



**PARQUE NACIONAL
DE MAPUTO**



ANAC
ADMINISTRAÇÃO NACIONAL
DAS ÁREAS DE CONSERVAÇÃO

**MAPUTO NATIONAL PARK
MANAGEMENT PLAN**

For the Period 2023 - 2032

Copies of this Report can be obtained from:

NATIONAL ADMINISTRATION OF CONSERVATION AREAS

Av. 10 de Novembro, no 40, Praceta no 1196, MAPUTO,
Telephone: +258 21 303650, Fax: +258 21 306212

PARK ADMINISTRATOR: MAPUTO NATIONAL PARK

E-mail: info@reservamaputo.gov.mz

ACKNOWLEDGEMENTS

This Management Plan was prepared as a collaborative initiative. Numerous institutions and expert individuals provided information, documentation and advice (refer Annexure A). In particular, Peace Parks Foundation's guidance and support in the production of the plan are acknowledged.

CITATION

National Administration of Conservation Areas. 2022. Maputo National Park Management Plan for the Period 2022 - 2032. vi + 94pp

"The conscious destruction of our flora and fauna threatens our most valuable heritage: nature.

Forests are one of our greatest assets. They provide us with precious and essential wood, purify the air we breathe, regulate the climate and the river flows, they fertilise the soil and protect us from the destructive action of the winds. They stabilise the dunes, prevent desertification and provide the habitat for thousands and thousands of animals from which we derive great benefits.

Our wildlife has an immeasurable cultural, scientific, ecological and economic value."

– Samora Moisés Machel, 1981





REPUBLIC OF MOZAMBIQUE
MINISTRY OF LAND AND ENVIRONMENT

APPROVAL

MINISTRY OF LAND AND ENVIRONMENT

Ministerial Diploma No 24/2023

of 30 January

With the need to ensure effective management of Maputo National Park, in order to guarantee the protection of ecosystems and natural resources therein, pursuant to paragraph 1 of Article 68 of the Regulation 16/2014, of 20 June, amended and republished 5/2017, of 11 May, Law of Protection, Conservation and Sustainable Use of Biological Diversity, approved by Decree No 89/2017 of 29 December, I determine:

Article 1. The National Park Management Plan is approved in Maputo for the period 2023 to 2032.

Art. 2. This Ministerial Diploma enters into force on the date of publication.

Ministry of Land and Environment, in Maputo, at 23 November 2022. - The Minister of Land and Environment, Ivete Joaquim Maibaze.

Minister of Land and Environment

Autorizo.
I Maibaze
23/11/2022

Honourable Minister
Ivete Joaquim Maibaze



TABLE OF CONTENTS

APPROVAL	i
TABLE OF CONTENTS	ii
ACRONYMS	iv
LIST OF FIGURES	v
LIST OF TABLES	v
LIST OF ANNEXURES	v

01 INTRODUCTION 01

1.1 Brief Background and Context	02
1.2 Purpose of this Plan	02
1.3 Enabling Legal Framework	03
1.4 Governance, Planning and Reporting Framework	03
1.5 Structure of this Plan	09

02 DESCRIPTION 11

2.1 Regional Characteristics	12
2.2 Biophysical Characteristics	19
2.3 Socio-Economic Characteristics	26

03 SITUATION ANALYSIS 33

3.1 Conservation Significance	34
3.2 Cultural Significance	35
3.3 Economic Significance	36
3.4 Opportunities	36
3.5 Threats and Constraints	36
3.6 Current State Outline	39

04 STRATEGIC PLANNING FRAMEWORK 41

4.1 Future Desired State	41
4.2 Theory of Change	41
4.3 Adaptive Management	44
4.4 Management Programmes	44

05 IMPLEMENTATION PLAN 47

5.1 Natural Resource Management	48
5.2 Cultural and Heritage Resource Management	58
5.3 Community Engagement	60
5.4 Tourism Development	62
5.5 Management, Administration and Finance	70

06 ZONATION 79

6.1 Categories of Zonation	80
6.2 Zone Details	83
6.3 Total Protection Areas	83
6.4 Tourism Development Areas	84
6.5 Controlled Use Areas	84

REFERENCES 88

APPENDICES 89

Appendix 1: Park Level Agreements	89
Appendix 2: Past METT Results for the Maputo National Park	92

ACRONYMS

ANAC*	National Administration of Conservation Areas
CBNRM	Community Based Natural Resource Management
CUA	Controlled Use Area
DUAT*	Right of use and exploitation of land
EAME	Eastern African Marine Ecoregion
EPA	Environmental Protection Area
HWC	Human Wildlife Conflict
MCPE	Maputaland Centre of Plant Endemism
METT	Management Effectiveness Tracking Tool
MTA*	Ministry of Land and Environment
MNAP	Maputo National Park
MoU	Memorandum of Understanding
MSR	Maputo Special Reserve
MU	Management Unit
PEOT*	Special Plan of Spatial Planning
PPF	Peace Parks Foundation
PPMR	Ponta do Ouro Partial Marine Reserve
SADC	Southern African Development Community
SAPA	Social Assessment of Protected Areas
SOP	Standard Operational Procedure
SPV	Special Purpose Vehicle
TDA	Tourism Development Area
TFCA	Transfrontier Conservation Area
TPA	Total Protection Area
TPC	Threshold of Potential Concern
WHS	World Heritage Site

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

LIST OF FIGURES

Figure 1.	The regional context of the Maputo National Park	03
Figure 2.	Relationship between plans, strategies, and operational protocols of significance to the park	06
Figure 3.	Maputo National Park showing the terrestrial and marine components	13
Figure 4.	Land tenure in the areas surrounding the Maputo National Park	14
Figure 5.	The geology of the area surrounding and including the park	19
Figure 6.	The hydrology of the area surrounding and including the Maputo National Park	20
Figure 7.	Soils of the Maputo National Park	23
Figure 8.	Land cover of the area surrounding and including the Maputo National Park	24
Figure 9.	Marine ecosystems associated with the Maputo National Park	27
Figure 10.	Location of communities in the area surrounding and including the park	28
Figure 11.	Land use in the area surrounding and including the Maputo National Park	31
Figure 12.	Simplified, schematic Theory of Change for the Maputo National Park	43
Figure 13.	Zonation map for MNAP	81
Figure 14.	Zonation map details	82

LIST OF TABLES

Table 1.	Government stakeholders	07
Table 2.	Landcover types for MNAP	21
Table 3.	Estimated number of individuals per species and trophic guild, and target number of animal units	50
Table 4.	Operational objectives and key actions for the Natural Resource Management Programme	56
Table 5.	Estimated annual budget for the Natural Resource Programme	58
Table 6.	Operational objectives and key actions for the Cultural and Heritage Resource Management Programme	59
Table 7.	Operational objectives and key actions for the Community Engagement Programme	61
Table 8.	Estimated annual support budget for the Community Programme	62
Table 9.	Potential tourism development sites with the park	64
Table 10.	Operational objectives and key actions for the Tourism Development Programme	69
Table 11.	Estimated Annual Cost of the Tourism Management Programme	70
Table 12.	Research and knowledge gaps identified at the time of drafting this plan	73
Table 13.	Operational objectives and key actions for the Management, Administration and Finance Programme	74
Table 14.	Estimated annual budget for the Management, Administration and Finance Programme	76
Table 15.	Coverage of park zones	83
Table 16.	Park level agreements	89
Table 17.	Past METT results for the park	92

LIST OF ANNEXURES

ANNEXURE A	Stakeholder Engagement and Validation Report – 2022-2032 Park Management Plan and Specific Regulation, June 2022.
-------------------	---



CHAPTER 01

INTRODUCTION

This chapter gives context to the development of the management plan for MNAP. It also explains its purpose, structure and focus and provides an overview of the governance, planning and reporting framework as well as a brief overview of the legal framework governing the park.



The MNAP was established in December 2021 in terms of the Law for the Protection, Conservation and Sustainable Use of Biological Diversity (Act No. 5 of 2017) and this plan has been prepared in terms of that Law and associated Regulations.



1.1 Brief Background and Context

The Maputo National Park (MNAP) is a 1,728km² protected area under the auspices of the National Administration of Conservation Areas (ANAC; see Sections 1.3 and 1.4.1), spanning coastal, terrestrial, and marine ecosystems in the southern-most region of Mozambique. It forms an integral element of two of the Lubombo Transfrontier Conservation Area components (Lubombo TFCA; Figure 1): the Lubombo Conservancy-Goba and Usuthu-Tembe-Futi TFCA and the Ponta do Ouro-Kosi Bay TFCA.

The MNAP was established in December 2021¹ in terms of the Law for the Protection, Conservation and Sustainable Use of Biological Diversity (Act No. 5 of 2017) and this plan has been prepared in terms of that Law and associated Regulations.

Concurrently with the development of this plan for the MNAP, a dossier is being prepared in terms of the Convention Concerning the Protection of the World Cultural and Natural Heritage of 1972 presenting evidence in support of the claim that the biodiversity and heritage features of the MNAP are of global significance and arguing for the MNAP to be afforded World Heritage Site (WHS) status. Successful proclamation as a WHS requires a fundamental commitment to the protection, conservation, preservation, and presentation of World Heritage values together with a strong emphasis on local economic development.

Globally, growing knowledge of the importance of natural systems and biodiversity in the wellbeing of human communities is becoming increasingly mainstreamed while simultaneously the developmental needs of billions of people require urgent attention. Consistent with this, this plan for MNAP seeks to strike an appropriate and delicate balance between conservation objectives and societal developmental needs, i.e., to pursue an approach that optimises the economic potential of the MNAP without, in any significant manner, compromising the natural values and cultural integrity of the site.

1.2 Purpose of this Plan

This plan for the MNAP is a ten-year management plan covering the strategic interventions in the MNAP for the period 2022 – 2032. The plan builds on earlier plans for the constituent components of the new MNAP; i.e. the Maputo Special Reserve (MSR) and the Ponta do Ouro Partial Marine Reserve (PPMR). It is the first plan drafted for the integrated protected area and gives due recognition to the recently established Environmental Protection Area (EPA). What follows is a framework for integrating conservation, tourism, and the economic development of local communities living in and adjacent to the park while at the same time protecting the outstanding natural value of the area which makes it a candidate for WHS status.

¹ Decree No. 100/2021 of 31 December



FIGURE 1. The regional context of the Maputo National Park

1.3 Enabling Legal Framework

The management of the MNAP is subject to the legal framework of the Government of Mozambique and its international commitments. Primary national legislation regulating the conservation of biodiversity and natural resources as well as the management of national parks and other protected areas in Mozambique are:

- » 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)
- » Decree No. 16/2022 of 29 April (adjusting the designation, competencies, autonomy, management, budgetary regime, organisation, and operation of ANAC, created by Decree No. 11/2022 of 25 May and revokes Decree No. 8/2016 of 15 April and Decree No. 2/2018 of 31 January)
- » Law No. 22/2013 of 1 November (Fishing Law)
- » Law No. 20 of 1997 of 1 October (Environmental Law) and its regulations
- » Law No. 19 of 1997 of 18 July (Land Planning Law)
- » Law No. 15 of 2011 of 10 August (Public Private Partnership Law)
- » Law No. 10/1999 of 7 July (Forest and Wildlife Law) and its regulation
- » Law No. 20 of 2014 of 18 August (Mining Law).

Other relevant regulatory tools are applicable to the management of the MNAP and are contained in the park Compliance Register. Subsidiary Park level agreements applicable at drafting of this plan are presented in Park Level Agreements and Memorandums of Understanding (MoU) in Table 15; Appendix 1.

The preparation of a WHS nomination dossier in terms of the World Heritage Convention reflects a conviction that the biodiversity and heritage features of the MNAP are of global significance. A successful nomination will require that Mozambique and the management of the MNAP recognise a fundamental commitment to the protection, conservation, preservation, and presentation of World Heritage values in their management of the MNAP together with a strong emphasis on local economic development. This plan expresses the commitment of management to pursue an approach that optimises the economic potential of the site

without in any significant manner compromising the natural and cultural integrity of the site.

Further international commitments in relation to the management of biodiversity in Mozambique that are relevant to both the terrestrial and marine components of the MNAP, which includes the role of the MNAP as a key element of the Lubombo TFCA, include:

- » United Nations Convention on International Trade in Endangered Species of Wildlife Fauna and Flora, 1975
- » United Nations Convention on Migratory Species of Wild Animals, 1983
- » United Nations Convention on Biological Diversity, 1992
- » African Convention on the Conservation of Nature and Natural Resources, revised, 2003
- » Southern African Development Community (SADC) Protocol on Wildlife Conservation and Law Enforcement of 1999
- » General Transfrontier Conservation and Resource Area Protocol, 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.

1.4 Governance, Planning and Reporting Framework

1.4.1 Governance

Under the Law for the Protection, Conservation and Sustainable Use of Biological Diversity and its regulation, ANAC administers all protected areas in Mozambique including the MNAP. The same law provides for the participation by private sector and local communities in the administration of conservation areas through public private partnerships.

According to Decree No. 16/2022, ANAC resorts sectorally under the Minister who oversees conservation areas (i.e., the Minister of Land and Environment) and financially under the Minister overseeing government finances. ANAC is an autonomous 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 aims to-



- » ensure the implementation of biodiversity conservation policies and management of conservation areas
- » promote biodiversity conservation and ensure wildlife management
- » ensure conservation of biodiversity, landscapes, and associated heritage
- » define mechanisms for the administration and sustainable use of these areas
- » establish infrastructure in these areas for the management of biodiversity and economic activities to ensure self-sufficiency.

To achieve these objectives, ANAC’s responsibilities and competencies are set out in Decree 16/2022. As such, ANAC through the MNAP Park Management team (see Section 1.4.4) is thus responsible for the development and implementation of this plan.

A Management Council has been established² in terms of the Law for the Protection, Conservation and Sustainable Use of Biological Diversity as an advisory body to Park Management. The Management Council is chaired by the Park Administrator and comprises representatives from local communities, private and social sector associations, and Administrator(s) of the district(s) wherein the park falls. 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 MNAP
- » Implementation of this plan
- » The developmental needs of communities legally residing in the MNAP and buffer areas
- » Contributing to the preparation of strategic plans for the development of the MNAP
- » 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.

In the context of the Lubombo TFCA, the three participating partner countries recognise the shared nature of the terrestrial and marine resources in the area, including:

- » The ecological importance and sensitivity of these environments, their globally significant biodiversity and unique community structures
- » The importance of the natural resources in sustaining the livelihoods of local citizens
- » The shared nature of many threats posed to the integrity of the ecosystems of the area
- » The need for a common approach to sustainable development and precautionary approaches to resource use.

Mozambique has placed poverty alleviation high on the national agenda and recognises the need for local socio-economic development based on the sustainable use of natural resources and through the promotion of ecotourism in the region.

1.4.2 Planning

The development of this plan has taken consideration of national planning processes as well as the planning processes related to the development of the WHS and considerations of the Lubombo TFCA involving the Kingdom of eSwatini and

² The Management Council was established in May 2019.

³ In December 2019, the Council of Ministers gazetted the proclamation of the Maputo EPA with the MSR, PPMR and the Inhaca and Portuguese Island Forest and Marine Reserves as the core protected areas.

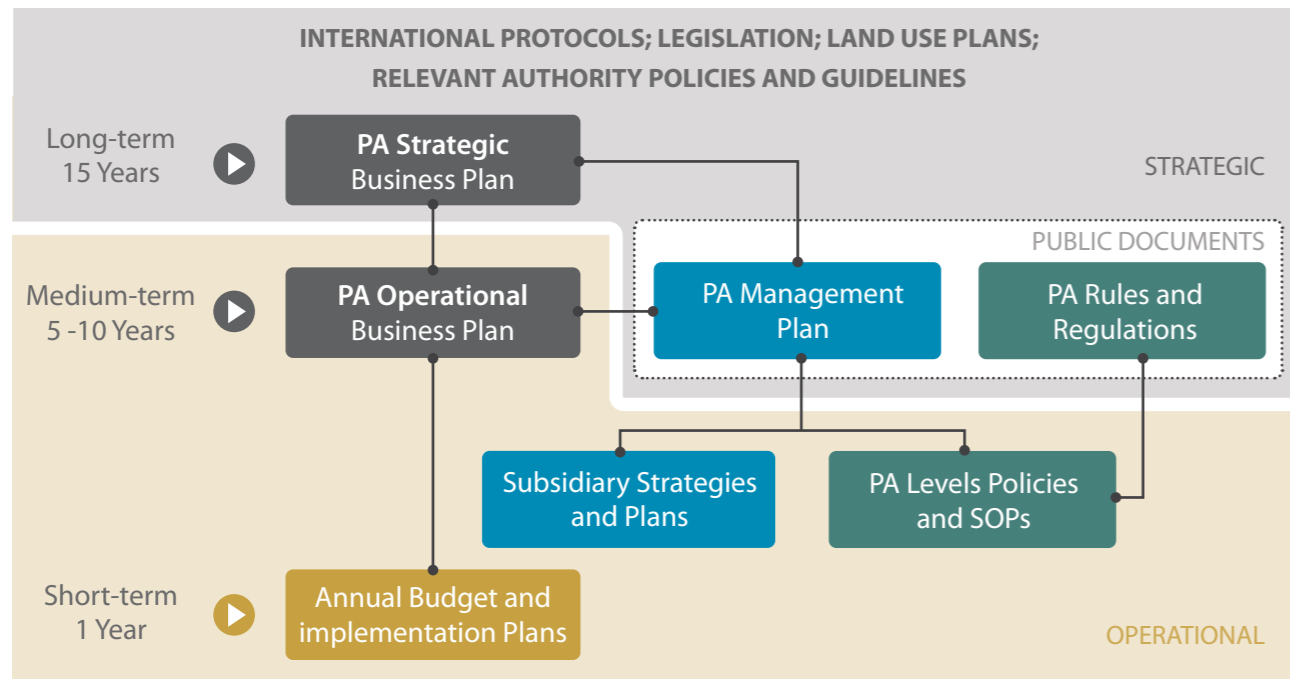


Figure 2. Relationship between plans, strategies, and operational protocols of significance to the park

the Republic of South Africa.

The following relevant planning documents and processes have been considered in this planning process:

- » The Integrated Development Plan for the Combined Lubombo Conservancy-Goba and Usuthu-Tembe-Futi TFCA (2014)
- » The MSR-Tembe Elephant Park Joint Operational Strategy (2013)
- » Ponta do Ouro Partial Marine Reserve Management Plan (2011)
- » Special Plan of Spatial Planning (PEOT) of a portion of the district of Matutuine and the Island of Inhaca (2020)
- » Local area development plans for Ponta do Ouro, Bela Vista and Salamanga (2020)
- » Planning processes relating to the Maputo EPA (proclaimed in December 2019).

The Maputo EPA has been gazetted³, and although it is a discrete land-use planning unit, it forms a wider ecological buffer than the formal buffer zone of park and is thus functionally very important (Figure 1 and Figure 3). At the time of drafting this plan for MNAP, the EPA did not have a completed plan guiding its own implementation. Future and ongoing alignment between the plans for the EPA and the

MNAP is essential. In addition to the EPA, this plan integrates with and is aligned other Park plans, strategies and operational level protocols. The dependency relationships of significance to the MNAP are illustrated in Figure 2.

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:

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




1.4.3 Stakeholder Engagement

Internationally, the protocols of the Lubombo TFCA facilitate engagement at various levels. At the political level there is a Trilateral Ministerial Committee through which the Minister of Land and Environment engages counterparts in South Africa and eSwatini. Below this, is a technically oriented Trilateral Commission which is attended by Directors General from the three countries and which is responsible for overseeing the achievement of the objectives of the protocol and advising the Ministerial Committee. The Trilateral Commission can establish Task Groups to address the development and implementation of component programmes, plans and projects. At the level of park management, Park Management Committees meet 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.

Regionally, four regional community fora, representative of local community fora, have been established. They are the Zitundo, Machangulo, Bela Vista and Inhaca Island.

In addition, there are 16 community based Natural Resource Management Committees in and around MNAP as well as four Community Fisheries Boards or Committees. These structures are represented on the Park Management Council (Section 1.4.1).

Table 1. Government stakeholders

 NATIONAL LEVEL	 PROVINCIAL LEVEL	 DISTRICT LEVEL
<ul style="list-style-type: none"> » Ministry of Agriculture and Rural Development » Ministry of Culture and Tourism » Ministry of Defense » Ministry of Economic and Finance » Ministry of Education and Human Development » Ministry of Public Works and Buildings » Ministry of Sea, Inland Waters and Fisheries » Ministry of Transport and Communication » National Fisheries Administration » National Institute for Fisheries and Aquaculture Development » National Institute for Fisheries Research » National Maritime Administration » National Maritime Institute » Eduardo Mondlane University 	<ul style="list-style-type: none"> » Independent Battalion of Boane » Provincial Directorate of Agriculture and Food Security » Provincial Directorate of Culture and Tourism » Provincial Directorate of Economics and Finance » Provincial Directorate of Education and Human Development » Provincial Directorate of Land and Environment » Provincial Directorate of Public Works and Buildings » Provincial Directorate of the Sea, Inland Waters and Fisheries » Provincial Directorate of Transport and Communication 	<ul style="list-style-type: none"> » Matutuine District Administration » City of Maputo's KaNyaka District Administration » Administrative Heads of the five administrative posts: Bela Vista, Catembe Nsime, Catuane, Machangulo and Zitundo » District Services for Education and Human Development » District Services for Planning and Infrastructures » District Services of Economic Activities

There are also private sector operator committees for Ponta do Ouro and Malongane, Ponta Madejane, Mamoli and Techobanine as well as the Machungulo Peninsula and the concessionaires established within the terrestrial component of the park.

The relevant government stakeholders at central, provincial and district levels (Table 1) are engaged as the need arises and through scheduled meetings.

1.4.4 Park Management

The MNAP is managed by ANAC through a Management Unit (MU) consisting of a Park Administrator (appointed by ANAC) supported by an Operational Manager or Technical Advisor, appointed by Peace Parks Foundation (PPF) in terms of a co-financing agreement between the two entities. The Park Administrator has overall responsibility and accountability for the implementation of this plan and the Park Operational Business Plan (see Figure 2) and oversees and coordinates the following functional work areas:

- » Conservation
- » Community Development
- » Tourism
- » Terrestrial and Marine Protection and Compliance
- » Communications and Stakeholder Engagement
- » Infrastructure
- » Finance and Administration.

The MU is chaired by the Park Administrator and reports to a Supervisory Committee which is chaired by the Director General of ANAC and comprises representatives from the Ministry of Land and Environment (MTA), the Provincial Directorate of Land and Environment, ANAC and PPF. Other Government representatives are invited to participate or observe depending on issues to be discussed.

The MU 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 Supervisory Committee, and ensuring institutional collaboration with government entities and key stakeholders.

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

- » Approve the appointment of MU members
- » Review and approve workplans and budgets, or material change requests, presented by the MU
- » Review and approve key strategic documentation
- » Stimulate private sector and donor interest in the development of the MNAP, including its tourism opportunities
- » Ensure the necessary support for cost efficient and effective development and management of MNAP
- » Monitor the development and management of the MNAP
- » Ensure compliance with financial procedures.

1.4.5 Monitoring and Reporting

There are several different plans associated with the MNAP (see Figure 2) and each of these has its own review (evaluation) and reporting interval. The ten-year implementation cycle of the plan provides the framework for all the planning and implementation that take place in shorter cycles. It is the responsibility of park management to ensure that the park is managed in a manner consistent with the plans and strategies and that they periodically review and update these, including the monitoring components, in an adaptive manner. Monitoring and evaluation and reporting on progress in relation to these plans and strategies will thus be led by the Park Administrator and MU.

At a strategic level, the success of implementation of the Management Plan will be measured and reported on in terms of the key operational objectives and annual targets, and at an operational level, linked to the performance measures set out in the various operational level instruments.

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 Management Council and Supervisory Committee. 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 their behalf.

1.5 Structure of this Plan

This Management Plan for the MNAP contains six chapters followed by References and Appendices which contain a list of known species in the MNAP as well as a comprehensive listing of applicable legislation at international, national and park levels. The six chapters are as follows:

	Chapter ONE:	Introduction This chapter gives context to the development of the management plan for MNAP. It also explains its purpose, structure and focus and provides an overview of the governance, planning and reporting framework as well as a brief overview of the legal framework governing the park.
	Chapter TWO:	Description This chapter provides a brief situational overview of the MNAP and the surrounding region in terms of historical, biophysical, socio-economic, infrastructural, and tourism characteristics and context.
	Chapter THREE:	Situation Analysis This chapter constructs an integrated picture of the conservation, cultural heritage, and economic significance of the MNAP, 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.
	Chapter FOUR:	Strategic Planning Framework This chapter discusses the strategic plan for the MNAP and presents the park's vision, problem statements and strategic objectives. It also provides a theory of change and how to approach adaptive management.
	Chapter FIVE:	Implementation Plan This chapter fleshes out the priority management programmes for the next decade (2022 to 2032).
	Chapter SIX:	Zonation This chapter details the spatial zonation of the MNAP and how this aligns to tourism and other management activities as well as resident and neighbouring communities.



CHAPTER 02

DESCRIPTION

This chapter provides a brief situational overview of the MNAP and the surrounding region in terms of historical, biophysical, socio-economic, infrastructural, and tourism characteristics and context.



Within Mozambique, the MNAP forms the core of the Maputo EPA. Covering 1,718km², the MNAP comprises terrestrial (1,040km²) and contiguous marine (678km²) components and is an amalgamation of two historically established protected areas, MSR and PPMR.



2.1 Regional Characteristics

2.1.1 Location and Extent

MNAP is located largely within the Matutuine District of the Maputo Province in the southern-most region of Mozambique and forms part of the 10,029km² Lubombo TFCA (Figure 1). The Lubombo TFCA includes four distinct transfrontier conservation areas shared between Mozambique, South Africa, and the Kingdom of eSwatini⁴ and lies in the heart of the globally acknowledged Maputland Centre of Plant Endemism (MCPE)⁵. The park falls within two of these components of the Lubombo TFCA: the terrestrial component of the park forms part of the Lubombo Conservancy-Goba and Usuthu-Tembe-Futi TFCA and the marine component, the Ponta do Ouro-Kosi Bay TFCA.

