

Assessing small scale fisheries (SSFs) and Marine Protected Areas (MPAs) through a socio-ecological lens



Project co-financed by the European
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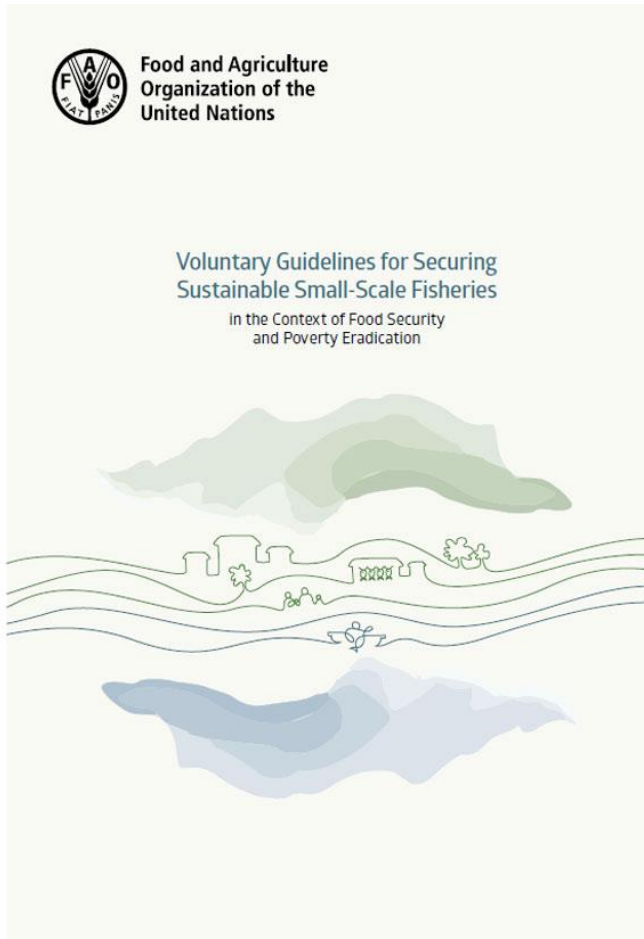
FishMPABlue 2 – Project Final Event
01-02 October 2019 – Rome (Italy)

SSFs – what are they?

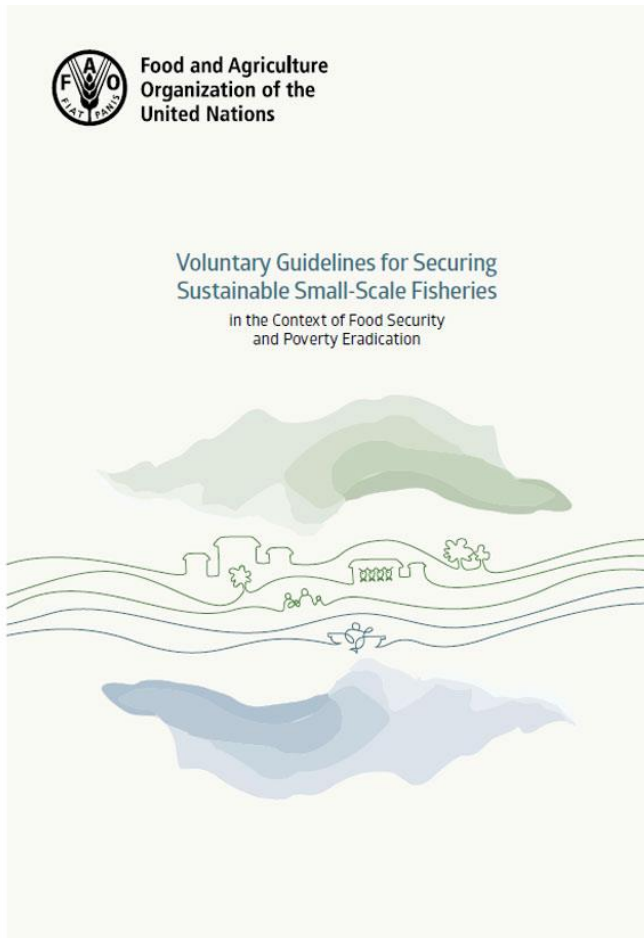
Still debated but...for the sake of generalization in the Mediterranean context some common features can be highlighted (also acknowledged by EU law):

- Usually operated by **relatively small (<12 meters total length) vessels**
- Typically **fishing within the first 3 nautical miles from the coast**
- **Vessels equipped with low-power engine and are operated by a single** (usually the owner) **or few fishermen** (frequently kindred)
- Small scale fisheries do not normally target a single species but are **highly multi-specific**
- **Adoption of passive gears** (mainly gillnets, trammel nets and longlines)





A policy framework for how to ensure sustainability for small-scale fisheries through a holistic and integrated approach



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Call for intersectoral and participatory approach where «responsible fisheries management, human rights and sustainable developments should go hand in hand»

SSFs in the Mediterranean Sea

Historical activity deeply rooted in the tradition and culture of the Mediterranean Sea.

It involves a considerable number of fishermen and vessels



68,131

(i.e. 83% of the total) are small scale fisheries vessels.



137,324

(i.e. 55% of the total) are employed in small scale fisheries

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First Regional Symposium on Sustainable Small-Scale Fisheries in the Mediterranean and Black Sea



©FAO/Fabio Massa

27–30 November 2013, St. Julian's, Malta

Building a future for sustainable small-scale fisheries in the Mediterranean and the Black Sea

Regional Conference
7–9 March 2016, Algiers, Algeria



Food and Agriculture
Organization of the
United Nations



General Fisheries Commission
for the Mediterranean
Commission générale des pêches
pour la Méditerranée



Increasing attention on SSFs in the Med



Karmenu Vella

@KarmenuVella

Segui

To save #Mediterranean fisheries, small-scale fishermen are key. They can count on our support [ec.europa.eu/fisheries/docu ...](https://ec.europa.eu/fisheries/docu...)
#MedFish4ever



07:27 - 29 mar 2017

32 Retweet 34 Mi piace



Ευρωπαϊκή Επιτροπή, EC in Cyprus, EU Commission Malta e altri 7

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Artisanal fishermen are the backbone of Mediterranean fisheries: they represent 80 % of the fishing fleet, 60 % of the fishing sector jobs and a quarter of total landings

Karmenu Vella, European Commissioner for Environment, Maritime Affairs and Fisheries

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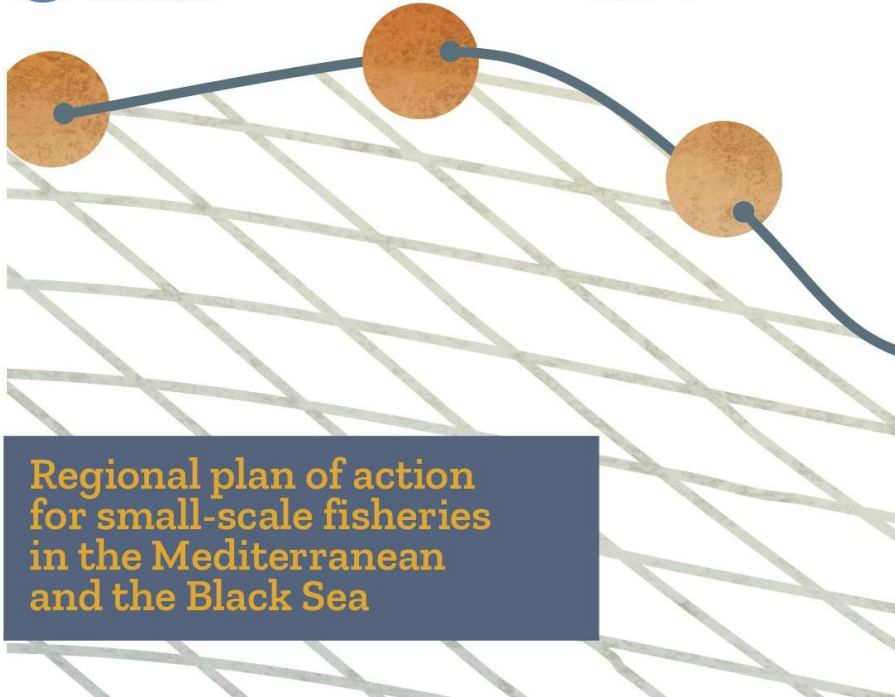
#MedFish4Ever



Food and Agriculture
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United Nations



General Fisheries Commission
for the Mediterranean
Commission générale des pêches
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Regional plan of action
for small-scale fisheries
in the Mediterranean
and the Black Sea

