ENABLING EFFECTIVE AND EQUITABLE MARINE PROTECTED AREAS:

guidance on combining governance approaches

UN environment

CITATION: UN Environment (2019): Enabling Effective and Equitable Marine Protected Areas – guidance on combining governance approaches. Authors - Jones PJS, Murray RH and Vestergaard O.
AUTHORS: Jones PJS[1], Murray RH[1] and Vestergaard O[2]
AFFILIATIONS: [1]University College London, Department of Geography
[2]UN Environment, Ecosystems Division, Marine and Coastal Ecosystems Branch
SERIES: Regional Seas Reports and Studies No. 203
ISBN NO: 978-92-807-3697-7
JOB NO: DEP/2169/NA

PUBLISHED: February 2019
PROUCED BY: Ecosystems Division, UN Environment
DESIGN: Communication Division, UN Environment
INFORMATION: https://www.unenvironment.org/resources/marine-protected-area-governance

Acknowledgments

Case study contributors: The authors are indebted to the many colleagues around the world who contributed detailed practical experiences informing this publication. A total of 34 case studies were developed and we are grateful for all the inputs we received from each contributor.

Reviewers: Jorge Jimenez, MarViva, Costa Rica; Jon Day, James Cook University, Australia; Richard Kenchington, University of Wollongong, Australia; Chloe Webster, Scientific Director, Med-Pan; Ario Damar, Centre for Coastal and Marine Resources Studies, Bogor Agricultural University, Indonesia; and Jan Kleine Buening, GIZ, Germany reviewed the draft publication. We found their constructive comments and suggestions most helpful and extend warm thanks for all the time and effort they put into reviewing drafts.

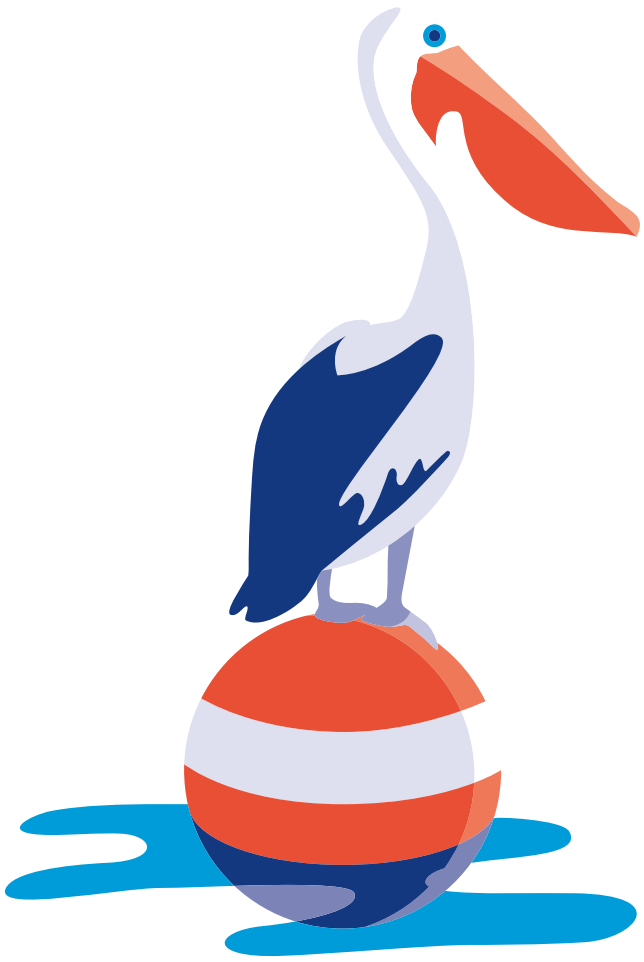
This guide was developed by UN Environment with financial support from Norway and Sweden, as well as the Blue Solutions project. Blue Solutions is a global initiative to establish a platform to collate, share and generate knowledge as well as build capacity for sustainable management and equitable governance of our blue planet being implemented in partnership between GIZ, GRID-Arendal, IUCN and UN Environment, financed by the German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU) through its International Climate Initiative.

BLUE SOLUTIONS

Ecosystems Division
United Nations Environment Programme
P O Box 30552, Nairobi, 00100, Kenya

ENABLING EFFECTIVE AND EQUITABLE MARINE PROTECTED AREAS:

guidance on combining governance approaches



CASE STUDY CONTRIBUTORS

Case Study	Main case study contributors
1. Great Barrier Reef Marine Park, Australia	Jon Day and Kirstin Dobbs, Great Barrier Reef Marine Park Authority
2. Darwin Mounds Marine Special Area for Conservation, UK	Elizabeth De Santo, Franklin and Marshall College, Pennsylvania
3. North East Kent European Marine Site, UK	Tom Roberts, Department of Sociology, University of Guildford
4. Wash & North Norfolk Coast European Marine Sitem, UK	Peter Jones, University College London and Tom Roberts, Department of Sociology, University of Guildford
5. Sanya Coral Reef National Marine Nature Reserve, China	Wanfei Qiu, Department of Marine Environmental Protection, Beijing
6. Seaflower Marine Protected Area, Colombia	Elizabeth Taylor, CORALINA and Marion Howard, Brandeis University
7. Galápagos Marine Reserve, Ecuador	Veronica Toral-Granda, Research Institute for the Environment and Livelihoods, Charles Darwin University, Australia, Gonzalo Banda-Cruz and Scott Henderson – Conservation International
8. Karimunjawa Marine National Park, Indonesia	Stuart Campbell, Wildlife Conservation Society
9. Wakatobi National Park, Indonesia	Julian Clifton, University of Western Australia
10. Tubbataha Reefs Natural Park, Philippines	Marivel Dygico, WWF, Angelique Songco, Tubbataha Management Office and Alan White, The Nature Conservancy
11. Ha Long Bay World Heritage Site, Vietnam	Bui Thi Thu Hien, IUCN Vietnam
12. Os Miñarzos Marine Reserve, Spain	Lucia Perez de Oliveira, University College London
13. Isla Natividad Marine Protected Area, Mexico	Wendy Weisman and Bonnie McCay, Rutgers University
14. Great South Bay Marine Conservation Area, USA	Carl LoBue and Jay Udelhoven, The Nature Conservancy
15. Chumbe Island Coral Park, Tanzania	Sibylle Riedmiller, Chumbe Island Coral Park and Lina Mtwana Nordlund, University of Gothenburg
16. Baleia Franca Environmental Protection Area, Brazil	Hietor Macedo, Chico Mendes Institute of Biodiversity Conservation and Melissa Vivacqua, Federal University of Santa Catarina
17. Pirajubaé Marine Extractive Reserve, Brazil	Leopoldo Gerhardinger, University of Campinas and Renata Inui, Coastal and Marine Studies Association
18. Cres-Lošinj Special Zoological Reserve, Croatia	Peter Mackelworth, Blue World and Draško Holcer, Croatian Natural History Museum
19. Velondriake Locally Managed Marine Area, Madagascar	Laura Marziali, University College London
20. Hol Chan Marine Reserve, Belize	Ruth Murray, University College London
21. Caye Caulker Marine Reserve, Belize	Ruth Murray, University College London
22. Bacalar Chico Marine Reserve, Belize	Ruth Murray, University College London
23. Fal & Helford European Marine Site, UK	Sally-Ann Smurthwaite, University College London
24. Sandals Boscobel Special Fisheries Conservation Area, Jamaica	Natalie Tellwright, University College London
25. Oracabessa Special Fisheries Conservation Area, Jamaica	Mette Erbs, University College London
26. Bluefields Bay Special Fisheries Conservation Area, Jamaica	Claire Thorpe, University College London
27. Nusa Penida Marine Protected Area, Indonesia	Julian Clifton and Dinah Yunitawati, University of Western Australia
28. Port-Cros National Park, France	Katie Hogg, Pedro Noguera-Méndez and Marìa Semitiel-Garcìa, University of Murcia, Spain
29. Tavolara-Punta Coda Cavallo Marine Protected Area, Italy	Katie Hogg, Pedro Noguera-Méndez and Marìa Semitiel-Garcìa, University of Murcia, Spain
30. Ustica Island Marine Protected Area, Italy	Katie Hogg, Pedro Noguera-Méndez and Marìa Semitiel-Garcìa, University of Murcia, Spain
31. Cabo de Gata-Nijar National Park/ Marine Protected Area, Spain	Katie Hogg, Pedro Noguera-Méndez and Marìa Semitiel-Garcìa, University of Murcia, Spain
32. Cabo de Palos-Islas Hormigas Marine Protected Area, Spain	Katie Hogg, Pedro Noguera-Méndez and Marìa Semitiel-Garcìa, University of Murcia, Spain
33. Shark Bay Marine Park, Western Australia	Peter Jones, University College London
34. Ningaloo Marine Park, Western Australia	Peter Jones, University College London

TABLE OF CONTENTS

1 INTRODUCTION

About this guide

This guide provides evidence-based advice on how to use the governance of marine protected areas to promote conservation and share sustainable marine resources. It has been developed using marine protected area (MPA) case studies from around the world.

People who can benefit from this guide include planners, decision makers and practitioners engaged in marine protected area development and implementation, or those who have a general interest in protected area governance. It provides a governance framework and highlights key issues to address specific governance situations. It can be used as part of an adaptive management cycle.

The case studies (page 12-13) highlight different governance approaches, challenges faced, and solutions implemented to achieve conservation objectives. Some marine protected areas are more effective than others, but they all highlight areas for improvement and indications of what could be implemented to enhance their effectiveness.

All MPAs display unique characteristics and face their own complex combination of challenges. There is no "one size fits all" solution. This guidance recognizes this and provides a flexible approach to governance that can be relevant to any MPA and used on an ongoing basis. The case studies cover a variety of MPA types, including no-take, multiple-use, small, large, remote, private, government-led, decentralized and community-led MPAs.

The global and varied examples used to support this guidance have demonstrated and highlighted the differences in the various roles that are taken within the governance and management of MPAs, between men and women as well as between different classes and ethnicities. These differences are identified across a variety of regions and cultural contexts, where there is not always equal opportunity to voice concerns and influence decisions and the benefits from protected areas are not equally distributed, frequently resulting in marginalization (Box 1). Global in scope, it recognizes the essential aspects of gender, class and ethnicity-related equality, as fundamental factors to achieving sustainable development goals and delivering effective and equitable governance of MPAs. This should be taken into account for all MPA governance projects to provide equality across all gender class and ethnicity-related characteristics.

Box 1

Addressing marginalization

The marginalization of particular groups of people based on gender, ethnicity, class, etc. is a recurring issue in environmental governance that must be addressed if the outcomes are to be equitable as well as effective. The importance of "considering gender-related issues within protected areas and the delivery of SDGs" is emphasized in protected area governance (Box 7.2, UNEP-WCMC and IUCN 2016). Studies of participatory development emphasize the importance of recognizing the potential for 'tyrannies of localism' (Cooke and Kothari 2001, Lane and Corbett 2005), i.e. governance processes being captured by local elites. This leads to less advantaged people being marginalized from access to decision-making processes, including losing many benefits and bearing many costs that may arise, potentially reinforcing local inequities (Jones 2014). The analyses of the MPA governance case studies in this guidance recognize the importance of addressing marginalization through ensuring that certain sectors of society, particularly women, ethnic minorities and disadvantaged classes, are not unfairly excluded from decision-making processes and do not bear an unfair share of any costs related to conservation restrictions. It is not feasible, however, to discuss the specifics of such marginalization issues and initiatives or to address them all in this global overview of case studies and summary guidance, though the focus on achieving MPA governance outcomes that are equitable as well as effective implicitly recognizes this.

Why governance is important

Most of the impacts on our oceans result from human behaviour and understanding governance approaches can help steer people's behaviour to provide for more effective achievement of a protected area's goals.

A Convention on Biological Diversity target and two United Nations Sustainable Development Goals (Box 2) tasked countries with implementing effective and equitable protection of marine and coastal areas. Significant progress has been made on achieving the coverage target of 10 per cent by 2020, with 15,292 MPAs covering 5.7 per cent of the global ocean area or 14.4 per cent of coastal and marine areas under national jurisdiction, as of July 2017 (UNEP 2017, Data source: UN Environment – World Conservation Monitoring Centre), designated in response. However, there is still insufficient consideration and action on effective governance, which continues to undermine the overall ability to achieve conservation goals.

This guide was developed to address the limited practical guidance on how to effectively approach marine protected area governance, and to tackle the difficulty in translating and implementing decisions made at an international level to a local context.

> "Well-governed and effectively managed protected areas are a proven method for safeguarding both habitats and populations of species and for delivering important ecosystem services"
>
> Convention on Biological Diversity

How to use this guide

This document provides guidance for implementing an effective governance strategy. It also provides a practical framework to support the analysis of the governance of existing MPAs and for establishing governance approaches for the first time. The individual sections can be used as required during MPA design and implementation.

A Marine Protected Area Governance framework (www.mpag.info) is provided as a key element of the guidance and provides a flexible approach to support analysis of the governance of an MPA. Such governance analysis can provide insight into effectiveness and indicate areas that need strengthening. The case studies provide evidence of how this framework has been applied in various locations around the world.

Summary descriptions of the 34 case studies form a Compendium of governance analyses to support this guidance, and provide further insight and understanding: https://www.unenvironment.org/resources/marine-protected-area-governance. Each case study provides a brief context of the MPA, the challenges it faces and a clear view of what has been implemented and what is needed, to strengthen the governance and address the challenges for effective achievement of conservation objectives and sustainable use.

Box 2

UN Sustainable Development Goals 14.2 & 14.5

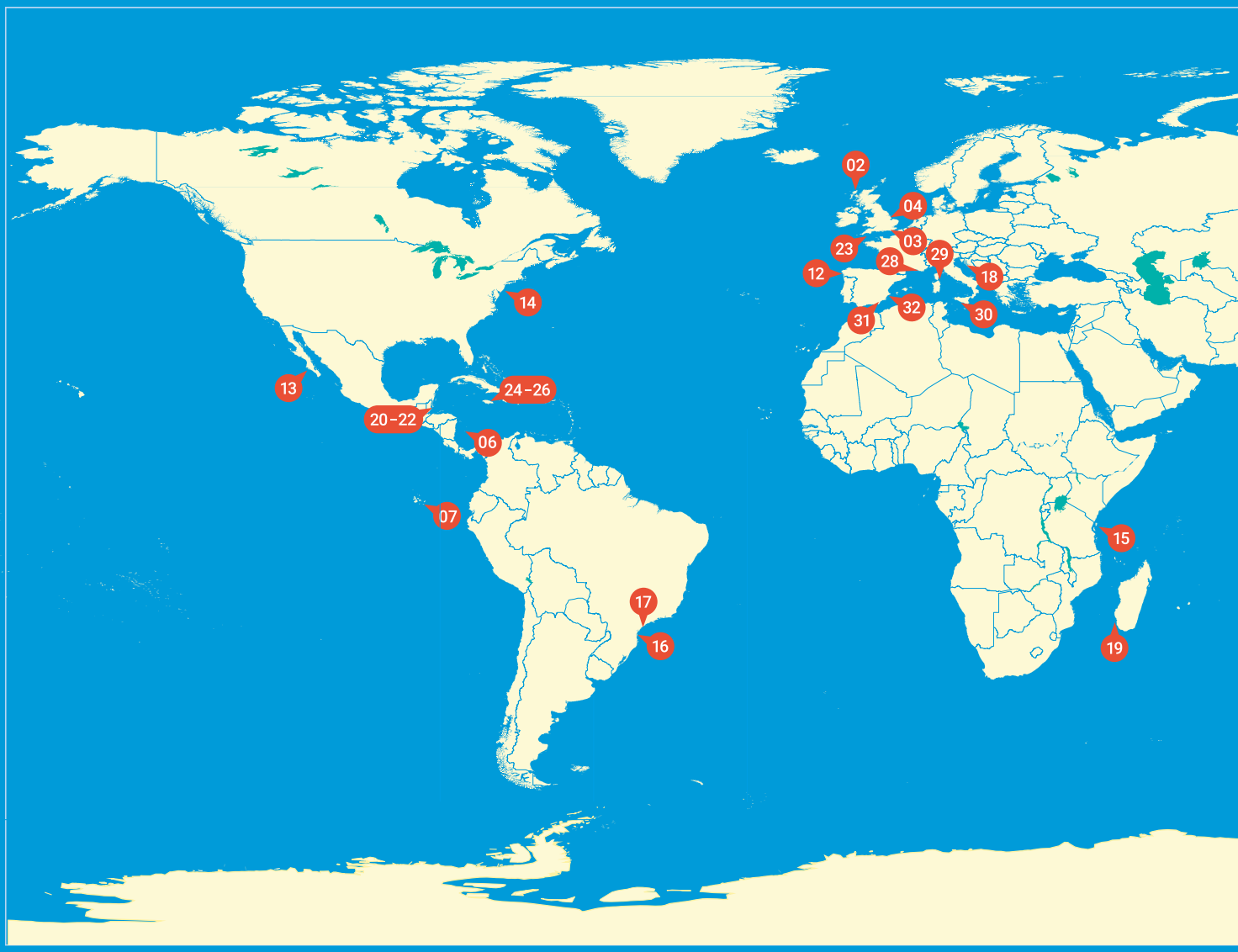
By 2020, sustainably manage and protect marine and coastal ecosystems to avoid significant adverse impacts, including by strengthening their resilience, and take action for their restoration in order to achieve healthy and productive oceans.

