

Temane

MOZTIPA055



Country: **Mozambique**

Administrative region: **Inhambane (Province)**

Central co-ordinates: **-21.67864 N, 34.98088 E**

Area: **678km²**

villages (MAE 2005; IMPACTO 2018). These developments, in addition to the activities of local communities, are impacting negatively on the IPA through the transformation and degradation of its ecosystems (MICOA 2012).

Qualifying IPA criteria

A(i)

IPA assessment rationale

Temane qualifies as an IPA under Criterion A(i), as this area supports important populations of five globally threatened species: *Bauhinia burrowsii* (EN), *Croton aceroides* (EN), *Triaspis suffulta* (EN), *Croton inhambanensis* (VU) and *Ozoroa gomesiana* (VU). This IPA is so far known to support six national endemic species (Darbyshire et al. 2019); this is below the 3% threshold of Mozambican endemic and range restricted species needed to qualify this site under Criterion B(ii).

Site description

The Temane IPA lies entirely within Inhassoro District in northern Inhambane Province and covers an area of 678 km² between the latitudes -21.49° to -21.91° and longitudes 34.89° to 35.04°. The boundaries of this IPA were primarily delineated to encompass important habitats that support both a notable number of plant species endemic to Mozambique, including five threatened species, and a range of ecosystems service that the habitats provide. Inhassoro District has, in recent years, attracted significant economic interest related to the exploitation of mineral resources. The critical areas for biodiversity within the Temane IPA fall within one of the largest natural gas and heavy sand deposits in Mozambique, centred on Temane, Maimelane, and Cometela

Botanical significance

This IPA is of high botanical importance primarily because of the presence of thicket and dry woodland habitats that support a number of northern Inhambane's endemic and range-restricted species of conservation importance. Five of these species are assessed as globally threatened on the IUCN Red List: *Bauhinia burrowsii* (EN; restricted to Inhassoro, Vilanculos and Mapinhane areas of Inhambane), *Croton aceroides* (EN; encountered in two sites in Inhassoro District, and from between Mabote and Funhalouro in northern Inhambane, and near Panda and Homoine further south in Inhambane), the woody climber *Triaspis suffulta* (EN; restricted to the Inhassoro and Vilanculos areas), *Croton inhambanensis* (VU; restricted to Inhassoro and Mapinhane) and *Ozoroa gomesiana* (VU; found only in northern Inhambane, mostly concentrated in the Inhassoro, Mapinhane and Vilanculos areas). All these species are endemics of the proposed Inhambane (sub-) Centre of Plant Endemism (Darbyshire et al. 2019).

This IPA is so far known to support six national endemic plant taxa and one near-endemic plant taxa. The endemic species to Mozambique consist of the five previously mentioned globally threatened species, plus the Least Concern species *Dolichandrone alba*.

Habitat and geology

In the broad sense, the Temane region lies within the Swahilian-Maputaland Regional Transition Zone phytogeographical region according to Clarke (1998), which covers much of the coastal-belt of

Mozambique, or according to Schipper and Burgess (2015), the Southern Zanzibar-Inhambane Coastal Forest Mosaic Ecoregion which stretches for around 2,200 km along the eastern coast of the African continent, from southern Tanzania to Xai-Xai (Gaza Province) in Mozambique. In a narrower phytogeographical sense, this IPA falls within the northern extension of the Maputaland Centre of Endemism, recently proposed as the Inhambane (sub-) Centre of Endemism (Darbyshire et al. 2019).

The climate is influenced by the warm current from the Mozambique Channel and is characterised as humid tropical by the coastline and dry tropical inland. The site experiences two seasons; the wet season runs from August to February, whilst the dry and relatively cool season runs from February to July. In the wet season, the average temperatures vary between 28 – 30°C, while in the dry season the temperatures vary between 18 – 27°C. The average annual rainfall ranges from 865 – 936 mm, with higher rainfall on the coast (Governo do Distrito de Inhassoro 2011; Global Forest Watch 2021). The elevation of the IPA ranges from 20 – 65 m asl. The region is part of the great coastal plains that stretch along a large extent of coastal Mozambique, and is characterized by red clay soils and sodic soils (mananga soils) dominating the inland zones (MICOA 2012).

Inhassoro District has been subject to several recent botanical surveys, which have helped to build our understanding of plant diversity in the Temane IPA region. Three main types of vegetation can be distinguished at this site. (1) A miombo woodland and grassland mosaic is encountered in the south of the IPA and consists of open woodland of medium sized-trees and shrubs (with ca. 35% canopy cover), with dominant species being *Julbernardia globiflora* and *Brachystegia spiciformis* accompanied by species such as *Afzelia quanzensis*, *Albizia adianthifolia*, *Garcinia livingstonei* and *Pterocarpus angolensis*, and with grassland with ca. 50% ground cover, featuring e.g. *Eragrostis chapelieri*, *Melinis repens*, *Perotis patens*, *Schizachyrium sanguineum* and *Sporobolus pyramidalis* dominating the landscape (Deacon 2014). (2) Mixed dry forest-woodland, which is the most extensive type of vegetation found at this site, and also features miombo species, but with the canopy here is dominated by tree species such as *Afzelia quanzensis*, *Albizia adianthifolia*, *Balanites maughamii*, *Garcinia livingstonei*, *Guibourtia conjugata*, *Pterocarpus angolensis* and *Suregada zanzibariensis* (MICOA 2012; Deacon 2014). This habitat is a mosaic of open woodland of medium-sized trees and shrubs (of ca. 30% cover), and an herbaceous ground cover (ca. 60%), with common grasses including *Megathyrsus maximus*, *Schizachyrium sanguineum* and *Sporobolus pyramidalis*. (3) Sand thicket, sometimes interspersed within the miombo woodland and mixed dry forest-woodland vegetation types, this habitat is widespread within the IPA, particularly in the northeast, and comprises dense and short semi-deciduous species dominated by *Hymenocardia ulmoides* and *Spirostachys africana*, with emergent trees of *Adansonia digitata*, *Balanites maughamii* and *Cordyla africana*. Climbers are numerous and include *Ancylobotrys petersiana*, *Apodostigma pallens*, *Artabotrys brachypetalus*, *Artabotrys monteiroae* and *Monodora junodii* var. *junodii* among others (Deacon 2014; Lötter et al. in prep.). These areas of thicket have a

