Protecting marine areas more effectively

Under the impetus of major international treaties, marine protected areas have multiplied over the last twenty years with the aim of conserving marine ecosystems. But without the backing of all stakeholders, who sometimes have divergent interests, the effectiveness of these areas is compromised.



Fishing boat in the Mediterranean, Alboran Marine Protected Area, Morocco.

The zoning of marine protected areas (MPAs) is decided by state institutions or major international NGOs on the basis of criteria for the protection of species and their habitat areas. There is little involvement of local authorities, economic stakeholders or associations, which leads to conflicts and difficulties in implementing MPA management plans.

The case of the Alboran marine protected area in Morocco is a prime example of this. In 2015, a study involving the protected area's management services and local small-scale fishermen led to the installation of small reefs in the MPA to prevent the passage of trawlers, which cause a great deal of damage. However, no sooner than they were installed, these lightweight structures were moved by trawlers, as a ministerial decree had authorised fishing in the area.

••• In addition to deciding on zones for marine protected areas, there is a need to create forums for consultation to ensure that all stakeholders are on board •••

In this example, small-scale fishing and trawler fishing, with divergent interests and working with different government departments, were in competition with each other, which had an impact on the effectiveness of the MPA. This is a recurring problem, not least because the managers of these protected areas are unfamiliar with the fishing territories and have no grasp of the social conflicts in the different countries. As a result, only a tiny proportion of the 10% of marine areas that should be protected internationally are actually protected.

To improve effectiveness, it would be necessary to involve all the economic stakeholders, to take account of the diverse range of interests, to adopt a multi-sectoral approach and to put in place a compensation "By studying the Alboran marine protected area (MPA), the Integrated Coastal Management in the Moroccan Mediterranean project (Gilmar) has highlighted the complex nature of integrated coastal management in the Moroccan Mediterranean, involving fishermen, farmers and tourism stakeholders. The team has produced scientific knowledge, trained students and managers, and used the results of its research to support decision-making. Its collaboration with public, professional and voluntary bodies lays the foundations for a new approach to MPA projects in Morocco."

Hicham Masski, National Institute for Fisheries Research, Morocco Mohamed Naji, Hassan II Institute of Agronomy and Veterinary Medicine, Morocco



Fishing nets drying on Aouchtam Beach, Alboran Marine Protected Area, Morocco.

policy when adaptation is not possible, which is often the case for certain categories of fishing. In the absence of support, monitoring and consultation, these fisheries come into conflict with each other and compromise the success of the conservation project.

Hence the need to develop alternative management scenarios and create forums for dialogue to generate consensus, even if this means redefining the zoning and structural diagnosis of MPAs.

PARTNERS

National Institute for Fisheries Research, Morocco

Hassan II Institute of Agronomy and Veterinary Medicine, Morocco

OUR SHARED OCEAN

Science in the Global South for a Sustainable World

IRD Éditions Collection Grands enjeux

Editorial management

Marie-Lise Sabrié

Editorial coordination

Corinne Lavagne Jasmine Portal-Cabanel

Iconographic research

Daina Rechner

Written by

Viviane Thivent Marie-Lise Sabrié

Design and page layout

Charlotte Devanz

Traduction

Fluent Planet

Proofreading

Anne Causse

Distribution coordination

Christel Bec

Cover photo

Children fishing on a reef flat in Reao, French Polynesia. © IRD/S. Andréfouët

This open-access publication is available to the public under the terms of the Creative Commons CC BY-NC-ND 4.0 license, which can be viewed at https://creativecommons.org/licenses/by-nc-nd/4.0/deed.fr. It authorizes any dissemination of the original work in its entirety, provided that the authors and publishers are mentioned and that a link to the CC By-NC-ND 4.0 license is included. No modification or commercial use is allowed.



© IRD, 2025

ISBN Papier: 978-2-7099-3070-3 ISBN PDF: 978-2-7099-3071-0 ISBN Open/epub: 978-2-7099-3072-7

LIST OF SCIENTIFIC CONTRIBUTORS

Evolving environments

El Niño in the spotlight

Jérôme Vialard, physical oceanographer and climatologist, UMR LOCEAN

PIRATA, the observatory in the Tropical Atlantic

Bernard Bourlès, physical oceanographer, UAR IMAGO

Extreme waves and tropical cyclones

Christophe Menkes, climatologist, UMR ENTROPIE Jérôme Lefèvre, ecologist, UMR ENTROPIE

The variability of upwellings

Vincent Échevin, physical oceanographer, UMR LOCEAN

Mapping the tsunami hazard

Mansour Ioualalen, physicist, UMR Géoazur

Understanding the complexity of Southeast Asia's climate

Marine Herrmann, physical oceanographer, UMR LEGOS

The unsuspected variability of lagoons

Thomas Stieglitz, coastal ecohydrologist, UMR CEREGE

Resilient Mexican mangroves

Johanna Jupin, Geochemist, UMR LOCEAN

An oasis in an ocean desert

Sophie Bonnet, oceanographer and biogeochemist, UMR MIO Cécile Guieu, biogeochemist, UMR LOV

Resilient coral in New Caledonia

Riccardo Rodolfo-Metalpa, ecophysiologist, UMR ENTROPIE

Sargassum taking over

Julien Jouanno, physical oceanographer, UMR LEGOS

Soot in the water

Xavier Mari, oceanographer and biogeochemist, UMR MIO Marc Tedetti, oceanographer and biogeochemist, UMR MIO

Plastics: from the rivers to the ocean

Lisa Weiss, physical oceanographer, UMR LEGOS, UMR LOPS

The fate of river water in the ocean

Nadia Ayoub, physical oceanographer, UMR LEGOS

On the trail of ocean plastic

Christophe Maes, physical oceanographer, UMR LOPS

Our friends from the deep

Leandro Nole-Eduardo, ecologist, UMR MARBEC

From micronekton to tuna

Christophe Menkès, climatologist, UMR ENTROPIE Anne Lebourges-Dhaussy, ecosystem acoustician, UMR LEMAR

The end of the reign of the anchovy?

