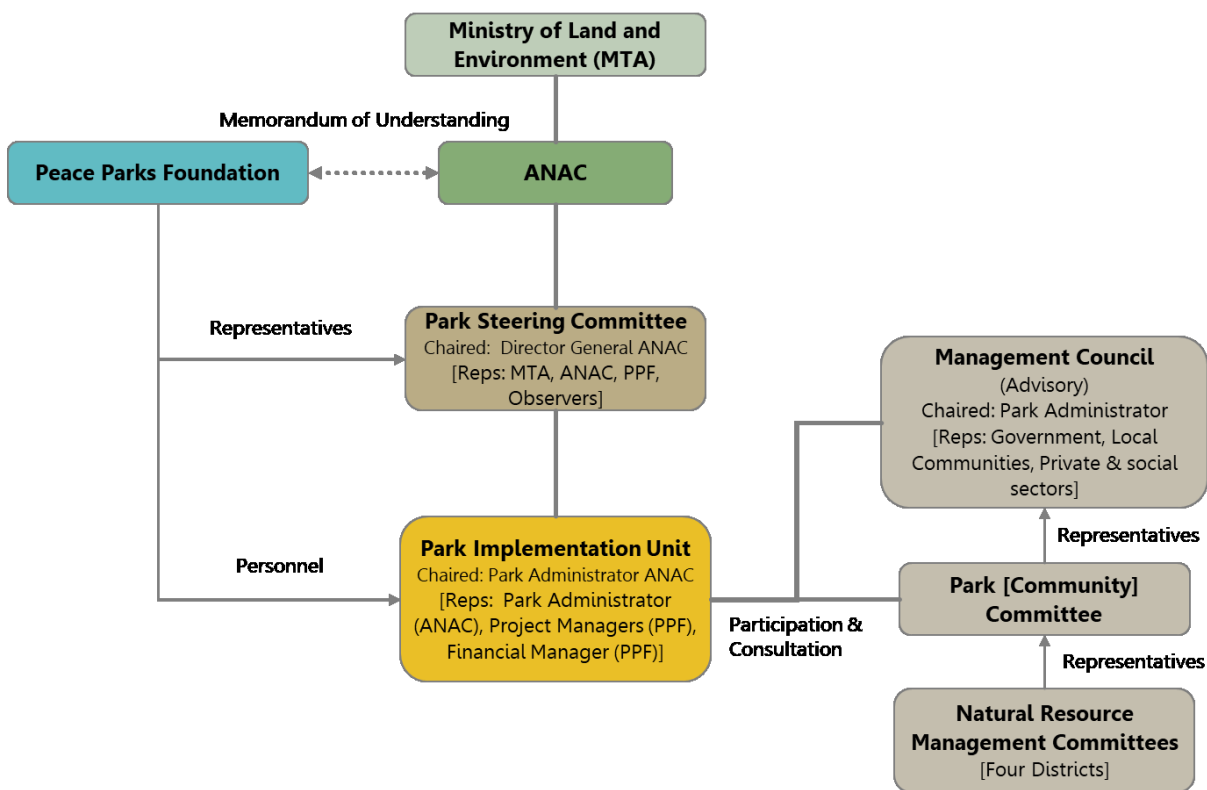


Figure 5. Park Institutional Arrangements

The relevant government stakeholders at central, provincial and district levels, besides through the above structures, are engaged as the need arises and through scheduled meetings.

The Park has a **Communication Strategy** but is largely focussed on the resettlement process and thus requires review.

2.3.4 Communities

A 'local community' is clearly defined in the Land Law, as “a group of families and individuals, living in a delimited locality which is an area that falls under an administrative division (i.e., it is below the level of an administrative post)”. In the context of protected areas, these communities commonly share the aim to safeguard resources of common interest such as agricultural land, forest, water sources or sites of cultural importance.

People living in communities around LNP share a similar hierarchical structure and a combination of state-based⁷ and traditional governance mechanisms with communities across the country.

There are three tiers of leadership - Tier 1 leadership, represented by the *Régulo*, Tier 2 leadership, represented by a *Chefe de grupo de povoações*, and Tier 3 leadership, represented by a *Chefe de povoação*.

In general, only the *Régulo* is appointed based on family lines and heritage. Tier 2 and 3 are appointed within political government structures at these levels. Among other responsibilities, the *Régulo* provides assistance with the allocation of land and the resolution of land-related conflicts. The other tiers below *Régulo* provide assistance with decision-making processes that affect people living in their area of responsibility.

As part of the Mozambique Government's effort to improve the sharing of benefits arising from protected areas (i.e., from tourism or any other form of natural resource-based activity), a Ministerial Diploma⁸ creates a mechanism for channelling benefits to local communities. The mechanism entails the formation of a Natural Resource Management Committee (NRMC) by the Park, which is a community-based organisation, represented by a minimum of ten community members. Legislation calls for the establishment of an NRMC for each community living in or around a protected area. In the absence of alternative institutions which can be used as a platform for community representation, NRMCs are used as a means to enable engagement between a park and communities.

In the case of LNP, communities are engaged as guided by the Districts and mainly through such NRMCs established for Mabalane, Chicualacuala and Massingir (Mapai is yet to be established). The Park interacts with these NRMCs through a main Park Committee with two representatives from each NRMC. The 20% revenue share⁹ is distributed through these committees. In the case of Mapai, liaison will be achieved via the consultative Management Council (see Figure 5). There are also project level community institutions or Community Legal Entities with which the Park engages directly.

2.4 Biophysical Characteristics of the Park

2.4.1 Climate

The Park and adjacent areas have a subtropical climate with hot, wet summers and mild, dry winters (KfW, 2018).

The average, maximum day temperatures increase from south to north, with absolute maximum temperatures of above 40°C being common for the months of November to February. Although the mean minimum temperature is above freezing point, frost is periodically recorded in the lower lying areas along the rivers in the Shingwedzi area.

Mean annual rainfall decreases from south to north. Based on adjacent KNP long-term figures, mean annual rainfall varies from the order of 360mm in the far northern part to over 500mm along the Libombos Range in the south west of the Park. Effective rain occurs from September to April with a short dry period of four months. Tropical cyclones occasionally enter the area in late summer months. They originate in the equatorial areas of the Indian Ocean when the sea surface temperature rises above 27°C and move slowly down the Mozambique Channel, gaining moisture as

⁷ Under Law 8/2003

⁸ Diploma 93/2005

⁹ The Council of Ministers has established a legal framework for allocating a share of resource revenues from protected areas derived from access fees and the use of resources to benefit local communities (refer Law 5/2017, Chapter VII).

they go along. High rainfall associated with tropical cyclones moving over land often causes extensive flooding and damage to infrastructure and services. Additionally, it can also have a severe impact on the natural environment.

Analysis of the rainfall patterns of the adjacent Kruger National Park over the past 100 years also indicates a cyclical nature with approximately 10 years of generally above average rainfall, followed by a period of similar duration with generally below average rainfall. High rainfall associated with tropical cyclones moving overland has caused extensive flooding and damage to infrastructure and services.

The high temperatures during summer result in high evaporation rates that impact negatively on the effectiveness of the precipitation. Hail occurs on a regular basis, but at low frequencies. Mist in winter may occur in the lower lying areas.

Mozambique is one of Africa's most vulnerable countries to climate change (Mavume *et al*, 2021). Climate-related hazards such as droughts, floods and cyclones are occurring with increasing frequency, which is having a cumulative and devastating impact on a population that is insufficiently prepared. The semi-arid and arid areas in the south of the country where LNP is located are particularly sensitive due to already unfavourable conditions such as low and highly variable rainfall (equal to or less than 500mm) and high average annual temperatures which have rendered the predominantly rain fed community production of maize a risky undertaking.

Current trends show an increase in mean annual temperature with the largest increase observed in the south of the country (up to 1°C over 100 years). Average annual rainfall decreased significantly at a rate of 3.1% per decade between 1960 and 2006. At the same time, the proportion of rain falling in heavy rain events has increased at a rate of 2.6% per decade. These trends show regional variability, with largest rainfall decreases in the south and smaller decreases in the north of the country. The south and coastal regions have experienced increasing rates of extreme events due to these changes in temperature and rainfall. The south has become hotter and dryer and experiences more frequent persistent droughts, while coastal regions have faced floods that are more episodic. The communities visited during the study have all confirmed experiences of droughts and floods during the past three years with poor maize harvest and death of livestock, in particular cattle.

Climate change projections foresee that the prevailing conditions in arid and semi-arid areas will be exacerbated:

- There will be a significant average temperature rise and the highest increases are expected for inland and southern regions, especially the Limpopo and Zambezi valleys (up to 3.0°C increase by 2055), but also in coastal areas. The likelihood of a maximum daily temperature above 35°C will be 25% higher in 2090 compared to current circumstances.
- Rainfall projections show no substantial change in total annual rainfall on the national level but regional and seasonal changes are more pronounced. A decrease is projected for the west, south and central regions of the country (including Zambezi valley) during the onset of the rainy season, with a strong decrease up to 31% projected for September and October. Another decrease for the south of the country is expected for the main rainy season, December - February.
- Most models also project a significant increase in the proportion of total rainfall that will fall in heavy rain events, while simultaneously dry spells will be elongated. These increases in heavy rainfall as well as heat waves are likely to result in an increase in extreme events, including droughts and floods. An increase in droughts is expected for the central and southern regions of the country. At the same time, more floods can be expected across the country – especially during the rainy season. While the north is likely to experience floods more frequently, the magnitude and damage of floods will often be higher in the south. The Limpopo basin has been indicated as a hotspot for floods, with an average increase of 25% in the magnitude of flood peaks.

2.4.2 Geomorphology, geology and soils

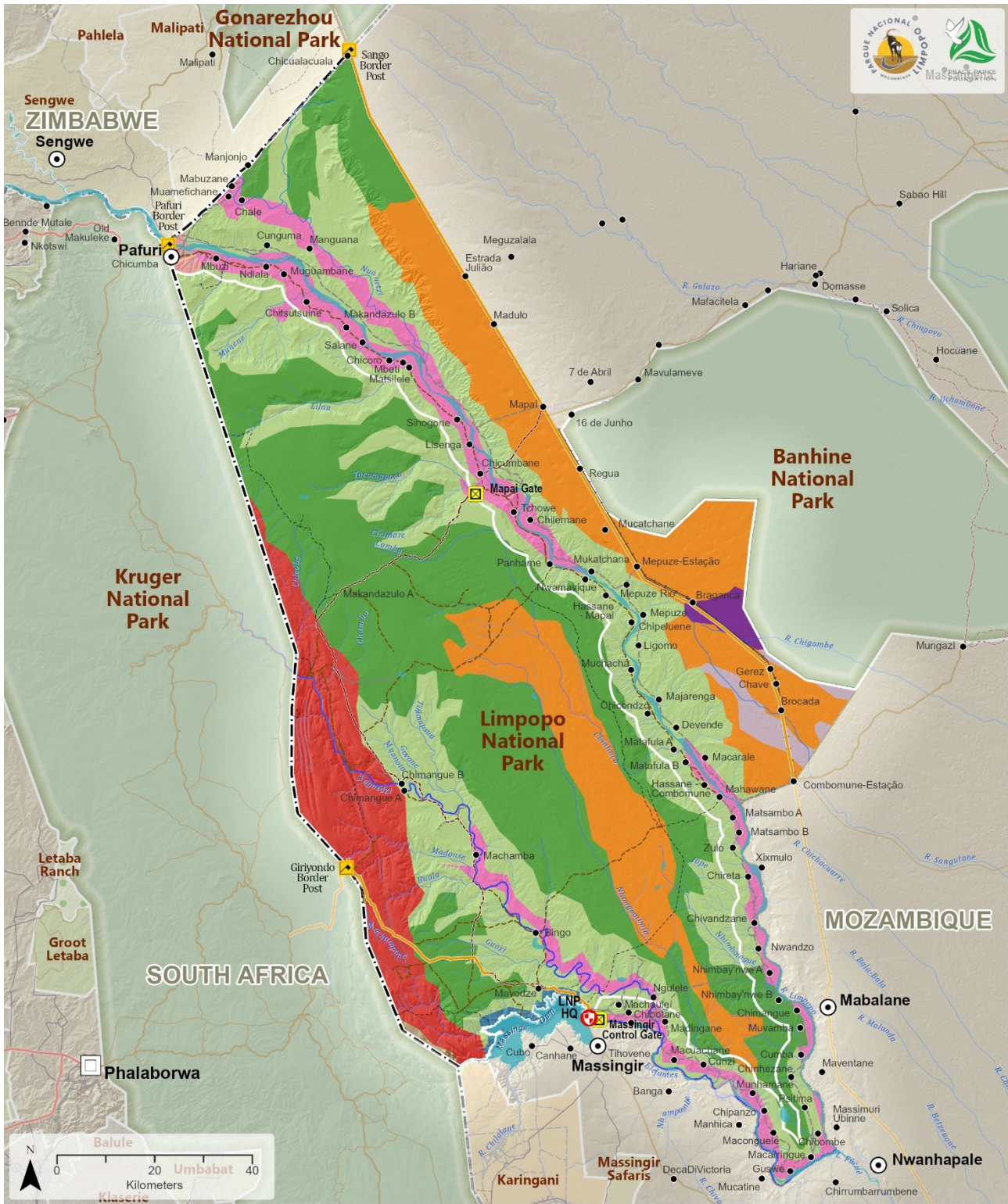
The majority of LNP falls within the Mapai Formation outcropping with volcanic rocks of the Karoo age in the west (Figure 6).

The main geomorphological features of the Park are the Lebombo Mountains in the west of the Park and the alluvial systems of the Limpopo, Shingwedzi and Elefantes Rivers forming part of a greater sedimentary basin.

The Lebombo Mountains consist of rhyolite/basalt which is extrusive igneous or volcanic rock. Red clays are common on the hills, whereas the well-drained soils of the rhyolite on the escarpment are shallow and clayey and poorly drained (Ministério do Turismo, 2003; Figure 7).

The river valleys consist of paleogene and neogene sedimentary rocks and the remainder of the Park of quaternary sediments.

Deep structured clay soils derived from calcaric sedimentary rocks are broadly associated with the drainage systems of the rivers, each with a narrow strip of alluvial sediments. Sandy soils, including dunes, are characteristic of the higher lying stepped slopes and crests away from the drainage lines.



SOILS

- Deep colluvial clay soils of Mananga (Mollic Solonchaks)
- Moderate to shallow sandy clay loam soils on limestone (Calcic Cambisol)
- Non-specified deep sandy soils (Arenosol)
- Shallow lithic basaltic soils, dark brown sandy clay loam (Eutric Leptosol)
- Shallow lithic rhyolitic soils, yellowish brown sandy clay loam (Eutric Leptosol)
- Course stratified alluvial soils, deep sandy loam (Eutric Fluvisol)
- Sandy soils of Mananga of varying thickness (Ferralic Arenosol)
- Sandy soils of Mananga of varying thickness (Haplic Solonetz)
- Lakes, lagoons or rivers



Figure 7. Soils of the Limpopo National Park

2.4.3 Hydrology

The hydrology of the region is dominated by three river systems, the Limpopo, Elefantes and to a lesser degree the Shingwedzi (Figure 8). These river systems drive land use, which influences the population distribution as well as wildlife distribution. It is thus a key factor in determining land use and potentially human wildlife conflict – refer to in Situational Analysis (Section 3) and Zonation (Section 6).

The Limpopo is the largest river system, and its catchments are derived from the interior plateau and the northern part of the eastern escarpment of South Africa and the the interior plains of eastern Botswana. The varying landscape and rainfall patterns have widely differing effects on the hydrologic regime of the Limpopo. The highveld produces most of the runoff and floods, but is controlled by the various dams in the Crocodile, Marico and Pienaars Rivers. These dams reduce runoff and control the moderate floods. The Botswana catchments of the Shashi, and others produce little runoff but can dramatically influence flooding. The escarpments catchment of the Pafuri can influence flooding as well as runoff to a lesser degree. The Limpopo, once perennial, currently dries up at the end of winter during dry cycles and only pools remain in the riverbed.

The hydrological regime of the Limpopo River is a key management consideration – it experienced great flooding in early 2000 and periodically flows at very high levels. The extent of the 2000 floods was so great that the valley was submerged and the floodplain boundaries were exceeded. Most of the floodplain is, however, excluded from the Park and forms part of the buffer zone.

The Elefantes River is derived from the eastern interior plateau of South Africa and high runoff and flooding is produced by the catchments of the Elefantes, the Wilge and Steelpoort Rivers. Dams in these catchments also influence runoff and flooding. The eastern escarpment rivers such as the Letaba and Blyde have a large effect on the flooding and runoff regime of the Elefantes River. The Massingir Dam in Mozambique controls these escarpment rivers and remains perennial throughout the season.

The Shingwedzi is a much smaller river system with only a small part of its catchment reaching the escarpment and its high rainfall regions. The river is therefore not perennial and dries up in its lower reaches. As it drains the central portion of the Park, it has a large effect on the wildlife distribution through the Lebombo rhyolite mountain drainage. These smaller streams retain water for long periods and attract wildlife from the dry waterless sandveld interior. The sandveld interior is waterless except for the many small pans, which retain water during the summer and in most years are dry during the winter, especially the latter part of the season.

All of these rivers have been significantly impacted due to high levels of water extraction, numerous large dams, erosion (bank destabilisation and overgrazing), alien plants and pollution.

2.4.4 Ecosystems

Moisture is the single most important criteria determining the species composition of the vegetation, with the underlying geology of secondary importance. This was the conclusion from a vegetation survey and classification undertaken in the summer of 2002 (Stalmans *et al*, 2004). More recently a Vegetation Map has been compiled and identifies seven Vegetation Units in the Park.

An important aspect is the large size of the sandveld, occupying almost 47% of the park and is a community poorly represented in KNP and the other Parks in the TFCA. This is significant for the LNP in the context of the transfrontier area as it offers diversity and a different habitat. This study did not afford any particular conservation status to these plant communities. KNP on the western boundary has been very well studied and the Vegetation Map of South Africa (SANBI, 2006), with map updates in 2018, identified the Lowveld Riverine Forest and associated floodplains of the Limpopo River and the Licuati Sand Forest, located about 30km south of the Limpopo River on the KNP/LNP border, as threatened ecosystems. These extend into Mozambique and are likely to therefore add value in the regional context. Furthermore, the floodplain and associated pans of the Limpopo River and Levuvhu rivers are a proclaimed RAMSAR site in the Makuleke section of the KNP, such is their importance in South Africa.

The main landscapes include, aside from the Vegetation Units described in section below:

- The aquatic systems associated with the rivers, floodplains, pans and the dam
- The rocky and broken topography of the Lebombo mountains including several steep gorges and cliffs with the Shingwedzi cliffs and Massingir gorge being the most spectacular
- The flatter areas dominated by mopane and sandveld.

An excellent cross-sectional profile of the landscape and vegetation stratification from the sandveld to the Limpopo River developed by Dr Ken Tinley following a number of field trips to the region during the 1970s, is presented in Figure 9. It clearly illustrates the salient ecological features of the area.

The impact of the impervious layers in the underlying soils are shown in Figure 10, also drawn by Dr Tinley. It illustrates how this drives vegetation and habitat types from the *Androstachys* woodlands in the west, through the panveld to the Limpopo River floodplain.

