

# The success story of the co-management of a sea-cucumber fishery (New Caledonia, South Pacific)

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Recently sea cucumber exploitation has significantly increased in New Caledonia (South Pacific). The sandfish (*Holothuria scabra*) fishery located in a 26 km<sup>2</sup> seagrass flat in the north-west coast of New Caledonia has been targeted for 15 years by a fisher community. They detected a decrease in commercial-sized sandfish (20 cm) in recent years and established a temporary closure in 2008. As part as the COGERON project, scientists and public authorities implemented a cost-effective participative monitoring program before the reopening of the fishery in behalf of the local community. Satellite imagery was used to determine a sampling design based on the habitats of the fishing areas. In situ census of sandfish conducted jointly by scientists, managers and fishers were first performed in June 2008. The biomass of the whole stock and of individuals larger than 20 cm were estimated by statistical inference at 116 t (95% confidence interval (CI): 30 t) and 22 t (95% CI: 9 t) respectively. A precautionary 9 t total admissible catch (TAC) was enforced by fishers following scientific advices and given the statistical uncertainty of biomass estimates. Fishers also determined fishing and sale days, monitored catches with Province managers, and closed again the fishery when the TAC was reached two months later. This co-management cycle has been repeated in September 2008, July 2009, November 2009, May 2010, and February 2011 following an adaptive approach. Fishers also progressively implemented additional informal limitations (i.e., fishing period restricted to three days per month, maximum catch level per fisher and per fishing period, limited number of annual fishing licences) to share and to sustain economical benefits. They now feel that this co-management system is effective: the biomass of commercial-sized sandfish has indeed doubled from 2008 to 2010 while the activity has become much more profitable.

This success story shows the need for implementing fishing rules proposed and endorsed by local fishers and supported by government agents (i.e., Fisheries Departments) and specific scientific inputs. The local key factors for success were 1) the strong social cohesion among fisherfolks, 2) the simplicity of the fishing system (i.e., a single slow-moving benthic species exported overseas), and 3) the restricted geographical extent of the coastal fishing area. These governance and contextual issues must be carefully considered should this co-management system be up-scaled and/or transferred to other sea cucumber fisheries. A 13-minute documentary was produced (in French) to share and discuss this experience with other fisher communities, governmental and non governmental agencies, and scientists ([www.ird.fr/la-mediatheque/videos-en-ligne-canal-ird/dans-un-esprit-de-cogestion](http://www.ird.fr/la-mediatheque/videos-en-ligne-canal-ird/dans-un-esprit-de-cogestion)).