

# In Madagascar, fishermen plant mangroves for the future

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Volunteers replant dozens of mangrove propagules or shoots in a field near the village of Amboanio in the Melaky Region in Madagascar, part of a WWF programme to restore the mangroves.

Hunched over the soil, Malagasy villagers work feverishly—deft fingers

planting stalks of mangrove to replace the swathes destroyed for firewood and building material.

In just two decades, Madagascar lost about a fifth of its mangrove forest area, exposing its coastline to the ocean's ravages and shrinking the nursery grounds of crabs and shrimp—two key exports.

With sea levels forecast to rise further due to global warming, coastal villagers are rushing to try and undo the damage, with the help of conservation group WWF.

"The ocean keeps rising and rising, and it takes everything with it," lamented 36-year-old crab fisherman Clement Joseph Rabenandrasana, who travelled several kilometres (miles) from his home in Beanjavilo to Amboanio on the island's west coast to volunteer in a two-day reforestation drive.

Amboanio is a hamlet of about 50 people in the Melaky region, heavily dependent on aquaculture.

"The mangrove protects us," said Rabenandrasana, while conceding that: "I used to harvest mangrove for money" to augment a humble crabbing income which averages about 50-80 euros (\$60-96) a month.

Rabenandrasana and others on the Indian Ocean island used to sell mangrove wood for construction beams, and used it themselves for cooking and heating, and to construct shelters.

"We realised too late the importance of this ecosystem," said Eric Ramanitra of WWF, driving the project to sensitise locals to the mangrove's indispensable role.



Clement Joseph Rabenabdreasana, 36, catches crabs in a mangrove near the village of Beanjavilo in western Madagascar, which along with shrimp are two key exports

### **'I didn't know'**

Found in the world's tropical and subtropical regions in more than 120 countries, mangroves serve not only as fish nurseries, but also filter water and shield coastal areas from the force of waves whipped up by cyclones.

"I didn't know that fish lay their eggs in the mangrove," said Samuel Razafimamonjy, 59, another volunteer.

Mangroves also absorb and store large amounts of carbon dioxide—one of the greenhouse gases driving planet warming.

The WWF project helps people replant the [mangrove forests](#) and to take charge of managing and protecting the valuable resource in a country rife with political turmoil and corruption.

"Today, there are dedicated zones where the local community has to give consent for harvesting, and a limit is imposed on the size of plants" that can be taken, said Ramanitra.

But the WWF also had to find ways to compensate for mangrove sales that locals such as Rabenandrasana willingly sacrificed.

Rabenandrasana nets crabs from a small boat in canals among the mangroves near his home village.

He has now learnt to take only those larger than 10 centimetres (four inches), and throw back juveniles and egg-carrying females so as to counter overfishing.





Madagascar, which hosts about two percent of the world's mangroves, has lost a fifth of them between 1990 and 2010, a study found

Bigger crabs are sold for a better price, and Rabenandrasana has seen his take quadruple while helping preserve the crab stock for the future.

## **Extreme climate**

Research published in the journal *Remote Sensing* in 2016 said Madagascar hosts about two percent of the world's mangroves, with eight endemic species.

Mangrove plants can range from small shrubs to tall trees tens of metres

high.

Satellite maps revealed that the island lost about 21 percent, or some 57,350 hectares (141,655 acres) of mangrove between 1990 and 2010, the study found.

What remains is threatened by [sea level](#) rise, and massive sand dumps from rivers upstream disrupting the fragile balance of fresh and salt water the ecosystem needs to flourish.

With so much protection from the deeply-anchored mangrove roots lost already, river water lifts sand from the banks and transports it all the way to the ocean via the mangrove in a visible, red stream of silt.

There is reason for concern: Madagascar was already one of 15 countries in the world most affected by extreme climate events between 1997 and 2016, according to environmental watchdog Germanwatch.

Globally, mangroves are estimated to be declining at a rate of about one- to two percent per year, said the 2016 study.

The main causes are conversion of [mangrove](#) forests for purposes of agriculture or aquaculture, overextraction of wood, and upstream erosion.

Natural phenomena such as tropical storms and rising ocean temperatures and sea levels also contributed, said the study, "the impacts of which are expected to continue to increase based on current climate change projections."

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