2.4.5 Vegetation

Details for the vegetation description can be found in Stalmans and Lotter, 2021 (Figure 11). The LNP falls within the Mopane vegetation of the Sudano-Zambeian Region¹ and corresponds to the Acocks, 1975, Veld Type 15, Mopani Veld. As part of the TFCA it includes the landscapes of the Greater KNP and potentially the landscapes to the east including BNP and ZNP. It is well connected to KNP with only some sections of functional game fence still in place but much of the boundary still accessible for wildlife movement. The connections to the east are more tenuous as there are portions of land which are not formally proclaimed and some, such as the Limpopo River, are heavily settled.

The KNP ecosystem is highly variable and although there are similarities with LNP, especially in areas adjacent, there are several very different habitats from those found in LNP including (figures in brackets indicate the percentage in the park) Grantine Lowveld (16,8%), Tshokwane-Hlane Basalt Lowveld (11,8%), Gabbro Grassy Bushveld (3,8%) Pretoriuskop Sour Bushveld(2%), Malelane Mountain Bushveld (2,4%) and other smaller components (KNP Management Plan, 2018-2028). This adds significant diversity to the TFCA and the two areas are complimentary with sandveld in LNP being very important in this regard.

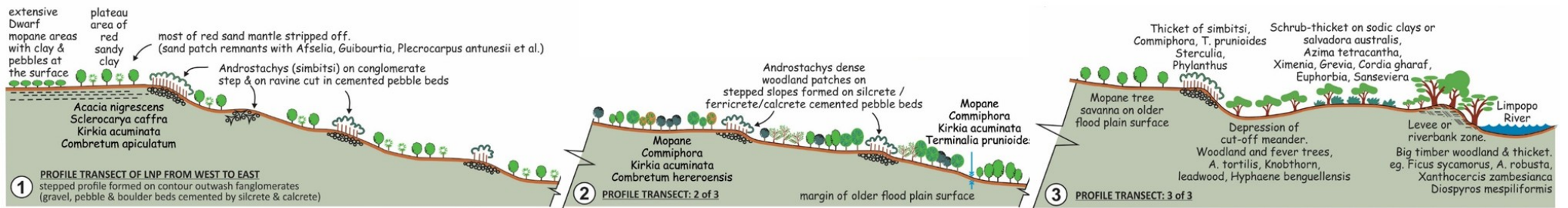


Figure 9. Cross-sections from Sand Plateau to Limpopo River illustrating the Ecological Features of the Park

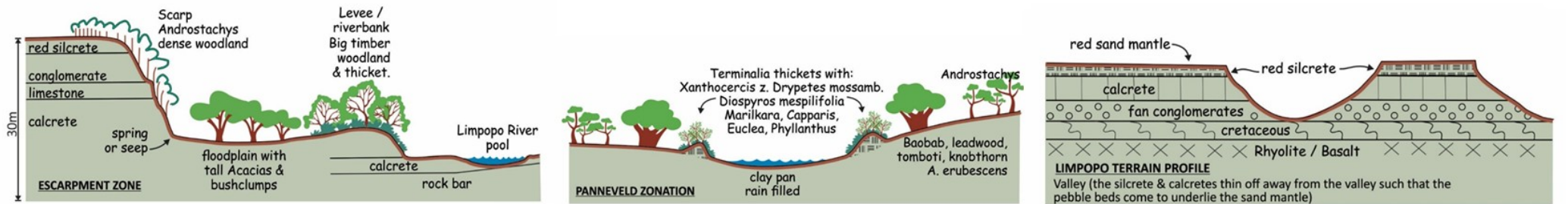
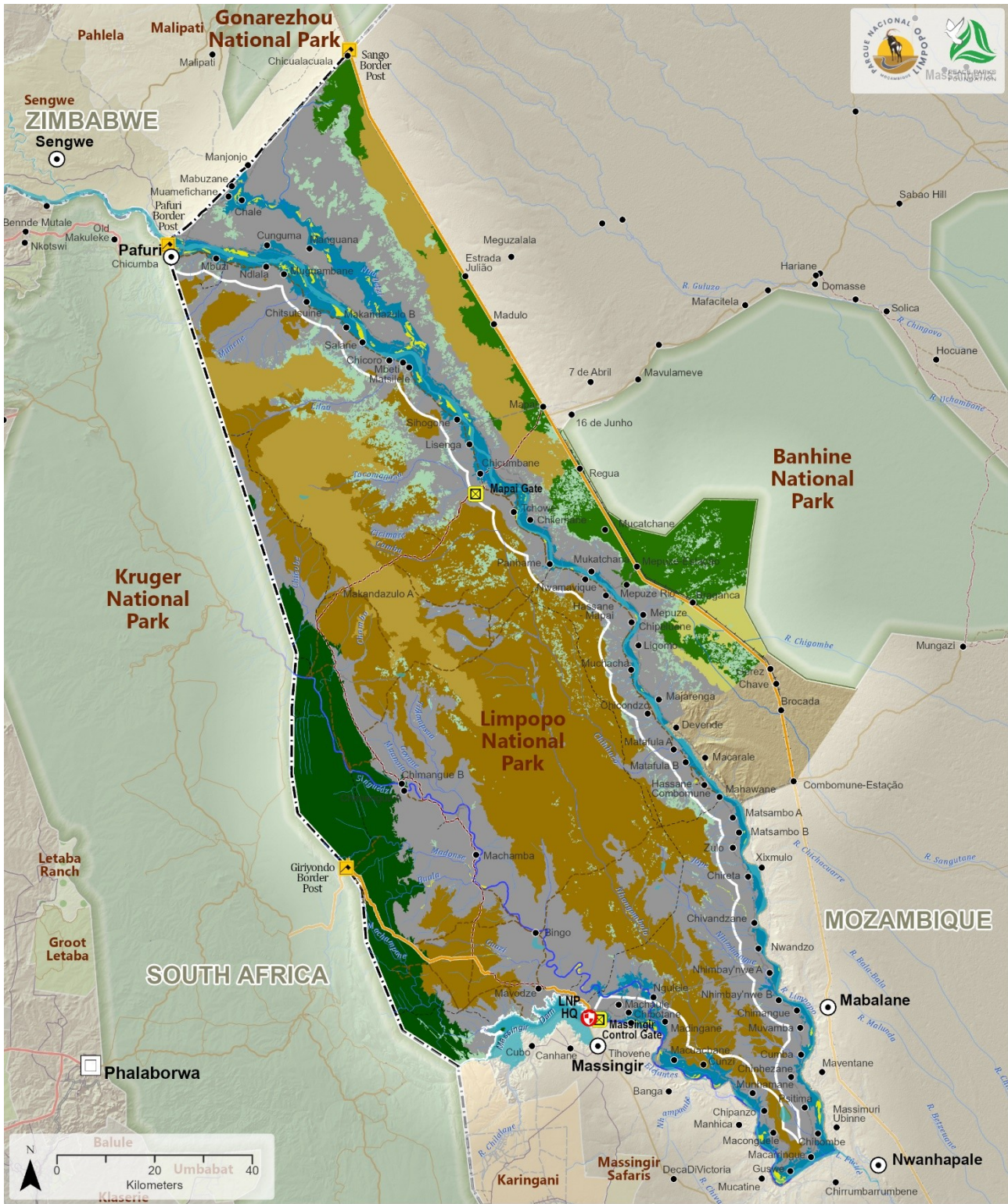


Figure 10. Cross-sections of the Park illustrating how Geology and Soils drive Vegetation and Habitat Types



VEGETATION


- | | |
|---|---|
|  Gaza Sandy Guibourtia Woodland |  Northern Lebombo Bushveld |
|  Ironwood Dry Forest |  Nwambiya Sand Thicket |
|  Limpopo Ridge Mopane Woodland |  Nwambiya-Pumbe Sandy Bushveld |
|  Limpopo-Olifants Alluvial Forest |  Southern Mopane Woodland |
|  Maputo Alluvial Vegetation | |



Figure 11. Vegetation of the Limpopo National Park

2.4.6 Fauna

Very few detailed studies have been undertaken of the fauna of LNP and the description that follows provides some indication of likely occurrence. Furthermore, decades of illegal wildlife use have severely depleted most small, medium and large mammals with only small populations remaining in the better protected areas. The recent resettlement of some villages, especially Massingir Velho, has seen an excellent increase in wildlife abundance and diversity as wildlife moves across from KNP. These include, elephant, lion and buffalo as well as many other ungulates.

Other species known from the area include:

- Forty-nine species of fish - three species deserve special conservation status because of their rarity and limited distribution, these being the two small seasonal pan inhabitants *Nothobranchius orthonotus* and *Nothobranchius rachovii*, as well as the lungfish *Protopterus annectens*.
- Thirty-four species of frogs - the sandveld pyxie (*Tomopterna krugerensis*) was discovered within KNP and has its main area of distribution within the Transfrontier Park area, although it has also been recorded in Kwa-Zulu Natal, South Africa.
- A total of 147 mammal species, of which none is endemic. However, aside from a localised population around Pretoria in South Africa, Juliana's golden mole (*Amblysomus julianae*) is known only from a few specimens collected from Pretoriuskop area in the KNP. Currently KNP is also one of the last areas anywhere in the world to have significant and viable populations of wild dog (*Lycaon pictus*), having some 300 individuals in total. The population of 3 000 white rhino (*Ceratotherium simum*) present in the KNP is the largest anywhere, while the 300 black rhino (*Diceros bicornis*) is the second largest population. Both these species are increasing steadily and increased range opportunities into Mozambique and Zimbabwe will enhance the conservation of these threatened animals, as it will for the endangered wild dogs. One as yet undescribed new species of *Eptesicus* bat is known from the KNP. Several rare antelope species representing unique gene pools are also largely localised within the TFCA area, such as roan antelope (*Hippotragus equinus*), sable (*Hippotragus niger*) and tsessebe (*Damaliscus lunatus*).
- At least 116 species of reptiles from the Transfrontier Park area. Included amongst these are two near-endemic species: *Nucras caesicaudata* (blue-tailed sandveld lizard) and *Monopeltis decosteri* (De Coster's spade-snouted worm lizard).
- A total of 505 species of birds from KNP, but a small number of additional species is likely to be present in the LNP. None of the KNP species is endemic.

2.5 Park Infrastructure and Services

The Park has its main headquarters at Massingir on the northern bank of the Massingir dam wall. All senior and middle management operate from this base and many are housed there. There are also workshops, stores, sheds, a short airstrip for ultralight aircraft and a hangar, control centre and a rustic tourism facility – Albufeira. This is the only area in the Park connected to the national electricity grid and has relatively good cellular phone reception. Water for the HQ is from the dam.

There is another small tourism camp and campsite on the Massingir dam at Agua Pesqueira.

Mapai is a small secondary base with an access control gate, it has cellular phone reception but is not connected to the national electricity grid.

There are two international border crossing points, one located at Giriyyondo and the second at Pafuri with access from KNP in South Africa.

There is a forward operating base in Massingir Velho and ten ranger stations positioned around the park. There is a good radio network with nine towers. There are five boreholes for the camps. There are five airstrips to service the ranger stations, excluding the airstrip at headquarters.

Water away from the Massingir dam is from boreholes and/or the Shingwedzi river. Water quality and quantity from boreholes is highly variable. The boreholes are generally found in the old marine cretaceous deposits and water quality is therefore generally poor.

There are a number of seasonal pans and rivers which provide temporary water sources.

Communications across most of the Park is extremely limited with cellular services best near main towns on the eastern side of the park. A radio network was developed and provides coverage in the areas of importance.

Roads are mostly limited to poor 4X4 tracks many of which are seasonally impassable. The only significant road is from Giriyondo border to Massingir. This requires significant upgrading and ongoing maintenance. There are two proper bridges crossing the Shingwedzi river, one near Chimangue and a second near Chibotane in the buffer zone, although this was damaged during floods in 2020.

There are a number of houses and other infrastructure in the villages that have been resettled, many of these having been either refurbished for park management or demolished and the area re-habilitated.

The Park has several tourism facilities ranging from basic camp facilities such as Sandalo, Nhampfule, Mamba and Giriyondo; Aguia Pesqueira that caters for bigger groups including overland sites; and Albufeira with chalets and also camp sites (see below figure). Several concessions have been issued to Gaza Safaris, albeit that these sites have not yet been developed.



TOURISM

- | | | | |
|---|--|---|--|
| <ul style="list-style-type: none"> □ City / Major Town ● Town ● Village ⊠ Entrance Gate ⊕ Headquarters ⊕ Checkpoint | <ul style="list-style-type: none"> ◆ Borehole ⊕ Airstrip ⊘ No-entry ⊕ Camp ⊕ Tourism Activity ⊕ Viewpoint ⊕ Picnic Site | <ul style="list-style-type: none"> — Primary - Surfaced — Primary - Gravel/Stabilised --- Primary - Tracks - 4x4 — Secondary - Gravel/Stabilised --- Secondary - Tracks - 4x4 — Tertiary - Surfaced — Tertiary - Gravel/Stabilised | <ul style="list-style-type: none"> --- Tertiary - Tracks - 4x4 — Management Road — Primary River — Secondary River — Tertiary River ▨ Gaza Safaris Concessions Proposed ▨ Gaza Safaris Concession |
|---|--|---|--|



Figure 12. Current Tourism Concessions and Facilities

2.6 Cultural Characteristics of the Park

In the GLTFCA, early inhabitants were San hunters and gatherers, while Bantu farmers and ironworkers entered 800 years ago gradually displacing the San. From about 1500, Portuguese trading posts became regular ports of call on the new route to the east. Later, traders and prospectors penetrated the hinterland. The discovery of gold in the latter half of the 19th century attracted large numbers of Europeans closer to the area. This contributed to sustained and increasing hunting pressure on wildlife, leading to the establishment of protected areas in South Africa and then Mozambique.

The predominant tribe in the LNP today is the Shangaan / Tsonga. International boundaries between South Africa, Mozambique and Zimbabwe divide the tribe and its families, and traditional tribal structures have been disrupted. During the civil war, numbers of people moved into the apartheid homeland of Gazankulu in South Africa and were accepted into the community there. However, with the transition to peace, many people have started to return to their former homes and are re-establishing a means of ensuring their basic survival, especially difficult in areas with low potential and high risk for agriculture and livestock rearing. As the situation presently stands, people can maintain only sporadic contact with each other. Visa applications in Maputo or Johannesburg are out of reach for that population for economic and logistical reasons and this makes the legal border crossing impossible for them. Therefore, contact is rare and dangerous, as people cross the border illegally.

It is evident that despite many political and social changes in both Mozambique and South Africa, people have generally retained many aspects of their traditional lifestyle including their language, house building styles and indigenous authority system. These factors need to be respected when negotiating any aspect of change in the communities both regionally and at household level. This is particularly important when discussing issues such as the fencing, moving of people and work opportunities and setting up a Tribal Legal System which prevents poaching and through Compensation Law can deal with minor poaching offences.

2.7 Local and Resident Communities of the Park

The local community of the Park is constituted of resident communities (i.e. villages within the boundaries of the Park), communities living in the buffer zone to the Park as well as host communities that have received resettled families.

These communities mainly engage in subsistence agriculture and livestock, with some households being able to generate additional income through fishing and casual employment (KfW, 2018).

LNP has an estimated number of about 1,380 households, residing in four villages, including about 9,600 head of cattle inside the core area of the Park. It is anticipated that the remaining villages will be resettled by 2026 as part of a **Resettlement Programme** initiated in 2005, aimed at ensuring wildlife conservation and to enable a sustainable and alternative development of the isolated villages within the Park (Table 2).

Table 2. Resettlement Progress

FROM	TO	FAMILIES (NO AND %)		YEAR RELOCATED	STATUS	CUMULATIVE (NO AND %)	
Macavene	Banga/Tihovene	165	8%	2011	Relocated	628	31%
Nanguene	Chinanguane	18	1%	2015	Relocated		
Massingir Velho	Mucatine	305	15%	2016	Relocated		
Makandazulo	Salane	140	7%	2021	Relocated		
Bingo	Chitare	249	12%	2021	To Relocate Q4 2021	249	12%
Mavodze	Macuacane/Nkanhane	833	41%	2024	House Construction	833	41%
Machamba	To be confirmed	150	7%	2026	Consultations	300	15%
Chimangue	To be confirmed	150	7%	2026	Consultations		
		2010	100%			2010	100%

People living in the buffer or support zone to the Park are distributed over 51 villages (i.e. about 5,155 households, 22,750 people and 38,280 head of cattle) in the southern and eastern parts, on the banks of the Limpopo and Elefantas Rivers (KfW, 2018; Figure 1), some living inside prospective wildlife corridors between LNP and BNP as well as the larger TFCA landscape.

The five host communities (communities who received resettled families) who are of importance to the management of the Park and its connectivity in the larger TFCA landscape are Banga/Tihovene, Chinanguane, Mucatine and Salane.

In context of the Resettlement Programme, funded by Government and KfW, a **Livelihood Restoration and Development Programme** has been designed and is being implemented for the Park's resettled as well as host communities. **Action Plans** address areas of access to water, agriculture, livestock rearing as well as the development of small businesses and the general socio-economic development. These plans focus on household level and contain special provisions for vulnerable households, so that these will have full access to livelihood restoration measures.

Additionally, with the support of the United States Agency for International Development, a **GLTFCA Integrated Livelihoods Diversification Strategy** was developed covering the period 2016 – 2030. It provides for a basis to develop concepts, roadmaps and action plans comprising specific implementation packages for livelihood restoration and improvement of the local communities of the various components of the TFCA. LNP falls within three of the identified nodes: Nodes 1, 2 and 3.

3 SITUATION ANALYSIS

LNP has enormous potential as a critical element of the larger TFCA (both for biodiversity conservation and tourism), however, there are some **major challenges** to this potential being realised and these include but are not limited to:

TFCA and Biodiversity

One of the most significant values of the Park is its location within a potentially larger fully functioning TFCA. Although the western boundary is secure the Limpopo River and linkages to the Parks to the east and north are not secure. This insecurity includes fragmentation of the natural areas in which increasing isolation of the Park from nearby natural areas would reduce or prevent the movement of certain species' gene pools. Furthermore, livestock along all the rivers and in the region are also a risk due to disease and should these increase in the future, barriers may be required which may fragment the TFCA vision further. The integrity of the Park's terrestrial ecosystems is threatened by ongoing environmental degradation through land transformation and development by communities not resettled yet in areas inside and adjacent to the Park in the east. Lack of access to the Limpopo River for wildlife significantly reduces the functionality of this ecosystem.

Unsustainable resource harvesting is a problem in areas close to settlements and this is preventing wildlife numbers growing and building a game viewing product.

The water availability and associated water quality is a potential threat especially in drier years which are predicted to become more severe and frequent as a result of global warming. The Limpopo River in the east is largely excluded and inaccessible to wildlife along much of its length due to human activities and settlement. This is likely to significantly impact on the ecological systems and processes in the Park as typically these large rivers with their productive floodplains provide much needed food and water for wildlife in the dry season while the adjacent sandveld and mopane woodlands would be used in the wet season especially by elephant. These processes are unlikely to operate properly. All mechanisms must be explored to provide access to wildlife to the sections of the Limpopo River, especially north of Mapai. Without access to the alluvial floodplain in the dry season the carrying capacity and, therefore, the productivity of the wildlife system, will be significantly reduced. Furthermore, if wildlife dispersal to the east is to occur then it is critical that **wildlife movement corridors are maintained**, free of human impact, where wildlife can move freely. A large dam on the Limpopo River north of Mapai has been planned but funding is not available, and no recent environmental impact has been undertaken so this has not been considered as a project likely to influence the Park during the currency of this Plan.

