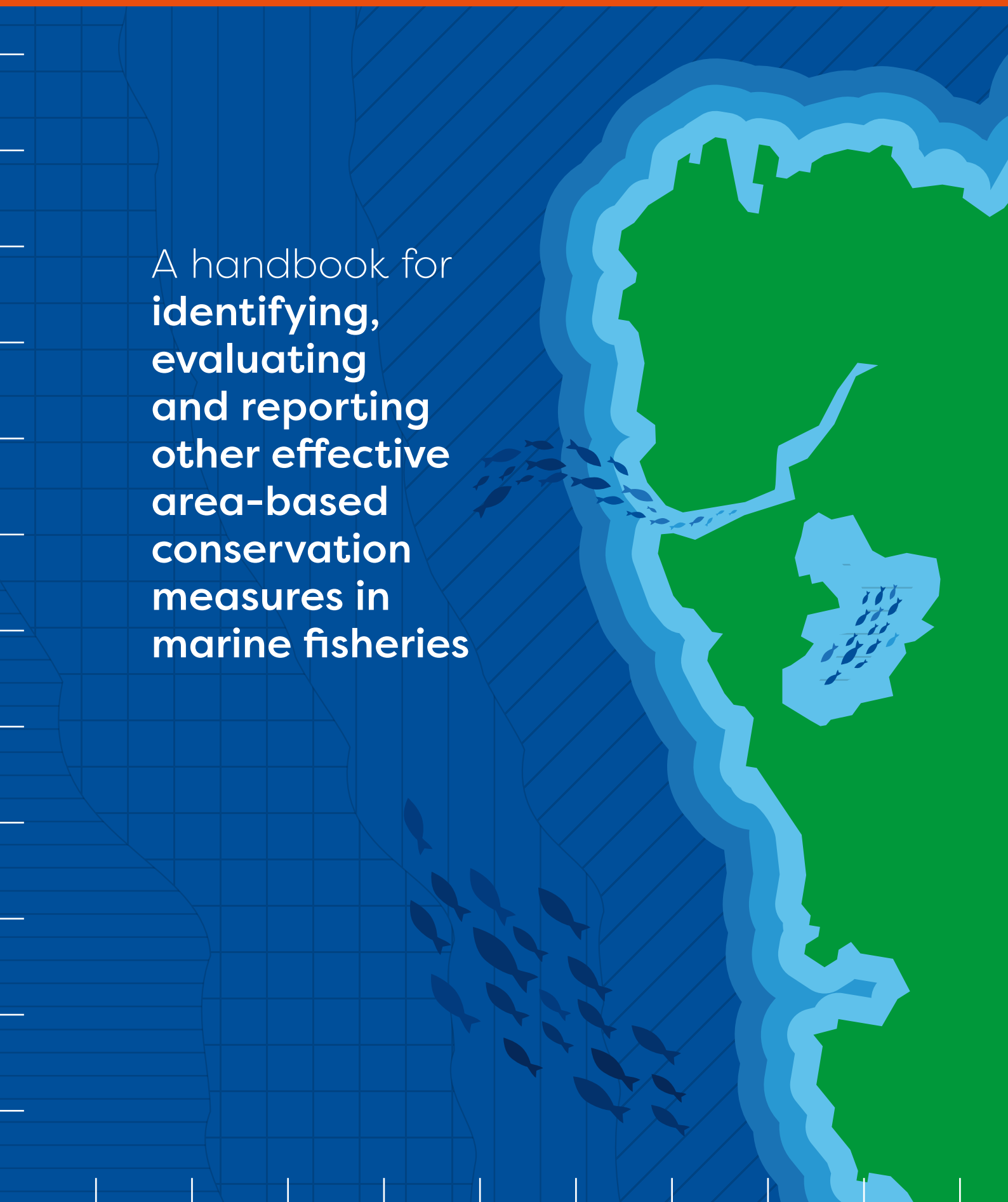
Food and Agriculture Organization of the United Nations

FISHERIES OECMs

A handbook for **identifying, evaluating and reporting other effective area-based conservation measures in marine fisheries**



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Food and Agriculture Organization of the United Nations
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Preparation of this document

This handbook for identifying, evaluating and reporting other effective area-based conservation measures in marine fisheries builds on a wealth of FAO fisheries guidance, including the *FAO Technical Guidelines on Fisheries Management* (FAO, 1997) and the various *FAO Technical Guidelines for Responsible Fisheries* (FAO, 2003; FAO, 2009a; FAO 2009b; FAO, 2011). The present document also draws on FAO's experiences and lessons learned from workshops held in the Baltic, Mediterranean and Caribbean seas, as well as OECM discussions in Latin America and North Africa, *inter alia*.

The document was drafted by Tundi Agardy, with technical oversight from Amber Himes-Cornell (FAO) and Vera Agostini (FAO), in addition to valuable contributions from Kristin Hoelting, Juan Francisco Lechuga Sánchez, Imen Meliane, Kim Friedman (FAO), Sarah Davidson and Lucy Bowser.

An initial draft of this Fisheries OECM handbook was reviewed by a group of selected experts; thereafter, it was the subject of a workshop held in Rome, Italy, from 18 to 19 October 2022. The aim of the workshop was to review the draft document and seek feedback on its content and format. Selected participants of this workshop were experts who actively work – or have the capacity – to support stakeholders in evaluating potential Fisheries OECMs against the OECM criteria in a specific country or set of countries. Participants represented countries in each major region of the world and crossed cultures and genders. The experts who participated in the workshop were: T. Agardy, V. Agostini, L. Anderson Rana, M. Calderon, S. Campbell, R. Cloete, D. Campbell, S. El Asmi, K. Friedman, G. Bakke, J. Hertzman, A. Himes-Cornell, K. Hoelting, S. Joe Kizhakudan, E. Kenchington, A. Kenny, R. Kishore, E. Mueni Musyoka, A. Rhodes Espinoza, H. Sagar, Z. Samaha, G. San Martín Catalán, R. Sauve and K. Spiteri. The following experts provided valuable written comments: G. Ahmadia, J. Appiott, H. Bingham, J. Briggs, D. Diz, D. Fluharty, S. Garcia, M. Makino and N. Okazoe.

Original illustrations in this document were produced by Manuela Marazzi, while the graphics and layout were prepared by Heather Allen Perreault.

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Foreword

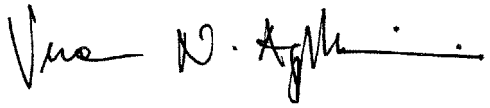
Our ocean and seas have an important role to play when it comes to food, yet we know they are facing considerable challenges. FAO's flagship fishery report, *The State of World Fisheries and Aquaculture* (FAO, 2022a), reveals that while two thirds of global commercial fish stocks are exploited at sustainable levels, recent decades have seen the remaining third fall into continued decline as a result of overfishing, pollution, poor management, and other factors. But there is some good news: of the total volume of fish landed globally, 82.5 percent is from biologically sustainable stocks, and this percentage has been on the rise in recent years.

The future of our ocean and seas lies in finding cooperative pathways. We are losing ground by getting stuck in debates over different priorities and staunchly defending narrow perspectives on how to achieve objectives. We must work towards a world where we share a joint vision for our ocean and seas. We are getting there, but more needs to be done. The recent recognition that fisheries area-based management tools which meet a set of criteria - OECMs - can be used to meet the Convention on Biological Diversity global targets, provides an opportunity to support that joint vision. Achieving it relies on clarity of intent and strong implementation.

The operationalization of OECMs will evolve over the next decade. A number of recent efforts provide a strong basis for this (IUCN WCPA, 2019; IUCN-WCPA, 2022), but targeted, sector-specific guidance in various formats and languages continues to be needed. Building on a number of recent efforts (such as ICES, 2021), this handbook is designed to help fisheries managers take the first step towards operationalizing OECMs, by clarifying how to identify existing management measures that could be designated as OECMs.

Our hope is that the practical advice contained in this handbook will encourage fisheries managers to identify, evaluate and report OECMs so that their stewardship of biodiversity is not only recognized now, but can grow in the future. A wider base of support for biodiversity conservation is needed if we are to conserve our ocean and seas' natural resources, and support food and livelihoods into the future. Identifying, evaluating and reporting marine fisheries OECMs is one step towards reaching that goal.

The 2030 Agenda for Sustainable Development points to biodiversity as one of the key elements for many economic activities, particularly those related to sustainable use sectors such as fisheries and aquaculture. However, the loss of biodiversity, coupled with its weakened ability to contribute to human needs, jeopardizes progress towards the Sustainable Development Goals (SDGs) and human well-being. The policy landscape could not be more ambitious – nor the moment more opportune – to develop tools that support more efficient, inclusive, resilient and sustainable aquatic food systems that will help achieve the SDGs and the CBD's Post-2020 Global Biodiversity Framework. We have until 2030 to ensure we deliver the vision of sustainable development articulated across the SDGs; and with specific regard to our ocean and seas, SDG14 – Life Under Water. To this end, we need communities of practice, partnerships and collaboration to develop a shared understanding on the future of our ocean and seas and implement the vital solutions it requires. I am confident this handbook will help us get there.



Vera N. Agostini
Deputy Director
Fisheries and Aquaculture Division

Abbreviations and acronyms

ABMT	area-based management tool
CBD	Convention on Biological Diversity
CEM-FEG	Fisheries Experts Group of the IUCN Commission of Ecosystem Management
COP	Conference of the Parties
CSOs	civil society organizations
DFA	Department of Fisheries and Aquaculture
EBSA	ecologically or biologically significant marine areas
EEZ	exclusive economic zone
FAO	Food and Agriculture Organization of the United Nations
GPS	global positioning system
HELCOM	Baltic Marine Environment Protection Commission
IBA	important bird area
ICES	International Council for the Exploration of the Sea
IMMA	important marine mammal area
IMO	International Maritime Organization
IPLCs	Indigenous Peoples and local communities
ISRA	important shark and ray area
IUCN	International Union for Conservation of Nature
KBA	key biodiversity area
LMMA	locally managed marine area
MCA	marine conservation agreement
MMA	marine managed area
MPA	marine protected area
MSP	marine spatial planning
NEAFC	North East Atlantic Fisheries Commission
OECM	other effective area-based conservation measures
RFA	responsible fishing area (Costa Rica)
RFB	regional fishery body
RFMO	regional fisheries management organization
RSO	regional seas organization
SDG	Sustainable Development Goal
TURF	territorial use rights in fisheries
UN	United Nations
UNEP	United Nations Environment Programme
VME	vulnerable marine ecosystem
WCMC	World Conservation Monitoring Centre
WCPA	World Commission on Protected Areas (of IUCN)
WD-OECM	World Database on Other Effective Area-based Conservation Measures
WDPA	World Database on Protected Areas
WKTOPS	Workshop on Testing Ocean Practices and Strategies (ICES)

Executive summary

Around the globe, fisheries managers strive to practise effective management that provides a clear path towards conserving ocean biodiversity while contributing to human well-being. With a growing global population that relies more and more on fisheries and aquaculture for food, nutrition, their livelihoods and cultural values, action to keep fisheries sustainable is essential. Similarly, the conservation of biodiversity is crucial to maintaining ecosystems that provide fishery resources and other ecosystem services: biodiversity provides the foundation for food security, nutrition, and the livelihoods of millions of people around the world. In this light, the global decline of biodiversity has led to increasingly urgent attention on ways to safeguard the functioning of social–ecological systems. Spatial management tools have a key role to play in this, and countries and fisheries stakeholders should feel confident in identifying which specific applications of these tools result in biodiversity-positive outcomes for the purposes of global recognition. The present handbook provides the preliminary guidance for countries and stakeholders to do so.

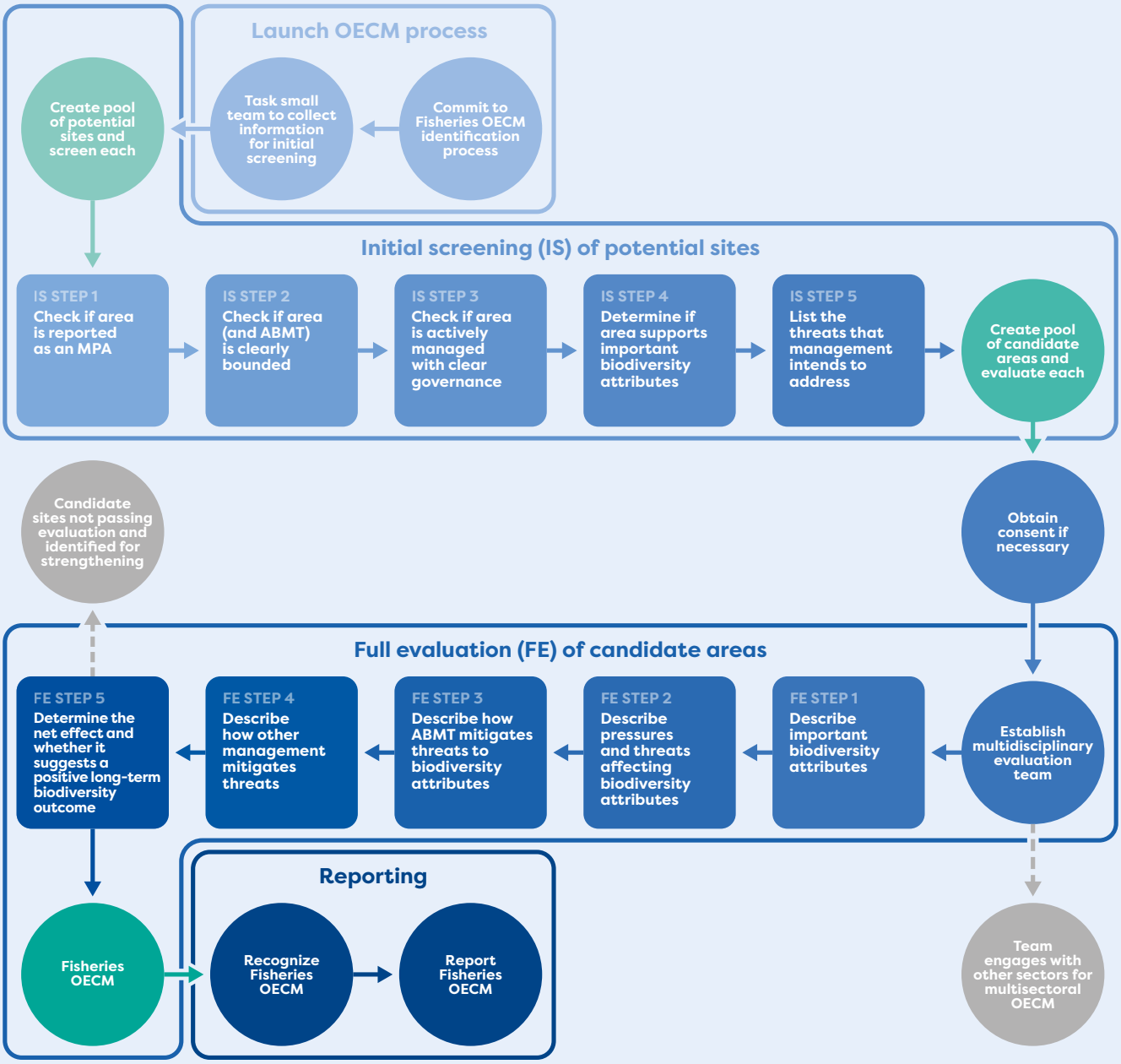
Fisheries management measures can deliver outcomes that align with the Food and Agriculture Organization's (FAO's) Strategy on Mainstreaming Biodiversity across Agricultural Sectors (FAO, 2020), the United Nations (UN) Sustainable Development Goals (SDGs), and the Convention on Biological Diversity's (CBD) 2050 Vision for Biodiversity (CBD, 2018a).[1] Many also conform to the definition, criteria and guidance on 'other effective area-based conservation measures' (OECMs) developed by the CBD Conference of Parties (CBD COP). In a fisheries context, OECMs are established, spatially defined management and/or conservation measures other than protected areas that produce positive, long-term and *in situ* biodiversity outcomes, in addition to the intended fishery outcomes. For the purposes of this handbook, these sector-specific OECMs are referred to as "Fisheries OECMs". However, considerable confusion abounds with regard to which measures qualify as OECMs, why fisheries agencies should take the time to identify them, and how fisheries management will benefit from the OECM identification process.

Recognizing the vital link between biodiversity and livelihoods, food security and ecosystem services that underpin human well-being, FAO is committed to promoting practical guidance on these issues. This handbook describes the key characteristics of Fisheries OECMs and outlines a basic process for identifying, evaluating, and reporting in order to encourage global recognition of the role that fisheries management plays in biodiversity conservation. To this end, the handbook poses questions that could be considered and provides examples showing how area-based management tools (ABMT) used in some fisheries can be evaluated to determine whether they qualify as Fisheries OECMs. **However, please note that this initial FAO guidance should be used to recognize existing fisheries management measures, not to plan new Fisheries OECMs.** In addition, while this handbook addresses marine fisheries, subsequent guidance will focus on inland fisheries. Additional products planned under the FAO Fisheries OECMs series will provide support for the implementation of Fisheries OECMs, including on management actions such as planning new Fisheries OECMs, monitoring OECM effectiveness and practising adaptive management in Fisheries OECMs.

A wide range of ABMTs achieve positive biodiversity outcomes. Identifying which areas with ABMTs qualify as Fisheries OECMs is not inherently difficult and can be done using existing fisheries data and expert opinion. This handbook outlines one possible process to assess potential areas with existing ABMTs quickly, as well as identifying those that can be shown to contribute to sustained positive biodiversity outcomes.

A practical pathway for identifying Fisheries OECMs entails gathering available information and using it to see how fisheries measures in specific areas align with

[1] These measures likely align with the emerging Post-2020 Global Biodiversity Framework, still being negotiated at the time of writing.


Launch OECM process
Commit to Fisheries OECM identification process
Task small team to collect information for initial screening
Create pool of potential sites and screen each
Initial screening (IS) of potential sites
IS STEP 1
Check if area is reported as an MPA
IS STEP 2
Check if area (and ABMT) is clearly bounded
IS STEP 3
Check if area is actively managed with clear governance
IS STEP 4
Determine if area supports important biodiversity attributes
IS STEP 5
List the threats that management intends to address
Create pool of candidate areas and evaluate each
Obtain consent if necessary
Establish multidisciplinary evaluation team
Full evaluation (FE) of candidate areas
FE STEP 1
Describe important biodiversity attributes
FE STEP 2
Describe pressures and threats affecting biodiversity attributes
FE STEP 3
Describe how ABMT mitigates threats to biodiversity attributes
FE STEP 4
Describe how other management mitigates threats
FE STEP 5
Determine the net effect and whether it suggests a positive long-term biodiversity outcome
Candidate sites not passing evaluation and identified for strengthening
Team engages with other sectors for multisectoral OECM
Reporting
Recognize Fisheries OECM
Report Fisheries OECM
Fisheries OECM

the definition of OECM and the criteria put forward by the CBD COP. Although the OECM criteria are context-specific, and interpretation of the criteria will reflect how both individual countries and countries across regions approach fisheries management, some common considerations apply. The pathway to Fisheries OECM identification described in this handbook (and illustrated in the preceding diagram) adopts a process that is practical and efficient, one which fisheries management agencies and other relevant government agencies and stakeholders can readily undertake.

The Fisheries OECM identification process involves assembling appropriate teams of people and information to carry out a stepwise evaluation of possible OECM sites. The first step is an initial screening, which rapidly identifies candidate areas that may qualify; for those sites that emerge as candidate areas, relevant stakeholders and rights holders are brought into the process. Once the governance authority has been given the consent to evaluate areas further, the process moves to determining whether these candidate areas can be formally recognized as Fisheries OECMs according to the definition, criteria and guidance on OECMs developed by the CBD COP. A simplified outline of this process is provided below.

Fisheries OECMs that align with the CBD definition and criteria can be reported to the CBD and to the World Database on OECMs (WD-OECM), and therefore count towards CBD spatial coverage targets. These include the former Aichi Biodiversity Target 11, and the new area-based target under the Post-2020 Global Biodiversity Framework. In addition, qualifying Fisheries OECMs can show that progress is being made towards other global targets such as the SDGs, as well as national environment and development goals.

Suggestions about the kinds of data, information and knowledge that can be gathered as evidence to complete a Fisheries OECM identification process are presented in this handbook. In addition to detailing the options for evaluating sites/measures used in fisheries management, the handbook provides a fictional case study to illustrate the human and information resources needed for evaluation of Fisheries OECMs.

The Fisheries OECM identification process can also be used to flag fisheries management practices that could be improved, in order to achieve better biodiversity outcomes. Indeed, the identification and evaluation process can set the stage for the introduction of additional or amended management measures, so that areas which do not currently qualify could do so in future. These actions would promote the addition of rigorously screened areas to a country's list of recognized OECMs.

Fisheries OECM identification makes existing contributions to biodiversity conservation more visible, as well as promoting additional fisheries management conservation measures where possible. This has the potential to:

1. strengthen the mainstreaming of biodiversity conservation objectives in the management of fisheries resources;
2. ensure that the efforts, needs and objectives of fisheries management are included in biodiversity conservation discussions and decisions; and
3. facilitate both multispecies fisheries management (where more than one fishery operates within an area) and intersectoral dialogue and coordination, where appropriate.

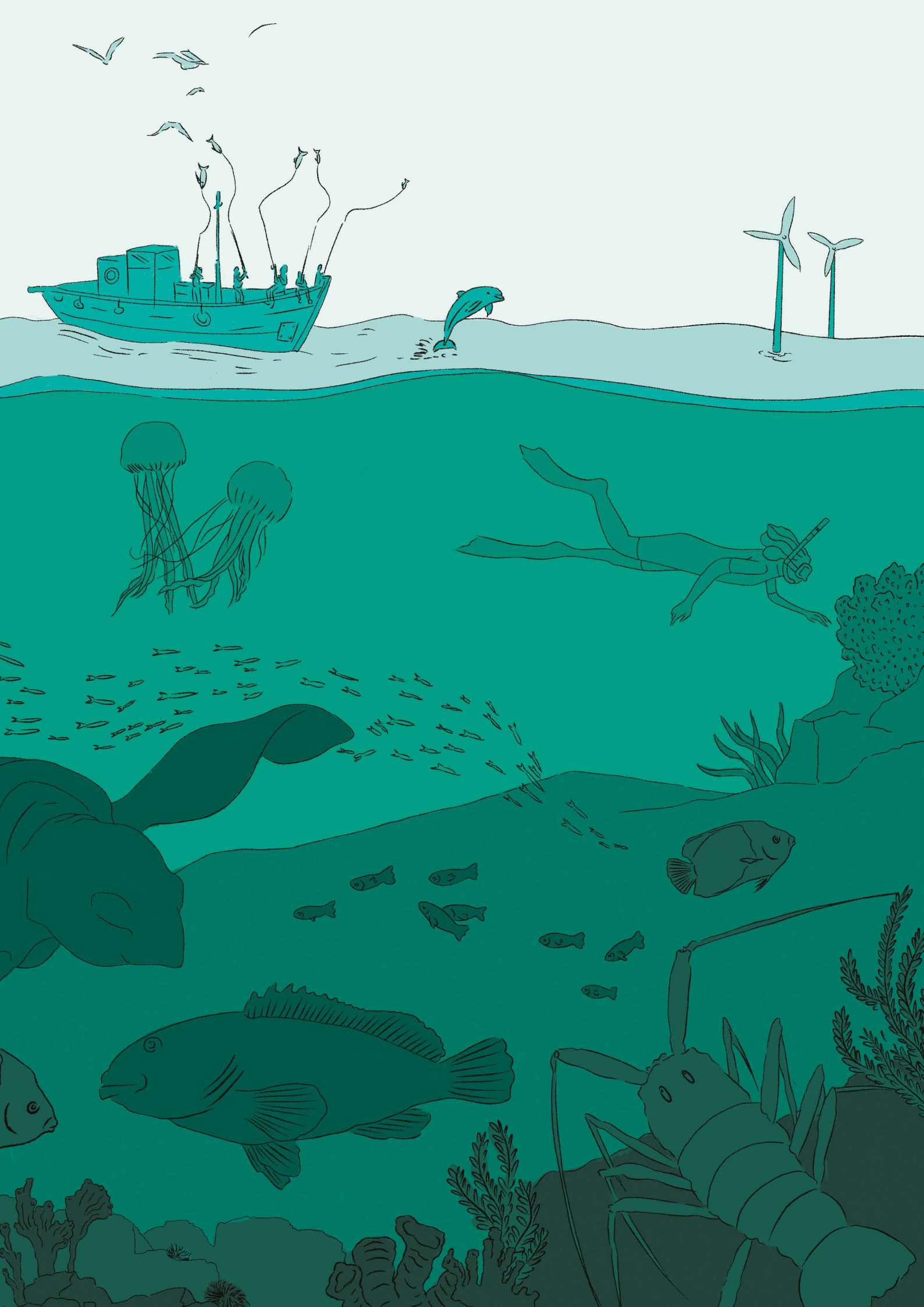
Recognizing Fisheries OECMs therefore has the potential to increase marine stewardship by explicitly acknowledging the need for food security, income generation and livelihoods, as well as maintaining both cultural values and the ecosystems that enable delivery of these services.

The handbook is in five parts. Part I provides generalized insights; part II presents the OECM criteria in detail; part III is centred on helping to set up governance mechanisms that oversee processes of identifying, evaluating and reporting Fisheries OECMs, including counting areas toward CBD targets in international fora; and part IV supports authorities in screening their most promising areas for Fisheries OECM recognition. Finally, part V puts Fisheries OECMs in the context of fisheries sustainability, reciprocal mainstreaming of biodiversity and the Blue Transformation.

Part I

Other effective area-based conservation measures in marine fisheries

- Part I provides background on the term OECM and explores OECMs in the context of fisheries management.
- FAO recognizes the vital link between biodiversity and livelihoods, food security, and ecosystem services that underpin human well-being.
- The Parties to the CBD have called expressly on FAO to assist countries in identifying OECMs and FAO is fully committed to this.
- A wide range of ABMTs provide net positive biodiversity benefits; these can potentially be recognized as Fisheries OECMs and can count toward countries' global area-based biodiversity targets.
- Identifying which areas with ABMTs qualify as Fisheries OECMs is not inherently difficult and can be done using existing fisheries data and/or expert opinion.
- This handbook describes the key characteristics of Fisheries OECMs and outlines a basic process to identify existing fisheries management measures/areas that conform to the OECM definition and criteria. To be clear, the handbook offers a guide for assessing *existing* fisheries management measures; it should not be used as a guide to plan new measures.
- Identifying Fisheries OECMs benefits the fisheries sector in many ways. For example, it recognizes fisheries management's contributions to biodiversity conservation, provides opportunities to highlight and replicate fisheries management successes, and it improves intersectoral collaboration.
- Fisheries OECMs promote biodiversity conservation through reciprocal mainstreaming. They situate biodiversity conservation as a central focus of fisheries management and ensure that fisheries sector perspectives are embedded within wider biodiversity conservation discussions.



Introduction

The challenge

The world's ocean, seas and coastlines provide resources, space and values to human communities around the globe, as well as providing the basis for crucial maritime industries and significant food security. However, as the world population reaches 8 billion people, growing demand has led to an intensification of the concordant pressures on the marine and coastal environment. Rising levels of unsustainable consumption, together with the increasing impacts of climate change, now threaten to undermine the benefits and values that the global ocean provides.

Marine conservation is critical to all sustainable development; the need to integrate the effective conservation measures that many sectors deliver into more holistic and synergetic ocean management strategies has therefore never been greater. Such sectors, and particularly the fisheries sector, have been utilizing management measures that aim to maintain ocean health, richness and productivity. In fisheries, these management measures include area-based management tools (ABMTs). Their adoption by fisheries management agencies and Indigenous Peoples and local communities (IPLCs) has been spurred on by several global and regional agreements. The commitment to using them has also been reiterated in many international processes.

Spatial management and the use of ABMTs to target sustainable use and conservation simultaneously have both received considerable attention, especially within the Convention on Biological Diversity (CBD). The CBD has three objectives: 1) the conservation of biodiversity; 2) the sustainable use of its components; and 3) the fair and equitable sharing of benefits. The Strategic Plan for Biodiversity 2011–2020 lays out the means to achieve these objectives, while its Aichi Biodiversity Target 11 (under Strategic Goal C) specifically articulates the role of area-based management to achieve conservation outcomes for biodiversity and safeguard important ecosystem services. At the same time, Strategic Goal B calls for reductions of the direct pressures on biodiversity and the promotion of sustainable use. The Post-2020 Global Biodiversity Framework strategy is expected to continue to highlight the role of area-based management in securing biodiversity and sustainable use.

Fisheries managers is in a unique position to show how sustainable development and conservation objectives can and should be aligned. This is particularly true for IPLCs that practise various kinds of community-based management which contribute to the conservation of marine socioecological systems. Effective fisheries management can conserve biodiversity by protecting marine species and habitat, thus promoting the sustainable management of resources that are critical to food security. Recognizing Fisheries OECMs therefore facilitates recognition of the investment that countries and fishing communities have made to manage fisheries in a sustainable manner while minimizing the negative impacts of resource extraction and supporting biodiversity at the same time.

An important solution: Other effective area-based conservation measures

There is an opportunity to ensure that sustainable use management approaches safeguard biodiversity as never before. In a clear example of reciprocal mainstreaming, countries are finding ways to enhance, recognize and promote conservation efforts made by sectoral management agencies with mandates other than environmental protection, propelled by decisions taken by multilateral instruments such as the CBD. When the Parties to the CBD set a numerical target for protected area coverage in 2010, several parties and stakeholders – including the fisheries community – argued that some area-based measures delivered important biodiversity outcomes, equivalent to those of protected areas, but were not being recognized or counted towards the global target. The Conference of Parties (CBD COP) subsequently introduced a new term describing

measures instituted in places which are not protected areas, but which conserve biodiversity as a result of sectoral or community-based management. Through this addition, the CBD COP recognized that formal protected areas are not the only means to deliver biodiversity conservation. It also agreed that such alternative areas should be called "other effective area-based conservation measures" or OECMs, and that these areas could also be counted toward national and international area-based conservation targets.[2]

In 2018, the CBD COP adopted the following definition of OECM (CBD COP Decision 14/8):

> a geographically defined area other than a Protected Area, which is governed and managed in ways that achieve positive and sustained long-term outcomes for the *in situ* conservation of biodiversity, with associated ecosystem functions and services and, where applicable, cultural, spiritual, socioeconomic, and other locally relevant values. (CBD, 2018b, para. 2)

Additional detail on the historical developments leading to the OECM concept is presented in Annex A.

Creating an additional category of area-based management beyond protected areas offers countries and IPLCs a way to recognize and account for sectoral management approaches that lead to positive biodiversity outcomes. The CBD COP Decision 14/8 includes a set of criteria and guiding principles that countries can use to help them discern what may count as an OECM (Annex B); however these are generic and not specific to either marine OECMs or sectoral OECMs. **This handbook is a first step towards providing tailored guidance for Fisheries OECM identification**.

Recognition of conservation beyond protected areas not only expands the global vision of *who* is actively delivering biodiversity benefits (to deliver credit where credit is due), but also sets up the opportunity for building intersectoral collaboration to deliver networks of special protections. Elsewhere, it allows for more robust and realistic tracking of global progress toward sustainable development and biodiversity conservation goals. Furthermore, the identification of area-based management tools that contribute to conservation could spur adaptive management across sectors to further improve these management approaches. Perhaps more than any other sector, marine fisheries managers use area-based management in such a way that OECMs can be readily identified, since effective management of areas important to fisheries supports human well-being as well as nature.

