



# SEASCAPE PROFILE

SOUTH WEST INDIAN OCEAN  
2024

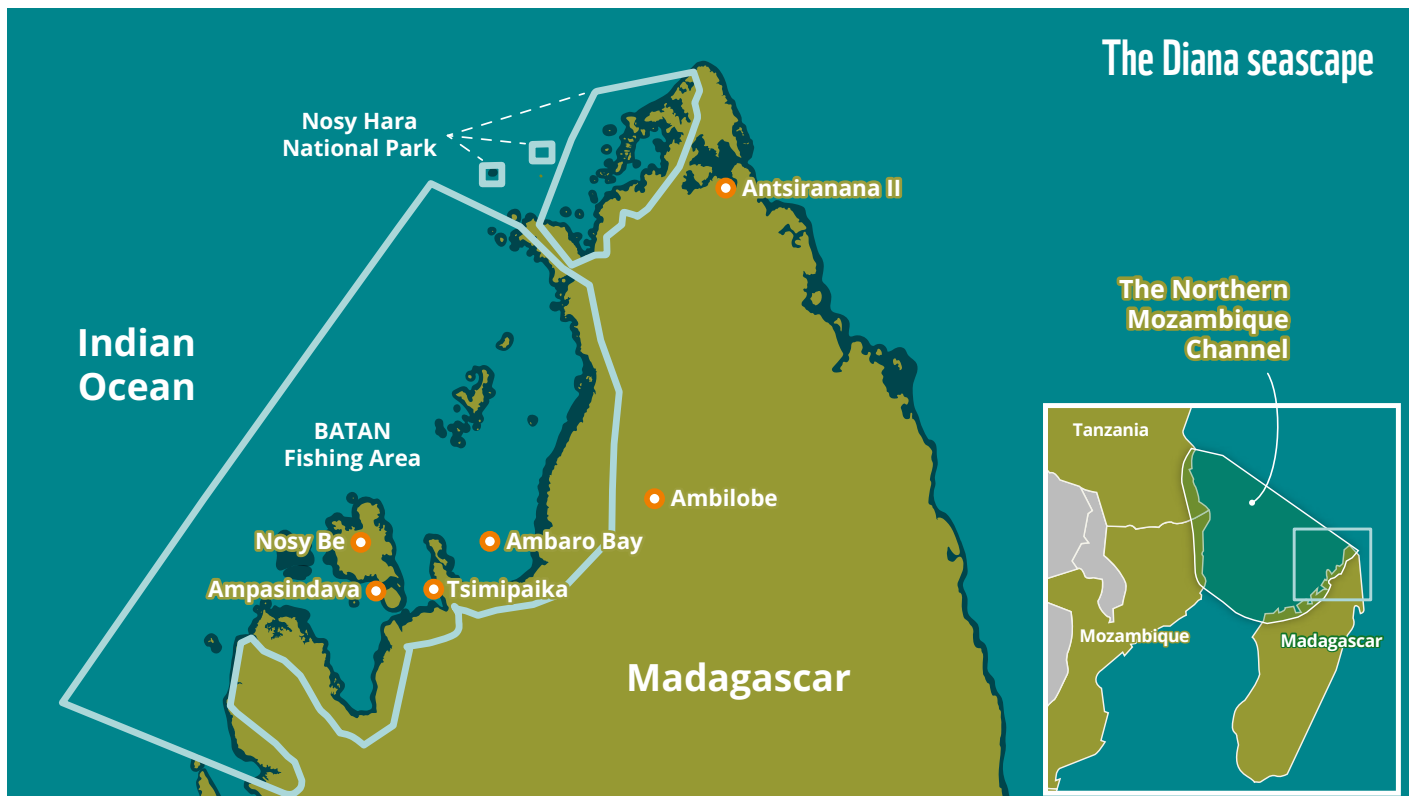


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## THE DIANA SEASCAPE

The Diana seascape crests the north-western coast of Madagascar. Here, it covers 1.7 million hectares of the island’s coast. As one of 15 seascapes in the WWF-SWIO’s portfolio and one of three WWF seascapes in Madagascar, the Diana seascape is also the smallest. Nevertheless, it boasts the largest coverage of both mangrove forests and seagrass beds in the country.

