CIFOR 25th ANNIVERSARY FORESTS MATTER

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# Restoring Madagascar's mangroves

Community-led conservation makes for multiple benefits

## Background

Madagascar's mangroves support globally important marine biodiversity, help mitigate climate change by sequestering carbon dioxide, and underpin the traditional livelihoods and fisheries of some of the world's most vulnerable coastal communities.

But they're being lost at accelerating rates, largely because of unregulated harvesting for timber and charcoal, which is sold at local and regional markets.

Madagascar's coastal communities – the primary users of mangroves – stand to lose much from the loss of these ecosystems. And they're already noticing the impacts. "Where mangroves have been deforested, seawater invades the rice fields during spring tides," describes Mr Francois, Treasurer of the Local Association of Mamisoa in Ambaro-Ambanja Bay, which boasts the country's largest mangrove ecosystem. "Where the mangrove forest is maintained, this phenomenon does not occur."

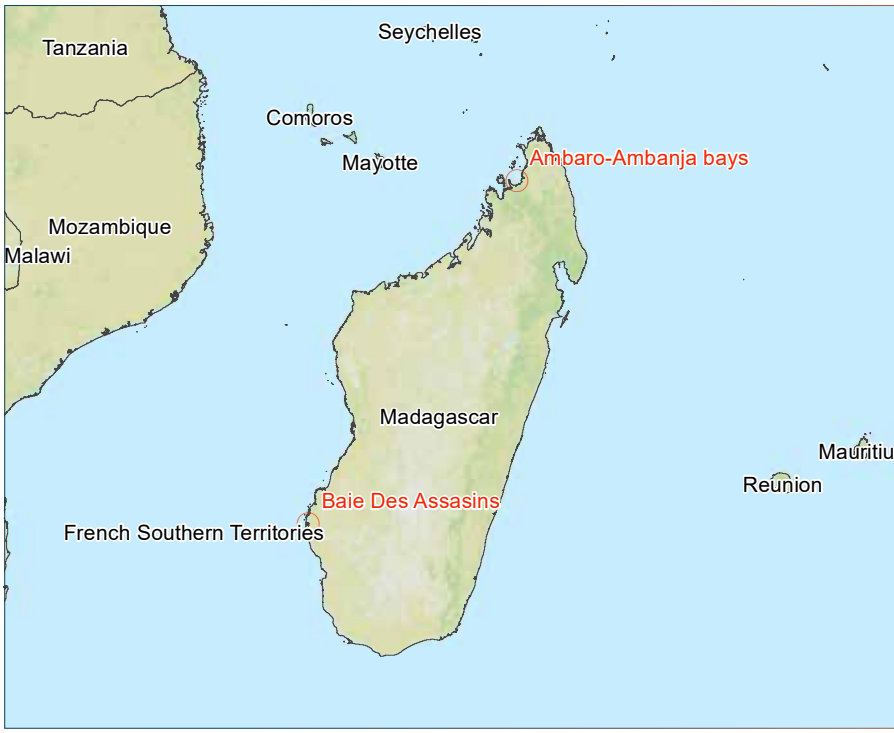


**Figure 1. Mangrove rehabilitation sites in the North and Southwest.**

Serge Anicet, who is a security guard for the Local Association of Miezaka in the same area, adds that his community is also struggling to find building materials, as they are running out of harvestable mangrove wood. Dan Paul, who is a security guard for the neighbouring Local Association of Mara Miasa, says he has noticed a decline in shrimp and fish stocks where mangroves are degraded.

As experts in their local environments, community members are also best-placed to lead successful conservation initiatives, says Lalao Aigrette of Blue Ventures, an NGO that develops locally-led approaches to marine conservation. So in 2011, her organisation initiated its 'Blue Forests' program, supporting community-led mangrove management to protect coastal ecosystems and livelihoods through reforestation and more sustainable harvesting practices.

The program focuses on two areas: the aforementioned Ambaro-Ambanja Bay, which is located in the northwest of the island; and Baie des Assassins, in the island's southwest, which has a comparatively modest number of mangroves and is located within the Velondriake locally-managed marine area (LMMA).

# Perspectives on success

Since beginning reforestation activities in 2014, community members from the ten villages surrounding the Baie des Assassins have planted 35 hectares of mangrove forest, and their counterparts in Ambaro-Ambanja have planted 57.4 hectares – an impressive feat that demonstrates their commitment to reforestation and sustainable management.

Participants planted the three varieties of mangrove that community members tend to target for harvesting, plus a different variety to ensure the diversity and resilience of the forests. Results from regular monitoring have shown a high average survival rate of the planted seedlings, with 79% in the southwest and 89% in the northwest.

Community members attribute these achievements to strong awareness-raising, good communication and negotiation, sound preparation, and competent technicians to ensure the varieties are planted in appropriate places.

Participation has a gendered slant. In Baie des Assassins, women represent the majority – 73% – of those involved in the reforestation activities because in the southwestern Vezo culture, men consider that tree planting is women's work and beneath them. This belief is not shared in the Sakalava culture in the north-west of the island, so in Ambaro-Ambanja, around 48% of participants in tree-planting are men.