Many area-based fisheries management measures already help drive sustainability by promoting broader ecosystem management and biodiversity conservation. Yet, despite the value they provide, neither marine OECMs generally, nor Fisheries OECMs specifically, are commonly recognized for their contribution to global targets for conservation. Figure 1 provides a map of the small number of marine OECM reported at the date of this publication – which is in contrast to the hundreds of terrestrial OECMs reported to date.[3] The paucity has less to do with whether areas meet the OECM definition and criteria, and more to do with the uncertainty on how to proceed with identifying, evaluating and reporting OECMs in the marine environment. **The guidance outlined in this handbook is intended to help in this regard, guiding countries and agencies by laying out a simple process to move forward with Fisheries OECM identification, addressing any confusions that arise, and highlighting important considerations.**

A more formalized recognition of the benefits delivered by OECMs is of considerable interest to countries trying to stimulate the recovery or maintenance of biodiversity. It also useful when communicating these outcomes, both within countries and when reporting on progress towards

[2] Aichi Biodiversity Target 11, to be superseded by new targets under the Post-2020 Global Biodiversity Framework, as well as the UN Sustainable Development Goals, especially SDG 14 – Life Below Water.

[3] There has been substantial interest in OECMs since the definition of the term in 2018, judging by the number of conferences, webinars and publications on the subject. However, with the exception of Canada, which decided a national OECM definition before Decision 14/8 was adopted, the first OECMs were not reported until 2020. For an updated view on OECMs that countries have reported globally, refer to the World Database on OECMs available via www.protectedplanet.net.

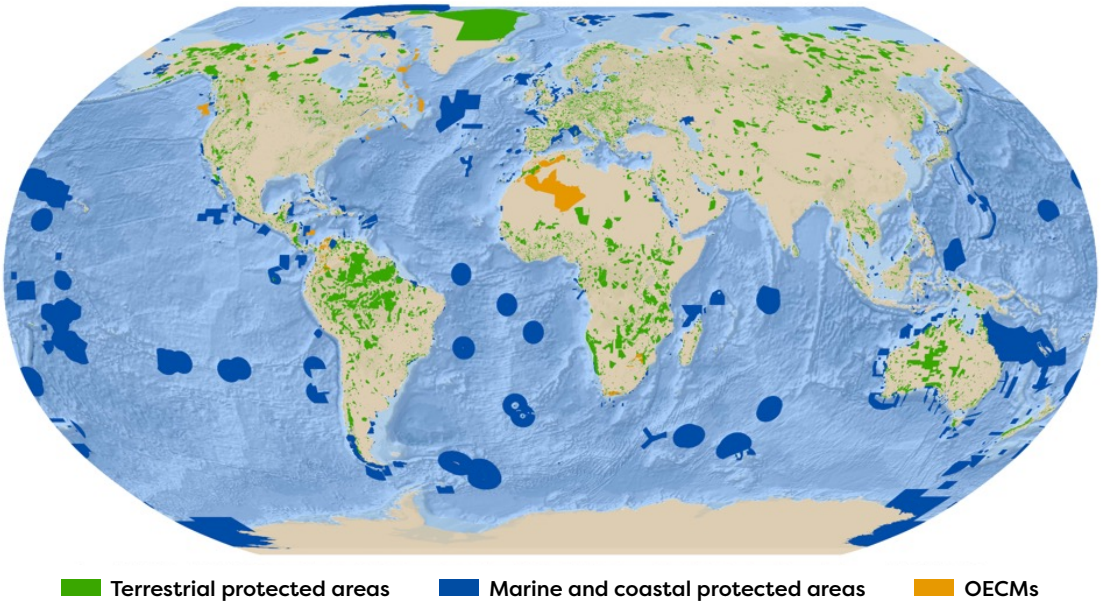


Figure 1. Global distribution of protected areas and OECMs, as of November 2022
Source: UNEP-WCMC. 2022. Explore protected areas and OECMs. In: *Protected Planet.* Cited 19 November 2022. www.protectedplanet.net

global conservation goals. Where successful applications of fisheries management measures have led to biodiversity benefits, the various ways this was achieved can be highlighted and used to replicate successes. Identifying and reporting Fisheries OECMs can also allow governments and regional organizations to strengthen connectivity and complementarity with other conservation efforts, including protected areas, to build a more coherent and interconnected approach to preserving and enhancing broader ecosystem health.

Fisheries benefit from effective management that conserves biodiversity, as do fishing communities and coastal countries. **Highlighting where this is happening and why gives credit where credit is due and also holds up models of fisheries management practices that can be expanded and replicated.** Embarking on Fisheries OECM identification , evaluation and reporting thus benefits states and their citizens; it allows wider recognition of the myriad ways marine fisheries measures can indeed deliver biodiversity outcomes, and drives progress towards national and global sustainability goals.

Guidance in response to a request by the Members of the Food and Agriculture Organization of the United Nations

Tapping into the opportunities provided by OECMs requires building a common understanding and interpretation of which types of fisheries-related management measures generate enduring environmental and social benefits for people and the oceans. Recognizing this, the Parties to the CBD welcomed voluntary guidance on the integration of both protected areas and OECMs into wider landscapes and seascapes in Decision 14/8 (CBD, 2018b). They also hailed the mainstreaming, across all sectors, of effective models of governance for protected and conserved areas and equity considerations.[4] In addition, Decision 14/8 welcomed scientific and technical advice on OECMs in the form of guidance on identifying existing areas where management measures contributed to *in situ* biodiversity conservation.[5] The same Decision 14/8 also specifically invited the Food and Agriculture Organization (FAO) to continue to assist parties in identifying OECMs through the provision of scientific and technical advice.

[4] See especially Annexes I and II of the CBD COP Decision 14/8.

[5] See Annex III of the CBD COP Decision 14/8.

In February 2021, the Thirty-fourth meeting of the FAO Committee on Fisheries (COFI34) noted the importance of considering multiple types of ABMTs, such as protected areas and OECMs, in the reciprocal mainstreaming of biodiversity. The Committee also noted the relevance of OECMs to achieving a number of the SDGs and global biodiversity targets, and requested that FAO produce and disseminate practical guidelines to support Members identify and implement these (FAO, 2022c; para. 17d and 17e). With this in mind, FAO launched an initiative to provide guidance to countries – and the fisheries management agencies within them – on how to identify potential Fisheries OECMs, and how to determine whether any area in which fisheries ABMTs are being used meets the OECM criteria.

A simple process can be applied in numerous contexts, allowing governing authorities to evaluate potential areas where the management they have undertaken has resulted in indirect benefits to biodiversity. This is true irrespective of whether the management is led by government, by communities, or by the private sector. Such a process can also guide regional fisheries management organizations (RFMOs) coordinating Fisheries OECM identification with or on behalf of Member States, or in areas beyond national jurisdiction (ABNJ).

This handbook provides guidance on how to implement such a process. However, while this handbook offers generic advice, the actual mechanisms by which governments will evaluate and report areas as Fisheries OECMs will vary from place to place, based on the needs and capacities of individual countries. The language in CBD COP Decision 14/8 specifically recognizes this flexibility in the application of the criteria in different circumstances. Each country will have to determine how the OECM criteria should be applied, as well as what particular thresholds may be relevant when identifying Fisheries OECMs for national and global reporting. It should also be noted that Fisheries OECMs are important tools for reaching other goals beyond those outlined by the CBD – including, importantly, the goals and sub-goals of SDG 14 (Life Below Water). Moreover, not all fisheries management practices that contribute to biodiversity-positive outcomes need to fit into the OECM box to be recognized as contributing to critical global and national goals. Consequently, many of the existing measures that are found not to meet the CBD's OECM criteria, but which help meet sustainable use goals, can and should be recognized under other targets (e.g. Aichi Target 6; SDG 14.2, 14.4 and 14.7, *inter alia*).

Special opportunities afforded by other effective area-based conservation measures in marine fisheries

The benefits of identifying other effective area-based conservation measures

Identifying and reporting Fisheries OECMs allows:

- recognition of the efficacy of fisheries management and co-benefits for biodiversity (as well as climate change mitigation, protection of culturally important and socioeconomic values, etc.);
- further operationalization of the OECM criteria;
- broader mainstreaming of biodiversity in fisheries management;
- better understanding and monitoring of human impacts on ecosystems, and the extent to which management tools have successfully mitigated these impacts;
- cooperation between sectors to bridge the divide between the fisheries and conservation communities;
- greater inclusion of fisheries perspectives in all marine planning; and
- more easily achieved sustainability and environmental targets – and with that the international recognition, technical support and funding that follows demonstration of success.

It can also offer numerous benefits to fisheries communities (and wider communities) at the site level, in a country, or in a region. These benefits, both direct and indirect are outlined in Figure 2. The reporting and identification process for Fisheries OECMs can broaden understanding of the wide range of benefits OECMs can provide, potentially promoting uptake of further effective ABMTs.

The identification process for Fisheries OECMs can catalyse improvements to fisheries management for better biodiversity outcomes in at least three ways. First, establishing a process for recognizing the good work being done by fisheries management agencies, RFMOs and the communities/stakeholders with which they work, can promote the replication of good management practices. Second, the OECM evaluation process itself can be used to quickly identify management interventions that could be strengthened to yield biodiversity-positive results. Third, once a Fisheries OECM is identified and reported, fishers and other stakeholders and rights holders involved in protecting the biodiversity of the OECM area can raise awareness about the need to prevent any new activities or uses undertaken by other sectors. As the latter could potentially harm biodiversity in the future, the identification process ultimately enables stakeholders and rights holders to increase political pressure to maintain active management of the Fisheries OECM.

Fisheries management measures with potential to be other effective area-based conservation measures

Fisheries management employs a variety of measures that aim to meet fisheries goals, including increased production, better livelihood opportunities, food security, and the equitable sharing of benefits. Many of these are spatial management measures, categorized as fisheries ABMTs, which can contribute to preserving or enhancing biodiversity and could be considered as Fisheries OECMs that count towards conservation targets and sustainable development goals.

The question of which fisheries management measures or tools can and should be given OECM recognition is not clear-cut. One issue is that not all fisheries techniques, gears or approaches adhere to the same definition everywhere in the world. For instance, what is referred to as 'trawling' in one country or region may not be the same in another. Similarly, 'small-scale' is a relative term in fisheries: what might be considered small-scale in one area could be more comparable to larger-scale or 'professional' or 'commercial' or even 'industrial' fisheries in another. This adds further credence to the need to consider the applicability of

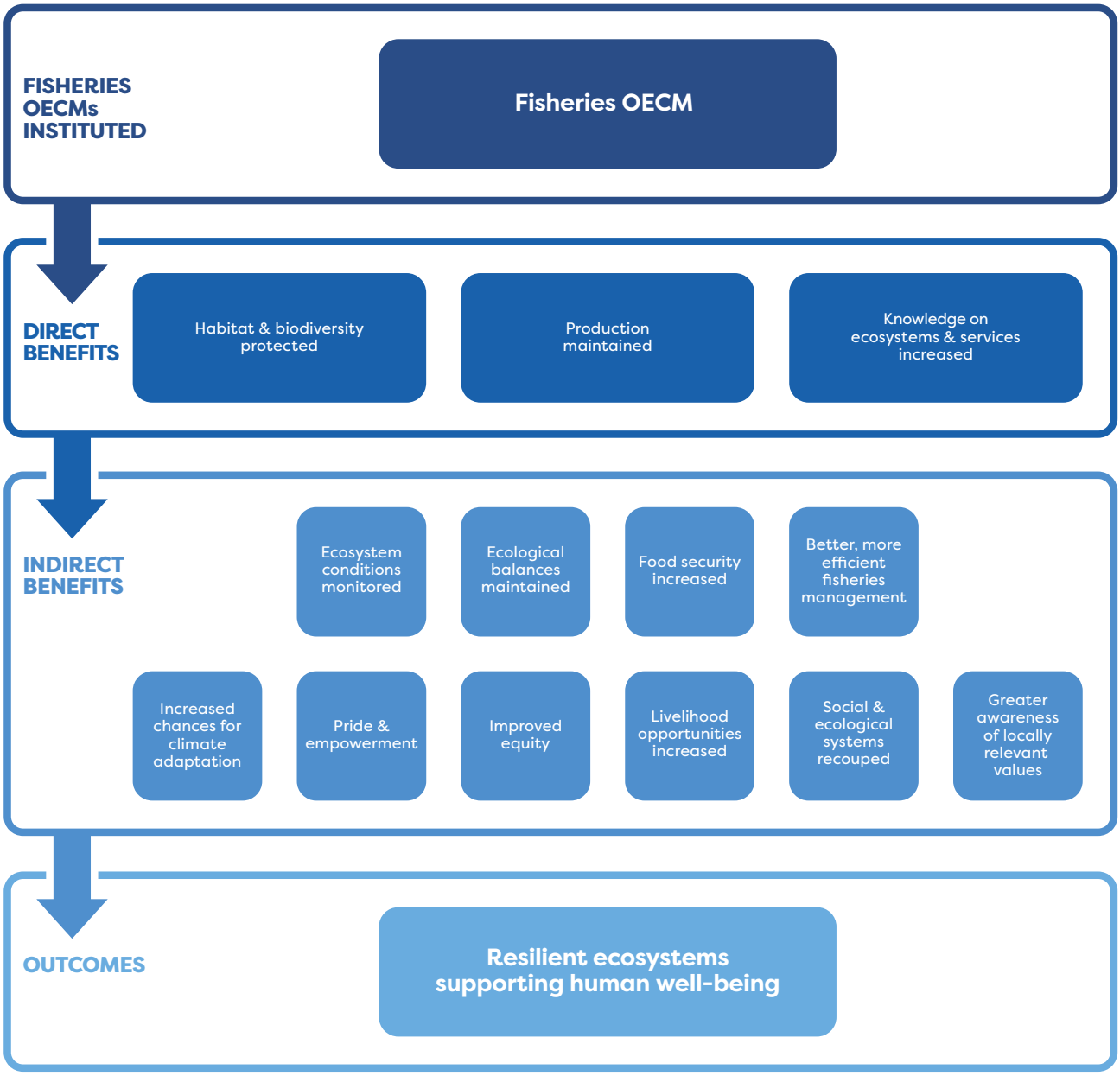


Figure 2. Potential benefits arising from Fisheries OECMs

Note: No one Fisheries OECM is likely to result in all these benefits, nor would Fisheries OECMs singlehandedly achieve these outcomes, but they can make a major contribution towards these ends. (For additional detail on how specific benefits flows are related and how benefits may contribute to outcomes together with achieving specific policy goals, see Annex C).

the OECM criteria on a flexible, case-by-case basis, and to carefully evaluate the impact of measures taken on the biodiversity features of interest.

There is an almost unlimited number of fisheries ABMTs implemented by governments, fishers, or other stakeholders and rights holders,[6] whether as single measures or in combination, which can potentially be considered effective area-based conservation measures. However, guided by the criteria laid out in Decision 14/8, this handbook focuses on describing a specific subset of fisheries ABMTs that have potential as Fisheries OECMs. If the area where biodiversity benefits occur is geographically delineated, with clear boundaries (GPS or latitude/longitude coordinates) and if there is evidence that the fisheries management measures in place have led or will lead to long-term biodiversity outcomes, then the ABMT is likely to be aligned with the OECM criteria. The initial screening and subsequent full evaluation (as outlined in Part IV) will help countries decide if it qualifies as a Fisheries OECM.

By contrast, fisheries ABMTs that do not occur in a fixed, prescribed area may not readily meet OECM criteria. Such ABMTs include move-on rules and real-time closures (which are variable in time and space). Similarly, ring-fencing – in which potentially damaging fisheries are kept within a prescribed space – is not likely to be aligned with OECM criteria, since the area supporting the biodiversity that benefits from the measure has no outer boundaries; the area with the biodiversity outcome cannot therefore be fully described or mapped. Although it will be the responsibility of the governing authority to determine which types of areas and measures to consider and how to go about Fisheries OECM evaluation,[7] the following describes the ABMT types most aligned with OECM criteria.

Vulnerable marine ecosystems

Vulnerable marine ecosystems (VMEs) comprise areas containing habitats or assemblages of species that are particularly sensitive to anthropogenic impacts. By virtue of this designation, VMEs commonly contain areas closed to all or some fishing gear (often bottom-contacting gear) to protect vulnerable biogenic habitats (such as coral reefs and sponge grounds). FAO has put together guidance to describe significant adverse impacts, which is available on the FAO and other websites (FAO, 2009b).

Area-based fishery closures

The broad category that pertains to 'fishery closures' includes several types of ABMTs; these are referred to by different names and sometimes established for different reasons. Among the most common types are fisheries reserves and no-take areas, which restrict fishing in ecologically important areas such as spawning or nursery grounds, and biologically diverse and vulnerable areas for long periods of time or in perpetuity. Some examples include fishery restricted areas – the nomenclature for fishery closures designated in the Mediterranean Sea – and benthic protected areas, which describe voluntary closures set by the Southern Indian Ocean Deepwater Fishers Association to protect underwater topographic features such as seamounts and hydrothermal vents.

Community-based areas and territorial use rights areas

Community-based fisheries management areas include marine managed areas (MMAs), locally managed marine areas (LMMAs) and responsible fishing areas (RFAs). The first, MMAs, are community-based area closures for both fisheries and biodiversity conservation, overseen by Indigenous Peoples, traditional communities and municipalities or other competent associative institutions (e.g. cooperatives,

[6] Readers are encouraged to explore the detailed descriptions of fisheries ABMT in Himes-Cornell *et al.* (2022), which provides the foundation for the description employed here.

[7] For example, Canada has reported a number of marine OECMs, evaluating some based on the following types of fisheries measures: fishery schedule closure times/areas; areas closed to protect benthic species and habitats; areas closed to protect areas used by marine mammals and search and rescue; areas closed to protect spawning areas of commercial fish; areas closed to protect juveniles of commercial fish; seasonal closures; rockfish conservation areas; shellfish contamination closures; prohibition for contaminated fisheries regulations; closures under the Species at Risk Act; and Critical Habitat. These measures generally prohibit fishing taking place in an area for various reasons, although in some cases only

unions). Closures are often established to be long term but may be regularly opened and closed. Management of these areas may be shared with the national government or managed entirely by the community. The second type, LMMAs, are prevalent in the South Pacific and are managed largely or entirely by local communities, often using traditional tenure and management practices. Finally, RFAs are commonly established by communities working in concert with national fisheries agencies, throughout Latin America. Territorial use rights in fisheries (TURFs) are area-based property rights in which individuals are granted access and fisheries privileges. Within TURFs, management measures can be employed that lead to sustained positive biodiversity outcomes, in addition to guiding sustainable use for the rights holder.

Rotational closures and seasonal closures

Rotational closures involve temporary, interannual, and usually recurrent closures and reopening of areas to specific fisheries or gears. Over the long term, all areas are fished on some pre-established multi-year schedule. They are often used when efficient harvesting can take most of the stock in a local area and renewal of the stock takes several years. The length of the closed and open periods and the relative size of the open and closed areas are context-specific.

In seasonal closed areas, fishing is restricted only part of the year and often in part of the fishing area. The area and time of closure is usually the same every year, based on an average time–space distribution of the element to be protected. Seasonal closures may apply to the total stock range or a part of it (e.g. concentration of spawners or juveniles).

Gear-restricted areas

Gear restrictions not only improve fishery efficiency but can also mitigate negative impacts on species and wider biodiversity. For example, turtle excluder devices built into shrimp trawls reduce bycatch and J hooks in longline fisheries can reduce the catch of protected and vulnerable non-target species.

Gear restrictions applied to large jurisdictions are unlikely to qualify as Fisheries OECMs; however, discretely defined gear-restricted areas may have the potential to qualify.

Marine conservation agreements (MCAs)

Though not an ABMT but rather a framework for ABMTs of various types, MCAs are contractual arrangements that aim to achieve ocean or coastal conservation goals that take place in prescribed spaces (The Nature Conservancy, 2018). They are used to engage communities in the management of the resources they use and the environments in which they live. Under these agreements, communities receive economic incentives or support payments, in return for community members undertaking agreed conservation activities while also refraining from destructive activities, notably non-sustainable fishing practices. In some cases, MCAs encourage the voluntary use of tracking devices in small-scale fishing boats to demonstrate compliance with area-based fishing restrictions; other MCAs offer premiums paid for sustainable fish products that have clear traceability. These agreements can extend the longevity of ABMT in fisheries by incentivizing investment in management and monitoring. Furthermore, MCAs involving a number of area-based fisheries management measures that collectively contribute to positive biodiversity outcomes could be the basis for IPLCs recognizing and reporting Fisheries OECMs.

None of these general classes of ABMT will meet the criteria for OECM and qualify in all circumstances. This handbook illustrates how some of these ABMT could qualify as Fisheries OECMs if certain conditions are met; as such, rather than provide examples, of which there are few, we provide a hypothetical case.

the use of specific gears is prohibited, and fishing with other gears may be allowed. (Ellen Kenchington, personal communication, 2022.)


Welcome to our LMMA
home to 264 species of fish,
3 species of sea turtles, and
4 marine mammal species

Handbook goals, target audience and structure

The Fisheries OECM handbook is intended to support governments, groups or individuals evaluate fisheries management in specific areas to determine if they qualify as OECM. It is the first of a number of planned products under the FAO Fisheries OECM workplan and outlines an approach that governments and rights holders can take in identifying and reporting areas in which fisheries ABMTs have led to positive and long-term biodiversity outcomes. The handbook poses questions that those evaluating potential Fisheries OECMs should consider.

While this handbook addresses marine fisheries, subsequent guidance will focus on inland fisheries. Additional products planned under the FAO Fisheries OECM series will provide support for implementation of OECMs, including planning new OECMs, monitoring OECM effectiveness, and practising adaptive management in OECMs. **This handbook applies equally to the full spectrum of fisheries management areas, from those in data-poor, low-capacity situations to those in data-rich fisheries with well-funded capacity for adaptive management.**

The primary intended audience for this handbook includes fisheries management agencies and the stakeholder groups and rights holders with whom they work. However, it is also meant to be useful for policymakers and marine managers, the fishing industry, other maritime sectors, scientific advisors to government (and intergovernmental bodies), fisheries and conservation scientists, marine planners, civil society and communities. Its diverse audience reflects differences in the way fisheries are managed, the governance frameworks for management, the availability of data, the types of ABMTs used in the country or region, the way information is collected on biodiversity, and the value of marine areas and resources to people. **Therefore, while the guidance given should work in any fisheries setting, a case-by-case evaluation of areas/measures will be necessary to respond appropriately and respectfully to the local context.**

The handbook is in five parts. Part I presents a background on OECMs, the terminology used, and suggested processes for identifying OECM in a fisheries context. It also articulates how Fisheries OECMs can contribute to meeting the development and conservation goals of states and their citizens, and how the Fisheries OECM identification process can provide specific benefits.

Part II examines the generic CBD OECM criteria and how they can be used to help define what is, and is not, an OECM. It takes the criteria agreed by the CBD and suggests what fisheries management agencies or community rights holders could consider when evaluating possible sites for OECM status.

Part III recommends how a process can be established to coordinate and manage initial screening, guiding institutions doing Fisheries OECM identification on how they might quickly assemble a list of potential Fisheries OECM candidates, and proceed with their evaluation to select and formally recognize Fisheries OECMs. It also describes a Fisheries OECM identification process, with suggestions regarding the actors to involve, oversight and governance.

In Part IV, the handbook details the technical considerations that can support the identification, evaluation and selection of fisheries-related OECMs. This includes information collection on potential sites, initial screening to identify candidate areas, and full evaluation to recognize those areas that qualify as Fisheries OECMs, meeting both the CBD definition and criteria.[8] A quick reference checklist is provided in Annex D, which summarizes information that should be considered during both initial screening and evaluation, to determine if areas/measures conform to the OECM criteria.

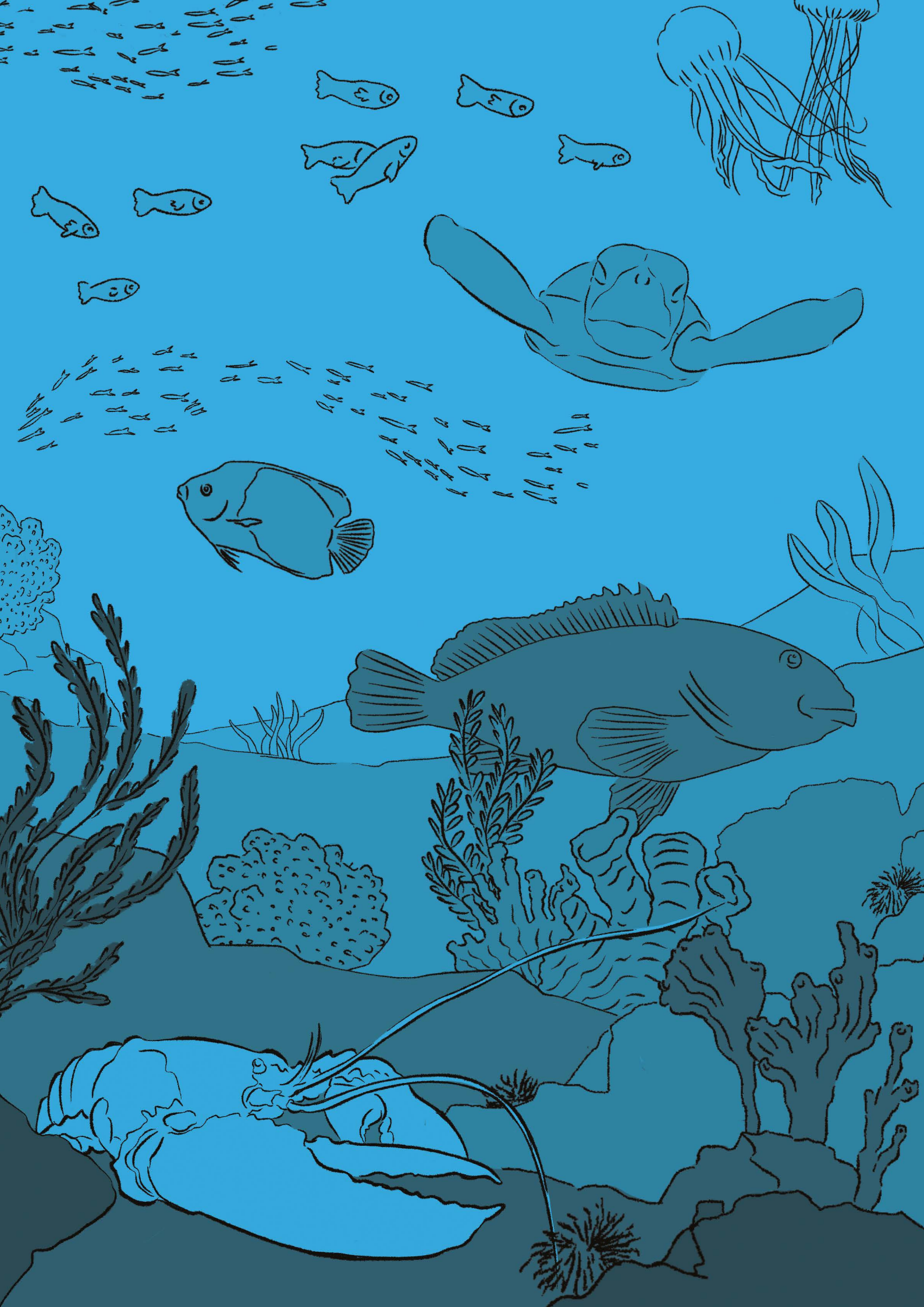
Part V presents Fisheries OECMs in the context of other forms of fisheries management, larger-scale networks of area-based measures, and fisheries goals such as the Blue Transformation.

[8] The handbook refers to this as systematic evaluation. However, it should be noted that what is implied is not an assessment of management efficacy or efficiency, but rather an objective evaluation of whether marine areas with existing fisheries ABMTs implemented in them produce the necessary biodiversity outcomes to qualify as Fisheries OECMs.

Part II

Understanding the criteria and principles for other effective area-based conservation measures

- Part II describes the four OECM criteria and related principles in the context of fisheries management to provide a basis for identifying, evaluating and reporting Fisheries OECMs.
- The OECM criteria are context-specific, and the interpretation of the criteria will reflect how individual countries approach fisheries management. Nevertheless, the common considerations described in this handbook apply across countries and regions.
- While all the criteria are important, the heart of OECM identification lies in Criterion C: the area demonstrates – or can be reasonably expected to demonstrate – positive *in situ* biodiversity effects.



The generic criteria and principles

A solid understanding of the OECM concept demands careful consideration of each OECM criterion, as well as the OECM principles that relate to these criteria and the OECM definition adopted by the CBD COP. The handbook explores these OECM fundamentals over the following pages, before presenting options on how to establish a process for Fisheries OECM identification and reporting (as outlined in Part III). Thereafter, it discusses how to harness the criteria to evaluate which measures/areas may qualify as Fisheries OECMs (as outlined in Part IV).

The CBD OECM criteria flow from the definition of OECM adopted by the CBD COP (Decision 14/8). Each of the four main criteria reflect the specific wording of the definition. How the criteria apply in a fisheries context influences the kind of specific questions that should be considered in a systematic evaluation of potential sites for Fisheries OECMs reporting.

At its Fourteenth meeting, the CBD COP agreed to recommendations on delineating four criteria and ten sub-criteria (see Annex B for the detailed description of criteria and sub-criteria), as well as guiding principles (see Box 1), for the identification of potential OECMs (CBD, 2018b, pp. 12–19). The intention behind these criteria and principles is to establish a uniformly agreed way of thinking about what an OECM is – one which is applicable across all ecosystems, and different national and governance circumstances.

Box 1. Guiding principles for OECMs (from CBD Decision 14/8)

OECMs have **a significant biodiversity value**, or have objectives to achieve this, **which is the basis for their consideration to achieve Target 11** of Strategic Goal C of the Strategic Plan for Biodiversity 2011-2020.

OECMs have **an important role in the conservation of biodiversity and ecosystem functions and services. They complement protected areas and contribute to the coherence and connectivity of protected area networks**, as well as to mainstreaming biodiversity into other uses in land and sea, and across sectors. **OECMs should, therefore, strengthen the existing protected area networks, as appropriate**.

OECMs reflect **an opportunity to provide *in situ* conservation of biodiversity over the long term** in marine, terrestrial and freshwater ecosystems. **They may allow for sustainable human activities while offering a clear benefit to biodiversity conservation**.

OECMs deliver **biodiversity outcomes of comparable importance to, and complement, those of protected areas**; this includes their contribution to representativeness, the coverage of areas important for biodiversity and associated ecosystem functions and services, connectivity and integration in wider landscapes and seascapes, as well as management effectiveness and equity requirements.

OECMs, with relevant scientific and technical information and knowledge, have **the potential to demonstrate positive biodiversity outcomes** by successfully **conserving *in situ* species, habitat and ecosystems and associated ecosystem functions and services. They prevent, reduce or eliminate existing, or potential threats, and increase resilience.** Management of OECMs **is consistent with the ecosystem approach and the precautionary** approach, providing the **ability to adapt to achieve biodiversity outcomes**, including long-term outcomes, including the ability to respond to new threats.

OECMs can help deliver **greater representativeness and connectivity** in protected area systems and thus may help **address larger and pervasive threats** to the components of biodiversity and ecosystem functions and services, and enhance resilience, including with regard to climate change.

Areas conserved for cultural and spiritual values, and governance and management that respect and are informed by cultural and spiritual values, often result in positive biodiversity outcomes.

OECMs **recognize, promote and make visible the roles of different governance systems and actors in biodiversity conservation**; Incentives to ensure effectiveness can include a range of social and ecological benefits, including empowerment of indigenous peoples and local communities.

The **best available scientific information, and indigenous and local knowledge**, should be used in line with international obligations and frameworks, such as the United Nations Declaration on the Rights of Indigenous Peoples. Similarly, the instruments, decisions and guidelines of the Convention on Biological Diversity should be used to recognize OECMS, delimit their location and size, inform management approaches and measure performance.

It is important that OECMs be **documented in a transparent manner** to provide for a relevant evaluation of the effectiveness, functionality and relevance in the context of Target 11.