The communities in this seascape are deeply embedded in nature and have a long history of caring for – and working with – their natural environments. With 60 years of involvement in Madagascar, WWF’s approach in the seascape focuses on strengthening this stewardship role by capacitating communities to sustainably manage their natural resources and meaningfully partake in policy discussions.



## SEASCAPE IN NUMBERS

1 698 261

hectares in total size

5.5%

under  
community  
stewardship

72 200

community members participating in  
WWF projects

24

community  
governance  
structures  
influenced by  
WWF projects

60 759

hectares of mangrove forest

75.78 Mg/ha

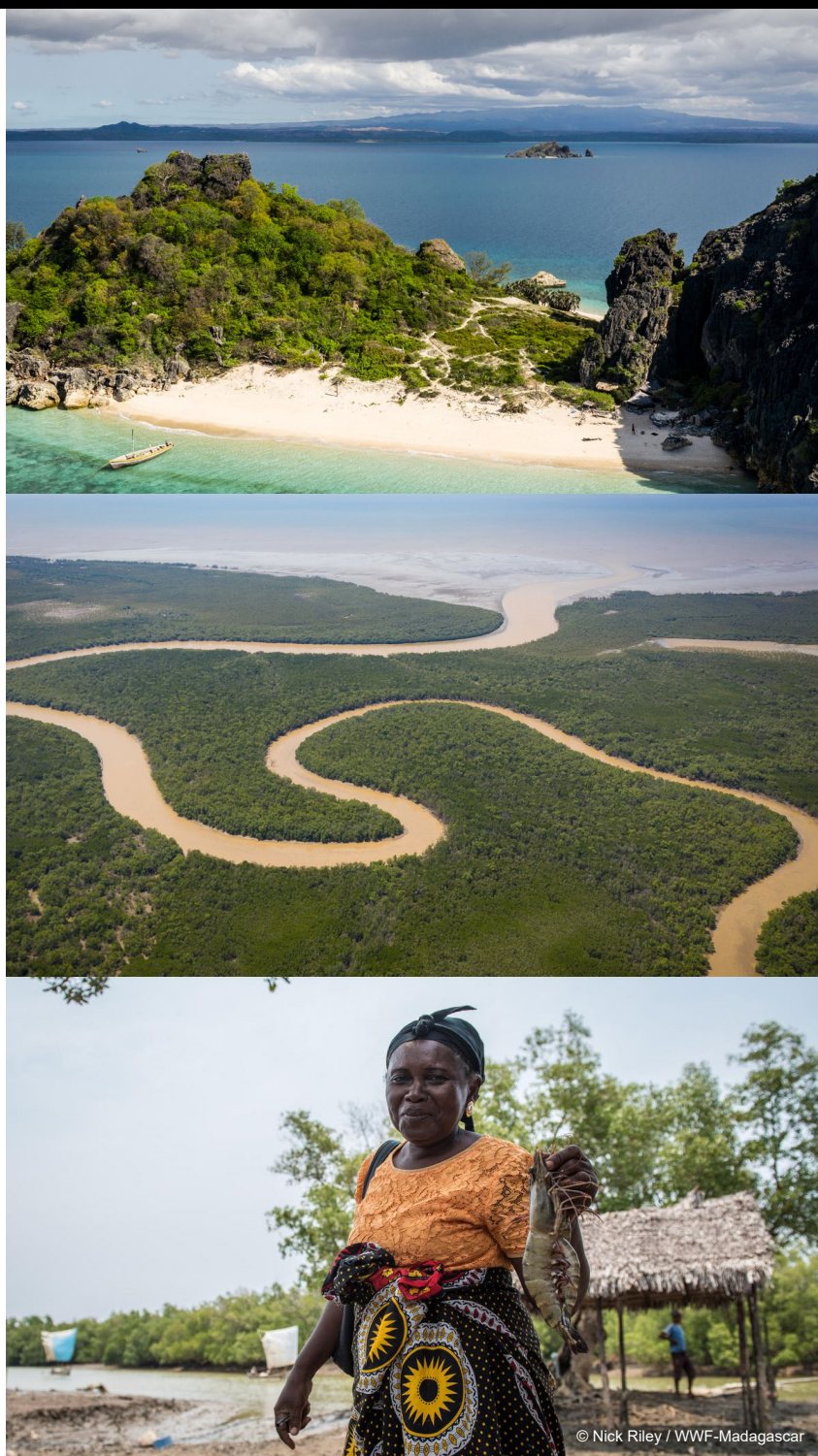
average carbon  
storage

## PROMINENT MARINE PROTECTED AREAS IN THE DIANA SEASCAPE

At the northernmost part of the seascape lies the Nosy Hara National Park – an archipelago that is home to the most intact coral reefs along Madagascar's shores. Research published in 2012 found that the reefs in the Nosy Hara archipelago contain 344 of the 369 coral species found in the Western Indian Ocean, contributing to the Northern Mozambique Channel's overall status as the second-most biodiverse marine hotspot. The low population density of Antsiranana II, the closest mainland coastal district, and the remoteness of the archipelago's islets contribute to the preserved state of the park's natural resources.