RPOA-SSF

to support and promote
small-scale fisheries for
the coming ten years

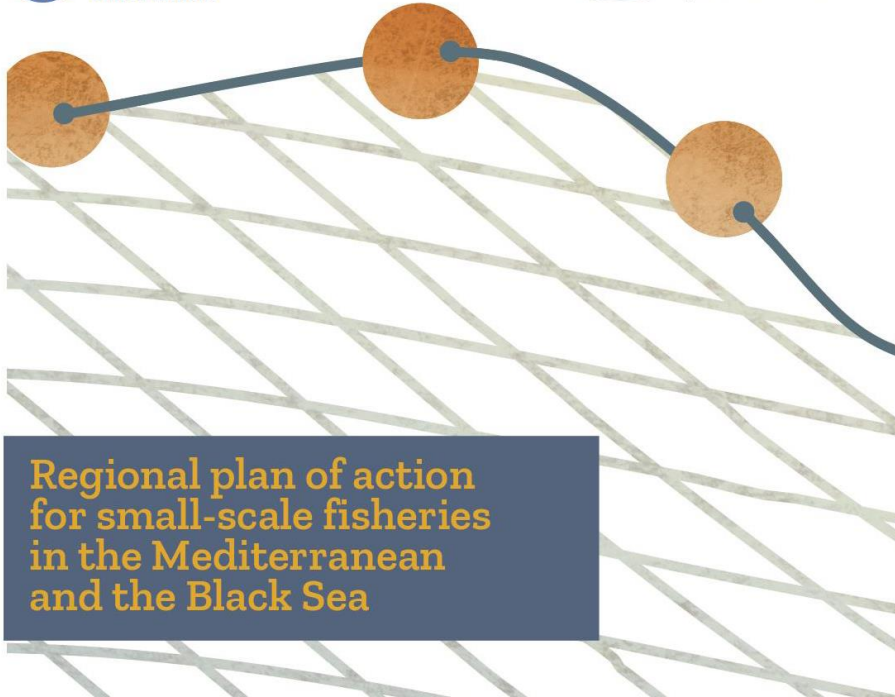
***“a concrete commitment to ensure the long-term environmental,
economic and social sustainability for small-scale fisheries”***



Food and Agriculture
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United Nations

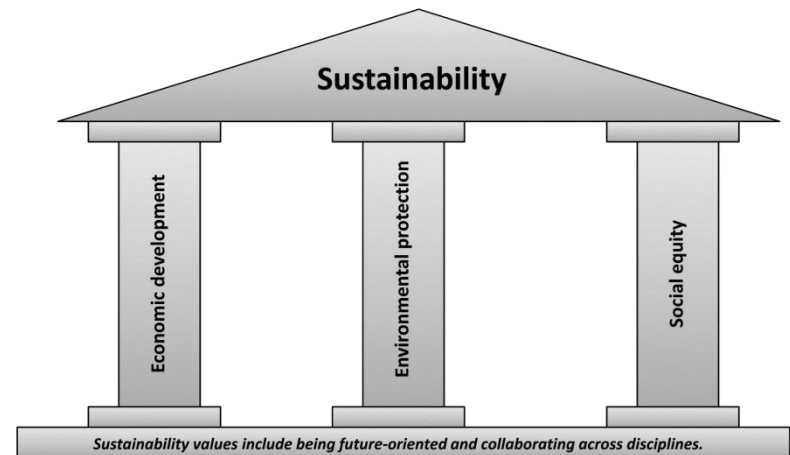


General Fisheries Commission
for the Mediterranean
Commission générale des pêches
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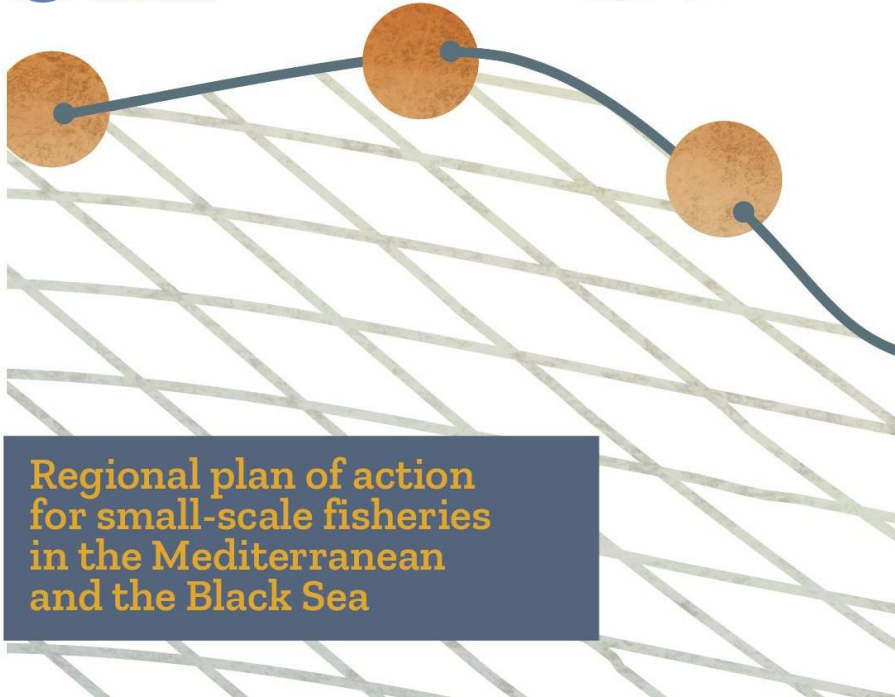
*“a concrete commitment to ensure the long-term **environmental**, **economic** and **social** sustainability for small-scale fisheries”*



Food and Agriculture
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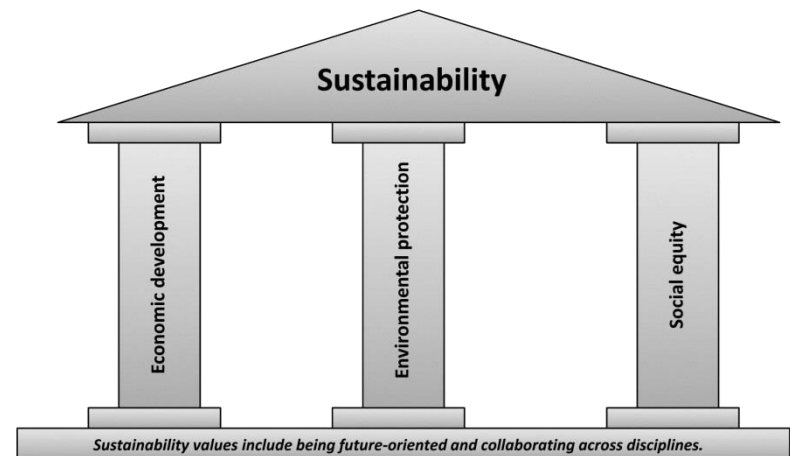


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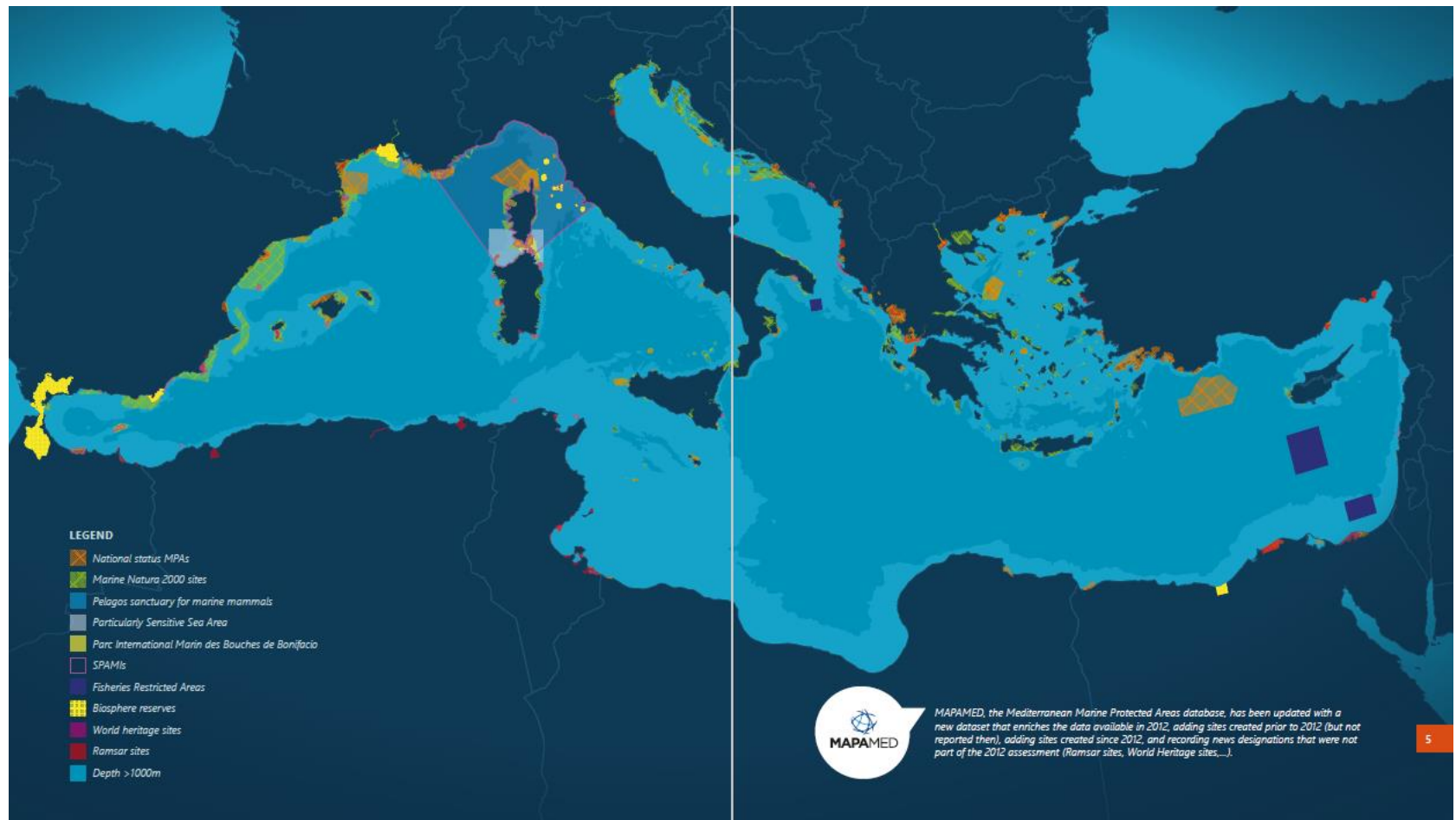