Source: CBD. 2018b. Decision CBD/COP/DEC/14/8 Adopted by the Conference of the Parties to the Convention on Biological Diversity: Protected Areas and Other Effective Area-based Measures, Sharm El-Sheikh, Egypt. www.cbd.int/doc/decisions/cop-14/cop-14-dec-08-en.pdf

Note: Those guiding principles related to recognizing OECMs can be found in Annex III of CBD Decision 14/8.

The criteria in the context of fisheries

When considering Fisheries OECMs, the wording used in the descriptions of each criterion below allows for flexibility when applying the criteria. The application will depend on the nature of fisheries, the management approaches to fisheries in each country, the capacities for management and the different governance arrangements for managing marine areas, data availability, and many other factors. Flexibility is also mentioned explicitly in CBD Decision 14/8, which states the criteria are to be applied "in a flexible manner and on a case-by-case basis" (CBD, 2018b). This flexibility is important because the indicators used by the CBD to describe the criteria in detail (see Annex B) are generic and may not be universally applicable. These indicators may be better viewed as demonstrating how criteria can be met in an information-rich area with time-series-supporting data, rather than being used as a set of thresholds for qualifying or disqualifying areas.

The following is a brief overview of the four main criteria for all OECMs (terrestrial and/or marine) and an interpretation of what they intend to achieve, as it applies to Fisheries OECMs.

Criterion A

Area is not currently recognized as a protected area

An area is not eligible to be considered an OECM if it has been recognized and reported as a protected area to the CBD Secretariat. One way to ascertain whether an area has been reported as a protected area is to enter its name in a CBD-aligned database, such as the World Database on Protected Areas (WDPA) (www.protectedplanet.net) or the Marine Protected Area Atlas (https://mpatlas.org). Where accessible, national or regional databases of protected areas used for the country's national reporting to the CBD Secretariat can also be checked.[9]

Though OECMs cannot overlap with reported protected areas, potential OECMs can encompass smaller protected areas that *are* reported. In this case, the area that can be reported as an OECM is only that which lies outside the boundaries of the protected area. Such cases should be checked carefully to ensure that the biodiversity outcomes are not only generated by the protected areas, but also by the additional measures within the OECM.

Criterion B

Area is governed and managed

An OECM must be a geographically defined space with clear governance and management. The governance of the area should be described as a specified entity or an agreed-upon combination of entities that has or have the formal governance mandate and powers for decision-making. This includes:

1. governance by a government agency (from national to local);
2. governance by private individuals, organizations or companies (e.g. fishers associations, concessions to private entities);
3. governance by Indigenous Peoples and/or local communities (e.g. territories and areas conserved by Indigenous Peoples and local communities); or
4. shared governance (e.g. governance by various rights holders and stakeholders sharing responsibility with a government agency).

Additionally, all OECMs should be areas in which active management occurs. For Fisheries OECMs, this could be government-led and/or community-based fisheries management.

This criterion captures the importance of having in place: a) effective management of an area, and b) governance authorities that have the necessary mandate and power to establish or adjust management measures, thereby securing a sustained biodiversity outcome.

[9] It is important to remember that the protected areas reported in the national reports do not always match those reported to the WDPA because countries do not always regularly update their input to the WDPA.

Criterion C

Achieves sustained and effective contributions to *in situ* conservation of biodiversity

For a particular area and its associated measures to qualify as an OECM, the management system or ABMT applied in the area should contribute to – or be realistically expected to contribute to – the conservation of biodiversity within the site. While the specific approach adopted to determine this contribution to conserving the site's key biodiversity attributes (also referred to as "biodiversity features", "biodiversity assets" or "biodiversity values"; see Box 2) will vary, what is important is that the approach is backed by supporting evidence, including monitoring data, if available, and/or expert opinion.

In order to ensure that the area can generate positive *in situ* biodiversity outcomes over the long term, the management of the area should be sustained and address manageable threats. Research has shown that the recovery of biodiversity attributes may take decades after the main manageable pressures have been removed. The need for long-term management thus speaks to the time it takes for biodiversity to benefit from the measure(s) and recover. As such, the recognition of biodiversity outcomes comes with an expectation that it will remain under management into the future.

While the primary objective of OECMs is generally not biodiversity conservation, any indirect benefits of effective management can feature in an evaluation of whether there are positive biodiversity outcomes resulting from management. However, while it is true that OECMs can be areas that have something other than conservation as their primary goal (sustainable production, for instance), it is also true that OECMs can be areas that were established for the purpose of biodiversity conservation but have not been reported as protected areas. This contrasts with protected areas, which according to the International Union for Conservation of Nature (IUCN) definition (Day *et al.*, 2012) always have conservation as their primary goal.

This criterion is at the heart of OECMs. It serves to ensure that areas recognized as OECMs do indeed contribute to biodiversity conservation and do not only serve sectoral management goals. Abiding by this criterion helps avoid labelling areas as OECMs when the net effect of the measure(s) is either not positive for biodiversity, or not sustained over the long term. For systems in which biodiversity-positive outcomes are slow to materialize, the rationale for calling an area an OECM will often need to rely on prediction or expert opinion, rather than solely on monitoring data that shows these effects.

Box 2. Biodiversity features, attributes, values and assets

In discussions around OECMs and the biodiversity they conserve, the terms "biodiversity attribute", "biodiversity feature", "biodiversity value" and "biodiversity asset" are often used interchangeably. While these terms may have different meanings, we assume biodiversity attributes and features to encompass parameters such as species richness, habitat type and coverage, or unique communities of organisms, as well as the underlying processes generating ecosystem services. Biodiversity values can relate to the physical characteristics of the site or its functioning, but the term can also refer to how humans perceive the biodiversity and the benefits it provides. Biodiversity assets, on the other hand, refer to those aspects of biodiversity of particular value to a sector. In this handbook, the term "biodiversity attribute" is used to encompass all these meanings – and the attribute or attributes that are the focus of the OECM will be variable and case-specific.

Criterion D

Associated ecosystem functions and services and cultural, spiritual, socioeconomic and other locally relevant values

In any marine area where a potential OECM occurs, it will be important to consider the many ways the ecosystem supports human well-being – through provisioning, regulating, supporting and cultural ecosystem services (see Figure 3). The inclusion of

the ecosystem services and values language in Criterion D reinforces the mission of the Strategic Plan for Biodiversity 2011–2020, which is to:

> take effective and urgent action to halt the loss of biodiversity in order to ensure that by 2020 ecosystems are resilient and continue to provide essential services, thereby securing the planet's variety of life, and contributing to human well-being, and poverty eradication. (CBD, 2010, p. 8)

This criterion signals that the area and its associated measures ultimately support the effective delivery of ecosystem services and functions, thus contributing to human well-being. In some respects, since all fisheries management aims to protect or enhance provisioning services (e.g. food production), this criterion is easily met with Fisheries OECMs. However, consideration of this criterion also ensures that measures undertaken in the area to promote one or more ecosystem services do not impede other ecosystem services or cultural values. For instance, measures to increase productivity in a fishery should not impinge on other ecosystem services being delivered – such as maintenance of water quality, or aesthetic and other cultural values. Figure 3 offers a graphic representation of the various ecosystem services which coastal and marine areas can provide.

Keeping the definition of OECMs and these criteria in mind, while remaining mindful of the many benefits that can flow from the identification and reporting of OECMs, fisheries managers may wish to establish a simple but systematic process for Fisheries OECM reporting. Some suggestions for such a process are offered in the next section.

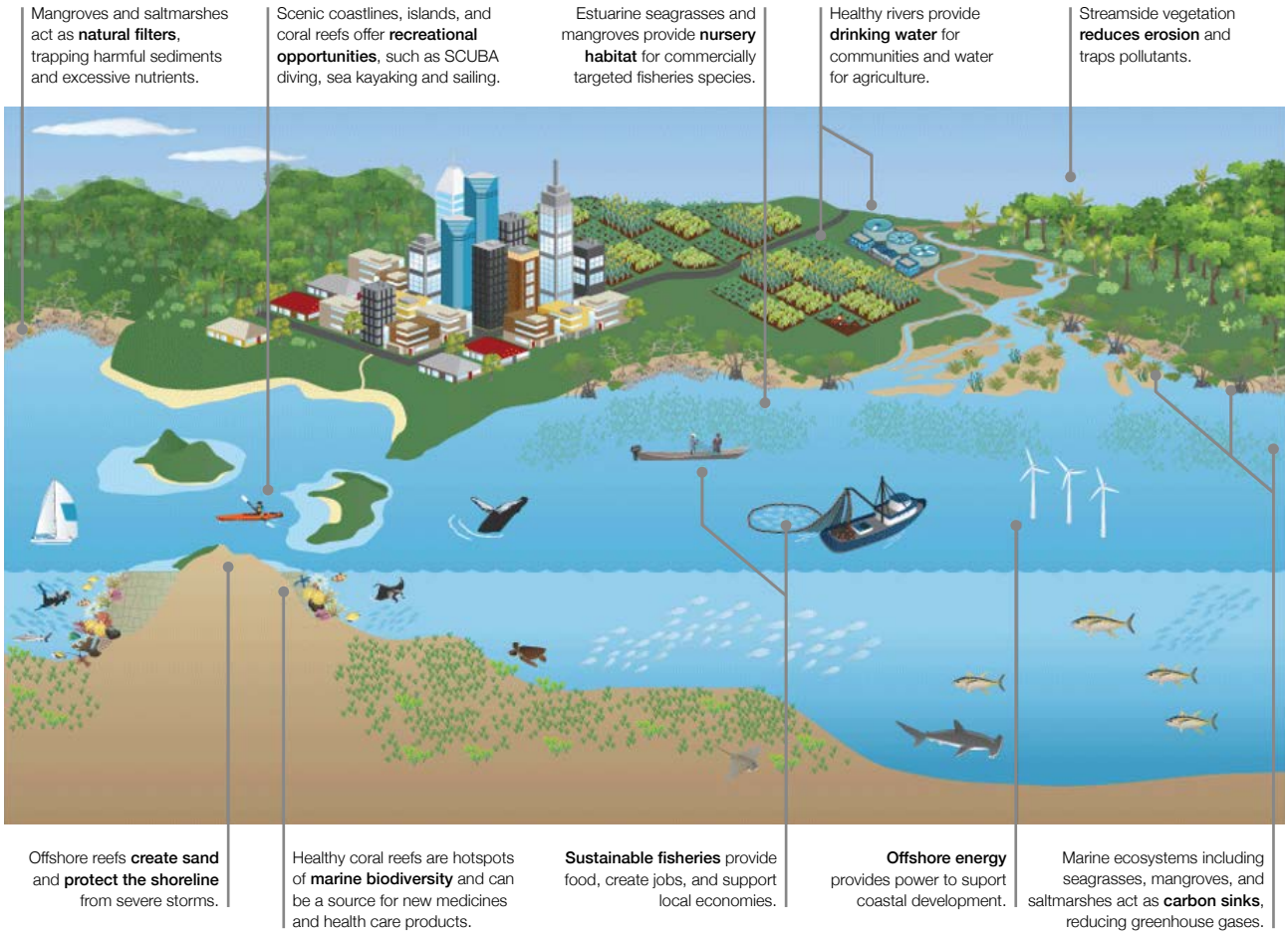
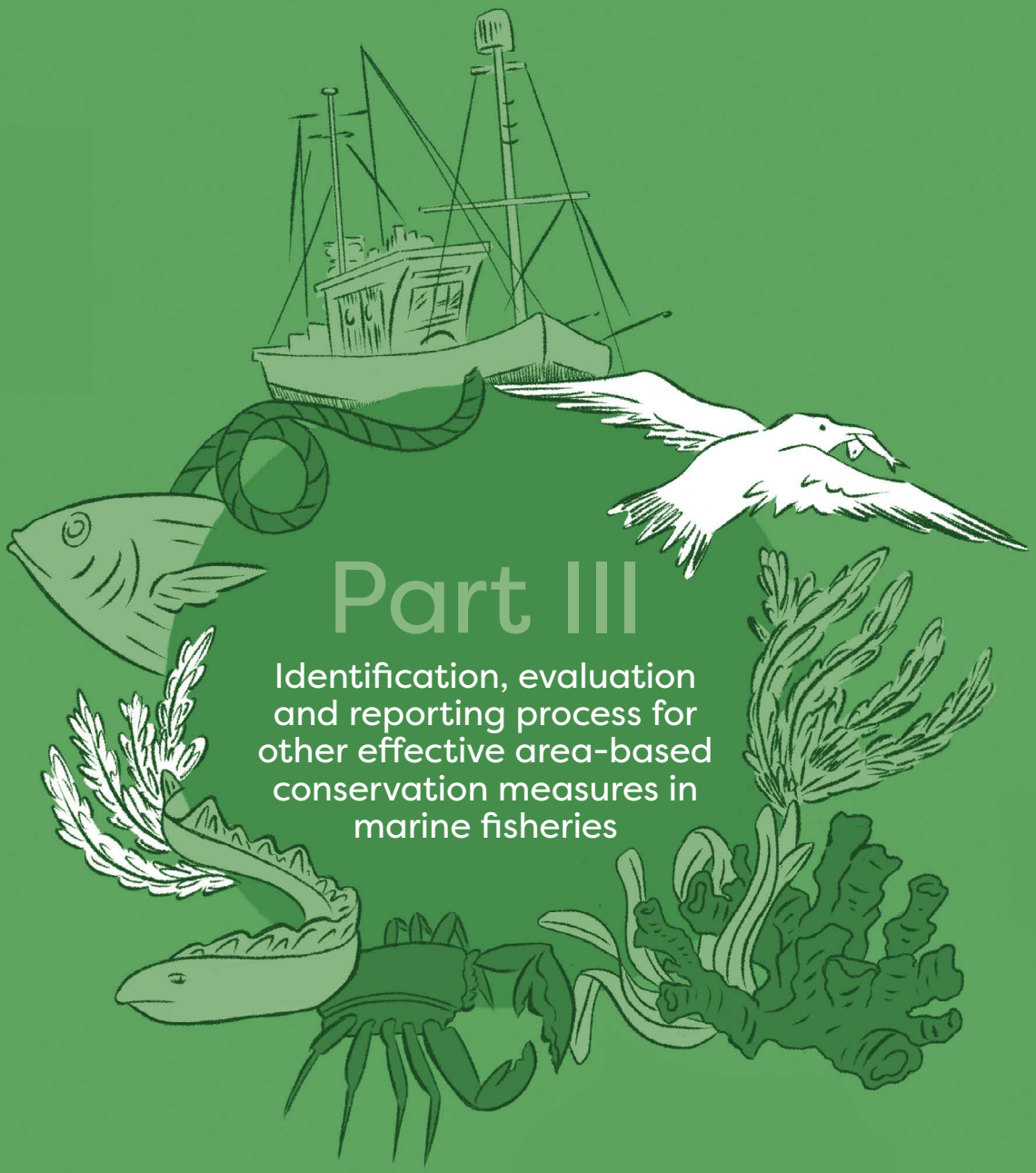


Figure 3. Some ecosystem services originating from coastal and marine areas

Source: UNEP. 2011. *Taking Steps Toward Marine and Coastal Ecosystem-Based Management: An Introductory Guide.* Nairobi, UNEP.



Part III

Identification, evaluation and reporting process for other effective area-based conservation measures in marine fisheries

- Part III sets out a process for the identification, evaluation against criteria, and reporting of Fisheries OECMs. It is a practical and efficient process that fisheries management agencies, as well as other government bodies and stakeholders, can readily undertake.
- The generic process outlined offers a set of signposts for countries to follow when establishing their own OECM identification, evaluation and reporting processes. It has four main phases:
  1) a launching phase that initiates the OECM identification process;
  2) an initial screening phase to quickly filter sites that are unlikely to qualify as OECM;
  3) an evaluation phase to assess candidate areas against the OECM criteria, with documentation; and
  4) a reporting phase in which Fisheries OECMs that meet the criteria are formally recognized and then reported.
- The Fisheries OECM identification, evaluation and reporting process involves assembling appropriate teams of people and information to carry out a stepwise evaluation of possible OECM sites.
- Establishing an agreed, systematic process for Fisheries OECM identification, evaluation and reporting at the country level can help streamline efforts, enhance collaboration and minimize conflict.
- The Fisheries OECM identification, evaluation and reporting process should always happen with the consent of the legitimate governing authority and relevant rights holders.
- It follows that the identification, evaluation and reporting of Fisheries OECMs will require distinct and tailored processes depending on the nature of the authorities governing the fisheries management of the area in question.
- Fisheries OECMs that align with the CBD's OECM definition and criteria can be reported to the CBD, the WD-OECM and other repositories, as appropriate.

A process for identifying, evaluating and reporting other effective area-based conservation measures in marine fisheries

Overview

Any institution wishing to identify existing measures/areas and evaluate them in order to report qualifying areas as Fisheries OECMs could benefit from answering a number of standard questions about the measures and their outcomes. This section outlines a generic process to identify, evaluate and report Fisheries OECMs that can be adapted to any country or institution's circumstances and capacities; it offers best practice steps that will enhance effectiveness and efficiency of evaluating and reporting Fisheries OECMs. There is no single correct approach to doing this; however, for the OECM recognition to be meaningful, and to ensure that credit for biodiversity conservation is given where it is due, a systematic approach is helpful.

The identification of Fisheries OECMs begins with initial screening, in order to create a list of candidate areas, followed by a full evaluation of these. Areas that meet OECM criteria can be recognized and subsequently reported to national databases, as well as to CBD-aligned global databases such as the World Database on Protected Areas and the CBD itself. A simplified diagram of this process, shown in Figure 4, illustrates how candidate areas that do not meet OECM criteria can be flagged for management enhancements. Thus, for those candidate areas that fall short of meeting one or more criteria, and for which management could be strengthened to allow criteria to be met, the area may be recognized as a Fisheries OECM (if and when criteria are met).

However, the process of identifying and reporting Fisheries OECMs entails more than technical means to assess sites and their measures against the criteria. The full process begins with a commitment to evaluate sites objectively, assembling a team to do the evaluations, as well as the participation of stakeholders alongside the consent of rights holders. The full process recommended in this Fisheries OECM handbook, showing detailed steps for OECM identification and evaluation, is described in Part IV.

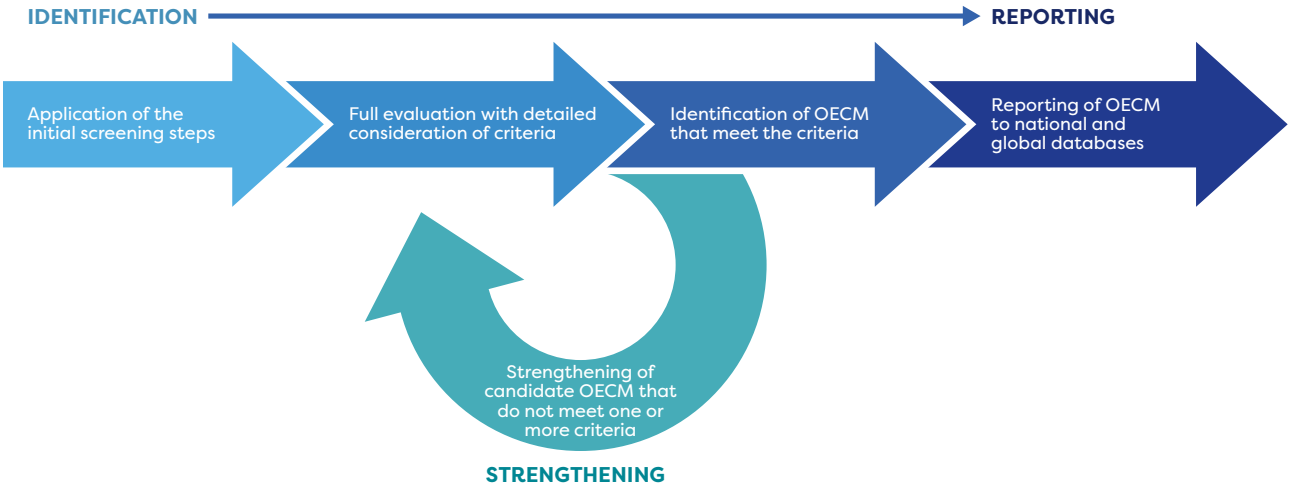


Figure 4. Main steps for one type of OECM identification process

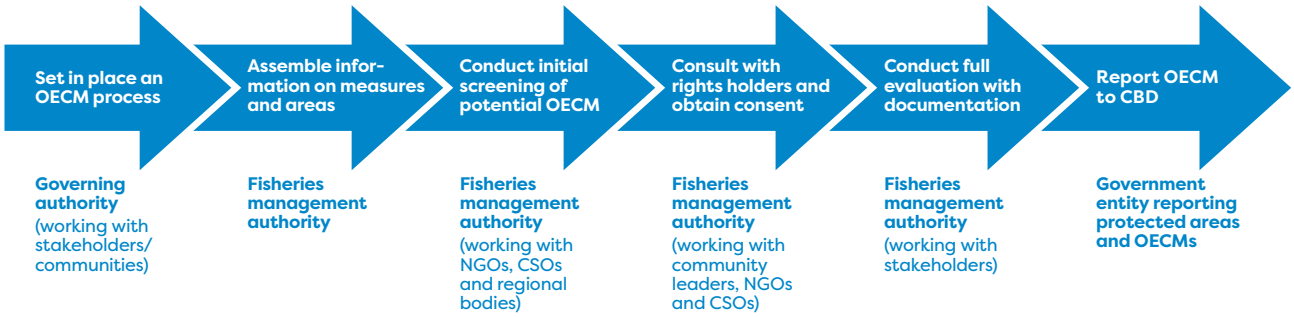


Figure 5. Actors typically involved in the OECM process when it is overseen by a fisheries management agency or government

Actors involved

There are diverse ways fisheries management can lead to biodiversity-positive outcomes; likewise, diverse actors are involved in the various steps of the process. It is important to involve the full range of actors across a wide range of different stakeholder groups, and across different competencies and authorities. This has a variety of benefits: it helps create an inclusive and transparent process; it can address issues of equity; it recognizes the value of inputs from different stakeholder groups as well as different types of knowledge; it improves the likelihood that the OECM evaluation will be accepted and that management measures will continue to be supported; and finally, it recognizes the importance of IPLCs in fisheries management and biodiversity conservation (Maini *et al.*, 2023).

The specific types of actors to involve will vary according to institutional frameworks, data availability, mandates to assess progress towards goals, etc. Figure 5 shows a generic actor mapping for the steps of the OECM process when that process is initiated by a government agency or authority.

In contrast, there will likely be situations in which the OECM identification process is initiated by a fishing community or other non-governmental entity, which has some sort of management authority for the area being considered as a possible OECM. In these cases, the actor mapping is slightly different (Figure 6). Either pathway offers a simple, systematic and transparent way of identifying Fisheries OECMs that meet the CBD criteria, which can then be reported to national and global databases.

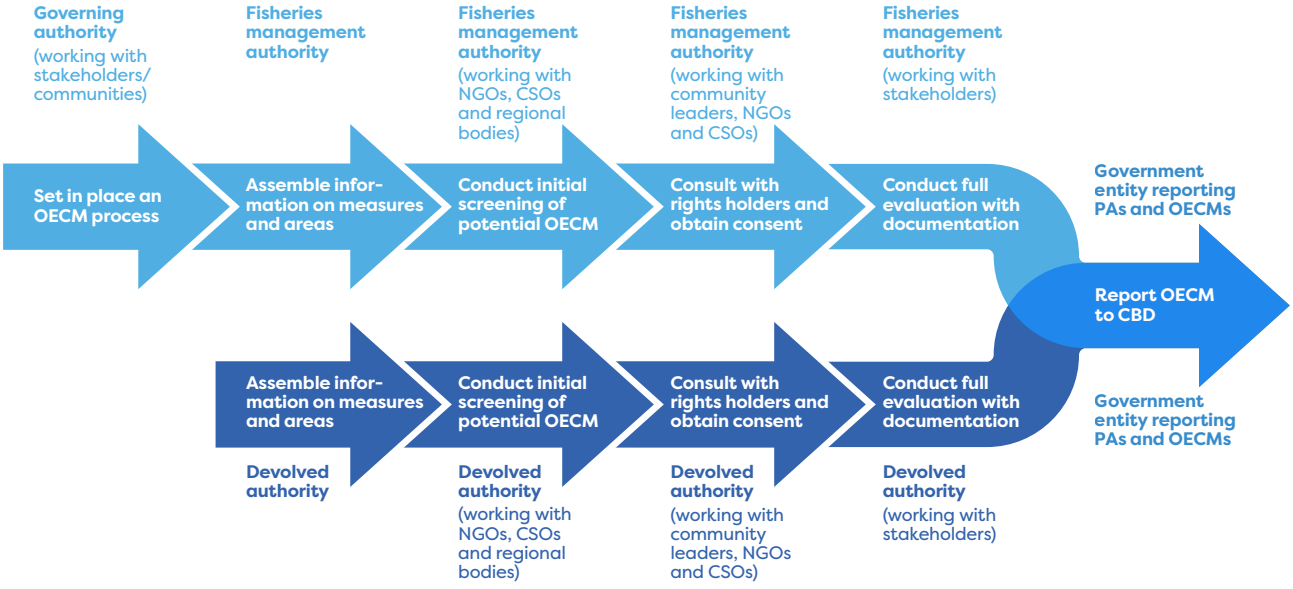


Figure 6. Alternative pathways to Fisheries OECM reporting initiated by a) a government entity or b) a devolved authority, such as, for example, a fishing community in an RFA or LMMA

Phases of the process

While the CBD decision and the relevant reporting mechanisms enable the governing authorities of individual areas to recognize and report their areas as Fisheries OECMs, there is value in setting up subnational and national governance frameworks to coordinate the screening of candidate areas and formal recognition of Fisheries OECMs. This can help coordinate the fisheries actors involved in the process at the national level, while enhancing intersectoral dialogue that can catalyse strengthened conservation measures by other sectors in and around recognized Fisheries OECMs. Such a framework can also create economies of scale, such that multiple sites could be evaluated efficiently.

The CBD decision provides limited information on the design of governance mechanisms, leaving countries the flexibility to establish a system that fits within existent institutional structures and best suits their needs. A streamlined process for identifying Fisheries OECMs can also be adopted by other sectors or done as a multisectoral process – not just for CBD reporting but for national databases and reporting under other international agreements. The process outlined in this handbook is tailored for government institutions undertaking systematic evaluations of existing fisheries areas/measures; however, it should be emphasized that non-governmental entities can also identify Fisheries OECMs and could use the same OECM process. This is particularly true for IPLCs, which practise many types of area-based management that contribute to biodiversity conservation, and who bring a range of traditional and other knowledge to the process that may not be available to government agencies.

The generic process recommended in this handbook encompasses four main phases:

1. a launching phase that sets in motion the simplified pathway to Fisheries OECM identification;
2. an initial screening phase to quickly filter sites that are unlikely to qualify as Fisheries OECMs;
3. an evaluation phase to assess candidate areas against the OECM criteria, with documentation; and
4. a reporting phase in which the Fisheries OECMs which meet the criteria are formally recognized by governing authorities maintaining national protected area databases, and then reported to CBD, the WD-OECM and other repositories, as appropriate.

The full process is detailed in Figure 7. Note that there are optional steps in this process as well: fisheries agencies might opt to work with other sectors to identify multisectoral OECMs; alternatively, areas that do not meet one or more criteria may be set aside for assessment of how management within them might be enhanced to allow them to meet OECM criteria at a later stage.

Launching the process

In the event that a process for identifying multiple Fisheries OECMs is desired (as opposed to having potential OECMs identified one at a time by a government agency or by IPLC), this will likely be initiated by a fisheries management agency working with other sectors, academics, communities, non-governmental organizations (NGOs) and/or civil society organizations (CSOs), where applicable. Launching a Fisheries OECM process unilaterally within fisheries management processes will be different from multisectoral processes in which Fisheries OECMs are identified and evaluated alongside OECMs from other sectors (e.g. energy, shipping, tourism, environment, etc.). In areas with multiple uses of the marine space, or in which multiple pressures arise from different sectors, an integrated, collaborative multisectoral OECM identification process is considered best practice and will ensure that biodiversity outcomes are sustained and long-term.

For unilateral Fisheries OECM identification, a team could be established at a national or regional level (e.g. within a regional fishery body [RFB] or RFMO) to evaluate management measures and areas that could qualify as Fisheries OECMs. The core team

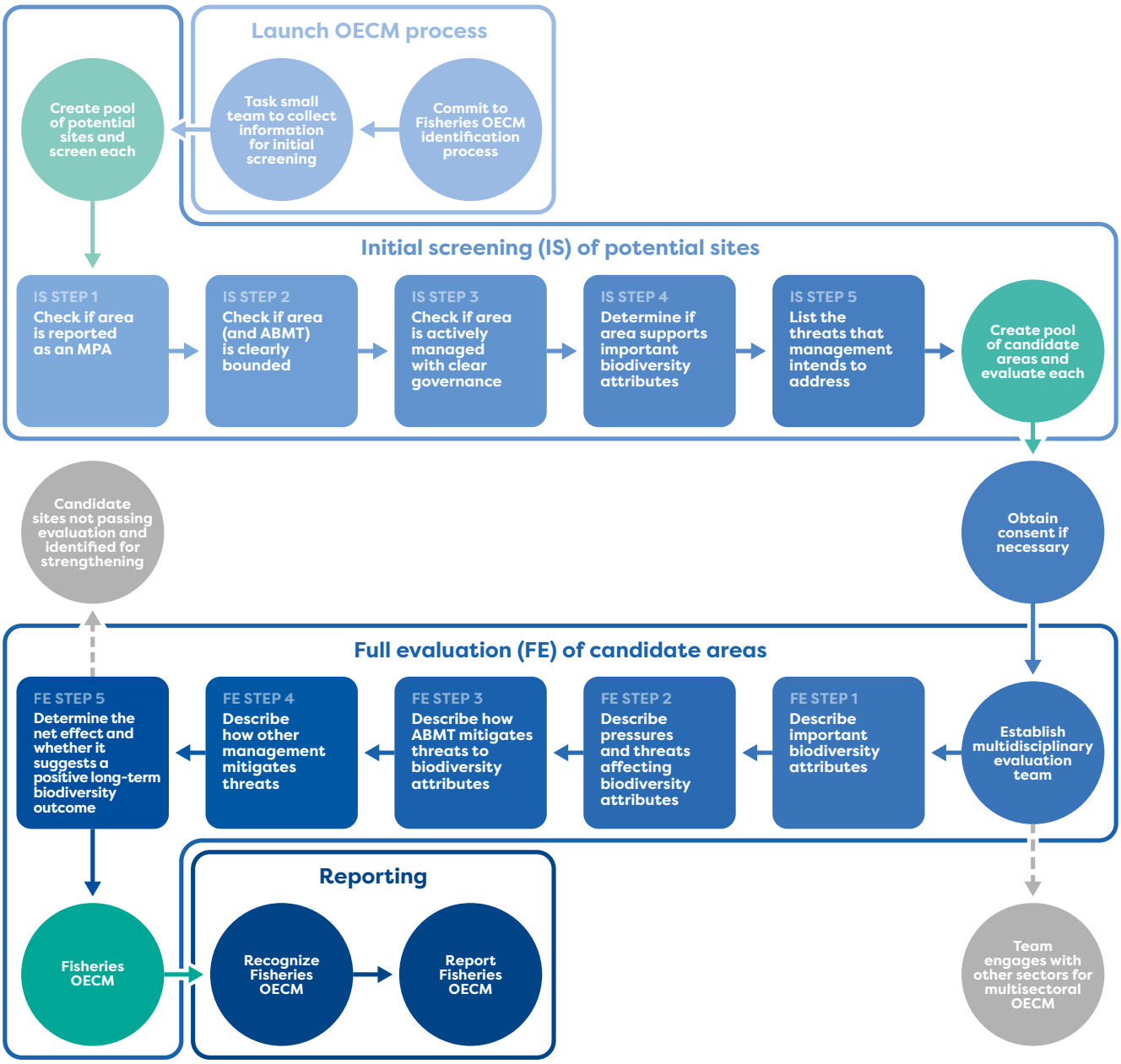


Figure 7. Phases and systematic steps in one possible Fisheries OECM identification process

might be quite small for the initial screening. This core team could then be supplemented by additional expertise and representation for the purposes of the full evaluation. Such a technical team should ideally include experts from the fisheries sector (and other sectors if needed), experts in conservation and biodiversity fields, and key rights holders and stakeholders (as shown in Figure 5 and Figure 6).