Perennial water for wildlife must be maintained in the Shingwedzi River, even if artificially supplemented, and the water quality monitored in very dry years as anthropogenic factors upstream are compounding these negative impacts, water abstraction and pollution, which could adversely affect wildlife and the use by large numbers of domestic animals.

Equally a reduction of fresh water in the rivers (through increased upstream abstraction or impoundment or even increasing levels of pollutants or through increased abstraction through boreholes), or increased salinity in these systems (through the same two causes) would pose a significant threat to the ecological functioning and thus the natural values of the LNP.

The Park, however, has tremendous potential for rewilding and absorbing wildlife from surrounding parks especially KNP. Rather than relying on passive movement it may be necessary to actively translocate to accelerate the rewilding process.

Disturbed areas such as old settlements and old fields are likely to become heavily encroached with thorn scrub or mopane regrowth. On the richer soils along the floodplain of the Shingwedzi River valley, which is a likely good game viewing area, some active management may be required to thin the thorn scrub of the encroaching species to allow browsers, especially elephant, to ultimately maintain a more open system, better for game viewing.

Climate Change

This is the driest region in Mozambique (FAO, 2016) and a key prediction of the science of climate change is not only that average temperatures will increase, but that extreme events e.g., floods and storms as well as dry periods, will be more severe. The effects of these more severe events on the natural values of the LNP are difficult to predict but they could have serious consequences for natural ecosystems in the Park as well as the social environment (e.g., through crop failure or in the tourism industry, through infrastructure loss as well as through changes to the natural systems). All planning needs to take these potential events into consideration.

Local Support for the Park

There is a long history of dispossession and resettlement and this has impacted on local people and their perceptions of the Park. In the minds of many local communities the LNP represents a pool of natural resources which remain despite them being diminished in the surrounding landscape. Many will seek to access these resources even if it is illegal. If the LNP staff do not have functional relationships with local communities, which is required by law, this will present a significant constraint to protecting the values that the LNP aims to protect. Thus, the need for an integrated planning of management models in biodiversity conservation requires the commitment of all parties involved.

Poverty Alleviation

While the LNP will certainly contribute to the economy of the region, it is not a silver bullet that will address all the needs of local communities and it is important to manage the perceptions and unrealistically high expectations that may have developed around the economic opportunities that the LNP can generate. It will always be important for the administrators of the region to remain integrated with other national government initiatives in support of local development to address the developmental needs of the region. Providing support for communities residing in the Park remains a challenge due to land use conflict. Resettlement therefore remains an important strategy for management to pursue to improve livelihoods.

The Socio-Economic Environment

The Massingir, Mabalane, Chicualacuala and Mapai Districts generally, and the areas neighbouring the Park in particular, include communities with many households relying extensively on locally sourced natural resources and subsistence agriculture. The depletion and degradation of natural resources in areas surrounding the LNP along the Limpopo River, as well as the increasing human population, have resulted in increased pressure being placed on the resources within the LNP. The Gaza Province Territorial Development Plan 2020, describes this northern region as an area impacted by drought but with potential for agro-livestock production.

Tourism Development

With an internationally well-known destination literally on the doorstep which attracted over 1,8 million visitors in 2019 and significantly more if the private reserves on the western border are included, there is a huge opportunity to attract some of this market. However, proximity does not automatically translate into success, there are constraints and these include:

- An inferior wildlife product, this will likely grow but it will take time.
- It could be dwarfed by the sheer scale of Kruger, but through careful differentiation of product offerings, especially activities where there is a competitive advantage such as for example tourism on the dam and a wider range of activities.
- Difficult border formalities, expenses and delays will be a huge deterrent for tourists. The impact that this will have must not be underestimated and seamless movement will only accelerate the tourism and therefore economic success of the Park.
- In spite of the large size of the Park there are limited quality game viewing areas which will be consistently good. These are likely to follow the Shingwedzi River zoned as a Controlled Use Area (CUA) with high, medium and low intensity use zones and the dam also having similar density of use zonation from east (high intensity) to the west low intensity. Overdevelopment and congestion in these areas could detract from

what is offered. Careful planning and zoning will be important if the full value is to be realised. The zonation is designed to optimise economic opportunities and conservation values (section 6).

- A good road network is important for guests to enjoy much of the product, this is costly to implement and maintain. Insufficient, poorly aligned and maintained roads will detract from the visitors' experience.

Building on the KNP market with a focus on adventure tourism will help accelerate the tourism growth in the Park and its size means a wide range of products can be offered to a very diverse market. There is already one significant concession concluded and this will help build confidence in the future development of the Park. Unlocking of the economic potential through mobilising private investment and skills of this vast area has therefore already begun notwithstanding the challenges. The Massingir dam is also an important tourism asset and this will add significant value to the tourism of the Park.

Funding and Governance

Transforming the Park from where it is today to that articulated in the Vision statement will require a significant amount of funding. Although much of the large funding has already been undertaken, there remains further funding which must still be sourced. This is needed to finalise the resettlement process, improve access and roads for tourists, continuation of barrier fencing, mitigating Human Wildlife Conflict (HWC), improve the wildlife numbers and contain illegal activities to within manageable levels. A key component of the recapitalisation strategy is developing a vibrant tourism market funded, marketed and managed largely by the private sector. Aside from the issues discussed above the private sector will demand a Park Management structure which ensures effective and efficient management into the future. Their investment returns will be long term and they must be satisfied that managerial capacity will be sufficiently equipped and funded into the future. Ensuring that the right management institution and framework is implemented will be an important success factor.

Strengths, Weaknesses, Opportunities and Threats (SWOT)

Internal factors that currently affect the Park and its vital attributes as well as those of an external nature that may affect or threaten the Park in future, as well as those factors that currently or could enhance the vital attributes of the Park are set out in the below table.

Table 3. Park SWOT Analysis

GENERAL	
<p>WEAKNESSES</p> <ul style="list-style-type: none"> • Park split into four Districts • Communications in the Park is difficult • Position of Park HQ in south east corner • Ability to retain park revenues • Weak financial capacity to face institutional development plan for the LNP • Lack of a marketing strategy for tourism development • Poor ecotourism development • Poor road and track infrastructure • No concrete plans to address climate change and its impacts on people • Unavailability of groundwater away from the rivers • Communities living in the Park 	<p>THREATS</p> <ul style="list-style-type: none"> • Insufficient funding to fully recapitalise the Park – donor dependence • Governance not improved and revenue retention not achieved
<p>STRENGTHS</p> <ul style="list-style-type: none"> • Good management foundation with infrastructure and equipment • Good relationships with District and Local Government • Low competition from other parks and reserves 	<p>OPPORTUNITIES</p> <ul style="list-style-type: none"> • Improve governance and revenue retention • Developing a special purpose vehicle (SPV) to improve management efficiency and effectiveness • Long term Strategic Business Plan improves ability to leverage future donor support • Consolidate Park into one District • Cross border collaboration regarding law enforcement,

	<p>tourism and conservation management</p> <ul style="list-style-type: none"> • Improved efficiency through training and use of technology • Consultative Council where communities have formalised input through community resource • Strategic location within the GLTP • Good diversity of the natural heritage resources • Private/community development of wildlife businesses in areas best suited to semi-arid extensive production • Improved production from agriculture based on irrigation
NATURAL AND CULTURAL RESOURCES	
<p>WEAKNESSES</p> <ul style="list-style-type: none"> • Low wildlife populations • Illegal harvesting of natural resources • None of the Limpopo River is proclaimed within the Park • Ecosystem not well researched and no long-term monitoring data 	<p>THREATS</p> <ul style="list-style-type: none"> • Loss of productivity of natural systems and biodiversity • Unsustainable illegal resource harvesting • The presence of wildlife/domestic stock diseases aggravated by their close interactions • Inability to secure movement corridors to the north and east • Water quality and quantity in major rivers especially the Elefantes • Impacts of climate change
<p>STRENGTHS</p> <ul style="list-style-type: none"> • Important position within the TFCA • Dispersal area for wildlife from KNP • Important habitat diversity (especially sandveld) for the TFCA • The ecological resilience likely to be achieved by the size of the TFCA 	<p>OPPORTUNITIES</p> <ul style="list-style-type: none"> • Rebuild the wildlife populations rapidly • Restore the ecological connectivity and functionality of the ecosystem, especially if sections of the Limpopo River are accessible to wildlife • Improve resilience of the ecosystem through movement across the TFCA of wildlife • Improved knowledge on the cultural and heritage resources of the Park and the promotion of these assets • A dispersal sink for wildlife from surrounding well stocked parks within the TFCA
TOURISM DEVELOPMENT	
<p>WEAKNESSES</p> <ul style="list-style-type: none"> • Low existing tourism numbers • Limited brand awareness and marketing of the Park as tourist destination • Poor tourism infrastructure especially roads and bridges • Border crossing is perceived as difficult • Security of tourists • Park is not 'investment ready' 	<p>THREATS</p> <ul style="list-style-type: none"> • Difficult border crossing processes • Water availability in key tourism development nodes • Any issues that delay the investment readiness of the Park • Demand or development pressures may lead to 'overtourism' in what is essentially a small wildlife area along the Shingwedzi River floodplain
<p>STRENGTHS</p> <ul style="list-style-type: none"> • Next to KNP with almost 2 million visitors in 2019 • Already one large concession agreement concluded – Gaza Safaris • Various tourism opportunities still in the pipeline 	<p>OPPORTUNITIES</p> <ul style="list-style-type: none"> • Improve wildlife product • Attract more investment especially foreign capital • Improve access including airport at Massingir and border crossing with KNP • Significantly increase tourism numbers especially focussed on the adventure market • Iconic features – Elefantes Gorge, Shingwedzi Cliffs and Massingir Dam • Being one of Government's priority tourism investment nodes • Develop access and affordable access for Mozambican's
COMMUNITIES	
WEAKNESSES	THREATS

<ul style="list-style-type: none"> • Conflict with communities still settled in and to some extent in the buffer zone of the Park • Poor responsibility agreement and relations with neighbouring communities • Communities' perception of the Park and its value • Park revenue sharing remains low until tourism development is completed • Most people survive on subsistence agriculture in a highly and increasingly unreliable climate • Resident population in protected area 	<ul style="list-style-type: none"> • Ongoing HWC for communities living inside the Park • Inadequate community benefits • Dependency of communities on terrestrial resources which hold limited livelihood options resulting in communities resorting to other activities that may be destructive (agriculture is for instance not particularly viable in the Park) • Uncontrolled and poorly planned settlement and land uses along the Limpopo River
<p>STRENGTHS</p> <hr/> <ul style="list-style-type: none"> • Good progress with resettling villages • Improved living conditions for resettled villages • Decentralisation of revenue with improved revenue sharing process almost complete • Resettled communities see improved benefit in their new areas 	<p>OPPORTUNITIES</p> <hr/> <ul style="list-style-type: none"> • Improved economic development with a more diverse economy which includes tourism • Develop climate smart products in resettled areas • Community tourism

4 STRATEGIC PLANNING FRAMEWORK

4.1 Future Desired State

4.1.1 Vision and Mission

The vision that LNP management will be working towards is:

A fully functioning Park, supported by communities with healthy interaction and integrated into the Transfrontier conservation, tourism and economic systems.

The mission-

Through effective, participatory and efficient governance and management, accelerate restoring the functionality and species abundance of the Park as a fully integrated conservation and biodiversity component of the larger TFCA, and improve self-sustainability through attracting tourism development to contributing to economic development, with a focus on local communities.

4.1.2 Strategic Management Objectives

From the description of the Park and its surrounds as well as the situational analysis, the following are **key issues**:

- The Park needs to be optimally structured to maximise revenue generation and funding opportunities while ensuring management efficiency
- A more flexible and nimble operating arrangement is required to improve conditions for staff, raise revenue and improve efficiency
- Low wildlife numbers, poor roads and access and poor image of the Park limit tourism investment
- Linkages to the TFCA to the north and east due to lack of access to and across the Limpopo River for wildlife
- Securing sufficient funding to deal with challenges and realise the opportunities
- Reaching agreement on alternatives for people settled inside the Park.

Based on the above, five **strategic management objectives** have been identified for the LNP. They are:

- To ensure the free movement of animals across the TFCA landscape including access to at least strategic portions of the Limpopo River - movement corridors are a critical component of this along the Limpopo River
- To accelerate the restoration and build complexity of the ecosystem through:
 - The resettlement of the villages inside the Park
 - The rapid rebuilding of wildlife populations following resettlement
- To grow the contribution of the LNP to the economy of the region through developing tourism in the Park:
 - Improving the access to and ease of movement into LNP by the Kruger tourists and regional and international visitors
 - Improving infrastructure, especially roads
- To contribute to improved resilience and quality in the lives of local communities:
 - Improving coordination with community leaders and government to reach agreement on settlements inside the Buffer zone
- To improve governance to ensure effective, efficient and inclusive co-management with revenue retention to strive towards the financial sustainability of the LNP.

4.2 Management Programmes and Outcomes

Park Management will have the following **work areas or Programmes** to deliver on these strategic management objectives, in a balanced and harmonised manner, working towards the following **outcomes**-

- A **Natural Resource Programme** (Programme 1; Section 5.1) as well as a **Cultural Heritage Resource Programme** (Programme 2; Section 5.2) for restoring the functionality and species abundance of the park as a fully integrated component of the TFCA to ensure its long-term ecological stability and enhanced value.
- A **Tourism Programme** (Programme 3; Section 5.3) that will contribute towards implementing a sustainable business model for the Park that will attract investment and result in tourism growth and delivering benefits to the Park, local communities and the public at large.
- A **Community Programme** (Programme 4; Section 5.4) to rapidly develop the wildlife economy to diversify it and build resilience while supporting sustainable agriculture around the Park with a strong focus on the Economic Zone in the south east.
- A **Finance and Administration Programme** (Programme 5; Section 5.5) focused on implementing a sustainable business model with various sub-programmes for ensuring the overall effective management of the Park through appropriate governance structures; institutional arrangements; stakeholder engagement and communication; critical management systems; human capital development; asset development and management; ensuring safety and security and Park assets and people; and research and monitoring.

The management programmes for the Park for the next ten years are described in Sections 5 below and spatialised as relevant in the zoning plan for the Park (refer Section 6).

For each programme the following format is followed (there may be some variation in terms of detail and content as is applicable):

- **Context**, this provides a brief overview of the issues and rationale for what follows
- This may, for the larger programmes, lead into a **sub-Vision** statement for that programme
- The achievement of this sub-Vision may be framed within a **Guiding principles** framework to help guide management with their decisions
- This leads into **Activities** which must be implemented to ensure the desired outcomes
- Finally, there is a **Strategy and Activities Summary** for each Programme
- This may be further detailed in **Operational Plans and Park Operational Business Plan** (not forming part of this management plan) with defined metrics related to resource allocations for programmes. **A summary of the headline capital required, and average annual operating budget** is provided for each Programme.

4.3 Theory of Change

A detailed Theory of Change has not been drafted for this plan. The approach that has been adopted is to combine the entire content of this plan together with the Business Plan (Figure 13) as a broad statement of the Theory of Change. A simplified, schematic of the structural form of the Theory of Change is represented in Figure 13. This does not include descriptions of the causal pathways, assumptions, or drivers. In essence the Theory of Change illustrates how the five management programmes, crafted to address the challenge of achieving the five strategic management objectives, will collectively contribute to the final Vision or Future Desired State for the LNP. Future revisions of this plan will be well advised to consider developing a more detailed and carefully articulated Theory of Change for LNP.

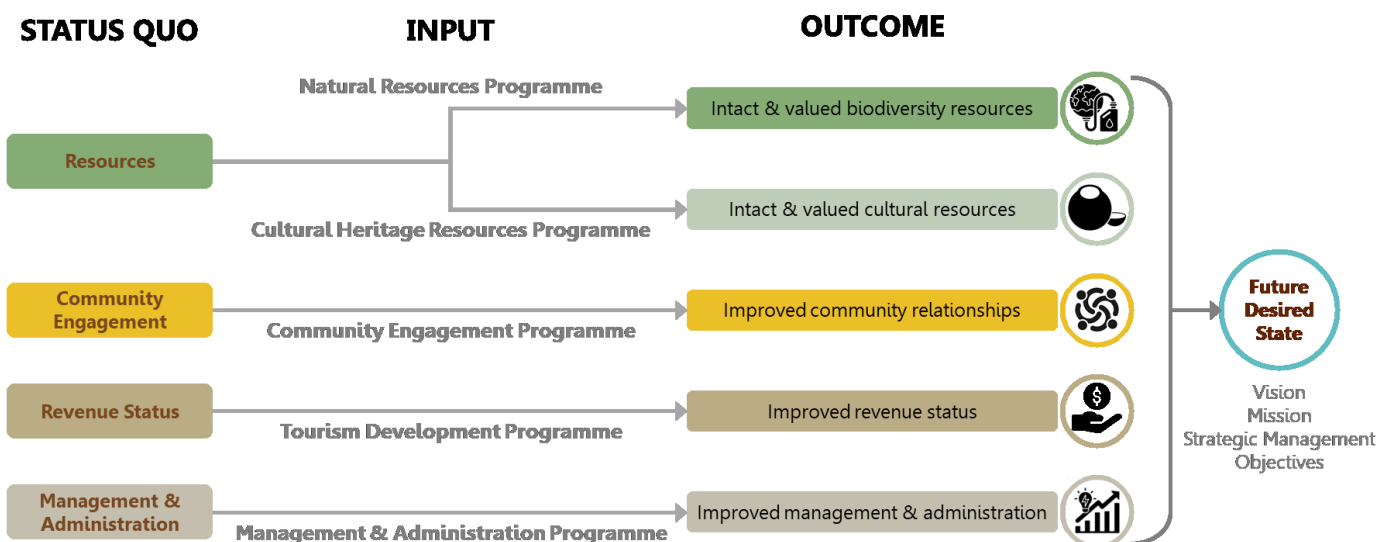


Figure 13. Simplified, schematic Theory of Change for the Limpopo National Park

4.4 Adaptive Management

This plan adopts an adaptive management approach based on the Open Standards for the Practice of Conservation¹⁰ which integrates planning, management, and monitoring into a framework that allows for managers to learn from the process of managing and thereby to continuously improve their management of a complex environment.

Inherent in this approach is the acknowledgement that it is not possible to have perfect understanding on which to base management decision making. It is, however, possible to make decisions, to act on them and to monitor the outcomes in a manner that one learns and can better inform future decisions. In this context the decisions are ideally considered as hypotheses which are then tested through the management intervention (even if the decision is to do nothing). Monitoring the outcomes will provide feedback to the manager as to the validity of the hypothesis and this knowledge can then guide future decision making. For example, a decision to allow grazers to exist at a higher density that will improve visitor sightings in the short term, will have consequences for the grass layer in a protected area. After implementing this approach for a number of years, a manager can then assess if the outcome on the grass layer is desirable or not. If it is, then the approach can be continued, but if the outcome is not acceptable then the manager will be prompted to change the intervention and potentially reduce the density of the grazers. In a complex environment this is likely to be an ongoing process with continual learning and, if necessary, occasional changes of direction informed by the learning process.

One of the tools used in the adaptive management approach is the use of thresholds of potential concern (Biggs, Ferreira, Freitag-Ronaldson, & Grant-Biggs, 2011). Understanding that many states of an environment can vary, and that within a certain range each state is acceptable but that at some stage a state may begin to shift into a range that is “of concern”. This threshold becomes a Threshold of Potential Concern or a TPC. For example, if the number of herbivores that are illegally hunted within a protected area is low, it is not necessarily a threat to the value of the protected area, but at some point the level of loss of animals is likely to result in the system changing, this would be the TPC for herbivore loss.