canopy cover ranging from 25 – 45% and a sparse herbaceous ground cover of 3 – 10% (Deacon 2014). This latter vegetation type corresponds to the Pande Sand Thicket of Lötter et al. (in prep.), a highly range-restricted vegetation unit the majority of which lies within the Temane IPA, and is of particular importance for most of the range-restricted and threatened species of this site.

Conservation issues

The Temane IPA does not lie within a formal protected area, however, the region is covered by the recently identified "Inhassoro-Vilanculos KBA" (WCS et al. 2021).

More generally, this IPA is currently under high pressure and degradation by local communities because of the harvesting of firewood, charcoal production, livestock grazing, agriculture (concentrated along the access roads and paths), with an associated increase in fire frequency, and expansion of settlements (A. Massingue, pers. comm. 2020; Global Forest Watch 2021; Google Earth 2021). In addition, Temane IPA is experiencing habitat degradation due to activities related to natural gas exploration around Temane village and heavy sand exploitation in Maimelane and Cometela villages.

Cultivated areas are concentrated along access roads and paths, and notably near Sasol's oil flowlines which occur across the vegetation mosaics of this IPA and themselves cause a level of habitat degradation (Deacon 2014; Google earth 2021).

Site assessor(s)

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IPA criterion A species

SPECIES	QUALIFYING SUB-CRITERION	≥ 1% OF GLOBAL POPULATION	≥ 5% OF NATIONAL POPULATION	1 OF 5 BEST SITES NATIONALLY	ENTIRE GLOBAL POPULATION	SOCIO-ECONOMICALLY IMPORTANT	ABUNDANCE AT SITE
<i>Ozoroa gomesiana</i> <i>R.Fern. & A.Fern.</i>	A(i)	✓	✓	✓	—	—	Abundant
<i>Triaspis suffulta</i> <i>Launert</i>	A(i)	✓	✓	✓	—	—	Scarce
<i>Bauhinia burrowsii</i> <i>E.J.D.Schmidt</i>	A(i)	✓	✓	✓	—	—	Abundant
<i>Croton aceroides</i> <i>Radcl.-Sm.</i>	A(i)	✓	✓	✓	—	—	Scarce
<i>Croton inhambanensis</i> <i>Radcl.-Sm.</i>	A(i)	✓	✓	✓	—	—	Frequent

IPA criterion C qualifying habitats

HABITAT	QUALIFYING SUB-CRITERION	≥ 5% OF NATIONAL RESOURCE	≥ 10% OF NATIONAL RESOURCE	1 OF 5 BEST SITES NATIONALLY	AREAL COVERAGE AT SITE
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General site habitats

GENERAL SITE HABITAT	PERCENT COVERAGE	IMPORTANCE
Forest - Subtropical/Tropical Dry Forest	—	Major
Grassland - Subtropical/Tropical Dry Lowland Grassland	—	Major
Shrubland - Subtropical/Tropical Dry Shrubland	—	Major
Artificial - Terrestrial - Subtropical/Tropical Heavily Degraded Former Forest	—	Major
Artificial - Terrestrial - Arable Land	—	Major
Savanna - Moist Savanna	—	Major

Land use types

LAND USE TYPE	PERCENT COVERAGE	IMPORTANCE
Agriculture (arable)	—	Major
Forestry	—	Unknown
Extractive industry	—	Major
Residential / urban development	—	Major
Harvesting of wild resources	—	Major

LAND USE TYPE	PERCENT COVERAGE	IMPORTANCE
Utility & service lines for telecommunication and gas pipelines crossing	–	Major

Threats

THREAT	SEVERITY	TIMING
Residential & commercial development - Housing & urban areas	High	Ongoing - trend unknown
Residential & commercial development - Commercial & industrial areas	High	Ongoing - trend unknown
Agriculture & aquaculture - Annual & perennial non-timber crops - Shifting agriculture	High	Ongoing - trend unknown
Agriculture & aquaculture - Wood & pulp plantations - Small-holder plantations	Low	Ongoing - trend unknown
Agriculture & aquaculture - Livestock farming & ranching - Small-holder grazing, ranching or farming	Low	Ongoing - trend unknown
Energy production & mining - Oil & gas drilling	High	Ongoing - trend unknown
Energy production & mining - Mining & quarrying	Unknown	Ongoing - trend unknown
Transportation & service corridors - Roads & railroads	High	Ongoing - trend unknown
Biological resource use - Logging & wood harvesting	High	Ongoing - trend unknown
Natural system modifications - Fire & fire suppression - Increase in fire frequency/intensity	Unknown	Ongoing - trend unknown
Invasive & other problematic species, genes & diseases - Invasive non-native/alien species/diseases	Medium	Ongoing - trend unknown

Conservation designation

DESIGNATION NAME	PROTECTED AREA	RELATIONSHIP WITH IPA	AREAL OVERLAP
Inhassoro-Vilankulos	Key Biodiversity Area	protected/conservation area encompasses IPA	–

Management type

MANAGEMENT TYPE	DESCRIPTION	YEAR STARTED	YEAR FINISHED
No management plan in place		–	–

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