There are a number of ways the team described above could coordinate and oversee the gathering of information needed to screen and evaluate potential OECM sites. One approach is to issue a call for stakeholders to offer suggestions for sites to be evaluated. In some countries that have initiated or undertaken OECM identification, all possible OECM sites have been brought to the table and

then systematically assessed against OECM criteria; this was the case for the Canadian Fisheries OECMs (Canada Department of Fisheries Oceans, 2016). In other countries, OECMs are evaluated on a one-off, case-by-case basis. For example, in Colombia, a process was established for nominating potential OECMs to the Ministry of Environment along with required documentation to initiate the identification and selection process, which ultimately led to the reporting of the area (Gómez *et al.*, 2021). For agencies with limited time and capacity to evaluate all fisheries ABMTs, it may be preferable to begin with those sites for which the biodiversity benefits are already known (the result of monitoring data) and are most likely to meet the OECM criteria. This 'low-hanging fruit' can allow agencies to test methods for OECM evaluation and craft a process that is tailored to the available information, as well as their institutional capacities and skillsets.

A comprehensive way to compile the inventory for potential Fisheries OECM areas would entail developing a master list of all sites that are likely to meet the OECM criteria or that have the key characteristics or potential to be an OECM. Alternatively, the master list might contain all fisheries ABMTs and their corresponding areas. For some countries, access to information about ABMTs being used in fisheries is straightforward, and databases already exist to provide evidence about where these measures are being used and to what effect. In other cases, extracting this information may be more difficult, and it may be preferable to identify sites one at a time as opportunities arise.

Establishing a screening team

The benefit of undertaking an initial screening is to eliminate areas that are unlikely to meet OECM criteria quickly. This allows for a more efficient use of the time and resources needed to undertake a detailed evaluation against the OECM criteria. In addition to identifying sites that have high potential to meet the OECM criteria, the initial screening can also be used to highlight which measures in which areas might be improved so they can qualify as OECM. Detailed technical considerations for screening and evaluation are provided in Part IV of this handbook.

Establishing a methodology for full evaluation

Decision 14/8 stresses that the "recognition of other effective area-based conservation measures should follow appropriate consultation with relevant governance authorities, landowners and rights owners, stakeholders and the public" (CBD, 2018b, p. 11; Annex III A.(g)). In addition, it stipulates that:

> [the] recognition of other effective area-based conservation measures in areas within the territories of Indigenous Peoples and local communities should be on the basis of self-identification and with their free, prior and informed consent, as appropriate, and consistent with national policies, regulations and circumstances, and applicable international obligations. (CBD 2018b, p. 11; Annex III A.(i))

It is essential that the consent of the governing authority of the area – whether a centralized government, local government, or IPLC authority – as well as that of any relevant rights holder, is obtained *before* the area goes through the full evaluation process to determine if it meets OECM criteria. Ideally, and to prevent any conflict, the governing authority and relevant rights holders should participate in or contribute to the evaluation of the area they govern or manage; their consent is critical to the use of any proprietary information. For the purposes of identifying existing measures in areas that could qualify as OECMs, it is assumed that mechanisms for such active engagement and for obtaining consent are already firmly in place, since these are key features of any management system with good governance.

It is beneficial to engage a broad range of technical experts, and stakeholders who may hold other forms of information and knowledge, in the next step of the process (Figure 5 and Figure 6). The next phase is full evaluation of candidate areas that emerged from the initial screening of sites (and for which the appropriate consent has been obtained). Since the screening will involve sourcing information such as management plans, monitoring or survey reports, together with other assessments or studies that may have been done in the area (e.g. biodiversity assessments, environmental impact assessments, risk assessments, etc.), as well as user knowledge from relevant

stakeholders, their participation is key. In many developing countries formally reported information may not be available, or access to it may be limited. This can also be the case in areas managed by IPLCs. In such cases, the assessment can still be undertaken based on expert assessment, which would also enable the incorporation of local and traditional knowledge. The way this knowledge is accessed and shared needs to be considered carefully by the authority(ies) overseeing the OECM process – and of course, IPLCs can launch and govern an OECM identification process themselves, independent of government.

Recognizing and reporting Fisheries OECMs

Once the full evaluation of candidate Fisheries OECMs has been completed, a decision can be made about whether the area should/could be recognized as an OECM. The decision to recognize (and consequently report) a Fisheries OECM may take into account factors that go beyond the technical evaluation, and the mechanisms by which selected sites are formally recognized will vary. However, in all cases it is clear that an area cannot be recognized without the consent of its governing authority.

The decision to recognize an area as a Fisheries OECM could be done by a sectoral authority (fisheries agency or ministry, for instance), or could be done through an intersectoral group, which would contribute to the coherence of the wider marine OECM network recognized within a country or a region. What is more, OECM recognition through an intersectoral body would facilitate the sharing of information concerning the biodiversity and other values of the area, and of any additional management measures it may need from other sectors. For most countries that have a process of marine spatial planning (MSP), the governance structures for intersectoral decision-making could be used to recognize OECMs.

Documenting OECMs helps countries assess their progress towards national and international goals, as well as their CBD commitments or commitments under other international agreements. There is no requirement for countries to report to a particular register. However, reporting to the CBD allows a country's progress towards biodiversity goals such as those agreed in the Post-2020 Global Biodiversity Framework and Sustainable Development Goals 14 and 15 to be recognized. The reporting of OECMs to the CBD is done by the national governments of the parties to the Convention. Regional organizations such as RFMOs can catalyse the reporting of OECMs by their Member States, and can report transboundary Fisheries OECMs on behalf of, or in coordination with their Member States (see Box 4). Countries can also report to CBD-aligned databases like the WD-OECM, a companion database to the WDPA.[10]

Box 3. Recognizing OECMs

The guiding principles in Annex III of the CBD Decision 14/8 highlight three main points in relation to the recognition of OECMs:

- Recognition of other effective area-based conservation measures should follow appropriate consultation with relevant governance authorities, landowners and rights owners, stakeholders and the public;
- Recognition of other effective area-based conservation measures should be supported by measures to enhance the governance capacity of their legitimate authorities and secure their positive and sustained outcomes for biodiversity, including, *inter alia*, policy frameworks and regulations to prevent and respond to threats; and,
- Recognition of other effective area-based conservation measures in areas within the territories of indigenous peoples and local communities should be on the basis of self-identification and with their free, prior and informed consent, as appropriate, and consistent with national policies, regulations and circumstances, and applicable international obligations. (CBD, 2018b)

[10] WD-OECM was established by the World Conservation Monitoring Centre and IUCN to help record all identified OECMs in a standardized way; it is publicly available through the Protected Planet website (www.protectedplanet.net). CBD-aligned databases like the WD-OECM are also used by the CBD Secretariat for reporting on progress towards Aichi Biodiversity Target 11, the Post-2020 Global Biodiversity Framework, and for reporting on SDGs. These databases are accessible to the public. Reporting to WD-OECM can be done by government, as well as by private entities, IPLCs. However, data from non-government providers undergo a verification process before being added. Details of the process to submit data related to areas to be included in WD-OECM are described in the user manual for the World Database on OECMs (UNEP-WCMC, 2019).

Through OECM reporting, countries can also assess their progress against national goals. The reporting process is therefore also directed at national registers of protected areas and nature conservation.

Governance of the process

Two different types of governance frameworks can be implemented, as per Figure 8. Either managers of a single sector (in this case, fisheries) drives the identification process, or a multisectoral OECM process is undertaken. In the latter case, Fisheries OECMs that emerge from full evaluation and are selected could be forwarded to a multisectoral or intersectoral coordination group, if such an entity exists, for recognition and reporting. This will be necessary in cases where other sectors are operating in the same space where ABMTs are being used. However, it should be noted that in the cases where the sole management of the area is done by fisheries managers, the OECM process could be undertaken unilaterally by fisheries authorities. Therefore, while the multisectoral, integrated evaluation and recognition process has benefits, for many countries it will be appropriate to address OECMs on a sector-by-sector basis.

As previously suggested, a diverse range of actors should be involved in the full evaluation of candidate areas and their measures. Managers or management authorities of the area(s) taking part in the evaluation will be able to answer many of the questions and easily provide information and knowledge on the candidate OECM. Rights holders and stakeholders should also take part in the full evaluation, as they can provide critical knowledge and insight, particularly on governance aspects, other threats, ecosystem services and any other area values of local relevance.

As for any group-based evaluation, some questions may result in divergent views, especially in the absence of data or knowledge to help inform the answers and provide evidence. For this reason, it is advisable to elaborate rules for decision-making, especially in the event of a lack of consensus.

Box 4. Regional bodies and Fisheries OECM identification and reporting

Areas where fisheries ABMTs are instituted often fall under multiple jurisdictions – transboundary areas, in other words, involving both state/provincial and national governments – or areas shared by neighbouring countries. Fisheries management areas may also overlap with multiple other sectoral jurisdictions. This occurs, for instance, when a fisheries agency manages bottom fishing that affects seabed areas that are leased by a minerals or energy agency. In addition, fisheries areas may encompass multiple national jurisdictions or span the area from a national jurisdiction into the high seas or ABNJ.

For transboundary areas that qualify as an OECM, any country will be able to declare and report only the portion of the OECM that falls under their jurisdiction. For areas that fall under the jurisdiction of multiple management authorities within a single country, the question is not whether the country can report the area as an OECM, but rather which sectoral agency leads the identification of the OECM, including evaluation against the criteria. More importantly, if multiple sectors use the site, OECM identification should consider the existing and prospective threats to biodiversity that each use presents, and the effectiveness of management by each sector in alleviating threats to biodiversity. To the extent possible, fisheries agencies should work with other sectors, as well as non-government partners and communities, to identify and address the broad suite of threats that affect biodiversity in heavily used areas.

It is important to note that RFMOs can recognize and report OECMs on behalf of their Member States. This is particularly significant in the case of transboundary OECMs, or where there is regional agreement to adopt a particular type of ABMT replicated across many jurisdictions. In these cases, RFMOs can, and often do, work closely with regional seas organizations (RSOs). For Fisheries OECMs that may extend into, or are wholly contained within ABNJ, RFMOs can report OECMs. In this case, however, the coverage of these OECMs in ABNJ cannot count toward national targets, only global targets.

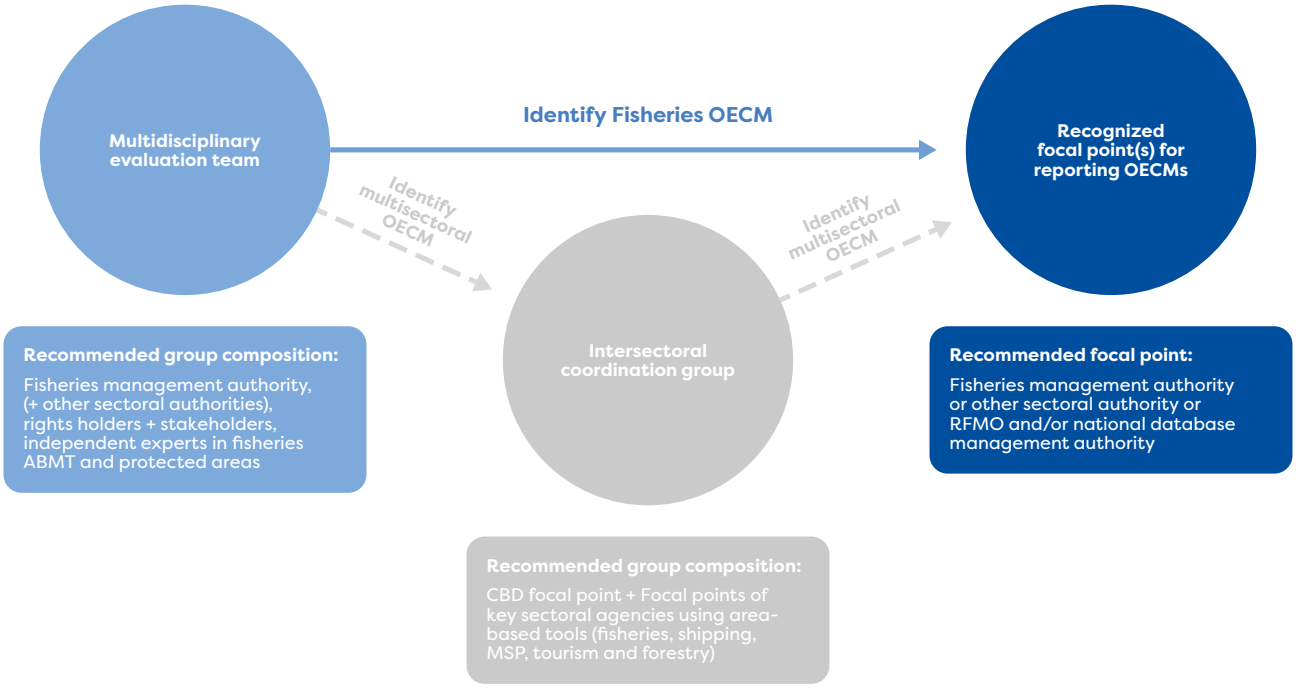


Figure 8. Generalized institutional frameworks for evaluating candidate OECMs

Each country may develop its own rules, depending on the procedures and decision-making mechanisms already in use in the country or cultural context. The most important thing is that the ground rules are clear and accepted, and that the resulting evaluation is not contested. Documenting the screening and evaluation processes is also important, particularly in terms of any divergence of views or difficulties interpreting the criteria in a particular context. These cases should be discussed at a national level where possible; a standard interpretation or way forward could then be agreed to ensure coherence in OECM recognition throughout the country.

Maintaining a candidate pool of other effective area-based conservation measures

The Fisheries OECM identification and evaluation process is used to select Fisheries OECMs that meet CBD criteria. However, it can also be useful to highlight fisheries management areas that could be modified to promote biodiversity conservation more effectively, in order to qualify as OECMs in the future. This is what is referred to as the Strengthening Step in the OECM process (refer back to Figure 4).

The full evaluation process provides details on any criterion that is not met by a candidate area; in some cases, the management authority may also be interested in enhancing certain aspects of management to address specific shortfalls, so that the area can eventually be reported as a Fisheries OECM.

The Fisheries OECM process should thus establish a means for maintaining this pool of sites, which can be revaluated at a later date if management improvements or access to better information are possible. A list of disqualified candidate sites could be maintained and analysed to determine whether the cause for disqualification is something that can be addressed relatively easily, thereby allowing for an expansion of OECM sites in the future. As a minimum, a list of the candidate sites that did not pass full evaluation, with links to information used during screening (including contact information for information providers, rights holders and stakeholders) should be maintained by the overseeing authority.

Part IV

Evaluating other effective area-based conservation measures in marine fisheries

- Part IV focuses on the evaluation phase of the entire process (identification, evaluation and reporting). It details the steps to undertake an initial Fisheries OECM screening and full evaluation. These steps are intentionally generic, offering signposts to countries as they establish their own OECM evaluation processes.
- OECM evaluation can be undertaken either by looking systematically at several potential sites, or on a site-by-site basis.
- An initial screening of potential Fisheries OECM sites can be implemented to determine whether they meet certain basic characteristics. Sites that pass the initial screening can then be identified as candidate Fisheries OECMs.
- For candidate sites, the full evaluation steps are designed to support countries determine which areas can be recognized and reported as Fisheries OECMs – in accordance with the definition, criteria and guidance on OECMs developed by the CBD COP.
- Evaluation can draw on both monitoring data and expert opinion. Evidence can be quantitative and/or qualitative.
- The initial screening and full evaluation can highlight fisheries management areas that do not yet meet OECM criteria but *could be modified* to promote biodiversity conservation more effectively, and therefore qualify as Fisheries OECMs in the future.
- A hypothetical case study of a potential Fisheries OECMs in a fictional country is provided to illustrate all phases of OECM identification, evaluation and reporting. The case study has been provided because only a limited number of marine OECMs have been identified and reported to date.

The Fisheries OECM evaluation process begins by assembling information on sites and measures that are potential OECMs. A list of potential sites is drawn up, which is then quickly reviewed using the steps in the initial screening process. Broadly speaking, the initial screening involves examining existing pressures and threats affecting the potential OECM site and describing the positive biodiversity outcomes that result, or are expected to result, from management. Once a potential OECM has passed initial screening, it can then be referred to as a "candidate OECM" and subjected to a full evaluation.[11]

While the term OECM refers to "measures" and not "areas", the CBD definition and criteria make it clear that it is indeed the area that needs to be evaluated. Clearly, no fisheries ABMT will produce the same result in terms of effective conservation of biodiversity in every place it is implemented. Fisheries ABMTs therefore need to be evaluated in the context of the specific sites in which they are applied, weighing up the considerations outlined in Figure 9.

Using this methodology, potential sites can be identified and evaluated either opportunistically (as an area garners attention as a possible OECM, having been put forward either by fisheries managers, fishing communities, NGOs, CSOs, or academic researchers); or systematically, whereby an entire suite of sites within a country is evaluated at the same time. Economies of scale may mean that considering a suite of sites at once is preferable to evaluating them on an individual basis. Nevertheless, whether one or more sites are being evaluated, the considerations are likely to be the same. Furthermore, depending on the extent to which OECMs are a widely known concept within the sector, initiating this process might require awareness-raising and/or requests for participation in Fisheries OECM identification processes by stakeholders and rights holders in the fisheries sector.

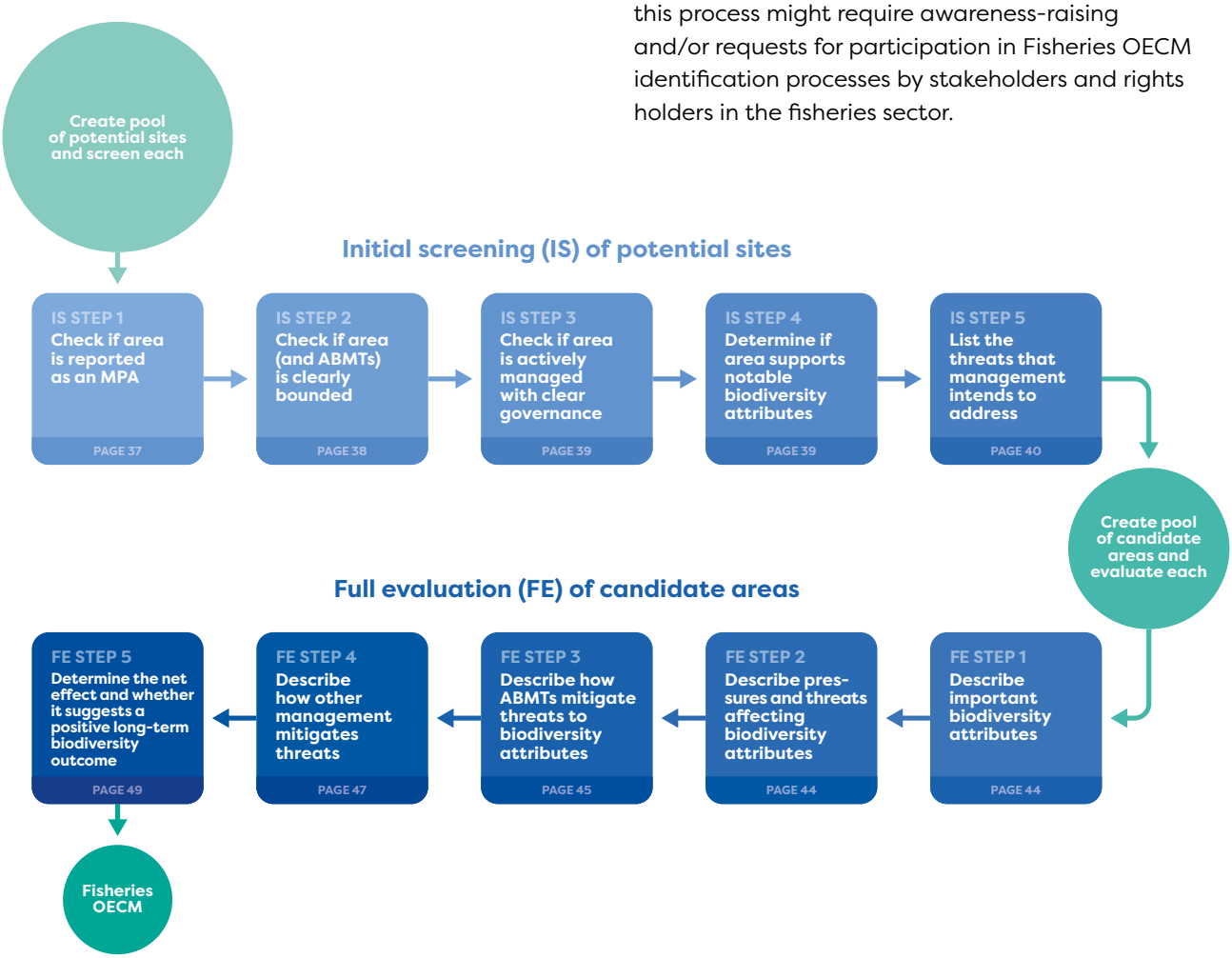


Figure 9. Simplified steps for OECM identification, evaluation and reporting

[11] The handbook refers to this as systematic evaluation, though this does not imply an assessment of management efficacy or efficiency; rather, it is an objective evaluation of whether marine areas with existing fisheries ABMTs implemented in them produce such biodiversity outcomes as to qualify as Fisheries OECMs.

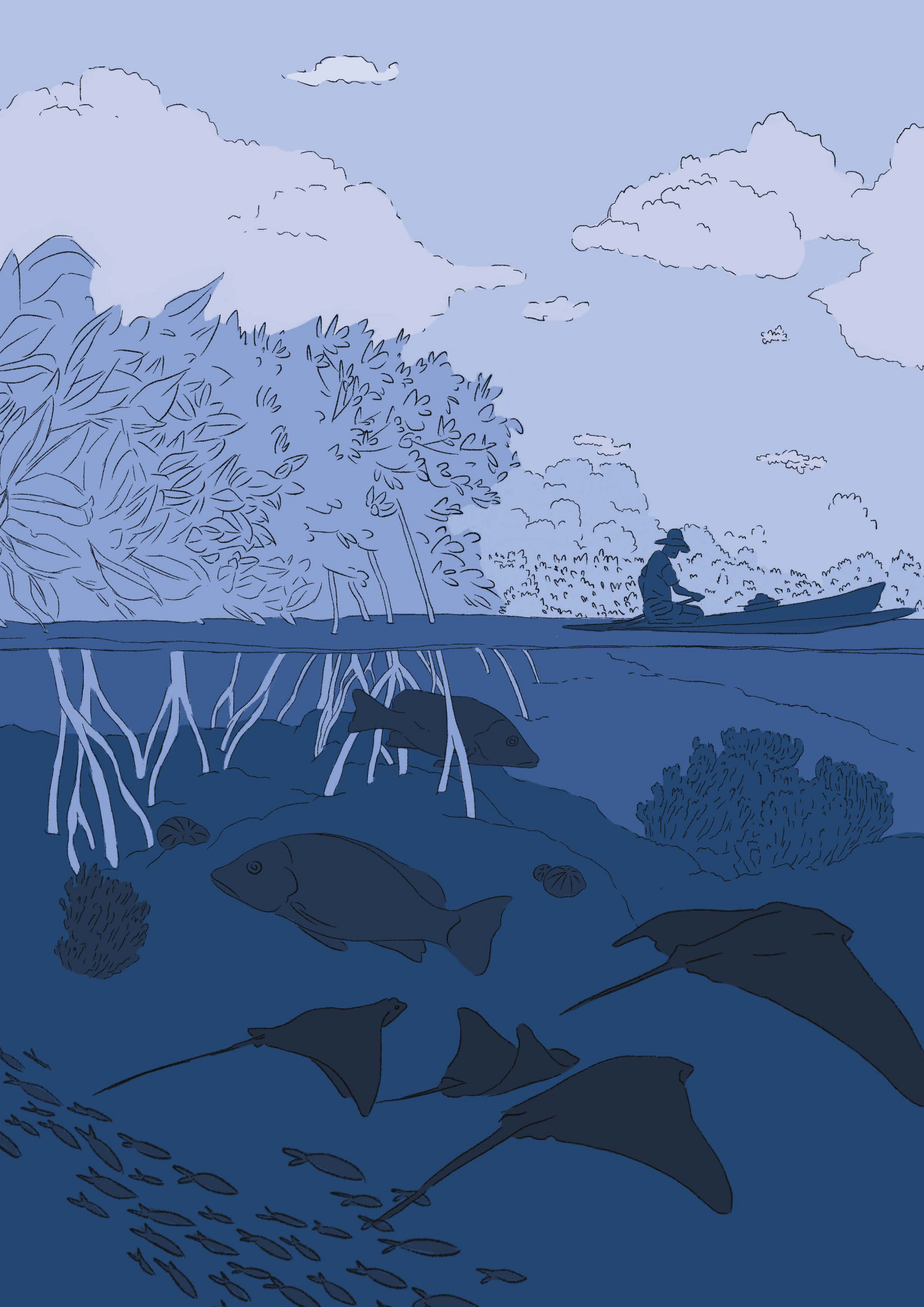
Collecting and collating information

To create a pool of potential OECM sites, information needs to be collected on the site's location and coordinates, governance, availability of data and knowledge on the ecology and environment. This also includes monitoring programmes, with an indication of who does the monitoring and how monitoring data are managed, as well as the uses of and pressures on the site, the fisheries management measures themselves (which tools are employed, for how long, with how much compliance, etc.), and the biodiversity-related outcomes (or expected outcomes).

Populating the pool of potential sites can be achieved by beginning at one of two starting points. Fisheries agencies (or other institutions) can adopt either:

A) An area-based approach: For countries systematically evaluating their fisheries ABMTs against the OECM criteria, information may be readily available. Here, the whole set of sites being managed with fisheries ABMTs could be reviewed. In such cases, countries could collate information on all the fisheries ABMTs being implemented in those areas in order to inform the OECM evaluation.

B) A measure-based approach: Countries with comprehensive databases that document the fisheries ABMTs in use – and in which regulations and use patterns are mapped – could begin by developing a master list of fisheries ABMTs currently employed. They could then ascertain where these tools are being used, providing the foundation for evaluation.



Conducting initial screening

The goal of an initial screening is to allow a shortlist of promising candidate sites to be drawn up before a significant amount of time and effort is expended on a full evaluation. The initial screening process thus filters out areas that cannot qualify as an OECM based on a core set of screening steps, resulting in a shortlist. A simplified decision tree for this initial screening is provided in Figure 10.

Though this handbook describes this initial screening and the subsequent full evaluation as a set of systematic steps, **it nonetheless recognizes that each region, country and institution undertaking the OECM process will tailor the approach to their own needs and institutional context (in line with the CBD definition and its reference to flexibility)**.

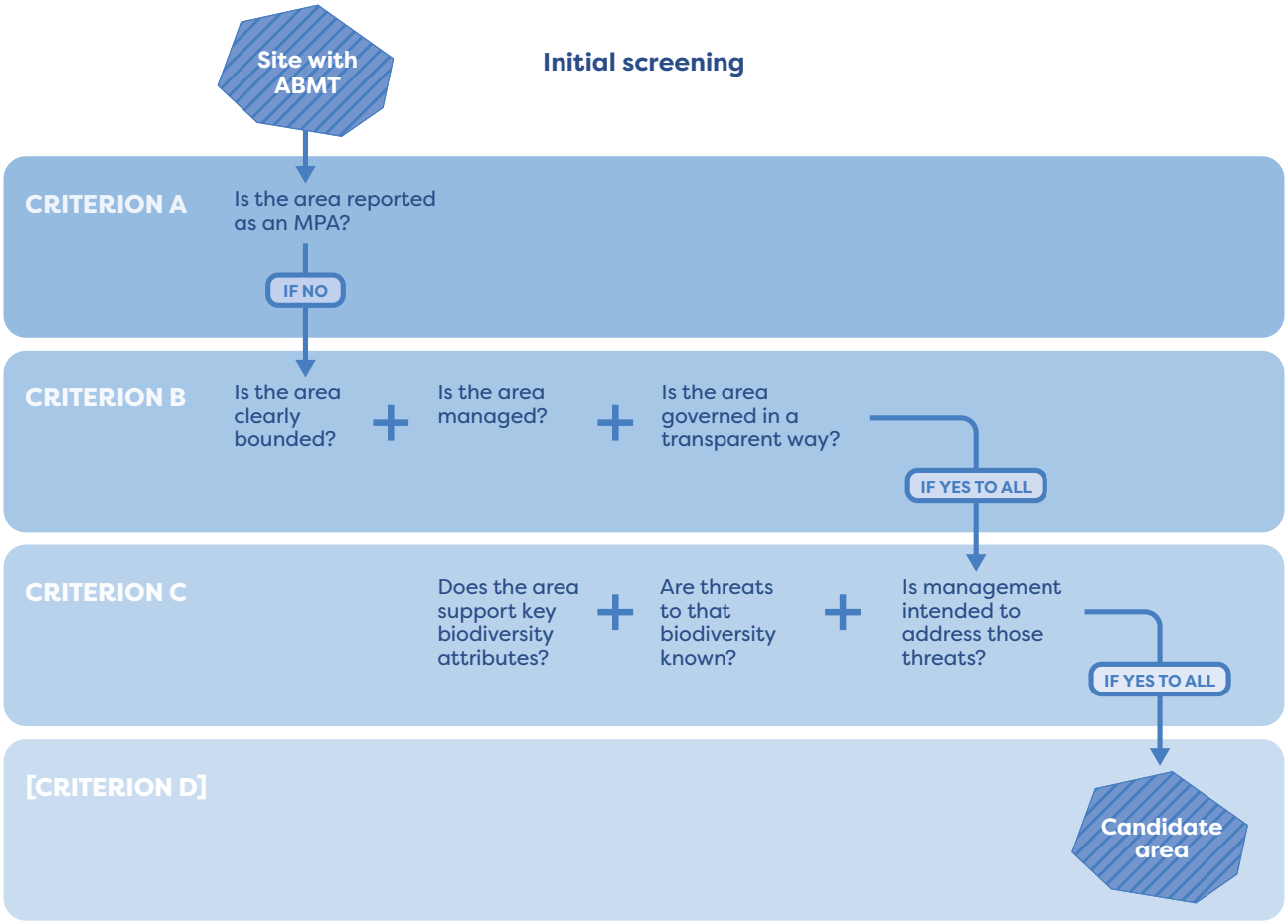


Figure 10. Simplified decision tree for initial screening of potential sites, with a focus on Criteria A and B, as well as an outline of the information needed for full evaluation, focused on Criteria C and D

Initial Screening Step 1: Check if the area is reported as a marine protected area

To help determine whether a site can be a candidate for OECM recognition under Criterion A, consider this question:

Is the area under consideration reported as a marine protected area (MPA)?

To avoid double-counting, the screening should ensure that any site being considered has not previously or is not currently reported as an MPA in global database repositories (WDPA). Note that sites that are called 'marine protected areas' or similar by user groups or local authorities – but which are not recognized by national authorities as MPAs and have not been reported as such – can still potentially be recognized as OECMs. Similarly, private protected areas and areas managed by IPLCs/subnational governments, which have not been formally identified through national government processes and reported as MPAs, could also potentially qualify as OECMs. At this point there is no need to consider what type of MPA is reported, nor how effectively it is being managed and meeting its goals – the simple point is that reported MPAs should not be considered as potential OECMs.

Determining this is less straightforward in cases where an area has been reported as an MPA in the past, but a country decides to change its status to an OECM. In this case the national authority will need to ensure the area listing is no longer reported as an MPA or lodged in international database repositories as an MPA (to avoid its being counted twice).