By 2020, conserve at least 10 per cent of coastal and marine areas, consistent with national and international law and based on the best available scientific information.

Aichi Biodiversity Target 11

By 2020, at least 17 per cent of terrestrial and inland water areas, and 10 per cent of coastal and marine areas, especially areas of particular importance for biodiversity and ecosystem services, are conserved through effectively and equitably managed, ecologically representative and well connected systems of protected areas and other effective area-based conservation measures, and integrated into the wider landscapes and seascapes.

See **Appendix 1** (p.40) for case study summaries and **Case Study Compendium** for full details:
https://www.unenvironment.org/resources/marine-protected-area-governance



2 MAP OF CASE STUDIES USED TO SUPPORT THIS GUIDANCE

01. **Australia** – Great Barrier Reef Marine Park
02. **UK** – Darwin Mounds European Marine Site
03. **UK** – North East Kent European Marine Site
04. **UK** – The Wash European Marine Site
05. **China** – The Sanya Coral Reef National Marine Nature Reserve
06. **Colombia** – Seaflower Marine Protected Area
07. **Ecuador** – Galapagos Marine Reserve
08. **Indonesia** – Karimunjawa Marine National Park
09. **Indonesia** – Wakatobi National Park
10. **Philippines** – Tubbataha Reefs Natural Park
11. **Vietnam** – Ha Long Bay World and Natural Heritage Area
12. **Spain** – Os Miñarzos Marine Reserve of Fishing Interest
13. **Mexico, Baja California Sur -**Isla Natividad Marine Protected Area
14. **USA** – Great South Bay Marine ConservationArea
15. **Tanzania, Zanzibar** – Chumbe Island Coral Park
16. **Brazil** - Baleia Franca Environmental Protection Area
17. **Brazil** - Pirajubaé Marine Extractive Reserve
18. **Croatia** - Cres-Lošinj Marine Natura 2000 Site
19. **Madagascar** – Velondriake Locally Managed Marine Area
20. **Belize –** Hol Chan Marine Reserve
21. **Belize** – Caye Caulker Marine Reserve
22. **Belize** – Bacalar Chico Marine Reserve
23. **UK** – Fal & Helford European Marine Site
24. **Jamaica** – Sandals Boscobel Special Fisheries Conservation Area
25. **Jamaica** – Oracabessa Special Fisheries Conservation Area
26. **Jamaica** – Bluefields Bay Special Fisheries Conservation Area
27. **Indonesia** – Nusa Penida Marine Protected Area
28. **France** – Port-Cros National Park
29. **Italy, Sardinia** – Tavolara-Punta Coda Cavallo Marine Protected Area
30. **Italy, Sicily** – Ustica Island Marine Protected Area
31. **Spain** – Cabo de Gata-Nijar Marine Protected Area
32. **Spain** – Cabo de Palos-Islas Hormigas Marine Protected Area
33. **Australia** – Shark Bay Marine Park
34. **Australia** – Ningaloo Marine Park

Figure 1 —
The relationship between governance and management

3 ABOUT GOVERNANCE

About governance

For marine protected areas (MPAs) to be effective they must have good governance to influence human behaviour and thereby reduce some of the impacts affecting the marine area. It is important that the governance approach is inclusive and promotes a sense of stewardship through engaging local communities, with a focus on social and economic benefits as well as environmental ones.

There is often confusion between governance and management which can undermine initiatives to improve effectiveness. It is important to understand the relationship between the two (Figure 1):

- Management is part of governance and is a formal representation of official decisions that can be readily seen, such as management plans, management groups and regulations.
- Governance is a broader set of elements that includes all the groundwork through to the negotiations and discussions that underpin management and influence human behaviour. It is a continuous process that involves negotiations among people, norms of behaviour and economic influences.

A governance structure needs to be adaptable, as changes will inevitably occur with the MPA. It is also important that the structure created is relevant to each individual MPA,

> Effective governance of an MPA is necessary to achieve biodiversity conservation objectives and social and economic development

to address its specific challenges.

Governance approaches

There have been many perspectives and theories on governance, which generally tend to focus on 'top-down', 'bottom-up' or 'co-management' approaches. However, this can be a very rigid and restrictive way of approaching governance and often ignores some vital aspects that can undermine effectiveness. The practical reality is that there is a need for an integrated approach combining the roles of the state, markets and people.

The most effective combination of these three approaches will differ for each MPA and will depend on several associated factors, including political will, community involvement, financial status, legislation and the capacity for enforcement. There should be input from all three approaches to generate the most effective and equitable form of governance

Governance approaches

STATE (top-down) control is always needed for laws and other regulations, to ensure that biodiversity and natural resources are actually protected against degradation and destruction, particularly from incoming users.

MARKETS are important for economic initiatives to support, for example, alternative compatible livelihoods. By recognizing the economic value of biodiversity in terms of natural capital and ecosystem services, balanced decisions can be reached. Property rights attached to natural resources can help promote economic rationalism.

PEOPLE (bottom-up) and local community involvement is necessary to decentralize decision-making processes and promote local ownership. Involvement in deliberations and decisions and utilizing local knowledge and expertise is key to success. Collaborative relationships and the integration of local traditions and culture help promote local stewardship.

Marine Protected Area governance types

From the example case studies reviewed, there are four broad types of MPA governance that have been identified (Table 1). It's not always straightforward to define the type of governance for a given MPA, but these four types represent some understanding of the main MPA governance types around the world.

Table 1 — The different MPA governance types

Marine Protected Area governance type	Main feature	Description
Government-led	Governed primarily by the state under a clear legal framework	Decisions are taken by the state with some transfer of power for implementing decisions, but not making decisions, to lower level government or quasi-independent government organizations, who consult local users and other actors on decisions taken at a higher level.
Decentralized	Governed by the state with significant decentralization and/or involvement from private organizations	Implementation is devolved by the state to lower levels of government, quasi-independent government and private organizations, and they have some decision-making powers, with central government retaining some control over implementation and decision-making.
Community-led	Governed primarily by local communities under collective management arrangements	The MPA is instigated on a bottom-up basis by local stakeholders, often through local organizations, with many implementation and decision-making powers remaining with local stakeholders/organizations, but often requiring some degree of state support for enforcement and therefore involving some central government influence.
Private	Governed primarily by the private sector and/or non-governmental organizations (NGOs) who are granted with property rights and associated management rights	MPAs instigated by organizations which may, or may not, represent local users, but often still require some state support for enforcement, though central government influence is generally limited to conditions attached to user and property rights, coupled with recourse to withdraw the rights if conditions are not fulfilled.

Steering human behavior through combinations of state, market and civil society approaches in order to achieve strategic objectives

4 WHAT YOU NEED TO KNOW WHEN CREATING A GOVERNANCE FRAMEWORK

There must be an understanding of the activities both within and surrounding a Marine Protected Area (MPA) and how they relate to and impact the objectives that have been set before more effective governance can be developed. Once this is understood, incentives can be applied to steer human behaviour and reduce the impacts that have been identified.

1. Objectives

An understanding of the conservation objectives at the outset, e.g. to conserve/restore habitats and species, as well as the priorities of those objectives, is critical. There may also be associated operational objectives, e.g. to raise awareness of the benefits of protection, but the conservation objectives should take priority. Understanding the needs of the key stakeholders and decision makers will also aid in fully defining and setting objectives.

What are the objectives of the Marine Protected Area?

What needs protecting and why?

Who is involved and has the power to define and set the objectives?

2. Impacts

Understanding the particular human activities and actions that lead to impacts and conflicts will enable the identification of the specific behaviours that need to be addressed. Such activities and behaviours include fishing, tourism and coastal development, both within and immediately surrounding an MPA. Natural or large-scale environmental impacts, for example climate change, hurricanes and invasive species, are not addressed as these are outside of the scope of this guidance as they are beyond local control.

Many of the human activities identified can have a cumulative impact which can further compound the effects that various individual impacts have on your MPA and these should also be considered.

What are the human activities that are leading to impacts that can undermine the effective achievement of the conservation objectives?

What activities are preventing the objectives from being achieved?

3. Driving forces

Trends in human behaviour can drive and increase impacts. These include: poverty, which can drive people to fish for their subsistence and livelihoods; the growth of tourism; the increasing reach and demand of fish markets; internal migration from poorer inland to coastal areas which offer more opportunities for development, and a desire for a better standard of living.

Understanding the driving forces behind why people are doing what they are doing can support the identification and implementation of behaviour change incentives, to minimize the impacts that these trends are driving. It can also indicate which population groups need to be included to foster knowledge transfer, understanding and cooperation.

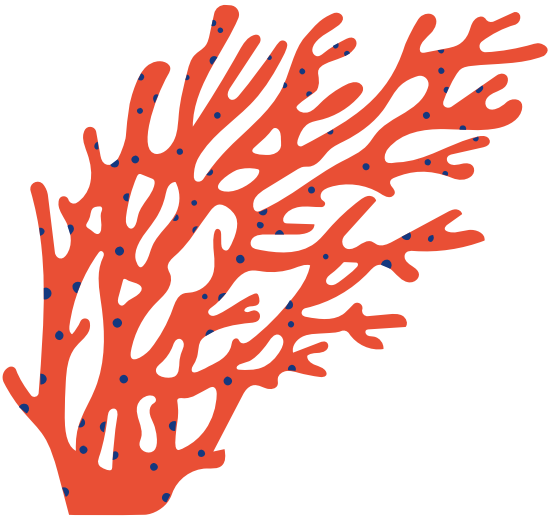
What trends in human behaviour are driving or increasing these impacts?

Why are people doing what they are doing?

Identifying the most common impacts

An analysis of the 34 case studies revealed a number of impacts and conflicting activities. Four of these activities occurred much more frequently than others and are likely to be present in or around your MPA.

> Our influence on marine ecosystems should be focused on influencing human behaviour/activities to minimize our impacts



Fishing

Many MPAs suffer from destructive fishing practices such as over-fishing and illegal fishing. This can be driven by: local demand, distant fish markets, people coming in to fish from other areas, the need to feed local communities and support subsistence livelihoods, or increases in populations or tourism. In some cases, aquaculture has been introduced and, if this is not carefully managed, it can have negative impacts on the surrounding environment.

Tourism and recreational activities

Tourism-related activities need to be carefully managed. If carried out responsibly they can be hugely beneficial: generating funding to support an MPA, as well as providing alternative livelihoods to ease possible fishing pressures. However, a rapid increase in tourism can quickly lead to an excess of activities on and in the water that increase pollution, local demand for fish and unsustainable coastal population growth and coastal development. A delicate balance must be maintained between the economic benefits of tourism and conservation objectives.

Coastal development

Poorly managed, coastal development can lead to harmful environmental impacts that can conflict with the effectiveness of an MPA. Largely driven by factors such as increases in tourism, a growth in population and those looking for jobs and improved living standards, as well as the development of new ports or shipping activities and other infrastructure development can have negative environmental impacts. These include habitat destruction, species disturbance and water pollution.

Water pollution

Prior to and after its designation, an MPA may be impacted by water pollution from a variety of sources. These include agriculture and aquaculture activities, the dumping of waste by cruise and merchant ships, and recreational marine traffic which can all introduce high levels of pollution into the marine environment. Other common sources of water pollution include poorly managed coastal practices and inadequately treated sewage discharges into oceans. These factors can reduce the resilience of the MPA and its surrounding environments.

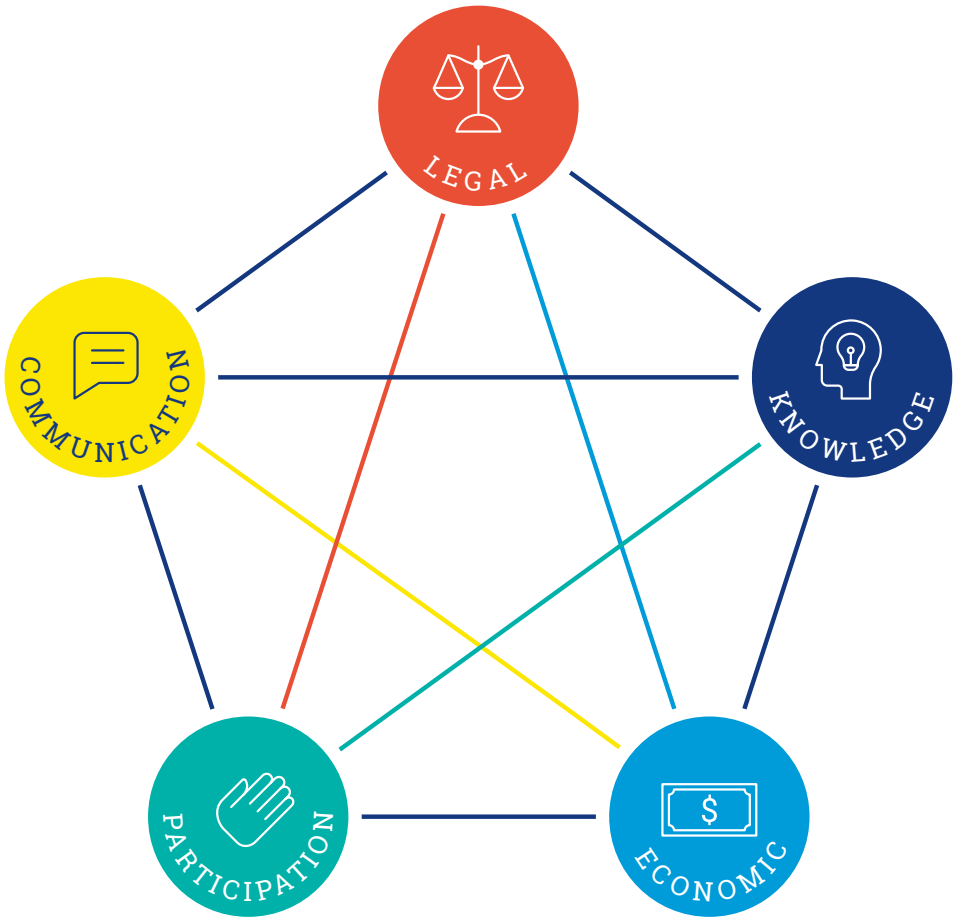
Each MPA will have different conflicts and these should be evaluated according to the individual circumstances and context. Often conflicts are interlinked. For example, tourism or population increases can lead to increased coastal development, which could impact water quality; especially in the absence of adequate measures to prevent such issues as catchment run-off, or if there are inadequate sewage treatment facilities. Such increases can also lead to increased fishing, which can negatively impact marine species and habitats.

Additional impacting activities include those related to ports and shipping, military activities, the exploitation of natural resources, and agriculture. These conflicts were less common across the case studies but sometimes were significantly harmful and equally as important.

After identifying and understanding the impacts that could undermine the effective achievement of conservation objectives, as well as the behaviours driving them, the governance analysis can begin. The MPAG framework provides a flexible approach to governance through the application of incentives to address or mitigate impacting activities and behaviours.

5 MARINE PROTECTED AREA GOVERNANCE FRAMEWORK

Figure 2 —
The five categories of incentives within the **MPAG** framework



MPAG - A practical and flexible approach

The Marine Protected Area Governance (MPAG) framework uses a combination of governance approaches grouped into five categories of incentives (figure 2), economic, legal, participation, knowledge and communication. Each of the incentive categories interact and support each other in many ways, forming an integrated web of connectivity.

The connections between incentive categories and individual incentives are very similar to the connectivity webs that can be seen in ecology (Appendix 2). A diversity of different species and different functional groups of species, with a complex web of interactions between them, leads to a more stable ecosystem. In a similar manner, a diversity of incentives, across different incentive categories, with webs of interactions between them, leads to a more stable governance framework.

Each of the five incentive categories contributes to one or more of the three governance approaches of state, markets and people.

Step

1

– REVIEW THE CONTEXT AND IMPACTS SURROUNDING YOUR MPA TO UNDERSTAND WHAT IS NEEDED TO INFLUENCE HUMAN BEHAVIOURS

What is an incentive?

An incentive is a particular governance approach that is designed to encourage people to behave in a way that supports the achievement of certain strategic policy outcomes such as, for example, biodiversity conservation

Table 2 —
The five categories of incentives with descriptions

Incentive category	Definition	Relevant governance approach
Economic	Using economic and property rights approaches to promote the fulfilment of MPA objectives.	Markets approach
Communication	Promoting awareness of the conservation features of the MPA, the related objectives for conserving them and the measures for achieving these objectives, and promoting awareness of the related benefits.	Supports all three approaches
Knowledge	Respecting and promoting the use of different sources of knowledge (local-traditional and expert-scientific) to better inform MPA decisions	Supports all three approaches
Legal	Establishment and enforcement of relevant laws, regulations etc. as a source of 'state steer' to promote compliance with decisions and thereby the achievement of MPA obligations	State approach/top-down
Participation	Providing for users, communities and other interest groups to participate in and influence MPA decision-making that may potentially affect them, to promote their 'ownership' of the MPA and thereby their potential to participate in the implementation of decisions.	People approach/bottom-up

Key points concerning the role of the State in relation to these incentives include:

- The State plays a critical role in enabling and supporting the implementation of various incentives across all governance approaches.
- Governments play a major role in providing legislative and policy environments and in controlling and mitigating the driving forces that cannot effectively be addressed at a local scale.
- Legal incentives, if used appropriately, integrate with and reinforce many of the incentives from the other categories. They enhance the resilience of the governance system and provide important support for the implementation of incentives from all other categories.

