

POLICY BRIEF FOR MADAGASCAR

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INTRODUCTION

The surface of mangroves in Madagascar represents around two percent of world's mangroves, which ranks the country second for overall mangrove area in the WIO region.

Mangrove ecosystems have been recognized to provide a wide range of ecosystem services, such as primary nursery habitat for various species of fish, birds, and marine mammals, including protecting coastal communities from coastal erosion and damage from storms and other natural hazards. Despite mangrove conservation efforts from ground to national level, degradation continues. To date, around 20% of mangroves have been deforested for timber, charcoal and agricultural expansion.

Following this, conservation approach has evolved in Madagascar. The first ever national workshop held in 2019, has contributed to raising the attention of policy makers, international NGOs as well as other key stakeholders in Madagascar. The national strategy on mangroves is currently being developed.

1. BENEFITS OF SOCIO-ECONOMIC ROLES OF MANGROVES

Mangroves provide services necessary for human well-being. In Madagascar, the total economic values (TEV) provided by mangroves are estimated at around USD 82.627.833 per year with an average per hectare of around US \$ 578 per year. The estimated economic value for each ecosystem services per year is found in the table below.

The economic value of mangroves for each ecosystem service under status quo scenario:

38,088,494 USD
Estimated value of
provisioning services

36,093,750 USD
Estimated value of
regulating services

8,066,503 USD
Estimated value of
cultural services

379,087 USD
Estimated value of
supporting services



In collaboration with:



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The policy recommendations made do not necessarily reflect the views of the institutions or their partners.

Table 1: Detailed economic value of mangroves under status quo scenario

Functions	Ecosystem services	Surface 2018 (ha)	Annual value (\$)	Value \$/ha/an	
1. Provisioning	NWFP	Crab	218,750	16,540,000	75.61
		Shrimp	281,750	19,682,600	69.86
		Honey	218,750	26,539	0.12
		Wild silk	281,750	747,149	2.65
	Wood materials	COS wood	2,998	179,880	60.00
		Charcoal	6,991	912,326	131
2. Regulation	Carbon	218,750	36,093,750	165	
	Shoreline protection	281,750	Unavailable	Unavailable	
3. Supporting	Maintenance of biodiversity	281,750	8,066,503	29	
4. Cultural	Ecotourism	8277	379,087	46	
			82,627,833	578.17	



2. GOVERNANCE OF MANGROVES

Different modes of mangrove management have been identified in Madagascar, including Protected Area under IUCN management category types, Community-based natural resources management (CBNRM) and mangrove access regulation by state-managed forest departments. The two former modes of management represent respectively 29.91% and 25.53% of overall mangrove covers. This management is not spatially exclusive, particularly for Protected Area under Cat V and Cat VI and community-based management which allows for overlap.

Effective mangroves governance should be underpinned by good coordination of mechanisms between Ministries and national-level integration policies and the local realities along with harmonized regulations.

3. CHALLENGES AROUND MANGROVES

Threats towards mangroves in Madagascar stem from different sources including economic (biomass energy, shrimp farming, agricultural practices, salt productions), social (human settlements, migration), environmental (climate related consequences) as well as institutional.