If one or more reported MPAs occurs within the limits of the site, or the potential OECM straddles jurisdictional boundaries, the determination is a bit more complicated. Potential OECMs may encompass reported MPAs within their wider boundaries, but in these cases only the area *outside* the boundaries of reported protected area, but within the demarcated OECM boundary, counts as OECM coverage. Note there is no understood minimum or maximum size limitation on OECMs (see Box 5), just as there are no size constraints for MPAs.

Box 5. Is size a limitation for OECMs?

As a rule, OECMs should be large enough to ensure that the features of interest can be self-sustained – either as individual OECMs or as elements within a network of ecologically connected OECMs. Small areas are undoubtedly easier to evaluate when assessing areas in which management measures provide direct, indirect, or ancillary benefits to biodiversity, but such small areas may have limited biodiversity impact. On the other hand, although very large OECM areas with MPAs within them may have greater impact, such complex management regimes across very large areas may be better suited to sustainable use targets, as opposed to protected area targets.

As previously noted, what matters is whether the biodiversity attributes of the site are conserved *in situ*; if a small area can accomplish this, there is no reason to ignore it. Measures employed by IPLCs will likely be smaller than protected areas administered by centralized government, for instance. A bit of practicality needs to come into this as well: if a measure effectively conserves a migratory species in that place but those individuals are then at threat in other places along their migration routes, this does not negate the importance of the area-based measure. Note that all area-based conservation is most effective when established in the context of wider planning, but localized effects (and the contribution of individual areas to wider protected area networks) are generally the focus of OECM identification.

Initial Screening Step 2: Check if the area is clearly bounded

Next, the screening needs to determine whether the potential site has clear boundaries. The list of potential sites can be generated by zeroing in on known areas with biodiversity features that are managed with spatial fisheries management, or by focusing on types of fisheries ABMTs and identifying where they are employed. If starting from an area/site, check if it is bounded, and if those boundaries are clear and understood by marine users and stakeholders. If beginning with a measure, determine whether that measure is applied in a clearly bounded area, again understood by users and stakeholders.

When describing the area and the fisheries management measures further, consider the following question:

What is known about the fisheries ABMTs being employed, in terms of what they are meant to achieve and what impacts they have had?

Fisheries OECM evaluation is an objective, information-based process, but it does not need to be an onerous one. The information and knowledge base used to determine whether areas/measures correspond to the CBD definition and its related criteria can be collated using data that fisheries management agencies, researchers, and community-based monitoring programmes probably already collect. Included in this information and knowledge are questions regarding who is in charge, locational documentation of where the measure exists, and information on biodiversity features. These include: stock size and trends in populations of fisheries species; species composition; age/size class distributions; catch per unit of effort; bycatch and discard composition/rates; habitat condition (especially benthos integrity); the distribution and condition of sensitive habitats/communities of organisms; distribution and abundance of rare or protected species; as well as the condition of the trophic structure/food web.

In addition, since the OECM definition mentions measures that preserve ecosystem services and cultural values, any information being collected on sociocultural values can figure in the evaluation. In the case of collecting information on biological assets and sociocultural values, multiple forms of data and information can be used, including time series on the condition of assets and values, the pressures on these, and management responses. Published research and/or expert opinion may also be used to make the case for areas/measures meeting the criteria.

In circumstances where the available data are incomplete or absent, not up to date, or difficult to access, evaluations of potential OECMs may be more readily achieved one by one, as opportunities arise. For instance, a performance review completed for a community-managed area (such as an RFA, or an LMMA) may present an opportunity to evaluate how that area matches the OECM criteria. Countries without readily accessible and comprehensive databases on all existing fisheries ABMTs in the country (and where they occur) will likely need to begin the OECM identification step by prioritizing the most obvious candidate sites, where the most data is available (the low-hanging fruit). Alternatively, they can respond to stakeholders' intentions to establish controls that meet the OECM criteria *de novo*. The process of raising community awareness may, in itself, stimulate interest to establish area-based controls that meet the OECM criteria. With time, greater stakeholder and government awareness and support may move those authorities responsible for this task to shift their focus to evaluating sites with less recognizable management structures in place, very limited information, or greater complexity.

Initial Screening Step 3: Check if the area is managed with clear governance

To address issues of governance and management (Criterion B), consider the question:

How and by whom is the area managed and governed, and is a management plan being implemented?

The existence of a management plan and management activities can be sufficient to meet this screening step; however, the legal authority to undertake that management (e.g. a governance arrangement) must be clear. Such a regime should establish clear roles and responsibilities for management (including monitoring and evaluation) and indicate where they reside (i.e. what agency or authority, including rights-holding Indigenous Peoples, local communities, or private property holders). This screening step is not meant to ascertain management effectiveness; rather, for the purposes of the initial screening, it is meant to distinguish active management from merely the intention of managing (a situation that is equivalent to 'paper parks'). If there is management in place, with clear governance, and if there are demonstrable biodiversity benefits, then it can be assumed that the management is active and that the measure(s) is (are) effective.

Box 6. Sectoral vs intersectoral, integrated management

In some sites, sectoral management authorities can address all manageable threats and demonstrate net positive biodiversity outcomes, particularly when the only threats within the area are generated by that sector's activities. In other sites, it might be unreasonable to assume that any sectoral authority would be able to address all threats to marine biodiversity, thus necessitating an integrated, intersectoral approach to ecosystem management. Fisheries management can be a catalyst for this, taking the first step toward this collaborative approach in areas of particular importance to fisheries, as well as for fishers and fishing communities.

While the initial screening focuses on ABMT and corollary fisheries management measures, the screening can also consider management measures instituted by other sectors (see Box 6).

Initial Screening Step 4: Determine whether the area supports important biodiversity attributes

This step involves describing the reasons the site is of interest, outlining the nature of the biodiversity features that are benefiting from the management measures. These may be described as biodiversity features, attributes, or values (refer back to Box 2).

In describing the biodiversity features of the area (Criterion C), consider the following question:

Does the site support <u>at least one</u> of the following important biodiversity values?

a) rare, threatened or endangered species and ecosystems;

b) natural ecosystems which are under-represented in protected area networks;

c) high level of ecological integrity or intactness;

d) significant populations of range-restricted species or ecosystems;

e) important species aggregations such as spawning, breeding or feeding areas; or

f) important sites for ecological connectivity, as part of a network of sites in a landscape or seascape.

These six types of biodiversity features are noted in CBD Decision 14/8. However, there are many priority-setting labels applied to marine areas that encompass one or more of these features. For instance, if the site is formally recognized as an area important for biodiversity – such as a key biodiversity area (KBA), an important bird area (IBA), an important marine mammal area (IMMA), an important shark and ray area (ISRA) or an ecologically or biologically significant marine area (EBSA) – it can be assumed that at least one of these biodiversity attributes

is present. In the full evaluation of candidate sites that emerge from the initial screening, the specific attributes of the biodiversity that make the site notable can be described in detail.

The biodiversity of marine areas should be considered three-dimensionally, though this poses challenges for characterizing biodiversity values (Box 7).

Box 7. How might the three-dimensional marine environment be considered, given the fact that many fisheries ABMTs are limited to only one portion of it?

In many instances, effective fisheries ABMTs only target one portion of the three-dimensional ocean space; typically either the benthos or a portion of the water column. A trawl ban within a VME, for instance, limits negative impacts on vulnerable benthic communities, but does not restrict fisheries in the water column above it. Such measures could still meet the OECM criteria as long as the important biodiversity attributes of the site are conserved. Admittedly, this is a value judgement, as all elements of ecosystems have some biodiversity value. However, for the purposes of being able to recognize fisheries ABMTs within an area as effectively contributing to sustained biodiversity outcomes, the outcomes relating to the site's important biodiversity values and attributes are those that need to be considered.

The depth dilemma also complicates how countries report three-dimensional areas on two-dimensional maps (and how the Parties to the CBD measure progress toward targets that are incomplete representations of biomes). In other words, the CBD's area-based targets refer to coverage on a two-dimensional plane, not the coverage of the three-dimensional volume of marine ecosystems. This issue remains a constraint in the measurement of progress toward targets and is another reminder that conservation in the marine domain has unique challenges.

Initial Screening Step 5: List the threats; note how management addresses them

To determine whether the fisheries ABMT addresses existing pressures and emerging threats to biodiversity (Criterion C), consider this question:

Are all existing pressures and emerging threats to the biodiversity features/attributes known and/or recognized, evaluated and, where relevant, addressed by the suite of fisheries ABMTs implemented in the area?

For this screening step, it will be sufficient to create a list of threats and pressures that probably affect species, habitat, ecological processes, and the delivery of ecosystem services. Such threats might arise, *inter alia*, from pressures in the site, pressures originating from outside the site, and broader pressures such as climate change. Once a list is generated, judgements can be made rapidly about the extent to which each threat impacts biodiversity, and how well the measures in the site address the significant threats. At this stage, a detailed analysis of threats and pressures is not needed – this will come later, during full evaluation. At that point, trends information will provide additional utility, if available, as will models that forecast pressures, states, and future responses.

Adhering to these five simple screening steps generates a shortlist or pool of candidate areas, providing the basic information to make the case for why the area could be considered an OECM. The detailed evaluation that follows can then assess the information on the candidate areas to see whether all the criteria are met, which results in a Fisheries OECM that can then be recognized and reported (Figure 11). It should be noted that not all candidate sites that make it through the initial screening will necessarily qualify as OECMs – the full evaluation will entail answering questions in greater depth about management approach, its effectiveness, and related biodiversity conservation outcomes.

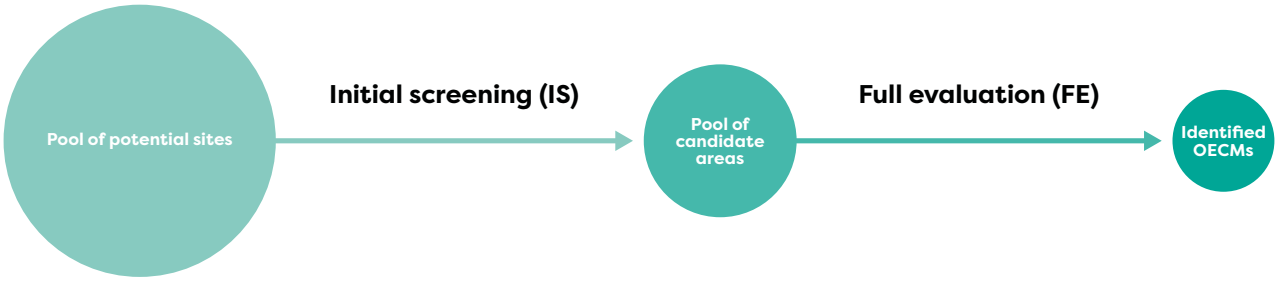
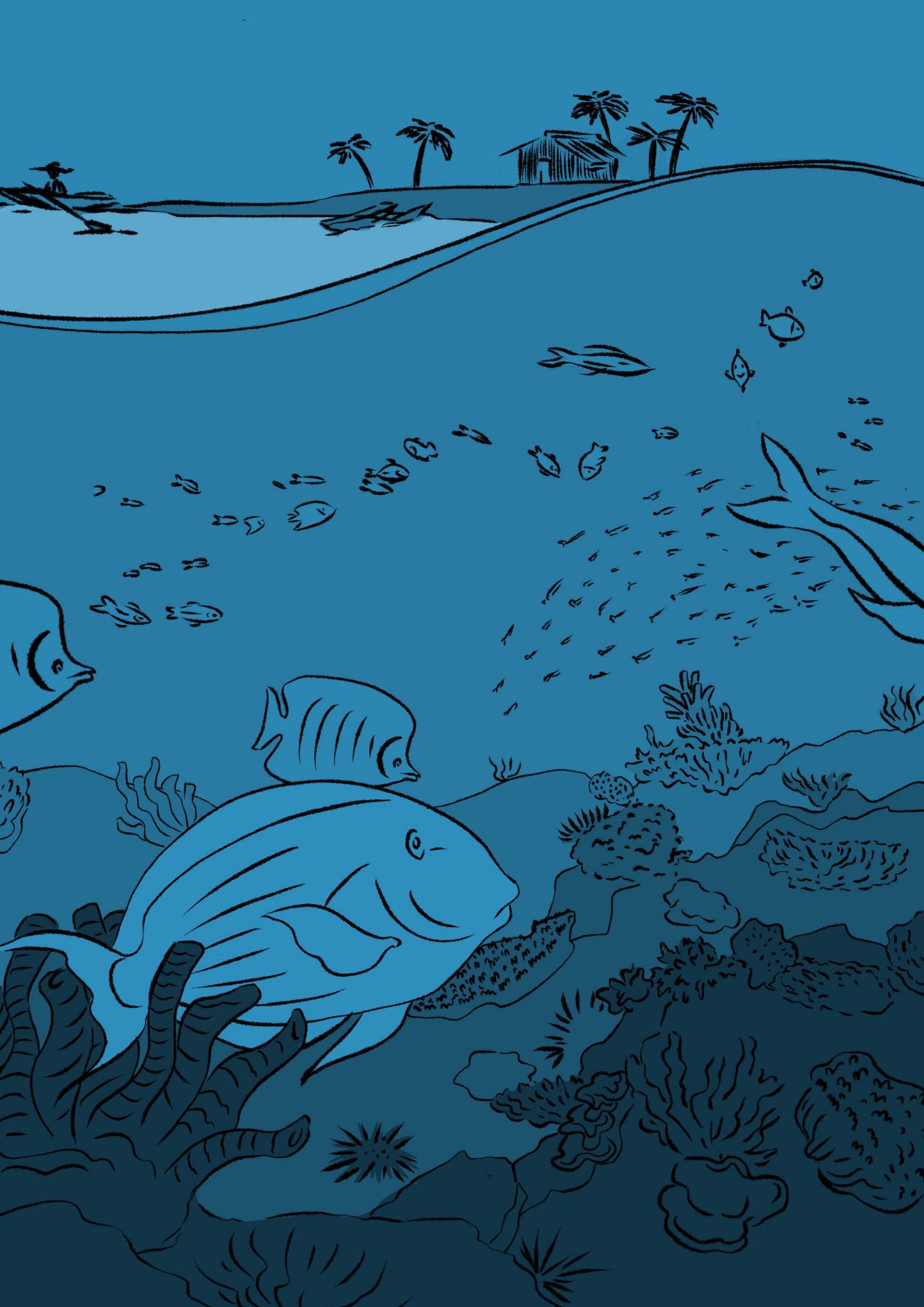


Figure 11. Screening areas/measures to identify Fisheries OECMs that can be selected and recognized begins with a large pool of potential sites, and results in a smaller pool of Fisheries OECMs

As detailed in Part III, after the initial screening, and prior to proceeding to the full evaluation, a consultation should be conducted to inform stakeholders and rights holders, get their input and obtain any necessary consent.



Full evaluation

Following the initial screening, the full evaluation allows sites to be assessed on whether they fit the definition and all the main OECM criteria. It focuses in more detail on:

a) the nature of biodiversity in the site (biodiversity attributes and their related sociocultural values);

b) types of existing pressures and emerging threats;

c) the fisheries measures (ABMTs) used in the area, and the extent to which these measures are sustained over time;

d) the other measures used in the area and/or other management that occurs inside or outside the area to address emerging threats other than those posed by fisheries;

e) how the measures impact biodiversity (whether there is a net positive biodiversity outcome or not) as well as how they contribute to the maintenance of important values and ecosystem services; and

f) whether any positive impacts to *in situ* biodiversity are likely to be maintained over the long term.

An overview of the full evaluation steps is provided in Figure 12.

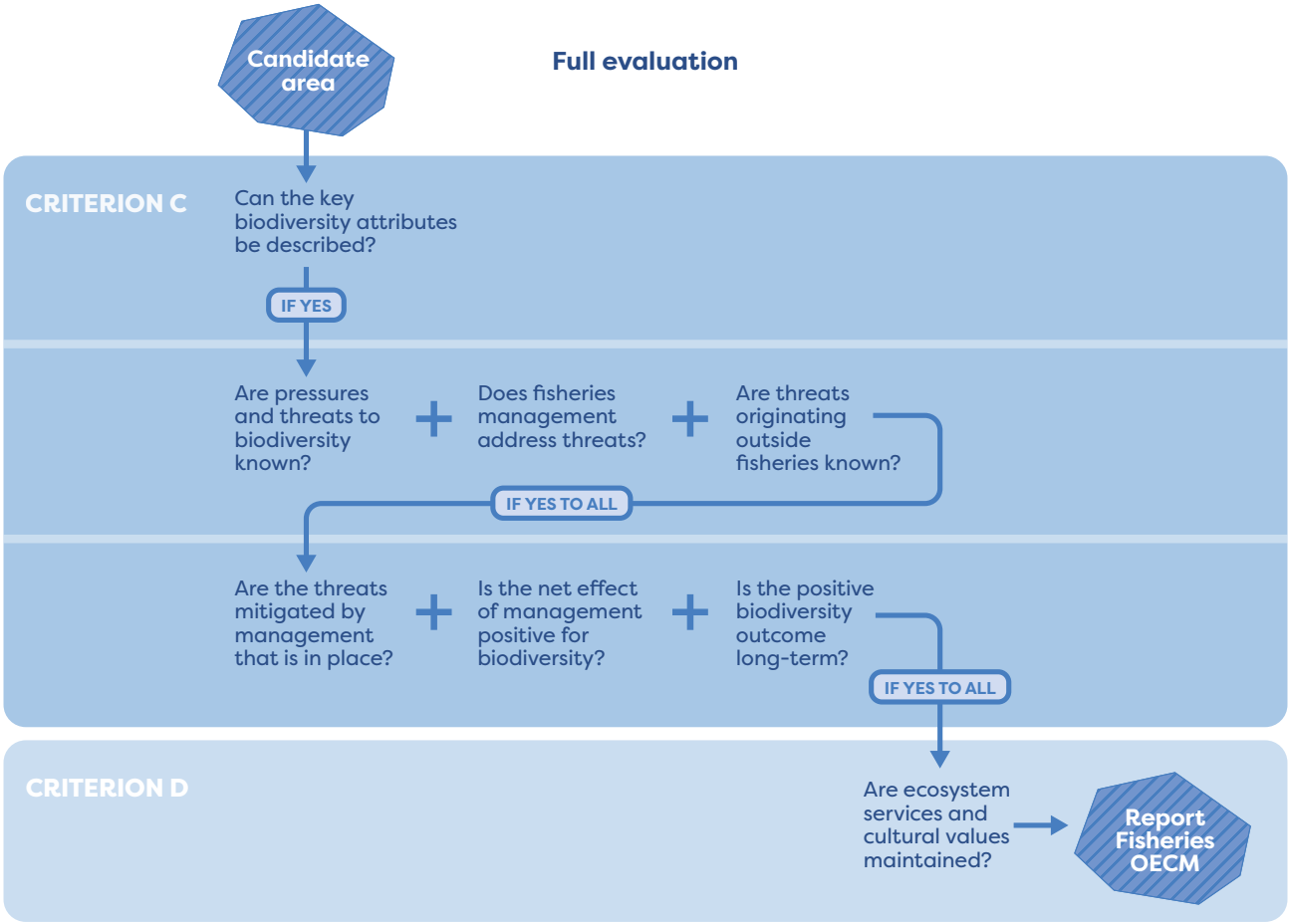


Figure 12. Recommended steps in the full evaluation of candidate areas to identify Fisheries OECMs that meet the main CBD criteria

Questions that might be considered when evaluating whether areas/measures fit the criterion are given in the following sections. A sample checklist that summarizes these questions is provided in Annex D.

Full Evaluation Step 1: Describe the important biodiversity attributes

Areas of the ocean and coasts where fisheries ABMTs have been implemented are likely to have important biodiversity including features, assets or values (collectively termed 'biodiversity attributes' – see Box 2), in addition to their importance for supporting fisheries production. To identify, evaluate, and then select areas as potential OECMs, it is important to detail the biodiversity attributes at the site and their related sociocultural values (Criteria C and D). A full ecological assessment is not required; however, the site should be described in terms of its productivity, general species richness, support of rare or endemic species, and existence of noteworthy ecological processes.

The full evaluation can refer back to the list of biodiversity attributes that were identified for Initial screening step 4 and describe them more fully. The following questions should be asked during this step:

What are the important biodiversity attributes present in the area? What is known about them? If little information is known about them, what can be inferred about them?

By describing biodiversity attributes more fully, information can be gathered from monitoring, onsite studies, assessments done by NGOs, CSOs and/or donors supporting the management of the site, and proxy studies from similar ecosystems. Indicative examples of biodiversity attributes are given in Table 1, although this is by no means a comprehensive list.

Full Evaluation Step 2: Evaluate existing pressures and emerging threats

Step 2 requires an understanding of what pressures and threats are present or could be reasonably expected to affect the area in the future, and how they impact the biodiversity attributes and related sociocultural values.

Many existing and emerging threats can be identified by understanding patterns of use, rates of compliance with regulations, and readily observed changes to the ecosystem. Fisheries data can shed some light on such changes but should be supplemented by

Table 1. Indicative biodiversity attributes, qualifying considerations and examples

Biodiversity	Qualifying considerations	Examples
High productivity and support for the wider food web	Is the area particularly important for maintaining productivity and supporting the wider food web?	Upwelling areas Tropical and temperate estuaries
General species richness	Does the area support an array of species and/or genetically distinct populations?	High biodiversity areas
Rare or endemic species	Does the area support rare, threatened, or endemic species?	Marine mammals, sea turtles, endemic species of fish and benthic organisms
Noteworthy ecological processes	Is the area notable for unusual or important ecological processes?	Breeding sites Nursery grounds Chemosynthesis areas
Representation	Is the habitat/community type under-represented in protected area systems?	Mesophotic reef areas
Intactness/high degree of habitat integrity	Is the area relatively undisturbed?	Remote archipelagos
Recognized as an area of importance for long-term ecosystem recovery/ restoration	Area degraded or disturbed but of noted importance for efforts in ecosystem restoration	Mangrove rehabilitation following shift away from shrimp aquaculture

biodiversity monitoring wherever possible. Traditional or user knowledge can and should be incorporated as well, in order to better understand local conditions. Where such information is not available, studies that have quantified impacts in similar ecosystems can be used as proxies to support judgement on whether the measures are having the intended effect – or can be reasonably expected to have the intended effect.

For this step, some guiding questions are:

What pressures and emerging threats exist at the site and in the adjacent areas? How could/do these existing and emerging threats and pressures affect the important biodiversity attributes of the site?

A listing of pressures on and threats to biodiversity, ecological processes, ecosystem services and values could be generated quickly to support this step (see example in Table 2). Expert opinion, published studies and monitoring data (both fisheries related monitoring, done by agencies, communities and their partners, and monitoring done by other sectors) will allow a rapid appraisal of the types of pressures and threats that could affect the site's biodiversity attributes.

Full Evaluation Step 3: Determine how the area-based management tools mitigate threats

Step 3 centres on understanding how fisheries ABMTs and other forms of fisheries management are addressing the site-specific pressures and threats identified. The OECM identification and evaluation does not require a long-term study to be conducted in order to quantify pressures and threats, although some systematic appraisal of management and its effectiveness in mitigating pressures and addressing threats should be done.

This step of the full evaluation builds on the previous steps, with the main consideration being:

How are the threats that potentially affect the site's important biodiversity features or attributes mitigated by ABMTs and other fisheries management measures?

To generate significant biodiversity outcomes, management measures should be tailored to address threats and mitigate pressures. An assessment should be conducted to evaluate whether the management measures considered effectively address the existing pressures on, and emerging threats to, biodiversity. If possible, clear links between management measures and any resulting positive biodiversity outcomes should be drawn up to establish cause and effect. However, the extent to which data are available to provide evidence of causality is variable. In some regions, long-term monitoring programmes and data-sharing mean that these casual links can be demonstrated (e.g. the HELCOM approach; HELCOM Secretariat, 2022). In other data-limited regions, surrogate studies may be needed to infer expected biodiversity outcomes. Care should be taken to ensure equivalencies are robust, and that there is a reasonable expectation, backed by expert opinion, that parallels can be drawn between distant places: in other words, outcomes evidenced in one study must reasonably be believed to occur in another place.

This is one of many aspects of the OECM debate where common sense and deference to practicality come into play. Logic can also be harnessed to highlight situations where there are expected pressures and emerging threats to the biodiversity attributes. Logic can also be used to determine which pressures and threats can be reasonably assumed to be manageable (as opposed to climate change impacts, natural disturbances, etc.) and which cannot. If reasonably manageable threats remain unaddressed, the area is unlikely to qualify as an OECM. In the end, what matters is that the measures put in place are supporting fishers and fishing communities, while doing as much as possible to safeguard the biodiversity of that place.

To better illustrate this step, a hypothetical example is given in Table 2, showing a list of threats to biodiversity attributes in a coral reef area that

Table 2. Hypothetical example of a list of threats to biodiversity attributes in a coral reef area designated as a fisheries closure by the community

Threat/pressure	Main ways threat impacts biodiversity in the site	Threats addressed?
Destructive fishing (e.g. dynamite fishing)	Destroys coral reefs and reduces habitat availability for reef organisms and fish communities; releases sediments into water column affecting filter feeders; creates noise.	YES
Overfishing	Reduces population of target stock as well as prey for organisms higher up the food chain; reductions in accidentally caught species/ populations. Puts species at risk and causes imbalances in the food web, with a reduction in biodiversity as well as tourism values. Also extirpation of populations of individual species.	YES
Pollution caused by discards/ fish processing	Causing eutrophication or otherwise reducing water quality and stresses reef organisms; can cause human health issues as well.	YES
Extirpation of populations of individual species	Puts species at risk and causes imbalances in the food web, with a reduction in biodiversity as well as tourism values.	YES
Overharvesting of bait for use in fish traps	Puts species at risk, including rare and protected species.	YES
Pollution from fishing boat engines	Stresses corals and interferes with coral reproduction, causing declines in coral health and biodiversity.	NO
Overfishing that causes coral reefs to be more vulnerable to ocean warming	Causes coral bleaching and mortality; loss of corals leads to declines in biodiversity and fisheries productivity in adjacent areas (spillover effect which benefits the community no longer occurs).	YES

has been designated as a fisheries closure by the community in order to protect the breeding stock of their target species.

The extent to which pressures threaten biodiversity will vary according to the condition of the ecosystem, including the system's response to exogenous pressures like climate change. For this reason, trend data are more useful than snapshots in time, though trend data are not always available.

The evaluation of whether management is addressing threats and pressures should be focused on the maintenance or enhancement of the important biodiversity attributes, and not the many other reasons why management may have been put in place (see Box 8).

To help answer these questions regarding the effectiveness of ABMTs in addressing pressures/threats, it may be useful to examine the spectra on which fisheries sit with respect to their impacts on species, ecosystems, and human societies (Figure 13). Countries, and, where applicable, RFMOs, can consult with stakeholders to estimate where particular fisheries sit on these spectra in specific areas. In other words, they may determine thresholds for the kind of effective management that will lead to the sorts of conservation outcomes intended in the CBD definition of OECMs. In Figure 13, areas and measures closer to the left-hand side are more likely to qualify as OECM than areas and measures falling towards the right side.

Box 8. Does effective overall management matter, or do results matter? In other words: what is the purpose of management?

The question of how effective management should be defined, and whether it is necessary to manage all current and prospective threats, presents challenges for all OECM identification and evaluation efforts. This is particularly an issue for those fisheries agencies trying to identify potential OECMs and finding ways to evaluate whether the measures they institute can carry the OECM label. Why? Because for OECMs, management to achieve the conservation of biodiversity may not be the primary objective, and other objectives usually come into play. These objectives can vary widely, and the management that is put in place to achieve such objectives will likewise vary widely. Asking whether all management in an area is effective demands that all management be evaluated against the objectives that relate to why it was put in place – such objectives of course vary widely.

To apply this point to the Fisheries OECM discussion specifically, it should be recognized that management measures aimed at achieving fisheries objectives may be focused on: maintaining access to fisheries resources for certain user groups; increasing productivity; improving fisheries efficiency; increasing market value (and thus profitability); and/or reducing conflict, among others. One can imagine that management may be entirely effective at meeting such goals while being ineffective at conserving biodiversity. Conversely, it is also possible that management is relatively ineffective at meeting the stated management objectives but is highly effective at conserving biodiversity. Given that access to marine resources and space is managed for a variety of reasons in any given place, exhaustive management effectiveness evaluations are not a necessary requirement for OECM designation. What is important to evaluate is how effectively biodiversity is conserved or enhanced, and to what extent the measures and their positive effects can be sustained over the long term.

Full Evaluation Step 4: Determine whether other threats are being addressed

In addition to the pressures and threats that fisheries management agencies can reasonably be expected to address through fisheries management, there will likely be pressures or threats from other sectors operating in the area or nearby. As mentioned above, a listing of these threats and a judgement on whether the measures attempt to mitigate those threats is needed to allow evaluation against Criterion C (see example in Table 3).

Here a guiding question is:

What external pressures may impact the important biodiversity attributes? Are these threats a) manageable, and b) being addressed?

With regard to what is manageable and what is deemed unmanageable, it should be acknowledged that even the complete closure of an area to all fishing activities for several decades may not result in the area meeting the OECM criteria, if the reason for biodiversity depletion is something beyond the control of fisheries management. Where possible, it will be important for fisheries managers to engage in dialogue with any other sectors acting in the area to discuss how the sum total of pressures and threats can be minimized or mitigated collectively.

Pressures that ABMTs are not designed to address can be listed to determine whether the implemented measures are adequate for the long-term conservation of biodiversity and ecosystem services in the area. As an example, this is done for the same hypothetical reason as that put forward in the previous step (see Table 2), in which a community establishes a fisheries closure (Table 3).

Note that many of the additional pressures and threats that are external to fishing and fisheries activities are manageable, and many fall under different sectoral jurisdictions. In areas where there are many uses, the optimal approach is to undertake the intersectoral identification, evaluation and reporting

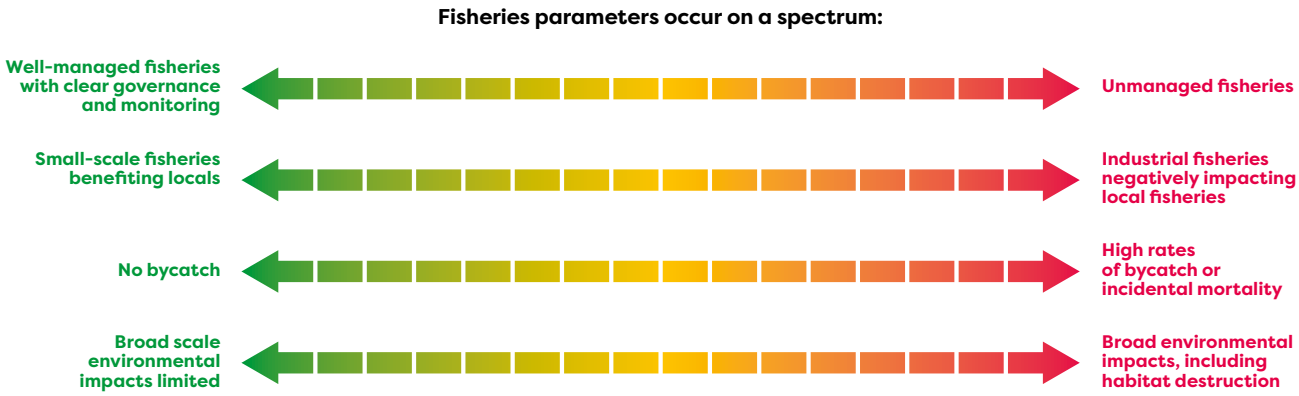


Figure 13. One formulation showing how specific fisheries can be considered as occurring along different spectra, which highlights varying degrees of impact and outcomes based on the management measures in place.

of OECMs; these might be led by fisheries interests or the interest of other parties. These sites will then not be exclusively Fisheries OECMs. However, it should be remembered that such multisectoral coordination is not a requirement of OECMs, and if existing pressures and threats to important biodiversity attributes are all addressed by fisheries management, intersectoral evaluation, selection and recognition is not needed. External threats like climate change, which cannot be mitigated locally, and mean local managers cannot be held responsible for their effects, should not disqualify a site from being an OECM. At the same time, the management measures seeking to restore and maintain biodiversity can have auxiliary benefits in that they may increase the resilience of the ecosystem to the impacts of climate change.