Identified TPCs can be expressed in the text of the subsidiary plans guiding each of the management programmes below. There are, however, a few high level TPCs which are captured in this plan as they are of overriding importance in the management of the LNP. These high-level TPCs are:

10 Adapted from <https://cmp-openstandards.org/resources/> - Open Standards for the Practice of Conservation

- Improve the wildlife product in the park to build a more diverse and resilient ecosystem and a tourism product:
 - Increased wildlife numbers especially valuable tourism species like predators and elephant
 - Ensure the growth of these populations are optimal for a system such as this
 - If necessary, relocate wildlife to accelerate the process
- Rapidly increase the number of tourists to the area by:
 - Improving the ease of movement for tourists between KNP and LNP
 - Improving the number of tourism facilities offered
 - Improving the range of tourist products offered
 - Upgrading and developing more tourism support infrastructure such as roads, river crossings, picnic sites etc.
 - Offer attractive investment conditions for the private sector to invest in a range of tourism products
 - Use tourism to generate revenue to sustainably fund the Park's funding requirements in the long-term
- Ensure that wildlife movement corridors remain open and accessible for wildlife to move freely:
 - Ensure strategic stretches of the Limpopo River are accessible for wildlife to move freely
 - Access to the Limpopo River in strategically important areas to improve ecological function and productivity
- Impacts of human presence in and around the Park:
 - Loss of assets and/or revenue because of theft
 - Increase in human settlement footprint or impact within LNP
- Ensure resettled communities participate in economic opportunities realised by the park
- To improve governance and management including diversified oversight so that sufficient funding can be secured and applied to manage the threats and realise the opportunities and ensure effective and efficient management.

A key aspect of adaptive management is monitoring and using the results to inform future interventions or approaches. In the case of LNP, a key informant for the adaptive management approach are the results of the periodic Management Effectiveness Tracking Tool (METT) assessments which have been conducted over the past half-decade. It is important, however, that the generic framework of the widely used METT is adapted to reflect the critical interventions and management programmes in this Plan to ensure it is properly measuring the attainment of this Plan. These adapted METT scores can then be used to assist management in guiding priority actions for the next planning period. Much of the detail will be contained in the subsidiary plans (Figure 3), which have shorter timelines, but which more directly guide operational implementation.

5 IMPLEMENTATION PLAN

5.1 Programme 1: Natural Resources

5.1.1 Context

LNP is an important protected area in the Great Limpopo Transfrontier Conservation landscape. KNP, which forms the western boundary, has a very high biomass of wildlife per unit area compared to LNP. It is likely that once current human disturbance is reduced or removed in LNP it will probably be an important dispersal area for wildlife from Kruger, at least for the short to medium term, especially for abundant and mobile species like elephant. It could also offer similar benefits for GNP in Zimbabwe. It is also an important link to Banhine and Zinave National Parks to the east and would form an important core of a larger protected area exceeding 80,000km². A landscape of this scale is likely to be more resilient to disturbances and impacts over time. This is a great advantage, but the connectivity must be preserved to ensure this valuable attribute.

In the short to medium term ecological management objectives will focus on **restoration, consolidation and protection**. This will be based on two important strategies, the first will be **restoring the disturbance** caused by many decades of human activities especially on the high productive landscapes along the river systems and the second will be to rapidly **re-establish diverse and fast-growing wildlife populations** to restore the ecological integrity and function of the system and develop a tourism game viewing product.

The key activities to be adopted to achieve these strategies are, the **restoration of old lands and the rehabilitation of settlement areas** to remove at least visual signs and other negative impacts of any nonfunctional infrastructure and removal of alien plants. The withdrawal of cultivation and land clearing is likely to lead to a thickening of scrub; this may need some active management to enhance game viewing if it is in important wildlife viewing areas and if the browsers and grazers cannot maintain an open landscape.

It is likely that as villages are resettled, wildlife will again re-populate these areas, however, this may be slow, especially if existing game are a long distance away. It may therefore be necessary to translocate certain less mobile species to these areas to accelerate the growth in wildlife numbers and to develop a game viewing product and ensure they are protected. The initial stages of this process may require specific monitoring of key species or individuals and habitats to determine the effectiveness and impact of this strategy.

In the longer term, once wildlife populations are established, the importance of the Park as a key component of the Great Limpopo Transfrontier landscape will be realised. At this point, management will likely switch its strategies more towards the objectives for the wider TFCA's. This may include encouraging wildlife movement corridors between the protected areas in the greater area. These corridor areas may require special management to ensure wildlife can move unhindered and strategies may be implemented to encourage this, for example the development of artificial water points, even if temporary. **Every effort must be made now to ensure corridors are located in the optimal areas and the functionality of them is secured into the future.**

The Limpopo River is an important 250km long ecological asset in this landscape, however, much of this resource is currently not formally part of the Park but rather the buffer zone. It is heavily settled thus denying wildlife access to this very valuable resource, especially seasonally. These large floodplain rivers across the region, such as the Chobe and Zambezi river systems in the Zambezi region of Namibia, Botswana, Zambia and the Lower Zambezi below Kariba, to mention just two, are critically important natural resources which support huge populations of wildlife, especially elephants, in a very small area during a critical often short period during the dry season. Access to this relatively small fraction of a much larger ecosystem significantly boosts the productivity of these systems and indeed the ecological services provided through nutrient flows and recycling (Skarpe *et al*, 2014). These same processes will be significantly curtailed along the entire 250km stretch of the Limpopo River (the scale is important) as this east-west movement for wildlife and domestic stock cannot be optimised. Elephants are especially important in driving these processes and as agents for nutrient cycling and transfer (Skarpe *et al*, 2014). Total secondary productivity is likely to be significantly lower and nutrient cycling curtailed while species richness and diversity may also be adversely affected. **Strategies which help simulate these processes should be explored and where possible**

solutions sought to enhance the functionality of this very important ecosystem. The lower reaches of the River including the confluence with the Elefantas, up to the dam is an important and potentially productive habitat, planning should optimise these attributes for the communities.

It is critical that wildlife numbers grow as rapidly as possible and that especially key species are afforded the necessary protection. This will necessitate the implementation of an **effective law enforcement strategy** to ensure maximum population growth and rewilding of the park.

Within the framework of Adaptive Management and Theory of Change (Sections 4.3 and 4.4) the ecological management will be split into two strategies, **one with higher levels of intervention and the other largely non-intervention.** In those areas and components of the Park which have been significantly impacted by human disturbance, a strong intervention strategy will be adopted, while in those less impacted, the strategy will be largely non-intervention.

5.1.2 Vision

Wildlife populations and ecosystem diversity and functionality are restored, and the wildlife tourism experience rapidly improves

5.1.3 Operational Objectives

The **four most important Objectives** to achieve during the currency of this plan are:

1. To **rapidly restore the full complement of historically occurring medium to large mammals**, either through natural movement from surrounding areas or through targeted relocations to ensure a quality tourism product
 - To focus resources protection on those species most valuable, vulnerable and at risk to ensure optimal growth rates
2. To **improve the functionality of the Limpopo River and surrounding ecosystem** and better integrate it for the benefit of all users of this critically important resource
3. To **ensure free movement of wildlife species across the TFCA landscape**, especially focusing on wildlife dispersal to the east and north into Zimbabwe
4. Managing the **recent human impacts on certain habitats** following the withdrawal of human settlements, to enhance tourists' experiences

5.1.4 Vegetation

The LNP does not contain any threatened or endangered habitats although there could be specific unlisted species in some areas, especially the gorges. A National Vegetation Map for Mozambique is currently being compiled (not available at the time of drafting this Plan), however two of the contributors to the National Plan were tasked to use those data to compile a Vegetation Map for the GLTFCA (Stalmans and Lötter, 2021). This map (see Figure 10) recognizes two IUCN functional ecosystem types for the LNP, namely Trophic savannas and Tropical-subtropical dry forests and thickets and within these two ecosystem types there are seven vegetation units, see below table.

Table 4. The Vegetation Units and IUCN functional ecosystem types for LNP

VEGETATION UNIT	AREA (km ²)	PERCENTAGE	IUCN FUNCTIONAL ECOSYSTEM
Nwambiya-Pumbe Sandy Bushveld	4,104	38.04%	Trophic savannas
Limpopo Ridge Mopane Woodland	3,755	34.82%	Trophic savannas
Northern Lebombo Bushveld	1,112	10.31%	Trophic savannas
Nwambiya Sand Thicket	956	8.86%	Tropical-subtropical dry forests and thickets
Ironwood Dry Forest	464	4.30%	Tropical-subtropical dry forests and thickets
Maputo Alluvial Vegetation	357	3.31%	Trophic savannas
Limpopo-Olifants Alluvial Forest	39	0.36%	Tropical-subtropical dry forests and thickets

The Vegetation Units described in the above table are shown spatially in Figure 10. The most abundant vegetation unit in Nwambiya-Pumbe Sandy Bushveld and Limpopo Ridge Mopane woodland, which together comprise almost 73% of the area. Aside from the Ironwood Dry Forest and Nwambiya Sand Thicket, none of the other Vegetation Units is represented in the two other Mozambique parks comprising of the GLTFCA, the Sandy Thicket and Sandy Bushveld are also poorly represented in KNP. The Vegetation Units are characterised by the following phenology and species composition (Stalmans and Lötter, 2021):

- **Ironwood Dry Forest:** Short- to medium- sized dense *Androstachys* forest that is usually found in patches on deep sands. Species diversity is generally low high in this forest type with at times almost mono-specific stands of *Androstachys*.
- **Limpopo Ridge Mopane Woodland:** Short to medium-sized deciduous woodland on sandstone derived hills and ridges. This woodland has a mixed canopy tree composition but is largely dominated by *Colophospermum mopane*.
- **Limpopo-Olifants Alluvial Forest:** A discontinuous or intermittent ribbon of fringing forest along the Limpopo and Elefantes Rivers on deep alluvial clays or sands. It is mostly evergreen but *Faidherbia albida* exhibits reverse phenology and is deciduous in summer.
- **Maputo Alluvial Vegetation:** Alluvial floodplain with seepage areas, riparian woodlands, and flooded (hygrophilous) grasslands along large drainage lines such as the Limpopo, Elefantes and Shingwedzi Rivers.
- **Northern Lebombo Bushveld:** Open deciduous woodland dominated by *Combretaceae* on rocky slopes and ridges along the northern parts of the Lebombo Mountains
- **Nwambiya Sand Thicket:** Dense thickets of 4-6 m with scattered taller trees on level upland sandy plains. The tree species include *Azelia quanzensis*, *Albizia forbesii*, *Balanites maughamii*, *Combretum collinum*, *C. mkuzense*, *Guibourtia conjugata*, *Xeroderris stuhlmannii*, *Xylia torreana*. The shrub *Baphia massaiensis* is prominent.
- **Nwambiya-Pumbe Sandy Bushveld:** Deciduous open woodland on deep sands with a mixed tree cover of broad-leaved species, including *Azelia quanzensis*, *Guibourtia conjugata*, *Terminalia sericea*, *Xeroderris stuhlmannii*, *Combretum apiculatum*, *Cleistanthus schlechteri*, *Pterocarpus lucens*, and *Sclerocarya birrea*.

Aside from human settlement related impacts much of the vegetation within the LNP is largely undisturbed, although fire seems to have significantly impacted and reduced the area of the Ironwood Dry Forest. Following the resettlement of people, the disturbed areas adjacent to these settlements are likely to respond with rapid growth of especially pioneer woody species. This may negatively impact on the game viewing experience and may require some active management to mitigate the negative consequences.

Water remains a critical driving force in this landscape and climate models (Mavume *et al*, 2021), suggest this area will likely be heavily impacted with more variation and severe extremes of rainfall and higher average temperature with Gaza Province showing the highest increase in mean annual temperatures in Mozambique. This may impact on vegetation through flooding, more intense fires, heavy grazing and browsing often linked to droughts. Although LNP forms part of a larger GLTFCA which will provide significant resilience due to the scale, a good monitoring system should help provide the tools necessary to manage this through adaptative management strategies.

Fire has been an ever-present feature for at least the southern areas of the park where people have lived and possibly in the Ironwood Dry Forest. With resettlement and fewer people inside the park this is likely to change, and a more structured approach to the management of fire will be required.

Guiding Principles

The vegetation management guiding principles can be broadly divided into two management categories - those areas significantly impacted by recent (last three to four decades) human activities and those largely unaffected. The management policies in these areas will vary in the short to medium term.

In the unaffected areas:

1. Management will be mostly non-intervention allowing for normal environmental fluxes with fire the only significant active intervention where the following will apply:
 - No suppression of natural wildfires, however specific fire management may be required in the Ironwood Dry Forest, a fire management plan must be investigated for this Vegetation Unit
 - Fire management can be used to reduce fuel loads near infrastructure and property
 - According to vegetation management principles which can be defined in specific actions and outcomes when necessary
 - To enhance tourism
 - To co-ordinate with TFCA neighbours.

In the human impacted areas, the following will apply:

2. Active management of the areas released from human disturbance to mitigate the following:
 - Management must develop cost effective and sensitive interventions to mitigate a likely increase in the density of woody vegetation which may impact on game viewing
 - Application of those policies outlined in the unaffected areas where appropriate.

Management Actions

The main management actions for vegetation management are:

- Develop a fire policy with SOPs to manage the various habitats, especially the Ironwood Dry Forest, to enhance game viewing and maintain species diversity and vigour
- Develop and implement a vegetation management plan with SOPs for disturbed areas and their future use for tourism
- Develop a simple and effective vegetation monitoring strategy (including invasive alien species)
- Develop and implement an invasive alien species management programme with SOPs.

5.1.5 Mammals

Recounts of early hunters (Bulpin, 2011 and Marsh, 1987) in the 1930's to 1950's tell stories of elephant hunting for ivory and later trophy hunting as ivory hunting was stopped. Unfortunately, the mammal abundance and diversity in this region of Mozambique have been significantly impacted and reduced as a result of human activity since those early years. The neighbouring KNP and the nearby Gonarezhou, however, hold very good populations of wildlife. If human disturbance is reduced or removed, recent evidence (following the resettlement of Massingir Velho) indicates some species (elephant, buffalo, lion, blue wildebeest, giraffe, impala and zebra) will return, albeit in small numbers.

It is therefore assumed that as resettlement of communities from within the LNP to outside the park continues this recolonisation of wildlife will continue. However, a key strategy to developing the Park is to unlock the economic benefits of tourism. This can only be realised when the game product is sufficient to meet this objective. This may take too long if a passive recolonisation were to occur. Active translocation to accelerate this will likely be required especially for species which may be less mobile. These should be focused on high value tourism areas such as the Shingwedzi alluvial plains and near the Massingir Dam. With surrounding parks within the GLTFCA having healthy wildlife populations this strategy must be explored and, if possible, implemented. This will ensure locally adapted species will again frequent this Park.

Rebuilding wildlife numbers must be supported by an effective protection and monitoring effort to ensure species are increasing at optimal rates and ensure HWC is not aggravated for nearby settlements.

Wildlife and domestic stock have regularly interacted in this landscape and this may continue in the future. This poses a threat to the transmission of several diseases.

Guiding Principles

In the short to medium term the management strategies must focus on rapidly rebuilding the wildlife product sufficient to attract tourism, the following guiding principles are important:

- To secure as many animals as possible from within the GLTFCA
- To ensure they settle and remain within the area after their release
- To ensure that the reintroduced species are released into suitable habitat
- To ensure there is adequate protection to ensure their growth rates are optimal.

In the long-term wildlife dispersal into and out of LNP must be prioritised (corridors are accessible to wildlife) to ensure the GLTFCA objectives are met and resilience of the system can be enhanced.

There will be limited supplementation of water except in exceptional and extreme cases such as:

- To encourage movement into wildlife dispersal areas
- Where water may have been historically accessible but is no longer, for example the Limpopo River that is now largely unavailable so the immediate adjacent areas cannot now be accessible in the dry season, subject to:
 - Considering human wildlife conflict issues
 - Illegal harvesting of game.

Where possible avoid contact between wildlife and domestic stock through appropriate strategies.

Management Actions

The main management actions for mammal management are:

- Meaningfully engage with communities to explore options, including incentives, for game to access important portions of the Limpopo River to ensure better ecological functioning, improve secondary productivity and in strategic areas to ensure open corridors for wildlife movement to and from other parts of the GLTFCA
- Management must develop and implement a restocking plan with targets, which must ensure sufficient numbers and diversity of species are released and their numbers grow at acceptable rates:
 - This includes sourcing of potential founding stock should translocations be necessary
 - Considering which species are suitable if there are still communities settled in the Park
- A monitoring system must be developed and implemented to ensure the reintroduction targets are met:
 - Where possible align the monitoring of wildlife with strategies adopted in neighbouring protected areas to help standardise on timing and techniques
 - The monitoring system must be adapted for the needs of management and specific species
- Wildlife dispersal areas to the north and east must be identified and secured (through engaging with appropriate agencies) to ensure the long-term movement of wildlife across the entire landscape
- The scale of the GLTFCA and the generally low numbers of wildlife presently in the park imply that generally a non-interventionist approach to managing the wildlife in the Park will be adopted, aside from the re-introduction, HWC and rewilding programme
- If necessary, to develop a water supplementation strategy to comply with the Policy and to enhance tourism and ensure that it does not:
 - Aggravate HWC
 - Attract domestic stock
 - Align with vegetation sensitivity

- Work with communities to separate wildlife and domestic stock to reduce disease transmission and HWC through, for example, fencing or herding practices for domestic stock
- HWC will be dealt with through national policy and relevant legislation but management may assist where agreements have been reached, for example, with fencing and other mitigation measures:
 - Develop and implement an HWC strategy for the Park
- Develop a wildlife/domestic stock disease surveillance Policy and, if necessary, Strategies and SOPs.

5.1.6 Aquatic Ecosystems

Most of the significant aquatic systems in the GLTFCA fall outside of the formally proclaimed area of the Park with the Shingwedzi the only major drainage system within the Park boundaries. There is a functioning Joint Water Commission (SADC, 2000)¹¹ which co-ordinates flow related aspects of the international rivers including the Limpopo, Elefantes and Shingwedzi. In 2003, the countries which share the Limpopo River Basin reached agreement on developing recommendations for the uses of the river, this is known as the Limpopo Watercourse Commission or LIMCOM. Furthermore, there is a draft Master Plan under development (May 2021) for the Massingir Dam under the management of ARA-Sul. Park Management assists the other relevant Government Agencies Administração Regional de Águas – ARA and Fisheries with patrols and other issues on the Dam and the northern shoreline.

Little is known and has been documented of the biodiversity of the countless pans and other seasonal rivers and waterbodies in the park. These are likely to contain important biodiversity including killifish and possibly lungfish.

Guiding Principles

With little known about the biodiversity of especially the seasonal pans, caution should be observed before considering any interventions in or immediately adjacent to the pans, especially supplementing water or developing any significant tourism product.

In water bodies inside the Park - to adopt a non-intervention approach unless there are concerns regarding any aspects, which may then trigger further studies or management intervention.

Assisting other responsible agencies, where necessary and working with Transfrontier partners where appropriate and, if deemed important and appropriate, to seek formal delegated support on the patrolling and management required on the Massingir Dam and the adjacent shoreline.