Just south of the Nosy Hara National Park is Ambaro Bay. Home to 10% of Madagascar's mangrove forests (54 000 ha), Ambaro Bay was recognised as an internationally important wetland site in 2020 when it was declared Madagascar's 21st RAMSAR site. The site is also home to five different species of lemurs, as well as 99 bird species – almost half of which are only present in wetlands and two of which are nearing extinction: the Madagascar fish eagle and the Madagascar heron.

The mangrove forests' waters host fisheries with a variety of crabs, shrimps and pelagic fish. These fisheries provide sustenance to 65% of Ambaro Bay's villages, with fishing also serving as one of the population's main economic activities. Other primary economic sectors include agriculture (rice, sugar cane and cassava) and livestock farming (cattle, sheep and poultry).



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## HOW WORSENING POVERTY IS UNDERMINING NATURE

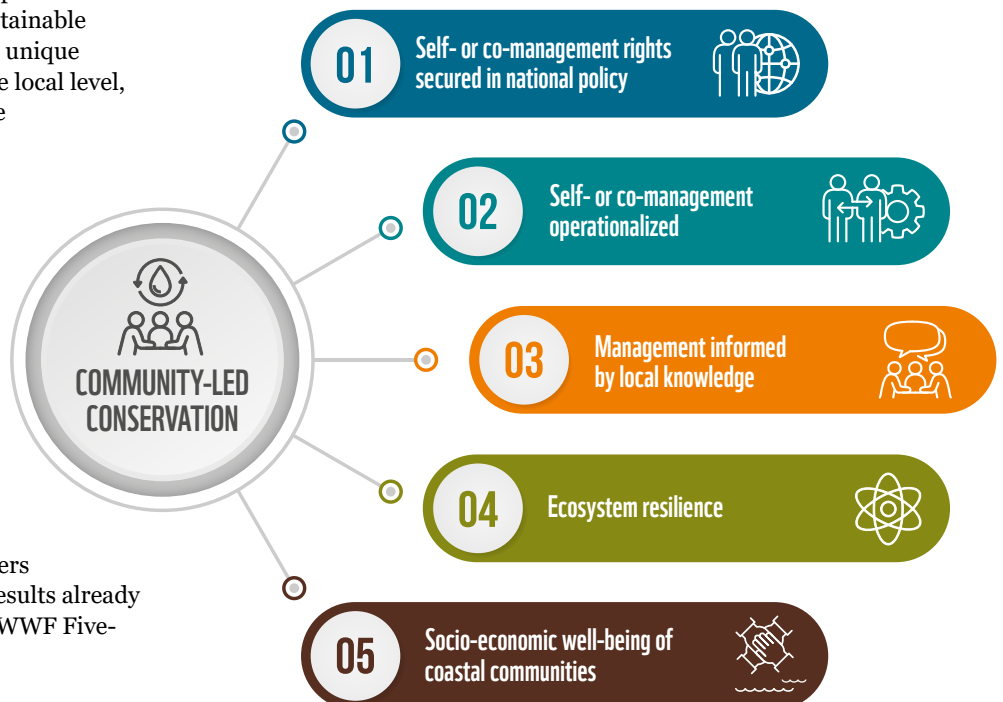
As part of the **BATAN (Ambaro Bay, Tsimipaika, Ampasindava and Nosy Be)** area, Ambaro Bay is more populated than Nosy Hara. Its close proximity to large cities, especially in the poverty-stricken Ambilobe district (54% of the population lives below the poverty line set at US\$1.9 per day), places pressure on the RAMSAR site’s mangrove forests. Mangrove habitat loss results from deforestation in pursuit of wood for construction and fuel, and space for agriculture and livestock farming. With growing population sizes and shrinking community incomes – partly due to conservation restrictions – the Diana seascape communities are experiencing worsening socio-economic vulnerability compounded by the impacts of climate change, ultimately leaving them more dependent on their environment’s declining natural resources.

