REPÚBLICA DE MOÇAMBIQUE

MINISTÉRIO DO TURISMO

DIRECÇÃO NACIONAL DE AREAS DE CONSERVAÇÃO

PROPOSTA

PARA A DEMARCAÇÃO E GESTÃO DO

CORREDOR DE FUTI

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CONTENTS

1 INTRODUCTION

1.1 Background

This document has been produced by the **Transfrontier Conservation Areas Pilot and Institutional Strengthening Project** (TFCA Project)[1], a five-year programme funded by the Global Environment Facility (GEF) within the National Directorate for Conservation Areas (DNAC) in the Ministry of Tourism, Maputo, Mozambique. It is a proposal for the zoning, development and management of the "**Futi Corridor**", a near-pristine tract of land linking the **Maputo Special Reserve** (MSR) in Mozambique with the **Tembe Elephant Park** (TEP) in South Africa, between the Rio Maputo in the west and the Indian Ocean in the east (see Map 6).

The primary objectives of this exercise are to:

(a) unite two artificially separated elephant populations occurring in Mozambique and South Africa respectively, and

(b) create a balanced development and management regime in an internationally recognised area of biological uniqueness that is becoming fragmented through *ad hoc* subsistence settlements, awarding of concessions, illegal extraction of natural resources, inappropriate infrastructural developments and uncontrolled coastal tourism.

The establishment of the Futi Corridor as a key conservation area between the MSR and TEP is one of the objectives of the **Lubombo Transfrontier Conservation Area** (LTFCA – previously referred to as the Maputo TFCA)[2] within the TFCA Project, created through the trinational 'Lubombo Transfrontier Conservation and Resources Areas Protocol'[3] signed on 22 June 2000 by Mozambique, Swaziland and South Africa as a component of the **Lubombo Spatial Development Initiative** (LSDI)(see Appendix 4). As required under this protocol a Lubombo TFCA Commission was established by the relevant Ministers on 13th May 2002, the primary function of which is to oversee the creation and management of four economic development nodes, one of which is focused around the linking of the TEP and MSR. The creation of the Futi Corridor is also one of the primary recommendations made by the Maputo Special Reserve Management Plan for the period 2001-2006, approved by the Minister for Tourism in March 2002.

Previously, the principle of the Futi Corridor was nominally approved by the Mozambican Government through the Council of Ministers when the TFCA Project was initiated in 1996.

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[1] The **Transfrontier Conservation Areas & Institutional Strengthening Project** (TFCA Project) was designed to assist the Government of Mozambique in the rehabilitation, development and sustainable utilisation of its forest and wildlife resources, integrating biodiversity conservation with economic development through the creation and development of three pilot TFCAs – the **Chimanimani TFCA**, the **Greater Limpopo Transfrontier Park/TFCA** and the **Lubombo TFCA**. The Project is working within a five-year programme (1997 - 2002) funded by the **Global Environment Facility (GEF)**.

[2] The **Lubombo Transfrontier Conservation Area** (LTFCA) was defined as an area of 25,000 km² following discussions with conservation counterparts in South Africa (Ezemvelo KwaZulu-Natal Conservation Services) and Swaziland (the Swaziland National Trust Commission) in June 1999 (Map 1). The LTFCA now incorporates several existing protected areas and most of the **Maputaland Centre of Plant Diversity** - one of a number of globally-recognised centres of biodiversity, one of only five in southern Africa and the only one in Mozambique. As a component of the GEF-funded TFCA Project, the realisation of the Mozambican sector of the LTFCA takes place through effective biodiversity conservation planning at all levels, involving inter-Ministerial liaison, landuse planning and integration into District and Provincial planning, NGOs, local communities and the private sector.

[3] The **Lubombo Transfrontier Conservation and Resource Areas Protocol** created an administrative framework for the economic development of *inter alia*, the proposed Futi Corridor and adjacent areas and seeks to encourage economic upliftment of the area primarily through the development of appropriate tourism. The conservation of biodiversity is seen as an integral component underpinning this development.

This proposal for the creation of the Futi Corridor incorporates the recommendations of two previous studies (Ostrosky & Matthews 1995, Boyd 1996); it also incorporates critical recent information obtained through an ongoing multi-disciplinary study of the area[4].

Box 1 – the TFCA Project

The TFCA Project was designed to assist the Government of Mozambique in the **rehabilitation**, **development** and **sustainable utilisation** of its forest and wildlife resources, integrating biodiversity conservation with economic development through the creation and development of three pilot TFCAs – the **Chimanimani TFCA**, the **Gaza-Kruger-Gonarezhou TFCA** (now the Greater Limpopo National Park), and the **Lubombo TFCA** (see map 1). The TFCA Project is a five-year programme (1997 - 2002) funded by the Global Environment Facility (GEF), working towards the above objectives through:

- **Trans-national linkages** - collaborating and cooperating with the neighbouring countries of South Africa, Zimbabwe and Swaziland in the identification and management of TFCA areas
- **Habitat and wildlife management** - developing national and trans-national guidelines for rehabilitation and management of natural resources within protected areas, and encouraging operational, economic and other partnerships among the private sector, local communities, NGOs and the Government
- **Local communities** - developing frameworks and strategies whereby local communities may participate in, and benefit from, the management and sustainable use of natural resources within TFCAs; ands
- **Capacity building** - of relevant GoM provincial offices, including staff and planning capabilities, and the funding of a Geographical Information System (GIS) unit.

1.2 Rationale for the Futi Corridor

1.2.1 The Lubombo Transfrontier Conservation Area

Legal protection of the Futi Corridor is a prerequisite for planned development of the area, ensuring its long-term integrity as a vital component of the internationally recognised Maputaland Centre of Plant Endemism. Long-term protection of the Futi Corridor must be accompanied by applied biodiversity conservation planning, development of a realistic framework of sustainable income generating activities such as ecotourism, and elevation of local communities to full partners in the process.

The political instrument to achieve this is the **Lubombo Transfrontier Conservation and Resource Areas Protocol** signed in June 2000, wherein the linkage between the MSR and the TEP through the protection of the Futi is defined as a specific objective.

4 'Restoration of the Tembe-Futi-Maputo Coastal Plains Elephant Population' is a study conducted jointly through the Universities of Pretoria and Eduardo Mondlane, funded by the US Fish and Wildlife Service through the Peace Parks Foundation (PPF) of South Africa between 1999 and 2002.