*“a concrete commitment to ensure the long-term **environmental**, **economic** and **social** sustainability for small-scale fisheries”*

*“there are **synergies and positive interactions** that can be realized **between small-scale fisheries and ... the participatory management of marine protected areas (MPAs)**”*

Portion of the sea managed to achieve the long-term conservation of nature with associated ecosystems services and cultural values

Portion of the sea managed to achieve the long-term conservation of nature with associated ecosystems services and cultural values

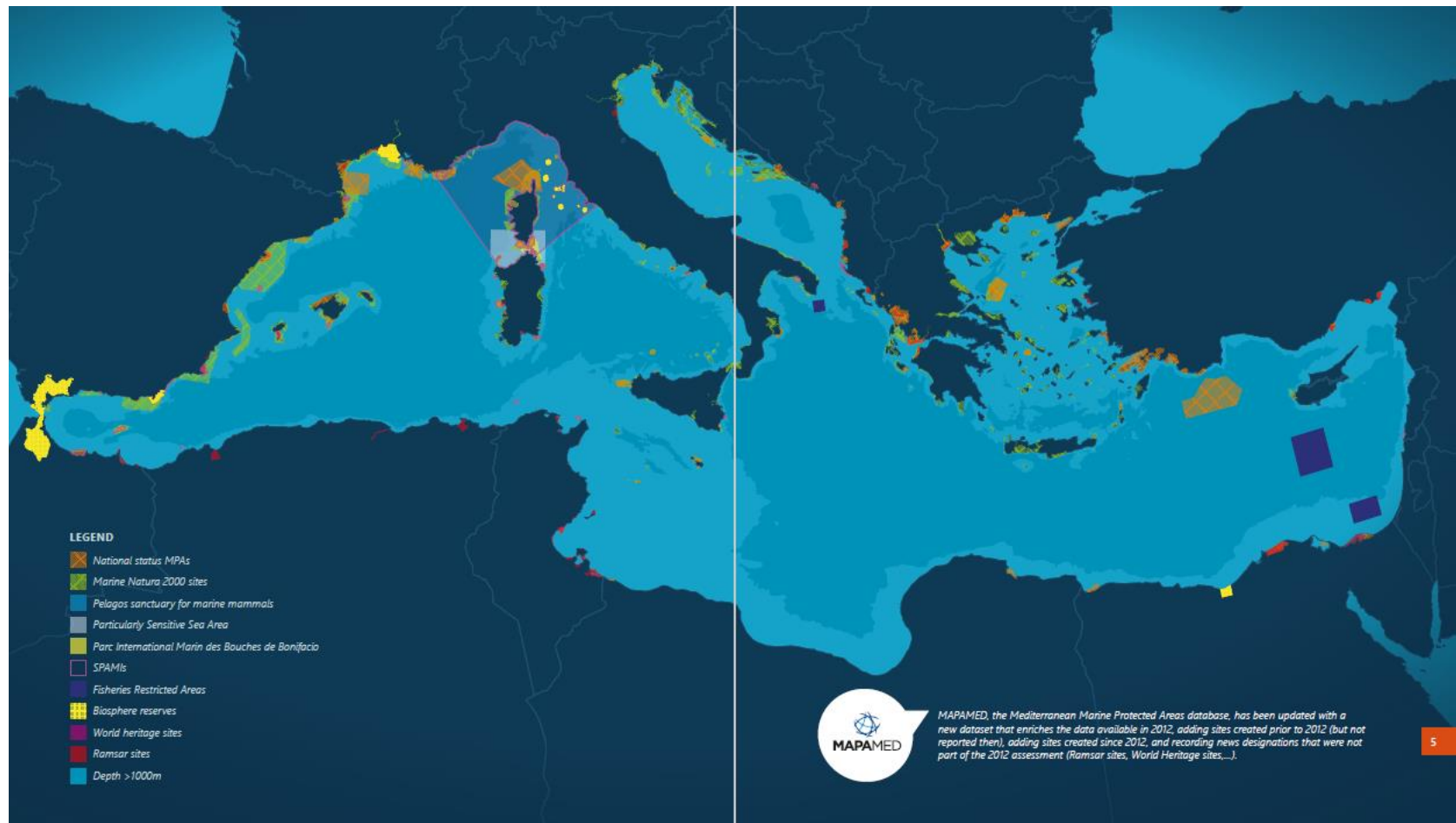


Portion of the sea managed to achieve the long-term conservation of nature with associated ecosystems services and cultural values