Addressing poverty – and the societal challenges and natural resource dependence that it drives – requires an inclusive approach. In the Diana seascape, this means drafting, formalising and actively applying community-led conservation measures that respect local need for natural resources while ensuring the sustainable use thereof. It further includes establishing a fair and effective enforcement mechanism for such measures. Lastly, it involves securing the livelihoods of local communities and equipping them with the means to financially grow while treading lightly on their environment.

## HOW WWF’S FIVE-POINT PLAN FOR SEASCAPES ADDRESSES THESE CHALLENGES

WWF’s vision for Madagascar’s seascapes is that the natural capital is managed in a sustainable and equitable way for the benefit of its unique nature and the Malagasy people. At the local level, it pursues this vision by enshrining the rights of coastal communities to co-manage marine resources in policy, strengthening community governance structures, enhancing small-scale fisheries management, improving ecosystem resilience and building the socio-economic resilience of coastal communities.

WWF’s strong presence in the Diana seascape and track record of successful collaboration with implementing and development partners in the area contribute to the positive results already achieved in this seascape through the WWF Five-Point Plan for Seascapes.



## 1. POLICY

*Madagascar was one of the first countries in Africa to adopt a legal framework for communities to manage their natural resources.*

In line with Malagasy tradition, local **grassroots communities (Communautés de Base, or COBA)** are encouraged to develop and enforce local bylaws, or dina, that govern how resources in **locally managed marine areas (LMMAs)** are used. There are LMMAs in both Ambaro Bay and Nosy Hara. Despite being based on traditional social code, dina can be adopted as law once it has been approved by the district's tribunal. Thus, the fines associated with non-compliance are legally binding.

Dina typically apply to specific LMMAs. The dina of Ambaro Bay's LMMAs are the result of four villages entering into contracts of **transfer of management of fisheries resources and aquatic ecosystems (TMFR-AEs)** with the Ministry of the Environment, in line with the **GELOSE (Gestion Locale Sécurisée, or Secure Local Management)** law. In 2016, WWF supported the villages with establishing and renewing their management transfer contracts, and currently supports them with managing their natural resources and securing livelihoods.



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As a marine protected area, Nosy Hara is co-managed by Madagascar National Parks and local park committees. In 2023, local community representatives and Madagascar National Parks identified a need to provide enhanced protections to 6 235 ha of the archipelago's coral reefs – an area that is now managed by four LMMAs. To date, with WWF's support, these LMMAs have co-developed four dina (combined under an “umbrella dina”, or dinabe) that have been approved by the district's tribunal.