The benefits to be derived from the protection of the Futi Corridor are partly dependent on linkages between the MSR and TEP, which will be fully realised only through effective joint ecosystem management of the greater MSR-Futi-TEP conservation area. The Futi Corridor has the potential to make far greater inputs into local economies as a conservation area managed for the benefit of all stakeholders, than through its indisputable fragmentation and concomitant loss of biodiversity, cultural and pristine landscape values resulting from *ad hoc* awarding of concessions, unplanned settlement and commercial levels of uncontrolled resource use as is currently the case.

1.2.2 Biological considerations

a) ELEPHANTS

The creation of the Futi Corridor as a part of a greater transboundary protected area linking the MSR and the TEP is a cornerstone to the consolidation of the last elephant populations in northern KwaZulu-Natal and southern Mozambique.

The area of the proposed Futi Corridor is extensively utilised by elephants moving between Manhoca in the south and the MSR in the north. Data obtained during a joint Universidade Eduardo Mondlane – University of Pretoria study clearly indicates that the Futi Corridor is an integral part of a continuous elephant range that includes the MSR. This information was obtained by following the movements of five elephants after they were fitted with satellite-tracking transmitting devices during 1999-2000 (see Map 3 for summary of collared elephant movements between January 2002 – March 2002). Some elephant appear to be residing permanently within the proposed corridor, while others move to and fro between the MSR and the Futi as far south as Manhoca.

The MSR/Futi elephant population is increasing at approximately 7% per annum (Fairall, pers.comm.), recovering from a minimum of less than 200 elephants resulting from hunting pressures during the war. Conflict between elephants and people in the vicinity of the MSR was greatly reduced following the construction of a 21 km elephant-proof fence along the southwest boundary of the reserve in 1997/8. There are still occasional conflicts along the western boundary of the Futi area as far south as Mussongue, which can be expected to continue and even worsen as elephant and human populations increase unless the elephant-proof fence is extended southwards.

b) OTHER BIOTA

While elephants are the flagship species in the combined conservation area, the proposed Futi Corridor is also of recognised biological significance for:

- comprising a central part of the internationally recognised Maputaland Centre of Plant Diversity;
- woody grasslands east of the Rio Futi (endemic-rich, very high conservation priority);
- swamp forests southwest of Lake Piti and southwest of Lake Satine (regionally rare ecosystem, very high conservation priority);
- extensive edaphic grasslands south of Lake Piti (habitat for Stanley bustard *Neotis denhami* (threatened in southern Mozambique) and pinkthroated longclaw *Macronyx ameliae* (one of only three sites in Mozambique where they occur, hence a high conservation priority);
- dry sand (licuati) forest west of the Rio Futi (habitat for globally near-threatened Neergaard's sunbird *Nectarinia neergaardi*; endemic-rich, very high conservation priority); and

- seasonal pans on black soils around Manhoca (seasonally important for elephants and waterbirds, and morphologically unique in the area).

Fig. 1 Seasonal pan near Manhoca, in the south of the proposed Futi Corridor.

The extensive sand forests of the Futi with their complement of near-endemic plant and bird species are endemic to the area south of Maputo. The Futi River and nearby sand forests still support regionally significant populations of hippopotami and crocodiles, as well as healthy populations of vulnerable and/or rare antelope such as suni and red duiker.

Together with the MSR the Futi Corridor has been recommended as an Important Bird Area (IBA), due to the presence of near-endemic, vulnerable and rare bird species.

The proposed southwestern areas of the Futi Corridor support different vegetational formations than the MSR and northern Futi, making a strong contribution to the remarkable overall diversity of the proposed combined Transfrontier Conservation Area.

c) RIO FUTI ECOSYSTEM

The perennial Rio Futi rises in South Africa, passing northwards through the central part of the proposed Futi Corridor into the MSR where it discharges into vast reedbeds in the northwest of the reserve.

The river supports what is probably the largest single reed and papyrus system in the subregion, delivering a constant supply of clear fresh water into Maputo Bay via complex freshwater and marine lacustrine systems in the north of the MSR. It also supports significant hippo and crocodile populations. On the South African side of the border, rotational harvesting of reeds outside of the TEP contributes significantly to local economies.

1.2.3 Socio-economic considerations

The area of the proposed Futi Corridor is one of the poorest and least developed in the subregion and access to markets and facilities for the southernmost communities of the area is primarily over the border in South Africa. It is therefore necessary that planning proposals such as this document should address appropriate and achievable elements of social development, which at the very least should incorporate a multi-sectoral approach to the development of TFCAs involving appropriate land-use planning (e.g. infrastructure, tourism, agriculture) and community development, as well as biodiversity conservation and ecosystem maintenance.

The LSDI initiatives in the area have thus far been confined to a programme of mosquito control to reduce the incidence of malaria; identification and advertising of tourism opportunities in Ponta do Ouro; and there is a long-standing proposal to upgrade the Ponta do Ouro – Salamanga road when funds become available. There are various tourism initiatives in various developmental stages at Ponta do Ouro, P.Malongane and P.Mamoli, with further tourism development planned on concessions (the status of some of which are unclear) around Zitundo and south of the MSR. None of these developments have specifically addressed possibilities of community upliftment and partnerships within a district-level planning framework.

The potential opportunities for upliftment of local communities offered by the development of the LTFCA are considerable. The key to this development lies in effective zonation and application of appropriate conservation planning, with full involvement of all stakeholders and transparent engagement between local communities and the private sector.

Linking the Maputo Special Reserve and the Tembe Elephant Park through the creation of the Futi Corridor will unify two elephant populations and create a larger conservation area of enormous value and high economic potential, with concomitant sustainable benefits for a wide range of stakeholders.

2. OVERVIEW OF PROPOSED FUTI CORRIDOR

2.1 Background

The establishment of the proposed Futi Corridor (FC) linkage between the MSR and the TEP is one of the most ambitious primary objectives of the LTFCA, and its protection as a spatially adequate conservation area is an essential prerequisite in applying some form of rational land use planning over the area by recognised government agencies in collaboration with local communities, the private sector and donors.