Table 3 —
The five categories of incentives
and their 36 associated incentives

Incentive category	Incentive	Relevant governance approach
Economic	1. Payments for ecosystem services (PESs) 2. Assigning property rights 3. Reducing the leakage of benefits 4. Promoting profitable and sustainable fishing and tourism 5. Promoting green marketing 6. Promoting diversified and supplementary livelihoods 7. Providing compensation 8. Investing MPA income/funding in facilities for local communities 9. Provision of state funding 10. Provision of NGO, private sector and user fee funding	Markets approach
Communication	11. Raising awareness 12. Promoting recognition of benefits 13. Promoting recognition of regulations and restrictions	Supports all three approaches
Knowledge	14. Promoting collective learning 15. Agreeing approaches for addressing uncertainty 16. Independent advice and arbitration	Supports all three approaches
Legal	17. Hierarchical obligations 18. Capacity for enforcement 19. Penalties for deterrence 20. Protection from incoming users 21. Attaching conditions to use and property rights, decentralization, etc. 22. Cross-jurisdictional coordination 23. Clear and consistent legal definitions 24. Clarity concerning jurisdictional limitations 25. Legal adjudication platforms 26. Transparency, accountability and fairness	State approach/top-down
Participation	27. Rules for participation 28. Establishing collaborative platforms 29. Neutral facilitation 30. Independent arbitration panels 31. Decentralizing responsibilities 32. Peer enforcement 33. Building trust and the capacity for cooperation 34. Building linkages between relevant authorities and user representatives 35. Building on local customs 36. Potential to influence higher institutional levels	People approach/bottom-up

A diverse set of incentives, used in combination, incorporating state, market and people approaches, can build resilience in a governance system

The five categories of incentives consist of 36 incentives that are applied to MPAs to address the human impacts occurring in and around them (Table 3).

The incentives are implemented to build the governance framework and interact with each other, forming links and connections that enable state, market and people approaches to governance to be combined. Examples of how the incentives are practically applied within existing MPAs can be found in Appendix 1, based on the 34 case studies supporting this guidance.

The combination of incentives applied should be those most appropriate to address the impacts and driving forces that have been identified for a given MPA. As with species in ecosystems, the incentives in a governance system must be appropriate to the context in relation to the impacts and the other incentives: it is not just a question of adding incentives simply to increase diversity. Not all incentives will be appropriate to a given MPA context and some may be identified as not being used, but could be beneficial to strengthen the governance framework and improve effectiveness. Examples of these can be seen in the associated MPA case study summaries compendium and some highlights are provided below:

- Evidence from the case studies shows that a diversity of incentives from all five categories provides the most effective approach. Among the 34 case study examples, 26 used a combination of incentives across all five categories.
- The incentives that were most commonly missing were knowledge and legal incentives - this could indicate a lack of political will in government-led approaches and lack of inclusion of local knowledge, as well as an inability for community-led approaches to sufficiently influence protection without some element of state control.
- Participation incentives are important where local communities are present in order to promote cooperation and compliance with the regulations and rules of the MPA, as well as to promote community stewardship.
- A combination of economic, legal and participation incentives supports market, state and people approaches. It is however, equally important that people are aware of the MPA, and that all available knowledge has been utilized to achieve success. The inclusion of communication and knowledge incentives bridges these gaps.
- These case studies clearly reveal that it is not sufficient to have an MPA with only participation or economic incentives.

The most frequently used incentives

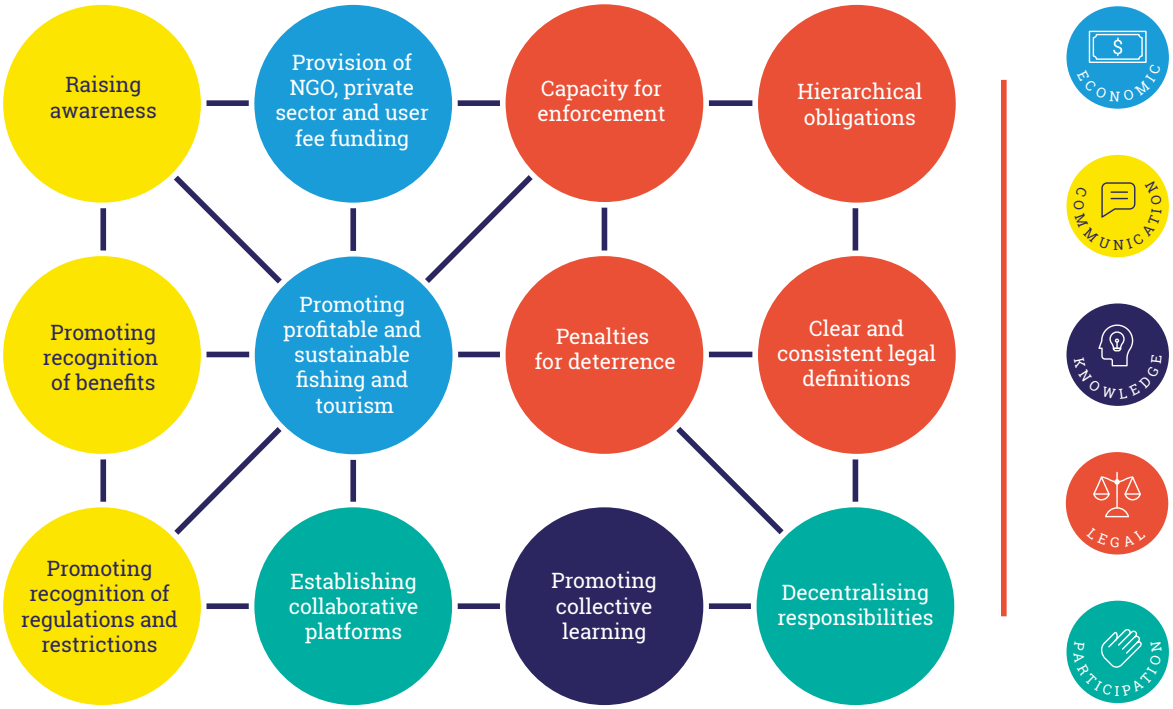


Figure 3 —
The 12 most frequently used incentives

The core 12 incentives

The figure above and the following list shows the 12 most frequently used incentives across all 34 case studies. The bracket indicates which of the five incentive categories they belong to. Examples of how they are implemented can be found in Appendix 1.

- Promoting profitable and sustainable fishing and tourism
- Provision of NGO, private sector and user fee funding (Economic)
- Raising awareness (Communication)
- Promoting recognition of benefits (Communication)
- Promoting recognition of regulations and restrictions (Communication)
- Promoting collective learning (Knowledge)
- Hierarchical obligations (Legal)
- Penalties for deterrence (Legal)
- Capacity for enforcement (Legal)
- Clear and consistent legal definitions (Legal)
- Establishing collaborative platforms (Participation)
- Decentralizing responsibilities (Participation)

Five of the case studies use all 12 of these incentives in combination (see Appendix 1 for case study summaries):

- Great Barrier Reef Marine Park (case study 1)
- Tubbataha Reefs Natural Park (case study 10)
- Bluefields Bay Special Fisheries Conservation Area (case study 26)
- Shark Bay Marine Park (case study 33)
- Ningaloo Marine Park (case study 34)

Step

2

– REVIEW WHICH OF THE MOST FREQUENTLY USED INCENTIVES ARE BEING USED BY YOUR MPA

These MPAs neither address the same types of conflicts and driving forces, nor incorporate the same MPA governance type, which illustrates how the incentives can be flexibly combined in different ways to address differing challenges in different contexts. Through the MPAG framework analysis, the MPAs were given an effectiveness rating and all five of these MPAs have a reasonably high effectiveness rating of 3 out of 5, i.e. some impacts are completely addressed, some are partly addressed.

As with the connections between species in ecology as previously noted, it is important to identify and understand the connections between incentives, to improve the stability and effectiveness of the governance framework. Figure 3 illustrates the connections and interactions between the 12 most frequently used incentives:

These incentives could be addressing more than one impact. The diverse set of incentives used highlights the power of combining all five categories of incentive and incorporating the elements of state, markets and people approaches. It demonstrates the importance of taking an integrated approach to governance in order to foster a more resilient system that can better achieve MPA objectives.

These core 12 incentives are the starting point for reviewing the most appropriate incentives to address the drivers and conflicts identified with an MPA. However, they may not always be relevant. For example, the Darwin Mounds European Marine Site (case study 2) relies less on participation incentives as the MPA is in a very remote location, so has fewer actors to involve in decision-making and cooperation. Equally, if an MPA has sufficient political will and funding from the state, there may not be a requirement for NGO, private sector or user fee funding.

Here are four examples of how the 12 core incentives have been used in combination to address particular issues (funding – Great Barrier Reef Marine Park; awareness – Tubbataha Reefs Natural Park; fisheries – Bluefield Bay Special Fisheries Conservation Area; decentralizing responsibilities – general case study).

BOX 4:
Ensuring sufficient funding

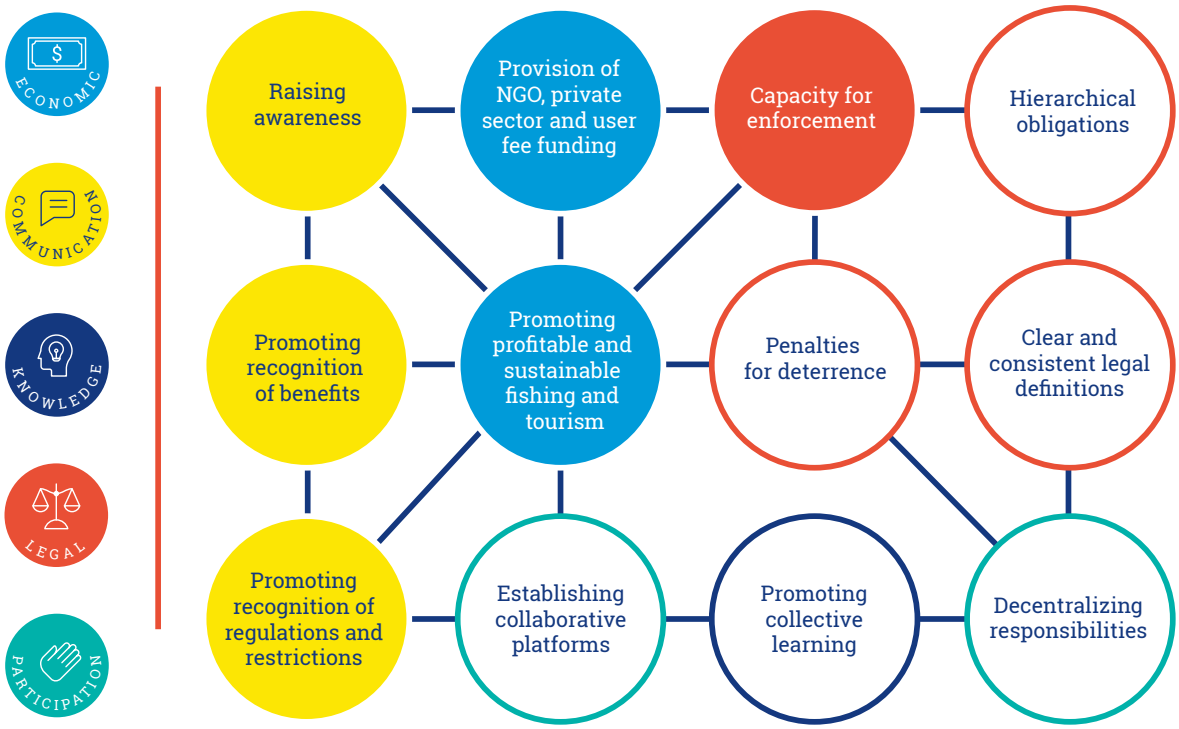


Figure 4 —
Incentive web example showing the direct connections of incentives for funding (the colour filled circles)

The Great Barrier Reef Marine Park (case study 1) illustrates how sufficient funding can support a diverse combination of incentives. In 2007/08 there was AUD$46.3 million invested into the presentation, management and economic value of the Great Barrier Reef. Both the federal and state governments re-affirmed their commitment to a joint programme of field management across the whole area with shared funding on a 50:50 basis. This state funding, was complemented by funding from NGOs and user fees, providing the foundation to support the promotion of profitable and sustainable fisheries with sufficient capacity for enforcement.

The funding provides resources to raise awareness and promote recognition of benefits and recognition of the regulations and restrictions. A significant amount of income from tourism (AUD$5.1 billion in 2006/7) is re-invested into local areas, businesses and infrastructure to support the MPA and surrounding environment. These economic incentives support legal, communication and participation incentives directly.

BOX 5:
Raising awareness/promoting recognition of benefits/promoting recognition of the regulations and restrictions

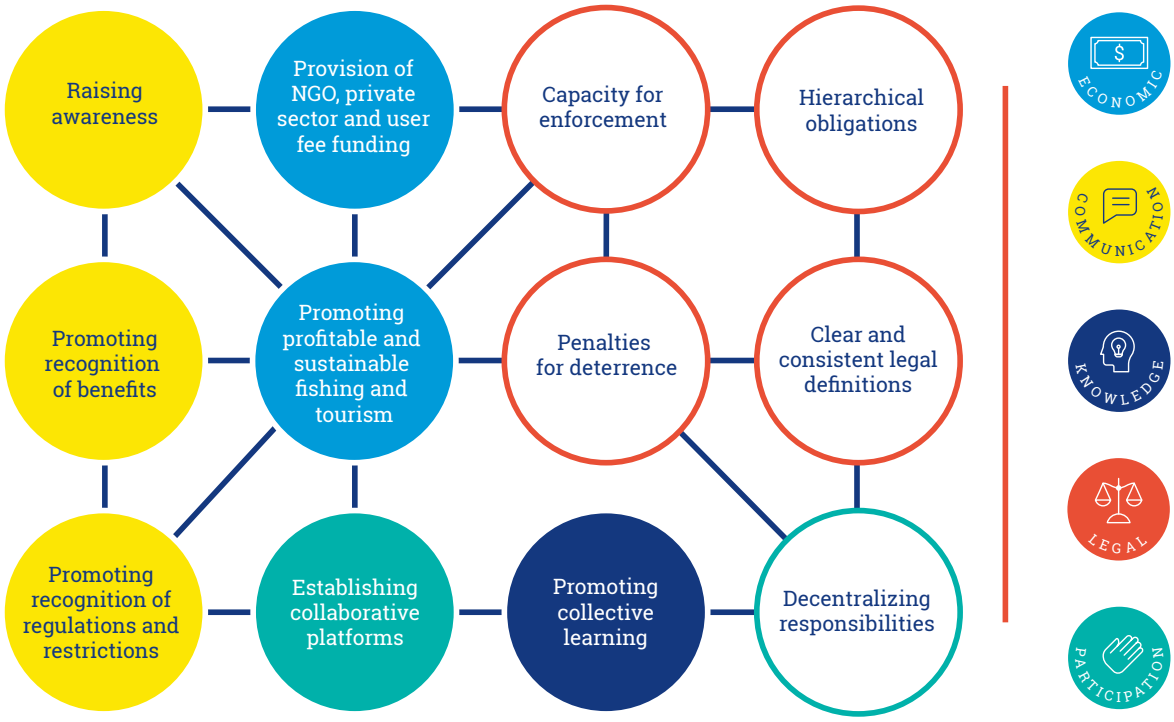


Figure 5 —
Incentive web example showing the direct connections for using communication incentives (the color filled circles)

The use of communication incentives in the case of Tubbataha Reefs Natural Park (case study 10) illustrates how they are used in combination. Through leveraging the 'New 7 Wonders of Nature' campaign, the park has been very successful in raising awareness. The inclusion of regular dives with high profile people has enhanced visibility and awareness levels of the MPA at a local level.

Information, communication and education campaigns in local schools, communities and organizations improve awareness and enlarge the constituency for the park and marine conservation in general. The recognition of benefits from the MPA are promoted and openly communicated through these routes, as well as through forums with local stakeholders. These communications include the results of scientific studies - monitoring the status of the reefs and other marine life, larval dispersal and contextualising these, considering related pressing issues on health, poverty and climate change.

The methods available for communication and raising awareness ensure that all locals are aware of the regulations and restrictions. Instilling the values of the park and the rationale of protective measures is instrumental in encouraging stakeholders and partners to support park management and increase compliance with regulations.

These interactions help to support and promote profitable and sustainable fisheries.

The use of these communication incentives also supports economic and participation incentives.