Management Actions

Park Management must continue to engage with the relevant committees, working groups and Government departments and agencies responsible for these areas and ensure the Objectives of this Plan are communicated and where possible aligned with the relevant plans and management of these assets.

Park Management must continue to provide input into land use activities in the buffer zone, especially along the Limpopo River and, as identified elsewhere in this plan, explore mechanisms to improve the access to wildlife and management of these valuable assets. This must be done through the relevant local, district, provincial and national government agencies and with communities.

Any planned developments in or adjacent to waterbodies should be carefully assessed by experts and, if necessary, limitations or mitigation measures defined and monitored to ensure the integrity of these systems. Basic baseline data collection and monitoring should be undertaken, if necessary, of the undisturbed water bodies.

¹¹ Revised Southern African Development Community (SADC) Protocol on Shared Watercourses is the key instrument for transboundary water management in the SADC

5.1.7 Environmental Management

This section deals with addressing a range of environmental issues associated with infrastructure development (e.g. environmental impact assessments) and management (e.g. maintaining storm water channeling on roads) as well as issues related to the management of tourism facilities (e.g. wastewater and sewage management as well as solid waste removal) as well as staff facilities (e.g. waste from accommodation as well as from vehicle repair facilities). It also deals with managing the potential impacts of fire on infrastructure (e.g. maintaining firebreaks to protect perimeter fences and infrastructure).

Guiding Principles

The field of environmental management is large and, rather than attempt to summarise priority guiding principles in this plan, it is more appropriate to refer to the many expert texts which are available on the topic. If one principle will be of overarching value it is that it is generally easier and more effective to avoid environmental damage than it is to attempt to repair the damage.

Management Actions

In order for effective environmental management to take place in the LNP, a number of SOPs will need to be in place and implemented. Over time the list of SOPs may expand, but an initial set should include an SOP for i) **Solid Waste Management**, ii) **Wastewater and Sewage Management**, iii) **Erosion Control**, iv) **Firebreaks**, and v) **Disaster Management**.

5.1.8 Enhancing the Ecological Connectivity of the LNP within the TFCA

The LNP is a critically important part of the greater GLTFCA, it lies at the heart of it and is an important link with KNP to the west and the parks to the north and east. There are no formally declared protected areas which would ensure the connectivity of LNP to these areas. The western edge of Limpopo River (5km from the river) forms the eastern boundary of the park. This river is heavily settled and farmed with a major road and railway line as well. The linkage to Banhine to the east and to a lesser extent Gonarezhou to the north is therefore tenuous. As mentioned previously, one of the great attributes of the TFCA is the sheer scale of it and if the linkages to the north and east cannot be secured, much of this value and associated resilience will be lost. Every effort must therefore be made to ensure corridors or linkages are secured and maintained.

With the Limpopo River and much of the associated floodplain excluded from the Park it implies that the bulk of the Park to the north of the Shingwedzi River is largely waterless in the dry season. The primary productive value of this 'dry region' cannot be fully utilised by grazers and therefore predators and much of its value are lost. Mechanisms and incentives should be explored through community engagement to secure strategic areas where wildlife could access the floodplain and water resource in the dry season. This would significantly enhance the productivity of this important natural asset.

Guiding Principles

Efforts to enhance the ecological productivity and functionality of the northern and eastern areas as well as the connectivity with Banhine and Gonarezhou must be explored and mutually beneficial agreement/s formalised. **This is one of the most critically important strategies for the park and the greater GLTFCA for which solutions must be found with the communities and which must be implemented.**

Management Actions

It is one of the most important priorities for ANAC and the Park to resolve this and every effort must be made to secure linkages with access to the Limpopo River and floodplain. Options which consider long-term leases must be considered, so vital are these areas. Dialogue must be entered into with communities, traditional leaders, provincial, local and district governments to find workable win-win solution that secure these linkages for the TFCA (Section 6; Figure 14).

5.1.9 Natural Sustainable Resource-use Management

A widely adopted approach to conservation is recognition that the biodiversity that is contained and conserved in protected areas, including the buffer zone, also forms natural resources for people living around the protected area, and that these resources can be utilised in a consumptive and non-consumptive manner. In both instances the utilisation needs to be sustainable in order to ensure that the values of the area are not diminished through their use. In addition, many of these natural assets are not well protected outside of formally conserved areas, and this increases the importance of ensuring their protection within the protected area. In addition, in the adjacent aquatic environment of the Massingir Dam there is traditionally greater access to the natural resources for use by both commercial interests as well as recreationally. This is no different in LNP and it is thus important that legal natural resource use is appropriately managed in collaboration with other Agencies.

Guiding Principles and Associated Actions

Historically communities living in and around (in the buffer zone) LNP have relied to some extent on the use of local natural resources for a range of purposes to support their livelihood, some of these rights have been secured in the resettlement agreements. The state in Mozambique accepts that well-established traditional uses of natural resources remain a right but that historical access rights to and use of these resources must be managed in a manner that is sustainable, registered with Park Management and permitted, as well as consistent with an agreed protocol that addresses the following:

- All national legislation and policy (national and local) with respect to natural resource use
- The impact of the use on other LNP users and the broader ecosystem; especially features (species or ecosystems) of high conservation significance
- Sustainability measures that are in place (e.g. quotas)
- There will be a zero quota for specifically identified species (e.g. individuals of threatened or protected species)
- Permitting and the specific nature of the utilisation
- Harvesting for predominantly commercial purposes will not be permitted
- Utilisation zonation and seasonality
- Harvesting techniques
- Daily access constraints (times, duration, points of access, conditions of access e.g. security, supervision)
- Overnight camping requirements and constraints if overnight camping is required
- Recording of extracted resources against agreed standards
- Redress measures in instances of non-compliance with agreed procedures.

This is required for the development of a comprehensive **Natural Resource Use Management Plan**.

5.1.10 Law Enforcement and Anti-poaching

There are multiple law enforcement and anti-poaching needs in an operation such as the LNP and these require specialist resources to effectively ensure the safeguarding of the park. There is a need to safeguard infrastructure such as the headquarters together with the workshops and the entrance gates. In addition, there is a need to effectively ensure that visitor facilities are safe and that visitors behave (e.g. while using the dam) within the LNP rules and regulations. Over and above all of this there is a need to effectively prevent the illegal harvesting of natural resources. An effective law enforcement programme will improve the removal of the remaining fence between KNP and the Park.

Guiding Principles

Although different names are commonly given to the function of preventing illegal harvesting of natural resources (anti-poaching, law enforcement etc.) and the safeguarding of infrastructure or entrance gates (guard) specialised training is required in order to perform these functions well. In addition, there is considerable overlap between the skills set of the individuals who perform these security functions. These functions carry specific risks as they mostly

require that firearms are carried, and individual staff members may engage in armed conflict with others. In the aquatic environment the work will involve skippering a boat. For this reason, it is important that there is appropriate training for staff performing these functions, and that the staff members are appropriately equipped to carry out their duties.

Management Actions

The law-enforcement functions, which include access control, safeguarding of infrastructure and visitors as well as ensuring that visitors behave in an acceptable manner, require a set of SOPs which clearly articulate how the staff members must behave and respond in different situations. Similarly, the staff who are engaged in anti-poaching activities require a set of SOPs, which will differ from the other set, to guide their behaviour especially observing human rights in law enforcement coupled with proper training. The details of these two sets of SOPs are not captured in this document as there is a requirement for them to be confidential as well as for them to be changed at short notice by the park administrator in response to changing situations. For this reason, the **Law Enforcement and Anti-Poaching Strategy and Action Plan** is a critical document for this function.

5.1.11 Strategies and Activities Summary

In order to achieve the desired outcomes of the Natural Resource Programme the following operational objectives have been identified together with the associated key actions and timeframes.

Table 5. Strategies and key activities for the Natural Resource Management Programme

STRATEGIES	KEY ACTIVITIES	TIMEFRAMES
Vegetation		
Ensure that the ecological role of fire in the natural ecosystems is maintained	Implement the Fire Management Plan	Ongoing
Return degraded portions of the LNP to their natural state	Develop and implement a Vegetation Restoration Plan	2022 and ongoing
Ensure that the invasion of alien plant species does not detract from the natural value of the LNP	Develop and implement an Alien Plant Control Plan	2021 and ongoing
Terrestrial large mammals		
Restore the full complement of indigenous medium to large mammals	Where appropriate Implement the Wildlife Reintroduction Plan	Ongoing
Ensure that Large Mammal Management is informed by the best available data	Review, update and implement a Large Mammal Monitoring Programme in response to the Large Mammal Management Plan	2022 and ongoing
Reduce levels of conflict between neighbouring communities and wildlife to acceptable levels	Develop and implement a Human Wildlife Conflict Resolution Strategy	2021 and ongoing
Ensure that growth rates in large mammal populations are kept within acceptable limits	Continue to implement the Law Enforcement and Anti-Poaching Strategy and Action Plan	Ongoing
Reduce HWC	Engage with communities to find local solutions and develop a HWC strategy and SOPs	End 2023
Aquatic Management		
River Basin Management	Support other agencies with conservation of important waterbodies and rivers	2021 and ongoing
Pans and seasonal waterbodies	Oversee any development impacts	2021 and ongoing
Environmental management		
Ensure that all management minimise negative impacts on the values of the LNP and seek to proactively protect such values	Finalise and implement as appropriate a Solid Waste Management SOP	2021 and ongoing
	Develop and implement as appropriate a Wastewater and Sewage Management SOP	2022 and ongoing
	Develop and implement as appropriate an Erosion Control SOP	2022 and ongoing
	Implement as appropriate a Firebreak SOP	Ongoing
	Develop and implement as appropriate a	2022 and ongoing

STRATEGIES	KEY ACTIVITIES	TIMEFRAMES
	Disaster Management SOP	
<i>Ecological and conservation Connectivity</i>		
Undertake assessment of potential for wildlife dispersal areas and links with parks to the north and east and access to the Limpopo River and floodplain.	Prepare a report on Potential Opportunities for securing WDA with access to the Limpopo River for wildlife	2023 and ongoing
Engage local communities and neighbours in negotiations to ensure wildlife dispersal areas are accessible to encourage movement between the other Parks within the TFCA	Develop Operational Guidelines for wildlife dispersal areas of the LNP and use them to guide negotiations with local communities and other neighbours	2024 and ongoing

STRATEGIES	KEY ACTIVITIES	TIMEFRAMES
Natural resource use (all user groups)		
Ensure that the use of natural resources (by all user groups) within the LNP is sustainable and not limiting to future generations	Develop and implement a comprehensive Natural Resource Use Management Plan	2023 and ongoing
Law enforcement and anti-poaching		
Contain illegal activities to within acceptable limits	Continue to implement a Law Enforcement and Anti-Poaching Strategy and Action Plan	Ongoing

5.1.12 Financial Considerations

A brief overview of the estimated costs for the implementation of the Natural Resource Management Programme from 2022 to 2032 is provided in the below table¹². Details regarding this budget as well as the budgets for all other programmes are contained in the Park Operational Business Plan.

Table 6. Estimated annual budget for the Natural Resource Programme

CATEGORY	COST (US Dollars)		COST (Mozambique Metical)	
	Operating Cost in 2032	CAPEX to 2032	Operating Cost in 2032	CAPEX to 2032
Protection	1,175,000	350,000	76,375,000	22,750,000
Conservation	115,000	3,095,000	7,475,000	201,175,000
Wildlife Reintroduction		500,000		32,500,000
TOTAL	1,290,000	3,945,000	83,850,000	256,425,000

The protection includes the operating costs of the law enforcement programme while the biodiversity is the monitoring budget for the natural assets. The CAPEX programmes include:

- Erection hangars and developing airstrips to assist with protection (USD350,000)
- The wildlife reintroduction is an allocation to relocate wildlife to boost game numbers in strategic areas (USD500,000)
- The biodiversity is for the KNP fence removal (USD300,000), Erection of fences in the east to help mitigate HWC (USD2,545,000) and projects to secure the Banhine corridor (USD250,000).

¹² Figures are rounded to the closest MZN10,000 and closest USD1,000, exchange rate used throughout this Plan is MZN65.00=USD1.00 and all figures are based on 2021 data

5.2 Programme 2: Cultural and Heritage Resources

5.2.1 Context

The Law on Protection of Cultural Heritage (Law No 10/88 of 22 December, amended by Law No. 13/2009) defines cultural heritage as “*all the tangible and intangible assets created or assimilated by the Mozambican people throughout history and of importance in terms of the definition of Mozambican cultural identity*”.

Tangible in this context refers to “*immovable or movable assets which, owing to their archaeological, historical, bibliographical, artistic or scientific value, form part of the cultural heritage of Mozambique*”, while intangible assets are “*essential elements of the collective memory of the people, such as history and oral literature, popular traditions, rites and folklore, the various national languages, as well as works of the human mind, together with all forms of artistic and literary creation, irrespective of the medium or vehicle through which they are expressed*”.

There is relatively little formally documented records pertaining to the cultural and heritage assets of the LNP. However, this area has a long history (over 800 years) of human habitation by San, Bantu and Europeans. The local communities have derived their livelihoods from it for many years - there are thus likely historic and heritage sites and cultural practices associated with this landscape, with strong nature-culture interaction. These sites, values and practices are worth understanding, conserving and preservation as it may contribute to the sustainable management of the park and add a unique element to the Park’s tourism offerings. Additionally, by re-establishing the cultural and spiritual significance and value of the area and nature for local communities in particular, will motivate them to respect and better care for their environment.

5.2.2 Vision

The Vision for the Cultural and Heritage Resources Management Programme for LNP is:

The culture and heritage resources of the Park are understood, appropriately conserved and contribute to the well-being of local communities as well as the conservation values of the Park.

5.2.3 Operational Objectives

The **Operational Objectives** to achieve and realise the vision for the management of cultural and heritage resources of LNP as well as the Park strategic management objectives are:

- To establish an understanding and knowledge of the cultural heritage resources of the Park
- To protect and present the heritage and cultural resources associated with the Park.

5.2.4 Guiding Principles

The following management policies/guiding principles will be considered with regard to cultural and heritage resources management within LNP:

1. **Effective trusteeship over cultural and heritage resources:** A key feature of cultural and heritage resources that should be included in any plan or intervention associated with the conservation identified assets is that they are an irreplaceable source of identity and inspiration, which can also be an important driving force for sustainable development (UNESCO, 2020), and for this to be effective, authentic trusteeship over the cultural and heritage resources needs to be established.
2. **Integration of and additionality of the conservation and management of cultural and heritage resources in Park plans and programmes:** Conservation of cultural heritage sites as well as the role and value of cultural heritage resources can be enhanced through alignment and integration into other plans and programmes of the LNP including tourism, stakeholder engagement and environmental awareness. This programme can additionally be enhanced through partnerships with cultural heritage organisations and other aligned institutions. A detailed site survey needs, however, to be conducted of the cultural and heritage resources of

the LNP which will then form the basis of a **Cultural and Heritage Resource Management Plan** for the Park for sustainable, effective and equitable approaches to the management and governance of these resources, recognising and enabling deeply held cultural; spiritual; aesthetic; and utilitarian values.

5.2.5 Management Actions

The main strategies and concomitant management actions for cultural and heritage resources management and unlocking benefits to communities and the Park, linked to the operational objectives and guiding principles are:

- Establishing a better understanding of the cultural and heritage resources within the Park
 - Conduct, subject to funding, an assessment to understand the spatial distribution and cultural significance of key sites within the LNP and integrate them into the management programme, in collaboration with local communities and relevant organisations
- Conserving these resources appropriately
 - Develop and implement a **Cultural and Heritage Resource Management Plan** for the Park.

5.2.6 Strategies and Activities Summary

In summary, the action plan to achieve the desired outcomes of the Cultural and Heritage Resources Management Programme is set out in the below table.

Table 7. Strategies and key activities for the Cultural and Heritage Resources Management Programme

STRATEGIES	KEY ACTIONS	TIMEFRAMES
Understand the spatial distribution and cultural significance of key sites within the LNP and integrate them into the management programme	Conduct assessment and survey of the cultural and heritage assets within the LNP in collaboration with local communities and relevant organisations	2023
Conserving these resources appropriately	Develop and implement a Cultural and Heritage Resource Management Plan for LNP	2024 and ongoing

5.2.7 Financial Considerations

There is no dedicated budget under this section, it is included in the Communities Programme.

5.3 Programme 3: Communities

5.3.1 Context

In Mozambique, protected areas have been established to ensure the conservation of representative ecosystems and species while recognising resident communities and their co-existence with nature, their traditions and cultural values, as well as their dependence on nature for basic livelihoods support and wellbeing.

Communities and their relationship with Park Management are therefore key to the management of LNP, however, key challenges are still in place, and include but are not limited to:

- Human settlement impact of resident communities and communities living in the buffer zone including unsustainable and illegal resource use
- The slow pace and loss of support of the voluntary resettlement process by local authorities and certain communities
- Limited livelihood options inside the Park as well as in the buffer zone
- Threats to these livelihoods including HWC
- Effective engagement of communities in park management and conservation.

Since its establishment, a significant number of communities have been living inside the Park, primarily along the Shingwedzi River, practising subsistence agricultural activities with inadequate livelihoods support as well as

incompatible activities with a National Park, including illegal hunting and frequent retaliatory killing of carnivores. Limited access to services (government legislation prohibits the provision of any social services inside protected areas) compounds challenges.

Opportunities relating to sustainable resource use and illegal activities are addressed in Section 5.1.

A key strategy of the Park, since 2005, has been the progressive but voluntary resettlement of communities with associated support projects (Table 2). Five of the initial resident villages have been assisted to relocate to host areas. It is believed that resettlement provides improved long-term well-being - benefit packages include a new house and access to social infrastructure such as schools, health services, electricity (where feasible) and water.

A specific community support zone has been established for these resettled communities along the Limpopo and Elefanters Rivers boundary and in the south-eastern corner of the Park below the barrier fence. These communities are supported with conservation and climate-smart agricultural projects (community irrigation schemes) focused on social upliftment, skills development and food security.

Additionally, through a Herding for Health Programme¹³, it is anticipated that communal farmers, both men and women, will directly benefit from learning new skills, increased income, and greater livestock and rangeland health. The programme currently focusses on HWC mitigation and piloting some restoration measures in the buffer zone. Further funding is, however, required to ensure future sustainability of this programme. In addition to promoting gender equality, the programme will build community governance capacity that improves interactions and relations between communities and Park Management and resolve barriers that stand in the way of wildlife corridor development for an expanded ecosystem connectivity.

In addition, specific resource use areas in the Park are defined in the resettlement agreements for harvesting and collection of natural resources.

There are currently four villages remaining in the Park. It is anticipated that the village of Bingo will be relocated by the end of 2021 to Chitar and Mavodze village by 2024 to Macuacane/Nkanhane - Machamba and Chimangue by 2026 (location yet to be determined). Funding is available to complete a third of the homes of the Mavodze resettlement, but not for the relocation of the remaining Mavodze households or the villages of Machamba and Chimangue. The communities of Machamba and Chimangue have not yet agreed to resettlement and will likely not until a resolution for the active resettlement of Mavodze has been reached.

There are 51 communities living in the current buffer zone of the Park as well as the identified wildlife corridors along the Limpopo River to the northeast and between the LNP and BNP (Section 2.7). At present, local livelihood options in the buffer zone are limited to subsistence agriculture, extraction of some nature-based products including from within the Park, as well as limited produce sales at Massingir open markets.