Without planned land-use within a framework of sustainable natural resource use and biodiversity conservation, it is certain that the area of the proposed Futi Corridor will become further fragmented through *ad hoc* land settlement, allocation of concessions and commercial levels of natural resource depletion. The expanding and virtually uncontrolled charcoal industry, less than 1% of which is legal (Pereira/CHAPOSA, pers.comm.), is one example of anticipated levels of natural resource extraction and exploitation. Others include unsustainable and illegal extraction of hardwoods, heavy illegal hunting (often by a motorised elite), commercial levels of medicinal plant harvesting, heavy commercial gillnetting of fish in the various freshwater lakes, opportunistic tourism and high levels of unplanned settlement, often by immigrants to the area.

There are a number of claims, concessions and proposed projects within the proposed FC, some of which (such as the proposed port at Ponta Techobanine) are incompatible with existing national interventions and protocols such as the LTFCA, the Lubombo Spatial Development Initiative (LSDI), and national marine and coastal protection programmes of MICOA. In addition, the area from Portuguese Island to Ponta do Ouro - incorporating the Maputo Special Reserve and Inhaca Island - is the focus of a proposed World Heritage Site application being prepared with support from UNESCO under the supervision of a national committee.

The ecosystems between the Rio Maputo and the Rio Futi are in remarkably good overall condition despite fairly extensive illegal hardwood extraction having taken place in certain areas and dramatic reductions in numbers of larger mammals. Aerial surveys have indicated a number of elephant carcasses in the south of the proposed conservation area, but overall it is felt that sufficient reservoirs of species such as reedbuck and bushbuck exist to allow depleted larger mammal populations to increase under an improved protection regime.

2.2 Ecosystems

The proposed FC lies on the Mozambican coastal plain, a low-lying sand plain between the Lubombo Mountains to the west and the Indian Ocean to the east, consisting primarily of ancient marine-derived sands overlying an undulating impermeable siltstone floor. The area covered by this proposal incorporates a unique and varied mosaic of ecosystems including savannas, grasslands, forests, freshwater lakes, floodplain and rivers. Important physical features contributing to overall biodiversity include:

- coastal lakes – about 20 freshwater/brackish lakes occur in the Mozambican section of the LTFCA; biologically, these are largely unexplored, but recent surveys within the MSR indicate that rare and/or endemic fishes occur. The more northern lakes within the MSR support high numbers of waterbirds and shorebirds, and the area is without doubt a strong candidate for nomination as a Ramsar wetland site. The currently unprotected southern part of Lake Piti falls within the proposed Futi Corridor, as do smaller lakes and pans;
- the Rio Futi – this perennial drainage is an ancient feature developed over a minor south-north fault line, in places underlain by ancient beach rock. It is characterized by enormous expanses of reed beds, bulrushes and to a lesser extent, papyrus. The river supports significant hippopotamus and crocodile populations and is important for water- and fish-dependent birds, but has a low diversity of fish fauna possibly due to low levels of available oxygen as a result of the dense aquatic vegetation; and
- geomorphological variation – although the entire area is covered by sands, these consist of several formations that differ greatly in age. This variation is reflected in the different vegetation types that occur, ranging from sandforest on the younger relict dune sands, to open savannah on older red sands in the west and southwest (Botha, pers.comm.).

Fig. 2 Aerial view southwards along the Rio Futi, halfway between the Maputo Special Reserve and the South African border.

There are four primary vegetation formations in the Futi Corridor, some of which are unique and extremely valuable both for ecosystem maintenance and biodiversity conservation (see Map 4and Appendix 1):

- **woody grasslands** (endemic vegetation type, endemic plants)
- **sand (licuati) forests** (endemic vegetation type, high biodiversity)
- **swamp forest** (regionally rare, narrow-tolerance plant and animal species)
- **mixed woodlands/savannah**

2.3 Local communities

The area has been settled for centuries. Changana people (many of whom are returned refugees) are the most numerous inhabitants, while the coast and immediate hinterland are settled by the Ronga, the region's oldest inhabitants.

The area falls within the administrative areas of Bela Vista and Zitundo (see Table 1). Settlements are scattered, with administrative area names referring to areas where foci such as schools, health centres and/or markets exist.

Traditional leadership structures have survived, and there are strong allegiances to the Tembe traditional leadership around the TEP. Nonetheless the overall picture of settlement, allegiances and affiliation in the area is extremely complex, compounded by emigration and immigration, allocation of concessions, the war and its political effects, and various cross-border interests.

Fig. 3 Madlelane village entrepreneur making reed mats for sale.

As a result of emigration during the war, the Futi Corridor now has a relatively low permanent human population of less than 600 permanent residents in a maximum of 100 households (Els, 2001), almost all of whom are primarily dependent upon natural resources for their sustenance (Els, 2001). Most settlement is along the edges of the Rio Maputo floodplain and immediate hinterland with foci at Salamanga, Chia, Mussongue and Gueveza. Other communities include palm wine harvesters in the area of Puza and itinerant immigration and settlement in the grasslands to the immediate south of the MSR boundary south of lakes Xingute and Piti. Increasing levels of immigration, primarily of retrenched Mozambican miners returning from South Africa, has been noted around Ponta Malongane and Ponta do Ouro, where over 1,000 people have settled within the past 3 years, few of whom are from the area.

The average age of the population (47 years) is eight years older than in the areas surrounding it, despite the majority of its residents having left the area during the war years. 22% of children in the corridor are under the age of 15 years, compared to 77% in areas to the east and west (Els, 2001).

Figs. 4 & 5 Small settlements in the proposed Rio Maputo buffer zone between the proposed Futi Corridor and the Maputo River.

The most prevalent land use to the west and east of the core Futi Corridor is scattered slash-and-burn subsistence agriculture, as much of the area is characterised by poor sandy soils and conventional agriculture is unsustainable. Natural resource use is the primary means of sustenance within the corridor, which has led to the widespread demise of larger mammals. Fishing in the freshwater lakes is a major source of income for many, most of whom undertake informal cross-border marketing of their catches.

Parts of the region are coming under heavy pressure from the charcoal and timber industries, especially to the west and southwest of the Licuati Forest Reserve where the levels of harvesting are unsustainable.

The principal route for employment seekers from the area has historically been southwards to South Africa, along the border with which there are several unofficial cross-border trading routes - primarily through the north of the Mbangweni area between TEP and Ndumo Game Reserve in South Africa and immediately to the east of TEP.