Within Mozambique, the MNAP forms the core of the Maputo EPA. Covering 1,718km², the MNAP comprises terrestrial (1,040km²) and contiguous marine (678km²) components and is an amalgamation of two historically established protected areas, MSR and PPMR. The park was proclaimed with buffer zone covering an area of approximately 1202km² (terrestrial: 664km² and marine: 538km²). The Machangulo Peninsula and the Inhaca Archipelago are not included in the MNAP (Figure 3).

The terrestrial area lies to the east of the Maputo River and south of the Bay of Maputo and the Machangulo Peninsula. It is bounded in the southeast by the southern extents of Lake Xinguti and Lake Piti. The Futi corridor runs from the southwest of the main area, along the Futi River linking to the Tembe Elephant Park in South Africa. Although contiguous with the marine component in much of the MNAP, the terrestrial component ends at the landward edge of beach⁶ where the marine component begins.

The marine component of MNAP extends to three nautical miles into open marine waters and one nautical mile into bay waters. The transition between open marine waters and bay waters takes place at the most north-easterly point of Inhaca Island. The open marine waters extend from the international border with South Africa north to the north-easterly most point of Inhaca Island. The bay waters extend from the most north-easterly point of Inhaca Island to the mouth of the Maputo River and includes the shallow waters separating Inhaca Island from the Machangulo Peninsula – the Ponta Torres strait.

4 The four areas are a) Songimvelo-Malolotja; b) Lubombo Conservancy-Goba and Usuthu-Tembe-Futi; c) Nsubane-Pongola; and d) Ponta do Ouro-Kosi Bay.
 5 van Wyk, 1996.
 6 The area periodically inundated by the sea, plus the subsequent strip of sand, gravel and boulders, to the limit where natural vegetation begins, or, in its absence, where another ecosystem begins.



FIGURE 3. Maputo National Park showing the terrestrial and marine components

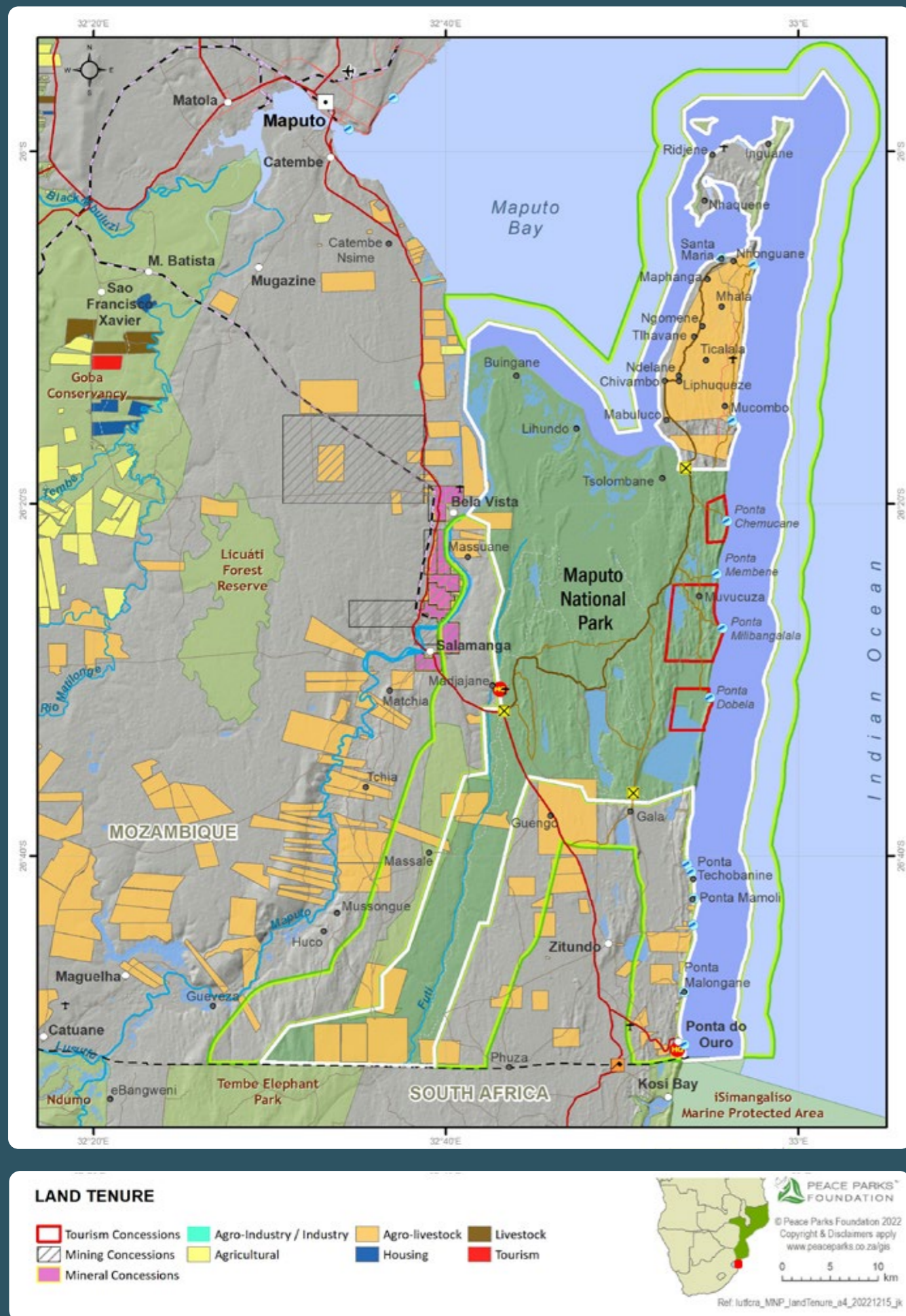


FIGURE 4. Land tenure in the areas surrounding the Maputo National Park

2.1.2 Regional Infrastructure and Services

Transport in the region south of Maputo is largely land based but includes air and water transport. Road access to the region is made easy by the upgraded arterial road, including the new bridge over the bay to the south of Maputo, which runs the 110km from Maputo, through Bella Vista, Salamanga and Zithundo to the South African Border. Boat based travel can be used to access Inhaca Island and the Machangulo Peninsula directly from Maputo. There are three airstrips for light aircraft in the region, one at Machangulo, one located to the north-east of Inhaca village, and a third outside Ponta do Ouro.

The national electricity supply network covers approximately 45% of the district through a power supply line which passes from Salamanga, through MNAP, to the Machangulo Peninsula and via sub-marine cable to Inhaca Island at Ponta Torres. A further power supply line extends south from Salamanga for both public and private use. Where there is no electrical grid supply, most people rely on firewood and charcoal for their energy needs.

Mobile and fixed telephone networks partially cover the region. Generally, within the MNAP communication is poor but is made possible by cellular booster towers, one of which is installed at the park Head Quarters.

There are 54 primary schools, four secondary schools and one technical school in the area surrounding the MNAP, with a concentration in the Bela Vista, Salamanga and Zitundo areas accommodating over 13,000 students. Illiteracy levels among adults are lower than for other rural areas in the country but there is a gender bias with illiteracy levels being higher for adult women than men.

There are 13 health posts and centres in the area around MNAP with nodes at Bela Vista, Machangulo, Catembe-Nsime, Catuane and Zitundo. In general, these stations are understaffed and malaria, dysentery, measles together with HIV/AIDS and Tuberculosis present significant developmental challenges.

Water supply in the district is largely (70%) from wells, boreholes, and small local water supply systems. A few communities augment their water supply from the Maputo River. Sanitation services cover less than 50% of the area and more than half of the district's population have no latrines (Direcção Nacional de Ordenamento Territorial, 2020).

There is a well-established Marine Biology Research Station on Inhaca Island which is managed by the University of Eduardo Mondlane and which attracts regional, national, and international students, teachers and researchers. The research station develops and offers environmental education programmes at schools as well as extension services to local communities.

2.1.3 Regional Land Tenure

Under Mozambican law, all land is owned by the State. However, the Constitution recognises the right of all citizens to enjoy, use and exploit land as determined by the State through DUATs (i.e., 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 MTA.

The categories of DUATs and Special Licences that currently apply to the area surrounding and within MNAP are listed below and the spatial context of specific DUATs and Special Licences are shown in Figure 4:

- » DUATs for agriculture, livestock, business/industry/ services, tourism, housing, social/religious activities and trade purposes
- » DUATs relating to mineral concessions
- » DUATs relating to ecotourism concessions⁷, specifically:
 - At Ponta Chemucane (8.1km²), awarded to the association A Hi Zameni Chemucane
 - At Ponta Milibangalala (30km²), awarded to Mozaico do Índigo, SA
 - At Ponta Dobela (15km²), also awarded to Mozaico do Índigo, SA.

DUATs previously issued and relating to mineral concessions and mining that fall within the boundaries of the MNAP, will no longer be valid. In addition, with the recent proclamation of the EPA, all future developments within and surrounding the MNAP will require a Special Licence issued by MTA and be based on the management and integrated development plans for the EPA as well as the PEOT for part of the district of Matutuine and Inhaca Island. In this instance Park Management will be afforded an opportunity to have input into the decisions.

⁷ Issued in terms of Resolution No. 51-53/2009 of 18 September.

⁸ At the time of writing, these plans are still to be drafted and approved.

2.1.4 Proclamation History of the Area

The terrestrial and marine components of the MNAP as well as constituent parts of the two components have different proclamation histories and the boundaries and spatial extent of the areas have changed over time. A brief history of the constituent areas of the terrestrial component of the MNAP follows.

The main area of the terrestrial component of MNAP, was recognised as a hunting concession (*coutada*) in 1932. In 1960, the boundaries were realigned, and the area formally named the Maputo Elephant Reserve⁹ reportedly for the protection of the remaining elephant population (Tello, 1973). Over the next decade a range of indigenous game was re-introduced to the area and, in recognition of the diversity of wildlife that was thus protected, the area was renamed as the Maputo Special Reserve (MSR) in 1969¹⁰. Around the same period the geographic limits of the area were fixed¹¹.

Between the 1960s and the early 1980s human settlement in the area, including within the boundaries of the MSR, increased. This, together with the subsequent civil war had impact on the ecological integrity of the area, partially through heavy grazing and partially as a result of the substantial reduction in the large mammal populations. The evacuation of most local residents to safer places during the civil war, and the destruction of their livestock herds, provided an ecological reprieve to the area and allowed for the rehabilitation of some of the degraded areas and paved the way for restocking the area with indigenous larger mammals (Stalmans, 2015).

The Futi corridor was incorporated into the MSR in September 2011¹², formally securing an important ecological movement corridor, particularly for large mammals, between the main area in Mozambique and the Tembe Elephant Park in South Africa. Additionally, the inclusion of the Futi corridor into the MSR served to secure representative habitats along the Futi River.

The proclamation history of the marine component of the MNAP, previously known as the Ponta do Ouro Partial Marine Reserve, is considerably shorter, having first been enacted in 1990¹³.

Although the MSR and PPMR were initially managed as two separate conservation areas, the decision was taken by The Park Supervisor Committee (refer section 1.4.4) in October 2017 to manage the two areas as a combined management unit under a single Park Administrator.

Prior to the proclamation of the MNAP, in December 2019, the Council of Ministers gazetted the proclamation of the Maputo EPA with the MSR, PPMR and the Inhaca and Portuguese Island Forest and Marine Reserves as the core protected areas¹⁴. Under the Law for the Protection, Conservation and Sustainable Use of Biological Diversity¹⁵, MSR and PPMR were jointly proclaimed as the Maputo National Park by the Council of Ministers in December 2021¹⁶.

2.1.5 Park Infrastructure

Management and tourism infrastructure in the MNAP are not well developed although most of the terrestrial boundary, other than where it borders onto the Maputo River, the Indian Ocean, or Maputo Bay, is fenced. There is a fence separating the MNAP from the Machangulo Peninsula. Current fencing is not of a uniform standard and ranges from elephant restraining fence to standard game fencing or a combination of both (Figure 3).

The tarred N1 road between Maputo and South Africa crosses the MNAP where the Futi Corridor joins the main area and checkpoints are under construction where the road enters and leaves the MNAP.

There are three entrance gates with the Park Headquarters situated a kilometre north of the main Futi Gate. The Headquarters consist of a complex of housing for Park Management as well as park security and operations and various support facilities. Nearby are the workshop, maintenance stores, and additional staff accommodation as well as a research and training/environmental awareness centre, which includes accommodation, that is currently under development. A marine office with staff accommodation is situated in Ponta do Ouro.

All internal roads are 4x4 sand tracks. The spine road between Salamanga and Santa Maria at the north of the Machangulo Peninsula, runs through the MNAP and is used frequently for

local transport. There is a 700m grass airstrip and a hangar inside the park which is formally registered with the national aviation authorities.

Shore-based access to the marine component of the MNAP can be gained via thirteen designated launch sites along the coast and one at Santa Maria in the Bay of Maputo.

The main power supply to the MNAP is from the overhead powerline running along the main spine road. The water supply at all facilities is from local boreholes. Sanitation at each facility is achieved through a French-drain system.

There is limited mobile phone communication in the MNAP although there are two booster towers and one at Headquarters. There is also a digital radio network linked to an operations room at the Head Office.

The security staff make use of nine fixed position security pickets on or near the inland boundary of the terrestrial component of the MNAP and seven marine pickets at fixed locations on the coast.

2.2 Biophysical Characteristics

2.2.1 Geology and Geomorphology

The coastal plains of the Matutuine District are contiguous with the Zululand coastal plains in South Africa and are dominated by Quaternary sedimentary deposits showing distinct stages of consolidation (Direcção Nacional de Ordenamento Territorial, 2020) (Figure 5). With largely flat or undulating features the maximum elevation of these coastal plains is approximately 190m found on coastal dunes and inland ridges.

The coastline is typified by largely straight, extensive sandy beaches with well-vegetated sand dunes, occasional platforms of Pleistocene sandstone which project from the land in a north-easterly direction into the sea forming rocky headlands and imparting a parabolic shape to the landform. The continental shelf extends about six nautical miles offshore.

Most of Maputo Bay consists of sandbanks and mudbanks averaging 10m in depth and interspersed with channels up to a depth of 15m. The seafloor in the east tends to be sandier while in the west it is muddier with rocks, stones, and dead coral. Inhaca Island is dominated by unstable old dunes, recent dunes, depressions, and plains. The Island is exposed to notable coastal erosion on the east coast caused by wind and wave action.

2.2.2 Climate

The climate of the region is sub-tropical, characterised by a warm wet summers (October-March with temperatures varying between 26°C and 30°C) and cool dry winters (April-September with temperatures varying between 14°C and 26°C). There is a clear rainfall gradient from an annual average of 1,050mm per annum in the east to approximately 600mm at the foot of the Lubombo Mountains. The annual average for the region is approximately 900 mm with around 110 rainfall days per year. The region receives no frost.

The annual mean open ocean surface temperature is 24°C, ranging from 22,5°C in winter to 26,4°C in summer. Higher temperatures are recorded in the southern and western reaches of the Maputo Bay due to the sheltered nature of the waters.

The prevailing winds are from the southeast with an average monthly velocity of approximately 2ms⁻¹ in winter and 4ms⁻¹ in summer.

2.2.3 Hydrology

The freshwater hydrology of MNAP and its surrounds are only superficially understood but is clearly influenced by the two main water courses of the Maputo-Usutu-Pongola river basin; i.e. the Futi and Maputo rivers which originate in South Africa and eSwatini (Figure 6). Upstream climatic conditions as well as water-use and extraction patterns result in a markedly seasonal flow regime for both rivers.

Rainfall predictions for the region suggest that rising temperatures associated with global warming, together with increased upstream extraction, alien plants and degradation of the peat layer, will reduce the amount of water flowing through the Maputo-Usutu-Pongola river basin (Climate Resilient Infrastructure Development Facility, 2019). Reduced levels of aquifer recharge may result in a longer-term lowering of the surface water bodies. This coupled with rising sea-levels may result in increased salination of the low-lying areas towards the river mouths. Implications of this for sub-surface aquifers in the MNAP are not known.

From the presence of the lakes (Piti, Xinguti and Munde as well as many other smaller water bodies), there appears to be a subsurface impermeable layer just inland of the coastal belt, although a saline intrusion has been recorded into the lakes in periods of drought and corresponding with high tides.

9 Decree No. 1994 of 23 July 1960.

10 Decree No. 2903 of 9 August 1969.

11 Ordinance No. 22314.

12 Decree No. 40/2011.

13 Law 3/90 of 26 September 1990 (Fisheries Law, Articles 35 and 69).

14 Decree 103/2019 of 13 December 2019.

15 Law No. 5/2017 of 11 May 2017.

16 Decree No. 100/2021 of 31 December.

The marine environment is strongly influenced by the warm Agulhas current which flows offshore in a southerly direction and sets up inshore counter-currents flowing to the north at a reduced velocity. Long-shore winds interact with the currents to generate southerly swells which can reach heights in excess of 5m. The tidal range lies between 1.8m and 2.4m.

Within Maputo Bay there are two distinct water bodies: oceanic waters to the east interfacing with the Indian Ocean (nutrient poor) and estuarine (nutrient rich) waters to the west. Although there is a net clockwise circulation of bay waters, which influences salinity gradients, the dual ecosystem structure is largely maintained which results in overall higher biodiversity in the system.

2.2.4 Soils

The MNAP is dominated by three soil types namely the sandy *Albic Arenosols*, the very sandy *Protic Arenosols*, and the loamy *Molli-Gleyic Fluvisols*. The two sandy soil types are associated with ancient sand dunes, occur along the coast and are unstable on steeper faces. They show minimal soil formation and are characterised by high permeability to water. The loamy soils have higher silt content, mainly as a result of fluvial deposits from the Maputo and Futi rivers, and thus have a higher capacity for water retention (Figure 7). The lower reaches of the river valleys are vulnerable to saline intrusion and thus the soils are saline in nature (Direcção Nacional de Ordenamento Territorial, 2020).

2.2.5 Ecosystems and Biodiversity

Regional Biodiversity

The MNAP is situated within the MCPE (van Wyk, 1996), which forms part of the Maputland-Pondoland-Albany Biodiversity Hotspot as well as the South East African Coast Endemic Bird Area. The MCPE lies at the intersection of Mozambique, eSwatini and South Africa and comprises the most southerly portion of the East African Coastal Plain as well as portions of the Lubombo Mountain range. Over 2,500 endemic plant and other taxa have been identified in Maputland (van Wyk, 1996)¹⁷. Of the five ecological zones

found in Maputland, three are represented in the MNAP¹⁸, i.e. Alluvial sediments, Coastal Plains and Coastal Dunes (Smith & Leader-Williams, 2006).

Maputland has also been recognised as an Important Bird Area¹⁹ due to the occurrence of species such *Gyps coprotheres*, *Zoothera guttata*, *Circaetus fasciolatus*, *Nectarinia neergaard*. The extensive marshes and flooded grasslands hold notable numbers of rails/crakes and other marshland species, including *Balearica regulorum* and *Turnix hottentota*, while the lakes support large numbers of water birds on a transient basis.

The open water marine component of the MNAP is considered one of the eight key biodiversity seascapes of global importance within the Eastern African Marine Ecoregion (EAME). The seascape stretches north from the iSimangaliso Wetland Park in South Africa for approximately 100km to Inhaca Island and is characterised by warm sea waters, scenic coral and other biodiverse reefs running parallel to the coastline 1-2km offshore. The reefs, which are among the southernmost in south-eastern Africa, are generally considered to be highly sensitive to disturbance. The high and well-vegetated coastal dunes in the site are important representatives of the parabolic dunes of the EAME biogeographic division.

The marine portion of the MNAP additionally hosts a diversity of other important ecosystems such as barrier lakes, mangrove stands and seagrass beds. These habitats are home to many vulnerable marine species, including a remnant population of the vulnerable dugongs, Indian Ocean bottlenose dolphins, seasonal migrant humpback whales, at least ten species of sharks including bull sharks, tiger sharks and hammerhead sharks, seahorses and two species of marine turtles, *Caretta caretta* and *Dermochelys coriacea*.

Terrestrial Ecosystem

The vegetation of the MNAP has not been mapped and categorised into vegetation types in appropriate detail. This plan refers to landcover types as described in Smith (2006). Of the 44 land cover types described for Maputland, eight dominate the landscape of MNAP (Figure 8; and Table 2).

17 Naming of species can use either the convention of a common name, which most people know or a binomial Latin name which few people know. Most species do not have common names. This results in a mix of both naming conventions being used in this plan.

18 The five ecological zones are 1) Lubombo; 2) Cretaceous; 3) Alluvial; 4) Coastal plain; and 5) Coastal dune.

19 IBA-MZ001.



FIGURE 5. The geology of the area surrounding and including the park



FIGURE 6. The hydrology of the area surrounding and including the Maputo National Park

Table 2. Landcover types for MNAP

LANDCOVER	AREA (km ²)	PERCENTAGE
Beach	5.31	0.51%
Dune forest	16.96	1.63%
Dune thicket	3.68	0.35%
Hygrophilous grasslands	182.84	17.58%
Mangroves	23.79	2.29%
Mud	5.81	0.56%
Open water	67.98	6.54%
Plantations	7.40	0.71%
Salt marsh and mud flats	50.38	4.84%
Sand forest	84.93	8.16%
Sand thicket	150.60	14.48%
Sedge & grass swamp	35.30	3.39%
Subsistence agriculture	18.63	1.79%
Swamp forest	1.27	0.12%
Terminalia woodland	112.53	10.82%
Woody grassland	272.90	26.23%

Three additional land cover types i.e. salt marsh, mudflats and mangroves are also present, but they are discussed under the section on marine ecosystems.

Edaphic and rainfall characteristics of the region drive the vegetation structure from a bottom-up perspective while the top-down processes of fire and herbivory by large mammals, are the two major drivers of the dynamics of these systems. Historical burning regimes were largely driven by anthropogenic pastoral practices which have changed since the initiation of modern conservation practices such as restricted or controlled burning. The reduction in the number of large herbivores over the past century, supplemented by periodic reintroductions, has added variation to the suite of ecological drivers experienced by the vegetation of MNAP.

As with many natural areas globally, the terrestrial ecosystems of the MNAP are exposed to threats posed by invasive alien plants and species such as *Chromolaena odorata*, *Lantana camara*; *Psidium guajava* and *Parkinsonia aculeata* have been observed in the park or on its boundaries. In addition, there remain plantations of Eucalyptus species close to the MNAP headquarters.

Recent game counts report populations of all indigenous large mammals including Cape buffalo, bushbuck, bushpig, grey and red duiker, elephant, giraffe, impala, kudu, nyala, steenbok, suni, reedbuck, waterbuck, warthog, blue wildebeest and zebra. Apart from buffalo and cheetah which require additional individuals to be released, these populations are assessed as being adequate to form the founder population for the MNAP.

A key feature of the ecology of the area is the capacity for large herbivores to move in response to the availability of water, palatable grazing, and in some instances, browse material. The limited size of MNAP and the impenetrable nature of its fences preventing movement out of the park, may result in certain of the larger mammals, such as elephant, driving habitat change through their browsing behaviour. For this reason, the opportunity established by the Futi corridor for movement between the main area and Tembe Elephant Park in South Africa is a key innovation in support of the ecological integrity of the MNAP.

Associated with the diversity of terrestrial habitats, and particularly the interface of coastal grasslands and forests, is a high avifaunal diversity with 350 bird species having been recorded (Stattersfield, Crosby, Long, & Wege, 1998). These include a number of endemic or key bird species such as the Southern banded snake-eagle (*Circaetus fasciolatus*), Cape vulture (*Gyps coprotheres*), Brown-headed parrot (*Poicephalus cryptoxanthus*), Woodward's batis (*Batis fratum*), Gorgeous bush-shrike (*Telophorus quadricolor*), Rudd's apalis (*Apalis flavida*), Black-bellied starling (*Lamprotornis corruscus*), Spotted ground-thrush (*Zoothera guttata*), Grey sunbird (*Nectarinia veroxii*), Neergaard's sunbird (*Nectarinia neergaardi*) and the Pink-throated twinspot (*Hypargos margaritatus*).

Reptiles and amphibians are well represented in the terrestrial environment (41 species of reptile – including several medically important snakes such as puff adder (*Bitis arietans*), green mamba (*Dendroaspis angusticeps*), snouted cobra (*Naja annulifera*), brown forest cobra (*Naja subfulva*), and the stiletto snake (*Atractaspis bibronii*) and 15 species of frogs). One native terrestrial chelonian, the eastern hinge-back tortoise (*Kinixys zombensis*), is known from the area.

Freshwater Ecosystem

Generally, little is known about the freshwater habitats which include the Futi River, the northern wetlands (flooded or hygrophilous grasslands) and the coastal lake system with lakes that vary in size from eight kilometres in length



to less than 100m wide. In addition to aquatic plants, these freshwater systems support animals ranging from Nile crocodile and hippopotamus, to at least three MCPE endemic or near endemic fish species (*Croilia mossambica*, *Serranochromis meridianus* and *Aplocheilichthys myaposa*). The wetlands further enhance the avifaunal diversity of the MNAP with pelicans (*Pelecanus*) and flamingos (*Phoenicopterus*) being notable, as well as the grey crowned crane (*Balearica regulorum*), black coucal (*Centropus grillii*), rosy-throated longclaw (*Macronyx ameliae*) and pale-crowned cisticola (*Cisticola cinnamomeus*).

Marine Ecosystem

The marine ecosystem comprises several different habitats including beaches and rocky shorelines, subtidal reefs, mangrove forests and intertidal sand flats, seagrass beds, estuaries and mud flats.

