FISHERY

SECTORAL SHEET

This publication was funded by the European Union. Its contents are the sole responsibility of the authors) and do not necessarily reflect the views of the European Union.

MSP4BIO

UCA Universidad de Cádiz

This sectoral sheet is part of a series covering five key sectors of the MSP4BIO Project: **Aquaculture, Fisheries, Marine Non-Living Resources, Renewable Energy, and Tourism.**

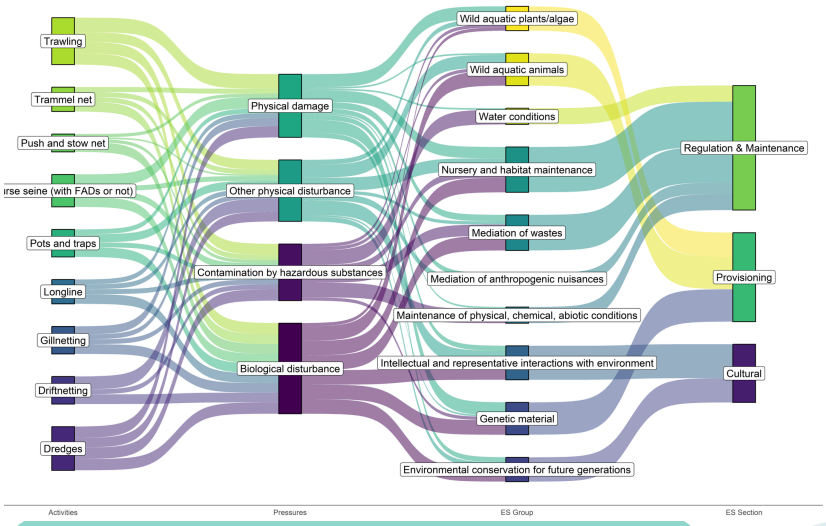
It guides MPA managers in addressing activities through an integrated approach and helps blue economy stakeholders understand sector impacts on ecosystem services.
The sheets outline Good Management Practices to **mitigate impacts and promote sustainable sector development.**

Designed as a resource for policymakers, they support trade-off analysis and address user conflicts.

Sector characteristics

Area-based marine conservation

Long-term data show that effective conservation in Marine Protected Areas (MPAs) can stabilize or boost fishing yields. However, sustainable fisheries alone may not meet ecological standards required for MPAs. Fishing operations in MPAs must prioritize nature conservation, aligning practices with conservation goals. This document outlines key ecosystem services, associated pressures, and successful management practices to guide decision-making.

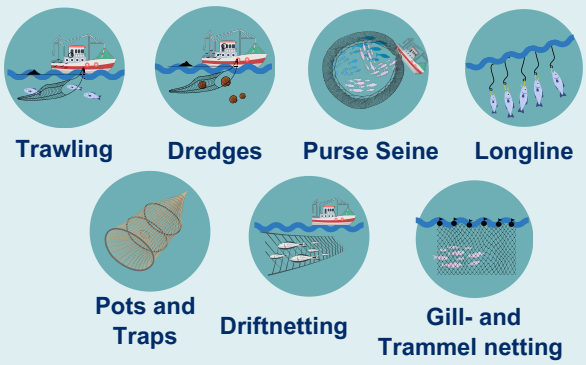


The Sankey Chart highlights how activities, based on the MSFD, exert pressures on marine ecosystems, impacting key services such as wild aquatic animals, nursery and habitat maintenance and cultural services. Sustainable fishing practices are imperative to protect these services and ensure the resilience of marine life and the Blue Economy sectors.

Ecosystem Services main dependencies:

- **Wild aquatic animals for nutrition**
- **Lifecycle maintenance, habitat and gene pool protection (i.e. nursery)**
- **Pest and disease control (i.e. invasive species)**

Activities



GOOD MANAGEMENT PRACTICES

The graphs below highlight key Good Management Practices (GMP) for planning various activities associated with the fishery sector, with examples in and near protected areas. Brief descriptions are included. For more details and sources please consult the deliverable.