BOX 6:
Promoting profitable and sustainable fisheries

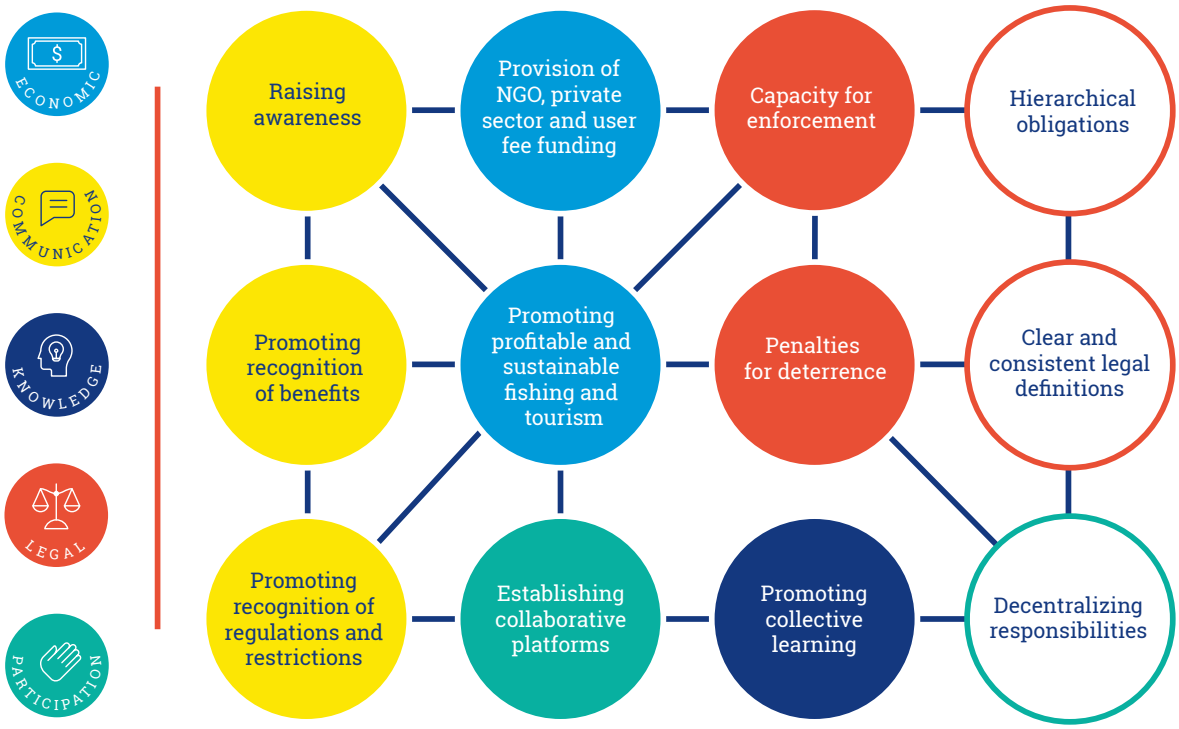


Figure 6 —
Incentive web example showing the direct connections of incentives for promoting profitable and sustainable fisheriesc (the colour filled circles)

The Bluefields Bay Special Fisheries Conservation Area (case study 26) in Jamaica is a completely no-take MPA. Fishers have reported increases in catches in surrounding areas since designation, indicating spillover into areas allocated for fishing, supporting a profitable and sustainable fishery. Ensuring sufficient funding both from the state and from NGOs and the private sector to provide for capacity for enforcement is important to enforce no-take restrictions, particularly as fish populations recover and grow, which attracts potential poachers. The connections with the fishers through collaborative platforms help to maintain the operation of a sustainable fishery and the feedback from the fishers supports the recognition of regulations and restrictions.

Education campaigns are raising awareness and helping to promote cooperation with the no-take zone, and encourage sustainable fishing in the surrounding areas, which is practised by the majority, through the communication of the benefits being delivered and through collaboration with many users.

The involvement of a variety of actors allows the use of all available knowledge, insights and learnings to support the requirements for the fishery, to allow its management to be effective and supports the achievement of conservation objectives. This also helps build trust and cooperation within the community while supporting economic incentives to fulfil local livelihood needs.

In this case, communication, economic, participation and knowledge incentives all support each other, and are backed up by legal incentives which increase the capacity for enforcement.

BOX 7:
Decentralizing responsibilities

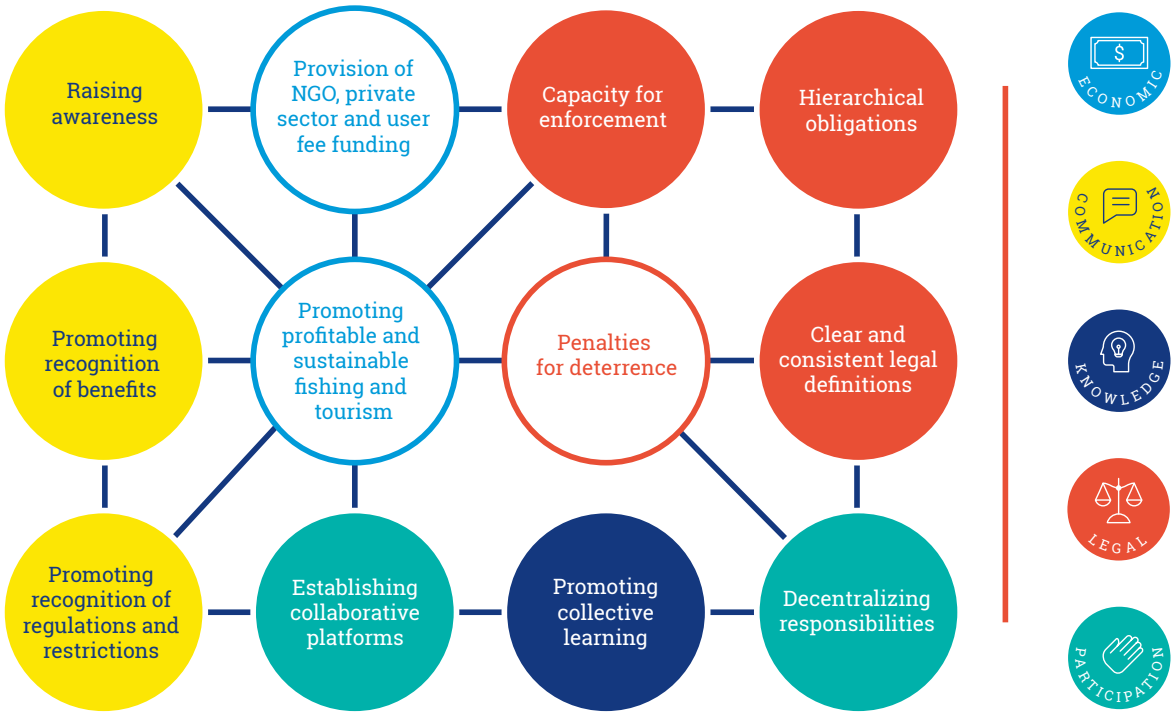


Figure 7 —
Incentive web example showing the direct connections of incentives for decentralizing responsibilities (the color filled circles)

The benefits of decentralizing responsibilities to lower level government organizations or non-government organizations can help to improve relationships and collaboration with a broader set of users. The more direct participation of local users through decentralization is supported by establishing collaborative platforms between them and the local organizations.

This also promotes collective learning and helps to raise awareness of local users and promotes their recognition of regulations and restrictions and of the benefits that flow from the decentralized MPA.

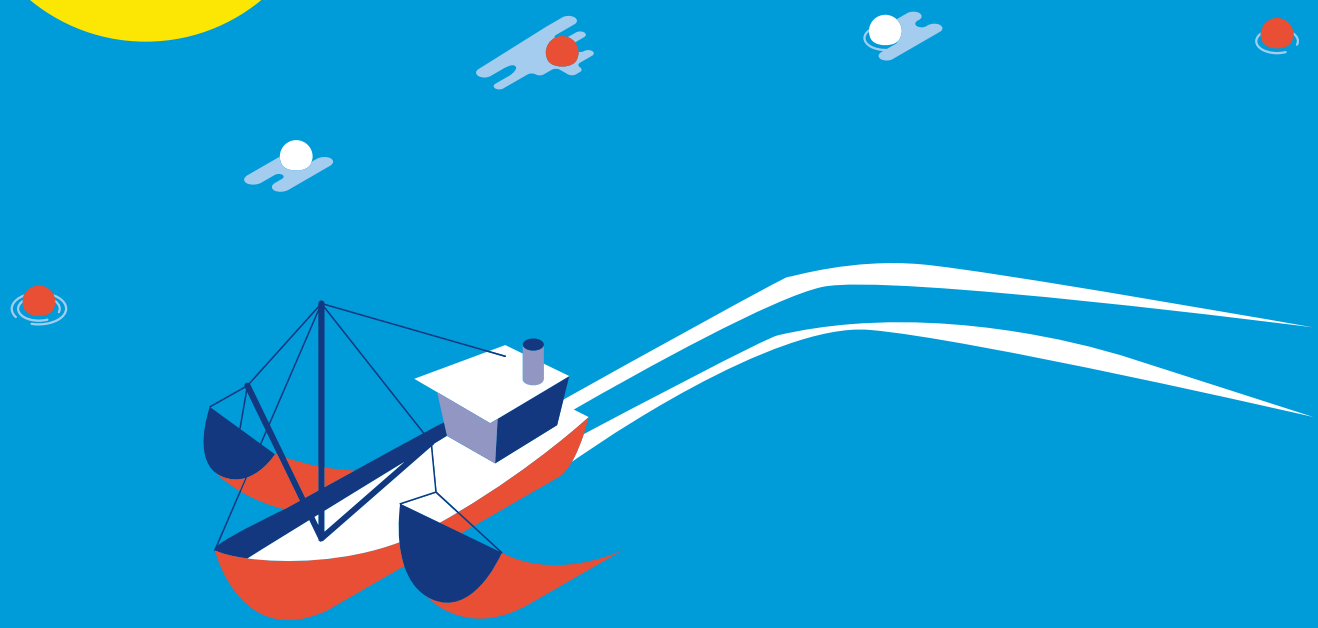
It is important that there are clear and consistent legal definitions to support this. Obligations that have been agreed with international bodies can also support and strengthen the lower level organizations.

Often a benefit of decentralization is the ability to increase the capacity for enforcement, through government resources partnered with additional local resources, to define where and how enforcement should take place to be most effective.

Step

3

– UNDERSTAND HOW YOUR INCENTIVES CONNECT – ARE THERE ANY GAPS?



Additional incentives and combinations

After considering the 12 core incentives, re-assess the driving forces and related impacts, and identify additional incentives from the full list that your MPA may be using or could benefit from to support further reductions in impacts.

It is important to consider those incentives that are in use as well as those that may be needed in the future. The examples of how each of the 36 incentives were used in the 34 case studies can further help an understanding of the different ways in which incentives can be implemented (Appendix 1).

Combining incentives

Once you have made a list of incentives, consider how they connect and support each other. This may highlight additional incentives that could be included. For example, if you choose to 'assign property rights', this should be combined with 'attaching conditions to use and property rights' to be more effective.

Combining frequently used incentives

In some cases, it can be clear which incentives should be applied in combination. Some examples are highlighted below:

→ **Assigning property rights (Economic) and attaching conditions to use and property rights (Legal)**

Property rights are very unlikely to be effective in the absence of legal conditions that can be monitored and measured to assess compliance. These conditions should be regularly reviewed to ensure they remain consistent with the objectives of the MPA, but more importantly, that the conditions are being complied with to ensure the effective achievement of MPA objectives. There are different types of property rights that can be implemented as can be seen across the five case studies that use this combination of incentives listed below.

Case studies using the combination of assigning property rights and attaching conditions to use and property rights

05 The Sanya Coral Reef National Marine Nature reserve;
09 Wakatobi National Park
12 Os Miñarzos Marine Reserve of Fishing Interest
13 Isla Natividad Marine Protected Area
15 Chumbe Island Coral Park

→ **Promoting collective learning (Knowledge) and establishing collaborative platforms (Participation)**

21 of the case studies use this combination of incentives to maximize the opportunity to draw on as much knowledge as possible. They recognize the importance of having a designated platform or forum to enable collaboration for gathering knowledge to support decision-making. It also provides an open opportunity for discussions and inclusion of many different users involved in the MPA, who may not otherwise have the opportunity to provide input.

Case studies using the combination of promoting collective learning and establishing collaborative platforms

01 The Great Barrier Reef Marine Park
03 North East Kent European Marine Site
04 The Wash European Marine Site
06 Seaflower Marine Protected Area
07 Galapagos Marine Reserve
08 Karimunjawa Marine National Park
09 Wakatobi National Park
10 Tubbataha Reefs Natural Park
12 Os Miñarzos Marine Reserve of Fishing Interest
13 Isla Natividad Marine Protected Area
14 Great South Bay Marine Conservation Area
15 Chumbe Island Coral Park
16 Baleia Franca Environmental Protection Area
19 Velondriake Locally Managed Marine Area
20 Hol Chan Marine Reserve
25 Oracabessa Special Fisheries Conservation Area
26 Bluefields Bay Special Fisheries Conservation Area
29 Tavolara-Punta Coda Cavallo Marine Protected Area
32 Cabo de Palos-Islas Hormigas Marine Protected Area
33 Shark Bay Marine Park
34 Ningaloo Marine Park

More effective governance can be achieved through using appropriate and relevant incentive combinations to suit the marine ecosystem and surrounding environment of an MPA

→ **Penalties for deterrence (Legal) and legal adjudication platforms (Legal)**

In 14 of the case studies there are sufficient penalties for deterrence associated with the MPA as well as effective adjudication platforms. If people are being penalized or incurring losses as a result of the legal framework imposed, it is only fair they have a platform for appeal or dispute available to them. This helps to reinforce an appropriate level of penalties as well as promoting justice, fairness and equity.

Case studies using the combination of incentives for penalties for deterrence and legal adjudication platforms

01 The Great Barrier Reef Marine Park
02 Darwin Mounds European Marine Site
03 North East Kent European Marine Site
04 The Wash European Marine Site
06 Seaflower Marine Protected Area
10 Tubbataha Reefs Natural Park
23 Fal & Helford European Marine Site
28 Port-Cros National Park
29 Tavolara-Punta Coda Cavallo Marine Protected Area
30 Ustica Island Marine Protected Area
31 Cabo de Gata-Nijar Marine Protected Area
32 Cabo de Palos-Islas Hormigas Marine Protected Area
33 Shark Bay Marine Park
34 Ningaloo Marine Park

Often when incentives are applied the combinations and supporting connections are not considered. This can result in a system that is less effective than if those incentives were considered in combination, including the supportive links between them.

You can use the examples discussed as a prompt for incentives that may be needed to improve effectiveness. It is just as important to understand incentives needed to improve effectiveness, as it is to understand those that are already being used to achieve effectiveness.

Step

4

– REVIEW ANY FURTHER INCENTIVES THAT YOUR MPA COULD BENEFIT FROM TO IMPROVE EFFECTIVENESS

Incentives applied by focusing on a specific activity

An additional way of reviewing the use of incentives is to focus on a specific activity within an MPA and identify the incentives needed to address the impacts associated with that specific activity.

The following examples show activities that have taken place within MPAs, to illustrate how a single activity can utilize multiple incentives in combination (34 Ningaloo Marine Park; 6 Seaflower Marine Protected Area)

BOX 8:
Ningaloo Marine Park (case study 34) – Whale shark watching

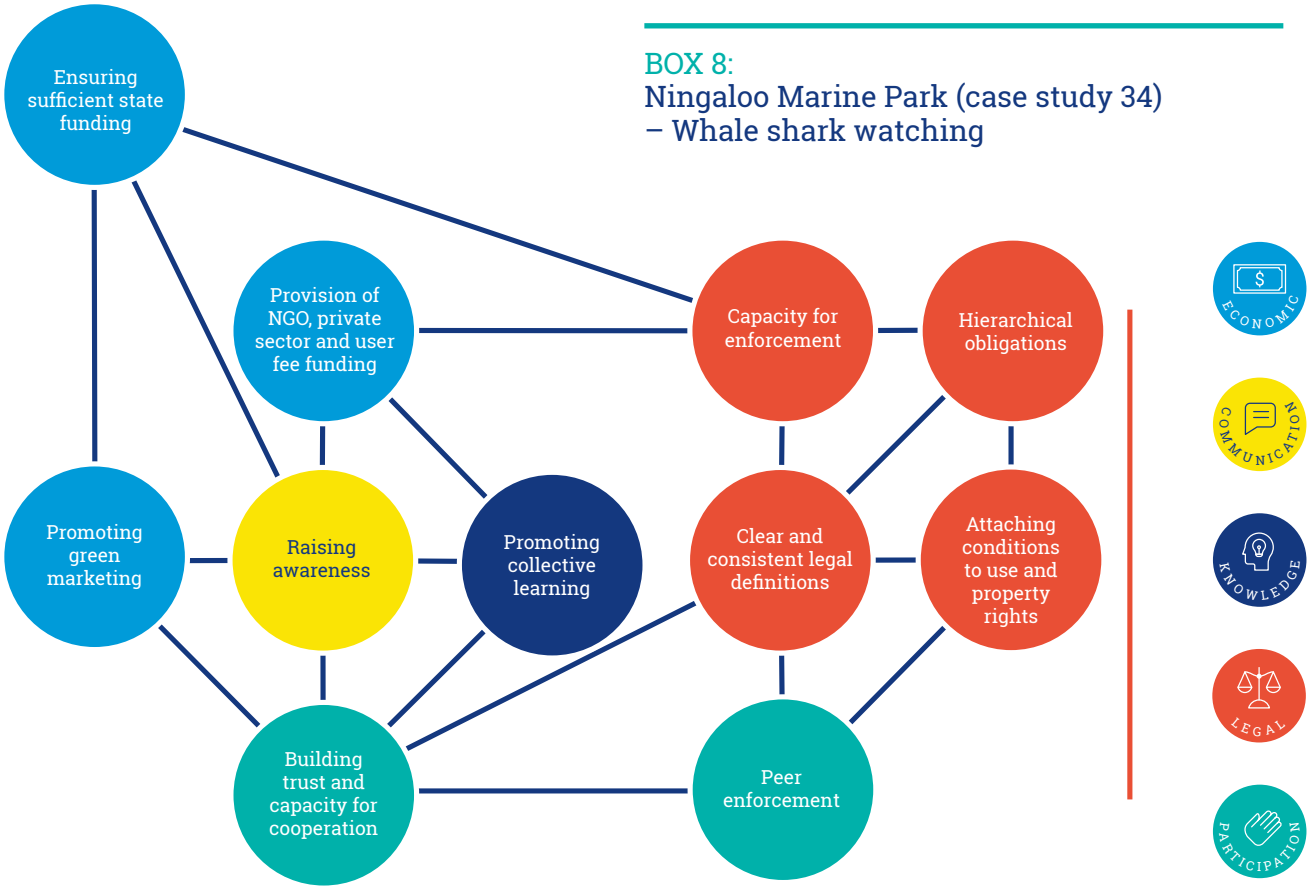


Figure 8 —
Combination of incentives to govern whale shark watching

Ningaloo Marine Park (case study 34) in Western Australia has developed a whale shark watching programme, aimed at protecting marine wildlife while also providing a recreational activity for local tourism that supports the local economy. A limited number of licences are issued to operate tourism boats for snorkelling with whale sharks within the marine park. This minimizes the disturbance to whale sharks. Cooperation among operators limits the number of whale shark encounters. Operators created a broader whole day tour package involving other activities that do not involve encounters with whale sharks. This serves to promote both environmental and economic sustainability.