The current buffer zone to the Park consists of a 5km strip along the Limpopo and Elefanters Rivers (Figure 1).

The purpose of a buffer zone is to form a transition area between a conservation area and a multiple-use area with the aim of monitoring and reducing the impacts resulting from activities incompatible with the conservation of biological diversity. The specific activities permitted, conditioned or prohibited within this zone can be provided in the conservation area management plan and in accordance with the legislation in force (in this management plan, see Section 6). Additionally, any activity in the buffer zone liable to affect biodiversity must be approved by Park

¹³ This programme includes amongst others the introduction to basic holistic rangeland management and planned grazing, low-stress animal handling, record keeping, and wildlife avoidance. It is a community development activity that promotes conservation outcomes while supporting people living in rural areas to find their way out of extreme poverty. It does this by teaching community members to make use of what they already have – cattle and other livestock. While many view livestock as a threat to conservation and especially rangeland health, it is in fact through the correct management of livestock and unlocking their value in underserved communities that significant benefits for sustainable land use and biodiversity conservation can be achieved.

Management in advance, and is subject to environmental licensing, based on the environmental impact in accordance with the specific legislation. As such, the current buffer zone to the Park does not sufficiently address likely impacts on the Park and wider ecological connectivity within the TFCA and should therefore be expanded to the north-east as well as between LNP and BNP. A formal and consultative process for delineating and gazetting this buffer zone must be followed with community governance structures, along with detail land use planning and the development of management controls for uses in this zone as well as the area to the south-east of the barrier fence. This may result in more communities having to form part of the 'local communities' of the Park.

In total, however, the Park currently has 60 local communities consisting of resident communities, those in the buffer zone of the Park and resettled communities that may fall outside the current buffer zone.

In addition to the aforementioned support projects, the Park shares revenues from tourism with these communities (20%), although this is nominal at present. These revenues are distributed via a Park (Community) Committee to the NRMCS (see section 2.3.4). From 2006 to 2019, an amount of approximately MZN14.5 million (USD223,000) has been paid to these committees and training has been provided to these committees to support decision-making regarding the management of these funds.

As indicated above, a key community issue for LNP, as for many other protected areas, is HWC which occurs along the Limpopo and Elefantas Rivers as well as inside the Park in and around resident community settlements. It relates mainly to crop damage and livestock losses caused by elephant, hippo, lion, crocodile, hyaena and baboon. There has also been loss of human life. Suspected poachers have been killed by lion, elephant and buffalo over the years. In the buffer zone, and on the dam, crocodile and hippo cause deaths almost annually.

In addition to actual incidences, the perceptions of communities of increased danger from wildlife for both lives and livelihoods require Park Management to institute more effective damage-causing animal control measures. Some of the current measures to curb HWC include collaring of lion and elephant as well as increasing and capacitating (training and equipment) staff and communities on how to better manage incidents related to damage-causing wildlife. The Herding for Health Programme also contributes solutions in this regard. How this issue will continue to be managed in the future will be a significant determinant for good relationships with the local communities of the Park as well as securing wildlife dispersal areas and corridors.

Good governance and strong management capacity are key for improved Park/community relations as well as sustained livelihoods support to reduce community vulnerabilities. Currently, the Park engages with communities as guided by the Districts and appropriate to the subject matter – e.g. regarding revenue sharing – the aforementioned Park Committee and the four NRMCS and relating to project interventions – Community Legal Entities (CLE) including associations established for specific interventions. Park Management thus relies on the Districts to advise, ratify and support approaches. Park Management also reports annually to the Districts on revenue sharing and project implementation progress.

5.3.2 Community Vision

The Vision for the Community Programme for LNP is three-fold:

Strengthened governance, participation in decision making relating to the management of the Park, access to and benefit sharing from the Park for its local communities.

Resilient local communities with improved living conditions and well-being and reduced destructive human practices that threaten the sustainability of the Park and no resident communities in the core area of the Park.

A Park valued by its local communities.

5.3.3 Operational Objectives

The **three most important Operational Objectives** to achieve and realise the community vision and Park strategic management objectives are:

- To establish a clear and good governance framework for community engagement and improved relationships
- To support sustainable community livelihoods and development, thus mitigating the impact of the Park on communities
- To mitigate adverse impacts of communities on the values of the LNP.

5.3.4 Guiding Principles

The following guiding principles will be considered when engaging with local communities, building relations between these communities and the Park, and designing or implementing community support activities – inside the Park as well as its buffer zone:

1. **Effective governance and formalised co-operative structures:** Establishing effective governance and working through formalised co-operative structures are critical to the success of community support programmes, particularly where a clear sense of ownership over the process and outcomes are endorsed. Good governance principles, such as the following will thus be promoted and is elaborated in the Park **Community Engagement Strategy/Plan** and related operational protocols and procedures-
 - a. respect for rights and knowledge while also respecting conservation priorities
 - b. promoting gender equality, fairness and dignity
 - c. establishing processes to ensure broad and representative participation in decision-making processes, at the appropriate level, geography and in respect of relevant issues
 - d. ensuring transparency and accountability
 - e. establishing equitable benefit sharing mechanisms and arrangements, at the appropriate level and geography
 - f. fostering collaboration with relevant regional and district authorities to facilitate commercial and development activities (including resettlement) to the benefit of local communities
 - g. strengthening the capacity of Park Management and the local communities to improve natural resources management inside the Park as well as in the buffer zone.
2. **Respect for the relationship between local communities and the natural resources they depend on:** The inextricable relationship between communities and the natural resources they depend on must be acknowledged and respected without compromising conservation results. Honouring this principle enables the development of activities that would allow a certain level of legal, well-regulated and sustainable use of renewable resources within the Park and its buffer zone (refer Section 5.1), while at the same time ensuring current and new livelihood options are aligned with the Park's conservation objectives. In line with this principle, support to these communities will require consideration of the additional threats (other than HWC) to their current and potential livelihood options posed by climate change, requiring additional effort to identify opportunities that help them adapt to changing environmental conditions. Details regarding the practical implementation of this principle is found in the Park's **Community Action Plan** and related operational protocols and procedures.
3. **Voluntary resettlement of resident communities:** Resettlement of resident communities is voluntary, and the Park subscribes to the principles set out in the **Regulations for the Resettlement Process Resulting from Economic Activities** (Decree 31/2012 of 8 August), Park **Resettlement (Action) Plans**, and any other environmental and social safeguards and standards that may be required by Government and support organisations. Additionally, the Park will provide preference to resettled communities regarding employment opportunities and access to resources within the Park.

4. **Shared responsibility for HWC management and mitigation:** As wildlife numbers increase and wildlife disperses, risk will increase and HWC will thus require improved management and administration. This should, however, be dealt with as a shared responsibility between Park Management and communities and is elaborated in an **HWC mitigation strategy** and related operational protocols and procedures.
5. **Culture and traditions and informed and knowledgeable communities contribute to ensuring sustainable resource use:** As sustainability will be a core focus of many interactions between Park Management and local communities, environmental education and awareness as well as culture and tradition will contribute in an important way to ensuring sustainable natural resource use and communities valuing the Park. Details of how this will be achieved can be found in the Park's **Environmental Awareness, Education and Community Outreach Programme**, the **Cultural and Heritage Resource Management Plan** (see Section 5.2) and the **Guideline on Community Access and Use of Natural Resources from Protected Areas** (see Section 5.1).

5.3.5 Management Actions

The main strategies for community support and unlocking benefits to communities, linked to the operational objectives and guiding principles are:

- Establishing a conducive and representative **platform for engagement** between the Park, its local communities as well as local government
- Setting a clearly defined **agenda** and operationalising this both in respect of the impact of the Park on communities and *vice versa*.

In respect of establishing a **platform for engagement** – the following key activities are required:

- Review and update the Park Community Engagement Plan to include operational guidelines
- Continue building effective governance within the Park as well as within its local communities and strengthen mechanisms and structures for engagement regarding matters inside the Park as well as its buffer zone including:
 - Ensuring adequate capacity of Park Management to support engagement with its local communities and other external parties
 - Redefining the buffer zone of the Park (refer Section 6, Zonation)
 - Redefining the local communities of the Park
 - Enable community inputs into the management of the Park through appropriate structures at different levels and purpose-fit as may be required
 - Coordination and collaboration with the Province and Districts and any other relevant authority or partners
 - Strengthening and developing the necessary core capacities of the local community structures to govern and manage at various appropriate levels and geographies (NRMCS and CLEs)
 - Establishing a comprehensive community programme monitoring and evaluation framework to support adaptive management, building forth on the Monitoring and Evaluation (M&E) and reporting tools developed for the community irrigation schemes.

In respect of setting an **agenda**:

- Prepare a Community Action Plan (CAP), based on the draft 5-year strategic workplan, addressing the following:
 - Identification of nature-based livelihood options and building a wildlife economy based on the establishment of economically and ecologically viable enterprises and compatible enterprises, guided by the aspirations of the Park's local communities and their development agendas including but not limited to a Herding for Health Programme inside the Park in the Economic Development Zone (refer Section 6, Zonation) as well as the buffer zone (specifically wildlife corridors) and resettlement host areas

- Preparation of a fund-raising strategy and raising funds for and supporting existing and identified community projects
- Optimising and managing community revenue payments through appropriate mechanisms and structures
- Managing the impacts of the Park on community livelihoods and development including mitigating HWC by preparing a collaborative HWC mitigation strategy in which communities take charge of their own futures with continued technical, early warning, training, site inspections and problem-solving support from the Park
- Regarding managing the unsustainable and severe negative impacts of communities on the ecological and conservation values of the LNP-
 - identifying and quantifying the various impacts, concomitant risks and developing appropriate mitigation or management strategies
 - continuing to encourage resident families to accept resettlement packages and finalising the resettlement process including ensuring access to better social infrastructure and improved livelihoods
 - lobbying and assisting, where possible, with Districts for better social infrastructure and required support for other communities in the buffer zone to the Park
 - undertaking environmental education and community outreach for buffer zone communities
 - ensuring sustainable resource use and community based natural resource management and undertaking detailed collaborative and mutually agreed land use planning of the resource use areas identified in the Park as well as the buffer zone (with the relevant authorities)
 - formally demarcating wildlife corridors and establishing management practices and controls for behaviour of communities' activities within these corridors.

5.3.6 Strategies and Activities Summary

In summary, the action plan to achieve the desired outcomes of the Community Support Programme is set out in the below table.

Table 8. Strategies and key activities for the Community Support Programme

STRATEGIES	KEY ACTIVITIES	TIMEFRAMES
Establishing a conducive platform for engagement between the Park and its local communities	Review and update the Park Community Engagement Plan, focusing on its operationalisation	2022
	Ensure adequate Park capacity and resources for implementing the Community Programme	2022 and ongoing
	Redefine the buffer zone of the Park and promulgate accordingly, along with preparing a detail land use plan and update the Buffer Zone Management Plan accordingly	2022
	Based on the amended buffer zone, redefine the local communities of the Park	2022
	Finalise community engagement and other structures as may be required including but not limited to the Management Council of the Park	2022 and ongoing
	Coordinate and collaborate with the Province and Districts	Ongoing
	Develop and implement a community governance structure capacity building programme at various levels	2023 and ongoing
	Establish and implement an M&E framework to support adaptive management	2023 and ongoing
Setting and operationalising a clearly defined community support agenda	Prepare a CAP including identification of nature-based livelihood options and building a wildlife economy	2022
	Prepare a fund-raising strategy for implementation of the CAP and raise funds for existing and identified community projects	2023 and as per CAP and fundraising strategy
	Support the implementation of existing and identified community	2022 and as per CAP

STRATEGIES	KEY ACTIVITIES	TIMEFRAMES
	projects	
	Optimise and manage community revenue payments	2022 and ongoing
	Prepare an HWC mitigation strategy and implement accordingly	2022 and as per strategy
	Continue with and finalising the resettlement process	2022 and as per Resettlement Plans
	Lobby with Districts for better social infrastructure and required support for Communities in the buffer zone to the Park	2022 and ongoing
	Develop and implement an environmental education and community outreach programme	2024 and ongoing
	Undertake detailed land use planning of the resource use areas identified in the Park as well as the buffer zone (in collaboration with the relevant authorities) and implement accordingly	2023 and ongoing
	Formally demarcate wildlife corridors and institutionalise management practices and controls	2024

5.3.7 Financial Considerations

A brief overview of the estimated costs for the implementation of the Community Support Programme is provided in the table below¹⁴. Details regarding this budget as well as the budgets for all other programmes are contained in the Park Operational Business Plan. There are a number of important once-off activities which are needed to operationalise the community programme and especially to finalise the activities in the buffer zones and the corridors, these are likely to result in additional operating expenses in the future.

Table 9. Estimated annual budget for the Community Support Programme

CATEGORY	COST (US Dollars)		COST (Mozambique Metical)	
	Operating Cost in 2032	CAPEX to 2032	Operating Cost in 2032	CAPEX to 2032
Community and Cultural Heritage	160,000	750,000	10,400,000	48,750,000
TOTAL	160,000	750,000	10,400,000	48,750,000
Resettlement		41,250,000		256,425,000

¹⁴ Figures are rounded to the closest MZN10,000 and closest USD1,000, exchange rate used throughout this Plan is MZN65.00=USD1.00 and all figures are based on 2021 data

5.4 Programme 4: Tourism

5.4.1 Context

LNP shares a common boundary and two border posts with South Africa but more significantly with the KNP, which in 2019 attracted almost two million visitors, making it the most visited game area proclaimed as a National Park in Africa. This presents an enormous opportunity to attract, even a small portion of these visitors to LNP. It is also potentially a springboard to other destinations in Mozambique including Banhine and Zinave National Parks; these are integral to the future achievement of the vision for the GLTFCA.

Tourism is an important strategy for generating economic development for the Park and the regional, provincial and national economies. It is the main strategy to generate revenue to fund the long-term operating costs of the Park. The tourism potential of the Park has been recognised with the signing of a significant concession agreement with Gaza Safaris for four important concession development sites developing 200 lodge beds and associated infrastructure, in the south west and southern central part of the Park. This will bring significant investment, attract tourists and provide revenue for the Park and also a positive impact on the economic status of the local communities through job creation and associated businesses in the area.

A draft Strategic Business Plan for Tourism (2021) for the Park has been developed which provides detail on the products, their market position, location, timeline and estimated investment and revenue streams - this forms the basis of much of this Programme. It is a long-term plan (>20 years), which stretches beyond the timeline of this Plan, but provides a long-term vision and strategy for tourism. The potential tourism development areas have been included in the Zonation for the Park – see section 6.

The draft Strategic Business Plan for Tourism has identified several challenges ahead to realise the tourism potential and this Plan must provide the enabling policy framework and strategies to lay the foundation to help unlock and realise these. The most important include:

- The resettlement of people away from important tourism landscapes
- The rapid growth of wildlife populations, especially of key species, to provide a competitive game viewing experience
- Ease of travel for travellers across international borders, both land and air
- Improvement in basic tourism infrastructure especially roads, river crossing, picnic sites, viewing sites, jetties and the like
- A secure environment for tourists
- Secure access to sufficient, reliable and good quality water for each concession site in the concession areas.

Ease of travel across international borders is a critical success factor to attracting large numbers of tourists which are needed to leverage the economic benefits. The Kgalagadi Transfrontier Park model where access to both countries' parks without a passport has proved very successful and if this flexibility could be implemented between KNP and LNP it would significantly improve the probability of achieving the targets set in the draft Strategic Business Plan for Tourism. If this can be achieved a border crossing close to the Shingwedzi Cliffs with good access roads from KNP would be a significant achievement and contribute to the economic benefit.

Although LNP may be approximately 10,000km², much of it is unsuitable for high quality tourism. Much of the north is very dry and waterless for the dry season, generally the best game viewing season, while the entire length of the Limpopo river is farmed and settled. The southeastern boundary along the Lebombo Mountains is mostly hilly, rocky and broken terrain making access and traversing difficult in a vehicle, although well suited to other non-vehicle activities such as walking, mountain bikes, horses etc. That leaves a potentially very good strip along the Shingwedzi river and the Massingir dam and adjacent shoreline of about 1,300km² or just about 13% of the Park. However, much of the shoreline is heavily incised and again difficult to traverse in a vehicle, but boat-based activities are a valuable opportunity.

In spite of these challenges and limitations the Park still offers excellent potential to develop almost 1,500 tourism beds inside the Park based exclusively on the wildlife experience and there is also potential to develop a Resort Village and Community Lodge to the east of the barrier fence in the area for economic development near the Park

headquarters at Massingir, with some of these Resort visitors undertaking short day trips in the Park, see Table 10 for a breakdown of tourism facility type and estimated number of tourist beds.

Table 10. Proposed bed count by product Type (excluding day trippers)

Source: Draft Strategic Business Plan for Tourism 2021

TYPE	STAR RATING	PROPOSED BED COUNT
Exclusive Traversing Block Concession	5 to 6-star	452
Corporate Concession Multi-User Exclusive Traversing Concession	4 to 5-star	100
Site Concession / Non-Exclusive Traversing	3 to 4-star	530
4x4 Camps	2-star	304
Activity Concession & Houseboats	Varies	40
TOTAL		1,426
Resort Village & Community Lodge	3 to 4-star	847

There is a wide range of products offering a diverse experience from upmarket exclusivity to affordable and rustic where tourists can tailor their trip according to their experience.

5.4.2 Tourism Vision

The Vision for Tourism in the LNP is:

To develop a full range of tourism products to generate revenue.

5.4.3 Operational Objectives

The size of the Park and the landscape variability means that the development and management of tourism can achieve four important Operational Objectives to realise the tourism potential, these are:

- To generate revenue to fund Park operations
- For socio-economic development and to diversify the local economy
- To showcase the Park to local Mozambique citizens
- To attract suitably experienced and qualified investors in developing and operating facilities and realise an equitable concession fee for the value of the site.

The long development time horizon for fully unlocking the tourism potential implies many of these Objectives will only be partly realised during the currency of this Plan. The early years are mostly preparatory as the focus will be on rebuilding the wildlife product, improving access and infrastructure to ensure a good investment foundation for attracting tourism.

5.4.4 Guiding Principles

To assist management with their decision making the guiding principles for tourism in the LNP are outlined in the following sections.

Tourism development will be done mostly through **Public Private Partnerships** which will be offered through an open and transparent process based on investment friendly procurement policies to ensure quality operators and value for all parties.

Ease of movement of tourists between the countries in the TFCA is essential and this must form part of the preparatory work in the tourism rollout.

Zonation can be used to enable the LNP to **develop the range of products** (varying from rustic camps to **low impact environmental lodge developments**, self-catering and catered units) as well as activities to showcase the unique assets of the Park. Together with pricing, zonation will be used to **promote equitable and affordable access to LNP**,

especially for Mozambicans. Spatial zonation will be complimented with temporal separation of visitors and the management of absolute densities (numbers of visitors at a time) in each zone to ensure that the values of LNP are not diminished as a result of tourism.

To preserve the unique and pristine features of LNP, any development will need to be conducted in an **environmentally sensitive manner** (Section 5.1.7) and in accordance with a carefully designed **Zonation Plan** (Section 6) which will enable the integration of a range of wildlife and wilderness experiences at differing tourism densities while at the same time minimising the negative impacts on the environment. Zonation will be used to differentiate the Park user groups, these will usually be in defined concession areas as well as the other zones in the Park, and ensure environmental sustainability.

Concession areas will be **marketed and priced according to facility type and size, exclusivity offered and the type of experience**.