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## 2. COMMUNITY-LED GOVERNANCE

*WWF works with 24 community-based organisations, numbering 8 200 members in total, to support Diana seascape's ecosystem health and community wellbeing.*

LMMAs in Madagascar are supported by the MIHARI network. **MIHARI** stands for *mitantana harena ranomasina avy eny ifotony*, or “marine resources management at the local level” and is the result of a collaborative effort by 18 LMMAs in 2012 to convene for regular face-to-face meetings. These engagements provide a platform to share knowledge, discuss shared challenges and find collaborative solutions to local issues. WWF supported MIHARI in becoming a legal and independent entity in 2022 and continues to provide the network of over 200 LMMA representatives with training and financial resources, most recently focusing on helping them develop annual action, strategic and finance plans.

Also working to operationalise communities' rights to co-manage natural resources is the **Fishers' Union Federation of Ambaro Bay, Tsimipaika, Ampasindava and Nosy-Be (FUP BATAN)** – a civil society organisation that advocates for sustainable small-scale fishery management, enforcement of environmental laws and advocating for authorities to help maintain the health of mangrove forest. WWF helped establish this organisation in 2017, and has since empowered it with advocacy training and, more recently, with workshops for both FUP BATAN and MIHARI on marine spatial planning to ensure local representation in future marine resource management decisions. Current WWF efforts also focus on developing an online, practical communication guide to build the capacity of local LMMA leaders.

## 3. SMALL-SCALE FISHERIES

*In the Diana seascape, fisherfolk manage about 9 000 hectares of fisheries areas through WWF-supported natural resource management transfer contracts.*

Small-scale fishery management decisions are guided by the dina established by local communities, who are empowered by natural resource management transfer contracts. COBAs and other civil society organisations patrol and monitor LMMAs to ensure adherence to the dina and other small-scale fishing regulations. To this end, in Nosy Hara, WWF and Madagascar National Parks provided community organisations with smartphones, boat engines and data loggers. Consequently, the reported use of prohibited fishing gear in the park is very low. Ongoing efforts see WWF provide community members with technical support and training in, among other things, ecological and criminal threat monitoring, sustainable fishing practices, and cold chain development. Furthermore, through a parallel project aimed at expanding and consolidating Madagascar's marine protected areas network, WWF currently supports the revision and updating of the BATAN fisheries management plan in Ambaro Bay to protect its biologically sensitive shrimp fishing ground.



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## 4. EFFECTIVE ECOSYSTEM MANAGEMENT

*The communities in the Diana seascape have made strides in not only protecting coastal ecosystems, but also restoring them.*

In Ambaro Bay, WWF supports about 20 COBAs with 8 453 members who manage more than 21 of the RAMSAR site's 54 000 hectares of mangroves. With 162 community patrollers, or *polisin'ala* and *polisin-drano*, these COBAs' efforts have nearly halved illegal mangrove clearing between 2021 and 2023 and have contributed to restoring 6 640 ha of mangrove forests – 3 360 hectares shy of WWF-SWIO's 2050 goal for the seascape. The cooperation between FUB BATAN, COBAs and the *polisin'ala* has led to the successful prosecution of several dina offenders, particularly illegal fishermen and mangrove loggers.

WWF works to establish and renew natural resource management transfer contracts to support community-based natural resource management and to expand the network of managed mangrove forests in the seascape. Furthermore, WWF aims to establish, by 2025, a regional mangrove platform for improved collaboration between stakeholders, including local communities, CSOs, and public authorities.



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## 5. SOCIO-ECONOMIC RESILIENCE

*Poverty, exacerbated by a growing population and worsening climate conditions, are threatening the Diana seascape's mangrove forests.*

Mangrove forests serve as safeguards against flood and storm surge damages. They are also highly effective carbon sinks, and their continued loss could significantly reduce the climate change resilience of local coastal communities. Threats to these habitats include illegal logging – typically for the sale of timber or charcoal – and crop clearing. One way WWF works towards alleviating the pressures on mangrove resources is by strengthening and diversifying local livelihoods.

### THE SUSTAINABLE HANDICRAFT SECTOR

The raffia artisanal sector holds the most promise for diversifying livelihoods in the Diana seascape. Raffia, a plant fibre from the Raffia palm, is used by Ambaro Bay's craftspeople to make a variety of items, including baskets and mats, that are then sold at markets. In 2023, WWF collaborated with Ultramaïlle, a private sector partner focusing on textile products, and connected it with Ambaro Bay's local community-based cooperatives to produce raffia items that can be biologically certifiable and sold to a wider market for a higher price. WWF also worked with the Regional Office of Tourism and Handicraft to provide practical training to 91 craftswomen, of which 39 were certified and provided with equipment to process raw raffia products.