ECONOMIC, SOCIAL AND ENVIRONMENTAL CHALLENGES

Location	Area of mangroves affected	Main causes of degradation
Nosy-Be, Mahajanga and Morondava	1 267.77 Ha (per year)	Deforestation linked to wood energy requirement used for cooking, construction,
Mitsinjo, Port-Bergé and Analalava	12,845 Ha	Agricultural practices, in particular rice farming without polders, combining river and tidal decline
Mahajanga II and Ambanja	6,143 Ha	Deforestation linked to agricultural practices
Baly Bay	600 Ha	Conversion of mangrove forests into breeding ponds for shrimp farming, ultimately leading to eutrophication and proliferation of algae which releases toxins that affect mangroves
Belo sur Tsiribihina	Data unavailable	Foot fishers use hooks and dig big holes under mangrove trees to hunt crabs in their nests. About 51% of the population engage in this activity, and end up with monthly catches of 205 kg for fishing and 117 kg for trap crabs (Young Progress, 2018)
Ambaro Bay, Mahajanga and Morondava	1% of total area of mangroves	Driven by urbanisation, high influx of growing coastal populations which leads to infrastructure development, such as roads, on mangrove sites
Diégo-Suarez	Data unavailable	Although limited, impacts of salt production on mangroves have been recorded
Andilamoko, Anjiabe site	Data unavailable	Sea level rise leading to death of plants at margins of offshore mangroves as well as changes in species composition, ultimately leading to reduced productivity and ecosystem services. For instance, fishing period decreases and consequently decreases the price of fishing products as well as household income
Tsiribihina, Mangoky Delta	Data unavailable	Cyclones and wind lead to the disappearance of mangroves due to wave activity that can uproot trees and break branches as well as defoliate the canopy
MPA Nosy Hara, Ambodivahibe	Data unavailable	Land erosion linked to frequent bushfires and deforestation leading to the extension of sandback of mangroves
Manambolo-Tsiribihina, Kirindy-Mitea, Menabe-Antimena	Data unavailable	Increased migration rates to coastal areas threaten mangroves as there is an observed increase in demand for wood and fish resources

INSTITUTIONAL CHALLENGES

Mangrove conservation in Madagascar faces a variety of institutional challenges. An inefficient coordination mechanism between research institutions and different regulating bodies of fisheries and forestry has been observed.

Lack of funding or poor allocation of funding for the integrated management of Madagascar's coastal and marine areas including mangroves have caused lack of supports in terms of material and financial and local coordination of activities at all levels.



LEGAL CHALLENGES

Law n°96-025 related to the local management of renewable natural resources in order to address overarching issues on mangrove governance does not meet anymore ever changing context at both local and national context.

Insufficient clarity of Decrees around the establishment of some entities in charge of mangroves generates room for misinterpretation or conflict. Decrees related to establishing the National Commission of Integrated Mangrove Management and of that regulating the integrated management of the coastal and marine areas of Madagascar don't specify clearly responsibilities and roles of Decentralized Collectivities in the decision making.

4. RECOMMENDATIONS FOR POLICY MAKERS

INSTITUTIONAL FRAMEWORK

To set an institutional framework that provides funding to all structures involved in mangroves governance in all level for management fees, control and monitoring, field activities such as resources restoration and promotion of income generating activities to reduce dependence on mangrove resources. The source of funding is from license fees collected from the mangroves valorization from fisheries and forest sector to finance stakeholders' actions involved in the sustainable management of mangroves and establishment and implementation of equitable benefit sharing mechanism.

LEGAL FRAMEWORK

To review existing law of the law 96-025 related to the local management of renewable natural resources in order to address overarching issues on mangrove governance. Such revision should foster large local participation, alignment of internal traditional regulation with the legal one, strengthening sectoral collaboration between Ministries, establishment of the corporate of the new regulation on the Corporate Social Responsibilities (CSR).

To review the existing Decree on the regulation of Integrated Coastal Zone Management (ICZM) in general to provide clear provisions in respect to coordination mechanisms between local authorities and ministerial departments.

To review the Decree n° 2015629 establishing the National Commission of Integrated Mangrove Management and the Decree n° 2010-137 regulating the integrated management of the coastal and marine areas of Madagascar.

To map an improved mangrove governance strategy by considering different mangrove definition and establishing national mapping database.

COLLABORATION WITH RESEARCH INSTITUTIONS

This collaboration engages support from various sectors. From the perspective of economic valuation of mangroves, reliable and sufficient data only provide basis for sound policy decision on mangroves. As this requires substantial investment in terms of funding, exploring innovative financing strategies that foster sustainable businesses.

REFERENCES

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