Arnaud Bertrand, ecologist, UMR MARBEC

Societies facing the ocean

Senegal: the emergence of a resilient fishing industry

Ndickou Gaye, geographer, Cheikh Anta Diop University, Dakar and UMI SOURCE

The future of the Vezo

Francis Veriza, geographer, University of Toliara and UMR Passages

Alexandria, how not to adapt?

Sylvie Fanchette, geographer, UMR CESSMA

Is the sinking of the Mekong Delta inevitable?

Nicolas Gratiot, geophysicist, UMR IGE

Reducing vulnerability in the city of Douala

Raphaël Onguene, physical oceanographer, University of Douala

Food security in Polynesia

Marianna Cavallo, ecologist, UMR LEMAR

The role of women in fishing

Ariadna Burgos, ethnoecologist, UMR PALOC

Nokoué, a lagoon under pressure

Alexis Chaigneau, physical oceanographer, UMR LEGOS Yves Morel, physical oceanographer, UMR LEGOS Victor Okpeitcha, physical oceanographer, Prodata SARL Zacharie Sohou, oceanographer, fisherman and biologist, IRHOB and UAC Thomas Stieglitz, coastal ecohydrologist, UMR CEREGE

Towards sustainable resources

A plankton model

Olivier Maury, oceanologist, UMR MARBEC

Tropical tuna under surveillance

Daniel Gaertner, biologist, UMR MARBEC

Towards more sustainable baits

Pascal Bach, ecologist, UMR MARBEC

The birds' share

Philippe Cury, oceanographer and biologist, UMR MARBEC

Artisanal fishing on an industrial level

Arnaud Bertrand, ecologist, UMR MARBEC

Food biodiversity

Fany Sardenne, ecologist, UMR LEMAR

Aquaculture for better nutrition

Maria Darias, biologist, UMR MARBEC

Gathering data by sailboat

Éric Machu, biogeochemist, UMR LEGOS

Swimming over underwater habitats

Rodolphe Devillers, geographer, UMR Espace-Dev Priscilla Dupont, biologist, UMR Espace-Dev

Shining a light on invisible biodiversity

Laurent Vigliola, ecologist, UMR ENTROPIE

Using artificial intelligence to measure biodiversity

Laurent Vigliola, ecologist, UMR ENTROPIE

The AI that thought it was a seabird

Sophie Lanco, ecologist, UMR MARBEC

Bacteria on the back of plastic

Thierry Bouvier, ecologist, UMR MARBEC

Towards home-made electricity?

Pierre-Pol Liebgott, biochemist and ecologist, UMR MIO

The Comoros in need of sand

Gilbert David, geographer, UMR Espace-Dev Nourddine Mirhani, geographer, University of Comoros

Let the mangroves grow back on their own

Marie-Christine Cormier-Salem, geographer, UMR PALOC

Shared knowledge

The sound of silence

Timothée Brochier, ocean modeller, UMI UMMISCO Nicolas Puig, anthropologist, UMR Urmis

Changing our approach to corals

Pascale Chabanet, ecologist, UMR ENTROPIE Lola Massé, biologist, UMR ENTROPIE

Changing estuary water flows

Stéphanie Duvail, geographer, UMR PALOC

Draw me the sea

Élodie Fache, anthropologist, UMR SENS Stéphanie Carrière, ethnoecologist, UMR SENS, Catherine Sabinot, anthropologist, UMR Espace-Dev

Towards a sustainable mangrove crab industry in Madagascar

Jennifer Beckensteiner, fisheries expert, UMR AMURE Marc Léopold, economist, UMR AMURE, UMR ENTROPIE

Managing milky waters

François Colas, physical oceanographer, UMR LOPS Jonathan Flye-Sainte-Marie, ecologist, UMR LEMAR Alice Pietri, physical oceanographer, UMR LOCEAN

Marine heatwave alert

Sophie Cravatte, physical oceanographer, UMR LEGOS

A little-known but coveted deep-sea

Valelia Muni Toke, anthropologist, UMR SeDyl Puerre-Yves Le Meur, anthropologist, UMR Sens

Towards a new ocean governance

The Seychelles: towards a truly sustainable blue economy?

Patrice Guillotreau, economist, UMR MARBEC

Regulations based on local realities

Catherine Sabinot, anthropologist, UMR Espace-Dev Marc Léopold, economist, UMR AMURE, UMR ENTROPIE

The Mediterranean Sea as a legal entity

Victor David, environmental lawyer, UMR IMBE

Gabon proactive in protecting biodiversity

François Le Loc'h, ecologist, UMR LEMAR

Making assessments for more effective steering

Adrien Comte, economist, UMR LEMAR

Al at the service of marine environmental law

Marie Bonnin, environmental lawyer, UMR LEMAR

Protecting marine areas more effectively

Tarik Dahou, socioanthropologist, UMR PALOC

When science emancipates people

Latifa Pelage, ecologist, UMR MARBEC