### COMMUNITY-LED ECOTOURISM

In 2023, WWF supported the launch of the Ankazomborona ecotourism site in Ambaro Bay. Managed by the Ankameva COBA, the site offers four walking circuits through its two conserved ecosystems (204 ha of tropical rainforest and 1 359 ha of mangrove forest) and provides locals with tourism-related job opportunities. WWF aims to establish the tourism infrastructure for another community-led ecotourism site, Ampasindava. Ecotourism in this coastal fishing village, near the Nosy Hara National Park, is projected to benefit about 20% of the 9 000 inhabitants. More than half of these benefactors will be women.

### VILLAGE SAVINGS AND LOANS ASSOCIATIONS

Since 2022, WWF has helped establish 87 **village savings and loans associations (VSLAs)** across the Diana seascape, with more than 2 000 households benefitting from these groups to date. WWF aims to meet the eagerness of the seascape's communities to establish and join VSLAs by matching its technical capacity to do so. VSLAs provide households with access to funds for, for example, financial support during fishery closures, or to invest in the development of new alternative sustainable income-generating activities. Aside from the raffia sector, such activities specific to the seascape include beekeeping and fish farming. In 2023, 150 households benefited from beekeeping training and equipment provision, and 91 households were trained in fish farming and equipped with Tilapia fry.

### MITAO FORECAST EARLY WARNING SYSTEM

Driven by climate change, more frequent and intense oceanic storms in the last five years have increasingly endangered the lives of local fisherfolk. To improve the safety and resilience of fishing communities, WWF supported the **Mitao Forecast Early Warning System (MEWS)** in Madagascar, including the Diana seascape. MEWS shares weather forecasts via a public notice board and provides local fisherfolk with enough information to safely decide when to go out to sea. The system, which is based on information from Windguru, an online weather forecasting service, has to date led to a 98% reduction in fishing fatalities relating to severe wind. This warning system has had an immensely positive impact on the lives of local fisherfolk and coastal communities.

# UPCOMING AND MAJOR PROJECTS

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2024

*Contributing to the ecological significance of the Northern Mozambique Channel, the Diana seascape is home to some of the most abundant and diverse marine ecosystems. Simultaneously, it is also equipped with a legal system that prioritises community-led natural resource management. As such, it comes as no surprise that the seascape is the focal point of many large-scale projects, including three prominent projects in the Western Indian Ocean.*

### Mangroves for Community and Climate (Madagascar)

**Budget:** US\$4.5 million

**Project duration:**  
December 2020 – December 2025

#### Key objectives:

- Restore mangrove forests and strengthen management by local communities by building capacity, securing laws for good mangrove management and facilitating stakeholder networking
- Build climate resilience of local communities through climate warning systems, access to basic social services and promoting climate-smart value-chains.

**Key funder:** Bezos Earth Fund

### Coastal Community-based Conservation in Indonesia and the Western Indian Ocean (global initiative)

**Budget:** US\$200 000

**Project duration:**  
July 2021 – June 2024

#### Key objectives:

- Support local resource management groups, including LMMAs, MIHARI and FUP BATAN
- Promote village savings and loan associations and livelihood diversification
- Facilitate project coordination and learning exchange via multi-stakeholder meetings and platforms.

**Key funders:** Margaret A. Cargill Philanthropies (MACP)

### Sustainable use of mangroves in the Western Indian Ocean Region

**Budget:** US\$2 million

**Project duration:**  
April 2023 – April 2026

#### Key objectives:

- Improve economic stability by supporting sustainable livelihoods and priority value chains
- Support community-based mangrove management plans and the implementing organisations
- Establish a financing mechanism to drive sustainability in conservation activities.

**Key funders:** Bengo



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