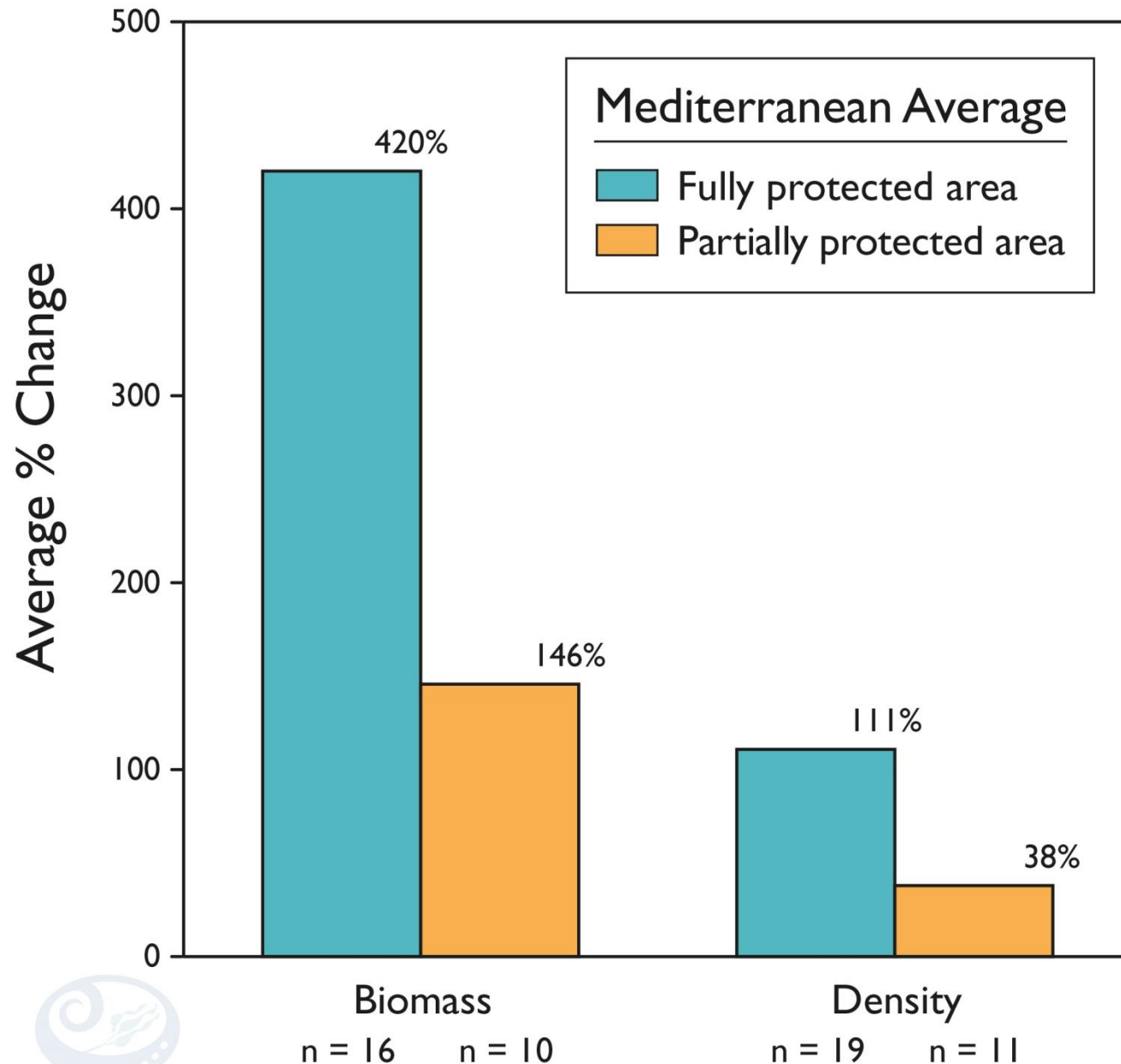
1231 MPAs

Covering ~**180,000** km²

0.04% of the Mediterranean
Sea fully protected



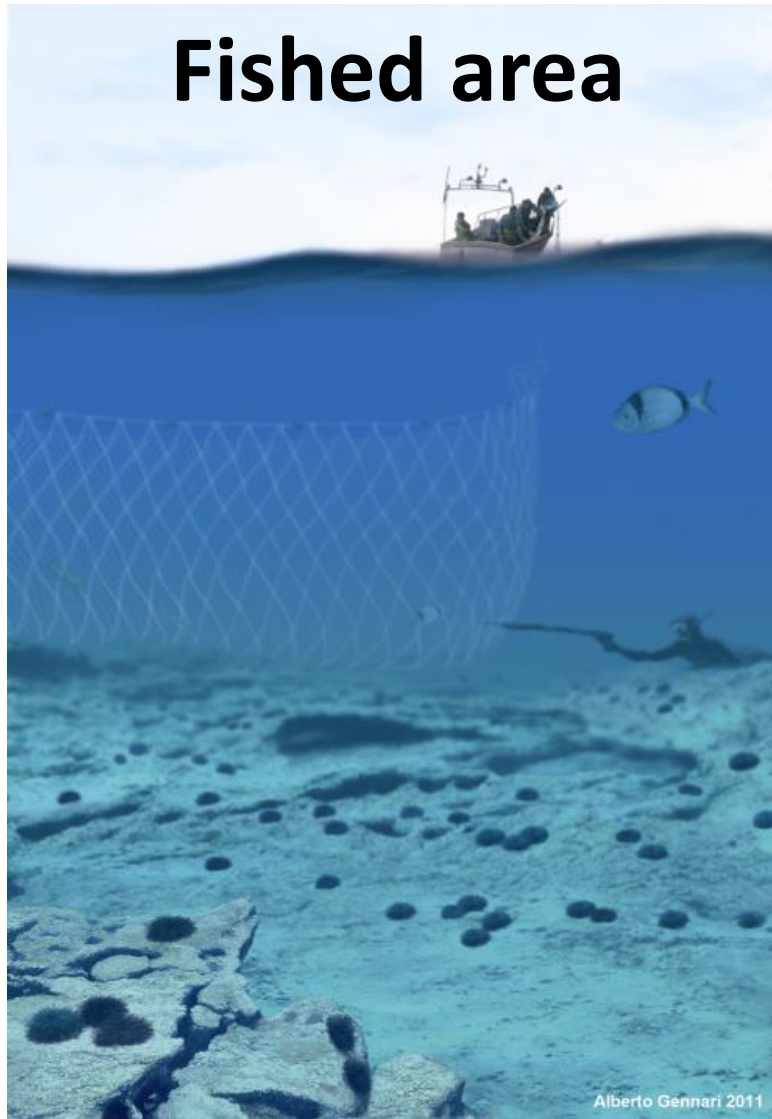
Ecological benefits of MPAs – fish assemblage



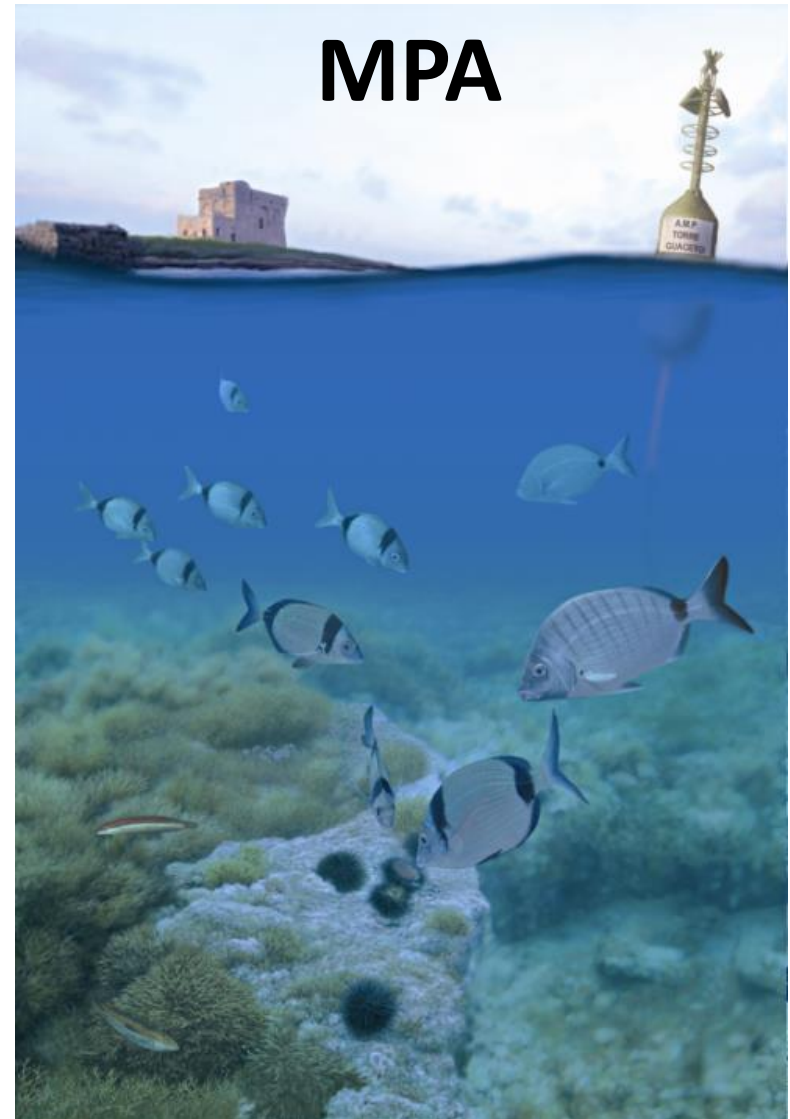
From Pisco and UNS 2016

Ecological benefits of MPAs – ecosystem effect

Fished area



MPA



INSIGHTS | LETTERS

Tropics, N. S. Sodhi *et al.*, Eds. (John Wiley & Sons, 2013), pp. 40–50.

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Marine Protected Areas miss the boat

IN THEIR POLICY Forum “Making waves: The science and politics of ocean protection” (23 October, p. 382; Published online 15 October 2015), J. Lubchenco and K. Grorud-Colvert discuss recent progress in establishing and enforcing Marine Protected Areas, in which extractive activities are illegal. We should make sure that the focus on Marine Protected Areas does not divert attention from other strategies of ocean protection. The major threats to the ocean are global warming, ocean acidification, pollution, illegal fishing, land-based runoff of sediments, and plastics (1, 2). Other threats include noise pollution and whale collisions resulting from ship traffic (3, 4). Marine Protected Areas provide absolutely no protection from any of these threats. The major “threat” they address is legal fishing, which

is now well regulated in almost all of the areas where large Marine Protected Areas are being implemented (5) and unlikely to be effectively enforced where fisheries are not well regulated (6).

Ray Hilborn

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E-mail: rayh@u.washington.edu

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2. W.J. Fieldner, R. E. Kearney, B. S. Wise, W.J. Nash, *Ecol. Appl.* **25**, 1187 (2014).
3. D. W. Laist, A. R. Knowlton, J. G. Mead, A. S. Collet, M. Podesta, *Mar. Mammal Sci.* **17**, 35 (2001).
4. D. Malakov, *Science* **291**, 576 (2001).
5. R. Hilborn, D. Ovando, *ICES J. Mar. Sci.* **71**, 1040 (2014).
6. G.J. Edgar *et al.*, *Nature* **506**, 216 (2014).

TECHNICAL COMMENT ABSTRACTS

Comment on “Atlantic and Pacific multidecadal oscillations and Northern Hemisphere temperatures”

S. Kravtsov, M. G. Wyatt, J.A. Curry, A.A. Tsonis

Steinman *et al.* (Reports, 27 February 2015, p. 988) argue that appropriately rescaled

Role of MPAs in supporting fisheries is still much debated



Fishing off the coast of the small, remote island of Palmyra, only one side of which is a marine protected area.