Beaches and Rocky Shoreline

The eastern coastline is largely linear with extensive sandy beaches interspersed with small rocky points. This is backed by well-vegetated sand dunes. Rocky shores comprise approximately 13% of the length of the coastline and consist of wave cut sandstone platforms with large tidal pools and gullies and are largely submerged at high tide. The rocky shoreline is home to algal moss, beds of *Sargassum spp.*, mussel beds, limpets, coralline turf and barnacle flats. There are three zones of intertidal seaweed with distinctive sets of species in each zone.

Two species of turtle, the loggerhead turtle (*Caretta caretta*) and the leatherback turtle (*Dermochelys coriacea*), nest and lay eggs along the beaches between Ponta do Ouro and Inhaca Island annually between October and January. The eggs hatch between December and April. The stretch of coast between Ponta Malongane and Ponta Chemucane is particularly important for these species with 950 nests recorded for the 2017/18 season and 736 for 2018/9. Green and hawksbill turtles are locally present, although they do not nest within the MNAP.

Ghost crabs (*Ocypode ryderi*, *O. ceratophthalmus* and *O. madagascarensis*) generally occur in large numbers in the sandbanks and beaches, together with mole crabs (*Emerita austroafricana*) and whelks (*Bullia natalensis*) which dominate the macro fauna of the sandy shores.

The eastern coastline is a prime area for seabird-watching and most Indian Ocean seabirds have been seen there at some stage. Highly valued possibilities include White-chinned petrel (*Procellaria aequinoctialis*), Shy (*Diomedea cauta*), Indian yellow-nosed albatross (*Thalassarche carteri*) and Sooty tern (*Sterna fuscata*).

The coastal dunes are generally well vegetated, with the primary colonisers including *Ipomoea brasiliensis*, *Scaevola plumiera* and *Arcotheca populifolia* as well as *Sophora inhambanensis*.

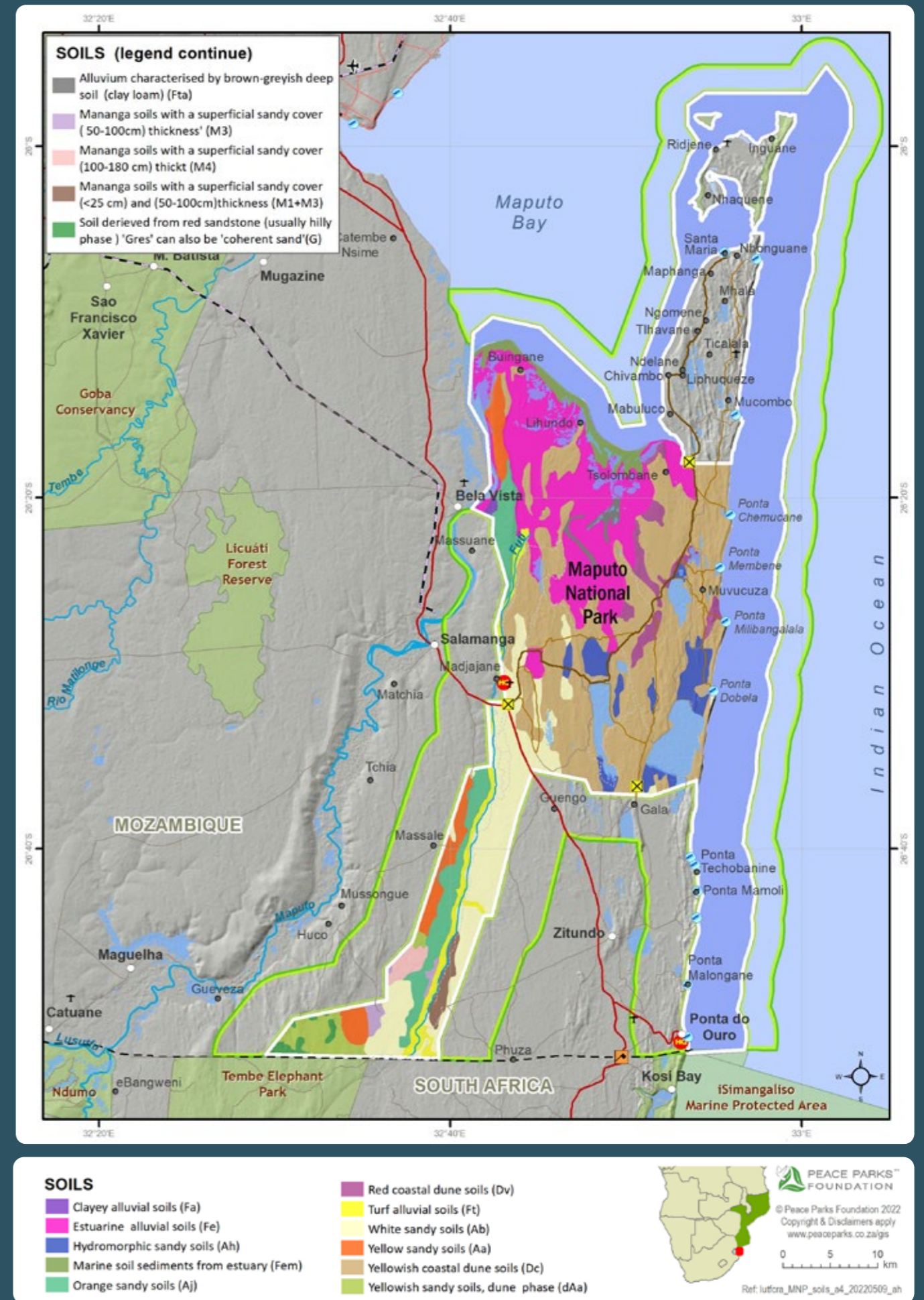


FIGURE 7. Soils of the Maputo National Park

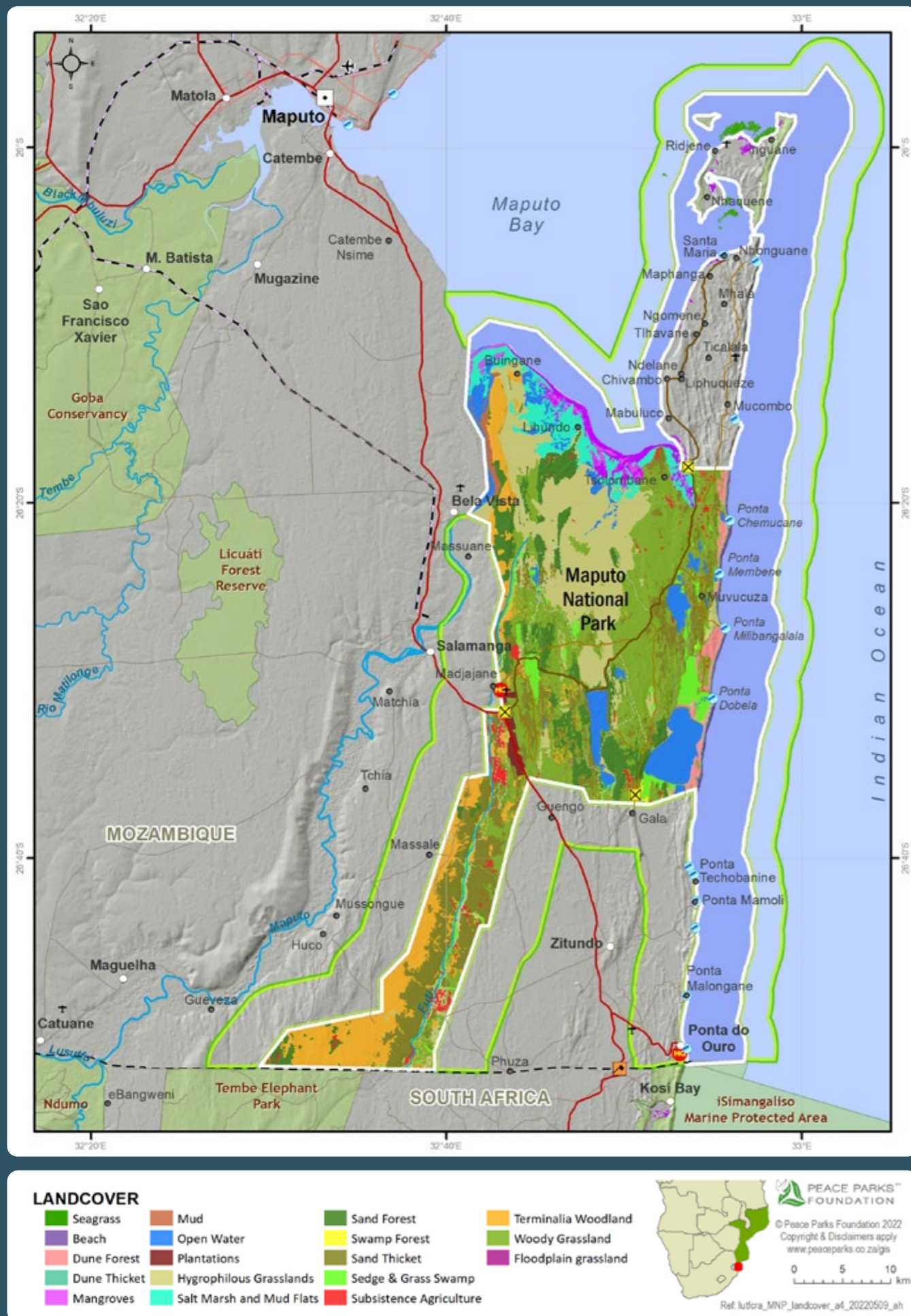


FIGURE 8. Land cover of the area surrounding and including the Maputo National Park

Sub-tidal Reefs

Sub tidal rocky reefs extend seawards from the rocky headlands and many of these are encrusted with corals and associated organisms. In addition to forming substrata for corals, the shallower inshore reefs also provide a habitat for several edible invertebrates, e.g. rock lobsters (*Panulirus spp.*), mussels and oysters as well as red bait and limpets. The fish fauna of the sub-tidal reefs is diverse, with 376 species having been recorded to date. They mostly comprise widely distributed Indo-Pacific species, with some southeast African endemics. Nocturnal and cryptic species have not been well described. Importantly, species composition varies between reefs, depending on the structure, substratum and depth of the reef.

Decline in the coral cover in the MNAP has been recorded in the past two decades and is attributed to, amongst other factors, deteriorating water quality, sedimentation from dune erosion and destructive fishing practices. Coral bleaching has also been recorded.

The ichthyofauna of the MNAP east coast is continuous with that of the Maputaland coastline of South Africa, and there is transboundary movement of fish, including spotted ragged-tooth shark (*Carcharodon carcharias*); sailfish (*Istiophorus platypterus*); giant kingfish (*Caranx ignobilis*); king mackerel (*Scomberomorus commerson*); brassy kingfish (*Caranx papuensis*); and large-spot pompano (*Trachinotus botla*).

Further offshore, Indian bottlenose and humpbacked dolphins occur in the coastal waters as well as in Maputo Bay. Southern right and humpback whales can be sighted seasonally, and there are some residential individuals.

The coastal waters of the MNAP, have a high shark diversity including species such as the vulnerable *Rhynchobatus sp.* (wedgefish) and *Carcharhinus albimarginatus*. One of the largest recorded aggregations of giant kingfish, and one of the few recordings of the species aggregating in the western Indian Ocean, has been repeatedly observed off the eastern coast of the MNAP in the past decade (Daly, Daly, Cowley, Pereira, & Filmlter, 2018).

Mangrove Forests and Intertidal Sand Flats

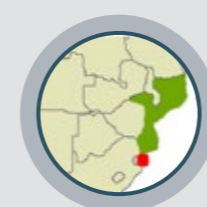
Mangrove forest is found in a strip from the mouth of the Maputo River to Machangulo and in smaller stretches up the eastern boundary of Maputo Bay to Inhaca Island (Figure 9) and covers approximately 50km². Mangrove forests have a stabilising influence on the coastal mudflat and estuarine habitats where they protect the shoreline in times of high energy storms by absorbing the energy exerted by heavy seas. They also serve as a nutrient rich nursery area as well as foraging and nesting sites for many species (de Boer, 2002). The key mangrove plants are *Avicennia marina*; *Rhizophora mucronate*; *Bruguiera gymnorhiza*; *Ceriops tagal*; and *Lumnitzera racemosa*.

There is considerable commercial interest in the penaeid prawns which are found in the mangrove forests, as well as limited interest in other species such as bivalve and gastropod molluscs, shrimps, prawns, and crabs. Additionally, the mangroves are exploited for fuelwood and timber for construction of boats and fishing gear and are vulnerable to disturbance by local communities when harvesting mud crab. There is evidence that the range of the mangrove areas on the Machangulo Peninsula, the northern boundary of the park, and on Inhaca has increased by about 10% since the 1960s²⁰.

Seagrass Beds

Seagrass beds cover an area of approximately 38km² and are mainly found in the shallow waters around Inhaca Island (Ferreira & Bandeira, 2014). Nine species of seagrass have been recorded including *Cymodocea rotundata*, *C. cerrulata*, *Halodule uninervis*, *Syringodium isoetifolium*, *Thalassodendron ciliatum*, *T. leptocaulis*, *Halophila ovalis*, *Thalassia hemprichii* and *Zostera capensis*, comprising 75% of the total number of seagrass species occurring in Mozambique and 16% of the 58 global seagrass species.

Seagrass beds are important habitat and nursery grounds for a range of marine species, including many of the commercially important fisheries species. In addition to species like sea urchins and sea stars, the seagrass areas are very important habitats for marine turtles as well as dugongs



The landcover map has a resolution of 25m and was derived from Landsat ETM scenes from 1997 and 1995 (Smith & Leader-Williams, 2006) modified to be consistent with a new landcover classification scheme with new areas of subsistence agriculture, commercial agriculture and plantations added by on-screen digitising ASTER scenes from 2001 and 2003. The same process was used to identify where Eucalyptus plantations have been cleared. Though the landcover information dates to 2003 the only areas that might have changed substantially over the past 17 years would be the subsistence agriculture areas inside the protected area which will be updated through future studies.

20 (de Boer, 2002).

Dugong dugon which have been sighted in MNAP. Seagrasses also provide several important ecosystem services including carbon sequestration, trapping of nutrients and facilitating nutrient cycling through the presence of the rich invertebrate fauna which includes worms – *Balanoglossus studiosorum*, *B. Hydrocephalus*; sea cucumber – *Holothuria scabra*, *H. Atra*, *H. Leucopilota*; snails – *Cypraea annulus*, *C. helvola*, *Conus lividus*; bivalves – *Eumarcia paupercula*, *Trachycardium flavum*, *Anadara antique*; Crustacea – *Portunus pelagicus*, *Alpheus crassimanus*, *Penaeus semiculatus*, *Hippolyte sp.*; and anemone – *Heteractis magnifica*.

Seagrasses meadows are vulnerable to disturbances such as sedimentation and trampling as well as motorboat activity and jetty construction (Williams, et al., 2018).

Estuaries and Mudflats

The estuaries are biologically productive habitats in which many species live, feed and reproduce as well as nursery areas. Watercourses in MNAP displaying estuarine characteristics include the Bembi River outlet in the bight of the Machangulo Peninsula which is strongly affected by the tide – it is lined with mangroves along its banks and has important nursery functions for many marine fish species that are dependent on it during the later stages of their life cycle; and also Dobela, that originates from Lake Piti.

The mudflats to the north on the southern edge of Maputo Bay, besides being an important feeding area for young prawns and fish, also host various bird species, typically Terek sandpiper (*Xenus cinereus*), Bar-tailed godwit (*Limosa lapponica*), Greater sand plover (*Charadrius leschenaultia*), Little stint (*Calidris minuta*) and Curlew's sandpiper (*Calidris ferruginea*).

2.3 Socio-Economic Characteristics

2.3.1 Demographics, Settlement and Communities

In the context of MNAP, the term “local communities” includes both communities living in the area surrounding the park, i.e., the EPA and the park buffer zone, as well as the four communities living inside the park. As the governance of the larger protected area landscape including the EPA continues to be clarified, so the management of MNAP will have to refine its understanding of the term “local communities”, not only in terms of location and overall number of people but also age and gender profiles to inform community

engagement and support strategies. Based on 2020 estimates by the District of Matutuine, the total population size living within the surrounding administrative regions is about 27,000, distributed as follows: Bela Vista (19,065); Machangulo (3,381); and Zitundo (4,140). The population on Inhaca Island is estimated to be close to 6,000 people with most of them concentrated in Inhaca village.

The four settlements of resident communities within MNAP (Lihundo, Buingane, Muvukuza and Tsolombane), total approximately 181 families at the time of drafting this plan (Figure 10). Although these communities are legally residing within the MNAP, their activities may be constrained and their impact on the protected area is managed and regulated, respecting cultural practices. This includes formally recording their physical footprint, including coordinates of structures and impacted areas, the number of households and family members, their livelihood activities and their mode of access. Following assessment and designation, these details may not be changed without prior approval by Park Management. Families that wish to relocate outside the park are supported with incentives but may not return or resettle – they may, however, apply to Park Management for harvesting of natural resources.

Many communities participate in regional and local Community Based Natural Resource Management (CBNRM) structures. These structures are potential recipients of the 20% revenue share from MNAP (which is part of the current national policy framework), but most require strengthening from a governance perspective. Currently only the terrestrial component of the park's local communities receives the 20% revenue share – Park Management is working on ensuring that all the local communities of the park will receive this benefit (terrestrial and marine).

Because living in or adjacent to a protected area carries the elevated risk of Human Wildlife Conflict (HWC), the manner in which the issue is managed by park authorities will weigh heavily on the long-term viability of conservation as a land use option in the MNAP. A recent Social Assessment of Protected Areas (SAPA) process indicates that some local communities have negative perceptions of conservation as a result of, amongst other reasons, HWC and, in their view, a lack of compensatory or equitable benefits made available to them by park managers. This has resulted in a commitment by Park Management to review and update the park's Community Action Plan. In addition, revised protocols regarding the use of resources within the MNAP and the mitigation of HWC are being piloted, and the environmental awareness and

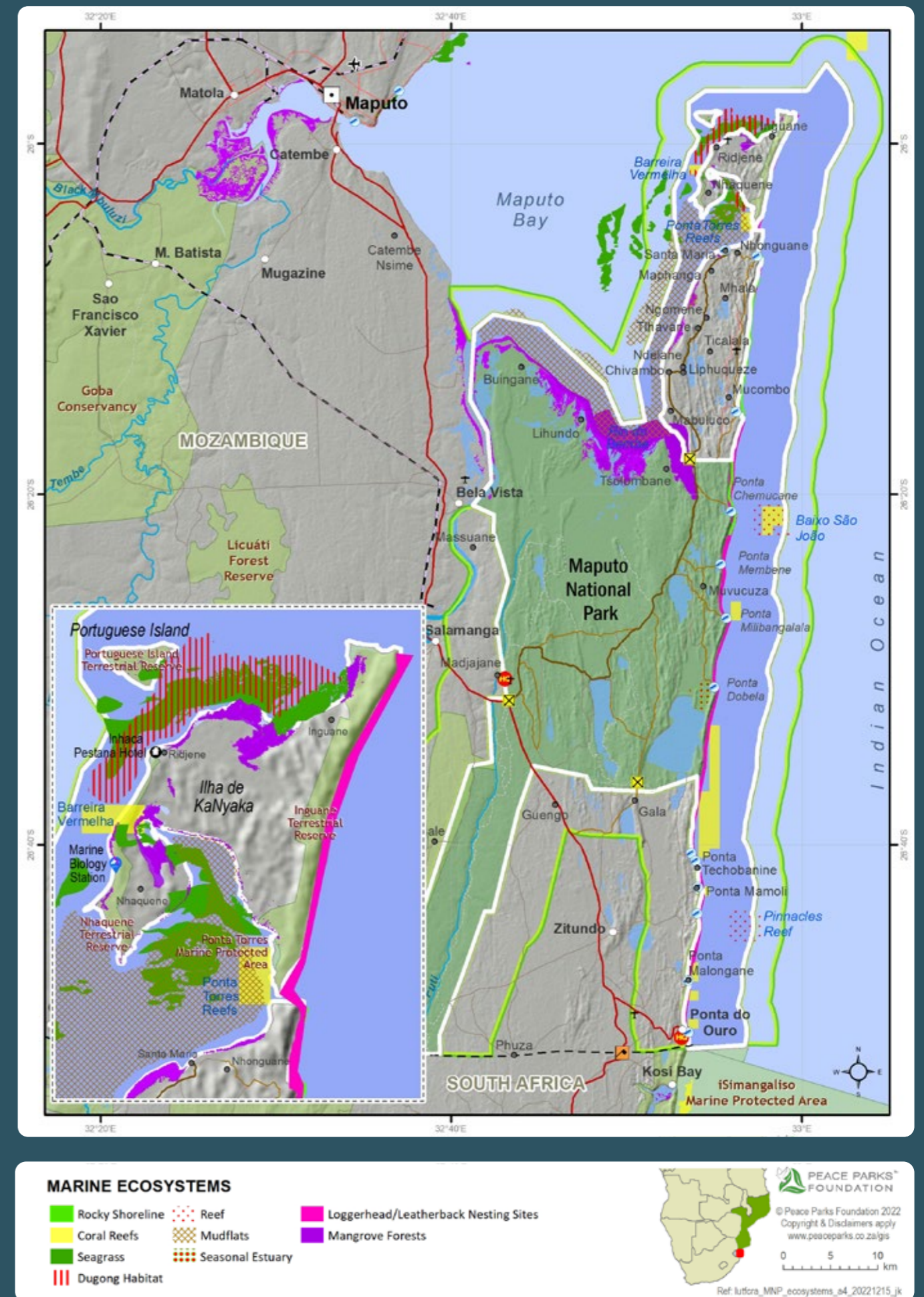


FIGURE 9. Marine ecosystems associated with the Maputo National Park



FIGURE 10. Location of communities in the area surrounding and including the park

education programme is being expanded to promote the participation of local communities and to strengthen their capacity in the management of natural resources. Lastly the SAPA highlighted the sense that many communities have of unfulfilled promises by MNAP staff of employment as well as a perception of inadequate community development programmes (Calengo, Chibequete, Mendonca, Tembe, & Machava, 2019).

2.3.2 Culture and Heritage

Little is documented of the cultural and heritage resources that may be present within the boundaries of the MNAP. Regionally, the population of Matutuine District belongs mainly to the Ronga and Xichangana ethnic groups, which are a sub-set of the larger Tsonga group which has a strong influence of the Nguni people. There are close associations with peoples living further south in South Africa and west in Eswatini. As a result, contact with neighbouring countries is frequent with transboundary families being common (Izidine, Siebert, van Wyk, & Zobolo, 2008).

The human settlements of Maputo Bay region date long before the early Portuguese records and arrival of the first Europeans. The first settlements are from the Iron Age and archaeological sites have been identified along the coastal areas at Maputo Bay, Inhaca, and at Milibangala.

The Ronga peoples belong to the Mpfumu and Matola clans, located west of Maputo Bay and were the first local group to make contact with European traders. South of the bay was the Tembe clan and its two sub-clans the Matutuine and Maputo which later became independent. The name Maputo derives from the first name of the youngest son of Uangobe Tembe, the first king of Matutuine, who later became king and named his territory Maputo and areas such as Salamanga and Makasane after his children (Adam, J, & Saranga, 2014).

During the Portuguese colonial period, Jorge Oliveira Santaca assumed the mantle of leadership for the area. Santaca was not a direct descendant of Maputo; rather, he was the son of the previous chief's sister. Although Mozambique is a democracy today, the role of traditional leadership is recognised in law and, among others, empowers traditional chiefs to coordinate development projects and to oversee natural resource management institutions. Descendants of Santaca still govern today (Izidine, Siebert, van Wyk, & Zobolo, 2008).

Inhaca Island derives its name from Tsonga Nhaca, a Chief who lived in Maputo around the 16th century and who reportedly offered hospitality to merchant Portuguese sailors. There is evidence that the island has long been inhabited although the history is contested. Inhaca Island served as a station for various maritime nations including the English, Dutch, Austrian and Portuguese who sought asylum on Portuguese Island around 1500. Despite the recognised importance of the Bay following Lourenço Marques explorations, the Portuguese did not settle permanently in this region. The focus of their interest was the northern shores of contemporary Mozambique. During the 15th to 17th centuries this island served as a refuge for the survivors of shipwrecks and at times served as a trading warehouse for ivory, hence its earlier name of Elephant Island. The effective occupation of the Inhaca Archipelago by Portugal from the 19th century persisted through to Mozambique's independence in 1975. The Inhaca Maritime Biology Station was established in 1948 (Universidade Eduardo Mondlane, 2010).

Early trade was local as linkages between Machangulo and Inhaca enabled such trade. The locals used small boats that allowed navigation on the rivers and the near shore waters between Machangulo and Inhaca. The arrival of the Portuguese and other Europeans introduced the local people to the international trade linking them to global trade networks.

The communities of this region worship their ancestors in so-called sacred places, associated with burial sites (small cemeteries and trees) of their traditional leadership, land chiefs (Indunas) and other counsellors of the royal family. Lineage is largely patrilineal (Calengo, Chibequete, Mendonca, Tembe, & Machava, 2019).

2.3.3 Economic Activities and Livelihoods

Tourism is estimated to have contributed 60% to the economy of the Matutuine District in 2019 with agriculture contributing an additional 30%, fisheries (marine, lake and river-based) 6% and livestock 3%. Many local residents are at least partially dependant on a subsistence economy which can be characterised as a "low-input-low-output" form of agriculture (crops and grazing) as well as fisheries and the harvesting of forest products. Domestic livestock numbers are limited due to the occurrence of disease, the limited availability of suitable quality water and the very poor nutrient status of the soils of the area. Beekeeping (wild collection and production), aquaculture and collection of medicinal plants support some livelihoods.