Trawling and Dredging

- **Mapping habitats: for identification of sensitive habitats and fauna, for more sustainability and rentability of fishery activities.**
- **Vessel mapping updated cartography to enable vessels to avoid areas of VME (Vulnerable Marine Ecosystems), proximity alert system.**
- **Target species restrictions, e.g. ITQ (individual transferable quotes) for deepwater species New Zealand.**
- **Fishers are required to notify authorities in advance of their fishing trip to determine if an observer is required.**
- **Establishment of benthic protection areas including measures such as: I) ITQs and II) observation and electronic net monitoring system, e.g. a season-long areas closure and yearly adjustments based on data from previous year.**

Reduction of bycatch:

- **For bird bycatch reduction, bird-scaring lines or tori lines can be introduced as a requirement of the license. e.g. License for deep-sea trawl fishery South Africa.**
- **Once the catches are a relevant volume or number of ETP (Endangered, Threatened, Protected) species or VME habitat forming species, the vessel will move a minimum of safety distance of the ETP and VME before continuing the activity.**
- **Use of new devices, such as semi-flexible exclusion grid to reduce bycatch of cetaceans, turtles and elasmobranchs, e.g. Australia reduced dolphin bycatch by around 50 % using exclusion grids.**

Temporal Approaches

- **Closed areas or seasons can be enforced to protect fish populations in vulnerable conditions, e.g. Indonesia and Estonia - spatial restrictions in mouths of streams or rivers.**
- **Changes in permitted activities multiple times per year, at fixed rates, such as fishing being allowed on public holidays and weekends, e.g. MPA in Spain with diverging permissions for commercial and recreational fishing within a week**
- **Irregular closures for periodic harvesting on a non-predetermined schedule (closures may be from several months to years, but opening date not set at point of closure).**

LEGEND

- ORIENTED TOWARDS LIMITING THE ACTIVITY
- ORIENTED TO MANAGEMENT PROCESS
- GOOD PRACTICES FOR MPAS
- ORIENTED TO THE ACTIVITY DEVELOPMENT
- ORIENTED TO THE SOCIO ECOSYSTEM
- GOOD PRACTICES FOR MSP

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Cultural and Community Approaches

- Involvement of local communities in participatory management of important fishery community, e.g. Ecuador and Peru restoration and monitoring of ecosystems in the hands of communities
- Cultural ties or residency as criteria for fishing permissions, e.g. In Cambodia, only residents can fish inside MPA
- Fishing activity inside a MPA can require membership of fishing cooperative, e.g. In MPA in Mexico, exclusive commercial fisheries access for cooperative members
- Negotiations between professional and recreational fishers for resource use.
- MPA fisheries management recognizing local wisdom, traditional knowledge, and customary management of the area, e.g. MPA in eastern Indonesia with customary fisheries management that have been used for centuries and managed by local communities.
- In some areas industrial fishing is not allowed.

Sustainable Approaches

- To protect the environment, certain fishing practices, like lobster traps, should be timely restricted, e.g. recovering traps within a 6-week timeframe, so seagrass integrity remains intact.
- Creation of physical barriers to hinder or impede illegal fishing activities, e.g. artistic sculptures on the seafloor.
- Large areas of sensitive habitats are closed to different levels of fishing, e.g. all bottom contact gear, all mobile bottom contact gear, no contact with bottom permitted.
- Gear marking can be implemented to facilitate an effective tracking of fishing gear and minimize loss of gear therefore reducing entanglement, e.g. In Atlantic Canada and Quebec gear marking is required for some fishing gears.
- Minimum size/weight restrictions, e.g. in Fiji, fish size limits are defined locally through fishing net mesh sizes.
- Shift from mobile to static gear can reduce destructive impact.

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