Marine biodiversity needs more than protection

To sustain the seas, advocates of marine protected areas and those in fisheries management must work together, not at cross purposes, urges Ray Hilborn.

On 1 September, government leaders, directors of five governmental organizations (NOAA) and others will meet in Hawaii at the International Union for Conservation of Nature World Conservation Congress to discuss environmental and development challenges. Twenty-three NOCs, including the Pew Charitable Trusts and the National Oceanic and Atmospheric Administration, are joining the IUCN to make one of the world's critical and marine areas fully protected from fishing and other forms of exploitation by man.

If the target were achieved, the abundance of exploited species in the areas that are closed off would undoubtedly increase. It is not clear, however, whether the same would be true for marine biodiversity overall.

There are currently two very different views on the effectiveness of marine where

fishing is either banned outright or tightly restricted. Many conservationists see the establishment of these marine protected areas (MPAs) as the only way to protect biodiversity. Others — not included — argue that the protection of biodiversity at sea can include recreational and industrial fishing and other uses of ocean resources. In fact, we think that closing waters to some kinds of fishing gear and restricting the catch of named species can offer much more protection than cordoning off new areas. We are concerned that MPAs may simply shift fishing pressure elsewhere.

Opinions are so divided that the conservation expertise of fisheries managers is being left out of national and international debates to protect ocean resources. Likewise, the needs of threats to biodiversity besides fishing, such as from oil exploration,

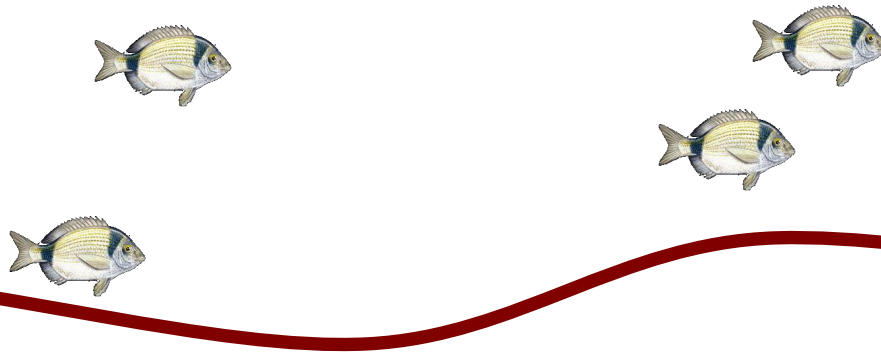
sea level rising and ocean acidification, are not being addressed in standard fisheries management.

The ocean has myriad problems — climate change, development, the need for food and other needs of a growing human population. To tackle them, conservationists and those involved in fisheries management must work together and answer in the same governing bodies.

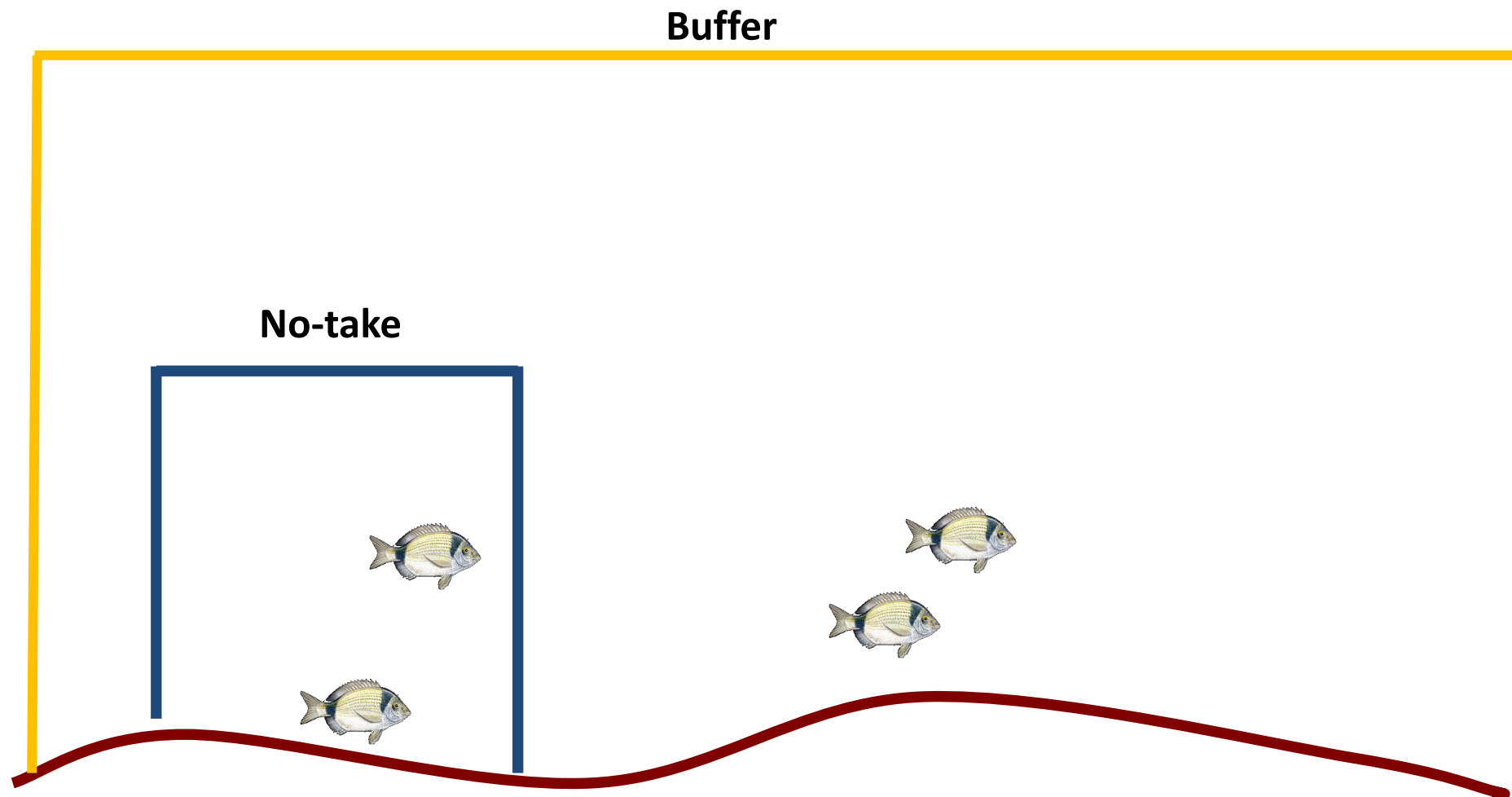
USE OF PROTECTION

Calls for MPAs began to increase during the 1970s, when overfishing was common in most of the developed world's fisheries. In the early 1980s, ecologists often assumed that biodiversity would flourish only inside protected areas. One group proposed, for example, that 10% of the ocean be

MPAs as fisheries tool - conceptual scheme



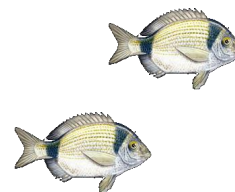
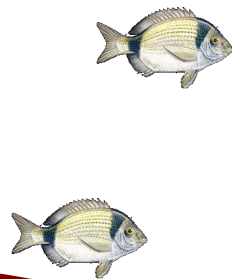
MPA implementation



MPA implementation

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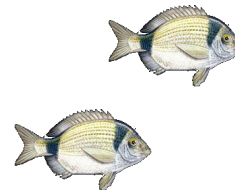
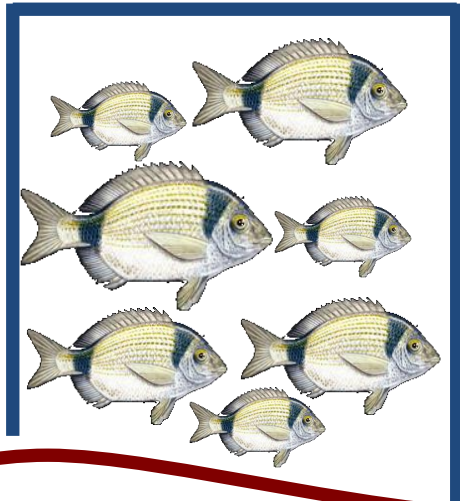
No-take



MPA implementation  Ecological benefits

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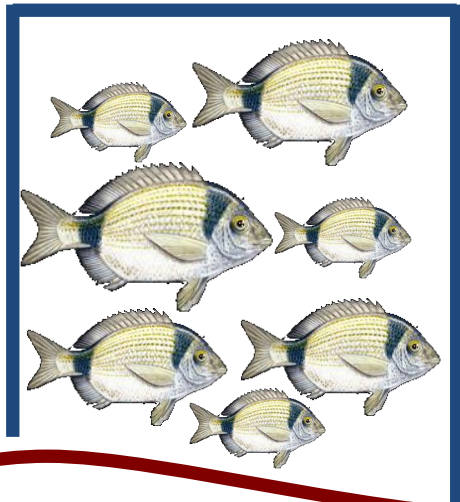
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MPA implementation  Ecological benefits