Existing tourism establishments can accommodate an estimated to 3,100 visitors daily and offer a range of largely marine based activities (Direcção Nacional de Ordenamento Territorial, 2020). Within MNAP a luxury lodge has been developed at Ponta Chemucane, in partnership with the Zameni Chemucane community as well as a luxury resort at Ponta Milibangalala. Other Tourism Development Areas are located at Ponta do Ouro, Malongane, Mamoli, Machangulo, Santa Maria and Inhaca Island. A key reason for the establishment of the Maputo EPA is to promote sustainable livelihoods in the region and, with the MNAP as the recognised core area, to ensure that socio-economic activity surrounding the park is compatible with the park's objectives. This includes the development of tourism facilities and the associated nature-based activities. Additionally, the participation of local communities in the benefits resulting from these activities will be promoted.

The industrial sector in the area is small and based on charcoal and cement block production. A cement plant has been built near Salamanga with a 5,000 t/day production capacity. Bakeries and cereal mills are also present. Requests have been made for new mining concessions to exploit clay, limestone and stone along the length of the Maputo River (refer

Figure 11) (Direcção Nacional de Ordenamento Territorial, 2020) and existing mining concessions are sited between Bela Vista and Salamanga.

The livelihood of most families is heavily dependent on women, many of whom practice slash and burn type agriculture as well as collecting natural resources such as firewood, fruit, inter-tidal organisms, building materials and water. Fishing is primarily conducted by men, and despite it being illegal many admit to engaging in hunting for meat in the MNAP as well as in the surrounding areas where it is subject to a licence. The income of many households is supplemented by remittances made by family members working elsewhere.

In recognition of the increasing need to support the development of sustainable livelihoods in the Matutuine District a number of international inter-governmental institutions (e.g., World Bank with the Mozbio II project) and non-governmental organisations (e.g., PPF) have initiated projects which aim to intervene in a manner that increases environmental awareness and enables and empowers local groups in community governance, the wildlife economy and natural resource management and use.

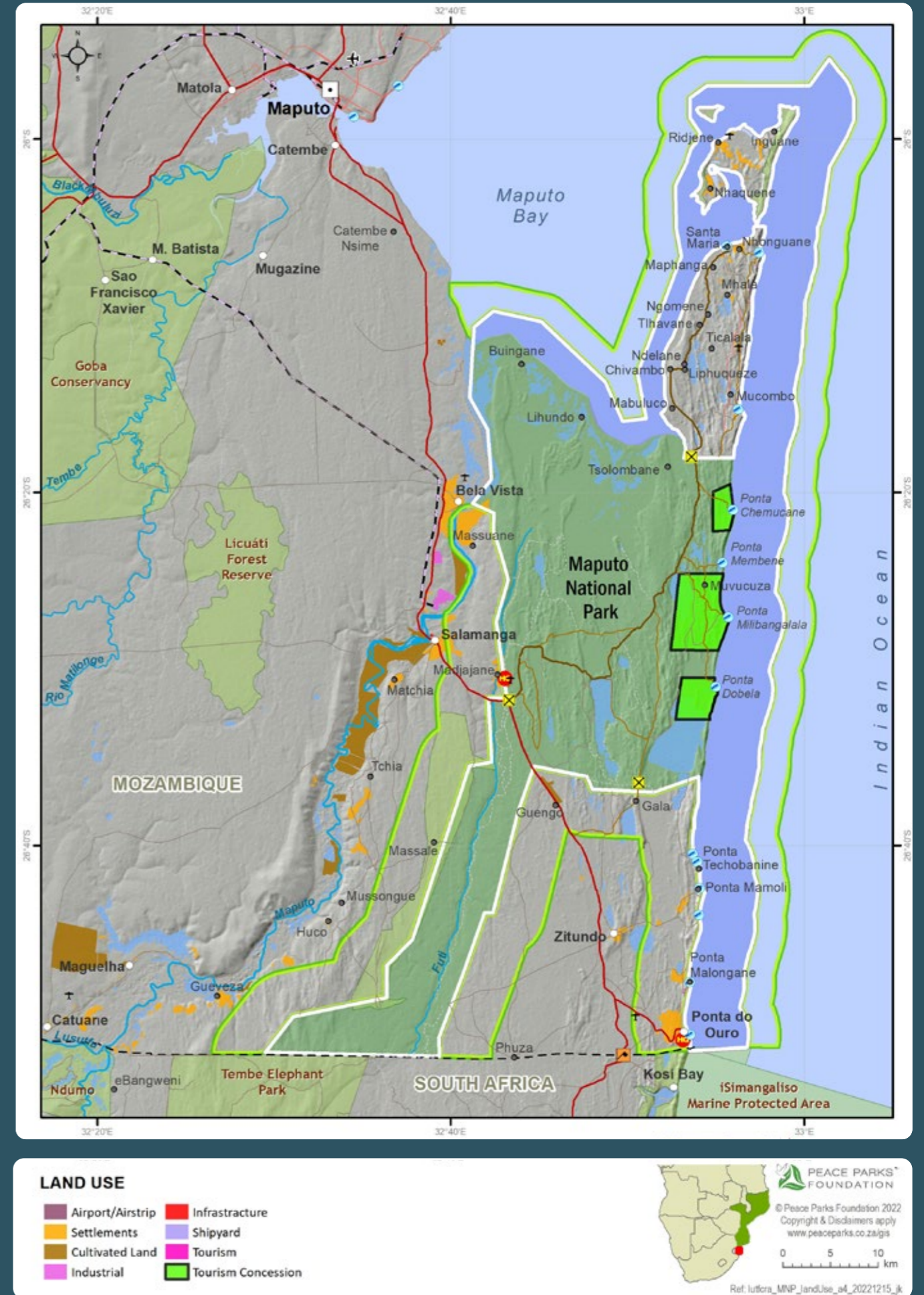


FIGURE 11. Land use in the area surrounding and including the Maputo National Park

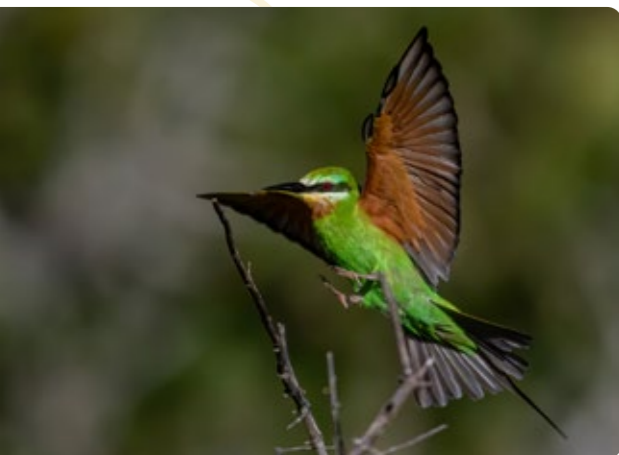


CHAPTER 03 **SITUATION ANALYSIS**

This chapter constructs an integrated picture of the conservation, cultural heritage, and economic significance of the MNAP, 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.



The MNAP is home to some of the world's most outstanding natural features which, together with the cultural heritage, exhibits outstanding values with the potential to be universally recognised as an important asset in the local, national, and international context.



The MNAP is home to some of the world's most outstanding natural features which, together with the cultural heritage, exhibits outstanding values with the potential to be universally recognised as an important asset in the local, national, and international context. The initial acceptance of the MNAP into the State Party's Tentative List for nomination for World Heritage status and the subsequent initiation of the process of preparing a nomination dossier are clear indications of this. The value is derived from the unique natural heritage combining ecological features and cultural features of the area as well as its association with the transboundary initiative which recognises the importance of the larger Lubombo TFCA from a social and ecological perspective. The draft nomination dossier additionally recognises the potential of the MNAP to contribute to economic growth and to generate prosperity through recreational tourism development. A key goal of this plan for MNAP is to develop an enabling framework with policies and programmes to enhance this potential.

This section examines the 'conservation', 'cultural' and 'economic' assets contributing to MNAP's outstanding universal value and presents a rationale for conserving and developing the park.

3.1 Conservation Significance

The MNAP has conservation significance under the following three categories, which are also of significance to the WHS nomination process. The MNAP i) contains superlative natural phenomena or areas of exceptional natural beauty and aesthetic importance; ii) is an outstanding example representing significant on-going ecological and biological processes in the evolution and development of terrestrial, fresh water, coastal and marine ecosystems, and communities of plants and animals; and iii) contains the most important and significant natural habitats for in situ conservation of biological diversity, including those containing threatened species of outstanding universal value from the point of view of science or conservation.

3.1.1 Superlative Natural Phenomena and Aesthetic Beauty

The marine, terrestrial and aquatic ecosystems all contain or are important transient homes to considerable diversity and, sited centrally within the MCPE, many of the biota are endemic or rare. This together with the exceptionally picturesque landscapes and intact ecosystems and their interfaces provide a superlative backdrop to any experience of the MNAP. Additionally:

- » The terrestrial environment includes the full range of biomass density from dense coastal forest through more open sand forest and thickets to savanna and open grasslands.

- » The aquatic environment includes wetlands and reedbeds, rivers and riverine habitat, flood plains, a freshwater lake system with multiple lakes of various sizes, estuaries, and mangrove forests.
- » The marine environment contains both open ocean and bay waters. The open ocean component includes the warm water pelagic system over the continental shelf as well as the primary and secondary dunes, expansive sandy shores, rocky points, rocky and coral reef, and pelagic ecosystems. The coral reefs are among the southernmost in the continent and connectivity with larger systems is illustrated by the beaches which are important nesting sites for two endangered or vulnerable turtle species – something that is of global significance.
- » The ecological integrity of each of the environments as well as the intact linkages and flows between them add to their value. Visually, the clear open water of the Indian Ocean with the associated unspoilt sandy beaches, rocky points, together with high forested coastal dunes alongside the system of freshwater lakes of varying sizes through the grasslands, wetlands, salt marshes and estuaries to the mangroves and finally to the calm waters of the Maputo Bay, provides scenery of incomparable beauty.
- » This is before having set eyes on the Futi corridor, its associated savanna woodlands, or the island splendour of Portuguese island and Inhaca island with its own forested areas and sea grasses stretches providing a home to dugongs.
- » The sense of place is awe inspiring over much of the MNAP.

The species lists for MNAP remain under development although they are available for popular taxa such as large mammals, birds, freshwater and marine fish. Apart from large mammals which have been heavily exploited historically, the MNAP is one of the last remaining natural areas in the world that still contains much of its original plant and animal species richness along with varied and unique landscapes of exceptional natural beauty.

The MNAP is recognised as a valuable contributor towards the Mozambican protected areas network as well as being an area of regional biodiversity significance. While the terrestrial environment is the natural home of the largest land mammal, the African savanna elephant, together with hippopotamus, giraffe, Cape buffalo and Nile crocodile, the marine environment is transient home to the migrating

Southern Right and Humpback whales as well as many rays and sharks.

3.1.2 Significant Ongoing Ecological Processes

The combination of fluvial, marine and aeolian processes initiated in the early Pleistocene in southern Mozambique and stretching through to the iSimangaliso Wetland Park in neighbouring South Africa has resulted in a variety of landforms that persist to the present day. The setting at the edge of a biogeographic zone in both the marine and the terrestrial environments emphasises the importance of the MNAP from an evolutionary perspective, and the associated species richness, much of which is endemic.

The interface between the high energy open waters of the Indian ocean and the calm waters of the Maputo Bay and the role that the shallow waters of the bay play as a nursery ground for a range of commercially important as well as migratory species highlight the ecological complexity and heterogeneity of the MNAP systems.

3.1.3 Most Important Natural Habitats

There are four natural phenomena that can be judged as outstanding in the MNAP. These are:

- » The ecology of the coastal lake system with shifting salinity and the diversity of life that they support
- » The integrity and importance of the turtle nesting sites on the eastern beaches
- » The offshore coral reefs which are among the most southerly on the east coast of Africa
- » The numbers and diversity of the wetland systems from the Futi corridor through to the freshwater lakes, the estuaries, and the mangroves.

3.2 Cultural Significance

The MNAP and surrounds have been inhabited by human communities for over 1,000 years and many local residents continue to derive their livelihoods directly from the natural environment. Indeed, four communities are currently living inside the MNAP. This long history with the area has resulted in a large percentage of respondents from resident communities indicating in 2000²¹, that wildlife in the MNAP has strong cultural value to them and their families and that natural resources are safeguarded by traditional belief

21 Soto, Munthali, & Breen, 2001.

systems. There is however limited documented information available on both the tangible and intangible cultural and heritage assets within or associated with the MNAP, or detail on how these assets are valued by individuals within local communities. As part of the process of developing the WHS nomination dossier an assessment of cultural and heritage assets will be undertaken, and the outputs of that process will serve as a useful guide to this management plan.

3.3 Economic Significance

The MNAP and its surrounding landscape (the EPA) are widely regarded having important economic potential for the people of the region of which the tourism potential of the park is significant. The rich scenic beauty together with the sense of place which is available in the largely intact ecosystems of the MNAP as well as the potential for a big five game viewing experience and the potential marine experiences (long unspoilt beaches, snorkel and scuba diving and fishing) are well suited to both domestic and foreign visitors. Combined with the close proximity to the city of Maputo which enables easy access to the MNAP and the wealth of other wildlife experiences further south in South Africa, it is possible for long-haul flight travellers to include a diversity of experiences into their trip. The climate of the area also lends itself to tourism.

Transport infrastructure is largely confined to roads, although there is limited opportunity to fly or to catch a ferry boat to some destinations. The arterial road, the recently tarred N1, and the newly built bridge over the bay link Maputo to the international border with South Africa. From the border it is a five-hour drive to uShaka International Airport at the coastal town of Durban.

There are currently a number of tourism facilities and concessionaires established in the MNAP with potential for more sites and operations to be developed.

3.4 Opportunities

The key opportunities that have been identified include:

- » The inherent value and current state of the biophysical environment including the fact that it is largely untransformed and will require little rehabilitation.
- » The siting of the MNAP in a larger EPA creates an ideal context for biodiversity conservation with a core area and an effective surrounding buffer.
- » The established tri-national agreements that enable effective engagement with neighbouring states in relation to the management of the larger landscape,

including upstream activities which may negatively impact on the natural functioning of the hydrology of the MNAP.

- » Proximity of the MNAP to Maputo and the range of other wildlife attractions in the broader transnational region.
- » The high tourism appeal of the MNAP land and seascapes.

3.5 Threats and Constraints

This section explores some of the challenges facing the MNAP together with identified threats to its natural values.

3.5.1 Threats to the Natural Values of the Park

Disruption of Larger Landscape Scale Geo-Hydrological Processes

As the uniqueness of the area is dependent on the nature of the larger scale ecological and geo-hydrological processes any disruption to them poses a threat to the MNAP. This could take place through non-compatible land-use practice, both inside and surrounding the MNAP. This threat 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. Equally a reduction of fresh water in the rivers (through increased upstream abstraction or impoundment), or lakes (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 MNAP.

The integrity of the park's terrestrial ecosystems is threatened by ongoing environmental degradation through land transformation and development in areas adjacent to the park.

The Shape of the Park

The optimal shape for a protected area, all else being equal, is to reduce the boundary to area ratio, i.e. to tend towards a circular configuration. This is partially achieved in the main area of the MNAP but it is not achieved in the stretch of coastline extending south of Lake Piti and Ponta Mamoli, nor is it achieved in the case of the Futi corridor or in the discontinuity around the Machangulo peninsula and portions of Inhaca Island. These two southerly limbs of the MNAP do, however, contribute significantly to achieving ecological connectivity and are thus important elements and add considerable value to the park.

Unsustainable Utilisation of Natural Resources

Illegal harvesting of mammals for meat (bushmeat poaching) or fish from the lakes, rivers, the bay and the open ocean, especially where ecologically inappropriate harvesting techniques such as very small grid netting are used, are a threat to the natural resources and natural values of the MNAP. Additionally, poaching of species such as elephants for high value derivatives such as ivory or removal of species on the coral reefs for their ornamental value are of concern and measures to prevent these need to be a management priority.

The Socio-Economic Environment

The Matutuine District as a whole, and the areas neighbouring the park in particular, include communities with many households relying extensively on locally sourced natural resources. The depletion and degradation of natural resources in areas surrounding the MNAP, as well as the increasing human population, have resulted in increased pressure being placed on the resources within the MNAP. Although the proclamation of the EPA clearly states that its purpose is to support environmentally compatible development, any decision that results in land use, such as commercial eucalyptus plantations, which will deplete subsurface ground water, will present a threat to the natural values of the MNAP. Similarly, unmanaged fire regimes due to the deliberate ignition of grass fires by neighbouring communities to meet their needs, would pose a threat.

The city of Maputo has considerable economic activity including an active port with ongoing shipping activity. An oil spill, either along the eastern coast of MNAP or within the Maputo Bay will significantly impact on the natural values of the MNAP. Likewise, the introduction of pollutants into the water system from upstream catchments, potentially in neighbouring countries would present a threat to the natural values of the MNAP.

Alien Species Invasion

Alien invasive species, and in particular plants, pose a threat to biodiversity and thus the natural values of the MNAP. This threat is largely manifested through an alteration in the natural ecology of the various ecosystems. An alien species monitoring, and control programme is essential to counter this threat. Common species such as Triffid weed *Chromolaena odorata* are widespread in the coastal regions on the east coast of Southern Africa and water hyacinth *Eichhornia crassipes* and *Pistia stratiotes* establish and grow where there is nutrient enrichment in natural water bodies.

Climate Change

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 MNAP 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 infrastructure loss, and the tourism industry e.g., through infrastructure loss as well as through changes to the natural systems.

These potential events can best be managed at park level through adopting a long-term management approach which promotes climate change resilience and ensuring that all planning considers climate change challenges. This includes approaches which are adaptive, that take an ecosystem approach, and which are consultative, especially with local communities. Management responses to climate change challenges can, in some instances, be addressed strategically e.g., establishing connectivity corridors, while others are best to implement on an activity-by-activity basis e.g., construction of infrastructure requires that the design be climate change appropriate and can contribute towards both mitigation and adaptation (impact attenuation) efforts. Climate change responses are thus embedded in this plan, both strategically as well as at the activity level (Section 5.5.5).

3.5.2 Constraints

Poverty Alleviation

While the MNAP 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 MNAP can generate. It will remain 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.

Local Support for the Park

In the minds of many local communities the MNAP 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 MNAP 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 MNAP aims to protect.

Tourism Development

There are many constraints to tourism development. These include the availability of sites for development and the capacity of sites to cater for the infrastructural and operational needs (e.g. water and power supply as well as waste and sewage disposal) of a tourism facility without in any material manner diminishing the natural values of the MNAP. Additional constraints relate to the business side of a tourism venture and include issues of financing (revenue retention), reputation, marketing, and accessibility.

3.6 Current State Outline

Based on the foregoing assessment of significance, opportunities, threats and constraints, the following are summary statements on the current state of the park:

Natural Resources:

- » The terrestrial natural resources are generally in a good natural condition with very little sign impact from human disturbance. There are, however, pockets of high impact around settlements within the park and the Eucalyptus plantation along the national road. Wildlife populations have increased significantly due to introductions to boost numbers and from natural increases. Illegal harvesting of all terrestrial resources is very well contained within acceptable limits.
- » The marine resources, especially those in the estuary and the western bay area of Inhaca Island and the Machangulo peninsula are heavily impacted by significant use (much of which may be unsustainable). There are programmes being implemented to address this and many are showing positive results. The communities, however, are dependent on these marine resources for their livelihoods and this will require further work in the future. The coast and especially the turtles are well protected and monitored. The pelagic resources are under some pressure from commercial harvesting although the park is now better equipped to access this area and deal with these activities.
- » The terrestrial component currently supports very little natural resource use, mostly for reeds and grass. The freshwater aquatic system does support fish harvesting in some of the lakes. There is a monitoring and control system to monitor this use. The marine environment, especially in the bay area, as highlighted above, is heavily harvested and this needs constant efforts to improve the types, season and amount of use.

Cultural Resources:

- » Limited documented information available on assets within or associated with MNAP as well as how these are valued by local communities.

Community Engagement:

- » There is no clear baseline/context or long-term agenda for community engagement – the current Community Action Plan is outdated.
- » Internal governance of the various community structures is not yet optimal; however, efforts are being made to improve this.

- » Local communities do not currently all benefit equally from the park: only the terrestrial local communities receive the 20% revenue share - the marine communities not yet but do derive significant livelihood benefits from some projects and from harvesting the marine resources.
- » HWC is causing strained community relationships: the odd shape of the park and especially the narrow Futi section remains a significant challenge especially with elephants which often breach the fence and there is also some HWC with the settlements inside the park.
- » Communities living inside the park have livestock and these are a problem as these are not permitted and settlements inside the park have an impact on the natural vegetation from harvesting of resources, keeping livestock and some human impacts on tourism.

Tourism development:

- » Tourism development is steadily being undertaken but there have been significant delays in the development and rollout of facilities. The new road and bridge are likely to improve demand as the proximity to Maputo is an added advantage. There are well developed plans to increase tourism. Ponta Dobela has not been developed and this will impact on revenue to the park as these facilities must be established to attract visitors for economic and park funding reasons.

Management, administration and finances

- » The park is not achieving its financial sustainability goals and cannot yet cover its operational costs through current income streams. This is aggravated by delayed development and rollout of key areas like Ponta Dobela and to some extent Milibangalala.
- » Operating costs and capital expenditure are still being supplemented by donor funding: if the full complement of tourism facilities can be developed the park could generate sufficient funds to cover the operating costs.
- » The Park Management Council has only recently been established and is not yet fully functional
- » Human resource capacity and progression management strategies are not optimal: the park does not have all the required staff, in sufficient numbers and appropriate positions.
- » Generally, Park Management has adequate vehicles and equipment, the essentials are adequate although more is always needed. There is also a good baseline of functional infrastructure available for management including houses, workshops, offices, and entry gates. The roads and tracks remain a challenge as the sandy conditions are difficult to improve, this significantly limits access.



CHAPTER 04 **STRATEGIC PLANNING FRAMEWORK**

This chapter discusses the strategic plan for the MNAP and presents the park's vision, problem statements and strategic objectives. It also provides a theory of change and how to approach adaptive management.



The vision that MNAP management will be working towards is: A park with widely recognised and valued terrestrial and marine ecosystems, conserved, and sustainably managed for future generations.

4.1 Future Desired State

4.1.1 Vision

The vision that MNAP management will be working towards is:

A park with widely recognised and valued terrestrial and marine ecosystems, conserved, and sustainably managed for future generations.

4.1.2 Mission

The mission for the MNAP over the following ten years is:

Through effective and efficient management, to restore and conserve the exceptional ecosystems and biodiversity of the MNAP as part of a larger biodiversity transfrontier conservation area, and to become self-sustainable through conservation-compatible opportunities, contributing to economic development, with a focus on local communities.

4.1.3 Strategic Management Objectives

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

- » To maintain, and where necessary restore, the ecological integrity and cultural identity of MNAP.
- » To grow the contribution of the MNAP to the economy of the region through developing tourism and other products in the park.
- » To contribute to improved resilience and quality in the lives of local communities.
- » To ensure the financial sustainability of the MNAP.
- » To provide for effective inclusive governance.

To achieve these management objectives, it is necessary to have a clear Theory of Change which takes one from the status quo to the future desired state.

4.2 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 Park Operational Business Plan (see Figure 2) 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 12. This does not include descriptions of the causal pathways, assumptions, or drivers. In essence the Theory of Change illustrates how five management programmes (section 5), starting from the current baseline (summarised in section 3.6) and crafted to address the challenge of achieving the five strategic management objectives, will collectively contribute to the final Vision or Desired Future State for the MNAP (section 4.1). Future revisions of this plan will be well advised to consider developing a more detailed and carefully articulated Theory of Change for MNAP.