Clearly defined conditions are attached to the licenses and these are made clear to all who are issued one and others in the area.

There are strict regulations in place on how the activities are undertaken, and licence holders and boat operators watch each other with the potential to support enforcement actions by appropriate authorities, building trust and cooperation among the operators and the surrounding community.

It is the responsibility of each operator to educate tourists on the boats, in particular regarding behaviour and activities that should be avoided, which is also supported by relevant awareness-raising materials.

Promotion of this activity raises awareness of the MPA and the rules and regulations, but also promotes green marketing as it is positioned as 'ecotourism' to attract visitors.

As this area is popular with whale shark aggregations they are included as a feature of 'outstanding universal value' under the Ningaloo Coast World Heritage Site listing. There is a requirement for this programme to report annually on the status of these aggregations and also to include relevant research, compliance and operations to support adaptive management, which encourages collective learning from tour operators as well as supporting MPA management.

State funding provides for adequate enforcement that helps to ensure the regulations are upheld, encouraged by hierarchical obligations under the World Heritage Convention, while a user fee helps support research, monitoring and surveillance.

This combination of incentives enables this activity while ensuring that potential impacts from human behaviour are minimized to support the effective achievement of the conservation objectives.

BOX 9:
Seaflower Marine Protected Area (case study 6) – Government agreed oil exploration

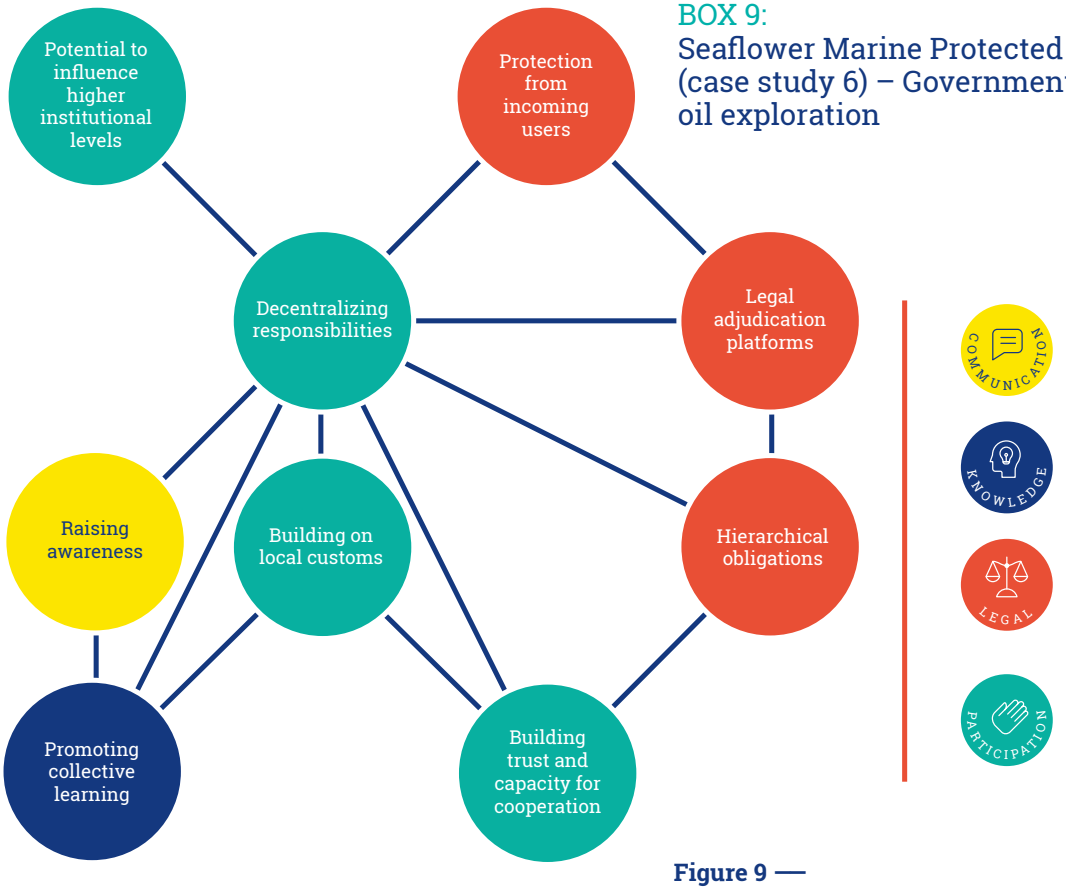


Figure 9 —
Combination of incentives to govern oil exploration

The Seaflower Marine Protected Area in Colombia encountered a serious conflict related to oil exploration. Licences were granted to a company by the central government for oil exploration and extraction within the boundaries of the MPA. It could have significantly undermined the conservation efforts and negatively impacted the marine ecosystem.

CORALINA is an autonomous government agency with considerable decision-making powers within a decentralized governance type. This position allowed CORALINA to challenge this central government decision.

CORALINA initially used communication incentives to raise awareness of the situation through radio, newsletters, blogs and other forms of campaigning, including a petition claiming that the rights of the indigenous population had been ignored.

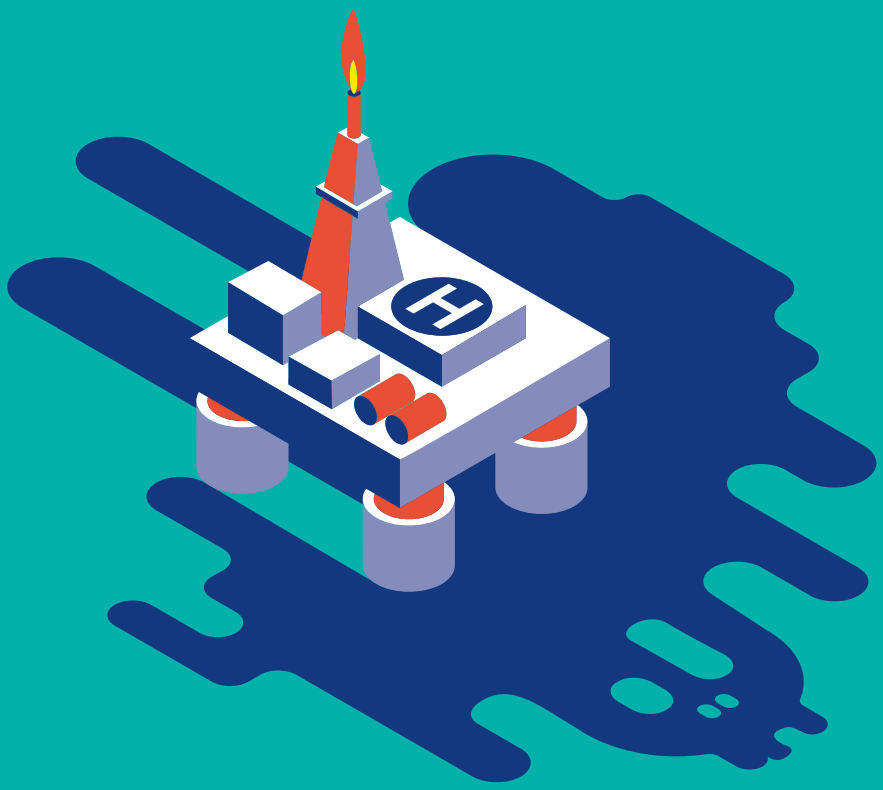
The use of participation incentives encouraged the support of the local communities and key stakeholder groups. They were able to promote collective learning to gather all of the information needed to build a case to challenge the decision. This included the infringements on local customs and culture as well as the impacts on the marine ecosystem.

A positive relationship between the organization and local communities helped the situation as there was trust and cooperation between various groups to support the MPA.

A robust legal adjudication platform allowed CORALINA to issue an 'Acción Popular', a legal instrument to seek protection of collective rights and interests related to homelands, the environment and other interests. The case went to a legal tribunal and then the high court, which resulted in the licenses being revoked.

The basis of the case was that the oil exploration violated environmental laws, including the Convention on Biological Diversity ratified by the Colombian Congress. The alignment with the CBD illustrates the benefit of hierarchical obligations that have been agreed to and how they can help to support and influence the achievement of conservation objectives.

This case highlights the potential to influence higher institutional levels and also to provide protection from incoming users. This combination of incentives enabled the prevention of a potentially highly impacting activity that could have undermined the effective achievement of the conservation objectives and ultimately the health of the ecosystem.



6 CONCLUDING REMARKS

To achieve effective governance of marine protected areas we need to focus on building resilience. From a marine ecosystem standpoint, the most effective way of building resilience is through encouraging species diversity across different trophic groups. Similarly, the most effective way of building governance system resilience is through the application of a diverse set of incentives from different categories.

The key is to apply a diverse set of incentives to address the specific impacts related to your individual MPA. The incentives should be focused on encouraging behaviour change to effectively achieve conservation objectives, as well as supporting sustainable use and promoting equity.

This guidance and the rationale behind it can be summed up as **– the key to resilience is diversity, both of species in ecosystems and incentives in governance systems.**

Here is a brief re-cap on key things to remember:

- Effective governance of an MPA is necessary to achieve biodiversity conservation objectives and social and economic development.
- Our influence on marine ecosystems should be focused on influencing human behaviour/activities to minimize our impacts.
- Understand your conservation objectives and identify the conflicts and drivers that need to be addressed to achieve your conservation goals.
- A diverse set of incentives, used in combination, incorporating state, market and people approaches, can build resilience in a governance system.
- The most effective governance can be achieved through using appropriate and relevant incentive combinations, to suit the marine ecosystem and surrounding environment of an MPA.

How to achieve Marine Protected Area effectiveness

The effective application of a combination of MPA governance incentives reduces the impact of human behaviour

Increases species diversity and thereby improves the health of the marine ecosystem

Improves flow of marine ecosystem services

Improves the sustainability and profitability of marine activities

These benefits increase the potential of local people to both cooperate with existing incentives and to propose or develop further incentives, in order to further improve effectiveness.

References

Cooke B and Kathari U (2001) The case for participation as tyranny. pp.1–15 in B. Cooke and U. Kothari (eds) Participation: the new tyranny? Zed Books, London/New York

Jones PJS (2014) Governing Marine Protected Areas: resilience through diversity. Routledge, London/New York. tinyurl.com/GoverningMPAs

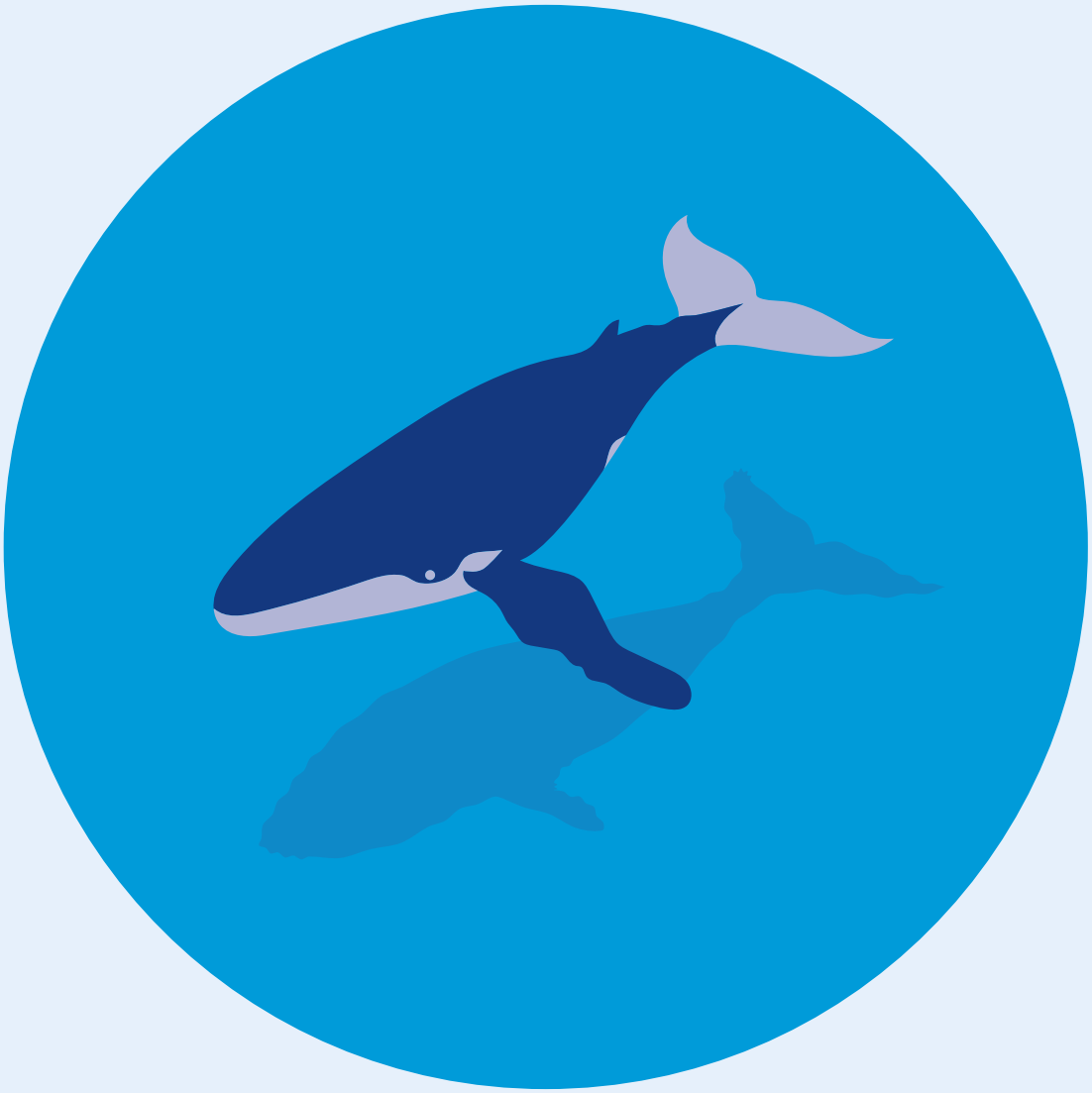
Lane MB and Corbett T (2005) The tyranny of localism: indigenous participation in community-based environmental management. Journal of Environmental Policy & Planning 7, 141-159

UNEP (2017). Frontiers 2017 Emerging Issues of Environmental Concern. United Nations Environment Programme, Nairobi. http://www.unenvironment.org/resources/frontiers

UNEP-WCMC and IUCN (2016) Protected Planet Report 2016. UNEP-WCMC and IUCN, Cambridge, UK and Gland, Switzerland. www.protectedplanet.net/c/protected-planet-report-2016w

7

APPENDIX 1
GOVERNANCE INCENTIVES



The following pages provide detailed descriptions of the 36 incentives based on Jones (2014), organized into the five main categories - economic, communication, knowledge, legal and participation.

Each incentive is accompanied by examples from the case studies to illustrate how that incentive has been used. These examples demonstrate how incentives can be adapted to address different impacts, utilizing the resources that are available or that have been assigned in response to the MPA designation.

Economic incentives (10)

1 Payments for ecosystem services

Direct payments for ecosystems services provided by the MPA through formal markets. e.g. blue carbon payments to sustain the use of mangrove, tidal marsh and seagrass habitats as carbon sinks to mitigate climate change.

At this stage no case studies identified Payments for ecosystem services as an incentive that was being used or as being a particularly important priority to be introduced

2 Assigning property rights

Assigning or reinforcing property rights for certain areas and resources to appropriate groups of people to promote ownership and responsibility, stewardship, rational self-interest in sustainable exploitation, etc.

05 The Sanya Coral Reef National Marine Nature Reserve
Property rights/sea user rights were issued for tourism development providing incentives to better manage resources within tourist areas e.g. the Yalongwan Underwater World Corporation was given user rights for 7.6 ha of sea in the experimental zone of SCRNMNR, which are subject to a 3-year renewal. They protect the rights of tourism companies from competitors and provide them with the incentive to invest in the protection of coral reef habitats, on which the diving industry depends.