Table 1. Summary of facilities in area of proposed Futi Corridor

Community	Approximate population	Primary subsistence	School (primary)	Health centre	Administration
Salamanga	1,030	Agriculture	1	1	Bela Vista
Chia	395	Agriculture	1	0	Bela Vista
Mussongue	155	Agriculture, hunting	1	0	Zitundo
Geveza	1,010	Agriculture	1	0	Zitundo
Puza	390	Agriculture	1	?	Zitundo
Futi central	<100 ?	Agriculture, hunting	0	0	Bela Vista/Zitundo

2.4 Existing protected areas

2.4.1 Tembe Elephant Park

The 30,012ha Tembe Elephant Park (TEP) in South Africa abuts the international border between Mozambique and South Africa. It was gazetted in 1983 to protect the last wild elephants in the South African part of Maputaland and currently supports a wide variety of larger mammals besides elephants, including both rhinoceros species and lion. The entire area of the TEP falls within the area of the Tembe Tribal Authority, who derive financial benefits from the privately run tourist lodge in the reserve.

The TEP was completely enclosed within an elephant-proof fence in 1989, since which time the park's elephants have been physically isolated from the adjacent elephant population in

Mozambique. The TEP elephant numbers are currently estimated at between 120-140 and display a high male to female ratio, possibly an artefact created by the artificial enclosure of the reserve and exclusion of female herds that might have been in Mozambique at that time.

2.4.2 Maputo Special Reserve

The Maputo Special Reserve (MSR) covers an area of ±79,400ha from the littoral on the south side of Maputo Bay southwards to parallel 26°36'S.

Its western boundary is defined by the Rio Maputo as far south as Bela Vista, eastwards to the Rio Futi and then southwards along the main Salamanga – Ponta do Ouro road. The eastern boundary is defined by the high water mark of the Indian Ocean.[5]

The MSR is managed by DNAC. A revised MSR management plan for the period 2001-2006 was approved in March 2002.

A population of approximately 240 elephants ranges primarily over the central and western parts of the reserve, moving outside it to the south and southwest along the Rio Futi as far south as seasonal pans near Manhoca, close to the TEP. The MSR also supports relict populations of reedbuck, bushbuck, suni, steenbuck, red and grey duikers and hippopotamus, as well as populations of Nile crocodile and has been identified as an Important Bird Area (IBA) (Parker, pers.comm.).

The MSR has very high biodiversity, wilderness, and landscape values and its ecosystems have until recently been remarkably unimpacted despite its proximity to Maputo[6]. Most of the ±10,000 subsistence farmers and fisherpeople formerly resident within the reserve left the area during the civil war; the current population stands between 1,000 - 4,000.

[5] Protective legislation was first applied to the area through Diploma Legislativo nº 343 of 1932, creating the Maputo Elephant Reserve specifically to protect the relict elephant population. This legislation was augmented and amended by subsequent regulations, the most pertinent of which are Diploma Legislativo nº 2903 of 1969 which amended the name of the reserve to Maputo Special Reserve and Diploma Legislativo nº 22314 of 1969 which re-defined the reserve's limits. In addition, the entire area south of the MSR, east of the Rio Maputo as far south as the South African border was established as a Zona Vigilancia by Diploma Legislativo nº 2904 of 1969 (see Map 3), the current status of which is unclear under the current Forest and Wildlife Act.

[6] The erection of a 33 kV powerline through the reserve in 2001-2002 has adversely impacted its biodiversity, ecosystem and landscape values and might necessitate a complete re-routing of tourist access into and through the Reserve. Although the Environmental Impact Assessment made clear recommendations regarding minimising powerline clearance damage within the reserve, these were not adhered to either by the consulting engineer or contractor.

Fig. 6 Elephant family group in vast reedbeds in the north of the Maputo Special Reserve.

2.5 Marine boundaries proposed for Maputo Special Reserve

The first Management Plan for the MSR (1997-2001) made various recommendations to extend certain of the current reserve boundaries (Map 8). These were:

- a marine zone extending three nautical miles eastwards into the Indian Ocean adjacent to the current terrestrial reserve boundaries;
- a marine zone extending one nautical mile northwards into the Maputo Bay adjacent to the current terrestrial reserve boundaries;
- an extension westwards from the current reserve boundaries on the east bank of the Rio Maputo, westwards as far as the west bank of the Rio Maputo.

The primary considerations for the above proposed extensions are:

- protection of important coral and rocky reef associations;
- protection of the Baixo de São João and adjacent areas;
- protection of important prawn and fish breeding and nursery areas in Maputo Bay and Rio Maputo estuary; and
- to facilitate appropriate tourism development in the area

The two proposed marine extensions recommended in the 2001-2006 MSR Management Plan (Map) should be approved. This would safeguard the marine resources of the area, ensure the protection of the richest hard coral communities in the subregion, allow proper zonation of the reefs and help prevent inshore trawling (currently prevalent) and illegal SCUBA diving from P. do Ouro.

3. PROPOSED FUTI CORRIDOR

3.1 Boundaries & Zonation

This document makes recommendations for combined buffer and multiple-use conservation/development zones adjacent to the Core Conservation Area of the Futi Corridor-Maputo Special Reserve-Tembe Elephant Park complex.

Three separate recommendations have been made previously, all either commissioned or produced by the National Directorate of Forestry and Wildlife (DNFFB):

- Ostrosky and Matthews (1995)
- Boyd (1996)
- Maputo Special Reserve Management Plan (2001-2006)

The above documents recommend roughly equivalent boundaries of the Futi Corridor.

In this current proposal, two categories of zonation have been applied – a **Core Conservation Area** (CCA) that will be gazetted as an extension of the MSR, and two **Community Conservation Development Areas** (CCDAs) that will perform the functions of buffer zones (Zonas Tampão) to the immediate west and east of the CCA.

3.1.1 Core Conservation Area (CCA)

Box 2 – Protected Area categories

The Forests and Wildlife Law (Law 10/99 of 7 July 1999) revised the categories of protected areas and wildlife and forestry production areas within Mozambique as follows:

- **National Park** - total protection of flora, fauna, landscapes, geology; no hunting, natural resource exploitation, land modification or alien species permitted.
- **National Reserve** - total protection of specified plant & animal species and/or ecosystems; resources may be utilised by license within norms established by a management plan.
- **Areas of Historical & Cultural Value** (Communal Use Zones) – set aside for forests with religious interest, and sites of historical and cultural use; resources only to be used in accordance with customary practices and norms of communities
- **Multiple-use areas** (Zonas Tampão, or Buffer Zones) – Can be designated by Ministerial Council around any protection area, within which multiple resource use may be allowed according to a management plan

It is recommended that the Futi Corridor be created as a conservation area by the south-westward extension of the MSR, thereby increasing the total area under formal protection from ±790 km² to ±1,520 km². In the longer term, due to the exceptional biological and ecosystem qualities of the

area, consideration should be given to upgrading the enlarged MSR/Futi Corridor to a higher conservation status such as Game Reserve or National Park.