Basic infrastructure will be provided by the Park, suited to the product offered, to ensure the products can be used and enjoyed by tourists, including:

- Bulk and other services such as roads and tracks will generally be the **responsibility of the concession holder in concession areas** with performance criteria for development and maintenance thereof.
- **Roads of varying standards will be developed** and maintained dependent on the market niche for the specific area.

Ensure that **revenue targets** are achieved through a combination of **Park Entry/Conservation fees and concession fees** and ensure there is a balance between these commensurate with the opportunities and services offered.

In addition, to ensure environmental protection at development sites and to ensure that Park Management and concessionaires are held accountable for appropriately managing their developments, it is necessary that they comply with **Environmental Management Standards** which provide a framework for developing and implementing Environmental Management Plans for each development.

5.4.5 Management Actions

To give effect to the Tourism Development Strategy articulated in the draft Strategic Business Plan for Tourism Development (2021) the following Activities will be required:

- Ensure sections of the Park are tourism ready for the development rollout including the wildlife product, any resettlement and infrastructure development
- Undertake general management and monitoring of tourists and concessionaires in the Park
- Develop marketing material to attract investors and operators for the opportunities the Park offers
- Develop a procurement policy, framework and procedure to secure bids for tourism opportunities
- Develop Environmental Management Standards for Developments in the Park and ensure these are complied with
- Engage with the relevant Government Departments to improve immigration access to the Park for road and air arrivals
- Develop a marketing and branding strategy for the Park's tourism
- Secure funds and develop detailed plans for improving tourism infrastructure to ensure these are of a suitable standard for tourists
- Ensure there are appropriate access and revenue collection controls for tourists and other Park visitors
- Implement the tourism roll out plan when sites are ready for development.

Prioritised development opportunities are identified in the table below that will form part of the Park's Tourism Development Plan (also see section 6). This is a long-term development split into several 5-year phases with Phase 1: 2021-2026; Phase 2: 2027-2031; Phase 3: 2032-2036; Phase 4: 2037-2041 and Phase 5: 2042-2045.

Table 11. Prioritised development opportunities per area

Source: Draft Strategic Business Plan for Tourism 2021

Site and Area	Phase	Indicative Traversing Area	Tenure / Concession Type	Quality	Houseboat / Beds	Total Beds
Southern Section & Resort Village		130,000			100	1,317
Existing Camps / Lodges						
Agua Pesqueira Concession	2		Site concession - non-exclusive traversing	3-star		100
Proposed Resort Village - In Buffer Zone						
Golf & Conference Hotel	2	TBC	DUAT	4-star		120
Golf Cottages	2	TBC	DUAT	4-star		450
Golf Apartments	2	TBC	DUAT	4-star		225
Dam Lodge	2	TBC	DUAT	4-star		52
Proposed Lodges & Rest Camps - Dam & Other						
C1 Dam Multiple Concession - 5 x Corporates	1	1,500	Corporate multiple user exclusive traversing concessions	5-Star		50
Gorge Concession - Boat Access	2	5,588	Exclusive Traversing Concession (Gaza)	5-Star		24
Bonsweni Concession	2	19,592	Exclusive Traversing Concession (Gaza)	6-star		48
Bonsweni Branded Corporate	2	-	Exclusive Traversing Concession (Gaza)	6-star		64
Bingo Concession	2	7,500	Exclusive traversing block concession	5-Star		50
Shingwedzi River Camp	2	NA	Site Concession - non-exclusive traversing	4-Star		38
Proposed 4x4 Trail Camps						
Lower Shingwedzi Camp	2	NA	NA - Park managed infrastructure	2-star		28
Bingo Camp	1	NA	NA - Park managed infrastructure	2-star		28
Mahinga Pan	1	NA	NA - Park managed infrastructure	2-star		16
Proposed - Activities						
Gorge Concession Houseboats	2	NA	Exclusive traversing concession (Gaza)	5-Star	28	0
Gorge Concession Tenders	2	NA	Exclusive traversing concession (Gaza)	5-Star	24	0
Other Houseboats	1	NA	Activity Concession	3-Star	12	0
Other Tenders	2	NA	Activity Concession	3-Star	36	0
Gorge Canoe & Hiking Trail	2	NA	Activity Concession	3-Star		8
Rio Elefantes Canoe Trail	2	NA	Activity Concession	3-Star		8
GLTFCA Gorge & Canoe Trail	2	NA	Activity Concession	3-Star		8
Central Section		175,000			0	502
Proposed Lodges & Rest Camps						
Mbona Kaya Concession	2	8,019	Exclusive Traversing Concession (Gaza)	4-star		48
Gazari Concession	3	49,929	Exclusive Traversing Concession (Gaza)	6-star		48
Gazari Branded Corporate	3	-	Exclusive Traversing Concession (Gaza)	6-star		64
C2 Multiple Concession - 5 x Corporates	3	3,750	Exclusive Traversing Concession	5-Star		50

Site and Area	Phase	Indicative Traversing Area	Tenure / Concession Type	Quality	Houseboat / Beds	Total Beds
Machamba Concession	3	8,765	Exclusive Traversing Concession (Gaza)	5-star		40
Chimangue Lodge	2	NA	Site concession - non-exclusive traversing	4-Star		38
Chimangue Camp	2	NA	Site concession - non-exclusive traversing	3-Star		38
Nwankande Tented Camp	1	NA	Site Concession - non-exclusive traversing	3-Star		88
4x4 Trail Camps						
Sandalo 4x4 Camp	0	NA	NA - Park managed infrastructure	2-star		16
Giriyondo Camp	0	NA	NA - Park managed infrastructure	2-star		24
Mbona Kaya 4x4 Camp	2	NA	NA - Park managed infrastructure	2-star		16
Shingwedzi Cliffs	2	NA	NA - Park managed infrastructure	2-star		16
Proposed - Activities						
Wilderness & Shingwedzi Cliffs Trails	2	NA	Activity Concession	3-Star		8
GLTFCA Shingwedzi Cliffs Trail	2	NA	Activity Concession	3-Star		8
Mapai Hub & Wilderness Section		300,000				300
Existing Camps						
Nhampfule 4x4 Camp	0	NA	NA - Park managed infrastructure	2-star		24
Proposed Lodges & Camps						
Mamba Pan Concession	3	7,500	Exclusive Traversing Concession (Gaza)	4-star		48
Community Lodge	3	TBD	DUAT / TBD	3-star		36
Mapai Dam Lodge	4	NA	Site concession - non-exclusive traversing	4-star		60
Mapai Valley Lodge	4	NA	Site concession - non-exclusive traversing	4-star		52
Proposed 4x4 Trail Camps						
Mamboreni	3	NA	NA - Park managed infrastructure	2-star		16
Banga	3	NA	NA - Park managed infrastructure	2-star		16
Tiven	3	NA	NA - Park managed infrastructure	2-star		16
Nuambia	3	NA	NA - Park managed infrastructure	2-star		16
Hassane	4	NA	NA - Park managed infrastructure	2-star		16
Northern Link		140,000				154
Existing Camps						
Pafuri 4x4 Camp	2	NA	NA - Park managed infrastructure	2-star		40
Proposed Lodges & Rest Camps						
Lilau Pans Camp - Air Access	1	10,000	Exclusive traversing concession	5-star		18
Matsilele Camp	5	NA	Site Concession - non-exclusive traversing	4-star		80
Proposed 4x4 Trail Camps						
Limpopo River Camp - Location TBD	4	NA	NA - Park managed infrastructure	2-star		16
TOTALS		745,000			Net Useable Area	2,273
Park Area (Ha)		1,100,000			Outside Park	847
					Inside Park	1,426

5.4.6 Strategies and Activities Summary

The action plan to achieve the desired outcomes of the Tourism Programme is set out in the below table.

Table 12. Strategies and key activities for the Tourism Programme

STRATEGIES	KEY ACTIVITIES	TIMEFRAMES
Prepare Park for tourism Investment	<ul style="list-style-type: none"> Prepare a marketing and branding strategy for investors and a Plan for the Park's tourism Prepare procurement policies, framework and procedures Prepare Environmental Management Standards Finalise resettlement in core areas Develop strategies for improving ease of access for international visitors Improve the wildlife product Improve infrastructure Secure funding Identify possible sites and ensure they are suitable for the type and scale of product, especially water, game viewing etc. 	2021 onwards
Responsible Development	Ensure concession holders comply with minimum standards and Agreement	2022 Onwards
Revenue Generation	<ul style="list-style-type: none"> Ensure concession holder pay concession fees Enact a revenue control system for entry fees 	2023 Onwards
Attract Investors	<ul style="list-style-type: none"> Implement tourism rollout plan in the draft Strategic Business Plan for Tourism Offer sites for investment/development 	2023 Onwards
Ensure visitors comply with Regulations	Monitor and control visitors and concessionaires' activities	2021 and ongoing

5.4.7 Financial Considerations

The funding required to mobilise and achieve the tourism objectives are summarised in the table below, the details are explained in the Strategic Business Plan for Tourism Development (2021).

TOURISM ENHANCEMENT	OPERATING COSTS IN 2032		CAPEX TO 2032	
	US Dollar	Metical	US Dollar	Metical
Tourism Management	160,000	10,400,000		
Border posts			1,625,000	105,625,000
Tourism Camps			90,000	5,850,000
Resort			1,100,000	71,500,000
Dam			150,000	9,750,000
Signage			100,000	6,500,000
Picnic areas			90,000	5,850,000
Road upgrades and new roads and tracks			7,000,000	455,000,000
4X4 Camps			335,000	21,775,000
TOTAL TOURISM	160,000	10,400,000	10,490,000	681,850,000

The operating expenses are for monitoring and managing tourism access and movement in the Park as well as managing concessionaires. The CAPEX items are largely self-explanatory with the following details:

- The border posts are for upgrading facilities to improve ease of movement and develop new border control points in strategic positions
- The tourism camps are to improve basic infrastructure in Albufeira and Agua Pesqueira
- The Resort is to provide basic services to the offer the concession rights for a private investor

- The dam is for jetties and launch sites around the dam
- Signage is to assist with information and navigating the parks roads and tracks
- Picnic areas and 4X4 Camps is to develop these facilities in strategic areas
- Road and track upgrades and developing new are to improve access to areas of the park for tourists and to a lesser extent to assist with conservation management.

5.5 Programme 5: Management, Administration and Finance

5.5.1 Context

For the LNP to achieve and maintain its potential it must significantly raise capital to develop and improve infrastructure, finalise resettlement, improve management efficiency and effectiveness and create an environment conducive to attracting investment in tourism, especially from foreign investors. The first phase of the recapitalisation is to continue to raise donor funding while simultaneously improving the tourism attractiveness. A key component of this is developing a governance system which builds confidence with tourism investors and operators, improves management through training, incentivising staff, securing and maintain all assets and retains income. This is likely best achieved through the establishment of a Special Purpose Vehicle (SPV) such as a Foundation and through management partnerships such as co-management of critical aspects. Such a mechanism will ensure the attainment of the conservation, economic and community objectives set out in this Plan. The management system needs to include provision which is made for unpredictable but catastrophic events as well as for ensuring the capacity for continuous learning in the form of research.

5.5.2 Vision

The Vision for the Finance and Administrative Management of the LNP is:

A sustainably funded and efficiently functioning management system and ecosystem with motivated staff

5.5.3 Operational Objectives

To achieve this Vision the following key operational Objectives must be achieved:

- To secure all necessary funding
- To develop an appropriate governance and management system
- To develop, implement and monitor performance targets for ALL aspects of management including financial, conservation and social.

5.5.4 Funding

It is important to develop and implement an administration and financial management system that is efficient, accountable and transparent and able to respond to opportunities in order to achieve its desired target of covering all operational expenses and Government fees within ten years. To achieve financial independence, it is projected that LNP must attract approximately 200,000 visitor days annually, and to do this tourism concessions will need to be invested in by private partners which agree to develop and operationalise at least 2,200 tourism beds.

Guiding Principles

The draft **Strategic Business Plan for Tourism** which has been developed and describes a long-term sustainable funding strategy for the LNP envisages a funding strategy to attain a self-funded Park in the long term (~20 years). Initially relying heavily on donor funding and this gradually declining as tourism, especially through Public Private Partnerships increasing till the Park management expenses are financially self-sustaining.

A key element of this strategy is the development of a Special Purpose financial Vehicle (SPV), a Foundation, which will be established to retain income for Park management purposes and improve the efficiency and effectiveness of management.

To effectively implement this strategy management must develop **three to five-year revenue targets/projections** with **annual budgets and workplans** based on the **Park Operational Business Plan** which provides the business framework for the implementation of this Plan. This must ensure there is adequate funding to achieve the required outcomes. If a shortfall is detected, additional funds will need to be secured or activities re-prioritised to align with funding available. Activity funding will be collaboratively prioritised according to risks and impacts as set out in this Plan. In years of surplus revenue, the additional funds will be invested in projects which are either revenue enhancing or will result in cost saving improvements. Business management principles will be applied where targets are set, performance evaluated, and strategies adapted to meet budget and resource constraints as well as to optimise performance and ensure effective and efficient management. To this end management must develop, implement, and continually evaluate, financial and procurement policies and procedures. It is important that management receives a clean financial audit each year. This will require that appropriate governance and management structures and procedures are implemented. In addition, in order to best secure income generating opportunities for the LNP, a partnership or co-management agreement needs to be finalised with an appropriate governance structure.

Management Actions

The following are important management activities to be achieved during the currency of this Plan:

- Securing the necessary funding for priority objectives
- Develop governance structures including the formation of the Management Council
- Develop and implement management and monitoring systems
- Develop three to five-year funding plans
- Develop annual budgets with targets and monitor to ensure these are attained
 - Implement adaptive management to learn from experience
- Ensure staff are properly trained, developed, incentivised and equipped to undertake and achieve these functions
- Ensure effective collaboration of the Park within the TFCA context.

5.5.5 Administration, Stakeholder Engagement and Communication

The successful administration of a protected area requires that Park Management engages in the effective building of stakeholder relationships and, in the specific case of the LNP, this is particularly important in relation to the Management Council, agreements with third parties and also how the Park interacts with its international counterparts in context of the GLTFCA and engages and shares information with staff and stakeholders. There is a very clear need to ensure that there is an effective and secure system of information and document management. Furthermore, the Park is split between several Districts, which makes management extremely cumbersome and, consolidating into one District, would significantly improve efficiency.

Guiding Principles

According to legislation the Park requires a Management Council which has oversight responsibility for achieving the objectives of this Plan. Currently this does not exist and this must be formed and operationalised. It will also require a **governance capacity building programme** which needs to be developed and implemented. The LNP will further continue to **participate in the various TFCA structures** as well as the relevant landscape scale activities to promote the objectives of the TFCA components.

To ensure appropriate communication and engagement of stakeholders, the Park will develop and implement a **Stakeholder Engagement and Communication Strategy**. It will also establish an effective and secure **Information and Document Management System** for record keeping and decision-making purposes.

The Park forms an integral part of the surrounding Districts and the Province, continued interaction and liaison with all stakeholders in this area must be prioritised.

Management Actions

Management actions in respect of administration, stakeholder engagement and communication include:

- Form and operationalise a Management Council
- Build capacity of this Council
- Continue with TFCA interactions
- Explore consolidating the Park area into one District (in respect of law-enforcement prosecutions)
- Continue to liaise with and build relations with neighbouring communities, Districts, Province and other government agencies and role players.

5.5.6 Human Resources

Successful implementation of the five management programmes of this Plan is dependent on the people put in place to implement it. Without a full complement of appropriately trained and skilled staff, motivated and disciplined to conduct the necessary tasks, the higher-level objectives of this plan will not be achieved. For this reason, it is essential to effectively assess, train and manage the human resources in the LNP.

Guiding Principles

The management of the human resources of the LNP will be guided by a suite of **Human Resource Policies** which will be developed and implemented under the guidance of the Park Administrator. The policies need to include a code of conduct, occupational health and safety principles, disciplinary procedures, and job descriptions for staff as well as guide the setting of performance standards and targets for staff, and ensure that their training, housing, and equipment are appropriate for them to undertake their tasks. Staff performance must be measurable and measured and incentives provided for above standard performance. Where performance standards are not met, appropriate corrective actions must be taken. Where staff have identified training needs, appropriate training needs to be scheduled into the **Capacity Building and Training Programme**.

The Human Resource Policies will include guidance on the matter of preferential recruitment of local individuals in order to increase the contribution of the LNP to local communities.

Management Actions

Management actions in respect of human resources include:

- Ongoing staff training and development
 - Special attention to Law enforcement and respect for human rights of any suspected offenders
- Update staff policies and procedures.

5.5.7 Infrastructure, Vehicles and Equipment

No protected area, including the LNP, is able to function effectively if infrastructure, vehicles and equipment are not of a suitable standard and appropriately maintained. Once the LNP has acquired essential infrastructure and equipment, it is the responsibility of Park Management to maintain them.

Key infrastructure includes but is not limited to, roads, buildings (administration, law enforcement, access control, staff accommodation, workshops, tourism facilities, etc.), fencing, communication infrastructure, power, water and sewage infrastructure, erosion control structures, landing strips etc.

Guiding Principles

In order for Park Management to effectively and efficiently maintain key infrastructure, vehicles and equipment, a **Management System** needs to be established including a set of **Standard Operating and Maintenance Protocols**. These protocols and policies will address the need for inventorying, quantifying and detailing approaches to maintaining (including upgrading where necessary) as well as use of the infrastructure, vehicles and equipment by staff in LNP.

In addition, Park Management must monitor and control private sector developments to ensure compliance with **Environmental Management Plans** which are developed as part of each development proposal as required under the concession agreements. The development proposals will further specify how costs for supporting infrastructure such as telephones, radios, electricity, and water for use by the lodges will be covered, as well as the importance of using environmentally sensitive technologies.

Portions of the KNP boundary fence are still functional and act as a barrier for wildlife and in some sections, especially near the formal border crossings are also designed to limit human movement. Many parts of the fence, although still 'in place' are no longer functional. Where appropriate management must liaise with KNP to remove this so it does not represent a hazard to wildlife. As security improves and the risk of poaching declines, further liaison with KNP may be pursued with a view to improvement wildlife movement.

Management Actions

Management actions in respect of infrastructure, vehicles and equipment include:

- Developing an infrastructure development priority plan and secure funds
- Developing an infrastructure and equipment maintenance and replacement plan and ensure responsible staff members are trained and qualified to oversee and implement it
- Continue discussions with KNP management to remove the border fence as and when deemed appropriate
- Ensuring maintenance and provision for replacement are properly budgeted for and funds are available.

5.5.8 Risks and Disaster

Increasingly with global change, and climate change in particular, natural systems are exposed to the risk of extreme and unanticipated events and natural disasters. Indeed, one of the key predictions of the climate change models is that extreme events will become more extreme i.e. droughts will be drier and persist for longer and likewise floods will be more intense and more frequent. In this environment flooding along the Limpopo River and, to some extent, the Shingwedzi, must form a key issue for planning and risks assessments.

Guiding Principles

Because the potential for extreme and unanticipated climatic events occurring is increasing, it is important that the management of the LNP does not simply wait till one happens before putting remedial measures in place. Good practice protected area management involves conducting scenario planning and through this assessing the key risks, particularly those that have a high likelihood of happening and which also have a high anticipated consequence, and then putting measures in place as to how to respond should the event happen. These measures should be documented in a **Disaster and Risk Management Protocol** and, where appropriate, necessary preparatory measures can be put in place in advance. A high priority is a Standard Operating Procedure for flooding along the main rivers, especially the Limpopo.