07 Galapagos Marine Reserve
Rights to operate tourism vessels (cupos) allocated to Galapagos residents.

09 Wakatobi National Park
Dive tourism operators are granted 'reef leases' that give them exclusive use of specific areas for their dive tourism operations, but the decision-making process through which these leases are granted needs to be better integrated with the MPA's participative governance. In particular, addressing the rights of artisanal fishers and marine resource dependent communities when granting reef leases is required to ensure their support and participation with other incentives.

12 Os Miñarzos Marine Reserve of Fishing Interest
Limiting the access to the MPA was considered crucial to obtaining an overall reduction in fishing in the area. It was decided to introduce territorial user rights for fishing (TURFs), for those fishing within the MPA. Such rights refer to the right to exploit a resource in a particular area rather than an ownership, and they cannot be sold. The mechanism favours those that fish locally to promote collective management and restricts fishing from outside the local village, particularly SCUBA divers, from having access.

3 Reducing the leakage of benefits

Measures to reduce the 'leakage' of the economic benefits of the MPA away from local people, including measures to promote the fair distribution of such benefits among local people, e.g. ecotourism that maximizes the income received by local people through locally operated businesses, home-stay accommodation, employing locals in tourist facilities, commercial operations run by the protected area authority itself, etc.

6 Seaflower Marine Protected Area
Several artisanal fishing zones for exclusive use by traditional fishers are located adjacent to the no-take-zone to ensure that the benefits of any export/spillover go mainly to local fishers. Jobs related to the MPA are only given to island residents.

13 Isla Natividad Marine Protected Area
'Intrusion' by incoming diving and surfing operators is restricted so that locals can capture the benefits by running such activities themselves, but improvement is needed in coordinating these efforts. The fisheries harvesting concessions are allocated exclusively to local fishing cooperative members but there are concerns about poaching by incomers.

10 Tubbataha Reefs Natural Park

24 Sandals Boscobel Special Fisheries Conservation Area

25 Oracabessa Special Fisheries Conservation Area
Local residents are given preferential consideration in employment opportunities in the MPA.

4 Promoting profitable and sustainable fishing and tourism

Promoting sustainable exploitation through various fisheries management approaches, particularly providing a refuge for exploited populations in no-take zones to safeguard and enhance harvests in adjacent fishing grounds through spillover/export, insurance against uncertainty, etc.

06 Seaflower Marine Protected Area
Work with the local fishing cooperatives to promote the idea of sustainable fisheries and to explore alternative livelihoods to reduce pressure on fish populations.

14 Great South Bay Marine Conservation Area
A major re-stocking programme has increased the density of hard clams, which has significantly benefited surrounding hard clam fisheries through the export of propagules.

20 Hol Chan Marine Reserve
Gear restrictions, closed seasons and bans on certain fishing methods were introduced to increase sustainability. This was communicated to the fishers along with the rationale. The MPA also has a designated no-take zones to allow regeneration and encourage spillover. Effective patrolling also supports the enforcement of these restrictions.

34 Ningaloo Marine Park
A regulatory framework has been set up to exclude commercial fishing from the entire park and sustainably manage recreational fishing, including very detailed restrictions, such as sanctuary zones (34 per cent), bag limits, size limits, technical measures, fillet export limits, etc. Recreational fishing total allowable catches uptake is not monitored or restricted and concerns remain that some stocks are over-exploited by recreational fishing.

5 Promoting green marketing

Promoting the 'green marketing' of appropriate tourism, fisheries, etc. within the MPA to increase profits and income, including market premiums for well conserved natural resources and tourist/diver user fees.

10 Tubbataha Reefs Natural Park

24 Sandals Boscobel Special Fisheries Conservation Area
Promoting the areas as premier ecotourism locations for dive boats to attract tourists to experience the protected areas, through select brochures and marketing materials. The premium nature and higher price bracket can go some way to managing the level of tourism, while still providing funding to the MPA through user fees.

13 Isla Natividad Marine Protected Area

06 Seaflower Marine Protected Area
Seafoods from the MPA are marketed as being from a sustainable source.

12 Os Miñarzos Marine Reserve of Fishing Interest
The MPA has been used to promote green tourism through activities such as underwater photography competitions, tourist trips on working fishing boats ('pesca-tourism') and seafood cookery workshops.

15 Chumbe Island Coral Park
The MPA has won numerous international awards as a premium and effective high-end ecotourism destination, which has helped in advertising and in ensuring a sustainable flow of tourism income on which the funding of the MPA depends.

6 Promoting diversified and supplementary livelihoods

Promoting the diversification of livelihoods and supplementary options to gain more income from such livelihoods, including alternative economic development opportunities, which are compatible with the achievement of the MPA's biodiversity conservation objectives, while generating sustainable income for local people.

07 Galapagos Marine Reserve
Develop the capacity for local people to process, market and export seafood products to maximize their income from fishing and thereby reduce fishing pressure. This has included support for women's groups interested in processing seafood products and value added fishing products.

08 Karimunjawa Marine National Park
Microfinance schemes and technical support by NGOs to promote the development of seaweed, clam and fish farming for domestic markets have been implemented, while controlling and minimizing related environmental impacts. Marine zones have been created for aquaculture with over 2,000 fishers legally involved in seaweed and grouper mariculture, under the proviso that they cease destructive fishing practices and comply with fisheries regulations.

15 Chumbe Island Coral Park
The ecotourism resort has an exceptionally high staff–tourist ratio to promote jobs for local people, as well as providing livelihoods related to tourism, e.g. food and handicrafts markets on the island, provision of craftsmen and building materials for resort maintenance, outsourcing of road and boat transport.

19 Velondriake Locally Managed Marine Area
Aquaculture of sea cucumber and red seaweeds has been introduced to ease some pressures on the marine resource and has fostered independent small businesses for local families, providing an additional source of income.

7 Providing compensation

Providing fair economic compensation for those users who incur costs as a result of restrictions on their activities that cannot reasonably be offset through alternative compatible opportunities, e.g. fishery buy-outs.

1 Great Barrier Reef Marine Park
Because of re-zoning a structural adjustment package was initiated for fishers, their employees and other businesses/workers who were significantly negatively impacted by the re-zoning of the park. This package is still being finalized with some components completed (e.g. Licence

Buyout Component of the parks Structural Adjustment Package) but the level of economic adjustment has been much greater than anticipated: the initial budget of AUD$10 million spiralled upward to AUD$250 million.

09 Wakatobi National Park
Compensation equivalent to US$500 per month is paid to each village in return for a cessation of all fishing activity. The money, however is spent on public building repairs and transport infrastructure. Subsistence line fishers generally have low levels of literacy and education and are excluded from village administration and public meetings, and are therefore marginalized from this compensation.

8 Investing MPA income/funding in facilities for local communities

Investing some of the income from or funding for the MPA to develop local facilities (schools, medical care, family planning, etc.) and infrastructure (roads and other transport links, electricity, water, etc.).

05 Sanya Coral Reef National Marine Nature Reserve
Income from the MPA goes to developers and tourism operators and not the local community, but they have in turn invested in the local infrastructure, providing schools, roads, piped water and electricity.

10 Tubbataha Reefs Natural Park
7-10 per cent of tourist entry fees are used to fund infrastructure improvements, such as new roads and the improvement of public facilities on islands in the municipality of Cagayancillo. Fees also support the better management of fisheries outside the MPA for Cagayancillo fishers.

09 Wakatobi National Park
Repairs to public buildings and transport infrastructure along with other facilities for the local community are funded by compensation provided by dive tourism operators under the 'reef leasing' scheme, noted above (Assigning property rights).

15 Chumbe Island Coral Park
Tourism income is used to provide environmental education facilities and opportunities. A warden patrol boat also serves as a rescue boat for local fishers outside of the MPA.

19 Velondriake Locally Managed Marine Area
Some of the income from the MPA is invested in promoting family planning among local communities, alongside educational and public health programmes.

9 Provision of state funding

Ensuring that sufficient state funding is available to support the governance of the MPA, particularly in relation to enforcement and economic incentives, while ensuring that such funding does not allow the state to 'capture' MPA governance by undermining the balance of power.

01 Great Barrier Reef Marine Park
Through the Great Barrier Reef intergovernmental agreement (2009) both the Federal and State Government re-affirmed their commitment to a joint programme of field management across the whole area, with shared funding on a 50:50 basis.

02 Darwin Mounds European Marine Site
The UK government funds the policing and enforcement for the MPA, the main resource required.

26 Bluefields Bay Special Fisheries Conservation Area
Government funding is satisfactory. It is often late but its provision is written into legislation.

10 Provision of NGO, private sector and user fee funding

Seeking corporate, NGO and private funding through endowments, donations, etc. to support the governance of the MPA, while ensuring that such funders cannot 'capture' MPA governance through an inappropriate degree and type of influence, and that the MPA becomes financially sustainable through a diversity of income sources so that it is not critically vulnerable to the withdrawal of NGO funding. Funding can also be raised through 'user fees' on individuals or businesses using the protected area for diving, recreational fishing, etc., potentially also serving to manage user numbers.

07 Galapagos Marine Reserve

09 Wakatobi National Park

10 Tubbataha Reefs Natural Park

11 Ha Long Bay World Natural Heritage Area
A proportion of the user fees charged to tourists is allocated to help fund the MPA.

05 Sanya Coral Reef National Marine Nature Reserve
Funding is mainly from the private tourism sector, but there is a risk of institutional capture which is leading to a shift of power, which is undermining the fulfilment of the MPA's conservation objectives.

15 Chumbe Island Coral park
The MPA was originally privately funded by a lead individual, as NGOs considered such a venture to be too politically and economically risky; the operational funding being entirely derived from high-end ecotourism income.

18 Cres-Lošinj Marine Natura 2000 Site
The MPA has been almost entirely driven and funded by the local NGO Blue World, which was established specifically for this initiative. They get their funding from paying volunteers, corporate donations and a European Commission programme, but this is unsustainable and there is no long-term plan.

Communication incentives (3)

11 Raising awareness

Using social and local media, TV and radio and other approaches to overcome 'out of sight, out of mind' barriers by raising the awareness of users, local people, relevant authority officers, politicians, etc. about the aesthetic values, ecological importance and vulnerability of the protected area's biodiversity.

20 Hol Chan Marine Reserve

05 Sanya Coral Reef National Marine Nature Reserve

06 Seaflower Marine Protected Area

08 Karimunjawa Marine National Park

24 Sandals Boscobel Special Fisheries Conservation Area
Awareness is raised through various activities, including educational programmes and presentations with children and local communities. Specific activities focused on fishers and tourism operators also help to build awareness and visibility.

01 Great Barrier Reef Marine Park
Many examples of regularly using communication and education to raise awareness about the park are used, generally focused on the key message for zoning, best voluntary environmental practices, safety and boating impacts on the park's biodiversity. Used publicly recognized 'champions', such as sports stars and TV personalities, to promote awareness and build support. The Outlook Report process and the various products (online evidence, fact sheets etc.) are also proving very effective in raising awareness in other government agencies as well as with politicians and the public. Transmission of information about the park to users and visitors helps Australia meet its obligations under the World Heritage Convention. The belief is that an educated and aware user is more likely to voluntarily abide by laws governing the protection of the reef.

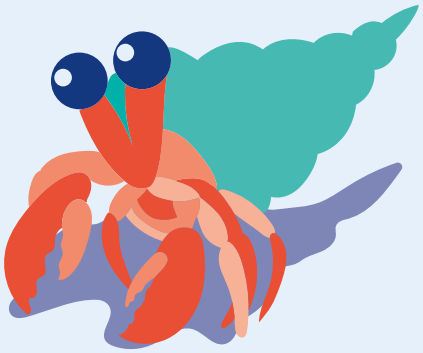
08 Karimunjawa Marine National Park

10 Tubbataha Reefs Natural park
Uses the 'take pride' approach, whereby an NGO runs a grassroots campaign, employing commercial social marketing techniques, to sell the MPA and build support for it – 'inspiring conservation'.

12 Promoting recognition of the benefits

Promoting recognition of the potential resource benefits of the conserved areas in terms of profitable and sustainable fishing, insurance/resilience, etc., while being realistic about such potential benefits and not 'over-selling' them.

03 North East Kent European Marine Site
Prior to designation, there was a perceived lack of value for the area. The promotion of benefits through the MPA designation and continued collaboration with the local community has generated a sense of pride and recognition of value.



10 Tubbataha Reefs Natural Park
Benefits from the park are made known to the public through forums with local stakeholders on results of scientific studies – monitoring the status of the reefs and other marine life, larval dispersal and contextualizing these in light of pressing issues of health, poverty and climate change.

19 Velondriake Locally Managed Marine Area
Local monitors snorkel and count the number of fish inside and outside the reserve, comparing data and reporting back to the rest of the community. Meetings are also held to explain the value to communities of the permanent reserves.

30 Ustica Island Marine Protected Area
The benefits of the MPA are communicated through guided tours, school programmes, a visitor centre, website and public meetings.

13 Promoting recognition of regulations and restrictions

Promoting recognition of and respect for the MPA's regulations and restrictions, including the boundaries

01 Great Barrier Reef Marine Park

33 Shark Bay Marine Park

34 Ningaloo Marine Park
Websites, leaflets, information booklets, notice boards, etc. are extensively employed to promote recognition of regulations and restrictions, including dissemination by wardens during patrols, targeting of recreational fishing shops and operators for leaflets, etc.

21 Caye Caulker Marine Reserve
Regulations and restrictions are communicated to tour guides with yearly updates on any changes in rules and regulations. They are also communicated through community events. Communications with fishers could be improved.

08 Karimunjawa Marine National Park
1,000 posters of the new zoning regulations were disseminated by local park rangers and NGOs to local communities in 2006 to raise awareness among communities of the park regulations and boundaries. They also discussed the regulations in face-to-face meetings with users. Evaluation of community perceptions of new park regulations has led to a plan to increase signage at strategic areas to improve knowledge and awareness of the park regulations.

26 Bluefields Bay Special Fisheries Conservation Area
Legal definitions and jurisdictions are widely understood by the community due to a leaflet campaign in the early years of this MPA, explaining the boundaries, restrictions and penalties, including diagrams for illiterate fishers. Wardens continue to promote training days and inform fishers on regulations. The community understand the consequences of trespassing or poaching.

Knowledge incentives (3)

14 Promoting collective learning

Promoting mutual respect among local people and scientists of the validity of their respective knowledge, and promoting collective learning and the integration of different knowledge bases through partnership research, research/advisory groups, participative geographic information systems, participative workshops, etc.

06 Seaflower Marine Protected Area
At this MPA both indigenous and technical knowledge are utilized. All users can voice their opinions and have an opportunity to be consulted and have their ideas incorporated into MPA planning, management, education, research and monitoring. Scientists, managers and MPA users regularly work together to inform initiatives. Joint planning workshops between users and scientists helped build trust which in turn promoted the sharing of knowledge as a basis for MPA design.

10 Tubbataha Reefs Natural Park
Standardized resource monitoring protocols agreed and applied by local people in collaboration with scientists in order to integrate the principles of science with traditional knowledge and to guide the process of learning.

13 Isla Natividad Marine Protected Area
The fishing cooperative initially began experiments to close and monitor areas and these were further developed in collaboration with NGO and academic scientists, guided significantly by the knowledge of the local fishers.

16 Baleia Franca Environmental Protection Area
A committee of residents, tourists, fishing associations and public agencies was created for the opening of Ibiraquera lagoon, promoting collective learning, especially using the fisher's knowledge of shrimp larvae and fish ecology. The collective learning activity within the Management Council is considered as a learning community that gathers people with shared interest in learning-by-doing through partnerships to solve governance problems. While this is a positive action, there is an issue of marginalization, as the committee favours individuals with higher education and this can leave non-scientifically literate groups, such as fishers, in a more passive situation where their knowledge is not utilized in collective learning.

27 Nusa Penida Marine Protected Area
The village forums allowed for several instances of collective learning which influenced the zonation plan. Some core zones were reduced in size following fishers' concerns regarding access to well-established fishing grounds. The temporal zonation was another outcome of collective learning and agreement between fishers and tour operators in these forums. Finally, locally recognized physical markers were identified which were subsequently used in the designation of MPA boundaries.

15 Agreeing approaches for addressing uncertainty

Explicitly recognizing the challenges raised by scientific uncertainty and agreeing approaches to address such challenges, e.g. ground rules for the interpretation and application of the precautionary principle, decision-making under uncertainty and adaptation in the light of emerging knowledge.

01 Great Barrier Reef Marine Park
The application of the precautionary principle, and the decision to 'adaptively manage' in the absence of perfect knowledge, are both important factors in the successful management approach of the park. The precautionary principle is incorporated in the legislation, and an adaptive management approach involving periodic monitoring against indicators is normal practice.

02 Darwin Mounds European Marine Site

03 North East Kent European Marine Site

04 The Wash European Marine Site

23 Fal & Helford European Marine Site
The precautionary principle is applied under the European Union Habitats Directive as a legislative requirement of the European Union Treaty.

10 Tubbataha Reefs Natural park
The precautionary principle was employed as the basis for the decision to designate a 10-nautical mile partially protected buffer zone around the no-take MPA.

