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Making Money Local: Can Protected Areas Deliver Both Economic Benefits and Conservation Objectives?



2.22 Madagascar: Velondriake Paysage Harmonieux Protégé

By implementing sustainable use agreements for octopus fisheries, Malagasy fishers have increased average weight of octopus landed and doubled average village income from octopus fishing.



Andavadoaka, Velondriake Paysage Harmonieux Protégé, Madagascar © Louise Jasper, Blue Ventures

Ecosystem service: Fisheries

Protected area: Velondriake Paysage Harmonieux Protégé, Size: 683 km², WDPA ID: 555512161, IUCN management category: V

Adjusted net national income per capita (US\$): 405

Conservation value

Velondriake, meaning ‘to live with the sea’ in the local Malagasy language, supports one of the largest and most biologically diverse coral reef systems in the western Indian Ocean.

Description

Most of the approximately 7,500 people living in Velondriake Locally Managed Marine Area (LMMA) are Vezo, a semi-nomadic people heavily dependent on the marine environment for food, transport, income and cultural identity.¹

The small-scale fisheries sector employs 87% of the adult population, generates an average of 82% of all household income, and provides the sole protein source in 99% of all household meals.²

Since 2004, local fishers have been managing octopus fisheries through contemporary adaptation of customary laws known as *dina*.³ The LMMA’s management plan includes strategic, short-term bans on fishing in specific reef areas (rotational temporary closures) allowing the population and the reef ecosystem to regenerate.⁴ As a fast-growing species, bans from between two and seven months across one fifth of a village’s fishing area, allow octopus populations to recover. Results from this management are impressive. An analysis in 2015 of the impacts on fisheries of 36 closures within Velondriake over eight years showed that the average weight of octopus landed

per fisher per day increased by 87%, from 2.4 kg in the month prior to the closure to, 4.4 kg in the month after a reopening.⁵ In the same timeframe, total landings for each village increased by up to 718% and average village-level income from octopus fishing doubled, from US\$597 to US\$1,407.⁶ The average return on investment was 81% (i.e. US\$1 worth of octopus left in closure sites grew to US\$1.81 by the end of the closure period).⁷ The opening period is also an important source of income for women because it happens during neap tide, which means that women can catch octopus by gleaning in shallow water (men usually fish for octopus in deeper water using boats). The amount of fish harvested in closure sites generates more revenue than the amount of fish that would be harvested assuming continued open fishing at that site, so the opportunity costs of foregone catch are covered by increased profits following temporary closures.⁸ Involvement in these closures has also led to non-fisheries benefits including community interest in broader resource management, community member empowerment through involvement in decision making and improved local governance.⁹

Tangible benefits

Increased production from fisheries: 87% increase in average weight of octopus landed per fisher per day in the month after the reopening of a fishing closure, doubling average village income from octopus fishing.

References

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- 6 *Ibid.*
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