Management Actions

Management actions in respect of risk and disaster management include:

- Developing a risk assessment of likely risk events
- Developing a risk strategy to outline the likely response to these risk events
- Ensuring staff are trained and aware of dealing with such emergencies and undertake test runs to highlight weaknesses
- Ensuring insurance policies are adequate and sufficient for likely risk events.

5.5.9 Compliance Management

ANAC is the government agency responsible for setting and implementing conservation policy in LNP that is consistent with both national and international obligations. This requires that all national legislation which is pertinent to the LNP and the activities which take place in the LNP or in relation to it, must be known to the Park Management and measures must be taken to ensure that there is compliance with it.

Guiding Principles

In relation to the management of LNP, compliance covers all functions from law enforcement and visitor access to firearm safety, vehicle and radio licensing to impact assessments. In order for the management staff of the LNP to fully conduct their duties, it is necessary for them to develop and implement a **Compliance Register** which is regularly consulted and the necessary action taken to ensure compliance with national and any other relevant legislation.

Management Actions

Management actions in respect of compliance management include:

- Developing a compliance register, refer to the Park Operations Business Plan for guidance
- Ensuring all staff are aware of the performance standards for the various areas that have been identified and what expectations are in terms of their achievement.

5.5.10 Research

There are many aspects of the biophysical and cultural features of LNP that are not well known or understood. For this reason, research which is supported by Park Management and aligned to the management plan, is permitted in the LNP and can be facilitated by Park Management.

Guiding Principles

In order for Park Management to maintain oversight and control over the research activities in the LNP, all research applications must be submitted through ANAC for approval. Research activities will be subject to the requirements set out in the **Research Management Protocol** and conducted with the collaboration of Park Management. Most research will be conducted by third parties but this must be regulated via formal agreements with specific performance standards. Gaps in knowledge requiring research in order to improve the management of the LNP are listed in the below table.

Table 13. Research and knowledge gaps identified at the time of drafting this plan

THEME	GAPS
Biodiversity context	Developing basic species lists and abundance Determining appropriate monitoring methods for wildlife, vegetation and the abiotic environment Where appropriate researching re-introduction strategies for key species
Institutional context	Strategies to develop and offer concessions in the Park to improve value for money for all stakeholders
Socio-economic context	Resource use and its importance for the livelihoods of local communities as well as its impacts on the resources and their habitats Socio-economic baseline study with periodic updates to monitor impact

Management Actions

Management actions in respect of research include:

- Developing a monitoring strategy for key elements in the natural, social and economic environment
- Developing a research policy and procedures and identifying key projects and finding partners to assist.

5.5.11 Management Effectiveness Tracking

The effectiveness of contemporary conservation management globally, is most frequently measured by a periodic standardised assessment known as the METT. The LNP has a history of METT assessments having been conducted previously. The **METT assessments** will continue to be conducted at regular intervals of two years and the results will be used to focus annual activities in a manner that weaknesses in management are progressively improved.

Guiding Principles

In order to gain maximum benefit from a METT assessment it is important that it be conducted in a non-competitive manner which encourages a realistic assessment of the management achievements of the LNP and which is comparable from year to year. The changes in the METT score over time are what enables a manager to identify weaknesses and to focus on interventions that will improve overall management of the protected area.

Management Actions

Management actions in respect of tracking management effectiveness include:

- Adapting the universal METT system to align with the priorities for LNP to ensure those key elements are monitored and weighted appropriately.

5.5.12 Strategies and Activities Summary

In order to achieve the desired outcomes of the Management, Administration and Finance Programme the following Strategies have been identified together with the associated key actions and timeframes.

Table 13. Operational strategies and key actions for the Management, Administration and Finance Programme

STRATEGIES	KEY ACTIVITIES	TIMEFRAMES
Financial sustainability and management		
Promote financial sustainability of the LNP by 2040	Update and implement a Strategic Business Plan for Tourism and ensure short and medium term funding needs are addressed and achieved	2021 and ongoing
	Draft and secure signatures for the implementation of a Co-management Agreement and SPV - Foundation	2022
	Secure agreement that LNP revenue can be retained for purposes of implementing this plan	See tourism
Ensure effective and efficient management of the finances of the LNP	Develop and implement three to five-year rolling budgets and implementation plans with annual budgets based on a Park Operational Business Plan	2022, 2027 and 2032 with ongoing implementation
Appropriate policy context for LNP administration		
Improved governance and oversight	Form the Management Council Develop and implement a governance capacity building programme	2022 and ongoing
Better positioning of the Park in the broader conservation landscape	Continue to participate in TFCA structures and activities	Ongoing
Ensure good relationships with supportive stakeholders	Explore consolidating the Park area into one District Develop and implement a Stakeholder Engagement and Communication Strategy	2022 and ongoing
Ensure human resources are appropriately managed	Develop and implement necessary Human Resource Management Policies	Ongoing
Enhance staff capacity	Develop and implement a Capacity Building and Training Programme	2022 and ongoing
Ensure infrastructure, vehicles and equipment are appropriately managed and used	Develop and implement an Infrastructure, Vehicle and Equipment Management System	2022 ongoing
Ensure effective and secure information and documentation management in LNP	Develop and implement a Park Information and Document Management System	2022 and ongoing
Ensure disaster preparedness	Develop and implement a Disaster and Risk Management Protocol and firmly embed this with relevant staff	2023 and ongoing

STRATEGIES	KEY ACTIVITIES	TIMEFRAMES
Ensure that supported research is conducted appropriately	Implement the Park Research Management Protocol	Ongoing
Address management deficiencies		
Progressively improve the effectiveness of management in LNP	Adapt the METT to reflect Park priorities and risks Regularly conduct a METT assessment of the LNP and use results to influence annual management operational plans	Biennially

5.5.13 Financial Considerations

The estimated annual operating budget¹⁵ for this programmes in 2032 together with the cumulative CAPEX requirements are summarised in the Table 16.

Table 14. Estimated annual budget for the Management, Administration and Finance Programme

CATEGORY	COST (US Dollars)		COST (Mozambique Metical)	
	Operating Cost in 2032	CAPEX to 2032	Operating Cost in 2032	CAPEX to 2032
Finance and Administration	383,000	620,000	24,895,000	40,300,000
Foundation and Governance	510,000		33,150,000	
Operations and Maintenance	215,000		13,975,000	
Contingency for Operations	110,000		7,150,000	
Provision for Replacement	160,000		10,400,000	
TOTAL	1,378,000	620,000	89,570,000	40,300,000

This programme includes a number of other important support programmes which include:

- The general financial, human resources, administration and operational aspects of the Park
- A provision for the annual operating expenses of the Foundation which is described in the Strategic Business Plan for Tourism Development (2021)
- A provision for the replacement of minor assets including equipment, vehicles, furniture, IT equipment etc.
- A provision for maintenance of fixed assets including fences, buildings, roads, tracks, airstrips and utilities
- A contingency for operating expenses of the other programmes.

¹⁵ Figures are rounded to the closest MZN10,000 and closest USD1,000, exchange rate used throughout this Plan is MZN65=USD1.00 and all figures are based on 2021 data

6 ZONATION

The **Zonation Plan** is the primary spatial tool used for planning, conservation and decision-making processes as part of the Management Plan for LNP.

The Zonation Plan for the LNP is based on the need to balance negative biodiversity impacts of inhabitants living in and around the Park as well as visitor facilities and activities¹⁶ with the need to generate positive tourism ventures in answer to the social responsibilities and benefits presented by protected areas which ultimately contribute to the economic development of the area. It sets the spatial framework within which development and activities can occur and specifies key characteristics of these developments and activities. The development of the Zonation Plan takes due consideration of the need to protect priority habitats and biodiversity but also realises that LNP is seen as an integral link / corridor to the larger GLTFCA landscape. Continued socio-economic impacts keep altering the ecological stability and functionality of connected landscapes. The impacts are driven by basic and economical needs and a clear path needs to be established to mitigate these impacts ensuring ecological connectivity. The principle of mitigation is taken into consideration when specifying which activities may or may not be undertaken in a particular zone. This could result in activities being allowable in sensitive habitats such as sand forest, riverine environments and alluvial floodplains, but with strictly specified and enforced development criteria. Visual experiences and “sense of place” can contribute to decisions which define a zone or its use.

6.1 Categories of Zonation

In terms of Article 70 of the Regulations to the Law for the Protection, Conservation and Sustainable Use of Biological Diversity Law No. 5/2017 the zonation of a conservation area such as the LNP may include the following zones:

- A **Total Protection Area (TPA)** – a zone in which a high degree of protection of natural resources is sought
- A **Tourism Development Area (TDA)** – a site in which tourism developments may be undertaken subject to restrictions which are site specific. A TDA is located as a node within a CUA as detailed below
- A **Controlled Use Area (CUA)** – a zone in which sustainable activities and development may be allowed subject to specific rules or codes of conduct. Different CUAs may have different rules or codes of conduct, linked to the intensity of use - high, medium or low
- A **Community Development Area** – a zone in which defined permissible customary activities of resident local communities may take place in a regulated manner
- **Area of Economic Development (AED)** relevant to TFCAs, in which economic activities will be authorised respecting the limits established in its Management Plan.

The Zonation map developed for the LNP makes use of three of the above zoning categories mentioned (i.e. TDA, CUA and AED) within the boundaries of the Park, with most of the Park being CUAs with either a high, medium, low (restricted) or low intensity categorisation. The spatial distribution of these zones is presented in Figure 14.

¹⁶ And to a lesser extent management infrastructure and activities



ZONATION

Zone Classification

- Controlled Use Area - Low Intensity - Restricted
- Controlled Use Area - Low Intensity
- Controlled Use Area - Medium Intensity
- Controlled Use Area - High Intensity
- Area of Economic Development
- Buffer Zone
- No Fence

TDA PAMP (P 0-2) TDA SBP (P 3-5)

- High Intensity
- Medium Intensity
- Low Intensity
- Limited Intensity
- Medium Intensity
- Low Intensity
- Limited Intensity



Figure 14. Zonation map for Limpopo National Park

6.2 Zone Details

Permissible and non-permissible activities and developments for each zone are described in the outline below. Additional rules and requirements are provided in the LNP **Specific Park Regulation** as well as in operational protocols forming part of LNP's operational management framework. Although certain developments and activities may be permitted within a zone, they may nonetheless require additional approvals or permitting, as set out in the Specific Park Regulation, prior to their implementation. Park Management is responsible for monitoring the impacts of any public use of the LNP and, if necessary, may intervene based on evidence of unacceptable impact on LNP resources or values. The interventions may take the form of temporarily or permanently restricting access to a specific area, placing limitations on specific activities in the area or prohibit an activity in the area, recognising the rights of any users. Imposing these restrictions on an area does not necessarily mean that all activities are restricted in the area e.g., scientific research and monitoring, law enforcement and general management activities may still be undertaken in any of these areas as and when needed.

Proposals for new activities and developments, not listed in any of the zones, may be submitted to Park Management for consideration and will be evaluated on a case-by-case basis. Additionally, any development or new structures in LNP must have prior approval by the relevant authorities.

6.3 Controlled Use Areas

The anticipated nature and size of the demand for tourism and community resource use along the buffer zone in LNP, as well as biophysical considerations and existing land use practices have influenced the establishment and descriptions of the CUAs. Broad details of the CUAs are covered below while details of specific permissible and prohibited developments and activities within each of the identified TDAs are dealt with in the Specific Park Regulations. Designated settlement footprints defined for resident communities living inside any of the CUAs as well as the permissible and prohibited activities and development for these communities are elaborated on under the Community Programme section of this document.

The **CUAs** broadly include the following areas (see Figure 14 for a spatial layout of the CUAs):

CUA-LI (low intensity and density¹⁷), the largest zone, includes the entire northern area of the Park. The eastern part of the southern boundary is demarcated by the 4x4 track running from the barrier fence in the south to Bingo where it intersects with the Shingwedzi River, it then follows the Shingwedzi River upstream until it intersects with the Madonse River, it continues along the Madonse River up to the International Boundary. The largest areas of use in this zone are set aside for TDAs with low intensity of use within concession areas as well as limited numbers of 4x4 trail permit holders. CUA-LI has potential for more TDAs than currently identified, and these may be opened for concessions, but the number of TDA sites within CUA-LI will be limited as will the number of game drive vehicles. Proposed wildlife movement corridors are identified within the buffer zone next to the CUA-LI and align with the ecological linkages to BNP and GNP in the east and north (also see section 6.6).

¹⁷ The meanings of density and intensity development, activities and use are:

- a. High density infrastructure development - high coverage of infrastructure with moderate levels of change in the biological and environmental characteristics associated with the natural and cultural landscape of the area.
- b. High intensity activities and use – activities and use with high but not serious levels of disturbance and impacts on the natural and cultural landscape which can be mitigated.
- c. Medium density infrastructure development - minor coverage of infrastructure with moderate levels of change in the biological and environmental characteristics associated with the natural and cultural landscape of the area.
- d. Medium intensity activities and use – activities and use with moderate levels of disturbance and impacts on the natural and cultural landscape which can be mitigated.
- e. Low density infrastructure development – limited coverage of infrastructure that does not change the biological and environmental characteristics associated with the natural and cultural landscape of the area.
- f. Low intensity activities and use – activities and use with very low levels of disturbance and impacts on the natural and cultural landscape.

CUA-MI (medium intensity and density) consisting of the area south of the Madonse River from the Giriyyondo border post up to the primary track running north south all the way down to Massingir Velho, then south east to Massingir Dam. With the southern boundary being the Elefantes River and the western boundary the International Border from the Elefantes River to Giriyyondo. It is a medium use area aiming to answer to the Park's objectives to increase tourism opportunities close to an already existing tourism market in the KNP, mainly consisting of TDA with low and limited intensity development footprints.

CUA-HI (high intensity and density) includes the immediate area around Massingir Dam as the southern boundary all along the barrier fence up to the 4x4 track which creates the northern boundary of this zone up to the primary tract running in a north-south alignment down to Massingir Velho and Massingir Dam to form the western boundary.

The use in this zone is set aside for TDA of high intensity, ranging from resort type developments, corporate lodges, low intensity use inside concessions to limited 4x4 type developments. Activities along the dam will be regulated according to the ARA-Sul's dam zoning plan. This is an area for high intensity visitor use with a road network designed to cater for day visitors seeking a game viewing experience but which does not negatively impact on the lower use zones. Larger game drive vehicles may be permitted if circumstances are conducive. Traffic may be controlled in a manner that improves flow, e.g. one-way traffic.

Within the CUAs **restricted areas** will be imposed on specific areas with a high scenic and sensitivity value, where any type of development will have a degenerated effect on the surrounding landscape. Manmade developments will be restricted to prevent negative impacts on the wilderness character of these areas. Areas to include are the following:

- Shingwedzi Cliffs
- Elefantes Gorge
- Visual sensitive ridges along the Lebombo Mountains bordering onto KNP
- Sand forest plateau between Nhangombolo and Chinhucu River with high ecological value and sensitivity combined with a high visual sensitivity.
- Tokomagona River environment just south of Lilau River
- Identified escarpments, crests and foot slopes next to the Shingwedzi River where any development will pose a high visual impact to the surrounding environment.

6.4 Tourism Development Areas

Tourism Development Areas or TDAs are nodal sites which have been identified and where ecotourism concession opportunities may be undertaken within LNP, subject to certain restrictions. The TDA sites have been selected in a manner which showcase various aspects of the LNP and provide for a range of user experiences, densities and activities while limiting the impact on other users as well as on the natural values of the area.

The TDA sites are located in CUAs (Figure 14), with sites possibly being at each of the following broad geographical locations: on the northern banks of the Massingir Dam, Elefantes Gorge Concession, Bonsweni Concession, Shingwedzi floodplain landscape, Mapai area, Lilau plateau and Pafuri surrounds. A few sites have been identified in the buffer zone to the Park but require further discussion with stakeholders.

As set out in Section 5.4, tourism development will be phased. The zonation map thus depicts two types of TDA symbols illustrating the development period covered in the Management Plan – i.e., Phases 1&2 (2021-2032) as well as in the Strategic Tourism Development Plan for the Park - Phase 3-5 (2032-2045).

The TDA categories are:

- a) Limited intensity – very few facilities, only nonpermanent infrastructure development and where the maximum tourism number per site is 24 (there are 10 sites identified in the Park)
- b) Low intensity - few facilities where the maximum tourism number per site is 48 (there are 15 of these in the Park)

c) Medium intensity - moderate number of facilities where the maximum tourism number per site is 100 (there are seven of these in the Park)

d) High intensity - high number of facilities and where the maximum tourism number per site is 750 (there is one hub identified in the Park).

A 4x4 trail network with small rustic campsites will also be developed in a manner that they leave no permanent footprint - camps will be developed as and when needed, and their location may change over time, currently these are set at the limited intensity locations.

6.5 Area of Economic Development

This zone represents about 11% or 1,019km² of the Park area and includes the area south of the barrier fence in the triangle created through the confluence of the Limpopo and Elefantos Rivers on the inside of the buffer zone. The AED will be accessible for Park and community development initiatives, but under the authority of the Park. The Park will develop principles and planning guidelines for the AED that will guide the different types of economic development and activities that could be undertaken in the AED. These development guidelines would include:

- A detailed land use plan for the area selecting the optimal land use/s for the area so as to meet people's needs but still safeguard resources for the future
- All development to be based on sustainable natural resource use principles with no net negative impact on the environment
- Would potentially include water access improvement to provide larger range areas for livestock grazing as part of the planned Herding for Health (H4H) programme
- Could include wildlife economy-based projects.

6.6 Buffer Zone and Critical Ecological Linkages

In order to maintain and secure critical ecological linkages between the various protected areas close to LNP, namely Banhine in Mozambique (and onwards to ZNP), and GNP in Zimbabwe, the following is proposed (see below figure):

- Expanding the current buffer zone of the Park in the north and between LNP and BNP to accommodate wildlife dispersal, protect the Nuanetzi floodplain and viewsheds specifically on the escarpment to the northeast of the Nuanetzi River
- Recognition and formalisation of wildlife corridors (about 1,790km²) – not only in the current buffer zone (as identified in the 2012 Buffer Zone Management Plan) but also the proposed buffer zone, including-
 - between the villages of Chipeluene and to the south of Chicondzo, linking LNP to BNP through one of the last remaining ecologically functional and relatively sparsely populated areas along the Limpopo River between these two parks
 - in the north of the Park along the Limpopo River between the villages of Mbuzi and Ndlala and Chitsutsuine and Salane, linking LNP with GNP through the Nuanetzi River floodplain area.

As the 2012 Buffer Zone Management Plan only pertains to the current buffer zone this requires further discussion and updating in collaboration with affected communities and District and Provincial authorities.

The formalisation and safeguarding of these linkages will ensure ecological connectivity (habitats and genetic material), ecosystem functionality and reduce protected area fragmentation in the region. Human activities and conservation objectives need to, however, be aligned to ensure sustainable use of natural resources. These proposed areas (an area of about 4,190km²) together with the existing buffer zone (1,720km²) will require detail land use planning through a collaborative approach with key stakeholders and could consider opportunities for community conservation areas and other effective conservation measures including community-owned wildlife friendly and wildlife economy initiatives enabling direct, tangible benefits to affected communities. A suite of economic options, inclusive of consumptive and non-consumptive tourism activities, should thus form part of the

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