12 Os Miñarzos Marine Reserve of Fishing Interest
It was acknowledged at the outset of the MPA initiative that it was very difficult to predict the fisheries and ecological benefits of protection. Therefore the initiative should be considered as a pilot experiment.

29 Tavolara-Punta Coda Cavallo Marine Protected Area
Through collaboration with the university, the managers of the MPA have learnt that they do not have all answers and therefore need to test various approaches. This is openly communicated, though this is not done through a formal agreement or process.

16 Independent advice and arbitration

Seeking independent advice and/or arbitration in the face of conflicting information and/or uncertainty.

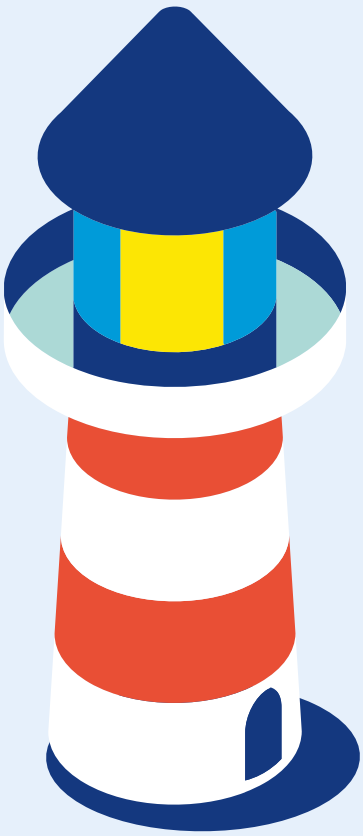
04 The Wash European Marine Site
Independent, external and respected experts, trusted by both sides, have been commissioned to undertake research to address specific questions when there are knowledge and uncertainty related disputes, including how the precautionary principle should be interpreted and applied.

20 Hol Chan Marine Reserve
The Board of Trustees provides an independent platform to address issues and if required will call on experts for independent advice.

26 Bluefields Bay Special Fisheries Conservation Area
It is difficult to find truly neutral knowledge deliberation and arbitration panel members in such a small area and more needs to be done to address this, perhaps seeking experts from further away on the island who have less stake. There is some independence from researchers to give advice without bias and some are happy to challenge leadership figures within the Bluefields Bay Fishermen's Friendly Society over knowledge issues.

33 Shark Bay Marine Park

34 Ningaloo Marine Park
Commonwealth-funded research programmes help inform management decisions but do not provide an arbitration role. The World Heritage Committee provides some scientific arbitration roles.



Legal incentives (10)

17 Hierarchical obligations

International, regional, national and local legal obligations that require effective MPA conservation, including the potential for top-down interventions.

06 Seaflower Marine Protected Area
There are many directives that this MPA is aligned to with varying levels of obligations. These were influential in CORALINA's successful legal actions to prevent the state from going ahead with proposals to license oil exploration and production activities in the MPA.

11 Ha Long Bay World Natural Heritage Area
As a designated World Heritage Area, there are legal and regulatory requirements to maintain standards that influence area designation and that can provide incentives to deliver to them; particularly through supporting fundraising from development banks.

22 Bacalar Chico Marine Reserve
Several international agreements and financial arrangements include obligations that must be met, which provides additional levels of legislation in this area. The UNESCO World Heritage Centre has placed this MPA on its 'In Danger' list and has identified specific requirements for improvements.

24 Sandals Boscobel Special Fisheries Conservation Area
This area must meet a number of obligations as a result of commitments to several international conventions – Convention on Biological Diversity, Caribbean Challenge, Caribbean Environment Programme and the Caribbean Community (CARICOM) Treaty of Chaguaramas.

31 Cabo de Gata-Nijar Marine Protected Area
This MPA is part of the Natura 2000 Network, is designated as a Special Area of Mediterranean Interest and is part of the MedPan Network. It therefore has a distinct set of obligations to uphold under these designations, in particular the condition in which the site must be maintained.

18 Capacity for enforcement

Following the principles of decentralization, ensure that sufficient government capacity, political will, surveillance technologies and financial resources are available to ensure the effective and equitable enforcement of all restrictions on all local and incoming users, including related pressures from fisheries and tourism market forces.

07 Galapagos Marine Reserve
Enforcement is carried out by the navy, but conflicts between the navy and Galapagos National Park Service

have led to breaches. It is a major challenge due to the size of the area, so a Vessel Monitoring System (VMS) has been implemented to address this. This could be improved. The VMS has helped to keep out illegal incoming vessels and enforce restrictions on local vessels. In addition, an Automatic Identification System has recently been introduced to improve enforcement (funded mainly by an NGO), but ensuring that these systems are installed and operational on all local fleet vessels will be a challenge. Illegal, unreported, and unregulated (IUU) fishing by local and incoming fishers remains a challenge due to a lack of capacity to intercept and detain vessels.

10 Tubbataha Reefs Natural Park
This park has 10–12 MPA authority, navy, coastguard and municipal personnel at a permanent ranger station who engage in observations and patrols, but maintaining sufficient capacity is dependent on NGO funding. The enforcement protocol is periodically reviewed and improved in collaboration with rangers, the prosecutors and legal advisers.

20 Hol Chan Marine Reserve
Due to the self-funding nature of this MPA from tourist user fees, there are sufficient financial and human resources for adequate patrols and management. An area of concern is the planned expansion of the MPA without an associated increase in enforcement capacity. The existing skills and resources available for enforcement are low, which could impact the conservation objectives.

26 Bluefields Bay Special Fisheries Conservation Area
Police patrol the area daily in addition to 24-hour warden patrols. Wardens have the power to arrest poachers and report wider environmental damage.

28 Port-Cros National Park
Park staff are granted Environmental Police status to enforce park regulations and issue sanctions but there are concerns that state budget cuts will lead to reductions in surveillance and enforcement capacity.

19 Penalties for deterrence

Effective judicial systems for proportionately penalizing illegal resource users in a way that provides an appropriate level of deterrence and helps address conflicts that would otherwise undermine marine conservation objectives.

01 Great Barrier Reef Marine Park
There is an effective judicial system for penalizing transgressors, and the legislation has very high maximum penalties if the courts choose to use them – up to a maximum of AU$ 5.5milion for an aggravated contravention by a corporate body.

02 Darwin Mounds European Marine Site
Transgressors can be penalized under Scottish law for infringement based on evidence from a combination of vessel monitoring sytems (VMS) and sea/air observation.

06 Seaflower Marine Protected Area
The legal procedures are well defined with a graduated penalty structure and an education-based approach.

07 Galapagos Marine Reserve
Previous failures to gain successful prosecutions of illegal fishers were a major problem, but political re-prioritization of marine conservation, partly through pressure from the World Heritage Committee, and building of legal capacity, including through NGO projects, is now leading to successful prosecutions that will help act as a deterrent.

10 Tubbataha Reefs Natural Park
Strong support from prosecutors and legal counsel and adequate enforcement equipment are provided to ensure illegal users are brought to court and sufficient deterrents are applied.

23 Fal & Helford European Marine Site
There are penalties in place and adequate levels of enforcement to deter most illegal activity.

26 Bluefields Bay Special Fisheries Conservation Area
Courts need to show greater willingness to pursue fishing prosecutions and levy fines that are sufficiently large to deter poachers. Political will to increase deterrence is increasing as evidenced by the introduction of the Fishing Bill in parliament.

20 Protection from incoming users

Providing for a degree of legal protection from incoming users, particularly non-local fishers, poachers, etc., as well as tourism developers, recognizing that exploitation by incoming users often poses a major threat to local biodiversity and resources.

07 Galapagos Marine Reserve
Licences to fish and rights to operate tourism vessels are restricted to legal Galapagos residents. Further protection is provided by restrictions on immigration and the repatriation of illegal residents; though the latter has proved politically controversial from a human rights perspective.

12 Os Miñarzos Marine Reserve of Fishing Interest
Territorial user rights for fishing are restricted to fishers with a track record of fishing in the area in order to favour local vessels. Exploitation by incoming fishers, including recreational divers, was a key motive for the community-based designation of this MPA.

14 Great South Bay Marine Conservation Area
Shell fishing near the area is only allowed by local residents.

27 Nusa Penida Marine Protected Area
Zoning allows fishing activity within the Traditional Fisheries Zone by local fishers only, although a mechanism for identifying local fishers (e.g. boat plates or numbers) has not been developed. There are concerns about the impacts of tourists, particularly day visitors

from Bali, and their impact (coral trampling, boat anchoring, fish feeding, over-use of popular dive sites leading to coral damage, etc.).

21 Attaching conditions to use and decentralisation, etc

Agreeing performance standards, conditions, criteria and requirements related to the MPA's conservation objectives and attaching them to user & property rights, participatory governance structures, etc.

01 Great Barrier Reef Marine Park
All traditional use rights are bound by the regulations associated with international obligations and national legislative and policy initiatives. Some special policy initiatives have been introduced to ensure sustainable use with regards to extractions, while also recognizing the importance of Traditional Use by indigenous Australians, though there are concerns that traditional human rights are being jeopardized through larger-scale harvesting for freezing and commercial gain.

07 Galapagos Marine Reserve
The rights to operate tourism vessels (cupos) include the condition that they cannot be rented to foreign-owned cruise vessels, though the enforcement of these conditions is a challenge.

12 Os Miñarzos Marine Reserve of Fishing Interest
The submission of annual stock assessments is a condition of the TURF to ensure consistency with sustainable fisheries policies.

34 Ningaloo Marine Park

33 Shark Bay Marine Park
There are strict requirements for marine wildlife tour boats and recreational fishing boats to comply with licence conditions related to MPA conservation measures.

22 Cross-jurisdictional coordination

Legal or other official grounds for coordination between different authorities, and between conservation and other government agencies/law enforcement units, to address cross-jurisdictional and cross-sectoral conflicts in order to support the achievement of MPA objectives, e.g. watershed management by pollution authority, fish stock management by the fisheries authority, forestry management by the forestry authority, recognizing that the environment authority with responsibility for MPAs often does not have direct jurisdiction over other sectoral activities that can impact the MPA's conservation features.

01 Great Barrier Reef Marine Park
The Park Act requires extensive cooperation across a range of Queensland and federal agencies, especially for surveillance and enforcement purpose. There is room for improvement with regards to decisions made that directly and indirectly impact the reef, for example port expansions and mining activity.

03 North East Kent European Marine Site
Authorities are legally bound to exercise functions in keeping with the achievement of MPA objectives. Collaboration with many organizations, authorities and stakeholder groups through the management structure has been effective for this MPA, although there are sometimes disagreements regarding responsibilities for regulating certain activities.

11 Ha Long Bay World Natural Heritage Area
There is some coordination across different jurisdictions with technical guidance and supervision provided by the Ministry of Culture, Tourism and Sport and the UNESCO Committee of Vietnam. This could be improved to include areas such as urban development.

28 Port-Cros National Park
A management board consists of representatives from central and local government, landowners, users and representatives of environmental NGOs to enable coordination of activities and actions across different jurisdictional areas. However, there is a need for improved coordination and for other authorities to exercise their functions in a way that better addresses conflicts, e.g. to establish limits on tourists and vessel numbers.

23 Clear and consistent legal definitions

Clarity and consistency in legally defining the objectives of MPAs, general and zonal use restrictions, jurisdictional boundaries, roles and responsibilities of different authorities, etc.

01 Great Barrier Reef Marine Park

33 Shark Bay Marine Park

34 Ningaloo Marine Park
Emphasis on ensuring that legal definitions are clearly stated and are consistent, especially between sectors and between state and commonwealth levels.

02 Darwin Mounds European Marine Site

03 North East Kent European Marine Site

04 The Wash European Marine Site

23 Fal & Helford European Marine Site
Clear and consistent legal definitions are laid out under the EU Habitats Directive and the UK regulations that govern their implementation.

13 Isla Natividad Marine Protected Area
There is a clearly defined criminal law as well as fisheries management law that applies directly to the fishermen's cooperative that runs this MPA.

25 Oracabessa Special Fisheries Conservation Area
The legal definitions are very clear: no extraction activities are allowed, except for lion fish culling and research.

24 Clarity concerning jurisdictional limitations

Promoting clarity and transparency concerning the jurisdictional limitations of MPA legislation, i.e. recognizing which driving forces, activities and impacts cannot be directly addressed by the MPA legislative framework and exploring alternative means of addressing such factors.

01 Great Barrier Reef Marine Park
The integrated management approach extends well outside the marine areas to include all the islands, all the tidal lands and waters, and many activities in the catchments. Furthermore, most of the management approaches today (e.g. addressing water quality issues) are undertaken in partnerships with local government and industries throughout the catchment area. The park's outlook reports have identified the impacts of climate change as having the potential to significantly impact the MPA's coral reefs, through a combination of ocean acidification, ocean warming and sea level rise. However, it is also made clear that mitigating the effects of climate change is beyond the jurisdiction of the park authority; though it is critical that these impacts are reduced if the MPA's coral reefs are to survive.

04 The Wash European Marine Site
There is recognition that, for example, with the proposed creation of offshore wind farms, the designation does not confer any additional protection from such proposals. However, there is frustration that this designation does not provide for resisting such proposals. More could be done by the nature conservation agency to communicate that they are actively engaged in requiring 'appropriate assessments' from proposed wind farm developers, by, for example, objecting to proposals and placing conditions on developments to allay some concerns.

25 Oracabessa Special Fisheries Conservation Area
There is awareness of issues that cannot be addressed by the MPA's legislative framework. Precautionary steps are taken to address potential conflicts that have been identified.

32 Cabo de Palos-Islas Hormigas Marine Protected Area
There is awareness that there are challenges in areas outside the MPA that are beyond the scope of the MPA's regulatory framework. There is different legislation for waters outside of the MPA that aims to address these challenges.

25 Legal adjudication platforms

Employing legal, customary law and other formal and widely respected decision-making platforms to address and regulate legal conflicts as required.

04 The Wash European Marine Site
A public inquiry process was utilized (2006) in relation to a proposal to deploy bird scarers around mussel ranches, and its recommendation to the government to reject the proposal was upheld. The recommendation to reject the application did create some tensions but it enabled governance processes to progress. Public inquiries were a widely utilized and respected adjudication platform for planning matters, but the decision was ultimately made by the government.

06 Seaflower Marine Protected Area
The CORALINA agency , to which MPA governance has been successfully devolved, challenged a central government decision to grant a licence for exploration and exploitation within the MPA through an appeal to an independent legal tribunal.

10 Tubbataha Reefs Natural Park
This is conducted through the regular courts. The environment department also provides a channel for conflict arbitration, based on a written opinion from the Supreme Court, whereby it should provide supplementary function to the Strategic Environmental Plan (SEP). The Palawan Council for Sustainable Development, which currently chairs the management board and implements the SEP, has jurisdiction over administrative cases filed by the management board.

31 Cabo de Gata-Nijar Marine Protected Area
There are appeal platforms but adjudication is also needed to address concerns about inequitable enforcement.

26 Transparency, accountability and fairness

Establishing legal provisions to transparency, accountability and fairness in MPA management processes, e.g. statutory requirements for public access to information, appeals, public hearings.

06 Seaflower Marine Protected Area
Informal public meetings are a regular feature of MPA management with open dialogue encouraged.

08 Karimunjawa Marine National Park
The involvement of the local community implies a degree of transparency.

14 Great South Bay Marine Conservation Area
The Nature Conservancy are the clear owners of the MPA, and strive to use publicly inclusive and transparent decision-making in management planning for the conservation area.

26 Bluefields Bay Special Fisheries Conservation Area
All partners are required to produce accounts of expenditure and progress reports on the achievement of conservation goals. Wardens are available for discussion if a community member feels that something unjust has occurred.

Participation incentives (10)

27 Rules for participation

Clear rules on participation from different groups and the representation of all user groups in participation processes in a manner that minimizes the undue influence of particular vested interests.

07 Galapagos Marine Reserve
There are rules concerning who will participate and how they will participate in both the Participatory Management Board and the Inter-Institutional Management Authority but the need for consensus in the Participatory Management Board is undermining the effectiveness of this decision-making body.

23 Fal & Helford European Marine Site
The Management Forum and Advisory Group clearly sets out the rules for participation, although this could be communicated more broadly to enable wider participation. The Advisory Group represents stakeholder interests and feedback to the management forum, but the management forum could be more accountable to the Advisory Group.

25 Oracabessa Special Fisheries Conservation Area
There are two seats on the Board to represent the fishing communities' interests and one seat for a community representative.

28 Establishing collaborative platforms

Developing participative governance structures and processes that support collaborative planning and decision-making, e.g. user committees and participative planning workshops, and including training to support such approaches.

16 Baleia Franca Environmental Protection Area
The Management Council provides a platform for collaboration between 42 representatives of relevant stakeholders. Technical Chambers also exist within the Management Council to focus on specific major threats to conservation objectives and allow additional parties to be involved. The Management Council and Technical Chambers are also able to designate working groups to deal with more specific and ad hoc issues. More could be done to ensure collaboration with a broader set of stakeholders and users, such as fishers.

17 Pirajubaé Marine Extractive Reserve
Participative meetings are held in the community, but a lack of coordination, organization and understanding of who is managing the MPA is undermining collaborative efforts.

20 Hol Chan Marine Reserve
The Board of Trustees meets every two months to collaborate and progress any developments or issues. This could be improved further through broader community involvement.

27 Nusa Penida Marine Protected Area
A collaborative board has been formed consisting of several relevant agencies and community forums for discussions.