The alignment of the Core Conservation Area has been designed to strike a balance between incorporating adequate elephant range and habitat, critical vegetation types, minimising impacts on local communities and maximising the common boundary with the TEP. The alignment has also been affected by the need to circumvent four private concessions and two community concessions. The proposed alignment of the extended MSR/Futi Corridor Special Reserve is shown on Map 6; provisional coordinates are presented in Appendix 3.

The western boundary of the CCA will need to be fenced to elephant-proof standard for ±64 kms, southwest from the southern limit of the existing elephant fence just north of the Futi bridge to meet the international border with South Africa opposite the Mbangweni corridor between Ndumo Game Reserve and Tembe Elephant Park.

The eastern boundary of the CCA will also have to be fenced to elephant-proof standard for ±32 kms, from the boundary of the Inkwazi Lda concession south-westwards to meet the international boundary with South Africa approximately 5.6 kms east of the Rio Futi. These fences will be essential to reduce human-elephant conflicts along the Rio Maputo and to a lesser extent in the Puza areas, as well as to define land-use boundaries.

The MSR Management Plan recommended that the proposed western boundary of the FC also include certain areas on the west bank of the Rio Maputo; in the interests of simplicity these recommendations are not addressed in this proposal[7].

3.1.2 Community Conservation Development Areas (CCDAs)

It is proposed that two development zones –the Rio Maputo and Puza Community Conservation Development Zones (CCDZ) covering ±351 km² and ±342 km² respectively (Map 6), be created to the west and east of the CCA. These will be planned and managed as buffer zones (Zonas Tampão), in which communities will be actively assisted to form partnerships in the arenas of sustainable planning, natural resource use and ecotourism. They are inherently valuable from biological and ecosystem maintenance points of view, and resource monitoring will be necessary to ensure that they are not degraded.

The proposed CCDAs are:

- RIO MAPUTO CCDA (351 km²)
  The proposed CCDA extends for about 65 kms from the junction of the Rio Pongola and Rio Maputo in the far southwest northwards to near Bela Vista with an average width of about 5 kms, incorporating fertile floodplain and wetland areas. The far southwest and northern areas of this CCDA are the most heavily settled and the economy of the far southwest, close to the Mbangweni Corridor between Tembe Elephant Park and Ndumo Game Reserve in South Africa, depends to some extent on informal trading between the two

[7] The 2001-2006 Management Plan for the MSR made recommendations on the boundaries of the proposed Futi Corridor based on the status of concessions, elephant habitat and range requirements and minimisation of elephant – human conflict. It defines the western boundary of the FC as mostly to the east of the Rio Maputo, a necessary step as the Rio Maputo floodplains were, and will again become, an highly productive agricultural area with a significant human population. The only area where the recommendation followed the course of the Rio Maputo was in the extreme south, where a small herd of elephant utilise an area close to the international boundary with South Africa. This also considered the scenario of an expanding elephant population in the area, possibly needing seasonal access to the Rio Maputo floodplains.

countries. A few elephant occur in this area, which abuts on the Catuane community conservation project area (currently assisted by the Fórum Natureza em Perigo) to the west.

The proposed alignment of the southward extension of the elephant-proof fence provides an opportunity to further sub-zone this CCDA, incorporating a more intensive programme of interventions such as agriculture, cattle and the provision of community facilities to the north and west, and an emphasis on natural resource management and appropriate private sector engagement to the south.

- PUZA/ZITUNDO CCDA (342 km²)
  This proposed CCDA extends about 34 kms northeast and east from Puza, to the coast at Ponta Mamoli. Its western boundary abuts the Futi Core Conservation Area to the west of Puza, turning to the northeast along the track to Zitundo then northwards almost to the MSR boundary. The coastline forms the eastern boundary, whilst the southern boundary is the international border with South Africa.

  The area has a fairly high human population, focused mainly in the immediate vicinity of and east of Zitundo and around Puza and incorporates existing tourism and wildlife concession areas (Futi Lda, Inkwazi Lda). It also incorporates an 11,700ha community certification area centred around Zitundo. The Puza community (about 500 people) have settled the southern part of the area, where the primary activity is palm wine (*sura*) production. The largest swamp forest in southern Mozambique occurs south-westwards from Lagoa Satine along the Rio Cele; this forest has been recommended for protection in the past due to the regional rarity of this vegetation type. The opportunities for private sector engagement are possibly not as great as in the Rio Maputo CCDA.

Table 2: Summary of existing and recommended zoning

Zone	Status	Area (km²)
Maputo Special Reserve	Exists	794
Futi Corridor	Proposed	730
Rio Maputo Community Conservation Development Zone	Proposed	352
Puza Community Conservation Development Zone	Proposed	342
TOTAL AREA		**2,218**

3.2 Factors influencing recommended zonation

3.2.1 Elephant range & biodiversity issues (Maps 3 & 4)

The results of an extended period during which the movements of elephants fitted with satellite collars were monitored, are presented in Map 3. It has been clearly demonstrated that the elephants of the MSR and the Futi form a single population moving between Manhoca in the south of the Futi, and the MSR. They also regularly move to the west, where they conflict with human settlement around Salamanga, Chia and Mussongue.