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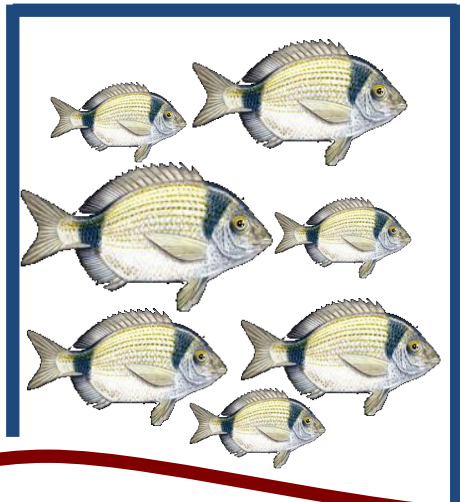
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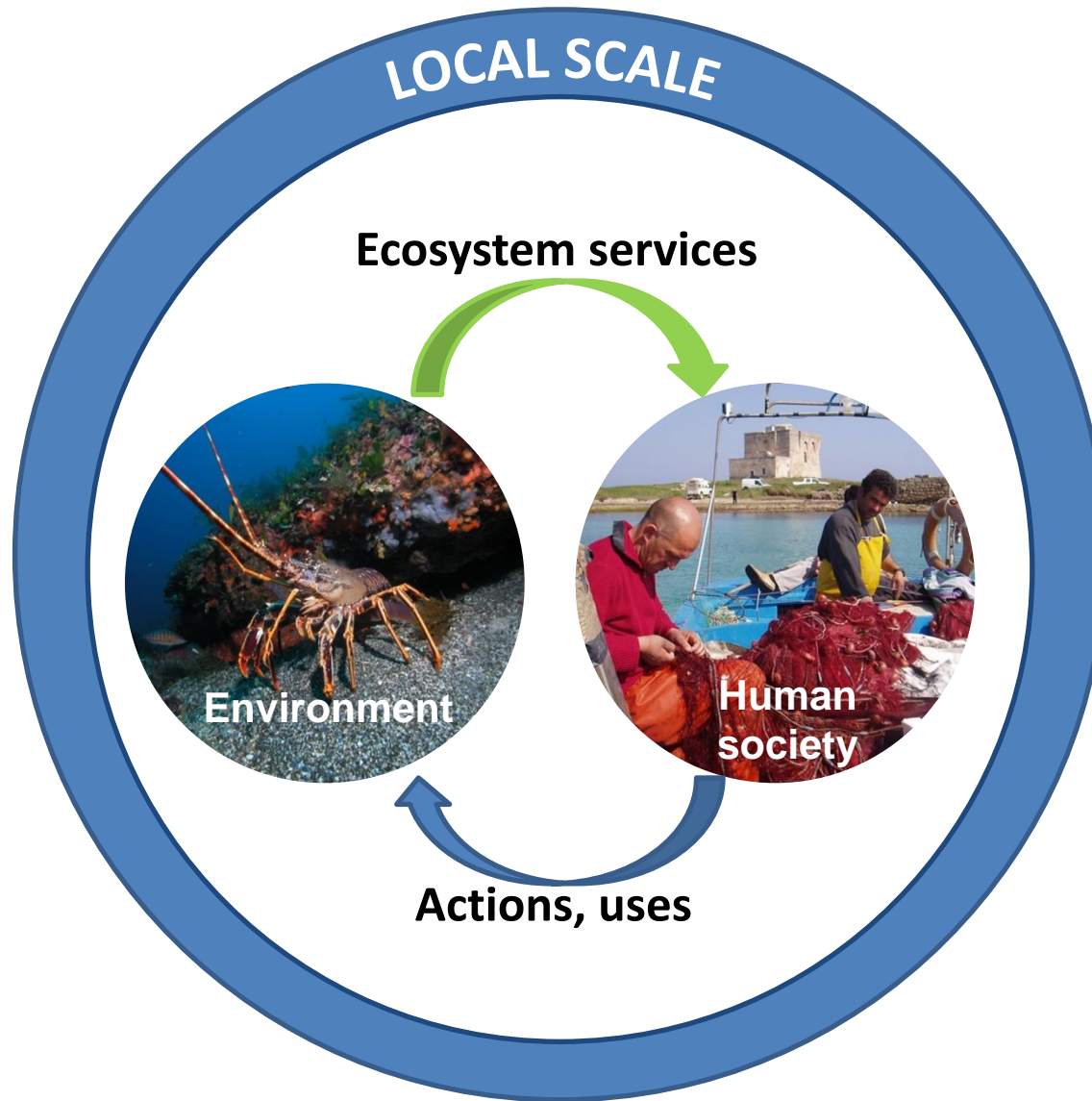


MPA implementation  Ecological benefits + Human wellbeing

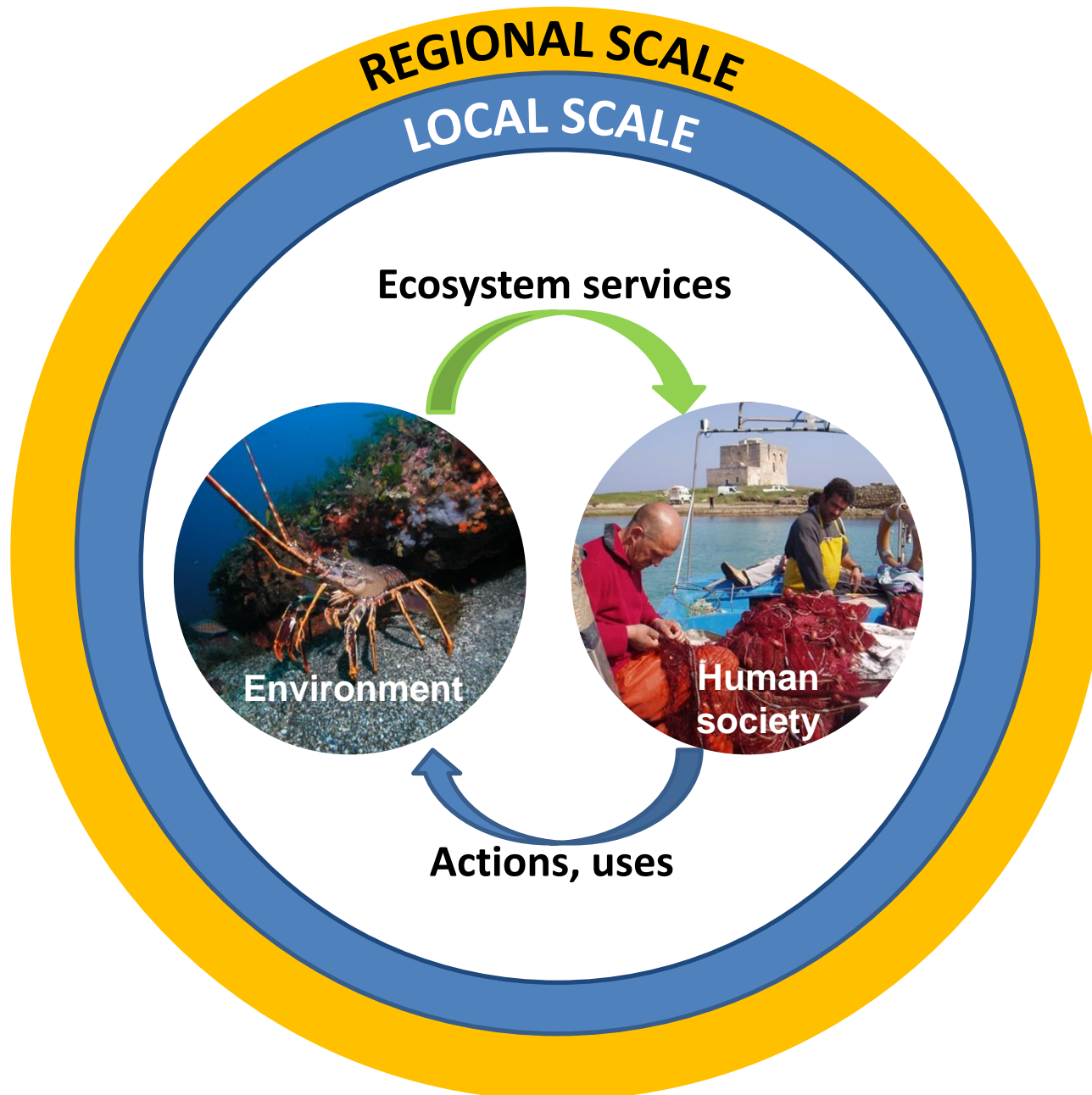
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No-take





MPAs and SSFs as Socio-ecological system



Is this really happening?