28 Port-Cros National Park
The 'Charter of the National Park' establishes meetings in various locations with residents, users and elected representatives.

29 Tavolara-Punta Coda Cavallo Marine Protected Area
A working group was created to facilitate meetings and workshops related to MPA decision-making and to develop strategic partnerships with key community groups, research institutes and key industries.

29 Neutral facilitation

Bringing in neutral facilitators to support governance processes and negotiations.

03 North East Kent European Marine Site
Independent facilitators from the Environment Council (now dissolved) facilitated the initial workshops.

16 Baleia Franca Environmental Protection Area
Independent external facilitation has been used for several discussions and developments, but changes in funding have resulted in this not being a permanent option.

20 Hol Chan Marine Reserve
The breadth of the representatives on the Board of Trustees provides an opportunity for neutral facilitation as there is not necessarily a vested interest in the outcome of a decision. The inclusion of the coastal zone management authority in the MPA's governance structure would improve this.

27 Nusa Penida Marine Protected Area
The Coral Triangle Centre provides neutral facilitation and is highly trusted by the local people.

28 Port-Cros National Park
The use of scientists and representatives from regional universities helps to facilitate discussions and provide independent input and support.

30 Independent arbitration panels

Employing neutral and locally respected panels to arbitrate on issues and recommend decisions.

03 North East Kent European Marine Site
The Thanet Coast Project panel acts as a mediator between various actors, and as an independent arbitrator for the MPA.

10 Tubbataha Reefs Natural Park
The MPA's Management Board can deliberate, negotiate and arbitrate on conflicts among users and regulators.

23 Fal & Helford European Marine Site
An application for a license to undertake an activity in the European Marine Site could be 'called in' by the Planning Inspectorate and a local inquiry held. However, this has not yet been implemented, despite some major conflicts related to a dredging proposal. Ultimately, the case could be referred to the European Court of Justice for a final decision.

31 Decentralizing responsibilities

Decentralizing some roles, responsibilities and decision-making authorities to local organizations through a clear management structure, while maintaining an appropriate degree of authority by higher level state organizations, to ensure that strategic conservation objectives are effectively met, being open and realistic about the degree of autonomy and influence that local people can expect.

19 Velondriake Locally Managed Marine Area
All responsibilities are decentralized and under the remit of the local communities. However, this can often lead to conflict between what local communities want and achievement of some biodiversity conservation goals.

20 Hol Chan Marine Reserve
Some of the responsibilities have been decentralized to the Board of Trustees, in particular financial management. This is the only model of its kind in Belize and is not embraced by the Ministry of Finance, which would like to reassert control. No other MPA in the region has been allowed to have this structure.

25 Oracabessa Special Fisheries Conservation Area
The decentralization of responsibilities is through 'delegation', with the transfer of some decision-making powers decentralized to the Board of Directors, and the government retaining final decision-making power and responsibility for auditing this MPA.

26 Bluefields Bay Special Fisheries Conservation Area
The majority of the responsibilities rest with the local communities and other NGOs.

32 Peer enforcement

Providing for participative enforcement, e.g. peer enforcement, community rangers/wardens, and promoting the potential for cooperation and peer enforcement through the development of a sense of ownership of the MPA and respect for related decisions.

08 Karimunjawa Marine National Park
Recent developments by the park have involved villages in a community-based surveillance programme that aims to allow local fishers to report infringements which are supported by National Park laws and legal deterrents. Village forums received training and resources to participate in monitoring of the MPA, in particular surveillance and reporting of destructive fishing offences. Community involvement in park management has led to an increase in the number of infringements reported.

13 Isla Natividad Marine Protected Area
Cooperative members are largely responsible for enforcing restrictions on each other, local people who are not members of the cooperative, and incoming fishers, though the latter is a particular challenge.

19 Velondriake Locally Managed Marine Area
All enforcement is undertaken by peers under rules of self-enforcement. The legal penalties for infringement are high.

33 Shark Bay Marine Park/34 Ningaloo Marine Park
Some recreational fishers encourage peer compliance and can report infringements to the 'Fishwatch' hotline. Marine wildlife tourism operators provide a mutual surveillance role, partly as a result of competition for licenses.

33 Building trust and the capacity for cooperation

Building trust among individuals through transparency, face-to-face discussions, equity promotion, etc., and promoting cooperation and confidence that this will be reciprocated among MPA users.

04 The Wash European Marine Site
Given the historical lack of a role for the nature conservation agency due to the lack of designations that affected marine activities, many users of the site were suspicious of the conservation officers and the role of the agency. Trust in the conservation officers is developing as is trust in the second project officer, who was employed by the European Marine Site partnership, rather than the nature conservation agency. This neutrality has helped increase user trust in him and his ability to act as a mediator.

08 Karimunjawa Marine National Park
The level of involvement of villages in governance processes builds trust and cooperation across the whole community, which in turn helps implementation of the management plan.

17 Pirajubaé Marine Extractive Reserve
Work is being undertaken by the Environmental Education Programme to build trust and to reconstruct and strengthen a sense of community 'identity'. But past behaviour and lack of action makes this a challenge as many feel that 'nothing ever happens' after meetings.

30 Ustica Island Marine Protected Area
Coast Guards, MPA staff, dive centres and local fishers are involved in patrolling and monitoring, as the management of the MPA was entrusted to the Ustica municipal government. This has helped to build local trust and cooperation.

34 Building linkages between relevant authorities and user representatives

Developing and strengthening linkages among relevant government authorities and key user representatives, including mutual trust, to promote the fulfilment of legal conservation objectives and build resilient governance structures.

11 Ha Long Bay World Natural Heritage Area
The Ha Long Bay Management Department has established a public profile among local communities and developed important linkages with other relevant agencies.

14 Great South Bay Marine Conservation Area
Tackling many of the impacts on the area requires collaboration with users and interest groups outside the conservation area, which The Nature Conservancy is actively engaged with. However, there have been some relationship issues with users who have an interest in harvesting shellfish outside the conservation area which needs to be addressed.

27 Nusa Penida Marine Protected Area
Prior to the designation of the MPA, linkages had been established through the Coral Triangle Centre meetings. However, after the designation of the MPA, the Centre's role was assumed by the district government, which has not maintained these linkages.

34 Ningaloo Marine Park
Key user representatives are officially appointed to the Ningaloo Coast World Heritage Advisory Committee but development of links with specific recreational fishing representatives could help address tensions.

35 Building on local customs

Promoting consistency with and respect for local traditions, customs, norms and practices, insofar as they are compatible with and contribute towards the fulfilment of legal conservation objectives, including scope for flexibility, negotiations and compromises.

10 Tubbataha Reefs Natural Park
The involvement of the local community from the outset has helped ensure that their customs are not ignored or eradicated.

26 Bluefields Bay Special Fisheries Conservation Area
Various partnerships built up by the local fishing society have helped develop social capital and maintained traditional ways of decision-making and discussion.

27 Nusa Penida Marine Protected Area
Local customs ('adat') remain particularly strong in Bali, and customary traditions coexist alongside official institutions created by the government. These are reflected in community-based enforcement activities. In addition, a 'sacred temple zone' was created to ensure that boat-based diving activities, such as divers changing in view of the temple, do not offend local sensitivities.

31 Cabo de Gata-Níjar Marine Protected Area
This area is quite underdeveloped, so it is important to build on traditional customs, culture and fishing practices. The regulations importantly take this into consideration to ensure that the practicalities of marine protection are aligned with the requirements and traditions of the local artisanal fishing community.

36 Potential to influence higher institutional levels

Promoting recognition and realization of the potential for the participative governance of a given MPA to influence the higher and wider statutory framework, processes and obligations, i.e. that local people can have an influence on higher level institutions as well as being influenced by them in a co-evolutionary manner.

6 Seaflower Marine Protected Area
A government decision to grant oil exploration and development licenses was challenged through a 'People's Action' by the local MPA agency CORALINA, which led to a series of legal challenges and to the licenses being revoked.

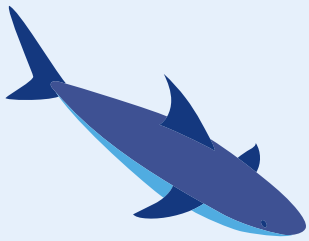
15 Chumbe Island Coral Park
This MPA's Advisory Committee has the capacity to challenge government decisions if they were to impact the objectives of the MPA.

20 Hol Chan Marine Reserve
The Board of Trustees has the power to influence the Government of Belize in this MPA. The inclusion of the coastal zone management authority in the MPA's governance structure would strengthen this position.

1 Great Barrier Reef Marine Park

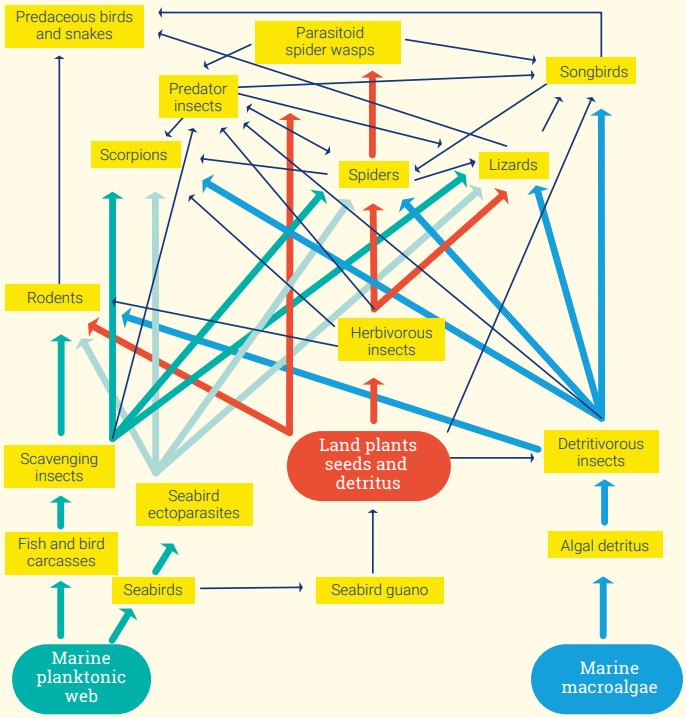
33 Shark Bay Marine Park

34 Ningaloo Marine Park
Deliberations and decisions by the local World Heritage Site Committee and related advice can have significant influence on state, commonwealth and even international decisions by UNESCO under the World Heritage Convention.

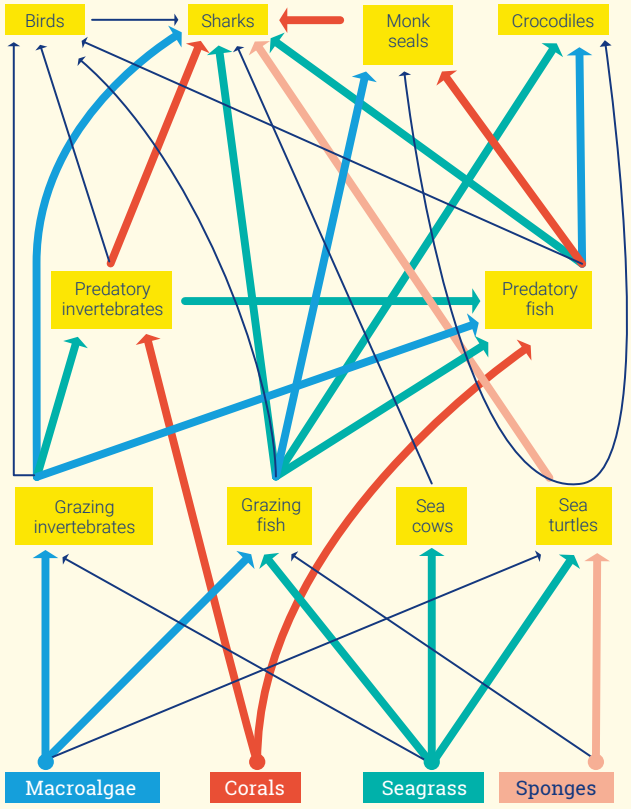


8

APPENDIX 2
THE PARALLELS BETWEEN DIVERSITY IN GOVERNANCE AND DIVERSITY IN ECOLOGY



a

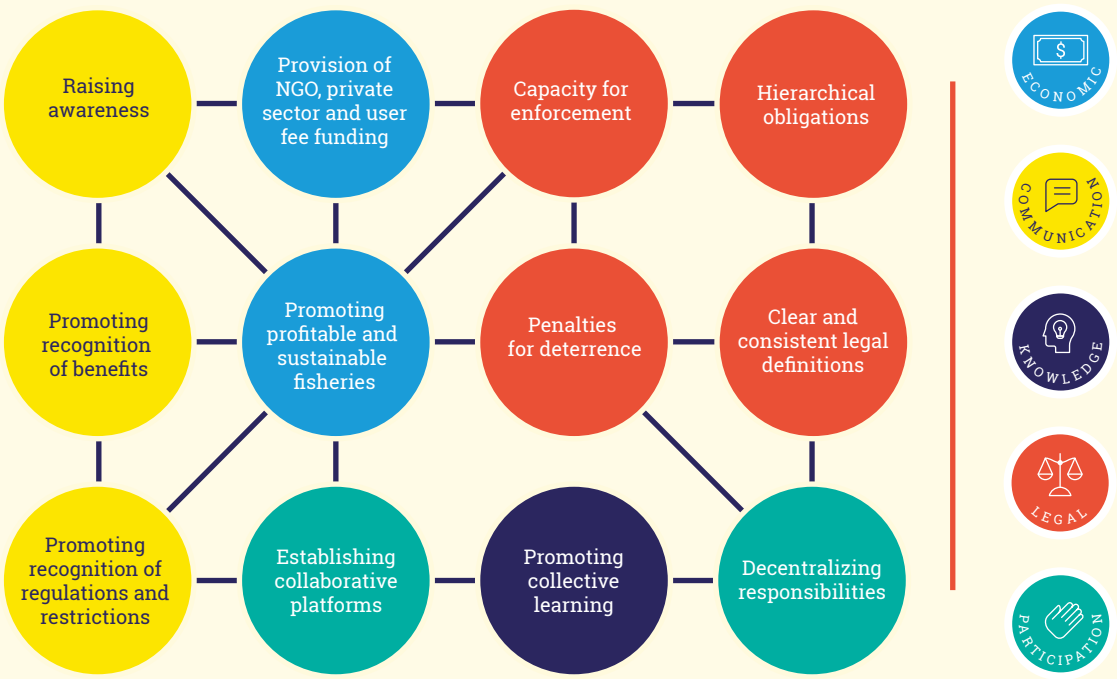


b

The diagrams above illustrate the various interactions between a diverse set of species in both coastal and marine ecosystems that forms complex webs of connections.

Examples of trophic webs —
a Two islands in the Gulf of California
b typical tropical coral reef including seagrass meadows (simplified)
Nodes represent functional groups
thick arrows represent strong trophic interactions
thin arrows represent weak interactions

a Adapted from Polis (1998)
b Adapted from Jackson et al. (2001). Figure from Jones (2014)



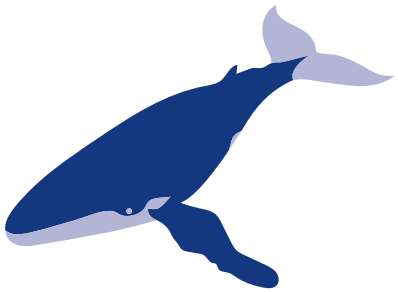
12 most frequently used incentives —
This is the 12 most frequently used incentives web to demonstrate the same type of connectivity between incentives as there is in ecological webs

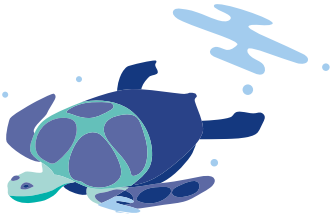
The rationale for using incentives in combination and creating diversity is similar to that found in ecology. One of the most significant developments in ecology in recent years is the recognition that having a diversity of different species and of different functional groups of species, with a complex web of interactions between them, supports ecosystem stability. This type of synecological[1] approach allows us to understand relationships and interactions among different species, rather than focusing on individual species using an autecological[2] approach. This approach can also be applied to developing MPA governance frameworks. The role of a particular incentive often interacts with one or more incentives to steer human behaviour towards the effective achievement of MPA objectives. The interactions between the incentives form a complex web and a structurally and functionally integrated, diverse and resilient governance system. It is important that the incentives complement and reinforce each other to deliver against objectives and to reinforce the governance framework against driving forces that could potentially undermine effectiveness.

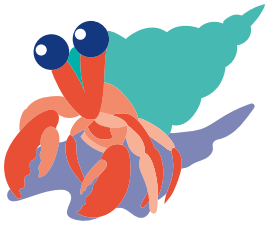
These interactions illustrate that incentives from different categories are mutually dependent, which increases the blurring between traditional governance approaches through top-down, bottom-up or co-management. Instead the focus is on how top-down (legal), bottom-up (participation) and market (economic) approaches can be combined, along with awareness-raising (communication) and collective learning (knowledge) approaches. Through using incentives from all five categories, they interact and work in combination to form an effective governance framework that is resilient to the negative effects of driving forces, i.e. the key to resilience is diversity, both of species in ecosystems and incentives in governance systems (Jones 2014).

1) Focused on ecological interactions between different species from different functional groups

2) Focused on ecological interactions between different species from different functional groups







UN environment

United Nations
Environment Programme