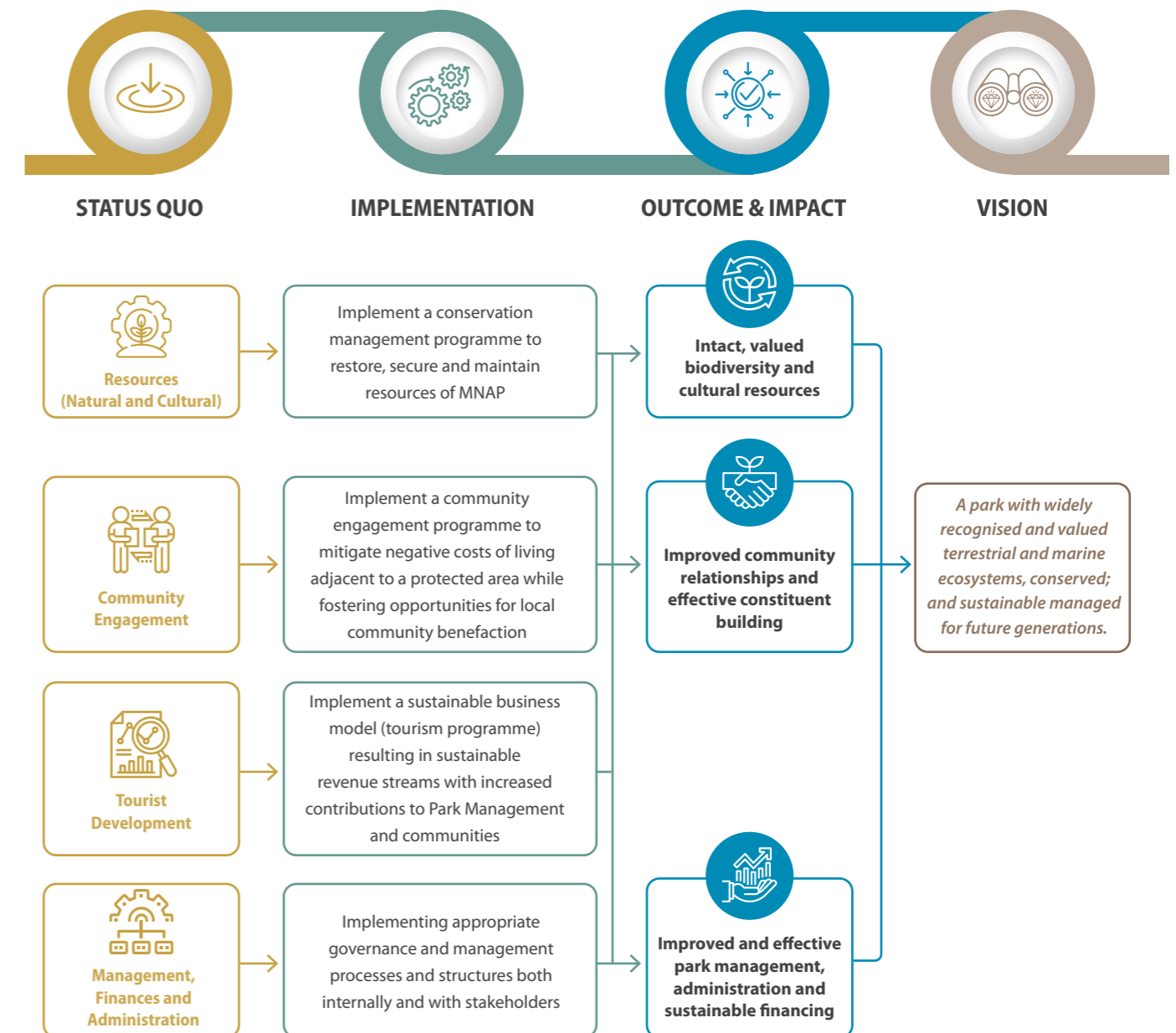


Figure 12. Simplified, schematic Theory of Change for the Maputo National Park



4.3 Adaptive Management

This plan adopts an adaptive management approach 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 continuous 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 a Threshold of Potential Concern (TPC; 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 and management responses will be expressed in the text of the subsidiary plans and operational protocols of the park, 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 MNAP. These high-level TPCs are as follows, noting that these may be adapted in response to management interventions:

- » Impacts of human-wildlife interaction:
 - Loss of human life (one life)
 - Damage to the property of individuals (three incidents)
 - Significantly negative perceptions towards the park (three formal complaints)
- » Impacts of human presence in and around the park:
 - Loss of assets and/or revenue because of theft or injury (two incidents)
 - Increase in human settlement footprint within MNAP (>100m²)
 - Complaints by tourism operators of human presence interference with tourism products (three formal complaints)
- » Impacts of tourism enterprises:
 - Visitor density (to be formally assessed)
 - Poor infrastructure and equipment maintenance (two formal complaints)
- » Impacts/changes/trends in habitats, species and other cultural assets:
 - Loss of key habitats and or species (20% of baseline inventory)
 - Loss of cultural assets (20% of baseline inventory).

A key aspect of adaptive management is monitoring and using the results to inform future interventions or approaches. In the case of MNAP, 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. The METT scores can 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 2), which have shorter timelines, but which more directly guide operational implementation.

4.4 Management Programmes

The following work programmes will be used to deliver on the strategic management objectives, in an integrated and balanced manner. Each work programme aims to result in a specific outcome or set of outcomes (Table 4, 6, 7, 10 and 13) with the collective result of the five overarching outcomes placing the MNAP closer to the Desired Future State or Vision for the MNAP (Figure 13). The internationally established and standardised method for assessing the

effectiveness of the management of a protected area is the METT. METT assessments of the MSR were conducted in 2015 and 2017 and in the functionally combined MNAP, prior to proclamation, in 2019, 2020 and 2021. The results are presented in the Appendices. Deficiencies detected in these METT assessments contribute to guiding management priorities in this plan. These include the need to establish an effective planning process and to develop a plan to work from (i.e. this plan), the need to implement activities which protect the biodiversity and cultural values of the MNAP (this can be found in many of the subsidiary plans) and the need to generate revenue and to spend the revenue on priorities (this can be found in the Park Operational Business Plan) while at the same time ensuring that tourism is effectively managed.

The functional work areas for implementation of each programme, with oversight and coordination by the MU, are indicated below.

Programme 1 – Natural Resource Management

The goal of the natural resource management programme is to maintain the natural resource base of the MNAP as best as is possible through sound ecological management of the unique ecosystems, their biodiversity and species, the restoration of degraded areas, control of alien species invasions, and sound environmental management associated with infrastructure. In addition, the functionality of the MNAP will be expanded through promoting the ecological buffer influences of the EPA and managing the legal use of natural resources in a sustainable manner while effectively containing the illegal use of these resources.

Implementation of this programme will resort under the Conservation, and Protection and Compliance functional areas.

Programme 2 – Cultural and Heritage Resource Management

The goal of the cultural heritage resource management programme is to protect and promote the important cultural heritage resources within the MNAP and to ensure that they are accessible to local communities in a manner that builds a sense of place and appreciation for the park that is compatible with the natural values of the park.

This programme will be implemented under the Community Development functional area.

Programme 3 – Community Engagement

The goal of the community engagement programme is to ensure that the management of the MNAP is conducted in a manner that where possible engages with, and is sensitive to, the needs of local communities living in and around the park. In these engagements it is important that Park Management do not agree to allow activities which lead to the natural value of the area being compromised. At all times Park Management should seek ways to mitigate the negative costs of living adjacent to a protected area while at the same time fostering opportunities for local community beneficiation from the park.

As for Programme 2, this programme will be implemented under the Community Development functional area.

Programme 4 – Tourism Development

The goal of the tourism programme is to contribute towards implementing a sustainable business model for the MNAP in a manner that will result in the growth of a sustainable revenue stream with increased contributions to both Park Management and the delivery of benefits to local communities as well as the regional economy. It is important for the tourism programme to function in a manner that does not detract from the biophysical or cultural features of the MNAP that are the focus of the conservation efforts.

Implementation of this programme will resort under the Tourism functional area.

Programme 5 – Management, Administration and Finance

The goal of the management, administration and finance programme is to ensure the overall effective management of the MNAP through implementing appropriate governance and management processes and structures both internally as well as with stakeholders. These processes include management and financial systems (including monitoring and reporting), human capital development, communication, asset development and management as well as safety and security.

This programme will be implemented under the Infrastructure, Finance and Administration, and Communications and Stakeholder Engagement functional areas.



CHAPTER 05

IMPLEMENTATION PLAN

This chapter fleshes out the priority management programmes for the next decade (2022 to 2032).



There is thus a functional management system in place although not all of the activities, practices and protocols have been fully documented.

In this section, the ten-year implementation plan is detailed with strategic statements and guiding principles as well as operational objectives and specific actions required to achieve the objectives. The ten-year implementation plan has been developed in response to factors outlined earlier in this document that will either enhance or constrain the achievement of the management goals. Financial considerations for implementation of each programme are also provided, based on the Park Operational and Expenditure Plan for the period of the management plan. Indicative budgets will be refined in medium term and annual budgets and implementation plans.

The drafting of this plan is taking place at a time when two protected areas, each with their own histories have combined. There is thus a functional management system in place although not all of the activities, practices and protocols have been fully documented. This new plan specifies that many subsidiary plans are fully documented, and this will need to take place while the old system is transitioning to the new planning context. Additionally, Park Management will aim to have these various guiding documents in place within five years of approval of this plan.

5.1 Natural Resource Management

5.1.1 Ecological and Restoration Management

Vegetation

The vegetation of the MNAP broadly consists of sand forest, coastal and dune forest, swamp forest, grasslands, mangroves, and seagrass beds. The distribution and configuration of the individual vegetation types have not been formally mapped. The two primary management interventions appropriate to the vegetation are large herbivore composition density (biomass) and fire management. Due to the history of the area, these habitats are mostly ecologically intact, although the levels of herbivory are likely to have been low over the last 30 years due to relatively low herbivore numbers.

Fire, on the other hand, is known to have occurred in the grassland stands over this period, and due to the relative absence of herbivores, the fuel load is likely to have been elevated potentially having led to fires of increased intensity.

Invasive alien plants are present in some habitats and in all likelihood are increasing in extent and density in some areas. Of particular concern are *Lantana camara* and *Chromolaena odorata*. Residual *Eucalyptus* plantations are present in areas and although there is little evidence of them invading, they do affect ground water levels and a programme of removal should be implemented.



Guiding Principles

All naturally occurring vegetation types and habitats are important and are valued, there are however, some, such as the Licuati sand forest, swamp forest, frontal dunes, seagrass beds and mangroves, which have higher conservation status and this needs to be taken into consideration in management decision making. To better understand the distribution and configuration of the vegetation types a detail **Vegetation Map** needs to be developed.

To a large extent vegetation can be allowed to function naturally with minimal direct intervention. The primary drivers of the vegetation composition, structure and dynamics are the soil nutrient status and rainfall, neither of which can be managed, and herbivory, fire regime and invasion by alien plants. The last three drivers can and should be managed.

A **Terrestrial Large Mammal Management Plan** needs to be developed, seeking to manage the herbivore composition and density in a manner that approximates a natural regime with natural variation that occurs through climatic variation and other ecological causes, and including predator and carnivore introductions and reintroductions.

A **Fire Management Plan** for the park is in place and seeks to implement a near natural fire regime while at the same time reducing negative consequences of fire such as excessive entry of fire into sensitive forest margins. This plan further seeks to optimally adjust management's controlled burning plan to accommodate lightning ignited fire as well as fires lit by neighbouring communities. All infrastructure must be protected from fire, usually by means of a firebreak, early in the fire season.

Invasion of the MNAP by alien plants poses a threat to the natural value of the site – currently removals take place in an ad hoc manner. An annual programme of control based on prioritised alien plant threats, the **Alien Plant Control Plan**, thus needs to be developed and implemented. A key feature of this plan needs to be a baseline map of alien plant species' distribution and abundance, which is updated on a regular basis.

Degraded areas detract from the values of the MNAP. All degraded areas will be mapped, and a plan developed to progressively restore these areas. The details of this will be

documented in the **Vegetation Restoration Plan**. To track trends in relation to vegetation management, and a detailed Vegetation Map, the current **Vegetation Monitoring Programme** must be reviewed and updated if required, implemented, and reported on annually.

Terrestrial Large Mammals

From the perspective of medium and large terrestrial mammals, the MNAP is a closed system; i.e. they are not able to move through the larger landscape and interact with others of their own species outside of the park. This fact has genetic as well as ecological consequences such as potential influences on natural population regulation processes for each species. In addition, although the process of re-establishing populations of large mammals has been initiated, certain trophic guilds (e.g. predators) are incomplete. For all these reasons large mammals need to be actively managed on an ongoing basis, they cannot simply be left in a *laissez faire* manner. Although the overall integrity of the system is sought, each species of large mammal must be considered and managed independently. It is also important to recognise that the numbers of individuals of each species will vary depending on climatic and other conditions and in response to potential changes to the boundary of the MNAP.

Guiding Principles

As a starting point, estimates of potentially suitable indigenous large herbivore densities, based on an agricultural methodology, are presented in Table 3 (Stalmans, 2015). These figures do not represent an ecologically ideal set of animal densities, but hypothetical densities based on available resources. By targeting approximately 80% of these figures, management will be placing the large mammal populations of the MNAP at a relatively safe density from an ecological perspective and this can serve as a suitable guide for management interventions in the first ten years of large mammal management in the MNAP. An upper limit to the size of each population, i.e. the TPC, should be set at 20% above the figures set by Stalmans (2015). A **Wildlife Reintroduction Plan** has been drafted and should be implemented and regularly reviewed. All re-introductions should follow the International Union for Conservation of Nature "Guidelines for Reintroductions and Other Conservation Translocations" as well as expert veterinary advice.

Table 3. Estimated number of individuals per species and trophic guild, and target number of animal units

SPECIES AND FEEDER TYPE	TARGET NUMBER OF ANIMALS	LARGE STOCK UNIT (LSU) - NUMBER OF ANIMALS PER ANIMAL UNIT	TARGET NUMBER OF ANIMAL UNITS	UPPER TPC FOR EACH SPECIES (NO OF ANIMALS)
BULK GRAZERS				
Buffalo	1,500	1.00	1,500	1,800
Hippo	800	1.82	1,456	960
White rhino*	50	2.47	124	60
Waterbuck	2,000	0.46	920	2,400
Zebra	3,000	0.54	1,620	3,600
TOTAL for bulk grazers	7,350		5,620	8,820
CONCENTRATE GRAZERS				
Lichtenstein's hartebeest*	200	0.38	76	240
Common reedbuck	8,000	0.19	1,520	9,600
Oribi	200	0.08	16	240
Warthog	500	0.18	90	600
Bushpig	500	0.21	105	6000
Blue wildebeest	400	0.47	188	480
TOTAL for concentrate feeders	9,800		1995	11,760
MIXED FEEDERS				
Eland	200	0.81	162	240
Elephant	400	2.74	1,096	480
Impala	800	0.16	128	960
Nyala	1,000	0.26	260	1,200
TOTAL for mixed feeders	2,400		1,646	2,880
BROWSERS				
Bushbuck	500	0.13	65	600
Giraffe	50	1.47	74	60
Kudu	500	0.42	210	600
Black rhino*	25	1.56	39	30
TOTAL for browsers	1,075		388	1,290
Total Animals	20,625			0
Total Animal Units			9,648	24,750
Kg per km²	4 443			

* These species are currently not present in the MNAP but are understood to have been historically recorded in the area.

All indigenous large mammals are important and valued and efforts must be made to restore the full complement of animals that occurred historically in the area. Some species, however, have a higher conservation status or a higher ecological impact than others, and this needs to be taken into consideration in management decision making. Non-indigenous large mammals should not be conserved in the MNAP and if any are present, they should be removed. The details of these species are to be captured in the **Terrestrial Large Mammal Management Plan**.

Self-regulating populations of large mammal species is ecologically ideal, and this can result in numbers fluctuating considerably. The fact that most large mammal populations are isolated in the contained environment of the MNAP means, however, that individuals are not able to move in or out of the MNAP. This has impact on self-regulatory processes as well as geneflow. Some large mammals, e.g. leopard, are understood to be able to move in and out of the MNAP, although it is not known to what extent this happens. It is thus important to recognise that each species needs to be managed in terms of national legislation as well as part of a meta-population and this requires active management; again, details are to be captured in the Large Mammal Management Plan.

If the large predator guild (e.g. lions) is incomplete their ecological impact may need to be simulated through management. Equally this is true of key bulk grazers/browsers. All management interventions aimed at controlling the density of a species should seek to be neutral with respect to the age and sex ratio of the remaining population; i.e. to leave the remaining population closer to a 50:50 sex ratio and with a normally structured age profile.

Regular game counts are important for providing the information on which management decisions are made. Disease surveillance is an important veterinary monitoring function. In order to track trends in relation to large mammal management, the current **Terrestrial Large Mammal Monitoring Programme** must be reviewed and updated if required, implemented and reported on annually. This programme should include game census data, field observations, disease surveillance and management interventions (e.g. numbers culled, natural mortalities, responses to breakouts, translocations, key species metrics e.g. collar data from elephants sighting data). The programme should also identify species which require additional or more intensive monitoring due to their conservation status or for other management reasons/ factors.

Some species of large mammals have an increased tendency to break out of a protected area. Some of these may not cause concern to local residents or will be easy for them to manage. In instances where the large mammals which break out cause problems for local residents, management must prepare for this and take measures to a) prevent breakouts in the first place, b) recover or, if legally applicable due to an immediate threat to human life, destroy individual animals which are outside the MNAP and c) put in place mechanisms and processes for resolving HWC, i.e. a **Human Wildlife Conflict Resolution Strategy**, guided by national policies.

A key cause of large mammal population decline in many African protected areas is illegal hunting. If illegal hunting is not controlled in the MNAP, it will result in the decline of the value of the MNAP as well as is in contravention of the law. For this reason, an appropriate and cost-effective **Law Enforcement and Anti-Poaching Strategy** has been developed and will be implemented and reported on. This strategy also addresses general park security and visitor behaviour.

Domestic livestock currently occur within the MNAP associated with the community settlements. This is inconsistent with National Legislation and sound ecological management and until an acceptable solution can be found, the park's **Livestock Removal Incentives Strategy** should be followed.

Aquatic Ecosystems

The aquatic ecosystems of the MNAP broadly consists of marine (including coastal), estuarine and mangrove forest, freshwater rivers and lakes, and wetlands. Aquatic ecosystems tend to be dynamic with a constant throughflow of material and they are thus constantly changing within a range. Excessive extraction can disrupt these processes. Aquatic systems also accumulate materials which are introduced to them and they can concentrate these materials. If inputs are outside of the natural range this can have very degrading and negative ecological consequences. Thus, the primary management requirement of aquatic environments tends to be restorative (where degradation has occurred), or to limit the range of one, or all of, i) inputs (e.g. silt, nutrients, toxins, alien species), ii) extraction (e.g. water, organisms such as fish) or iii) other uses (e.g. physical disturbance such as bumping coral reefs, trampling in mangroves). Aquatic systems are commonly also ecologically integrated with each other and other terrestrial ecosystems which add a

further layer of complexity and tends to mean that if one aspect of an aquatic system is disturbed there will be knock-on effects to other aspects.

Due to the history of the area, the aquatic habitats of the MNAP are largely ecologically intact, although the introduction of nutrients and toxins as well as extraction of water upstream are likely increasing. There are thus management imperatives to develop and implement systems to control these in a manner that do not diminish the values of the MNAP. Developing these systems is complex as many of the aquatic systems are strongly influenced by activities that take place outside of the MNAP and where the management of the MNAP has limited influence. Management of the aquatic system thus needs to consider activities within the MNAP over which control is possible and beyond MNAP where it is only possible for managers to attempt to assert influence. Additionally, observation and measurement of subsurface stocks and flows of water are not easy exercises.

Guiding Principles

The prime approach to managing aquatic ecosystems in the MNAP should be to seek to contain inputs, extractions and disturbance as far as is possible to within ecological ranges. To achieve this requires that a comprehensive **Aquatic Ecosystems Monitoring Programme** is developed and implemented which can inform management decisions, building forth on current marine and freshwater (i.e. crocodile and fish catch) monitoring initiatives.

The monitoring programme should identify what managers can control and what is beyond the control of managers and should, at a minimum, include measuring levels of water flow, nutrients, key identified toxins as well as levels of extraction and consumptive use, and the presence of alien species. It is likely that different components of the plan will deal with different components of the aquatic ecosystems e.g. marine, lakes, rivers, wetlands. Due to the complexity of the systems a system of raising “red flags”, i.e. TPCs, should be developed in order to provide managers with advance warning of potential problems. Where there are degraded areas or aspects of the aquatic ecosystems these should be rehabilitated in line with an **Aquatic Ecosystems Rehabilitation Plan**.

Many of the aquatic ecosystems are integrally linked to local people’s livelihoods (e.g. water, food, tourism, transport). For this reason, all planning and management interventions regarding aquatic ecosystems will require consultation and engagement with local communities – see the **Community Action Plan**. In addition, there are other user groups and stakeholders with jurisdiction over activities such as fishing including the Ministry of the Seas, Inland Waters and

Fisheries, Provincial Government, District Services, National Maritime Institute and Maritime Administration. Effective engagement and communication are necessary with all these groups and can best be achieved through a purpose driven forum.

With the easy access and abundant resources within the marine and aquatic environments there is significant pressure on them from both recreational visitors and community members as well as commercial fishing concerns. This needs to be countered through anti-poaching activities as well as visitor surveillance. The details of how this is conducted remain confidential and can be found in the **Law Enforcement and Anti-Poaching Strategy** and Action Plan.

5.1.2 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 channelling 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 tourist camps). In addition, particularly in the aquatic environments there should be mechanisms in place to deal with externally imposed environmental crises such as an oil spill near a mangrove forest or the release of toxins into a lake or waterway.

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. The sense of place and authenticity of any particular location in the park should thus be taken into careful consideration with any infrastructure development, in particular tourism infrastructure.

In order for effective environmental management to take place in the MNAP, a number of Standard Operating Procedures/ Protocols (SOP) 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) **Fire Breaks**, and v) **Disaster Management**.

5.1.3 Enhancing the Ecological Footprint

The purpose of managing the ecological footprint is to improve the ecological functionality and integrity of the MNAP. The MNAP is not an ideal shape for a protected area and the ecological processes it is established to conserve, although it is also recognised that the existence of the EPA creates a limited set of opportunities for enhancing the ecological functionality of the park. Engagement between the Park Management and the EPA administrators as well as with local communities are likely to be key interventions in this regard and will enable incremental improvements in ecological functionality to be made.

Guiding Principles

Efforts to enhance the ecological, and thus the conservation footprint, can vary between relatively small changes such as the realignment of a fence at a point, to substantially larger changes such as the ecological inclusion of significant areas of previously excluded land or seascape through agreement with neighbouring communities. It is not necessarily possible to decide in advance which is better, and each case should be argued and considered on its own merits. It is, however, of considerable value for the MNAP management team to develop a perspective on what the priority areas for strengthening the ecological footprint might be in order to reduce opportunities being passed up on due to a lack of preparation. In this respect an exploratory assessment of potential opportunities for strengthening the conservation footprint will be conducted; i.e. the report on **Potential Opportunities for Strengthening the MNAP Ecological Footprint**. This will enable Park Management to engage with relevant stakeholder in a manner that can advance this objective and to reach mutually agreeable approaches to its implementation.

A sister document to the above-mentioned assessment of opportunities is an operational guideline as to how the MNAP ecological footprint may be practically strengthened, including when negotiating with neighbouring communities. This document, **Operational Guidelines for Strengthening the MNAP Ecological Footprint** needs to be drafted and used to guide the Park Management team. In instances it may be possible for local communities to agree that their land be incorporated into the MNAP. In such instances several conditions will apply and these need to be captured in the operational guidelines.

5.1.4 Natural Resource-use Management

A widely adopted approach to conservation is recognition that the biodiversity that is contained and conserved in protected areas also form 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 marine environments there is traditionally greater access to the natural resources for use by both commercial interests as well as recreationally. This is no different in MNAP and it is thus important that legal natural resource use is appropriately managed.

Guiding Principles

Historically communities living in and around MNAP have relied extensively on the use of local natural resources for a range of purposes to support their livelihood. 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 MNAP 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 partly addressed in the **Management Plan for the Use and Extractive Resources in the Maputo Bay** but requires expansion in a comprehensive **Natural Resource Use Management Plan** and **Detail Land Use Plan/s** for both the park and its buffer zone, especially as the Bay plan is only valid until 2024. These plans will not be limited to local communities in terrestrial and freshwater aquatic environments and will extend to the use of marine resources in the shallow waters as well as the open ocean and also to the allowable catches and harvesting by recreational visitors.

5.1.5 Law Enforcement and Anti-poaching

There are multiple law enforcement and anti-poaching needs in an operation such as the MNAP 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 fishing on the beach) within the MNAP rules and regulations. Over and above all of this there is a need to effectively prevent the illegal harvesting of natural resources from both the marine and the terrestrial environments in the park and its buffer zone.

Guiding Principles

Although different names are commonly given to the function of preventing illegal harvesting of natural resources (anti-poaching) and the safeguarding of infrastructure or entrance gates (guard) specialised training is required in order to perform the functions well. In addition, there is considerable overlap between the skills set of the individuals who perform these security functions. These functions also carry specific risks as they mostly require that firearms are carried, and individual staff members may engage in armed conflict with others. In the marine environment the work will involve skippering a boat at sea. 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.

The law-enforcement functions, which includes 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. 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 Park Management 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.

