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Goba

MOZTIPA043

Country: **Mozambique**
Administrative region: **Maputo (Province)**
Central co-ordinates: **-26.35252 N, 32.10925 E**
Area: **217km²**

Qualifying IPA criteria

A(i), A(iv), B(ii)

IPA assessment rationale

Goba qualifies as an IPA under criterion A as it supports species of global conservation concern. A total of 7 species trigger criterion A(i): Indigofera gobensis (CR), Warburgia salutaris (EN), Encephalartos lebomboensis (EN), Encephalartos senticosus (EN), Encephalartos umbeluziensis (EN), Encephalartos aplanatus (VU) and Euphorbia baylissii (VU). Although not yet formally IUCN assessed, Asparagus radiatus, Euphorbia keithii, Tephrosia gobensis and Thesium jeaniae, are range restricted endemic species that trigger criterion A(iv).

Site description

The Goba Important Plant Area (IPA) lies in Namaacha District, Maputo Province, Mozambique, on the border with eSwatini to the west at (-26.35°, 32.10°). It forms the eastern part of the Lebombo Mountains, a core area within the Maputaland Centre of Endemism with several endemic plants occur (van Wyk 1996). The boundaries of this IPA were mainly delineated to encompass the majority of known records of the IPA trigger species within this region and were subsequently refined using Google Earth Engine (Gorelick et al. 2017) to identify and exclude degraded or transformed and urbanised areas.
This IPA covers 217 km2, and extends for approximately 35 km long from north to south, encompassing a montane landscape from 70 to 520 m elevation, with most areas lying at around 250 m. It supports a mosaic of forest on rocky slopes and cliffs together with woodland, wooded grassland and rock outcrops. There is one large and regionally important river running through the northern section of the IPA, the Umbeluzi River, in addition to two streams, namely the Changalane and Mazeminhane, in the southern section. The two streams drain their water into Tembe River, another important water source running towards the northeast into Maputo Bay.

Botanical significance

The Lebombo Mountains as a whole are of recognised botanical significance; they fall within the Maputaland Centre of Plant Endemism which is thought to be home for 203 endemic plant species or infraspecific taxa (van Wyk 1996; van Wyk & Smith 2001). A thorough analysis by Darbyshire et al. (2019) has proposed the Lebombo Mountains as a separate (sub-)centre of plant endemism within Maputaland and it is believed to contain 17 species Mozambican endemics and near-endemic restricted only to this sub-centre. Of the 17 taxa, three are known only from Mozambique. Species of conservation significance in the Goba IPA include Indigofera gobensis (CR), only known from this locality worldwide; the cycads Encephalartos lebomboensis (EN), Encephalartos senticosus (EN), Encephalartos umbeluziensis (EN) and Encephalartos aplanatus (VU) all of which are endemic to the Lebombos. These cycads are threatened due to habitat loss and over-collecting as a result of poaching for different purposes. Encephalartos umbeluziensis is highly concentrated at the Goba IPA, which has the second largest population of this species after Mlawula Game Resrve in Eswatini. Euphorbia baylissii (VU), threatened due to habitat destruction, also occurs within this IPA and it is not known to occur in any protected area. Asparagus radiatus and Tephrosia gobensis are among the other Lebombos endemic species confined to the forests of the Lebombo Mountains

included within this IPA. This site is also home to Warburgia salutaris (EN) which is threatened due to habitat loss and over-exploitation of parts of the plant, such as bark, stems, and roots, for medicinal usage (Senkoro et al. 2019; 2020). Thesium jeaniae, which has been assessed regionally as Rare (Raimondo & Scott-Shaw 2007), also occurs here and is a highly range restricted species in the southern Lebombo Mountains. Additional species to highlight include Stapelia unicornis, Euphorbia keithii (known from a range of less than 1,500 km2), Gladiolus brachyphyllus (with a range smaller than 10,000 km2) and Cyphostemma barbosae. These species are endemic or near-endemic to the Lebombo Mountains.
Another species of interest found in Goba IPA, although not endemic or range restricted nor of conservation concern as per the IUCN Red List, is Excoecaria madagascariensis (LC), previously known from Madagascar and Tanzania and so representing here rather a disjunct occurrence.
There are also several species that are important for socio-economic reasons, including Acacia swazica (used for charcoal), Androstachys johnsonii (widely used in construction and fencing of large areas for livestock), and Sclerocarya birrea (source of a traditional beverage and nuts), among others.

Habitat and geology

Vegetation patterns in Goba IPA are in accordance with topography, varying depending on whether an area is in the vicinity of a water course or is on free-draining slopes, with elevation also being an important factor. Forests are confined to river margins and cliffs or slopes, holding species of conservation concern such as Asparagus radiatus, Encephalartos umbeluziensis and Erythrophleum lasianthum, together with economically important species such as Androstachys johnsonii. Away from water courses, the landscape is comprised of woodland dominated by Acacia and Combretum species, including Acacia swazica, A. exuvialis, A. burkei, A. caffra, A. davyi, A. nigrescens and A. senegal var. rostrata, together with Combretum apiculatum, C. molle and C. zeyheri. Other important woodland species include Lannea discolor, Pterocarpus rotundifolius, Sclerocarya birrea and Terminalia phanerophlebia.
In geological terms, the Goba IPA is part of the Lebombo Mountains which consists of a sequence of volcanic rocks - basaltic lavas and rhyolitic flows - from the Jurassic period about 180 to 179 million years ago (du Randt 2018). Rhyolite, a resistant rock, is arranged in an alternating manner with basalt, a more readily eroded rock, resulting in a series of parallel sharp ridges with a gentle slope on one side separated by plains or water courses. The whole of the Lebombo Mountains area is relatively low with the highest peak no more than 800 m in elevation (du Randt 2018). Based on Google Earth imagery, Goba IPA peaks at about 500 m elevation.
The soils in the Goba IPA site are derived from rhyolite and basalt and are relatively fertile with high clay contents (du Randt 2018). Red soils are dominant throughout the area, but black alluvial clays are associated with drainage lines. The area has a tropical humid climate with two main seasons including a dry and cold season from April to September, followed by a wet, hot and rainy season ranging from October to March.