We don't know much.....

**And we need to know to soundly
manage!**

Small scale fisheries understudied



Counting on small-scale fisheries

ON 10 JUNE 2014, the member States of the Food and Agriculture Organization of the United Nations (FAO) adopted the *Voluntary Guidelines for Securing Sustainable Small-Scale Fisheries in the Context of Food Security and Poverty Eradication* (3) ("Guidelines").

To make these Guidelines effective, it is crucial that the FAO, governments, and civil society have access to data to help understand small-scale fisheries. Currently, catches from these fisheries are not collected separately, but are lumped in with industrial catches, even though they represent about one-quarter of global catches, and the majority of catches in many developing countries. To promote the transparency needed for good governance (2, 3), the FAO ought to request from member countries a report of catch data that distinguishes between industrial and small-scale fisheries.

Many decades of debate have failed to produce one, agreed-upon definition of a "small-scale fishery" but the modest variations in definitions between countries do not preclude efforts to gather global statistics. Just as the Guidelines do not impose a single definition of small-scale fisheries, each of the FAO's member States could define their own small-scale fisheries, reflecting local realities.

These changes would help to highlight the importance of small-scale fisheries and may also help governments that still treat these fisheries as a solution to

www.fao.org/3/a/scn201401.pdf

LETTERS

demographic pressure and rural landlessness (4) to focus instead on their inherent value.

Daniel Pauly¹ and Anthony Charles^{2*}

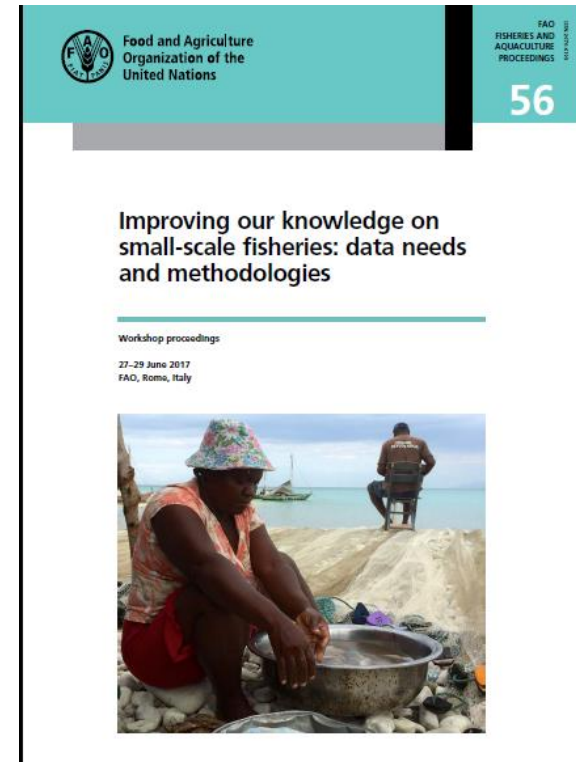
¹Sea Around Us Fisheries Centre, University of British Columbia, Vancouver, BC V6T 2A4, Canada.

²School of Business and School of the Environment, Saint Mary's University, Halifax, NS B3H 3C2, Canada.

*Corresponding author. E-mail: richard@smu.ns.ca

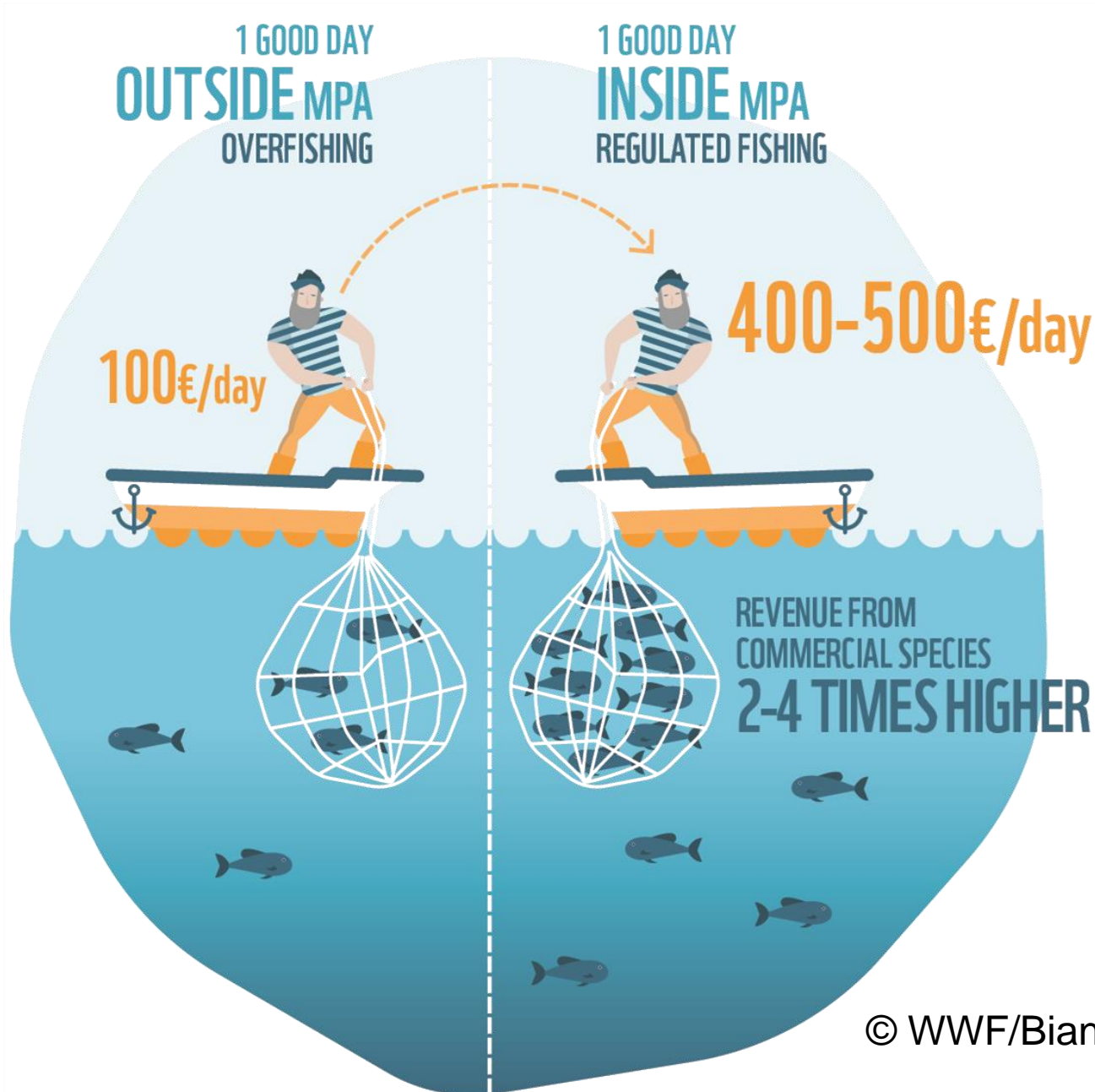
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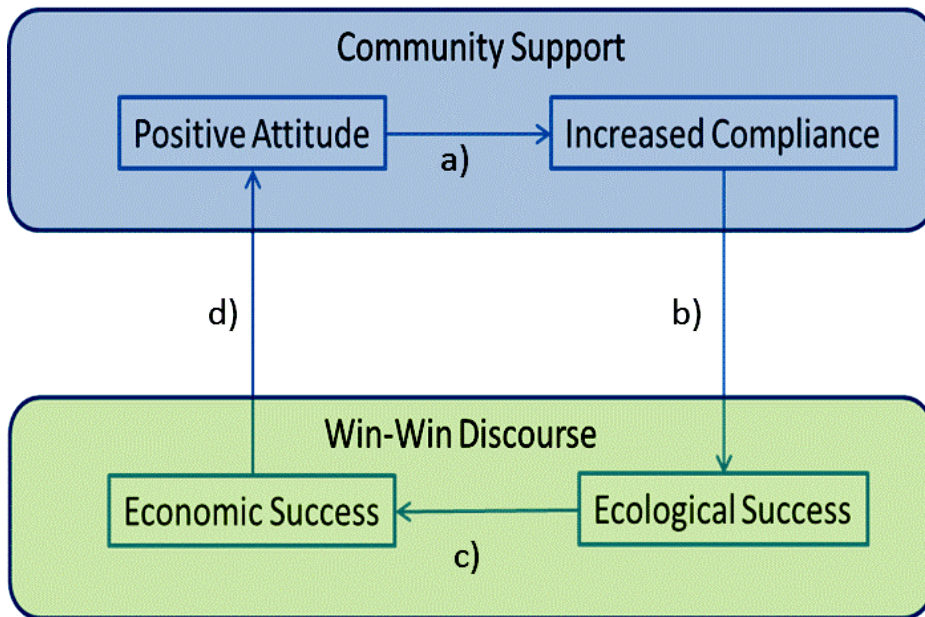
RPOA-SSF: “However, the sector still faces a number of challenges and efforts are needed to, among others, improve the collection of data for this notably data-poor sector.”