5.1.6 Operational Objectives

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 4. Operational objectives and key actions for the Natural Resource Management Programme

OPERATIONAL OBJECTIVE	KEY ACTION & OUTPUT ²²	OUTCOME ²³	TIMEFRAME
VEGETATION			
Describe the vegetation of the MNAP	Develop a detail Vegetation Map of the MNAP	Critical baseline information for improved vegetation and ecosystem management	FY2
Understand the impact of management and changes in the vegetation over time	Review, update and implement a Vegetation Monitoring Programme	Important vegetation insight (occurrence, distribution and status of plant populations); improved vegetation management	FY2 and ongoing
Ensure that the ecological role of fire in the natural ecosystems is maintained	Implement the Fire Management Plan	Wildfire hazard reduction, ecosystem restoration, improved vegetation management and wildlife habitat enhancement	Ongoing
Return degraded portions of the MNAP to their natural state	Develop and implement a Vegetation Restoration Plan	Erosion control, visual mitigation and wildlife habitat restoration and enhancement	FY2 and ongoing
Ensure that the invasion of alien plant species does not detract from the natural value of the MNAP	Develop and implement an Alien Plant Control Plan	Improved surface water runoff and groundwater recharge; habitat restoration; decreased risk and intensity of wildfires	FY1 and ongoing
TERRESTRIAL LARGE MAMMALS			
Restore the full complement of indigenous medium to large mammals	Continue to implement and review the Wildlife Reintroduction Plan	Rebuilt ecosystems; climate change mitigation; socio-economic opportunities	Ongoing
Manage the density of each large mammal species within appropriate ecological limits	Develop and implement a Large Mammal Management Plan	Enhanced ecosystem integrity; optimising aesthetic, scientific and socio-economic values of large mammals	FY2 and 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	Reliable information on large mammals for informed management decisions	FY2 and ongoing
Reduce levels of conflict between neighbouring communities and wildlife to acceptable levels	Develop and implement a Human Wildlife Conflict Resolution Strategy	Conserved biodiversity; reduced adverse livelihood and economic impacts; balanced social values of wildlife; human health and safety	FY1 and ongoing
Ensure that mortality rates in large mammal populations are kept within acceptable limits	Continue to implement the Law Enforcement and Anti-Poaching Strategy and Action Plan	Enhanced legal processes; minimised wildlife crime; integration of people and nature; sustainable use of natural resources, improved and strengthened field protection	Ongoing
Progressively reduce the density of livestock in the MNAP	Continue to implement Livestock Removal Incentives	Refer Human Wildlife Conflict Resolution Strategy related outcomes	Ongoing
LAW ENFORCEMENT AND ANTI-POACHING			
Ensure that the law is enforced.	Continue to implement a Law Enforcement and Anti-Poaching Strategy and Action Plan	Refer above	Ongoing

OPERATIONAL OBJECTIVE	KEY ACTION & OUTPUT ²²	OUTCOME ²³	TIMEFRAME
AQUATIC AND MARINE ENVIRONMENTS			
Ensure that key indicators in each aquatic ecosystem remain within a predetermined natural range	Develop and implement a comprehensive Aquatic Ecosystems Monitoring Programme	Important aquatic ecosystem insight; improved management of aquatic ecosystems and natural resources	FY2 and ongoing
Rehabilitate degraded aquatic environments	Develop and implement an Aquatic Ecosystems Rehabilitation Plan if required	Enhanced aquatic ecosystem integrity and possibilities for provision of ecosystems services; cost efficiencies	FY2 and ongoing
Ensure that illegal harvesting rates of all natural resources are kept within acceptable limits	Continue to implement the Law Enforcement and Anti-Poaching Strategy and Action Plan	Refer above	Ongoing
ENVIRONMENTAL MANAGEMENT			
Ensure that all management minimise negative impacts on the values of the MNAP and seek to proactively protect them	Finalise and implement as appropriate a Solid Waste Management SOP	Enhanced ecosystem integrity and human health and safety	FY1 and ongoing
	Develop and implement as appropriate a Wastewater and Sewage Management SOP	Enhanced ecosystem integrity and human health and safety	FY2 and ongoing
	Develop and implement as appropriate an Erosion Control SOP	Enhanced ecosystem integrity (reduced runoff velocity; maintenance of soil integrity; control of pollutants); maintained habitats and biodiversity	FY2 and ongoing
	Implement as appropriate a Fire Break SOP	Refer Fire Management Plan related outcomes	Ongoing
	Develop and implement as appropriate a Disaster Management SOP	Clarified roles and responsibilities and coordination mechanisms; integrated, inclusive, and equitable approaches to building resilience	FY2 and ongoing
ECOLOGICAL AND CONSERVATION FOOTPRINT			
Undertake assessment of potential conservation footprint expansion opportunities and prioritise them.	Prepare a report on Potential Opportunities for Expanding the Conservation Footprint of the MNAP	Options to improve ecosystem representation and landscape connectivity, ecological sustainability and resilience to climate change	FY3 and ongoing
Engage local communities and neighbours in negotiations to expand the conservation footprint	Develop Operational Guidelines for Expanding the Conservation Footprint of the MNAP and use them to guide negotiations with local communities and other neighbours	Efficient and effective approaches; clarity regarding roles and responsibilities of the many role players (also see above)	FY4 and ongoing
NATURAL RESOURCE USE (ALL USER GROUPS)			
Ensure that the use of natural resources (by all user groups) within the MNAP and its buffer zone is sustainable and not limiting to future generations	Develop and implement a comprehensive Natural Resource Use Management Plan and Detail Land Use Plan/s²⁴	Improved environmental and ecosystem management; improved welfare of communities	FY3 and ongoing

²² In bold.

²³ The benefits that a project or intervention is designed to deliver.

²⁴ Any planning in the buffer zone of MNAP should be aligned with EPA planning and plans.

5.1.7 Financial Considerations

A brief overview of the estimated costs for the implementation of the Natural Resource Management Programme is provided in Table 5 below²⁵.

Details regarding this budget as well as the budgets for all other programmes are refined and contained in the Park Operational Business Plan.

Table 5. Estimated annual budget for the Natural Resource Programme

DESCRIPTION	ANNUAL AMOUNT (MZN)	ANNUAL AMOUNT (USD)
Law enforcement and anti-poaching	26,210,000	417,000
Marine biodiversity monitoring	2,108,000	35,000
Terrestrial biodiversity monitoring	4,570,000	73,000
Invasive species management	390,000	6,000
Sub-total	33,350,000	531,000

In addition to the above, once off funding of approximately **MZN27,379,800 (USD434,600)** is required to secure equipment and some infrastructure to support the marine law enforcement programme as well as completing the wildlife introduction including predators. Costs for elephant management are not included, it is assumed any translocations will be funded from third party sources.

5.2 Cultural and Heritage Resource Management

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 which records the cultural and heritage assets of the MNAP and the surrounding EPA. However, as the area has been inhabited by Khoisan and Bantu people for over 500 years, there are likely historic and heritage sites as well as cultural practices which value nature. This view is supported by a study (Soto, Munthali, & Breen, 2001), wherein a high percentage of respondents from local communities indicated that wildlife in the MNAP has cultural value to them and their families and is safeguarded by traditional beliefs. For this reason, sustainable, effective and equitable approaches to the management and governance of MNAP need to be grounded not only in biodiversity research and practice, but also in recognising and enabling deeply held cultural; spiritual; aesthetic; and utilitarian values. A detailed site survey needs to be conducted of the cultural and heritage resources of the MNAP which will then form the basis of a **Cultural and Heritage Resource Management Plan** for the MNAP.

5.2.1 Guiding Principles

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.

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 MNAP including tourism, stakeholder engagement and environmental awareness. This programme can additionally be enhanced through partnerships with cultural heritage organisations and other aligned institutions.

5.2.2 Operational Objectives

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

Table 6. Operational objectives and key actions for the Cultural and Heritage Resource Management Programme

OPERATIONAL OBJECTIVE	KEY ACTION & OUTPUT	OUTCOME	TIMEFRAME
CONCLUDE WHS NOMINATION PROCESS			
Complete and submit the WHS nomination dossier	Complete all background studies and reports and compile a set of documents suitable for a WHS nomination process	Immediate international recognition; likely increase in tourism numbers; demonstrated social responsibility; access to UNESCO network and partners	FY1
DOCUMENT IMPORTANT SITES			
Understand the spatial distribution and cultural significance of key sites within the MNAP and integrate them into the management programme	Conduct assessment and survey of the cultural and heritage assets within the MNAP in collaboration with local communities and relevant organisations	Agreed statement of significance and baseline of the cultural/heritage assets for better management	FY2
	Develop and implement a Cultural and Heritage Resource Management Plan for MNAP	Agreed approaches and actions to maintain the outstanding importance of these assets; agreed framework for applications for grant aid and/or development proposals	FY3 and ongoing

5.2.3 Financial Considerations

The estimated once-off costs to establish a better understanding of the park’s cultural and heritage resources and how these should be managed will be approximately **MZN2,270,000 (USD36,000)**. Ongoing implementation costs can, however, only be assessed once the Cultural and Heritage Resource Management Plan has been finalised and approved.

²⁵ Figures are rounded to the closest MZN10,000 and closest USD1,000, exchange rate used throughout this Plan is MZN63.00=USD1.00 and all figures are based on 2019 data.



5.3 Community Engagement

As the governance of the larger protected area landscape including the EPA is being clarified, the MNAP will seek to refine its engagement strategy with local communities living around the park and the four communities living inside the park. Appropriate, innovative and collaborative interventions, such as ecosystem-based adaptations, which seek to increase community resilience and adaptability, as well as to promote their livelihoods and the implementation of CBNRM in the park, buffer zone and EPA, will be a focus theme in the interventions and activities that are implemented²⁶. In addition to reducing vulnerability, it is hoped that these interventions will also result in improved community cooperation and collaboration.

However, to select appropriate adaptation interventions more knowledge will be required as regards the status of and threats to the various ecosystems of the park as well as their vulnerability and of the local communities to climate change and other environmental impacts. Existing protocols are being applied regarding the use of resources within the park, however, these require formalisation and improved controls. This will be achieved through a revised **Community Action Plan**.

5.3.1 Guiding Principles

Establishing effective governance and working through formalised co-operative structures are critical to the success of community engagement programmes, particularly where a clear sense of ownership over the process and outcomes is promoted. While local initiatives are essential, they can be enhanced by collaboration with relevant regional and district authorities to facilitate commercial and development activities to the benefit of local communities. As sustainability will be a core focus of many interactions between the MNAP 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. Details of how this will be achieved can be found in the park's **Environmental Awareness and Education Programme**.

Gender equality, fairness and the dignity of all will be promoted in all community related interventions. In addition to the above, it is in the interests of both parties that the health of the livestock in the MNAP is good, as this protects wildlife as well. For this reason, Park Management should look to supporting programmes such as the Herding for Health programme around the reserve in the near future. In addition to this, as there are no clear plans to implement an HWC compensation scheme, this should be clearly communicated to all stakeholders in order to avoid uncertainty and potential confusion in this regard. Linked to this could be incentives for people to remove their livestock from the MNAP.

²⁶ Especially during events such as the COVID-19 pandemic.

5.3.2 Operational Objectives

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

Table 7. Operational objectives and key actions for the Community Engagement Programme

OPERATIONAL OBJECTIVE	KEY ACTION & OUTPUT	OUTCOME	TIMEFRAME
SETTING A BASELINE FOR ENGAGEMENT			
Establish a clear context for community engagement	Prepare and implement a Community Engagement Strategy including reviewing and redefining local communities in the context of the MNAP and the EPA as part of the revision of the Community Action Plan and clarifying the role of District Authorities and other organisations involved in community development	Defined local communities of the park; better understanding of their needs and aspirations; platform for joint sustainable decisions to create social capital, community empowerment, social transformation and deepened democracy; clarity regarding roles and responsibilities of local government and support organisations	FY1 and ongoing
Empower local community groups	Engage and facilitate governance strengthening and capacity building	Empowered community members driving long term community benefits; strong sense of community ownership; cohesiveness, collaboration and resilience	Ongoing
SETTING THE AGENDA			
Mitigate adverse impacts of communities on the values of the MNAP and negative impacts of the park on community livelihoods and development	Revise and implement the Community Action Plan	Local decision making; active local communities directly shaping community well-being	FY1 and ongoing
	Develop and implement a Human Wildlife Conflict Resolution Strategy	see section 5.1.6	see section 5.1.6
Ensure that the use of natural resources within the park and its buffer zone by communities is sustainable	Develop and implement a comprehensive Natural Resource Use Management Plan and Detail Land Use Plan/s	see section 5.1.6	see section 5.1.6
	Implement the park Environmental Awareness and Education Programme	Increased civic engagement, positive environmental behaviour and environmental stewardship; deepened personal development and wellbeing and strengthened communities	Ongoing
Promote alternative and sustainable livelihoods for local communities	Through engagement with local communities, seek opportunities for promoting alternative and sustainable livelihoods where feasible (develop and implement and Sustainable Livelihoods Framework)	Increased well-being and reduced vulnerability of communities; improved food security; more sustainable use of natural resource base	Ongoing

5.3.3 Financial Considerations

A brief overview of the estimated costs for the implementation of this programme is provided in Table 8 below, noting that this excludes any funding raised for specific projects.

Table 8. Estimated annual support budget for the Community Programme

DESCRIPTION	ANNUAL AMOUNT (MZN)	ANNUAL AMOUNT (USD)
HWC management	5,350,000	85,000
General community support	7,150,000	113,000
Environmental awareness and education	3,550,000	56,000
Sustainable use monitoring	160,000	3,000
Sub-total	16,210,000	257,000

In addition to this there is a once off funding of **MZN8,875,000 (USD141,000)** to develop an HWC strategy, help build governance within communities and explore improved land use options around the park, it excludes any incentive for relocation for communities settled inside the park.

5.4 Tourism Development

Being situated less than 100km from Maputo, the capital of Mozambique, and connected via the new national road and the Catembe bridge, as well as being close to the potentially large South African tourism market, MNAP has the potential to offer easy access to incredible land and seascapes. Within nearly 1,730km², visitors can experience habitats as varied as pristine coastal dunes to forests, freshwater lakes to estuaries and the open ocean as well as grasslands and savanna. Visitors will be able to access experiences ranging from spectacular wildlife to coral reefs and a sense of pristine wilderness.

The Financial Sustainability Strategy for MNAP has identified a business model premised on the notion that all revenue generated by the park will be available to fund management costs, as well as fees due to Government, and that while the revenue streams are being developed, support funding will be provided by donors through funding and co-financing agreements. Projections suggest that revenue can fully meet operational expenses within ten years. To achieve this, MNAP must increase the number of tourists to approximately 65,000 visitor days per year. The plan seeks to attract investment in tourism concessions for which concession fees will be payable as well as entry fees by visitors and to achieve the targeted revenue, at least 500 tourism beds must be developed and operational.

Although it has the potential to offer a world class tourism destination, MNAP is currently largely undeveloped from a tourism perspective. Although early initiatives have been met

with mixed success, a key aim of this plan is to consolidate all the tourism initiatives, to catalyse the tender and concession processes with subsequent facility design and build followed by operational implementation at each site, or Tourism Development Area (see section 6.4). It is envisaged that such development could generate the revenue required to cover the MNAP operating expenses and contribute to unlocking economic opportunities for local people. Prioritised development opportunities are identified in Table 9 and expanded on in a **Tourism Development and Facilities Rollout Strategy** that will form part of the park's Tourism Development Plan.

5.4.1 Guiding Principles

To preserve the unique and pristine features of MNAP, any development will need to be conducted in an environmentally sensitive manner (see Environmental Management) and in accordance with a carefully designed **Zonation Plan** (see Chapter 6) which will enable the integration of a range of wildlife and wilderness experiences at differing tourism densities while at the same time minimise the negative impacts on the environment. Higher densities of visitors should be permitted in the landward, peripheral areas of MNAP with lower densities on the beaches and further extremities.

Zonation should take into consideration the notion that MNAP does not need to cater for every need, there are other areas within a similar distance of Maputo which can provide higher density beach experiences for example. At

the same time zonation can be used to enable the MNAP to develop a range of products (ranging from rustic camps to low impact lodge developments, self-catering and catered units) as well as activities to showcase the unique assets of the park. Together with pricing, zonation can be used to promote equitable and affordable access to MNAP, 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 MNAP are not diminished as a result of tourism.

The approach can also be used to leverage opportunities for neighbouring communities to benefit from higher densities of visitors on the peripheral areas closer to where they live. This can be achieved through partnerships between community structures and the MNAP as well as through neighbouring communities contributing portions of their land on which other recreational activities take place; for example, conference facilities or golf courses. Limited traversing rights may be granted to neighbouring community partners. Tourism will thus focus on optimally unlocking this potential and increasing revenue and benefits that can be accrued through the MNAP.

With the lag times involved in tourism development, and the limitations on management if there are insufficient operational funds, the Tourism Programme needs to accelerate and build momentum rapidly. In achieving this, the park will attract private partners to invest in and manage the tourism products and other commercial opportunities. Tourism development will be guided strategically by national tourism plans and strategies and by the park **Tourism Development Plan** which will be reviewed and updated over time. The number of visitors to the MNAP will be an important determinant of the revenue generated. For this reason, it is necessary to implement a **Marketing and Branding Strategy** for the park.

All tourism facilities and operations will need to meet agreed standards for operation and maintenance, for this to be effectively managed each facility will require the development and implementation of an **Operational and Maintenance Standards** document which includes an auditing and reporting component (also see section 5.5.4). This should form part of the Infrastructure, **Vehicle and Equipment Management System** to be established for the park. **Tourism Operator Standards** (or codes of conduct), specifically for activity operators, will also need to be developed.

In addition, in order 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 to develop an **Environmental Management System** which sets a framework for developing and implementing Environmental Management Plans for each development.

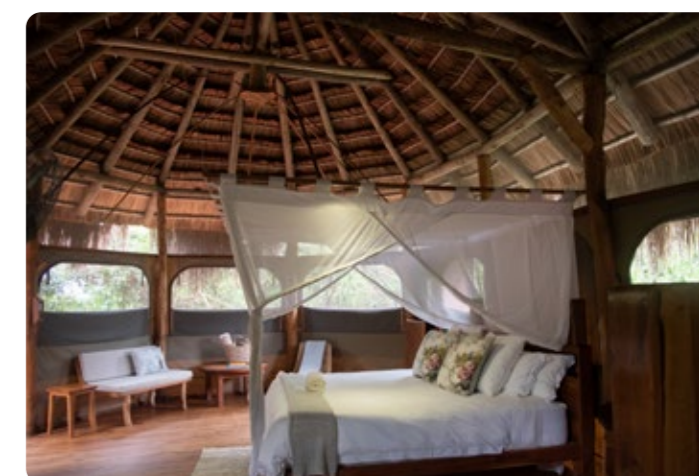


Table 9. Potential tourism development sites with the park

NATURE OF FACILITY & ACCESS TYPE	INTENSITY OF USE*	DESCRIPTION OF TOURIST DEVELOPMENT AREA	DEVELOPMENT CONSIDERATIONS / ENVIRONMENTAL SENSITIVITIES
CONTROLLED USE AREA-T1 (refer Chapter 6)			
FOOT OF THE FUTU LODGE			
Concession Private access	Low	<ul style="list-style-type: none"> This Tourism Development Area (TDA) is located within an area that could form a 7,400ha sanctuary for the big five in the south eastern part of the Futi corridor, close to the Tembe Elephant Park in South Africa – it overlooks the Futi River. The site is accessible via a well-defined, recently cleared 4x4 track of approximately 45km from the Futi South entrance gate through the park. Alternatively, the site can be accessed from Zitundo, travelling approximately 20km in a southwesterly direction through communal lands and woody grassland and sand thicket vegetation before entering the park through a community checkpoint gate. It is envisaged that the sanctuary could be fenced off from the rest of the Futi corridor at first and could potentially be stocked with the Big-Five, when all the required security measures are in place. 	To be detailed once a specific site has been identified and demarcated.
INDIVIDUAL 4X4 RUSTIC CAMPSITES			
Park facility Permitted access only	Low	<ul style="list-style-type: none"> All selected sites are within 500m off the existing access road, carefully located to not impact on the wilderness experience for any user of this zone. Campsites to accommodate a maximum of six vehicles per site and users will be required to be completely self-sufficient. All campsites will have views over or onto the prevailing salient landscape features which are frequented by plains game, elephant herds and hippo and crocodile may be visible in the landscape. 	<ul style="list-style-type: none"> Development footprints to only include ablution facilities (consisting of a compost toilet and a shower facility), which can easily be removed and rehabilitated if needed. Water can be supplied to some sites via a pedal powered pump system from a nearby water source. Sites may change over time.

NATURE OF FACILITY & ACCESS TYPE	INTENSITY OF USE*	DESCRIPTION OF TOURIST DEVELOPMENT AREA	DEVELOPMENT CONSIDERATIONS / ENVIRONMENTAL SENSITIVITIES
CONTROLLED USE AREA-T2 (refer Chapter 6)			
FUTI CONFERENCE CENTRE			
Concession Public access	High	<ul style="list-style-type: none"> The TDA is outside the park boundaries but close to the existing Futi Entrance Gate. The site is easily accessible and approximately 500m off the main road, surrounded by natural forest with large tree specimens just off the Futi River. It offers excellent development opportunities and could include additional land outside the park to develop other facilities such as a lifestyle estate, etc. A 12km game drive loop, through riverine forest and thicket as well as open woodland offers quick exposure to the local wilderness. 	<p>Some development considerations are listed below but are not limited to only these:</p> <ul style="list-style-type: none"> The site is a peripheral development which is close to the new tar road and noise might be a factor but can potentially be mitigated. The site is only 70km from Maputo and accessible by 2x4 vehicles. The site has remnant eucalyptus plantation that will require removal and rehabilitation. Electricity supply is good and possibly water with cellular communication infrastructure. Traversing rights and or incorporating the land into the MNAP is possible.
ELEFANTES PLAINS			
Park facility Public access	Medium	<ul style="list-style-type: none"> An easily accessible TDA 6km from the Futi entrance gate along soft sandy roads. Slightly elevated, with typical large pod mahoganies dotted along the edge of the sand forest the TDA overlooks the grassy Elefantes Plains to the east. There are three potential development sites separated by distinct east west, elephant migratory routes. Plains game and large herds of elephants are frequently seen in the open plains. 	<ul style="list-style-type: none"> The sites are close to an overhead main power supply source, supplying power to Santa Maria, which is favourable for power supply to the site. The powerline infrastructure, however, is visible from the site, particular for the northern section of the identified sites as the powerline follows the spine road, cutting across Elefantes Plains. This should be mitigated by painting the concrete pillars to blend in better with the surrounding landscape. Should the spine road be used at night times, the light pollution could negatively affect the northern site although this can be mitigated through realignment of the road and appropriate night drive game drive scheduling. Site development should adhere to the identified major elephant migratory routes. Development footprints to be sensitive towards the sand forest.

NATURE OF FACILITY & ACCESS TYPE	INTENSITY OF USE*	DESCRIPTION OF TOURIST DEVELOPMENT AREA	DEVELOPMENT CONSIDERATIONS / ENVIRONMENTAL SENSITIVITIES
CONTROLLED USE AREA-T2 (refer Chapter 6)			
LAGOA XINGUTI			
Park facility Public access	Medium	<ul style="list-style-type: none"> The TDA is 15km from the Futi entrance gate along soft sandy roads, and the site is situated on an elevated embankment overlooking Lake Xinguti, facing towards the east with spectacular sunrise opportunities. Large identified tree specimens rhythmically identified each chalet site. The luxury campsites, tucked into the forest edge, overlook an elevated grass terraced area following through to the open water of Lake Xinguti. The birdlife experience is spectacular, enhanced by the ever-present grunting of hippos. 	<ul style="list-style-type: none"> Electricity to the site will be from the existing Machangulo power line combined with solar energy. Water supply to the site is via borehole, pumped via solar power to a storage tank, elevated about 15m above the development. Development to pay special attention to not pollute the ground water or the lake with wastewater. The developed site is available as an operator concession via an open tender.
CONTROLLED USE AREA-T3 (refer Chapter 6)			
LAGOA NELA			
To be confirmed	Low	<ul style="list-style-type: none"> The TDA is located on the eastern embankment of Lake Nela, looking towards the west, 22km from the Futi entrance gate, only accessible via 4x4 vehicles. The heart like shape of the lake, with a prominent indentation set the scene for a much more intimate and interesting experience as compared to those of the larger waterbodies. The lake has a large resident hippo population, with constant noises echoing through the forest. The site is elevated from the water's edge amongst large tree specimens overlooking the waterbody. 	<ul style="list-style-type: none"> Development to pay special attention to not pollute the ground water or the lake with any sewerage infrastructure needs. Development to take cognisance of any territorial animal pathways, especially those of hippos and elephants. Electricity to the site will have to be via green electrical solution. Water supply to be via borehole, still to be found.
INDIVIDUAL 4X4 CAMPSITES			
Park facility Permitted access only	Low	<ul style="list-style-type: none"> All selected sites are within a 500m radius of the existing access road, carefully located to not impact on the wilderness experience for any user of this zone. Campsites to accommodate a maximum of six vehicles per site and users will be required to be completely self-sufficient. All campsites have views over or onto the prevailing salient landscape features. 	<ul style="list-style-type: none"> Development footprints to only include ablution facilities, consisting of a compost toilet and a shower facility, which touches the earth lightly that can easily be removed and rehabilitated if needed. Where possible water could be supplied to some sites, propelled via a pedal powered pump system from a nearby water source

NATURE OF FACILITY & ACCESS TYPE	INTENSITY OF USE*	DESCRIPTION OF TOURIST DEVELOPMENT AREA	DEVELOPMENT CONSIDERATIONS / ENVIRONMENTAL SENSITIVITIES
CONTROLLED USE AREA-T4 (refer Chapter 6)			
PONTA CHEMUCANE			
Concession Private access	Low	Already developed and plans approved.	It is a designated launch site.
PONTA MEMBENE			
Park facility lodge Public access	Medium	<ul style="list-style-type: none"> The site is located 38km from the Futi entrance gate on the coastal strip, only accessible via 4x4 vehicles along thick sandy road. The site is small and compact but three to four individual development clusters have been identified, providing opportunities for a diverse mixture of accommodation options, ranging from sea, forest, lake, and birds eye view units. The site is adjacent to a small inland lake that allows for diversity of the tourism product immediately away from the coast. The beach area is narrow but offers diverse rocky shore areas with ample tidal pools and reefs for snorkeling. 	<ul style="list-style-type: none"> The frontal dune system is very sensitive and any development to take cognisance of best practice principles when developing close to this. Due to the accessibility of the site, it can provide easier access for day visitors than any other coastal site. It is a designated launch site The site is close to existing human settlements who are established at Lake Zuali, about 6km from the coast. Electricity to the site will be via an underground cable combined with solar energy. Water supply is from a borehole. The developed site is available as an operator concession via an open tender.
PONTA MILIBAN GALALA			
Concession Public access	Medium	Already developed.	It is a designated launch site.
PONTA DOBELA			
Concession Private access	Medium	<ul style="list-style-type: none"> The site is located 50km from the Futi Entrance gate and 33km from the Gala entrance gate, only accessible via 4x4 vehicles along thick sandy roads. The site is open with two identified development clusters, one on terraces of the dune pinnacle and one in the forest area behind the frontal dune north of the river estuary, thus potentially lends itself to further expansion as and when needed. The site offers a sea and estuary view experience, with a possibility of linking to Lake Piti via meandering estuary boat safaris. The site is good for launching boats with excellent reef diving sites close by. The site is far from any existing human settlements. 	<ul style="list-style-type: none"> The site is on a steep slope, implicating high construction costs. The site concession was awarded to Mozaico do Indigo which has not developed the site within the contractual time period and a decision is awaited on potential retendering of this site. The site is adjacent to Lake Piti whose mouth may open up to the sea in times of high rainfall which will cut off accessibility to the development cluster on the dune pinnacle. The site is further away from the main entrance gate and therefore not ideally located for day visitors. Electricity to the site will have to be via a green energy solution. Water supply to be via borehole, still to be identified and might have to be purified. It is a designated launch site.