As exemplified in Table 3, some activities are so inherently damaging to biota that if they occur in an area, or are expected to occur in an area, it would most likely not be considered as an OECM. Such activities may include tourism development that destroys habitats, oil and gas extraction, seabed mining, and some forms of military activity (e.g. ordinance training such as bombing). In terms of industrial uses, countries may wish to develop

Table 3. Hypothetical example of a coral reef area designated as a fisheries closure by the community, listing additional threats/pressures, the ways they affect biodiversity, and whether the closure addresses these threats

Threat/pressure	Main ways threat impacts biodiversity in the site	Does ABMT address threat?
Damage from non-consumptive activity like tourism	Tourist overuse: stresses corals and predisposes them to disease; interferes with the behaviour and reproduction of reef organisms (including fish).	NO
Damage from unsustainable extraction	Seabed mining: causes destruction of the benthos and resuspension of sediments that harm filter-feeders.	NO
Pollution	Oil & gas exploration: pollution (chronic operational and acute as well as accidental oil spills); disturbance of seabed; increased turbidity causes morbidity in sensitive reef species and interferes with broadcast spawning of some reef fishes.	NO
Sound and percussion damage	Mining exploration and military exercises: sonar arrays create impulsive noise that causes mortality in some marine mammal species and interferes with communication in fish species.	NO
Temperature shocks and storm damage from climate change and its effects	Coral bleaching; reduced productivity; reduced biodiversity as thermally sensitive species move elsewhere; ocean acidification effects that reduce populations of calcareous organisms and reduce coral growth.	NO – though effective management can increase resilience

their own lists of activities that would automatically disqualify any area from being reported as OECMs. This could also be developed on a regional basis, through collaboration with RFMOs and RSOs, for instance.

However, for fisheries, there are already consensus opinions on what constitute fisheries activities that cause adverse impacts. For example, the FAO International Guidelines for the Management of Deep-Sea Fisheries on the High Seas state:

> Significant Adverse Impacts...are those that compromise ecosystem integrity (ecosystem structure or function) in a manner that:
>
> 1) impairs the ability of affected populations to replace themselves,
>
> 2) degrades the long-term natural productivity of habitats, or
>
> 3) causes, on more than a temporary basis, significant loss of species richness, habitats, or community types. (FAO, 2009b)

Clearly, if these adverse impacts are present, or can be reasonably expected to occur in the future, then the site is unlikely to qualify as an OECM. This can also be captured in formulating where certain fisheries fall along spectrums of impact, as shown in Figure 13.

Full Evaluation Step 5: Ascertain whether the measures lead to net positive biodiversity outcomes

Several guiding questions support an evaluation of the degree to which an area meets Criteria C and D.

In what ways do management measures implemented at the site contribute to biodiversity conservation, including restoring and safeguarding both biological attributes and their related sociocultural values?

In many cases fisheries ABMTs have been in place only a short time and outcomes cannot yet be determined. However, the CBD language suggests the sustained biodiversity outcome criterion can be met in such cases if there is a reasonable expectation of a positive biodiversity outcome. Such expectation could be based on projections and modelling, or it could be based on logic: if a highly destructive activity is restricted – and if other pressures/threats are not so severe as to potentially cancel out the positive effect of the ABMT – then the net effect of the restriction is likely to be positive for biodiversity. In addition, if studies have been conducted in similar ecosystems under similar conditions, and with the same management measures (and compliance), then such studies could act as surrogates to show a reasonable expectation of net positive biodiversity outcome.

For fisheries management measures that are not permanent (e.g. fishery restricted areas that are renewed periodically, or moratoria imposed for a limited time period), fisheries agencies could look at two features: first, is the measure likely to stay in place for a decade or more? Second, is the outcome likely to be sustained over time? If the answer to both questions is yes, and if there is consensus that the fisheries management measure or ABMT(s) will abate significant pressures and allow biodiversity recovery, then sites not yet showing positive outcomes can be eligible for recognition as OECM.

Biodiversity outcomes generally fall into three broad categories:

1) **Sustained increase in productivity, supporting wider food webs**. If the management measures result in a greater abundance of a functionally important species or of prey populations that support wider biodiversity, this could be considered a positive biodiversity outcome. Note that if the increase in production concerns a fishery species, with the added biomass or spillover later wholly extracted from the system, then it should not be seen as a biodiversity outcome.
2) **Maintenance or enhancement of threatened populations or endangered species**. If the fisheries ABMT(s) protects threatened populations or an endangered species, this can

count, regardless of whether that species is migratory and unprotected throughout the rest of its range. However, the management and conservation measures must be tailored to the pressures on and threats to those species in that particular place (*in situ* biodiversity).

3) **Protection of ecological communities** (i.e. habitat protection, safeguarding whole food webs, etc.). The easiest outcome to discern in this category is the conservation of habitat caused by limiting physically destructive activities (e.g. destructive fishing such as industrial bottom trawling; dynamite fishing; seabed mining; dredging for navigation; infilling or land reclamation for development, etc.). However, limiting destructive activities can also include prohibiting destructive fisheries-related activities, as is in some forms of bait collection. Other less discernible – but ecologically critical – results of management might be to maintain apex predator populations that then extend balance over entire food webs, maintain prey populations to support food webs, maintain diversity of species to maximize ecosystem health and resilience, and so forth. Measures that enhance species richness can restore depleted areas, or alternatively create new species assemblages (commonly referred to as "new nature"); the latter situations will need careful consideration.[12]

There are myriad ways in which fisheries management agencies collect data that can help ascertain or quantify biodiversity outcomes. Monitoring data collected by fisheries management agencies can also be complemented by published studies and research undertaken outside a fisheries context (see Box 9) and/or expert knowledge.

Box 9. How much information and monitoring should be available to show a demonstrable biodiversity outcome?

Adequate information is needed to demonstrate sustained biodiversity outcomes. Monitoring may yield sufficient data, but not all places monitor biodiversity alongside fisheries resources. Moreover, some fisheries ABMTs target single stocks, which makes their contribution to biodiversity conservation difficult to evaluate. The question of whether management measures aimed at maintaining or enhancing single stocks, populations or species adequately contributes to biodiversity conservation needs to be answered on a case-by-case basis. Such an assessment should establish whether that stock, population or species plays a particularly important ecological role (as, for example, would be the case for the management of keystone species). In general, if the outcomes of any single species (or stock) management measure are shown to include broader biodiversity conservation, then the area could well qualify as a possible Fisheries OECM.

However, collecting monitoring data – even if it relates to broader features of the ecosystem - may not be enough if data management capacity is limited. Fisheries agencies often collect a lot of data but need time and resources to be able to analyse data and present timely findings on management outcomes. Evaluating the effect of measures in conserving biodiversity is something that may require additional capacity.

Where monitoring and/or data management capacity is limited, expert opinion backed by documentation could be used. Such expert opinion could draw on published studies as well as models. Analyses of changing patterns of biodiversity, and modelling that predicts biodiversity status in the future, are often conducted by academic researchers and NGOs. Fisheries agencies would therefore benefit from partnering with such institutions, so that the basic fisheries data the agencies do collect may be supplemented by other sorts of data and analysed holistically.

[12] In many cases, artificial habitats, such as artificial reefs and shipwrecks, can increase productivity and biodiversity. However, sometimes this biodiversity is not the original assemblage that was present in the area, but rather a new form of biodiversity. From discussions in many of FAO's OECM capacity building workshops it is clear that structures which create new biological communities – as in the creation of artificial reefs or establishment of no fishing zones around wind farm piles/platforms – need to be evaluated differently from measures that maintain or enhance 'natural' biodiversity. The question of whether such measures should count as OECMs is likely best decided at the regional level.

A further consideration of net positive biodiversity outcome is how to score or rank multiple threats/pressures against management responses. To help address this, the following question could be answered with quantitative analysis or expert opinion:

If both positive and negative impacts on biodiversity exist, is the net outcome positive, or likely to be positive in the future?

Biodiversity outcomes will vary for different elements of the ecosystem(s). Therefore, once expected outcomes are documented or predicted, a rough calculation of net outcome may be needed. While there should be support for ascertaining net biodiversity benefits (in the form of monitoring data and reports, studies, or expert opinion and models), the determination of what areas qualify as OECMs does not require a quantification of impacts on biodiversity; it can be a qualitative assessment. In effect, a net positive outcome could be determined by considering whether the measurable or documented positive effects on the biodiversity of the site are larger in scale and outnumber any negative effects. In other cases, quantification may be possible, and thresholds could be agreed to simplify the evaluation.

Outcomes are likely to be site-specific and relative, meaning that the impact of the measure(s) needs to be looked at against what is likely to have occurred, had the measure(s) not been instituted. For instance, if a fisheries closure blocks other more destructive uses (or total habitat loss, as in land reclamation), should it count as a biodiversity outcome if some level of fish extraction still remains? A related challenge has to do with attribution: how to evaluate restrictions on biodiversity-harming activities based on legislation (regulations) versus what is restricted because of feasibility (de facto closures/gear limitations). These are questions that can only be answered on a case-by-case basis, reflecting the flexibility built into the CBD Decision.

What is acceptable in terms of thresholds, and how to determine the net effect (whether there is a net positive outcome for biodiversity that is likely to be maintained over the long term) will be a decision for individual countries. However, it may be reasonable for each region, led by RSOs and RFMOs, to suggest thresholds for what is to be considered a net positive biodiversity outcome, and the reasonable expectations of such an outcome.

Some evidence of positive biodiversity outcomes is expected for OECM reporting. As previously noted, this can be done qualitatively and does not require extensive data or analysis, but it should include evidence (i.e. a reasonable and logical argument for why biodiversity outcomes are expected). Ideally, such evidence would include data and knowledge collected in monitoring programmes undertaken by fisheries agencies. In certain cases it might involve NGO and CSO partners or academic institutions specifically focused on the area in question. In the absence of such data and knowledge, evidence could take the form of expert opinion on expected outcomes. If a particular kind of pressure or threat is mitigated through the implementation of one or more fisheries ABMTs, and if management is effective, it can be assumed that aspects of the *in situ* biodiversity have been conserved. However, determining biodiversity outcomes must sometimes look beyond primary pressures and threats, or those focused solely on fisheries, since in some cases biodiversity-positive outcomes cannot be expected by controlling fishery impacts alone.

In addition to considering whether the net biodiversity outcomes are positive, those evaluating whether an ABMT can be considered an OECM need to ascertain whether the biodiversity-positive outcomes can be sustained. The following questions can therefore be asked for full evaluation:

Is the net positive outcome, or projected outcome, likely to be sustained in the long term?

The text of the CBD Decision states: "The area achieves, or is expected to achieve, positive and sustained outcomes for the *in situ* conservation of biodiversity" (CBD, 2018b). Given that there will be many data-limited situations in the world, the "or is expected to achieve" clause is further explored below.

Agencies identifying and reporting OECMs need to be careful to introduce some rigour with regard to predicting that biodiversity outcomes will materialize if none have yet been shown to occur. The key word is 'reasonable', and some evidence should be presented for why it is assumed that biodiversity outcomes will materialize. Data can be provided by institutions or individuals outside the fisheries management agency – for instance, Indigenous Peoples, fishing communities, fishers, academic researchers who collect data over different time periods, citizen scientists, or NGOs and CSOs, where relevant. However, in the absence of periodic evaluations, it will be difficult to determine whether positive biodiversity outcomes are likely to be sustained.

In some cases, the justification for believing that area measures will likely contribute to conserving biodiversity in the future can be made by providing concrete evidence that a destructive activity or threat to biodiversity has been abated, without actually having evidence of its positive effect. For example, regularly collected fisheries compliance data will be unlikely to address analysis of ecosystem integrity, representativeness and connectivity – although OECMs are ideal laboratories for universities, NGOs and CSOs to study and quantify such attributes. Here, again, the use of surrogate studies and expert opinion can help build the case for OECM recognition.

The evaluation will also have to consider how the site is delivering ecosystem services and values, and whether the management measures are supporting these. For this consideration, screening should address the following question:

What ecosystem services – especially locally relevant services – are being delivered, and how does management safeguard or even enhance the delivery of those services?

When OECMs were introduced, they zeroed in on the need for conservation not only to maintain biological richness, but also on ways to improve equity and human well-being (Campbell and Gray, 2019). The consideration of, and support for, sociocultural values and ecosystem services is thus mandatory for OECMs. To qualify as an OECM, a candidate site must support ecosystem services including, where applicable, those of importance to IPLCs. Governance of the candidate site should identify, respect and uphold cultural, spiritual, socioeconomic and other locally relevant values. It should do the same for the knowledge practices and related institutions that are fundamental to the *in situ* biodiversity conservation of the candidate OECM site, as appropriate.

A full ecosystem service assessment is not required to complete an OECM screening and evaluation. However, appraising what ecosystem services are being delivered – and the stakeholders to whom benefits accrue – can guide actions that result in more compliance with the OECM criteria. The importance of locally relevant values and institutions underscores the need to ensure that governance is equitable, and that management involves the relevant authorities and stakeholders. Ecosystem service analyses can be built into systems that monitor and evaluate biodiversity attributes, as well as the effectiveness of governance and management, including with respect to equity.

Using a checklist

A checklist is a very convenient way to synthesize the considerations above. It helps structure the conversations and supporting documentation on each consideration during initial screening and full evaluation and should include questions related to these. As a quick reference guide, it can ensure that all the main OECM criteria are met in order for a Fisheries OECM to be identified, and can be used in training and evaluation processes. A sample checklist is provided in Annex D, including both initial screening and full evaluation considerations, as outlined in the previous sections.

An opportunity for strengthening measures

The evaluation process is not only useful in generating a list of qualifying Fisheries OECMs, but also helps identify and document areas that do not currently qualify but could be recognized as OECMs in the future with small changes (refer back to Figure 4).

Creating lists, ranking threats in order or priority (based on impacts) and preparing documentation showing that criteria have been met provides a transparent way to highlight the elements that could be strengthened in a candidate OECM site that did not pass full evaluation. This might entail, for example, expanding information collection to go beyond fisheries to the wider ecosystem, instituting additional ABMTs, or extending the duration of the measures so that they conform to the "long-term outcomes" stipulated in the criteria.

There are various scenarios in which a fisheries management area and its associated measures, having met the screening criteria, may not meet the OECM criteria under full evaluation. For example:

- A lack of accessible information related to the biodiversity attributes within the areas: fisheries resources may be monitored, for instance, but limited information may be available on other biodiversity attributes in the area. The governance and management authorities may wish to enhance monitoring within the area to include indicators related to the biodiversity outcomes, or they may choose to engage expert opinion on biodiversity attributes not monitored by the fisheries agency/communities.
- The area is producing biodiversity outcomes, but the management measures may not be sustained over the long term. This can be the case, for example, for measures that have been in place for a long time, but are expected to cease in the near future. In such cases, the governing and management authorities can decide to extend the timespan of the measures to promote long-term biodiversity outcomes.
- The fisheries measures within the area contribute to biodiversity outcomes – but fail to address other significant emerging threats to the biodiversity attributes that are widely expected to occur.[13] If pressures originate from other sectors, an intersectoral coordination mechanism for recognition of the OECM could be useful.

These are just some examples of how the identification process could highlight how measures might be improved, in order to allow a candidate site to be selected and recognized as an OECM in the future.

[13] This would be the case, for example, in a candidate OECM related to an area that has a trawl ban for the conservation of VMEs such as deep-sea corals, but in which a seabed mining lease is being considered. While the fisheries measures may be effective, the area is expected to be impacted negatively by deep-sea mining. In such a case, given the importance of the OECM, the national government could reconsider the lease.

An illustration of the identification, evaluation and reporting process

With so few marine OECMs identified and reported to date, and with no systematic guidance for evaluating OECMs in fisheries currently available, there is a paucity of examples on how the OECM identification process might be conducted. To illustrate all the phases of the OECM identification, evaluation and reporting process, and to hypothesize how fisheries managers might address all the considerations presented in this handbook, a fictional case study is presented over the following pages. It details how a government agency in a relatively data-poor region might answer questions that relate to the OECM criteria, to determine whether ABMT in certain areas might qualify as a Fisheries OECM. This is by no means meant to imply that the process detailed in this fictional case should be replicated everywhere – clearly circumstances will warrant different investments of time and energy in OECM processes. It simply illustrates a systematic process which could be adapted in various ecological and sociopolitical situations. Countries and RFMOs, working in concert with RSOs and stakeholders, could adapt the process to best suit their needs and capabilities, promoting a truly flexible approach to OECM identification, evaluation and reporting.

A hypothetical case: Potential marine fisheries other effective area-based conservation measures in Marinarum, a fictional country

Marinarum is a small developing coastal country with a large dependence on marine fisheries; approximately 18 percent of the adult population is directly employed in fishing and fish processing. Fisheries products provide food security for local communities, serve a domestic market that attaches significant cultural value to seafood, and provide the basis for a thriving export market. The waters of Marinarum include highly productive upwelling areas and harbour ecological communities of global biodiversity importance, including benthic areas with high rates of endemism.

The Department of Fisheries and Aquaculture (DFA) manages marine fisheries and is housed in the Ministry of Agriculture. Two regional councils serve to provide input from fishing communities and cooperatives, as well as other stakeholder groups in the country's subregions. The DFA employs numerous ABMTs, most of which have some degree of co-management. Communities and government jointly draw up responsible fishing plans unique to each site, which are reviewed and renewed every 10 years.

Three ABMTs in Marinarum are known to be meeting their fisheries management objectives of sustainable production and safeguarding livelihoods while at the same time yielding biodiversity outcomes. The DFA has decided to evaluate whether these three areas, and the fisheries management measures taken within them, could constitute Fisheries OECMs. The Ministry is supporting the OECM evaluation, with the idea that the process could serve as model for a wider assessment of area-based management in the country, and comprehensive OECM reporting.

The areas

Area #1 comprises the Ventura Seamount, a relatively shallow seamount known for its productivity and benthic biodiversity. This includes a sizeable area of coralligenous formations that include several species of deepwater coral and sponges, including two endemic sponge species discovered on a research expedition that catalogued seamount communities throughout the region 30 years ago. The site is also known to be an important nursery area for demersal fishes caught in the nearby longstanding commercial fisheries of Marinarum. The DFA worked with the commercial fishing community 22 years ago to create this no-take zone encompassing the seamount as the country's first fisheries closure. Since that time the DFA has been tracking fishing and vessel activity through a vessel monitoring system, as well as a 'fishing eyes on fishing' system devised by the country's commercial fishers. In this user-based monitoring system, vessels record and report incursions into the closed area. Compensation for the commercial fishers who previously bottom trawled there prior to the closure includes support to complete sustainability training and gear upgrades, as well as a fuel subsidy to cover the added cost of fishing beyond the seamount area. The Marine Sciences Academy of Marinarum conducts periodic monitoring of the Ventura Seamount, in concert with international research institutions, and has access to all the monitoring data, which it shares with the DFA and the co-management institution. This information is then incorporated into the periodic assessments of management benefits, as is called for in the responsible fishing plan for the wider area. The closure has been renewed twice since establishment.

Area #2 is located on the Obscura seamount, with depths averaging 250 metres. Like the Ventura seamount, endemic deepwater corals and sponges characterize a globally significant suite of biodiversity in an area of high productivity. However, unlike the Ventura Seamount, the ABMT employed by the DFA – again in concert with commercial fishers – covers only the benthos and not the water column above. This vertically limited closure was decided on the basis that the area was not found to support early life stages of demersal species, and was instituted shortly after the Ventura closure, about 11 years ago. The monitoring data collected by the Marine Sciences Academy are supplemented by catch data from the longline and purse seine fisheries that still operate directly over the seamount and throughout the wider region. The benthic closed area was recently renewed after community and government evaluation of its ten-year performance.

Area #3 is a coastal area with some of Marinarum's most extensive and well-developed seagrass meadows, a habitat type now highly depleted throughout the wider region. Recognizing the importance of seagrass in the provision of nursery habitats for fisheries species, as well as other important ecosystem services such as the maintenance of water quality – and its attendant effects on maintaining high quality seafood products– the DFA decided to institute a fisheries closure 1.5 years ago. This closure has resulted in restricted access for the small shrimp trawl fleet that previously operated in the area, and also affected patterns of use by the emerging sportfishing industry in Marinarum, since the no-take restrictions apply to commercial, artisanal, and sportfishing sectors alike. These sectors have approached the government for compensation and negotiations are ongoing. However, there is some pressure to urgently resolve the issue since the closure will be up for renewal in a little over 3 years (the renewal period for this top-down closure is 5 years rather than the 10 years allocated to co-managed areas with responsible fishing plans). The DFA works with the coastguard to undertake surveillance and enforcement of the closure; it is monitoring the recovery of the seagrass ecosystem carefully, through a dedicated research programme.

The process

The DFA began the Fisheries OECM evaluation by creating an interdisciplinary technical committee to evaluate pilot sites, and eventually to make recommendations for a systematic national process for identifying, evaluating and reporting OECMs. Focal points were identified, and a debriefing or inception workshop launched the evaluation process.

All the existing relevant information on the three sites was then collected by the evaluation team. This included the characterizations of the sites, the precise boundaries of the ABMTs, the dates that AMBTs were instated, and an outline of the governance arrangements for each. Monitoring data and reports on the marine biota (especially those required under the responsible fishing plans), as well as human uses of the area, were compiled to facilitate evaluation of each of the three sites.

An initial screening process was undertaken by fisheries agency staff. They verified that: the boundaries of each of the three areas were known; that none of the three areas had been reported as an MPA; and that each had a transparent governance structure and active management, including a publicly available management plan and regulations that were understood by all users. All three areas thus passed the initial screening and could go on to full evaluation.

The DFA then undertook separate stakeholder consultations with rights holders in each of the three areas. The purpose of these consultations was to raise awareness about what OECMs were and why reporting them would allow the good work of co-managing institutions, and users complying with regulations, to be recognized for promoting biodiversity conservation. The consultations set out to advise on the OECM assessments that were to take place and obtain consent from rights holders in each area, which were granted. One additional objective of the consultations was to see if unreported or updated information or knowledge sources on the use or condition of the site were available, for use in the full evaluation. This turned out to be the case for the two co-managed areas (Area #1 and #2). The additional information and knowledge collected included: 1) a participatory mapping exercise completed with local fishers and Indigenous communities to identify important fishing areas and sensitive habitats; and 2) a community consultation that revealed how the sites were valued in terms of their cultural significance.

Next, the DFA convened an interdisciplinary group to act as the evaluation team and conduct the full evaluation of each of the three sites. This team included fisheries biologists and managers from the department, as well as an oceanographer, an ecologist, an economist, and a sociologist from University of Marinarum. In addition, representatives of rights holders and stakeholders from each area were asked to join the group for each area's evaluation. Each of the three full evaluation exercises followed the same decision pathway, the steps of which are outlined individually below.

For Area #1 – Ventura

The interdisciplinary technical group used the available information to describe the biodiversity features and attributes of the site. These included: the species present; a description of vulnerable and endemic species; a habitat characterization (together with an explanation of the uniqueness of the site and why it had global biodiversity significance); the key ecological processes supported (including providing nursery habitats for key demersal species); patterns of historical fishing and other uses; and the current condition of the ecosystem. Trends information was also analysed for those features that had been studied. In the case of the Ventura seamount, the baseline established when the monitoring began depicted an already disturbed benthic ecosystem (with physical damage from trawling and decreased populations of key benthic species). That said, the oceanographic research done on the region's seamounts in the decade before the ABMT was put in place provided some qualitative information on their original condition. Trends information checked against the baseline suggest that the ABMT has led to the recovery of certain fish populations, with no further loss of corals or sponges. Note that the biodiversity features described as significant pertain to both benthic communities and water column or pelagic habitat – this proves to be important in a description of biodiversity outcomes.

The next step for the technical group was to identify threats to the Ventura seamount ecosystems. They created a list of both existing and historical threats or pressures and ascertained whether the fisheries management measures were designed to address the threats. Through a rapid review of management, it was agreed that the measures addressed all fisheries pressures. The group then looked to other pressures or threats that originated from non-fisheries uses or from wider environmental changes. For these additional, non-fisheries pressures and threats, they first asked whether they were manageable. Climate change poses a real challenge to safeguarding pelagic species at the site, since there have already been changes in the distribution of species toward higher latitudes, leaving some populations outside the boundaries of the closure. Nevertheless, climate change is not a locally manageable threat and the group

determined that no management measures taken at the site could successfully mitigate climate change impacts. No other uses of the area had occurred, and indirect threats that might be negatively impacting the biodiversity features were not in evidence, suggesting that all manageable threats were being addressed.

The technical group's next task was to summarize the outcomes of management, and to the extent practicable, quantify changes. Thanks to the monitoring data, there was evidence that management measures established in the Ventura ABMT area were lessening the impacts of those pressures. Specifically, they evaluated the degree to which the closure succeeded in stopping the physical destruction of benthos, as evidenced in the monitoring; they also reviewed the demersal fish population data to see if the measures were sufficiently addressing fisheries pressures in the water column. Monitoring data all suggested that fishing pressures at the site had been mitigated, with nearly full compliance with the regulations, and very few illegal fishing incursions. Benthic communities showed signs of recovery, indicating that the closure had the intended effect, while in the water column data on demersal fish species indicated a slow, though uneven, increase in populations. The group agreed that it was likely that this population increase in the site was contributing to spillover, with positive effects for adjacent fisheries. These biodiversity outcomes underlay valuable ecosystem services, including fisheries provisioning and the cultural benefits associated with robust fisheries.

Although the closure was not permanent, but reviewed and then renewed every 10 years, the team needed to address how likely it was that the closure would remain in effect into the future, given that OECM are meant to recognize sustained management measures, leading to long-term positive outcomes for biodiversity. The group agreed that given that the closure had been renewed twice, there was a reasonable expectation that the ABMT would be long-lasting.

For Area #2 – Obscura

The evaluation team, reconstituted with the addition of stakeholder representatives from the fishing sector utilizing this site (although it did not include stakeholders from the Ventura site), went through a similar set of steps for the evaluation of Area #2. However, two things distinguish this site from Ventura: 1) the closure was much more recent and had only been renewed once; and 2) the closure applied only to the benthos, with fishing in the water column over the seamount still permitted.

Information on the fisheries and biodiversity, as well as environmental factors and the uses of the site, was collected and organized. As a result of the more recent instituting of the ABMT (and hence the baseline that had shifted more significantly from the original or more pristine condition), the monitoring information constituted a smaller dataset, but one that could guide the OECM evaluation.

The team used the information available to describe the biodiversity of the site, primarily detailing the benthic communities since the benthos were the notable feature of this site. As in Ventura, the team then listed historical and current threats to the site's biodiversity features, and checked whether the ABMTs employed were designed to address the threats. Threats and pressures not addressed by the ABMT, including unsustainable fisheries taking place in the water column over the seamount, were then added to the threat evaluation.

To determine outcomes, the team assembled information on the recovery of the benthos following the benthic closure, and the degree of compliance with the closure. The DFA also made fisheries data available from both longline and purse seine fisheries operating in the area. Even though the biodiversity features of this potential OECM exclusively concerned the benthos, the group needed to determine whether the pelagic fisheries were

having any knock-on effect on the benthos. As was revealed, intensive longline fishing on and around the seamount had significantly depleted the apex predator population, affecting the local food web. This was thought to put not just the pelagic but also the benthic communities at eventual risk. Therefore, even though the benthos and its notable biodiversity was adequately protected by the ABMT, the continued longline fishing in the waters over the seamount was expected to have enough of a negative effect on the ecosystem to effectively cancel out the positive effects of the benthic closure. The net biodiversity outcome was therefore not currently positive, and could not reasonably be expected to be positive over the long term. The site was not deemed a Fisheries OECM.

For Area #3 – Seagrass Meadow

The shallower and more coastal Area #3 presented a slightly different case from the seamount areas. The ABMT used on this site is relatively recent, and it is too early to discern the effect of the measures. Additionally, since the fishing restrictions were imposed by DFA without stakeholder involvement in planning the measures, there is limited understanding and buy-in from the fishing communities affected.

As in the other cases, the DFA assembled a site-specific team to undertake the screening. This took significantly more time than launching the process in the other sites because of misconceptions about what the government was trying to do. Eventually, however, it was possible to engage the communities and raise their awareness about why the ABMTs were instituted, and what the OECM process was aiming to achieve.

The team collected and organized information about the site. This included the extent and condition of the seagrass meadows, species diversity, changes to the populations of species utilizing the seagrass for reproduction, feeding or as nursery areas, and the site's historical patterns of use. In addition, since seagrass health is so directly affected by water quality and hydrology/physical oceanography, the group summarized what was known about pollution from land-based sources and river inputs, as well as changes to flows caused by coastal development.

The site's biodiversity features and attributes characterized it as a largely intact, regionally rare productive seagrass ecosystem acting as a critical nutrient loading/ feeding and nursery area, which supports wider fisheries along the coast of Marinarum. Habitat coverage and condition, along with species diversity, was noted. Next, the technical team evaluated direct and indirect threats to the site. Shrimp trawling – now banned – was deemed to be the major threat to the seagrass. However, since shrimp trawling only moved into the area 3 years prior to the ABMT being put in place, the damage to the seagrass and impacts on associated biota were not extensive. Additionally, since there was no longstanding historic use of the area by fishers, the government made the unilateral decision to close the site before extensive damage did occur, in the knowledge that it was not disaffecting traditional users.

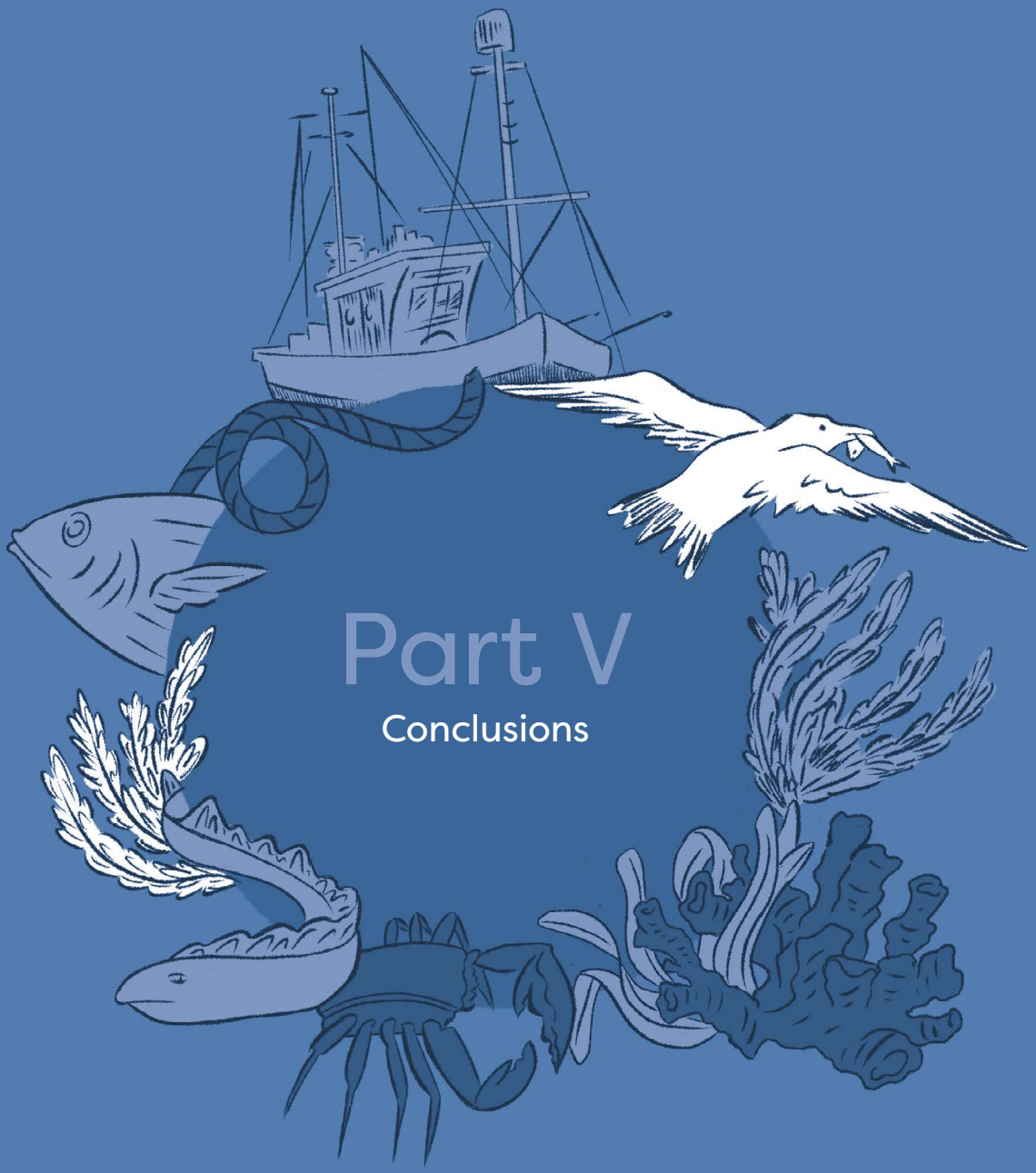
Direct threats to the site had therefore been limited to shrimp trawling, which had resulted in physical disturbance of the seagrass beds (including the destruction of rhizome nets, thereby preventing quick regeneration of the meadow) and attendant bycatch issues. Without turtle excluder devices, the shrimp fleet was regularly catching and often killing green turtles, which are a protected species in Marinarum. This sea turtle species feeds on the seagrass, but also contributes to maintaining the health and biodiversity of the ecosystem. In addition, the physical disturbance caused by shallow water trawling had driven the resuspension of sediments, which was suspected to have caused further reductions in productivity.

