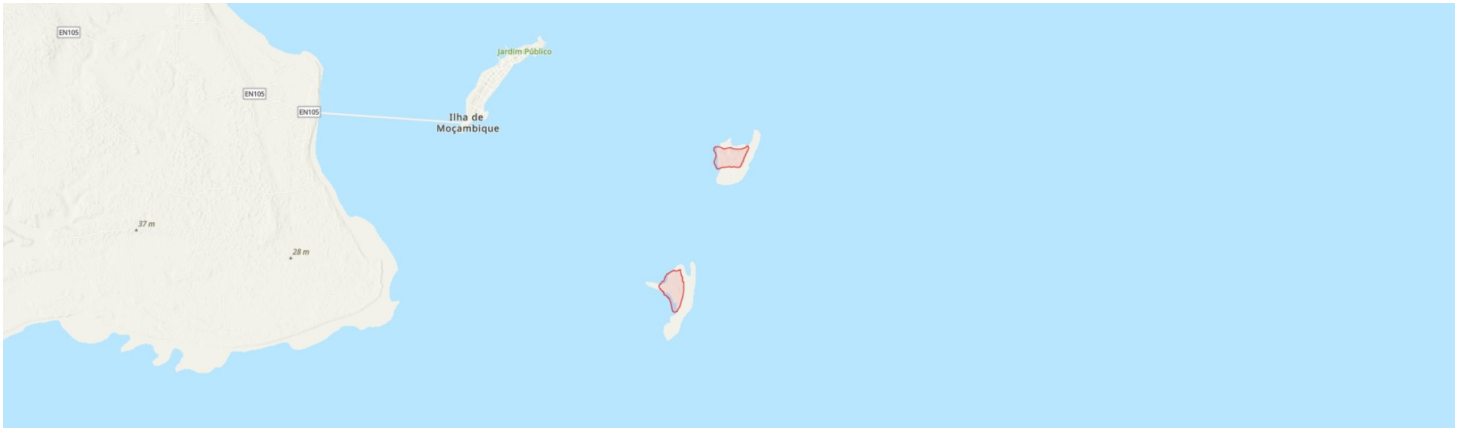
Goa and Sena Islands

Ilhas Goa e Sena (Test version)

MOZTIPA010



Country: **Mozambique**
Administrative region: **Nampula (Province)**
Central co-ordinates: **-15.05310 N, 40.78440 E**
Area: **0.65km²**

Qualifying IPA criteria

A(i)

IPA assessment rationale

Goa and Sena Islands qualify as an IPA under Criterion A(i), as they support critical populations of three globally threatened species: the endemic Euphorbia angularis which his considered to be Vulnerable, and the two Endangered near-endemic Barleria species, B. setosa and B. laceratiflora; based on current knowledge, this IPA is considered to be the most important site globally for these three species.

Site description

Goa and Sena are two small, low-lying coral islets separated by ca. 2.6 km in the Indian Ocean in Ilha de Moçambique (Mozambique Island) District of Nampula Province, Mozambique, measuring ca. 0.3 km2 and 0.35 km2 respectively. These islands are located in the mouth of Mossuril Bay, approximately 6.5 – 8 km offshore from the mainland. They lie east and southeast of the famous Ilha de Moçambique, a World Heritage Site which is one of the oldest European settlements in East Africa and an important early trading centre under Portuguese rule from the early sixteenth century until independence. Whilst Ilha de Moçambique is now almost entirely built up away from the beaches, the islands of Goa and Sena are largely undisturbed. Sena Island is also known locally as the Ilha das Cobras (Snake Island).

Botanical significance

These islands support important examples of coral rag thicket, a vegetation type that occurs only sporadically on the northern Mozambique coast - this is one of the most southern localities for this habitat nationally. The coral rag thicket supports one endemic species, Euphorbia angularis (VU), which is common throughout Goa Island but is absent on Sena Island (Mucaleque 2020). The islands also supports two near-endemic species of Barleria - B. setosa (EN) and B. laceratiflora (EN) (Darbyshire et al. 2015; Luke et al. 2015; Darbyshire 2018). The former is common on both Goa and Sena (Mucaleque 2020); it is also known historically from Ilha de Moçambique and the adjacent mainland Cabeceira Pequena near Mossuril; however, due to habitat loss at these latter two locations, this species may now be restricted to Goa and Sena Islands. Barleria laceratiflora was recorded from Goa Island in 1947; it was not refound on either island during a brief botanical visit in 2020 (Mucaleque 2020) but could easily be overlooked if not in flower. It is known elsewhere only from Lindi Bay in coastal southeast Tanzania where it is considered to be threatened by development and habitat loss (Luke et al. 2015). To our knowledge, only Goa Island has previously been surveyed for its plant diversity before the brief botanical survey on both islands in 2020 for the TIPAs: Mozambique project.