It is probable that much of the vegetation between the Rio Futi and Rio Maputo has an inherently low nutritive status (Botha, pers.comm.), for which reason as large an area as possible should be secured as elephant range. Confining the elephant population too close to the Rio Futi will almost certainly result in higher numbers of elephant breakouts and additionally this might have adverse long-term impacts on the more nutritious vegetation along the Rio Futi, as well on the internationally valuable sand forests. Elephant range and ecology has been studied

A number of other biological criteria have also been taken into consideration in defining the CCA and CCDAs (Map 4). These are:

- ❖ nationally and regionally important swamp forests extending southwards from Lagoa Satine along the Rio Cele, as well as swamp forests to the SW of Lagoa Piti
- ❖ large edaphic grasslands to the south of Lagoa Piti, nationally and regionally important as habitat for the vulnerable pink-throated longclaw (one of only 3 sites in Mozambique)
- ❖ extensive sand forest to the west of the Rio Futi, home to near-endemic bird species, and the regionally vulnerable suni antelope; and
- ❖ extensive woody grassland mosaics to the east of the Rio Futi, with endemic plant species

3.2.2 Community issues (Map 2)

Human populations in the area are focused along the Rio Maputo in the west and around Puza in the east. The central forested areas between the Rio Futi and the Salamanga-Manhoca road are sparsely populated, even by Mozambican standards. It is hoped that communities willing to resettle outside the proposed FC can be assisted to do so, while the creation of development nodes in the adjacent CCDAs might provide further incentives for CCA residents to move to these areas.

An overview of opinions on the creation of the Futi Corridor were obtained from eight community areas around the Futi Corridor in mid-2000, as part of a joint study by Eduardo Mondlane University and the University of Pretoria on the design, conservation and community aspects of the FC, with which the LTFCA component of the TFCA Project collaborated and provided backup. Overall responses regarding community willingness to participate in tourism and conservation were positive, perhaps reflecting a need for employment but a fear of losing access to land and livelihoods. Results per area differed considerably, with Salamanga presenting the least favourable and Ponta Malongane communities the most favourable responses, respectively.

Further community consultation was conducted in December 2001 by a combined DNAC/SPFFB/Matutuine District Administration team, during which 237 people were consulted on the proposed Futi Corridor. The majority of the population held a negative attitude to any form of conservation in the region, due to fears of diminished access to natural resources and increased elephant problems, as well as negative preconditioning by the failed Blanchard project. Follow-up community consultation indicated that, while accepting in principle the benefits that an elephant-proof fence would bring, community perceptions on the alignment of such a fence were to have it as far from them as possible, very close to the Futi River. This is obviously unacceptable from the point of view of securing adequate elephant range over the almost uninhabited proposed Futi core conservation area, as well as bringing the biologically valuable sand forests and other resources of the area under an adequate conservation regime. Summaries of the results of community consultations are presented in Appendix 2.

An ongoing dialogue is being maintained with the communities affected by this proposal, which is essential if they are to fully comprehend the possible benefits of participatory conservation planning and development of the Futi Corridor, and the importance of securing an adequate area for this. In addition, community title will be obtained for at least two of the community areas affected by the Futi Corridor, before the end of 2002.

3.2.3 Concessions (Map 5)

As a result of its low human population, pristine condition, proximity to South Africa and Maputo and obvious ecotouristic potential, the area of the proposed Futi Corridor has attracted high levels of entrepreneurial interest from both within and outside Mozambique. Most land applications have been made for sites along the coastline, but a few have been made for areas suitable for wildlife/wilderness ecotourism developments around Manhoca and to the south of the MSR.

A number of smaller concessions exist along the Rio Maputo, where objectives are usually linked to farming as a consequence of the better soils and access to perennial water. These concessions and applications have by far the greatest number of local communities living on them, and it is clear that a focused programme will be required specifically to resolve the land issues there.

Fig. 7 Aerial view over 9,550 ha. concession on south shore of Lake Piti, within the Puza Community Conservation Development Area.

Not all developments appear to have valid land title accompanying them, and there is at least one situation where more than one concession has been awarded over the same area. The confused situation regarding existing concessions and areas under application is presented in Map 5. Provisional details of applicants and status of concession applications are presented as an addendum to Map 5.

3.3 Opportunities

3.3.1 Core Conservation Area (Map 6)

The protection of the CCA will allow the identification and allocation of community-managed leasehold areas fronting onto the Futi River. This will open up possibilities of income generation through community - private sector collaboration, primarily through the development of eco-lodges (sites to be identified) and, over the longer term, marketing of game species. It is not anticipated that local communities currently residing within the proposed Futi Corridor will be negatively affected by its formal protection, although clear collaborative policies will need to be developed to limit further immigration to the CCA. Communities engaged with the development of the Futi Corridor will have representation on the MSR/Futi management board.

3.3.2 Community Conservation Development Areas (Map 6)

There are reasonable opportunities in the CCDAs for developments such as rustic eco-lodges (specific sites for which have to be identified) and the creation of facilities catering for special-interest activities such as kayaking, bird watching and fishing, as well as opportunities for

agricultural, pastoral and infrastructural developments. The southern half of the Rio Maputo CCDA with its floodplain lakes and river frontage is particularly suitable for tourism-oriented activities, while the northern half with its higher, more concentrated human population and huge riverine floodplain lends itself more appropriately to agro-pastoral development and provision of services.

3.4 Risks

3.4.1 Proposed port at Ponta Techobanine

Ponta Techobanine, just south of the MSR boundary, is the proposed site for a new harbour, (Porto Dobela) covering 20,000 ha extending northwards within the MSR as far as Ponta Milibangalala. The proposed development will include extensive industrial as well as residential and tourist developments, with provision for 10,000 employees and 70,000 dependents. It is certain that unplanned immigration to the area if the project goes ahead will be considerable, and the ecological ramifications of this are such that any form of land-use planning in this ecologically sensitive and globally valuable area will become meaningless.

3.4.2 Unplanned immigration

There are clear risks attached to the creation of employment possibilities in an area as undeveloped and impoverished as the proposed Futi Corridor. A clear and enforceable policy regarding *ad hoc* immigration by job seekers and itinerants is an absolute requirement preceding any physical developments in the area. One of the primary functions of the proposed CCDAs is to act as development nodes to which immigrants can be directed, away from the CCA. In the CCDAs, immigrants will have to liase with whatever administrative structures are in place.

3.4.3 Concessions

A confusing factor in the area is the *ad hoc* granting of concessions by a variety of authorities, which in one area near Zitundo has resulted in three different applications (two of which are known to have been approved) over the same piece of ground. Other current applications include one of 9,900 ha and another of 1,000 ha in the centre of the proposed Futi Corridor (see Map 5 and addendum for provisional details of approved and ongoing concession applications as of April 2002). It is imperative that concession procedures be rationalised within an overall planning framework, perhaps through the recently approved Elephant Coast Development Agency - and that transparent tendering processes form the only basis for private sector land entitlement within the Futi Corridor and MSR.