NATURE OF FACILITY & ACCESS TYPE	INTENSITY OF USE*	DESCRIPTION OF TOURIST DEVELOPMENT AREA	DEVELOPMENT CONSIDERATIONS / ENVIRONMENTAL SENSITIVITIES
CONTROLLED USE AREA-T4 (refer Chapter 6)			
INDIVIDUAL 4X4 CAMPSITES			
Park facility/ Permitted access only	Low	<ul style="list-style-type: none"> All selected sites are within a 500m radius off the existing access road, carefully located to not impact on the wilderness experience for any user of this zone. Campsites to accommodate a maximum of six vehicles per site and users will be required to be completely self-sufficient. All campsites have views over or onto the prevailing salient landscape features. 	<ul style="list-style-type: none"> Development footprints to only include ablution facilities, consisting of a compost toilet and a shower facility, touching the earth lightly that can easily be removed and rehabilitated if needed. Where possible water could be supplied to some sites, propelled via a manual pump system from a nearby water source.

Guideline maximum tourist numbers on site per day. Support staff will be over and above these numbers.

Intensity	Number per day
Low	<100
Medium	100 – 300
High	300+



5.4.2 Operational Objectives

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

Table 10. Operational objectives and key actions for the Tourism Development Programme

OPERATIONAL OBJECTIVE	KEY ACTION & OUTPUT	OUTCOME	TIMEFRAME
Ensure that tourism development in MNAP is guided by current and best knowledge	Review and implement the Tourism Development Plan	Agreed approaches for local economic development opportunities while maintaining ecological integrity through low-impact, non-consumptive use of local resources	FY1 and ongoing
Ensure collection, control and retention of MNAP entry revenue	Continue to implement an Entry-Revenue Management System		FY1 and ongoing
	Secure approval for the retention of revenue from marine based activities	Increased park revenue base	FY1
Initiate processes to develop and concession out tourism opportunities in MNAP	Review concession agreements and amend if required to ensure that they are current and guided by best practice	Operator compliance; increased park revenue base; maintaining ecosystem integrity; ensured visitor safety	FY1 and ongoing as concessions are assigned
	Implement the Tourism Development and Facilities Rollout Strategy forming part of the Tourism Development Plan	Cost efficiencies; maintaining ecological integrity: lower ecological impact	FY2 and ongoing
Increase visitor numbers to MNAP	Prepare and implement a Marketing and Branding Strategy for the park	Increased and consistent exposure of the park; high levels of awareness, understanding, support and activism among constituencies; increased visitor numbers (contributing towards financial sustainability); increased stewardship among park constituencies	FY2 and ongoing
	Develop Communication and Interpretation Material for MNAP	Responsible tourism; authentic experiences for tourists	Ongoing
Ensure development by MNAP and concessionaires is conducted within agreed and appropriate environmental guidelines	Develop and implement an Environmental Management System for the MNAP	Cost efficiencies; maintaining ecological integrity: lower ecological impact; responsible tourism and authentic visitor experiences	FY2 and ongoing
Tourism facilities meet agreed operational and maintenance standards	Develop and implement an Infrastructure Management System and ensure that operational and maintenance standards for all tourism facilities and operations are met	Cost efficiencies; maintaining ecological integrity: lower ecological impact;	FY1 and ongoing

5.4.3 Financial Considerations

The ongoing estimated annual cost of this programme is provided in Table 11 below. There are however, two important once-off interventions which require funding, these include the development of a revenue and entry control system as well as support for the further soliciting of concessionaires to develop facilities in the park, the estimated cost of these over the next period is **MZN8,190,000 (USD130,000)**.

Table 11. Estimated Annual Cost of the Tourism Management Programme

DESCRIPTION	ANNUAL AMOUNT (MZN)	ANNUAL AMOUNT (USD)
Tourism management activities	4,330,000	91,000
Access control & Revenue Collection	5,720,000	69,000
Sub-total	10,050,000	160,000

5.5 Management, Administration and Finance

Effective functioning of the MNAP to achieve conservation, economic and community objectives requires clear management systems with efficient and effective administrative and financial systems and capacity (including communication, monitoring and reporting), which in turn require well motivated and trained staff, with supporting infrastructure and equipment. 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.

5.5.1 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 MNAP must attract approximately 65,000 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 500 tourism beds.

Guiding Principles

The **Financial Sustainability Strategy** which has been developed to fund the MNAP envisages a model that makes use of Public Private Partnerships, and that these will be managed through a Special Purpose financial Vehicle (SPV) which will be established for this purpose.

As the strategic plan for the financial sustainability of the MNAP is dependent on start-up funding being available in the short to medium term and that reliance on this funding will over time be transitioned to the use of self-generated revenue, **three to five-year revenue targets/projections** and annual budgets and workplans will be developed as part of a **Park Operational Business Plan** for the management plan period in order to keep track of the financial status of the MNAP. 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 receive 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 MNAP, a co-management agreement needs to be finalised with an appropriate governance structure.

5.5.2 Administration, Stakeholder Engagement and Communication

The successful administration of a protected area requires that Park Management engage in the effective building of stakeholder relationships and in the specific case of the

MNAP 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 Lubombo TFCA and engages and shares information with staff and stakeholders. There is also a very clear need to ensure that there is an effective and secure system of information and document management.

Guiding Principles

As the recently established Management Council has oversight responsibility it will benefit from a **governance capacity building programme** which needs to be developed and implemented. The MNAP 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.

5.5.3 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 MNAP.

Guiding Principles

The management of the human resources of the MNAP 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, 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 MNAP to local communities.



5.5.4 Infrastructure, Vehicles and Equipment

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

Key infrastructure includes 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 Operational 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 MNAP.

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 SPV 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.

5.5.5 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 floods likewise will be more intense and more frequent. To build the resilience of the park and its communities, climate risk profiles should be determined, and **Climate Change Adaptation Strategies**

developed and adopted in order to implement climate change mitigants and actions to reduce and curb the effects of changing environmental conditions.

Guiding Principles

Because the potential for extreme and unanticipated events occurring is increasing, it is important that the management of the MNAP 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.

5.5.6 Compliance Management

ANAC is the government agency responsible for setting and implementing conservation policy in MNAP that is consistent with both national and international obligations. This requires that all national legislation which is pertinent to the MNAP and the activities which take place in the MNAP 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 MNAP, 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 MNAP 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.

5.5.7 Research

There are many aspects of the biophysical and cultural features of MNAP 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 MNAP 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 MNAP, 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. Gaps in knowledge requiring research in order to improve the management of the MNAP are listed in Table 12 (Centro Terra Viva, 2016).

Table 12. Research and knowledge gaps identified at the time of drafting this plan

THEME	GAPS
Historical and developmental context	History, development and settlements of the area.
Conservation status and management	<ul style="list-style-type: none"> Biodiversity, ecosystem (e.g. Machangulo ecosystems, including the Bembi Estuary Sanctuary), species (e.g. dugongs and turtles) and their status and ecology, particularly in the marine environment, e.g. intertidal flats, rocky shores, mangroves and sandy beaches. Taxonomy and biodiversity studies within the terrestrial environment especially in less studied groups (e.g. insects, plants, reptiles, freshwater fauna and flora). Population estimates for the area were only found for elephants and need to be conducted for several other megafauna. Collation of past records and production of more comprehensive current records on wildlife management practices, funding sources, staff training and expertise. Quantification of ecosystem services, with an economic perspective, for the local communities and tourism.
Institutional context	Institutional strategies and action plans to develop tourism.
Physical environment	Local scale research on sediments, oceanography, geology, limnology and hydrology.
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.

5.5.8 Management Effectiveness Tracking

The effectiveness of contemporary conservation management globally, is most frequently measured by a periodic standardised assessment known as the METT. The MNAP has a history of **METT assessments** having been conducted in 2015, 2017 and 2019²⁷. 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 MNAP and which is comparable from year to year. The changes in the METT score over time are what enable a manager to identify weaknesses and to focus on interventions that will improve overall management of the protected area.

²⁷ See Appendices for the assessment scores.

5.5.9 Operational Objectives

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

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

OPERATIONAL OBJECTIVE	KEY ACTION & OUTPUT	OUTCOME	TIMEFRAME
FINANCIAL SUSTAINABILITY AND MANAGEMENT			
Promote financial sustainability of the MNAP by 2030	Update and implement a Financial Sustainability Strategy	Delivery of cost efficiencies, risk mitigation, new competitive and revenue opportunities and innovations; improved staff development and retention; better managed park	FY1 and ongoing
	Draft and secure signatures for the implementation of a Co-management Agreement	Less conflicts between central and local level as it generates increased accountability upwards and increased legitimacy downwards; increased public trust in decisions; empowering of non-government actors; increased social learning; increased economic and social development of communities; promotion of ecologically sustainable use of the environment, social health and cultural sustainability of the local communities; potential for more effective park management (better biodiversity conservation, wildlife protection and increased support for local livelihoods)	FY1
	Secure agreement that MNAP (marine component) revenue can be retained for purposes of implementing this plan	Increased financial sustainability (see above – Financial Sustainability Strategy)	see Tourism Programme
	Ensure effective and efficient management of the finances of the MNAP	Develop and implement three to five-year rolling budgets and implementation plans with annual budgets based on a Park Operational Business Plan	Estimate and projection of medium-term funding requirement for the actions identified in the programmes; important reality checks on both the vision and objectives and the programmes which flow therefrom; important filter to ensure actions are achievable and funded while aspirational items and wish lists are contained or excluded
APPROPRIATE POLICY CONTEXT FOR MNAP ADMINISTRATION			
Informed decision making by the Management Council	Develop and implement a governance capacity building programme	Increased effectiveness and efficiency of park management; optimisation of the ecological, social, economic and cultural benefits of the park without incurring unnecessary costs or causing harm; better embedded in society	FY2 and ongoing

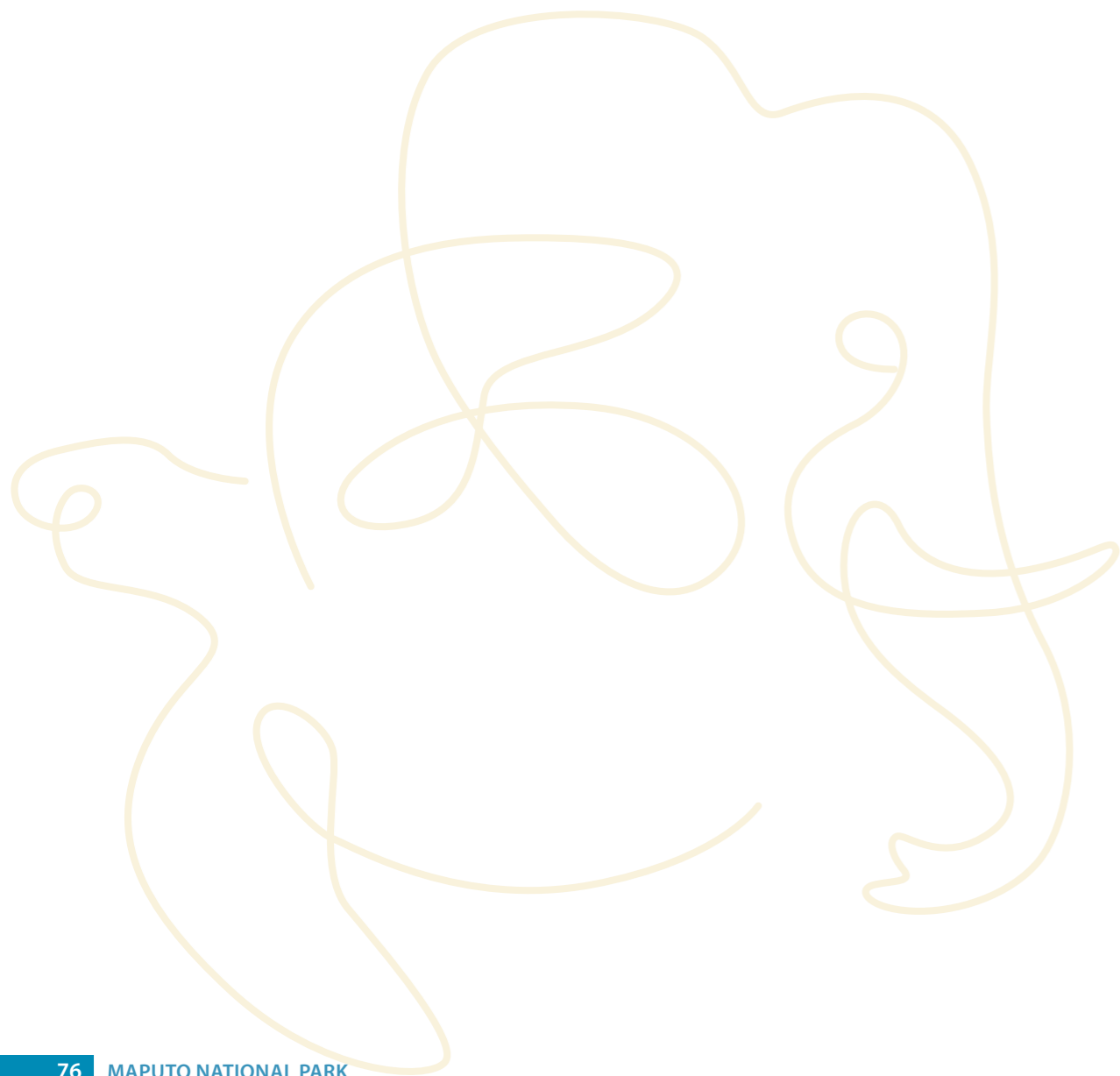
OPERATIONAL OBJECTIVE	KEY ACTION & OUTPUT	OUTCOME	TIMEFRAME
APPROPRIATE POLICY CONTEXT FOR MNAP ADMINISTRATION			
Better positioning of the park in the broader conservation landscape	Continue to participate in TFCA structures and activities	Improved ecosystem integrity and biodiversity conservation; opportunities for socio-economic upliftment	Ongoing
Ensure good relationships with supportive stakeholders	Develop and implement a Stakeholder Engagement and Communication Strategy	Clarity regarding who are the stakeholders of the park and best approaches to communicate with and engage them; leveraged understanding, support, collaboration and involvement in park management;	FY2 and ongoing
Ensure human resources are appropriately managed	Develop and implement necessary Human Resource Management Policies	Required employee competencies and behaviours; high levels of employee engagement, motivation, and job satisfaction; increased park management efficiencies: attainment of park objectives and satisfaction of key stakeholders	Ongoing
Enhance staff capacity	Develop and implement a Capacity Building and Training Programme	See above	FY2 and ongoing
Ensure infrastructure, vehicles and equipment are appropriately managed and used	Develop and implement an Infrastructure, Vehicle and Equipment Management System	Improved cost and other efficiencies, better traceability; regulatory compliance; better management decision making	see section 5.4.2
Ensure effective and secure information and document management in MNAP	Develop and implement a park Information and Document Management System	Improved efficiency, better traceability; regulatory compliance; safeguarded information; better management decision making	FY2 and ongoing
Ensure disaster preparedness and build climate change resilience	Develop and implement a Disaster and Risk Management Protocol	Detailed and realistic approaches for better response to disasters; available and up to date information on risks for risk reduction and resilient reconstruction if required	FY3 and ongoing
	Develop and implement Climate Change Adaptation Strategies both in respect of biodiversity as well as community livelihoods	Enhanced environmental services; protection of the asset base; less vulnerability to extreme weather events	FY2 and ongoing
Ensure that supported research is conducted appropriately	Implement the park Research Management Protocol	Increased value of research for decision-making; more efficient research practice; increased international collaboration; transdisciplinary research with integrity, originality and contribution to the scientific knowledge base	Ongoing
ADDRESS MANAGEMENT DEFICIENCIES			
Progressively improve the effectiveness of management in the MNAP	Regularly conduct a METT assessment of the MNAP and use results to influence annual management operational plans	Increased management effectiveness (management weaknesses rectified and adaptive management approaches implemented)	Biennially

5.5.10 Financial Considerations

The operating budget for this programme is shown in Table 14 below. Included are the salaries of the senior and middle management as well as their operating budgets.

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

DESCRIPTION	ANNUAL AMOUNT (MZN)	ANNUAL AMOUNT (USD)
Management and administration	12,980,000	206,000
Maintenance (infrastructure and equipment)	11,430,000	181,000
PPF Management support	7,715,00	110,000
Sub-total	32,125,000	497,000





CHAPTER 06

ZONATION

This chapter details the spatial zonation of the MNAP and how this aligns to tourism and other management activities as well as resident and neighbouring communities.



The Zonation Plan sets the spatial framework within which development and activities can occur and specifies key characteristics of these developments and activities.



The primary spatial planning tool for the MNAP is the **Zonation Plan**. The Zonation Plan for the MNAP is based on the need to balance negative biodiversity impacts of visitor facilities and activities²⁸ with the need to generate positive tourism ventures and more generally economic development. The Zonation Plan 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 although there is not a direct correlation between the zonation and the ecological characteristics of that zone. 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 frontal dunes; mangrove forests or sand forest, 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. Because they function in such a different manner, different zonation plans have been developed for the marine and terrestrial environments.

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 the zonation of a conservation area such as the MNAP 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 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. Different CUAs may have different rules.
- » A **Community Development Area** – a zone in which defined permissible customary activities of resident local communities may take place in a regulated manner.

A fifth zone category, which applies only in EPAs and TFCAs, is an **Area of Economic Development**, in which economic activities may be authorised within constraints determined in the relevant Management Plan. The Zonation Plan developed for the MNAP makes use of the first three zoning categories mentioned above (i.e., TPA, TDA and CUA). The spatial distribution of these zones is presented as a Zonation Map in Figure 13 and larger scale details in Figure 14. The percentage coverage of the park of each zone is provided in the table on page 83.

28 And to a lesser extent management infrastructure and activities.

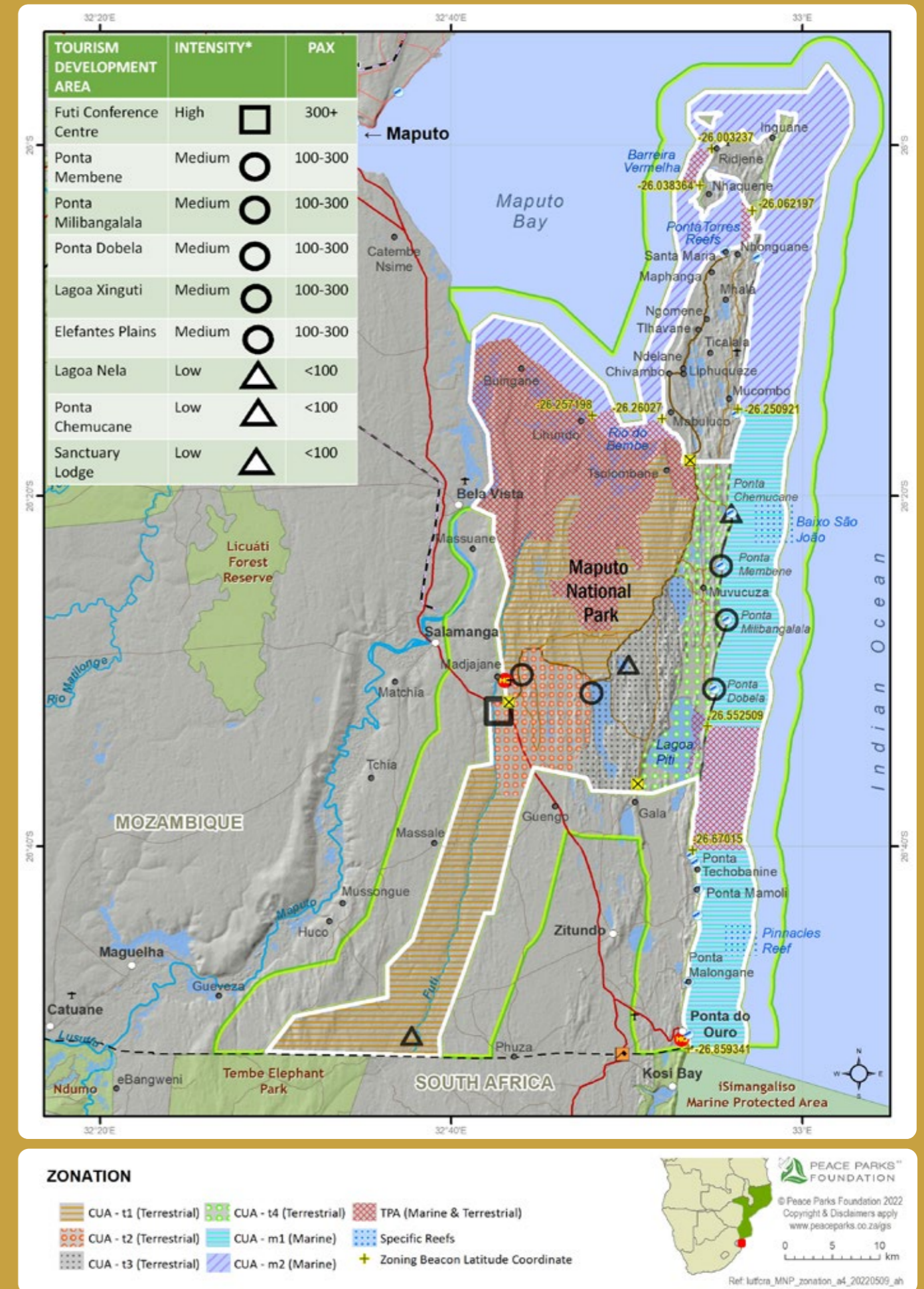


FIGURE 13. Zonation map for MNAP

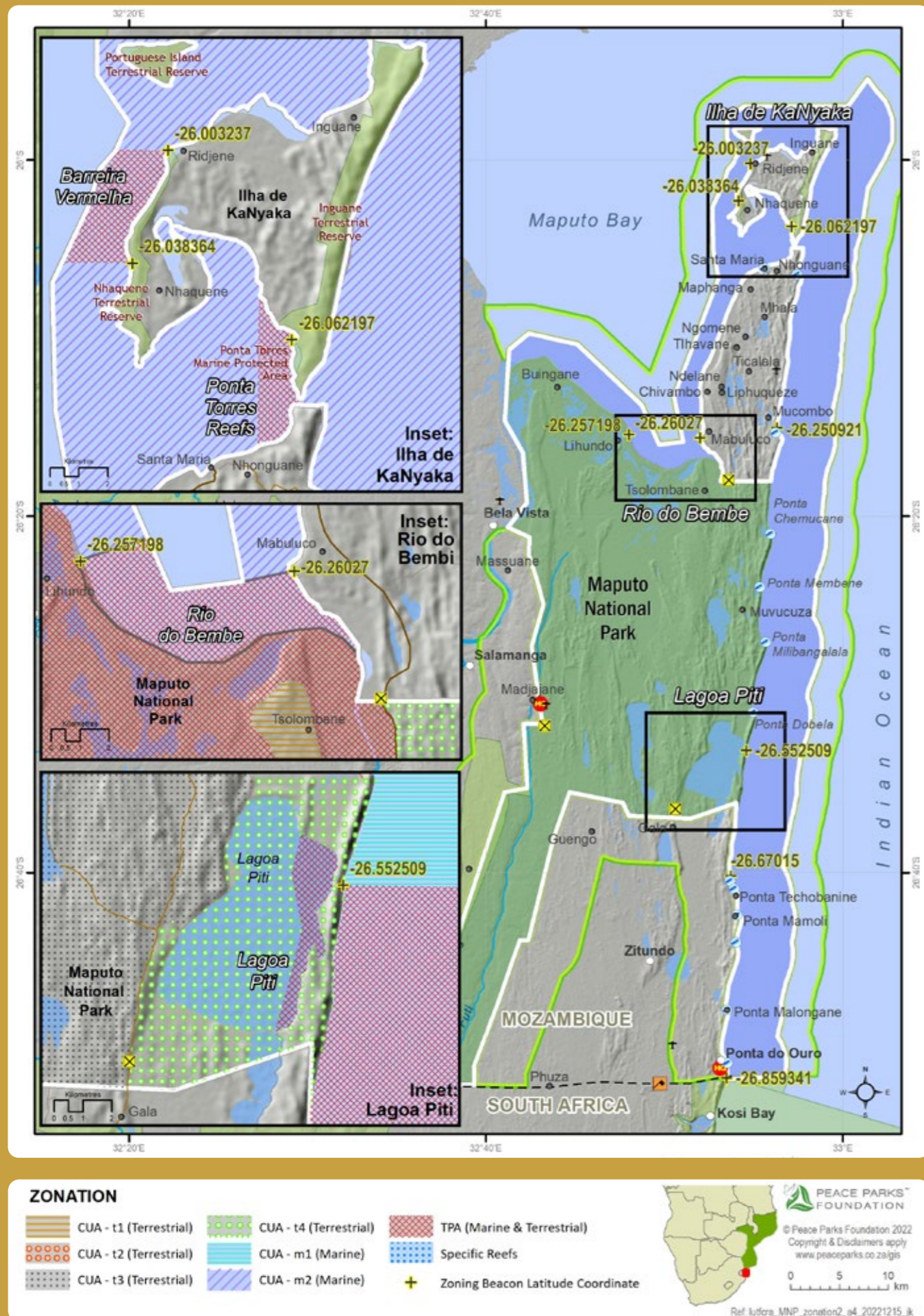


FIGURE 14. Zonation map details

Table 15. Coverage of park zones

ZONE	PERCENTAGE OF TOTAL AREA (%)
Total Protection Areas	22.55
Marine	5.23
Terrestrial	17.32
Tourism Development Areas	Areas of nodal sites still to be determined
Controlled Use Areas	77.45
Marine	35.54
Terrestrial	41.91

6.2 Zone Details

Permissible and non-permissible activities and developments for each zone are described in outline below. Additional rules and requirements are provided in the MNAP **Specific Park Regulation** as well as in any operational procedure forming part of MNAP'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 MNAP and, if necessary, may intervene based on evidence of unacceptable impact on MNAP 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 structure in MNAP must have prior approval by the relevant authorities.

6.3 Total Protection Areas

There are two **terrestrial TPAs**:

- In the northern parts of the park including the low lying seasonally flooded northern areas adjacent to Maputo Bay and are inaccessible for part of the year. The area borders on the Maputo River in the west and the edge

of the inundated floodplain area close to Tsholombane in the east. For the most part, the TPA follows a 0.5km buffer on the most northern 4x4 tracks from the western boundary of the park southeast of Massuane.