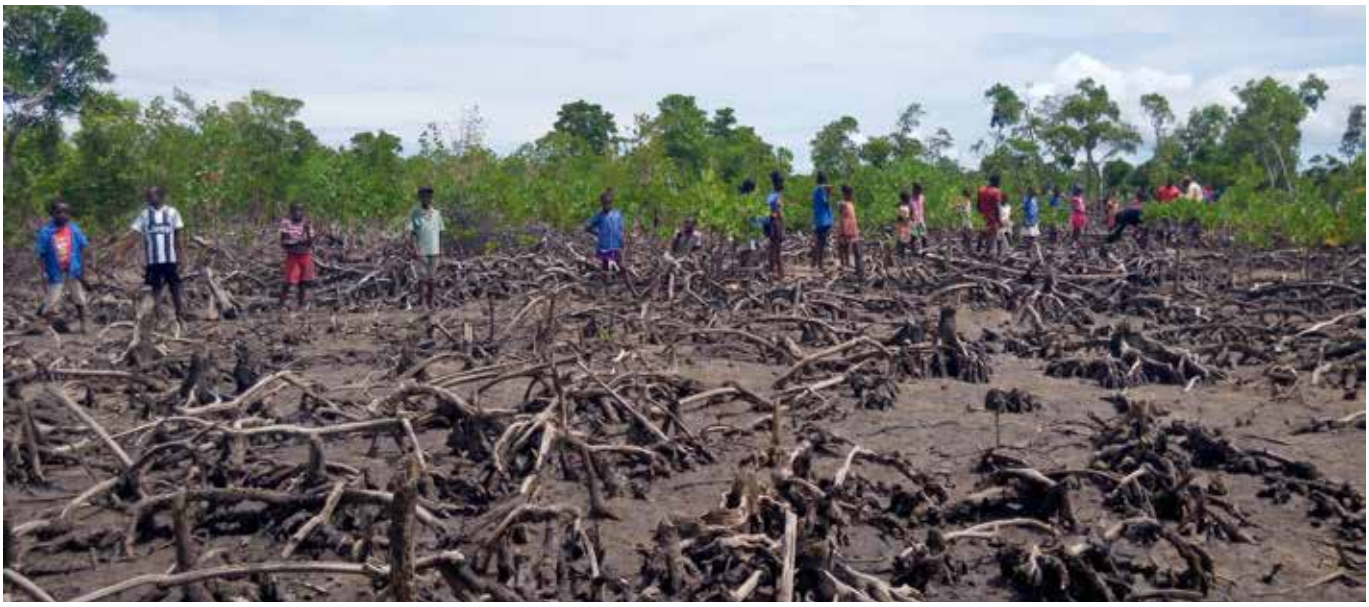

**Photo 1. Mangrove replanting by schools in Ambanja, Northwest Madagascar.**

# Challenges

Initially, most community members did not believe that mangroves needed to be actively reforested, and presumed they would simply recuperate naturally. So, Blue Ventures organised an exchange visit to a site where mangroves have been restored, and an experience sharing during the visit. They also involved community members in monitoring of reforested areas to observe the success rates of planted mangroves.

Many community members also hoped to be compensated monetarily for planting mangroves. Blue Ventures' approach, however, is to reinforce communities' traditional rights to use mangroves, which carries along with it the responsibility to manage, protect and reforest where necessary, says Aigrette. So, the organisation worked to resolve the issue through awareness-raising about the long-term benefits of mangrove conservation and restoration, particularly in terms of maintaining healthy fisheries, which coastal communities rely on for food and livelihoods.

The organisation also negotiated with communities to provide other forms of compensation. In Baie des Assassins, each village was consulted about what kind of strategy would increase their motivation for mangrove reforestation. The ten villages all came up with the same idea: a big communal meal to be provided after each reforestation event. Since these have been provided, motivation is high and involvement consistent. In Ambaro-Ambanja, a dedicated grant allowed Blue Forests to offer educational materials to the village schools in exchange for communities' participation in mangrove reforestation events, which motivated villagers to plant over 57 hectares in under a year.

Another challenge, for which no solution has yet been found, is the threat that grazing animals pose to the mangrove seedlings. Traditionally, goats and zebu (humped cattle) are allowed to wander and graze wherever they want, says Aigrette, and at low tide they can access most of the areas where mangroves are planted. Attempts have been made to incorporate a cattle owners' penalty into the local regulations, but so far there is little community support for this.

> **"Where mangroves have been deforested, seawater invades the rice fields during spring tides. Where the mangrove forest is maintained, this phenomenon does not occur."**
>
> – Mr Francois
> Treasurer of the Local Association of Mamisoa, Ambaro-Ambanja Bay, North-West Madagascar

**Photo 2. Replanting mangroves during Mangrove Day in Befandefa, Velondriake.**

# Scaling up?

Given mangroves' ability to sequester a high volume of carbon, these projects offer high potential for carbon financing, Aigrette says. If the value of carbon in international markets can be realized and transferred to the people whose livelihoods depend on the exploitation of mangroves, it could incentivize and finance community-led mangrove management, and help safeguard the fisheries that mangroves support, she says.

To make good and equitable use of any higher financial flows to these projects, secure ownership and management rights are key. Currently in Madagascar, communities have traditional rights to use the mangroves. Now, Blue Ventures is supporting efforts at regional and national government levels to officially transfer management rights to communities, which includes helping communities to prepare mangrove management plans that require protection, sustainable use and reforestation. It has also begun to expand its activities to other locations, and has commenced work at three more sites on the island.

Lessons learned at Baie des Assassins and Ambaro-Ambanja on mangrove reforestation are regularly shared with community members at the new sites through events and workshops. "We try to reproduce the elements that have led to success, like the communal meals to reward communities for replanting," says Aigrette, "and we collaborate to find solutions to challenges."

Back in Ambaro-Ambanja Bay, plenty of planting work still remains to be done, says Anicet. Francois adds that vast areas of mangrove forest in the area remain degraded, and only a small fraction has been restored to date. "So I want to encourage everyone in the community to actively participate in the mangrove restoration," he says.

Story was developed by Esther Mwangi (CIFOR) and Monica Evans
Photos by Blueventures

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