4. MANAGEMENT OF THE FUTI CORRIDOR

4.1 Primary objectives

The primary considerations that need to be met in the Futi Corridor are:

4.1.1 Biological

- biodiversity conservation, with reference to priorities established in the respective MSR and TEP management plans and in a proposed future Joint Management Plan (e.g. elephants,

Red Data species, unique, rare and/or otherwise valuable taxa, species and floristic and faunal assemblages);

- maintenance of ecosystem functioning; and
- maintenance of landscape values.

The above-average natural attributes of the area in terms of pristine landscape, endemism and biodiversity, have attracted extensive interest from international, regional and local conservation bodies. The coast and hinterland from Portuguese Island south to Ponta do Ouro is the subject of an application to UNESCO for World Heritage Site listing; the region is identified as a valuable anchor area under the Lubombo TFCRA Protocol; the MSR and adjacent areas have been identified as an IBA (Important Bird Area), and it is probable that the northern parts of the MSR will be nominated as a Ramsar wetland site.

The intrinsic ecological value of the area places the highest demands of professionalism on the agencies involved in its planning and development. It has been noted that marketing and economic imperatives have tended to sideline ecological issues in some TFCA arenas, the experiences of which must be viewed as guidelines to the development and management of the Futi-MSR conservation area.

4.1.2 Socio-economic

- ensure sustainable community resource rights;
- develop sustainable livelihoods for stakeholders within the CCDAs, using specific areas within the CCA as collateral in establishing joint eco-business ventures; and
- through applied zonation, encourage the provision of health and education facilities and livelihood diversification within the Community Conservation Development Areas.

A cornerstone of the development of the combined Futi-MSR conservation complex as a component of the Mozambican sector of the Lubombo TFCA, will be the creation of effective linkages and partnerships between governments, communities, NGOs and the private sector, working towards successful planning, development and management of the area.

As an example, the current MSR Management Plan makes provision for a Management Board (as yet unformed) on which all major stakeholders will be represented. This management board will have to incorporate representation from Futi Corridor stakeholders. It is hoped that community interests in the CCDAs and Futi Corridor will be represented by the creation of a Futi Corridor Community Working Group (or similar). The recently approved governmental Elephant Coast Development Agency will also have a major role to play in the development and management of the area.

The primary management option proposed for the CCA is to allocate ecotourism sites along the Rio Futi (these are still to be identified) to specific communities residing in the CCDAs. Communities then have the option of engaging appropriate private sector ecotourism interests to manage these sites. Both community and private sector players will be represented on the MSR/Futi management board.

4.2 Proposed roles of stakeholders

4.2.1 Government

Government's role will be to maintain adequate conservation management standards in the MSR-Futi conservation area through policing and monitoring of key ecological parameters and representation on the MSR-Futi management board, acting as conflict mediator and ensuring adequate levels of security. Government will also be responsible for preparing investment guidelines and monitoring investor compliance with these.

The Elephant Coast Development Agency (approved by Decree No. 49/2001 of 21 December 2001) as an independent governmental institution has an important advisory and developmental role in Matutuine District and will be the key agency active in the area of ecotourism and associated activities, establishing an investor framework and monitoring progress.

4.2.2 Local communities

A majority of local people in the area within and surrounding the proposed Futi Corridor are at least aware of their rights under the Land Law. The financial and institutional means to achieve this are well beyond the reach of most communities in the area, although the Swiss NGO Helvetas has been assisting selected communities to obtain certification through a process of land demarcation and funding. Progress has been slow - by March 2002 a total of three communities (Madlelane, Zitundo and Machangulo) had been awarded community certification.

If communities are to become meaningful partners in the planning and management of the Futi Corridor, this process needs to be speeded up through access to adequate funding and streamlining of legal steps to be followed.

It is proposed that:

- separate to this proposal, donor funding is sought exclusively for the purpose of obtaining certification for communities affected by the proposed Futi Corridor;
- the above process of entitlement take cognisance of the zonation proposed in this document (see para. 3.2). For example, it is recommended that the small, scattered communities living within the proposed core conservation area be offered acceptable alternative land within the proposed Community Conservation Development Zones (CCDAs);
- as part of the mechanisms of review and approval of this proposal, a policy is approved whereby leases for clearly defined development areas within the Core Conservation Area along the Rio Futi are obtained for communities resident in the CCDAs. This would be on the understanding that such leasehold areas be used for approved ecotourism ventures through transparent collaboration with investors, and will not used for settlement or environmentally destructive practices; and
- obligations of communities and investors as co-managers of the Futi Corridor will need to be developed by the as-yet unconstituted MSR-Futi Management Board.

4.2.3 Private sector

The involvement of the private sector in the proposed Futi Corridor will revolve primarily around the financing and establishment of professionally run ecotourism ventures in collaboration with local communities. These will maintain regionally acceptable standards of professionalism, according to either an expanded MSR-Futi management plan or a joint MSR-Futi-TEP management plan, whichever comes first. Private sector operators, together with their community partners, will have full representation on the MSR-Futi management board.

There are significant existing private sector developments both peripheral to and partly within the proposed Futi Corridor, most of which are engaged in ecotourism and game farming activities that, to a greater or lesser extent, can be accommodated within the objectives of the enlarged conservation area.

4.2.4 Donor/NGO community

The involvement of the donor and NGO communities needs to be harmonised according to whichever model of management plan is applied to the core conservation area and buffer zones. This could take place through invited representation on the management board. Donors and NGOs can also play key advisory roles in monitoring and evaluating various development and management parameters. Immediate assistance will be required for:

- resolving issues of community certification and title, especially along on concession areas along the Rio Maputo, including funding the process of certification and/or title;
- funding of a community liaison officer to assist communities with developing an understanding and awareness of all issues in the CCA and CCDAs, thereby enabling their full participation on the management board;
- infrastructure – including: new entrance gate and HQ complex proposed for the expanded MSR-Futi area; elephant fences along the west and east of the Futi; senior and junior staff housing; access tracks to assist with securing the Futi Corridor; new entrance track into the MSR to avoid the old entrance track;
- removal of alien *Eucalyptus* plantations along the Rio Futi and in the MSR;
- training – of senior staff and refresher courses for game guards;
- sustainable income-generating activities – long-term programmes are required for communities in the two CCDAs;
- assistance with benchmarking acceptable ecotourism models, community development and conservation activities through realistic monitoring and evaluation; and
- facilitation of community empowerment and community based natural resource management implementation.