In terms of being able to evaluate the effects of the ABMT, no data were available to suggest positive biodiversity impacts since the closure was implemented very recently. However, studies done in other countries with similar seagrass meadows and restrictions on shrimp trawling suggested that biodiversity outcomes could be expected and would begin to be reflected in the data approximately 5 years after closure. These biodiversity outcomes were expected to be significant, not only because seagrass is inadequately protected in the wider seascape in this part of the world, but also because of the importance of the site in continuing to provide crucial ecosystem services. The latter include water quality maintenance, erosion control, and supporting the cultural values associated with fishing and seafood consumption. This site was thus deemed to have high potential as a Fisheries OECM, and the DFA committed to undertaking more extensive monitoring to quantify the positive effects of the closure on both the site's biodiversity and the health and productivity of the wider area.

The results

Following the full evaluation of all three areas, the team made the recommendation to the DFA that two of the sites – the Ventura and Seagrass closures – should be recognized as Fisheries OECMs. For the site that did not meet the criteria (Obscura), the DFA initiated a planning process to amend the responsible fishing plan in order to mitigate the negative impact of longline fishing on the biodiversity of the site.

The Ministry of Agriculture subsequently made the decision to report the two qualifying sites (Area #1 and Area #3) to the CBD Secretariat, as well as reporting the two OECMs to the WDPA/WD-OECM. Since this process was considered a pilot for Marinarum, the Ministry skipped the important step of vetting the sites with other sector agencies (as per the recommended intersectoral coordination outlined in this handbook). However, this DFA-led pilot process did illuminate a way forward for a national system of OECM identification and recognition that involves all relevant marine sectors. The Ministry of Agriculture has thus taken the lead in developing an interministerial standing process for identifying spatial management measures across all sectors, so that OECMs on both land and sea can be identified, evaluated and reported using a standardized process.



Part V

Conclusions

- Part V describes how OECMs can work in concert with other fisheries management measures for maximum positive effect. It outlines the importance of Fisheries OECMs for: 1) their individual contributions to conserving biodiversity and maintaining ecosystem services; and 2) an OECM's role, alongside MPAs, in creating strong and resilient networks of biodiversity conservation.
- Fisheries OECMs support a population's needs for food security, income generation, livelihoods and the maintenance of cultural values. Crucially, they protect the ecosystems that enable delivery of these services.
- Through their combined emphasis on net positive biodiversity effects and human well-being, Fisheries OECMs constitute an opportunity to achieve both global biodiversity targets and the SDGs.
- Fisheries OECMs further sustainable seascape management, support the Blue Transformation and reflect FAO's vision for 100 percent sustainable management of the ocean and seas.

Other effective area-based conservation measures in the context of fisheries management

A Fisheries OECM can demonstrate, at a small, workable scale, how management for sustainable use can be biodiversity-positive. The best demonstrations of this will be Fisheries OECMs that not only improve biodiversity conservation and ecosystem functioning, but also exemplify good governance, the equitable sharing of benefits, and uphold the rights and needs of Indigenous Peoples and local communities. Alongside MPAs, fisheries ABMTs that qualify as OECMs and are recognized as contributing to biodiversity conservation can also be the basis for coherent and resilient networks of spatial protection across multiple ecosystems and large geographies.

However, like MPAs, the success of Fisheries OECMs is partly determined by the context in which these effectively managed marine areas sit. Fisheries management agencies, working in concert with fishers and other stakeholders, can influence this context in a variety of ways. The tools used represent a mosaic across the ocean space; tools can overlap, and areas can be managed by multiple sectors utilizing spatial and non-spatial management tools simultaneously.

Zooming out: Individual areas and their role in conservation networks

Evaluating fisheries ABMTs and complementary forms of management to determine whether they qualify as OECMs, and reporting areas that meet the OECM definition and criteria, allows countries to take stock of how well fisheries management is contributing to biodiversity conservation, while meeting human needs. In addition, the process can guide agencies through different aspects of Fisheries OECM evaluation not only to differentiate those areas that meet OECM criteria, but also to flag aspects of fisheries and other management that could be improved in order for the area to be eligible for OECM recognition.

A thoughtful, systematic, and streamlined approach to identifying and reporting individual Fisheries OECMs ensures that effective measures to preserve biodiversity are recognized, while avoiding double-counting or having OECMs substitute for MPAs. Importantly, the means by which potential Fisheries OECMs are screened not only catalyses the recognition of novel ways of providing biodiversity conservation, it also presents crucial opportunities to make sectoral management more biodiversity-friendly, highlighting ways to improve outcomes. The objective appraisal of individual OECMs may motivate an increasing robustness in MPA evaluation/tracking that has not existed to date. If such attention were to be focused on the performance of individual conserved areas in meeting the very specific management goals for which they were established (irrespective of whether they are OECMs and/or MPAs), as well as their role in safeguarding and enhancing biodiversity, the use of these area-based tools could be optimized (Gurney *et al.*, 2021).

Collectively, OECMs and MPAs can achieve conservation and sustainable use goals on wider, regional scales. For optimal outcomes, they should be incorporated into larger-scale marine spatial plans and marine policies. However, even in the absence of intersectoral MSP, networks of area-based conservation remain important to safeguard ecosystems and their biodiversity at large scales. It is therefore imperative that individual OECMs and MPAs be looked at not only for their role in driving positive biodiversity outcomes locally or *in situ*, but also their role in collectively safeguarding biodiversity and ecosystem values across whole regions.

OECM identification also enables 'big picture' views of how management effort is distributed in a region and how sectoral management (in this case fisheries) catalyses improvements in ecosystem health and productivity. Networks of MPAs and OECMs can contribute to a situation in which the whole is greater than the sum of its parts, and both national and regional fisheries management organizations can steer measures towards optimizing this large-scale sustainable management.

Sites in which effective management measures contribute to conserving biodiversity should thus be assessed individually, and in terms of their contribution to effective networks of conservation. OECMs can have enormous value in filling gaps in ecosystem representivity, all the more so when formal MPAs are largely focused on only a few types of biologically rich and diverse habitats – generally in relatively shallow waters, and usually on benthos instead of biota in the water column. Even more important is the role that individual areas play in maintaining connectivity between ecosystems, including by conserving migrating species. It is therefore recommended that potential Fisheries OECMs be evaluated not only based on how well they meet the OECM criteria for *in situ* conservation, but also how well they contribute to the greater whole.

Looking forward to the Blue Transformation

Aquatic food systems significantly influence human, animal and ecosystem health; they affect biodiversity, land and water use, the climate, as well as other aquatic and land-based economic sectors. Reflecting this, FAO has developed a roadmap for a Blue Transformation (FAO, 2022b) to harness the opportunities provided by aquatic food systems to end hunger and eradicate poverty. The Blue Transformation responds to the emergent burden placed on aquatic foods, which must continue to satisfy the increasing demand for nutritious and accessible food from a growing population. Through a Blue Transformation we must continue to change what we produce, how we produce it and what we use this production for – and meet these challenges.

A Blue Transformation requires targeted actions, policies and strategies that can sustainably maximize the contribution of aquatic food systems (both inland and marine) to food security, nutrition and accessible healthy diets for all.

FAO's vision for a Blue Transformation is anchored in three measurable objectives that reflect the core aspirations of the SDGs and illustrate a common global pathway for aquatic foods:

1) ensure the sustainable intensification and expansion of aquaculture that satisfies global demand for food and shares benefits equally, with a particular focus on food deficit regions;
2) ensure that the effective management of all fished resources delivers healthy stocks and secures equitable livelihoods; and
3) upgrade aquatic food value chains that ensure the social, economic and environmental viability of aquatic food systems.

Achieving these goals requires holistic and adaptive approaches that can secure livelihoods, foster an equitable distribution of benefits, and support the adequate use and conservation of biodiversity and ecosystems at all scales. The inclusive processes and ecosystem approaches of effective OECMs make them an ideal tool for this transition, and the broad range of benefits they deliver all contribute towards FAO's vision of a Blue Transformation. (Annex C outlines how benefits could flow from Fisheries OECMs, collectively helping to achieve conservation and sustainable use targets, sustainable economies, and the Blue Transformation).

More specifically, OECMs reinforce the importance of aquatic food systems as drivers of employment, economic growth, social development and environmental recovery – all core elements of the Blue Transformation and the SDGs.

OECMs also support the continuance and/or establishment of effective fisheries management systems that restore ecosystems to a biodiverse and productive state, while managing exploited resources within ecosystem boundaries. In this way, OECMs will also serve as tools to support the transition to more efficient, equitable, resilient and sustainable aquatic food systems. This in turn leads to better production, better nutrition, a better environment and better lives. Thus, the broad range of benefits that Fisheries OECMs can deliver all contribute in some way to the Blue Transformation.

Final thoughts

The process of identifying Fisheries OECMs and determining the degree to which they are contributing to biodiversity conservation achieves several important goals. On the one hand, it allows countries to showcase components of effective fisheries management that are neither well-known nor understood, allowing them to be recognized for the broader contribution they are making to biodiversity conservation. Recognition and continued management of Fisheries OECMs will deliver time-series data on ecosystem condition and trends in ways that can support management more effectively than information derived only from less managed but actively exploited areas. Fisheries OECMs also offer opportunities for sharing learning locally, regionally and nationally, within and across sectors, as well as contributing to achieving global commitments such as those stipulated in the CBD's biodiversity frameworks.

More broadly, Fisheries OECMs and broader ecosystem approaches to fisheries management can help break the cycle of habitat and biodiversity loss that is contributing to declining human well-being (as illustrated for one biome in Figure 14). As such, they are not only part of the global targets for spatial conservation that contribute to biodiversity conservation, but they are also part of the larger productive land and seascape management, reflecting FAO's vision for 100 percent management of our ocean and seas.

Given that the primary objectives of Fisheries OECMs are usually not related to biodiversity conservation but fisheries sustainability, they are more likely to generate multiple benefits for social, ecological and economic development. This makes Fisheries OECMs particularly relevant to reconcile food security, biodiversity conservation and sustainable development, and thus help achieve several of the Sustainable Development Goals alongside the global biodiversity targets. Each Fisheries OECM that achieves good outcomes on its own merits can also contribute to achieving much-needed positive outcomes at national, regional and even global scales.

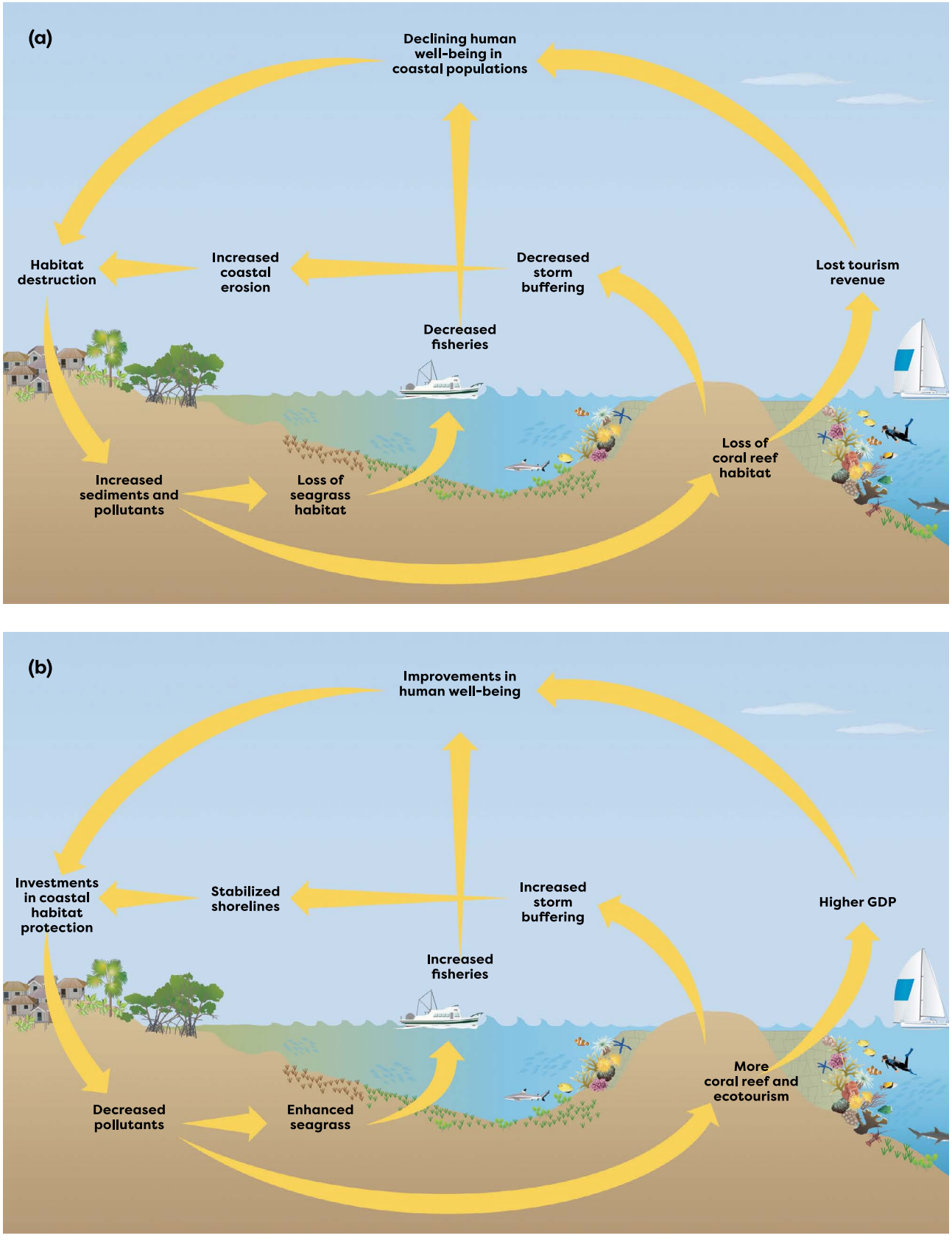


Figure 14. An illustration for one biome of how (a) a negative feedback loop of biodiversity loss can be turned on its head to yield (b) benefits for humans and nature

Source: UNEP. 2011. *Taking Steps Toward Marine and Coastal Ecosystem-Based Management: An Introductory Guide*. Nairobi, UNEP.

Bibliography

Works cited

Campbell, L. & Gray, N. 2019. Area expansion versus effective and equitable management in international marine protected areas goals and targets. *Marine Policy*, 100: 192–199. doi.org/10.1016/j.marpol.2018.11.030

Canada Department of Fisheries Oceans. 2016. *Guidance on Identifying "Other Effective Area-Based Conservation Measures" in Canadian Coastal and Marine Waters.* DFO Can. Sci. Advis. Sec. Sci. Advis. Rep.2016/002. waves-vagues.dfo-mpo.gc.ca/library-bibliotheque/365364.pdf

CBD. 2010. Decision CBD/COP/DEC/X/2 Adopted by the Conference of the Parties to the Convention on Biological Diversity at its Tenth Meeting: The Strategic Plan for Biodiversity 2011-2020 and the Aichi Biodiversity Targets. Nagoya, Japan & Montreal, Canada, CBD.

CBD. 2018a. Long-term strategic directions to the 2050 Vision for Biodiversity, approaches to living in harmony with nature and preparation for the post-2020 global biodiversity framework. CBD/COP/14/9, 5 October 2018. Montreal, Canada, CBD. www.cbd.int/doc/c/0b54/1750/607267ea9109b52b750314a0/cop-14-09-en.pdf

CBD. 2018b. Decision CBD/COP/DEC/14/8 Adopted by the Conference of the Parties to the Convention on Biological Diversity: Protected Areas and Other Effective Area-based Measures, Sharm El-Sheikh, Egypt. www.cbd.int/doc/decisions/cop-14/cop-14-dec-08-en.pdf

CBD. 2018c. Report of the technical expert workshop on other effective area-based conservation measures for achieving Aichi Biodiversity Target 11. CBD/PA/EM/2018/1/2. 9 February 2018. Montreal, Canada, CBD.

Day J., Dudley N., Hockings M., Holmes G., Laffoley D., Stolton S. & Wells, S. 2012. Guidelines for applying the IUCN Protected Area Management Categories to Marine Protected Areas. Best Practice Protected Area Guidelines Series No. 19. Gland, Switzerland, IUCN.

FAO. 2003. *The ecosystem approach to fisheries. FAO Technical Guidelines for Responsible Fisheries.* No. 4, Suppl. 2. Rome, FAO.

FAO. 2009a. *Fisheries management. 2. The ecosystem approach to fisheries. 2.2 Human dimensions of the ecosystem approach to fisheries.* FAO Technical Guidelines for Responsible Fisheries. No. 4, Suppl. 2, Add. 2. Rome, FAO.

FAO. 2009b. *International Guidelines for the Management of Deep-sea Fisheries in the High Seas.* Rome, FAO. www.fao.org/3/i0816t/i0816t00.htm

FAO. 2011. *Fisheries management. 4. Marine protected areas and fisheries. FAO Technical Guidelines for Responsible Fisheries.* No. 4, Suppl. 4. Rome, FAO.

FAO. 2020. *FAO Strategy on Mainstreaming Biodiversity across Agricultural Sectors.* Rome, FAO. https://www.fao.org/documents/card/en/c/ca7722en

FAO. 2022a. *The State of World Fisheries and Aquaculture 2022.* Towards Blue Transformation. Rome, FAO. https://doi.org/10.4060/cc0461en

FAO. 2022b. *Blue Transformation - Roadmap 2022–2030: A vision for FAO's work on aquatic food systems.* Rome, FAO. doi.org/10.4060/cc0459en

FAO. 2022c. *Report of the Thirty-fourth Session of the Committee on Fisheries. Rome, 1–5 February 2021.* FAO Fisheries and Aquaculture Report No. 1336. Rome, FAO. doi.org/10.4060/cb8322en

Gómez, M.S., Gómez, A.C., Tobón, C.M., Marín, J.E., Rodríguez, S.G. & Rodero, D.R. 2021. *Otras Medidas Efectivas de Conservación Basadas en Áreas (OMEC): Guía para su identificación, fortalecimiento y reporte en Colombia.* Resnatur, Instituto Humboldt, Fundación Natura y Proyecto Regional Áreas Protegidas Locales. Bogotá, Colombia.

Gurney, G.G., Darling, E.S., Ahmadia, G.N., Agostini, V.N., Ban, N.C., Blythe, J., Claudet, J., Epstein, G., Himes-Cornell, A., Jonas, H.D. & Armitage, D. 2021. Biodiversity needs every tool in the box: use OECMs. Nature Comment. *Nature*, 595 (7869):646–649.

HELCOM Secretariat. 2022. Outcomes of the webinar and workshop on OECMs. Document 1 submitted to the HELCOM Working Group on the State of the Environment and Nature Conservation. 17 May 2022. Helsinki, Finland, HELCOM.

ICES. 2021. ICES/ IUCN-CEM FEG Workshop on Testing OECM Practices and Strategies (WKTOPS). ICES Scientific Reports. Report. Copenhagen, Denmark, ICES. https://doi.org/10.17895/ices.pub.8135

IUCN-WCPA. 2019. *Recognising and reporting other effective area-based conservation measures*. Gland, Switzerland, IUCN. doi.org/10.2305/IUCN.CH.2019.PATRS.3.en

IUCN-WCPA. 2022. Site-level tool for identifying other effective area-based conservation measures (OECMs) Version 2.0. In: *IUCN*. Gland, Switzerland. Cited 19 November 2022. www.iucn.org/resources/file/oecms-site-level-assessment-tool

Maini, B., Blythe, J.L., Darling, E.S. & Gurney, G.G. 2023. Charting the value and limits of other effective conservation measures (OECMs) for marine conservation: A Delphi study. *Marine Policy*, *147*: 105350.

The Nature Conservancy. 2018. Marine conservation agreements practitioner's toolkit. In: *Conservation Gateway*. Cited 19 November 2022. www.conservationgateway.org/ExternalLinks/Pages/marine-conservation-agree.aspx

UNEP. 2011. *Taking Steps Toward Marine and Coastal Ecosystem-Based Management: An Introductory Guide*. Nairobi, Kenya, UNEP.

Additional resources

Global guidance on other effective area-based conservation measures

FAO. 2019. *Report of the Expert Meeting on Other Effective Area-Based Conservation Measures in the Marine Capture Fishery Sector. Rome, Italy, 7–10 May 2019*. FAO Fisheries and Aquaculture Report No. 1301. Rome, FAO.

Garcia, S.M., Rice, J., Charles, A. & Diz, D. 2021. Other effective area-based conservation measures in marine capture fisheries: systematic approach to identification, use and performance assessment (Version 2). Fisheries Expert Group of the IUCN Commission on Ecosystem Management, Gland, Switzerland. European Bureau of Conservation and Development, Brussels, Belgium. www.ebcd.org/feg.

Garcia, S.M., Rice, J., Himes-Cornell, A., Friedman, K.J., Charles, A., Diz, D., Appiott, J. & Kaiser, M.J. 2022. OECMs in marine capture fisheries: Key implementation issues of governance, management, and biodiversity. *Frontiers in Marine Science*, *9*, p.920051.

IUCN. 2022. IUCN WCPA Other effective area-based conservation measures specialist group. In: *IUCN*. Gland, Switzerland. Cited 19 November 2022. www.iucn.org/commissions/world-commission-protected-areas/our-work/oecms

UNEP-WCMC. 2019. User Manual for the World Database on Protected Areas and world database on other effective area-based conservation measures: 1.6. UNEP-WCMC, Cambridge, UK. http://wcmc.io/WDPA_Manual.

Application of the other effective area-based conservation measure concept

Beazley, L., Kenchington, E.L., Korabik, M., Fenton, D. & King, M. 2021. Other effective area-based conservation measure promotes recovery in a cold-water coral reef. *Global Ecology and conservation*. 26. doi.10.1016/J.GECCO.2021.E01485

Estradivari, Agung, M.F., Adhuri, D.S., Ferse, S.C., Sualia, I., Andradi-Brown, D.A., Campbell, S.J., Iqbal, M., Jonas, H.D., Lazuardi, M.E., Nanlohy, H. & Pakiding, F. 2022. Marine conservation beyond MPAs: Towards the recognition of other effective area-based conservation measures (OECMs) in Indonesia. *Marine Policy*, 137: 104939.

Gray, P.A., Cheriton, D., Gaetz, N., Lehman, P., Sherwood, J., Beechey, T.J. & Lemieux, C.J. 2018. Comparing screening tools for assessment of potential 'other effective area-based conservation measures' in Ontario, Canada. *Parks*, *24*: 31–48.

Marnewick, D., Stevens C., Antrobus-Wuth R., Theron N., Wilson N., Naude K. & Jonas H. 2020. Assessing the Extent of OECMs in South Africa: Final Project Report. BirdLife South Africa, Johannesburg.

Matallana-Tobón, C.L., Santamaría, M., Areiza, A., Tapias, C.S. & Galán, S. 2018. Rethinking nature conservation in Colombia: A case study of other effective area-based conservation measures. *Parks*, *24*: 89–98.

Quintana, A.C., Giron-Nava, A., Urmy, S., Cramer, A.N., Domínguez-Sánchez, S., Rodríguez-Van Dyck, S., Aburto-Oropeza, O., Basurto, X. & Weaver, A.H. 2021. Positive social-ecological feedbacks in community-based conservation. *Frontiers in Marine Science*, 8: 652318.

Petza, D., Chalkias, C., Koukourouvli, N., Coll, M., Vassilopoulou, V., Karachle, P.K., Markantonatou, V., Tsikliras, A.C. & Katsanevakis, S. 2019 An operational framework to assess the value of fisheries restricted areas for marine conservation. *Marine Policy*, 102: 28–39.

Santamaría Gómez, M., Cely Gómez, A., Matallana-Tobón, C., Echeverri Marín J., Galán Rodríguez, S. & Rey Rodero D. 2021. Otras Medidas Efectivas de Conservación Basadas en Áreas (OMEC): guía para su identificación, fortalecimiento y reporte en Colombia. Bogotá, Colombia. Resnatur, Instituto Humboldt, Fundación Natura y Proyecto Regional Áreas Protegidas Locales.

Shackell, N.L., Keith, D.M. & Lotze, H.K. 2021. Challenges of Gauging the Impact of Area-based fishery closures and OECMs: a case study using long-standing Canadian groundfish closures. *Frontiers in Marine Science*, 8: 612859. doi: 10.3389/fmars.2021.612859

Area-based management and sustainable fisheries

Boncoeur, J., Alban, F. & Thébaud, O. 2011. Bioeconomy – Bioeconomic analysis of marine protected area fisheries effects. In: J. Claudet, ed. *Marine protected areas. A multidisciplinary approach*, pp. 190–225. Cambridge, UK, Cambridge University Press.

Charles, A., Westlund, L., Bartley, D.M., Fletcher, W.J., Garcia, S.M., Govan, H. & Sanders, J. 2016. Fishing livelihoods as key to marine protected areas: insights from the World Parks Congress. In: IUCN-WCPA, eds. The legacy from the 2014 Sydney World Parks Congress. *Aquatic conservation*, 26(2): 165–184.

Claudet, J., Ban, N.C., Blythe, J., Briggs, J., Darling, E., Gurney, G.G., Palardy, J.E., Pike, E.P., Agostini, V.N., Ahmadia, G.N. & Campbell, S.J. 2022. Avoiding the misuse of other effective area-based conservation measures in the wake of the blue economy. *One Earth*, *5*(9): 969–974.

Echeverri, J., Cely-Gómez, A., Zafra-Calvo, N., González, J., Matallana-Tobón, C., Santamaría, M. & Galán, S. 2021. Application of site-level assessment of governance and equity (SAGE) methodology to a candidate OECM: Andakí Municipal Natural Park, Caquetá, Colombia. *PARKS*, 27: 85.

FAO. 1995. *Code of Conduct for Responsible Fisheries*. Rome, FAO. www.fao.org/3/v9878e/V9878E.pdf

FAO. 1997. *Fisheries management. FAO Technical Guidelines on Fisheries Management.* No. 4. Rome, FAO.

Franks, P. & Pinto, R. 2021. SAPA, SAGE or GAPA? Tools for assessing the social impacts, governance, and equity of conservation. IIED, London. www.iied.org/17664iied.

Garcia, S.M., Boncoeur, J & Gascuel, D. 2013. *Les aires marines protégées et la pèche : bioécologie, socioéconomie et gouvernance*. Presses Universitaires de Perpignan, France.

Garcia, S.M., Charles, A., Sanders, J. & Westlund, L. 2017. Interactions of marine protected areas with fishery livelihoods and food security: concluding discussion. In*:* L. Westlund, A. Charles, S. Garcia & J. Sanders, eds. *Marine Protected Areas: Interactions with Fishery Livelihoods and Food Security*. FAO Fisheries and Aquaculture Technical Paper No. 603, pp. 151–172. Rome, FAO.

Geldmann, J., Deguignet, M., Balmford, A., Burgess, N.D., Dudley, N., Hockings, M., Kingston, N., *et al.* 2021. Essential indicators for measuring site-based conservation effectiveness in the post-2020 global biodiversity framework. *Conservation Letters*, 14. dx.doi.org/10.1111/conl.12792

Gill, D.A., Mascia, M.B., Ahmadia, G.N., Glew, L., Lester, S.E., Barnes, M., Craigie, I., Darling, E.S., Free, C.M., Geldmann, J. & Holst, S. 2017. Capacity shortfalls hinder the performance of marine protected areas globally. *Nature*, *543*(7647): 665–669.

Jonas, H.D., Ahmadia, G.N., Bingham, H.C., Briggs, J., Butchart, D.H.M., Cariño, J., Chassot, O., Chaudhary, S., Darling, E., Degemmis, A. & Dudley, N. 2021. Equitable and effective area-based conservation: towards the conserved areas paradigm. *PARKS: The International Journal of Protected Areas and Conservation, 27.*

Jonas, H.D., Lee, E., Jonas, H.C., Matallana-Tobon, C., Sander Wright, K., Nelson, F. & Enns, E. 2017. Will 'other effective area-based conservation measures' increase recognition and support for ICCAs?. *Parks*, 23(2): 63–78.

Mesnildrey, L., Gascuel, D. & Le Pape, O. 2013. Integrating marine protected areas in fisheries management systems: Some criteria for ecological efficiency. *Aquatic Living Resources*, 26(2): 159–170.

Staples, D. & Funge-Smith, S. 2009. *Ecosystem approach to fisheries and aquaculture: Implementing the FAO Code of Conduct for Responsible Fisheries.* FAO Regional Office for Asia and the Pacific, Bangkok, Thailand. RAP Publication 2009/11.I Rome, FAO. www.fao.org/3/i0964e/i0964e00.pdf

Weigel, J.Y., Mannle, K.O., Bennet, N.J., Carter, E., Westlund, L., Burgener, V., *et al.* 2014. Marine protected areas and fisheries: bridging the divide. *Aquatic conservation: Marine and freshwater ecosystems*, 24(Suppl. 2): 192–215.

Weigel, Y., Morand, P., Mawongwai, T., Noel, J.F. & Tokrishna, R. 2015. Assessing economic effects of a marine protected area on fishing households. A Thai case study. *Fisheries research*, 161: 64–76.

Biodiversity, protected areas, and ecosystem-based management

Agardy, T. 2010. *Ocean zoning: making marine management more effective.* Washington, D.C., Earthscan.

Albers, H.J., Ashworth, M., Capitán, T., Madrigal-Ballestero, R. & Preonas, L.. 2021. MPAs and Aspatial Policies in Artisanal Fisheries. *Marine Resource Economics*, 36(4): 341–367.

CBD. 2022. Protected and conserved areas: Science brief for Target 3 of the post-2020 global biodiversity framework. CBD/WG2020/4/INF/2/Rev.2. Montreal, Canada, GEOBON. www.cbd.int/doc/c/c874/6eb7/813f0201cd67299c9eb10a4a/wg2020-04-inf-02-rev-02-en.pdf

Salm, R.V., Clark, J.R. & Siirila, E. 2000. *Marine and coastal protected areas: a guide for planners and managers.* Gland, Switzerland, IUCN.