Habitat and geology

The islands are surrounded by coral reefs and are formed from exposed coral rag deposits. Two main vegetation types are recorded: coral rag thicket and mangroves. On Goa Island, the coral rag thicket is common throughout and forms dense impenetrable

stands with both deciduous and evergreen shrubby elements. The dominant species here are Euphorbia angularis, Grewia glandulosa, Pemphis acidula and Suriana maritima. The thicket on Sena is somewhat less dense and shorter, and E. angularis is absent, whilst Salvadora persica is more numerous. Euphorbia tirucalli and Aloe and Sansevieria (Dracaena) species are also noted in the Sena thickets (Mucaleque 2020).
On Goa Island, the mangroves are restricted to the northern portion, whilst on Sena they are more widespread especially on the eastern side, and are associated with open saline pools. In both cases, Rhizophora mucronata is the dominant species, with Pemphis acidula occurring commonly along the mangrove margins (Mucaleque 2020).

Conservation issues

Although the focus of the Ilha de Moçambique UNESCO World Heritage Site is on the fortifications and architecture of the main island, and its association with the history of early navigation and trade in the Indian Ocean, Goa and Sena Islands fall within the proposed WHS buffer zone (UNESCO 2020). This IPA is not included within Mozambique's Key Biodiversity Areas network at present.

At present there is very limited disturbance on both islands. Goa Island is inhabited only by a lighthouse keeper on the eastern side and is otherwise only visited occasionally by fishermen. A previous occupant of the lighthouse grazed cattle on the island and this encouraged other local residents to bring their cattle, but this activity ceased in 2008 and has not caused lasting damage (Mucaleque 2020). The coral rag thicket is largely intact except for two paths that cross the island north to south and east to west; Barleria setosa is quite frequent along the edges of these paths. An introduced Opuntia species (cactus) is present in small numbers but does not appear to be particularly invasive. Otherwise, the only problem is with litter and debris from the sea. On Sena Island, fishermen set up temporary camps with small huts built from harvested wood but these have only a very minor impact on the vegetation.
Tourism is expanding rapidly along the coat of Mossuril District, and the Ilha de Moçambique World Heritage Site is one of the fastest growing tourist destinations in Mozambique both for its historical interest and for its beautiful beaches. There is a concern that this growing tourist industry will expand to the nearby Goa and Sena Islands in the future which could be damaging if not carefully controlled. However, previous plans to develop tourist lodges on Goa Island were rejected by government, in part due to the island's association with the World Heritage Site (Mucaleque 2020). At present, only very few tourists visit these islands, and Sena remains difficult to access as there is no regular boat link.
Another potential future threat is from increased extreme weather events and flooding in light of human-induced climate change; these islands are so low-lying (mostly below 5 m) that they could be badly impacted by rising sea levels or increased storm events, although the intact vegetation may offer some resilience.

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
Barleria setosa (Klotzsch) I.Darbysh.	A(i)	✓	✓	✓	–	–	Common
Barleria laceratiflora Lindau	A(i)	✓	✓	✓	–	–	Unknown
Euphorbia angularis Klotzsch	A(i)	✓	✓	✓	✓	–	Common

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
Marine Coastal/Supratidal - Coastal Caves/Karst	–	Major
Marine Intertidal - Sandy Shoreline and/or Beaches, Sand Bars, Spits, etc.	–	Minor
Marine Intertidal - Mangrove Submerged Roots	–	Major

Land use types

LAND USE TYPE	PERCENT COVERAGE	IMPORTANCE
Tourism / Recreation	–	Minor
Harvesting of wild resources	–	Minor

Threats

THREAT	SEVERITY	TIMING
Biological resource use - Logging & wood harvesting	Low	Ongoing - stable
Residential & commercial development - Tourism & recreation areas	Unknown	Future - inferred threat
Climate change & severe weather - Storms & flooding	Unknown	Future - inferred threat

Protected areas

PROTECTED AREA NAME	PROTECTED AREA TYPE	RELATIONSHIP WITH IPA	AREAL OVERLAP
Island of Mozambique (Ilha de Moçambique): Buffer Zone	UNESCO World Heritage Site	protected/conservation area encompasses IPA	100

Management type

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

Bibliography

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