4.3 Management actions & considerations

4.3.1 Establishment of management regime

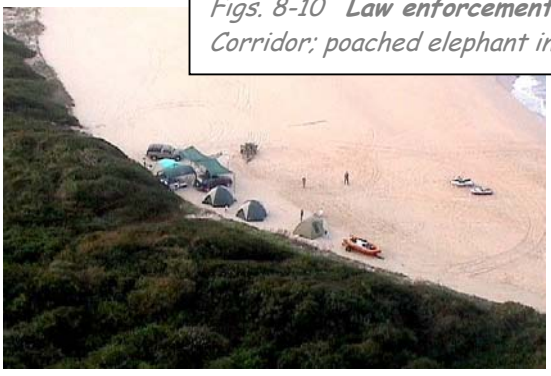
The combined MSR-Futi conservation area will be developed and managed by a management board with full representation from Government, local communities and the private sector, with invited participation of and assistance from donors and NGOs in achieving objectives. The roles of the newly approved Elephant Coast Development Agency will have to be established *vis a vis* the management board and, in the short to medium term, the Lubombo Ndumo-Tembe-Futi TFCA Task Group created under the LSDI.

A provisional list of immediate management considerations includes:

- *Joint Management Plan* – if the Futi Corridor is created as an extension of the MSR, the approved management plan for the latter will need to be immediately revised to incorporate management elements pertaining to the Futi. It will be necessary to work closely with

Ezemvelo KwaZulu Wildlife, as the managers of the TEP, in the creation of an overall joint management plan for the entire transboundary conservation area through the aegis of the Lubombo Ndumo-Tembe-Futi TFCA Task Group.

- *Law enforcement* – the area is almost completely unpoliced or otherwise monitored in terms of smuggling and commercial natural resource extraction. The proposed upgrading of the Ponta do Ouro – Salamanga road will require initiatives to control traffic through the area and effective deployment of game guards throughout the area through a system ensuring rapid access, strategic guardposts and effective radio-communications, will be essential. The existing MSR guard force should, if supplied with sufficient mobility and resources, be adequate to start the process. The effectiveness of this should be monitored.
- *Access* – the planning and routing of existing and required access tracks and airstrips in the Futi Corridor needs to be addressed, which will primarily be dictated by ecosystem fragility, landscape values, eco-lodge locations and law enforcement requirements.
- *Fencing* – the Futi Corridor will require fencing to the west and east, for which donor funding will be required.
- *De-mining* – the area is relatively free of landmines, apart from around Manhoca and possibly some border areas. These need to be cleared once the Futi has been secured as a conservation area.



Figs. 8-10 ***Law enforcement*** *(clockwise, from top left) – illegal timber extraction in Futi Corridor; poached elephant in Futi Corridor; illegal beach camping; illegal chamfuta sawmill*

4.3.2 Selection of ecotourism nodes within Futi Corridor

This task will take cognisance of area-specific community land issues and site availability both along the Futi River and inland. Much of the area is densely forested, and the extremely high numbers of mosquitoes along the Rio Futi will almost certainly influence the location of eco-lodges.

Additionally, the question of individual community perceptions of resource areas will form a primary foundation of the entire exercise. For this reason, a fulltime community liaison/development officer will be necessary until such time as:

a) the boundaries of the Futi Corridor have been finally determined;

b) community areas within the CCA have been determined and potential lodge sites identified;

c) communities have determined what forms their representations should take, i.e. a Futi Corridor Community Working Group, representation on the MSR-Futi Management Board, etc.;

d) needs within the CCDAs have been identified and harmonised within the management plan; and

e) communities have started the process of engagement with the private sector to develop eco-lodge sites.

4.3.3 Large mammal reintroductions

The structure and numbers of larger animal assemblages in the proposed Futi Corridor have been heavily impacted by hunting, but populations of species such as elephant, common reedbuck, bushbuck, hippopotami, small antelopes (two duiker species, suni and steenbuck) and Nile crocodile are adequate to allow regeneration.

In the interests of re-establishing a more representative wildlife assemblage both as part of overall ecosystem functioning and as an incentive to potential investors, it is recommended that appropriate species indigenous to the area (see Table 3) should be reintroduced after appropriate analysis of carrying capacities and distribution of suitable habitats.

With the agreement of the Tembe tribal authority, TEP management reintroduced lions to the reserve in June 2002. This will require a risks/benefits evaluation with regard to eventual re-opening of the gamefence between TEP and the Futi/MSR complex once the Futi Corridor is fenced. In the short-term this is not felt to compromise the objectives of the LTFCA in any way, given the greater importance of securing overall ecosystem function and an adequate conservation area.

As the area is part of a World Heritage Site application, it is recommended that strict guidelines be followed with regard to selecting appropriate indigenous species for reintroduction[8].

Table 3: Most suitable large mammals for reintroduction to the Futi Corridor[9]

Species	Suitable site/s
Buffalo	Along Rio Futi, MSR
Waterbuck	Along Rio Futi, MSR
Nyala	Sand forests throughout
Kudu	Manhoca, Mussongue, Futi Bridge, MSR
Blue wildebeest	Manhoca, Mussongue
Zebra	Manhoca, Mussongue

[8] For example, there is no evidence that species such as giraffe or impala ever occurred in the area east of the Rio Maputo although the latter probably occurred on heavier soils in the southwest, towards TEP and Ndumo Game Reserve.

[9] Based on the MSR 2001-6 Management Plan and a habitat review.

White rhino	Manhoca, Mussongue

It is anticipated that wildlife will increase under a more intensive programme of protection. Some species are known vectors for Foot and Mouth Disease but it is unlikely that this will pose a threat as the recommended southward extension of the existing MSR elephant fence between the settled floodplains of the Rio Maputo and the core conservation area of the Futi, will (unlike the current situation) assist in keeping domestic stock and wildlife apart. The Futi Corridor is within an endemic Foot and Mouth disease area, which precludes the export of live or dead hoofed mammals. There is no appreciable natural movement of live wildlife out of the area due to an overall decimation of game species, as well as physical restrictions imposed by the Rio Maputo and the international border fence.

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