Ecosystem services

Diz, D. 2019. *The Ecosystem Approach as a Frame for SDG 14 Implementation.* Strathclyde Centre for Environmental Law & Governance, UK.

European Commission. 2022. Mapping and Assessment of Ecosystems and their Services – MAES. In: *European Commission.* Brussels. Cited 23 November 2022. https://ec.europa.eu/environment/nature/knowledge/ecosystem_assessment/index_en.htm.

FAO. 2022. *Incentives for Ecosystem Services – Tools and models for decision support.* Rome, FAO. Cited 23 November 2022. www.fao.org/in-action/incentives-for-ecosystem-services/toolkit/assessment-and-valuation/tools-and-models/en/.

IPBES. 2022. Policy support tool – Ecosystem Service Assessment Support Tool. In: *IPBES.* Bonn, Germany. Cited 23 November 2022. https://ipbes.net/policy-support/tools-instruments/ecosystem-service-assessment-support-tool.

Millennium Ecosystem Assessment. 2005. *Global Assessment Reports, volumes 1, 2, 3.* Washington, D.C., Island Press. www.millenniumassessment.org/en/index.html.

Glossary of terms

as used in this handbook

Active management – Management that rests on norms, rules, or regulations known to the area's users. Compliance with such norms is monitored and, if needed, enforced. Active management also implies that some information is being obtained on the use of the area and its impacts, whether through monitoring, research, etc.

Area-based management tool (ABMT) – ABMTs cover a wide spectrum of tools and approaches that are used in discrete areas. In fisheries, they include reserves and closures, area-based gear restrictions, community-managed areas and seasonal closures, as well as dynamic tools such as 'move on' rules. Not all fishery ABMTs are likely to qualify as OECMs, but many may fully meet the OECM criteria.

Area-based targets – Area-based targets are quantifiable goals set for national policies and international agreements that are described as a percentage of a jurisdiction. For instance, for Aichi Biodiversity Target 11, Parties to the CBD committed to conserving 10 percent of their ocean waters as MPAs or OECMs.

Areas beyond national jurisdiction – These are areas outside the territorial seas and exclusive economic zones (EEZ) of coastal countries, otherwise known as the high seas.

Biodiversity – The variety of living things, including how many species are found in an area (species diversity); how much genetic variation exists in organism populations (genetic diversity); and how varied ecological communities are within an area (habitat diversity).

Biodiversity attribute – This term is interchangeable with 'biodiversity feature' and figures prominently in CBD Decision 14/8. In this context, biodiversity attributes describe biodiversity in all its manifestations, including biodiversity assets and biodiversity values.

Biodiversity asset – Particular biodiversity that is of value, which goes beyond fisheries stocks and includes features of biodiversity that support fisheries.

Biodiversity values – The monetary and non-monetary or cultural importance of biodiversity as an ecosystem service.

Blue Transformation – The vision and the process by which FAO, its Members and partners can use existing and emerging knowledge, tools and practices to secure and maximize the contribution of aquatic (both marine and inland) food systems to food security, nutrition and affordable healthy diets for all.

Candidate area – A marine or coastal area in which ABMTs are employed, and which has passed initial screening in the handbook's recommended process. Note that when the term "area" is used in the OECM context, it means an area and its corresponding measures.

CBD criteria – The CBD Decision 14/8 describes four main criteria that distinguish OECM. These include: a) that the area is not already reported as a protected area; b) that the area is governed and managed; c) that the management contributes to sustained and long-term positive outcomes for the *in situ* conservation of biodiversity, and d) that ecosystem services and cultural values are maintained.

Civil society organizations- Organizations that represent citizens and people from different regions around the world organized into constituencies, associations and groups.

Devolved authority – Describes a governing authority other than national government, such as an Indigenous People's or local community council.

Ecologically or biologically significant marine areas (EBSA) – Areas notable for the biodiversity they support, which has been identified through expert consultation and recognized by the CBD. These areas may contain more specific priority areas such as important bird areas, important marine mammal areas, important shark and ray areas, as well as key biodiversity areas identified under the Global Ocean Biodiversity Initiative. Neither EBSAs nor any of these categories of more specific important areas represent areas of special management. They are also not synonymous with protected areas, though they may contain them.

Ecosystem services – The benefits that ecosystems provide, e.g. provision of food and materials, maintenance of hydrological and climate balances, erosion control, recreational and cultural values, etc.

Fisheries OECM - OECMs established in a fisheries context which are spatially defined management and/or conservation measures other than protected areas that produce positive, long-term and *in situ* biodiversity outcomes, in addition to the intended fishery outcomes.

Fisheries sector - Here referring to a subset of the broader fisheries sector, specifically the management of fisheries, whether undertaken by fisheries agencies, fishing communities, and/or civil society.

Full evaluation – The steps taken to assess whether and how candidate areas meet the four main OECM criteria. The handbook recommends that certain specific questions are answered at each step of the full evaluation, with supporting documentation provided.

Governing authority – In this context, this includes government agencies that confer use/property rights over marine areas, at all levels of government (national, provincial, regional, municipal, tribal, etc.), as well as in some cases international authorities (e.g. International Maritime Organization).

Government entity – In this context, any government agency, ministry or department that has a role in managing marine areas.

Identifying OECM – The process for selecting sites that could potentially qualify as OECM; the subsequent evaluation of these potential sites will determine whether they in fact meet the criteria and should be reported.

Important biodiversity attributes – These refer to biodiversity attributes, features or assets that are outstanding for their richness, rarity, representativeness, ecological functioning, or value.

In situ – On site, within the bounds of a specified area.

Indicators – In this context, the indicators that are presented with the criteria and sub-criteria for OECM. These are not quantitative indicators, but rather indications or interpretations of how the criteria may be evaluated.

Initial screening – The first phase of evaluation, which filters potential sites and their measures, leading to a list of candidate areas for evaluation.

Long term – Generally interpreted as a time frame of 25 to 50 years, though it may in some cases extend to perpetuity.

Marine protected area – A clearly recognized and defined geographical space that is managed through legal or other effective means to achieve the long-term conservation of nature, with associated ecosystem services and cultural values.

Net positive biodiversity outcome – In an area with multiple pressures, a net positive biodiversity outcome is achieved when the management measures mitigate all the main (manageable) pressures. This concept recognizes that some pressures and threats are not manageable, or not locally manageable, and may therefore negatively impact biodiversity. This leads to the need for a calculation to determine if the sum total of management effects is moving in a positive direction.

No-take area – An area closed to extractive uses, including fishing.

Obtaining consent – A step in the OECM identification, evaluation and reporting process whereby stakeholders and rights holders with vested interests in the area are consulted about the OECM process, and where consent is requested in order to proceed with the full evaluation of the site, with the participation of these groups.

OECM process – A systematic method for identifying, evaluating and reporting OECMs that meet the criteria for national and international databases.

Potential site – These are areas and their measures in which effective management is practised and which could potentially be considered OECMs should they pass initial screening and full evaluation. The present handbook distinguishes between potential sites, which have not been screened, and candidate areas, which are those sites that have passed initial screening.

Production – In the context of this handbook, production refers to fisheries catch. This is in contrast to productivity, which refers to the biomass of fisheries species, as well as other components of the ecosystem.

Recognizing OECM – In this context, describes the formal endorsement of the results of the OECM identification and evaluation process by the governing authority. Recognized OECMs may then be sent to CBD focal points or national database managers for reporting.

Reporting OECM (national and international databases) – The process by which OECM data is sent to national or international databases such as that held by the CBD Secretariat and the WD-OECM.

Rights holder – Any person or institution having designated use or property rights in the area being considered as an OECM.

Significant adverse impacts – In the FAO definition, this refers to impacts that compromise ecosystem integrity (ecosystem structure or function) in a manner that: a) impairs the ability of affected populations to replace themselves; b) degrades the long-term natural productivity of habitats; or c) causes, on more than a temporary basis, significant loss of species richness, habitats, or community types.

Species richness – The number of species within a defined region. Richness can be further elaborated by the presence of species that are found in that area and nowhere else (endemic species).

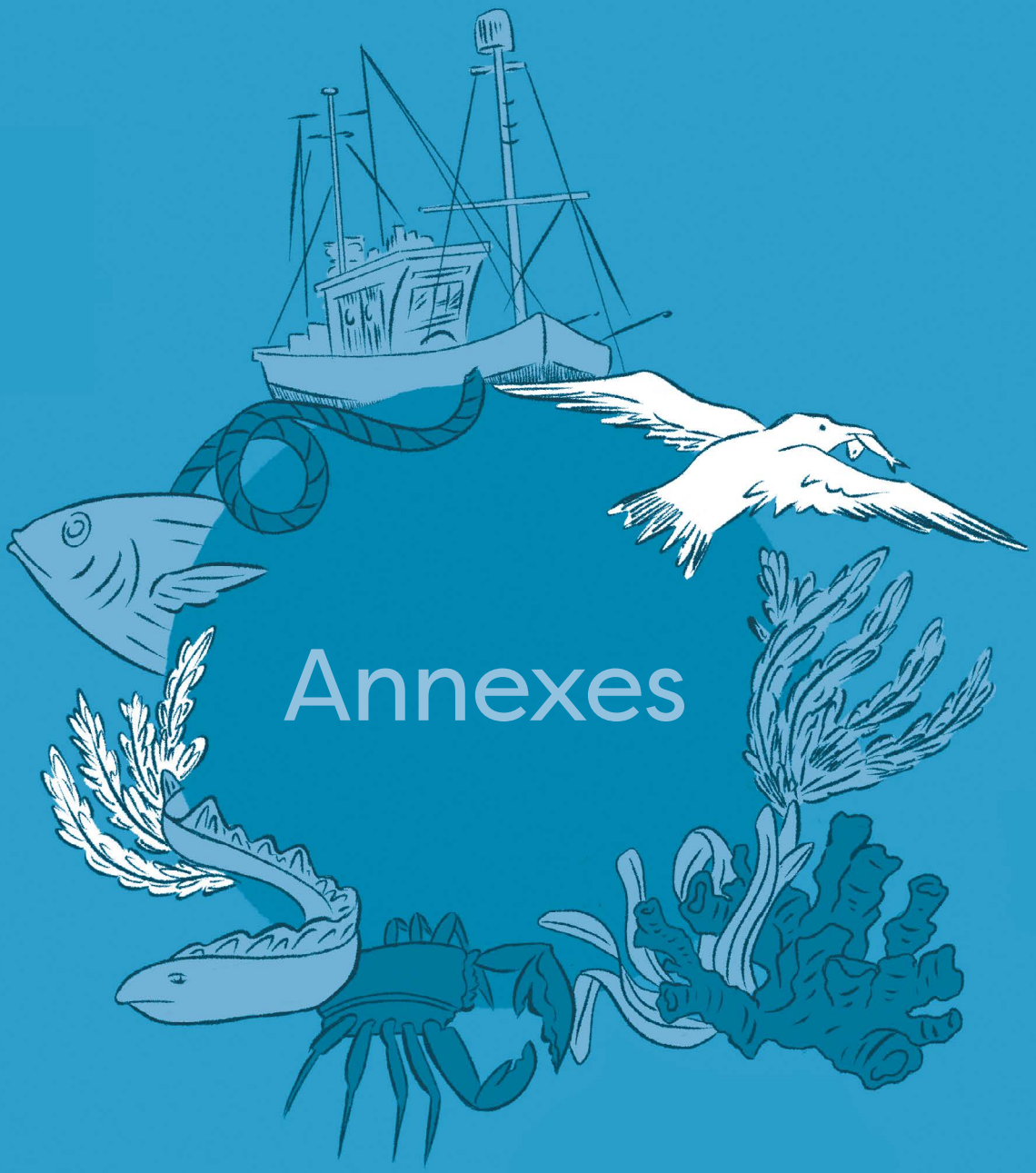
Stakeholder – Any person or institution with a vested interest in an area for reasons relating to livelihood, cultural importance, use or property rights, etc.

Sub-criteria – Refers to the sub-criteria offered in Annex III of CBD Decision 14/8, which provide greater detail on the four main criteria by describing their component parts.

Supporting documentation – Evidence offered that any reported OECM has known biodiversity attributes which have been effectively conserved (or can reasonably be expected to be conserved) through management measures. Such evidence could include a description of the biodiversity (species, habitat types, coverage, condition), the documentation of management measures in place (including regulations and compliance rates and/or testimony), and information on management impacts (including monitoring reports, published research, periodic assessments, etc.). In data-deficient areas, documentation could include expert opinion.

Sustained – In the language of the CBD Decision, sustained appears to be synonymous with 'long term'. In the present handbook 'sustained' refers to the longevity of management, while 'long term' refers to the longevity of the biodiversity outcome.

Transboundary area – A transboundary area straddles jurisdictions, whether between nations or different levels of government (e.g. from state or provincial to national waters), or between a country's maritime territory and areas beyond national jurisdiction (or high seas).



Annexes

Annex A: Historical context – The emergence of the other effective area-based conservation measures concept

The CBD Secretariat has hosted numerous discussions on ways of identifying and reporting many kinds of conservation measures, striving for clarity and consistency in its approaches, and enable tracking of progress towards globally agreed goals. One milestone in this effort was setting coverage targets for the conservation of biodiversity. In 2010, the Parties to the CBD adopted Target 11, calling for 10 percent of marine and coastal areas to be conserved through "effectively and equitably managed, ecologically representative and well-connected systems of protected areas and *other effective area-based conservation measures*" (CBD, 2010). Target 11 was adopted by the CBD COP as part of the 2011–2020 Strategic Plan for Biodiversity; it was the first time the term "other effective area-based conservation measures" was used.

Through this addition, the CBD recognized that formal 'protected areas' are not the only places that deliver biodiversity conservation. The addition of OECMs was meant to enable the inclusion of sites that are often not accounted for in national databases. These included private protected areas, traditionally owned and managed areas, fisheries management areas, as well as other settings where restricted uses and other management tools are compatible with conservation objectives. However, while there were already clear definitions and criteria for protected areas, this was not the case for OECMs.

The CBD hosted several consultations and workshops to discuss the definition of OECMs and their characteristics, notably an Expert Consultation in February 2018 (CBD, 2018c). Subsequently, in November 2018, the CBD COP 14 adopted a definition and criteria for the identification of OECMs (CBD, 2018b). As part of the same decision, the COP asked the CBD Secretariat to provide capacity building to states, including training workshops, to enable the application of the scientific and technical advice and guidance on OECMs. Various forms of guidance on OECMs have been produced by the IUCN and other organizations (IUCN-WCPA, 2019; IUCN-WCPA, 2022). These previous guidance documents apply to all types of OECMs – in the terrestrial, freshwater and marine environments. The application of the concept in marine environments and its use in fisheries management has been initially addressed by various groups – most notably FAO (2019) and Garcia, Rice and Diz (2021) – although no formal guidance has previously been published specifically for fisheries.

Annex B: Criteria and sub-criteria for identification and evaluation of other effective area-based conservation measures

(Taken from CBD/COP/DEC/14/08 p. 12)

Table B1. Criteria and sub-criteria for OECM identification

Criterion A: Area is not currently recognized as a protected area	
Not a protected area	• The area is not currently recognized or reported as a protected area or part of a protected area; it may have been established for another function.
Criterion B: Area is governed and managed	
Geographically defined space	• Size and area are described, including in three dimensions where necessary Boundaries are geographically delineated.
Legitimate governance authorities	• Governance has legitimate authority and is appropriate for achieving *in situ* conservation of biodiversity within the area; • Governance by indigenous peoples and local communities is self-identified in accordance with national legislation and applicable international obligations; • Governance reflects the equity considerations adopted in the Convention. • Governance may be by a single authority and/or organization or through collaboration among relevant authorities and provides the ability to address threats collectively.
Managed	• Managed in ways that achieve positive and sustained outcomes for the conservation of biological diversity. • Relevant authorities and stakeholders are identified and involved in management. A management system is in place that contributes to sustaining the *in situ* conservation of biodiversity. • Management is consistent with the ecosystem approach with the ability to adapt to achieve expected biodiversity conservation outcomes, including long-term outcomes, and including the ability to manage a new threat.
Criterion C: Achieves sustained and effective contribution to *in situ* conservation of biodiversity	
Effective	• The area achieves, or is expected to achieve, positive and sustained outcomes for the *in situ* conservation of biodiversity. • Threats, existing or reasonably anticipated ones are addressed effectively by preventing, significantly reducing or eliminating them, and by restoring degraded ecosystems. • Mechanisms, such as policy frameworks and regulations, are in place to recognize and respond to new threats. • To the extent relevant and possible, management inside and outside the other effective area-based conservation measure is integrated.
Sustained over long term	• The other effective area-based conservation measures are in place for the long term or are likely to be. • "Sustained" pertains to the continuity of governance and management and "long term" pertains to the biodiversity outcome.

In situ conservation of biological diversity	• Recognition of other effective area-based conservation measures is expected to include the identification of the range of biodiversity attributes for which the site is considered important (e.g. communities of rare, threatened or endangered species, representative natural ecosystems, range restricted species, key biodiversity areas, areas providing critical ecosystem functions and services, areas for ecological connectivity).
Information and monitoring	• Identification of other effective area-based conservation measures should, to the extent possible, document the known biodiversity attributes, as well as, where relevant, cultural and/or spiritual values, of the area and the governance and management in place as a baseline for assessing effectiveness. • A monitoring system informs management on the effectiveness of measures with respect to biodiversity, including the health of ecosystems. • Processes should be in place to evaluate the effectiveness of governance and management, including with respect to equity. • General data of the area such as boundaries, aim and governance are available information.
Criterion D: Associated ecosystem functions and services and cultural, spiritual, socio-economic and other locally relevant values	
Ecosystem functions and services	• Ecosystem functions and services are supported, including those of importance to indigenous peoples and local communities, for other effective area-based conservation measures concerning their territories, taking into account interactions and trade-offs among ecosystem functions and services, with a view to ensuring positive biodiversity outcomes and equity. • Management to enhance one particular ecosystem function or service does not impact negatively on the sites overall biological diversity.
Cultural, spiritual, socio-economic and other locally relevant values	• Governance and management measures identify, respect and uphold the cultural, spiritual, socioeconomic, and other locally relevant values of the area, where such values exist. • Governance and management measures respect and uphold the knowledge, practices and institutions that are fundamental for the *in situ* conservation of biodiversity.

Annex C: Linking possible benefit flows from other effective area-based conservation measures in marine fisheries

Each Fisheries OECM will lead to different benefits, and to differing degrees. Primary benefits flowing from OECMs include maintaining or enhancing fisheries production and conserving and restoring biodiversity (especially habitat). A further benefit is improving understanding of both ecology and how people value these marine areas.

Figure A1.1 depicts possible indirect benefits that could flow from Fisheries OECM; if all are achieved, positive outcomes accrue not only for biodiversity but for human well-being as well – and could contribute to meeting policy goals such as those shown. Inspiration for this figure from Alves-Pinto *et al.* (2020).

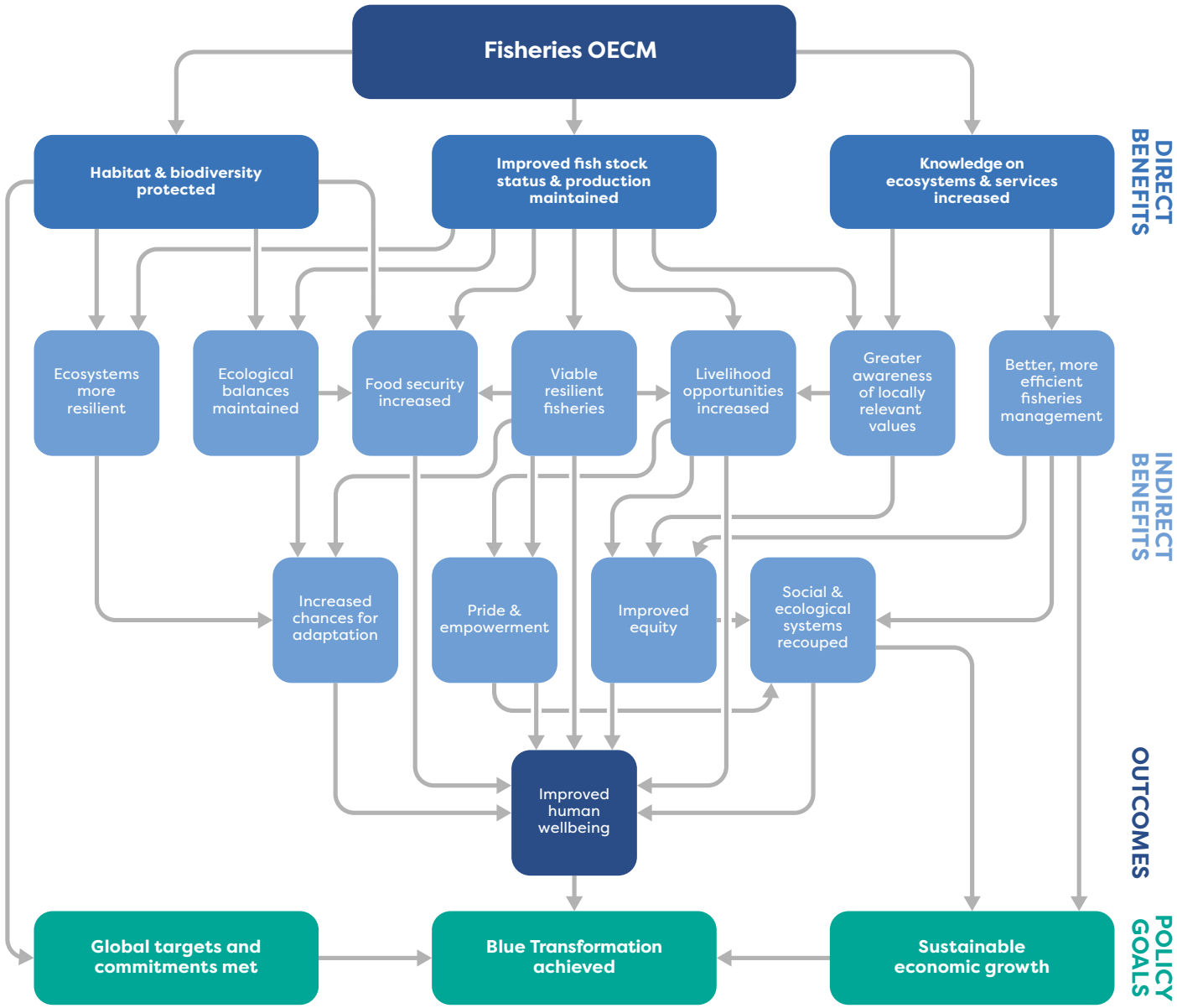


Figure C1. Theoretical indirect or corollary benefits that could flow from Fisheries OECMs

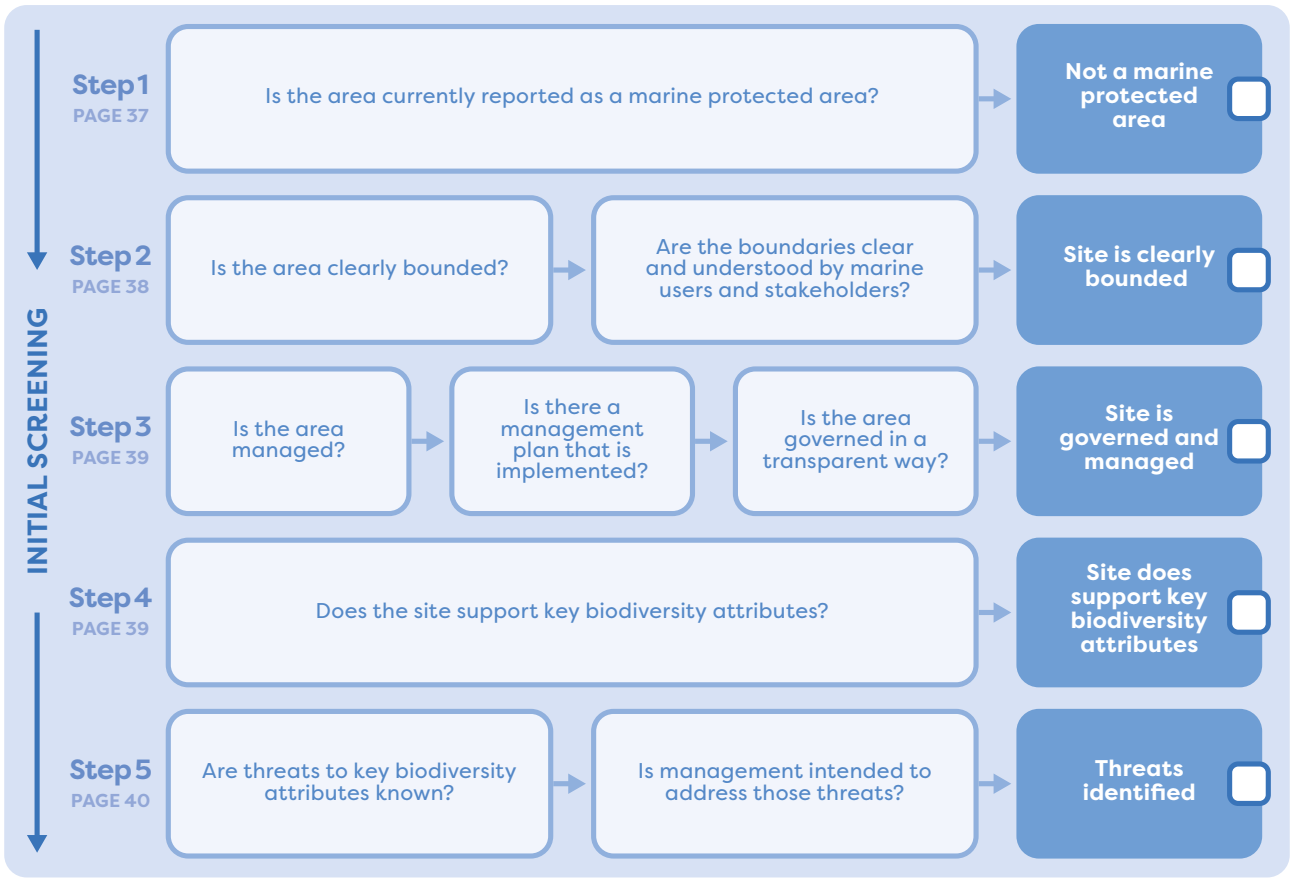
Source: Adapted from Alves-Pinto, H., Geldmann, J., Jonas, H., Maioli, V., Balmford, A., Latawiec, A.E., Crouzeilles, R. and Strassburg, B., 2021. Opportunities and challenges of other effective area-based conservation measures (OECMs) for biodiversity conservation. *Perspectives in Ecology and Conservation, 19*(2), pp.115–120.

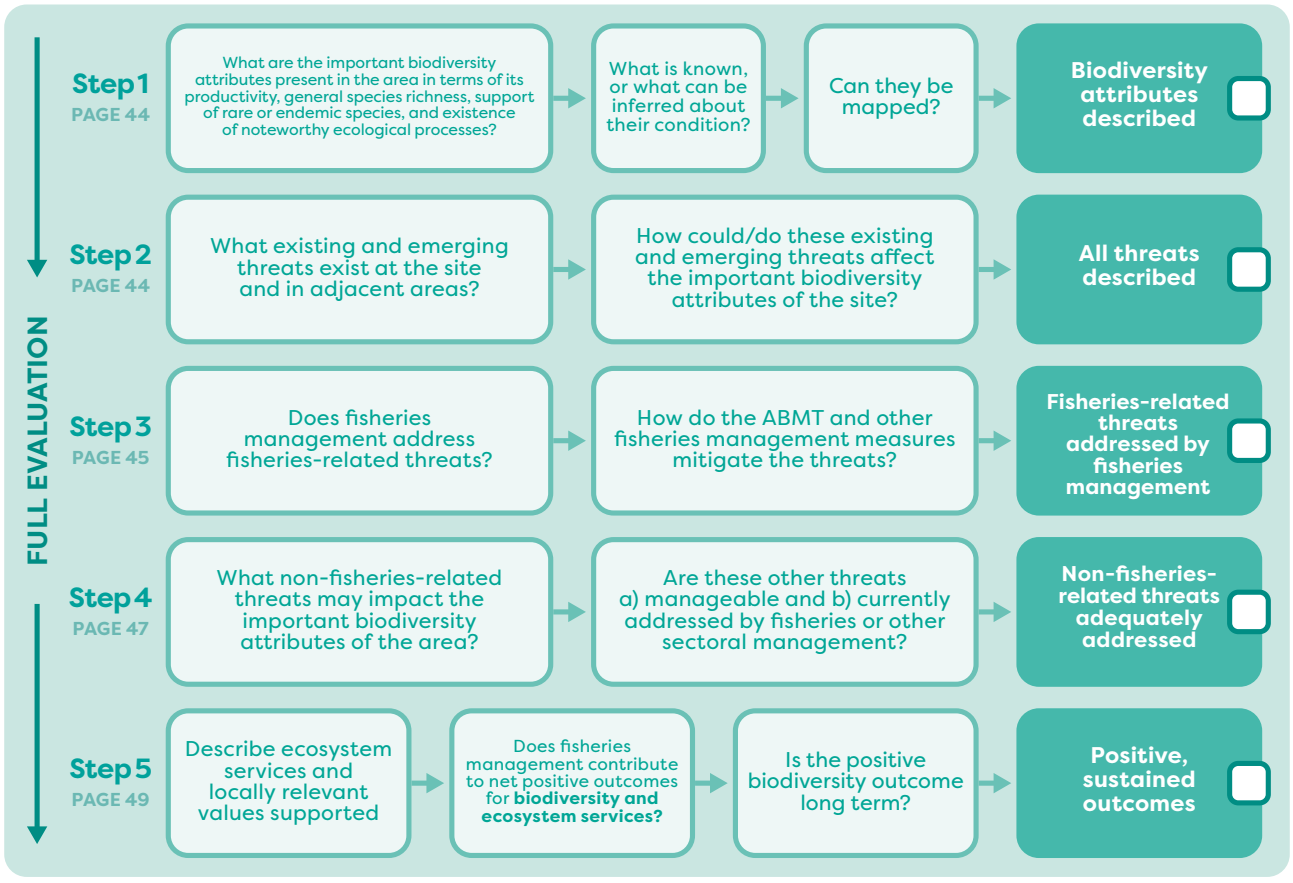
Annex D: Checklist for screening and evaluation

The following checklist is one example of how the screening and evaluation process can be condensed as a quick reference guide to steer the discussions and considerations of the screening and evaluation team(s). It is not intended as a dichotomous key with firm yes/no answers; rather, it brackets the conversations and helps ensure all facets of the OECM definition figure in the evaluation.

It should be noted that institutions already engaging in marine OECM identification may have similar checklists. The differences will reflect the nature of the institution guiding the process (e.g. government agency versus RFMO), the availability of monitoring data, and any thresholds on biodiversity outcomes that may have been agreed. This sample checklist is provided merely as a way to show how the considerations might be condensed, and in what order they might be addressed.

Fisheries OECM Identification Checklist
Has your evaluation considered each element?





Around the globe, fisheries managers strive to practise effective management that provides a clear path towards conserving ocean biodiversity while contributing to human well-being. A wide range of area-based fisheries management tools achieve positive biodiversity outcomes. Many also conform to the definition, criteria, and guidance on 'other effective area-based conservation measures' (OECMs) developed by the Convention on Biological Diversity Conference of Parties. In a fisheries context, OECMs are established, spatially defined management and/or conservation measures other than protected areas, which produce positive, long-term and *in situ* biodiversity outcomes, in addition to the intended fishery outcomes. However, considerable confusion abounds with regard to which measures qualify as OECMs. This handbook, the first product published under the FAO Fisheries OECM series, aims to promote practical guidance on issues related to Fisheries OECMs, describes key characteristics of Fisheries OECMs and outlines a basic process for identifying, evaluating and reporting OECMs in marine fisheries in order to encourage global recognition of the role that fisheries management plays in biodiversity conservation.

For more information:
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