- In the south-eastern corner of the park - the eastern portion of Lake Piti (Figure 14).

No tourist development or resource harvesting of any kind is permitted in the TPAs. Special arrangements relating to communities, resident in the northern TPA, will apply including the demarcation of designated settlement footprints per household within each of Buingane, Lihundo and Tsholombane settlements as well as the detailing of permissible and prohibited activities in the Specific Park Regulation.

Marine TPAs (Figure 13) include most of the Techobanine reef north of Ponta Techobanine (-26.67015 to -26.552509 and 3NM seaward), the Bembi River estuary (-26.257198 to -26.26027) and the Barreira Vermelha (26.003237 to -26.038364) and Ponta Torres reefs (-26.062197) of Inhaca Island.

Non-consumptive and non-motorised activities such as walking on the beach, cycling, horseback riding, swimming, and surfing are allowed in the marine TPAs. Walking in intertidal rocks and access to the dune cordon are not allowed without a permit. Any form of extractive use including fossicking, any form of motorised boating, kite surfing, or wind surfing are prohibited in the marine TPAs.

Overflight is permitted over both the terrestrial and marine TPAs on condition prior authorisation is obtained from Park Management. The same applies to small, guided, special interest tours and events which are allowed under strict control and permit.



6.4 Tourism Development Areas

Tourism Development Areas are nodal sites which have been identified and where ecotourism concession opportunities may be undertaken within MNAP. The TDA sites have been selected in a manner which showcases various aspects of the MNAP and provides 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 the various CUAs (Figure 13), with one site being at each of the following broad geographical locations. West of the N1 and Futi Gate; Ponta Chemucane; Ponta Membene; Ponta Milibangalala; Ponta Dobela; Lake Nela; Lake Xinguti; Elefantes Plains and the southern end of the Futi corridor.



A 4x4 trail network will be developed with small rustic campsites in a manner that they have a non-permanent footprint. These camps will be developed opportunistically, and their location may change over time. For this reason, they are not defined as TDA nodes.

Further details on these nodes and 4x4 trail network are provided in Table 9.

6.5 Controlled Use Areas

The anticipated nature and size of the demand for tourism experiences in MNAP, as well as biophysical considerations 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 listed in Table 9. 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 in the Specific Park Regulation.

6.5.1 Terrestrial Controlled Use Areas

The **terrestrial CUAs** broadly include the following areas (see Figure 13 for a spatial layout of the CUAs):

- » **CUA-t1** – there are two portions to this CUA. The first is north of the spine road and south of the TPA, the second is the Futi corridor.
- » **CUA-t2, CUA-t3, and CUA-t4** – are all found south of the spine road and over the breadth of the MNAP.

CUA-t1 is a **limited intensity visitor use** area and an area with exclusive access for TDA concession staff and guests as well as a limited number of 4x4 trail permit holders. CUA-t1 has potential for more TDAs than currently identified, and these may be opened for concessions, but the number of TDA sites within CUA-t1 will be limited as will the number of game drive vehicles. The leisure use of the freshwater resources in this zone is restricted and subject to Park Management authorisation – extractive resource harvesting is prohibited.

CUA-t2 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.

CUA-t3 is a **medium intensity visitor use** area and tracks will be open to all park users allowing for higher vehicle densities. To achieve this objective there may be a requirement to improve the standard of the roads and tracks in CUA-t3 as well as possibly managing traffic flow.

CUA-t4 is intended for **low intensity visitor use**. Within CUA-t4 there are four TDA sites one each at Ponta Chemucane, Ponta Membene, Ponta Milibangalala, Ponta Dobela. Activities along the coast from these nodes will be regulated according to the marine zonation. Terrestrial use will be focussed on limiting vehicle numbers – self-drive will only be allowed on certain tracks and guided game drives and adventure activities will be subject to Park Management authorisation.

The resource and leisure use of the freshwater lakes in zones CUA-t2 and CUA-t4 reflects the surrounding terrestrial use zonation and will be governed by a dedicated zonation plan for each lake.

6.5.2 Marine Controlled Use Areas

The marine CUAs are described from the edge of the coastal vegetation on the beach seawards and focus on activities in these zones. All fixed improvements or infrastructure or disturbance of the beach and associated environment are subject to Park Management authorisation and may require an environmental impact assessment.

There are two marine controlled use zones.

- » **CUA-m1** which refers to two areas. The first extends from south of Ponta Mucombo up to about 5km south of Ponta Dobela (-26.250921 to -26.552509 and 3NM seaward) and the second extends from approximately 2km north of Ponta Techobanine to the South African border (26.67015 to -26.859341 and 3NM seaward). These zones will be demarcated on the beach with markers.
- » **CUA-m2** referring to the area north of Ponta Mucombo (Machangulo Peninsula) around the Inhaca Archipelago following the coast to the mouth of the Maputo River.

Both marine CUAs allow for a range of activities including but not limited to special interest and sporting trails, tours and events, various water and beach-based adventure activities as well as subsistence and recreational fishing (which may be subject to certain restrictions).

The main difference between the two zones is that artisanal fishing and anchoring are permitted in CUA-m2 but not in CUA-m1. Semi- and industrial fishing, fishing for bottom fish and fishing using certain defined fishing techniques (including vertical jigging and use of fish aggregating devices), the use of jet-skis (except for fishing), and parasailing from a motorised vessel, are prohibited in both marine zones.

Within the marine CUA restrictions will be imposed related to the access and use of specific areas and reefs as follows:

- » CUA-m1, no fishing on Pinnacles Reef during the period 1 October to 1 March and Baixo São João reef at any time.
- » CUA-m2, between Inhaca and Portuguese Islands, trawling and the use of gillnets is not permitted, and between Inhaca Island and Machangulo Peninsula, use of gillnets and improved fishing gear is not permitted.





REFERENCES AND APPENDIXES

REFERENCES

The content of this management plan is largely derived from the review of the first edition management plans for MSR and PPMR and these are thus not continuously cited. Neither are personal communications and inputs by Park Management and experts received during the consultation process, nor are legal instruments such as laws and decrees. However, where new sources have been consulted, and new information included, such sources are cited below.

- » Adam, Y., J. M., & Saranga, O. (2014). Human settings in Maputo Bay. In S. Bandeira, & J. (. Paula, *The Maputo Bay Ecosystem* (pp. 67-86). Zanzibar Town: WIOMSA.
- » Administração Nacional das Áreas de Conservação. (2018). *Plano de Gestão para o Uso de Recursos Extractivos na Costa Ocidental da Reserva Marinha Parcial da Ponta do Ouro. 2018 - 2022.*
- » Biggs, H., Ferreira, S., Freitag-Ronaldson, S., & Grant-Biggs, R. (2011). Taking stock after a decade: Does the 'thresholds of potential concern' concept need a socio-ecological revamp. *Koedoe 53(2), Art. #1002*, p. 9 pages.
- » Calengo, J., Chibequete, I., Mendonca, R., Tembe, A., & Machava, F. (2019). *Situational Analysis of the Areas within the buffer zones of the Mozambican Conservation Component of Lubombo - Goba and Usuthu-Tembe-Futi Transfrontier Conservation Area.* Unpublished.
- » Centro Terra Viva. (2016). *Dossier for Nomination of Ponta do Ouro Partial Marine Reserve and Maputo Special Reserve to UNESCO World Heritage Site – Summary Literature Compilation and Analysis Report, Maputo.*
- » Climate Resilient Infrastructure Development Facility. (2019). <http://criidf.net/cribmap/>. Retrieved from <http://criidf.net/>.
- » Daly, R., Daly, C. B., Cowley, P., Pereira, M., & Filmlter, J. (2018). Quantifying the largest aggregation of giant trevally *Caranx ignobilis* (Carangidae) on record: implications for management, . *African Journal of Marine Science, 40:3*, 315-321, DOI: 1.
- » de Boer, W. (2002). The Rise and Fall of the Mangrove Forests in Maputo Bay, Mozambique. *Wetlands Ecology and Management, 313-321.*
- » Direcção Nacional de Ordenamento Territorial. (2020). *Plano Especial de Ordenamento Territorial de uma Parcela do Distrito de Matutuíne e da Ilha da Inhaca, Volume I: Diagnóstico Perfil Ambiental e Socioeconómico, June, Moçambique.* Maputo.
- » Ferreira, M., & Bandeira, S. (2014). Maputo Bay's Coastal Habitats. In S. Bandeira, & J. (. Paula, *The Maputo Bay Ecosystem.* (pp. 21-24). Zanzibar Town: WIOMSA.
- » Izidine, S., Siebert, S., van Wyk, A., & Zobolo, A. (2008). Taboo and Political Authority in Conservation Policy: A Case Study of the Licuáti Forest in Maputaland, Mozambique. *Journal for the Study of Religion, Nature and Culture.*
- » National Administration of Conservation Areas. (2019). *Situational Analysis of the Areas within the buffer zones of the Mozambican Conservation Component of Lubombo - Goba and Usuthu-Tembe-Futi Transfrontier Conservation Area.* Maputo.
- » Smith, R., & Leader-Williams, N. (2006). Smith, R.J. and Leader-Williams, N. (2006). *The Maputaland Conservation Planning System and Conservation Assessment. Durrell Institute of Conservation and Ecology, University of Kent, Canterbury, UK.* Canterbury, UK: University of Kent.
- » Soto, B., Munthali, S. M., & Breen, C. (2001). Perceptions of the Forestry and Wildlife Policy by the local communities living in the Maputo Elephant Reserve, Mozambique. In *Biodiversity and Conservation* (pp. 1723–1738). Netherlands: Kluwer Academic Publisher.
- » Stalmans, M. (2015). *Assessment of the carrying capacity for wildlife - Maputo Special Reserve, Mozambique May 2015.*
- » Stalmans, M. (2018). *Wildlife introductions into Maputo Special Reserve, April 2018.*
- » Stattersfield, A., Crosby, M., Long, A., & Wege, D. (1998). *Endemic Bird Areas of the World: Priorities for Biodiversity Conservation. BirdLife Conservation Series No. 7.* BirdLife International.
- » Tello, J. L. (1973). Reconhecimento Ecológico da Reserva dos Elefantes do Maputo. *Veterinária Moçambicana, 133-186.*
- » UNESCO. (2020, May). *United Nations Educational, Scientific and Cultural Organization World Heritage Convention.* Retrieved from Socio-economic Impacts of World Heritage Listing: <https://whc.unesco.org/en/socio-economic-impacts>
- » Universidade Eduardo Mondlane. (2010). *Plano de Maneio e Estratégia de Desenvolvimento do Arquipélago da Inhaca* (2010 – 2014).
- » van Wyk, A. (1996). Biodiversity of the Maputaland Centre. In L. van der Maesin, X. van der Burgt, & J. (. van Medenbach de Rooy, *The Biodiversity of African Plants* (pp. 198-207). Dordrecht, the Netherlands: Kluwer.
- » Williams, R., Litulo, J., Louro, C., Fernandes, R., Pereira, M., & TIFC, P. (2018). *Extractive resource use management plan for the western shores of the Ponta do Ouro Partial Marine Reserve. Support Document 1: Baseline document.* Maputo.

APPENDICES

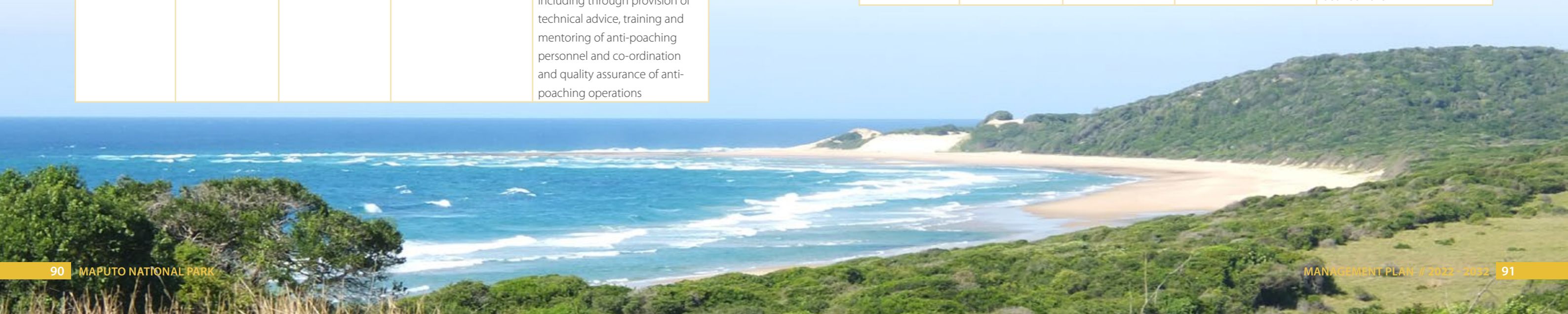
Appendix 1: Park Level Agreements

Table 16. Park level agreements

TYPE	PARTIES	COMMENCEMENT DATE	TERMINATION DATE	PURPOSE
Inter-ministerial Memorandum of Understanding (MoU)	Ministry of Tourism (MITUR) now MITADER, and Ministry of National Defence	22/12/2004	It was valid for five years and it is renewed, automatically, for same period if the parties do not terminate it.	For the establishment of bilateral cooperation, envisaging the participation of the defence force on law enforcement of national parks and reserves, under the administration of the MITADER
MoU	MSR and the National Fisheries Research Institute	19/03/2010	It was valid for one year and it is renewed, automatically, for same period if the parties do not terminate it.	For the establishing of cooperation guidelines with the fisheries sector, through the Research Institute, envisaging the promotion of sustainable use of marine resources and conservation of ecosystems within MSR, thereby contributing to the institutional strengthening of the parties on a mutually beneficial basis
MoU	PPMR and the National Fisheries Administration	19/10/2010	Does not have a date - only terminates if one of the parties informs the other three months in advance	For establishment mechanisms to support joint operations to control fishing activities within PPMR
Coordination Agreement	Ministry of Interior and MITADER	16/06/2015	N/A	Aiming to provide resources for the surveillance and dismantling of poaching and other networks syndicated for illicit practices in the area of natural resources and the environment
MoU	PPMR and F&F Services t/a Elephant Coast Company	07/10/2015	10/06/2016	To set out the terms of cooperation between ECCO and PPMR for the provision of aerial support and conservation consultation outdated

TYPE	PARTIES	COMMENCEMENT DATE	TERMINATION DATE	PURPOSE
MoU	ANAC and the Oceanographic Research Institute	17/05/2016	01/10/2020	To develop cooperative relationships based on established contacts and mutual understanding, especially to develop collaborative research and promote scientific exchange through mutual assistance in the areas of capacity building and marine science
Subsidy Agreement - Co-financing Agreement	MSR, PPMR and Biofund	2017	2020	For funding operational costs
Co-financing Agreement	MITADER and Peace Parks Foundation	2017	2025	For tourism development and strengthening protected area operations including procurement of equipment, law enforcement and wildlife restocking
Memorandum of Understanding (MoU)	ANAC and Dolphin Care Africa and Dolphin Encounters Research Centre	01/08/2017	It was valid for five years and it is renewed, automatically, for same period if the parties do not terminate it.	For scientific cooperation and research on marine mammals in PPMR
MoU	ANAC and Centro Terra Viva	10/07/2017	It was valid for two years and it is renewed, automatically, for same period if the parties do not terminate it.	To establish the principles that should govern the collaboration between the parties in the development of activities related to research and monitoring of species and ecosystems in marine conservation areas, promoting their protection and conservation
MoU	ANAC, PPF and the Dyck Advisory Group	13/09/2018	13/09/2021	For the provision of services relating to the development of anti-poaching strategies and operational plans and implementation and thereof including through provision of technical advice, training and mentoring of anti-poaching personnel and co-ordination and quality assurance of anti-poaching operations

TYPE	PARTIES	COMMENCEMENT DATE	TERMINATION DATE	PURPOSE
MoU	MSR and Vodacom	21/03/2019	21/03/2029	For establishing mechanisms and procedures for sharing infrastructure / space between the parties and installation of equipment and/or facilities necessary for the execution of the activities developed by the parties
MoU	Mozambique Portuguese School – Teaching Centre and Portuguese Language, PPMR and Ponta do Ouro Primary School	20/06/2019	Until one of the parties decide to terminate it	For the implementation of an education programme, focusing on Environmental Awareness, Health Education and Natural Science
MoU	ANAC and Moza Banco	29/11/2018	29/11/2019	For the development and implementation of communication campaigns on the protection of endangered species, elephant preservation and poaching in the various reserves under ANAC supervision - the partnership aims to contribute to the raising of environmental awareness, particularly the conservation of biodiversity and the sharing of knowledge about the importance of natural resources necessary for the socio-economic and sustainable development of Mozambique, as well as the establishment of a commercial relationship between them



APPENDICES

Appendix 2: Past METT Results for the Maputo National Park

Table 17. Past METT results for the park

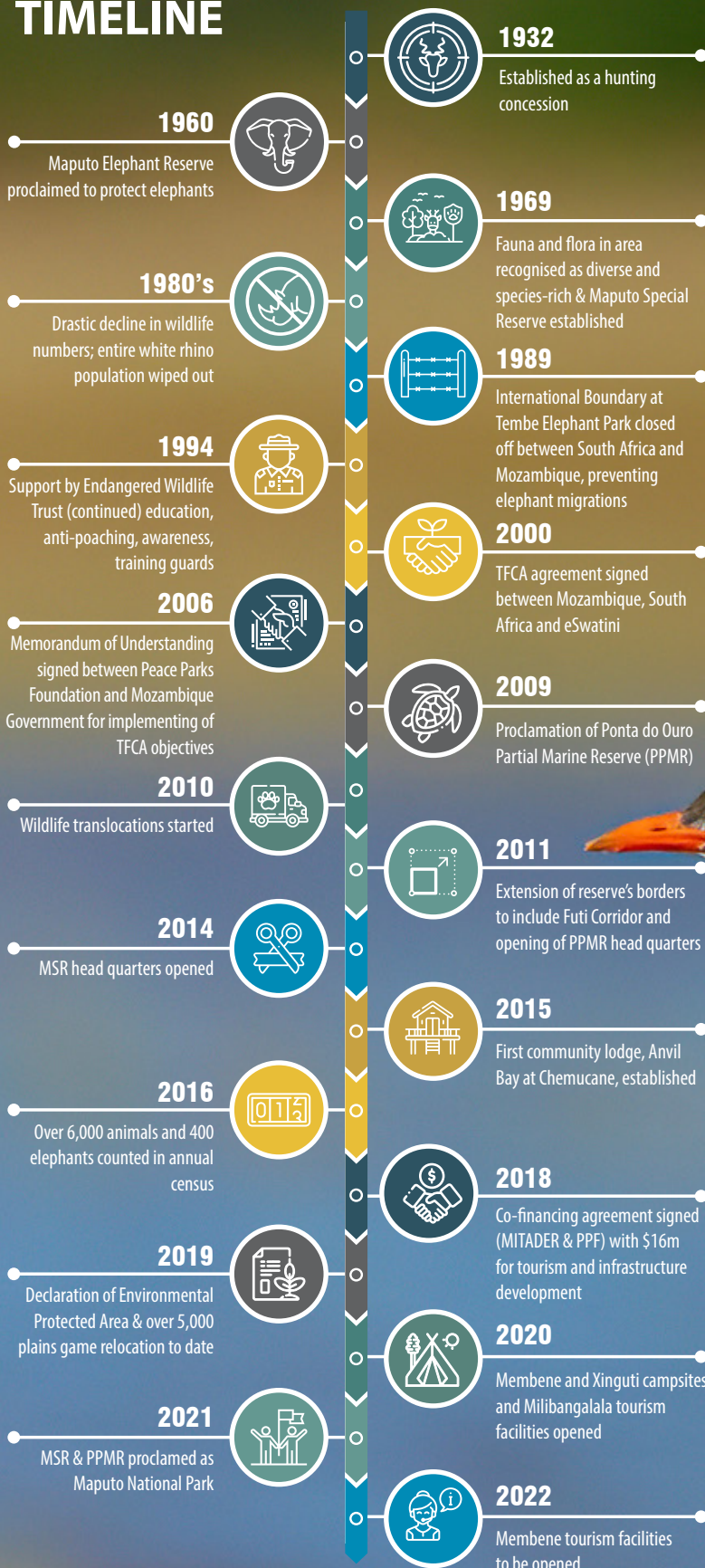
ASSESSMENT CRITERIA	SCORE				
	2015	2017	2019	2020	2021
1. Legal status: Does the protected area have legal status (or in the case of private reserves is covered by a covenant or similar)?	3	3	3	3	3
2. Protected area regulations: Are appropriate regulations in place to control land use and activities (e.g. hunting)?	1	2	1.5	1.5	1.5
3. Law Enforcement: Can staff (i.e. those with responsibility for managing the site) enforce protected area rules well enough?	2	2	2	2.5	2.5
4. Protected area objectives: Is management undertaken according to agreed objectives?	2	2	2.5	2.5	2.5
5. Protected area design: Is the protected area the right size and shape to protect species, habitats, ecological processes, and water catchments of key conservation concern?	3	2	2	2	2
6. Protected area boundary demarcation: Is the boundary known and demarcated?	1	1	2.5	1.5	1.5
7. Management plan: Is there a management plan and is it being implemented?	2	2	1.5	1.5	1.5
7.a Planning process: The planning process allows adequate opportunity for key stakeholders to influence the management plan	1	1	1	1	1
7.b Planning process: There is an established schedule and process for periodic review and updating of the management plan	0	1	0	1	1
7.c Planning process: The results of monitoring, research and evaluation are routinely incorporated into planning	0	0	0.5	0	0
8. Regular work plan: Is there a regular work plan and is it being implemented	2	2	3	2.5	2.5
9. Resource inventory: Do you have enough information to manage the area?	2	3	2.5	2	2.5
10. Protection systems: Are systems in place to control access/resource use in the protected area?	1	2	2	2.5	2.5
11. Research: Is there a programme of management-orientated survey and research work?	3	3	1.5	2	2

ASSESSMENT CRITERIA	SCORE				
12. Resource management: Is active resource management being undertaken?	2	2	2	2	2
13. Staff numbers: Are there enough people employed to manage the protected area?	1	1	2	2	2
14. Staff training: Are staff adequately trained to fulfil management objectives?	1	2	1	1	1.5
15. Current budget: Is the current budget sufficient?	1	1	2.5	2	2
16. Security of budget: Is the budget secure?	1	1	2	2	2
17. Management of budget: Is the budget managed to meet critical management needs?	3	3	2.5	2.5	2.5
18. Equipment: Is equipment sufficient for management needs?	2	2	1.5	1.5	1.5
19. Maintenance of equipment: Is equipment adequately maintained?	2	2	1	1.5	1.5
20. Education and awareness: Is there a planned education programme linked to the objectives and needs?	1	2	2.5	1.5	1.5
21. Planning for land and water use: Does land and water use planning recognise the protected area and aid the achievement of objectives?	0	0	0.5	0.5	0.5
21a. Land and water planning for habitat conservation: Planning and management in the catchment or landscape containing the protected area incorporates provision for adequate environmental conditions (e.g. volume, quality and timing of water flow, air pollution levels etc) to sustain relevant habitats.	0	0	0	0	0
21b. Land and water planning for habitat conservation: Management of corridors linking the protected area provides for wildlife passage to key habitats outside the protected area (e.g. to allow migratory fish to travel between freshwater spawning sites and the sea, or to allow animal migration).	0	0	0	0	0
21c. Land and water planning for habitat conservation: "Planning addresses ecosystem-specific needs and/or the needs of particular species of concern at an ecosystem scale (e.g. volume, quality and timing of freshwater flow to sustain particular species, fire management to maintain savannah habitats etc.)"	1	0	0	0	1
22. State and commercial neighbours: Is there co-operation with adjacent land and water users?	2	2	2	1.5	2
23. Indigenous people: Do indigenous and traditional people's resident, or regularly using the protected area, have input to management decisions?	0	0	0	0	0

ASSESSMENT CRITERIA	SCORE				
24. Local communities: Do local communities' resident or near the protected area have input to management decisions?	1	2	1.5	1	2
24 a. Impact on communities: <i>There is open communication and trust between local and/or indigenous people, stakeholders, and protected area managers</i>	0	1	0.5	0	0
24 b. Impact on communities: <i>Programmes to enhance community welfare, while conserving protected area resources, are being implemented</i>	1	1	1	1	1
24 c. Impact on communities: <i>Local and/or indigenous people actively support the protected area</i>	0	0	0	0	0
25. Economic benefit: Is the protected area providing economic benefits to local communities, e.g. income, employment, payment for environmental services?	1	2	2	2	2
26. Monitoring and evaluation: Are management activities monitored against performance?	1	1	1	0.5	1
27. Visitor facilities: Are visitor facilities adequate?	0	0	1.5	2.5	2.5
28. Commercial tourism operators: Do commercial tour operators contribute to protected area management?	2	2	0.5	1.5	1.5
29. Fees: If fees (i.e. entry fees or fines) are applied, do they help protected area management?	0	0	2	2.5	2.5
30. Condition of values: What is the condition of the important values of the protected area as compared to when it was first designated?	2	2	2	2.5	2.5
30a: Condition of values: <i>The assessment of the condition of values is based on research and/or monitoring</i>	0	1	0	1	1
30b: Condition of values: <i>Specific management programmes are being implemented to address threats to biodiversity, ecological and cultural values</i>	0	0	1	1	1
30c: Condition of values: <i>Activities to maintain key biodiversity, ecological and cultural values are a routine part of Park Management</i>	1	0	0	1	1
TOTAL SCORE	49	56	58	60	64



TIMELINE



PARQUE NACIONAL DE MAPUTO

Parque Nacional de Maputo/Maputo National Park

Telephone: +258 21 303650

Fax: +258 21 306212

Email: info@parquemaputo.gov.mz



Parque Nacional de Maputo



[parquenacionaldemaputo](https://www.instagram.com/parquenacionaldemaputo)



www.parquemaputo.gov.mz