Conservation issues

The Goba IPA is not part of the current network of conservation areas of Mozambique. However, this site encompasses the Goba Ntava Yedzu which is an area of about 9,000 ha managed by the community, though with no legal conservation status. Moreover, it falls entirely within a proposed Goba conservancy which is part of a wider regional initiative, the Lubombo Conservancy–Goba, which is a Trans-Frontier Conservation Area from eSwatini to Mozambique and South Africa (Üllenberg et al. 2014, 2015).
Goba IPA experiences habitat destruction resulting primarily from charcoal production. At present, none of the IPA trigger species are targeted for charcoal, however, the impact of habitat clearing for piling and burning of woody stems in the production process is expected to cause significant declines in species of conservation importance at this site. Areas that have been cleared for charcoal kilns then become the entry point for invasive plants including Agave sisalana, Lantana camara, Opuntia ficus-indica and Zinnia peruviana.
A further threat of particular concern is the illegal harvesting of plant species for trade in markets in the cities including Maputo, Matola and Boane. With rapid urban expansion over the last 15 years, demand for these plants for ornamental reasons has increased steadily which is likely to cause severe declines in some species, particularly the slow-growing cycad species such as Encephalartos umbeluziensis (EN) and Encephalartos lebomboensis (EN). Some plants in this IPA are also harvested for their medicinal properties, for example, Encephalartos lebomboensis (Donaldson 2010) and Warburgia salutaris (Senkoro et al. 2019, 2020).
In addition to charcoal production and plant poaching, there has been ongoing increase over the last 15 years of concessions granted for livestock grazing. Grazing areas have been fenced, causing an increased demand for poles from species with hard, resistant wood such as Androstachys johnsonii which, in turn, is causing significant habitat destruction. Being in the vicinity of protected areas in eSwatini, notably the Mlawula Nature Reserve, there is occasional movement of animals into the unprotected Mozambique lands, and in some instances these animals are hunted illegally. In addition, there have been reports that artisanal fishing takes place in the bigger rivers such as the Umbeluzi.
By taking advantage of the existing community initiative, the Goba Ntava Yedzu, this site could potentially be protected under one of the Conservation Areas of Sustainable Use categories, aligned with the “Protection, Conservation and Sustainable use of Biological Diversity” Act (Decree No. 16/2014), which permit integrated management, allowing some level of harvest of natural resources in accordance with the limits to be set by the management authority.

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
Indigofera gobensis Schrire	A(i)	✓	✓	✓	✓	–	Unknown
Encephalartos lebomboensis I.Verd.	A(i)	✓	✓	✓	–	–	Unknown
Encephalartos senticosus Vorster	A(i)	✓	✓	✓	–	–	Unknown
Encephalartos umbeluziensis R.A.Dyer	A(i)	✓	✓	✓	–	–	Frequent
Encephalartos aplanatus Vorster	A(i)	✓	✓	✓	–	–	Unknown
Euphorbia baylissii L.C.Leach	A(i)	✓	–	✓	–	–	Unknown
Asparagus radiatus Sebsebe	A(iv)	✓	✓	✓	–	–	Unknown
Tephrosia gobensis Brummitt	A(iv)	✓	✓	✓	–	–	Unknown
Warburgia salutaris (G.Bertol.) Chiov.	A(i)	–	✓	✓	–	✓	Unknown
Thesium jeaniae	A(iv)	✓	✓	✓	–	–	Unknown
Euphorbia keithii R.A.Dyer	A(iv)	✓	✓	✓	–	–	Unknown

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

General site habitats

GENERAL SITE HABITAT	PERCENT COVERAGE	IMPORTANCE
Savanna - Moist Savanna	–	Major
Forest - Subtropical/Tropical Moist Lowland Forest	–	Minor
Rocky Areas - Rocky Areas [e.g. inland cliffs, mountain peaks]	–	Major
Artificial - Terrestrial - Pastureland	–	Minor

Land use types

LAND USE TYPE	PERCENT COVERAGE	IMPORTANCE
Agriculture (pastoral)	–	Minor
Harvesting of wild resources	–	Minor

Threats

THREAT	SEVERITY	TIMING
Agriculture & aquaculture - Livestock farming & ranching - Small-holder grazing, ranching or farming	Medium	Ongoing - increasing
Biological resource use - Logging & wood harvesting - Unintentional effects: subsistence/small scale (species being assessed is not the target) [harvest]	Medium	Ongoing - trend unknown
Biological resource use - Gathering terrestrial plants - Unintentional effects (species being assessed is not the target)	Medium	Ongoing - increasing
Invasive & other problematic species, genes & diseases - Invasive non-native/alien species/diseases	Medium	Ongoing - increasing

Conservation designation

DESIGNATION NAME	PROTECTED AREA	RELATIONSHIP WITH IPA	AREAL OVERLAP
Goba Ntava Yedzu	Community Initiative	protected/conservation area encompasses IPA	90

Management type

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

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