Fisheries benefits of MPAs – Torre Guaceto

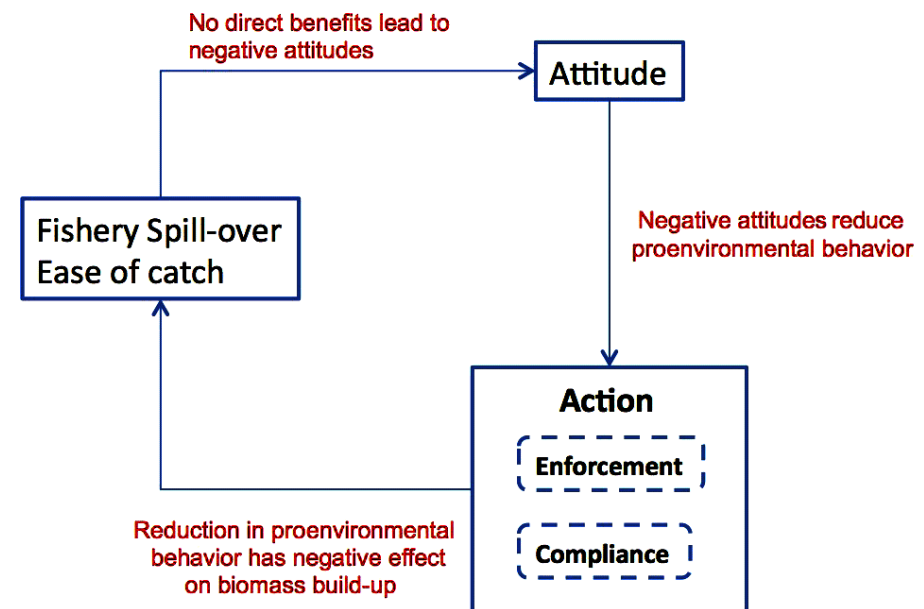
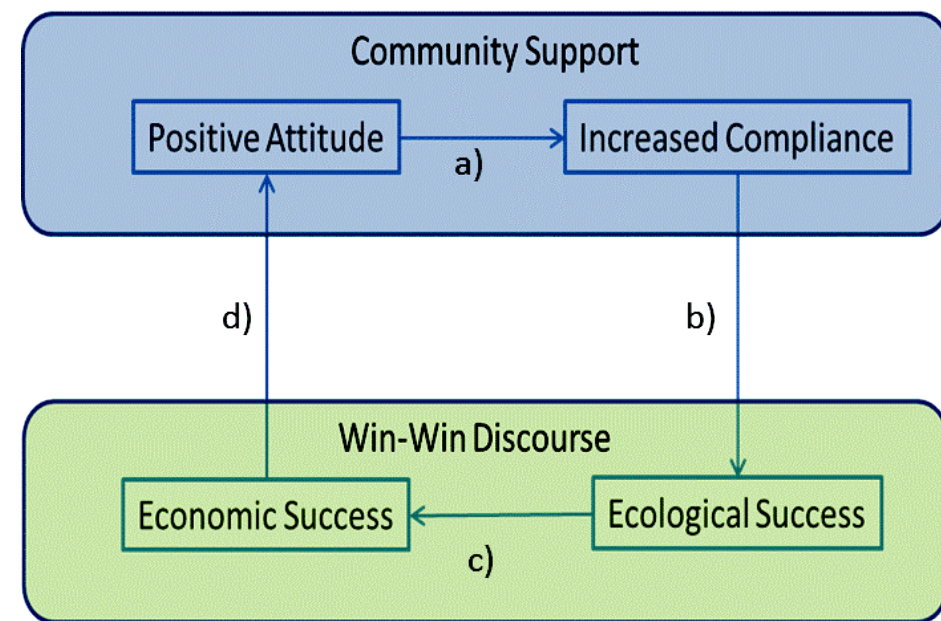


Crucial to know which circumstances determine the ***success*** of SSF management in Mediterranean MPAs

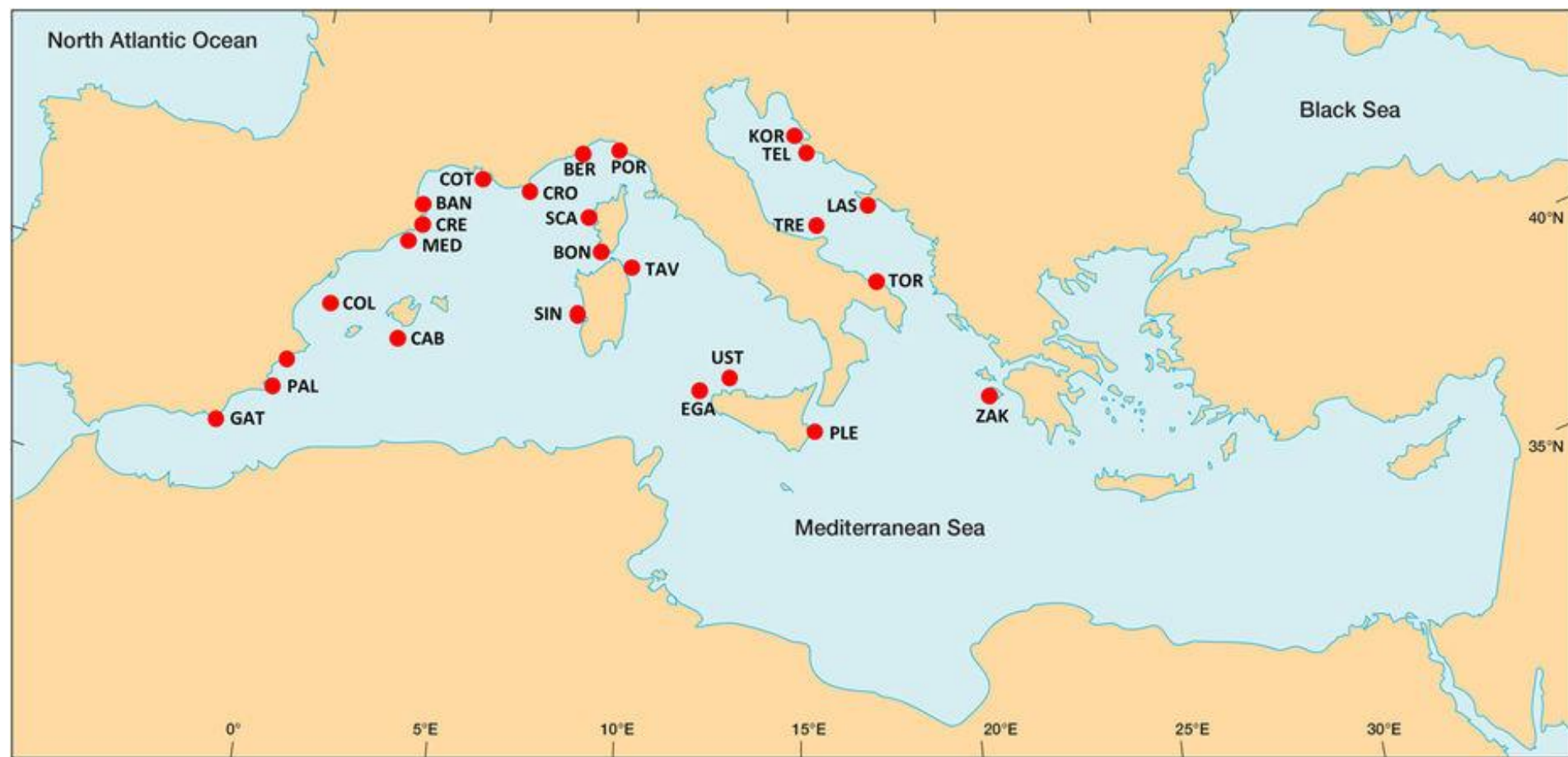
Crucial to know which circumstances determine the **success** of SSF management in Mediterranean MPAs



Crucial to know which circumstances determine the **success** of SSF management in Mediterranean MPAs



Key features determining succesful SSF management



25 MPAs from 5 Mediterranean EU countries

Covering approximately 3,160 km² and harbouring > 1,000 SSF vessels

We targeted as a **successful management practice** as the one **driving to**:

- a) **healthy fish assemblages** (including most of stocks targeted by fishing) within an MPA,
- b) **benefits to fishermen** (e.g. in terms of increased incomes)
- c) an **overall acceptance of the management practice** by fishermen.

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**Overall
Management
success**



Key features – overall success

Enforcement

Fishermen engagement level

Presence of fishermen in the MPA board

Presence of an incentive promoting sustainable fishing

Presence of a management plan

HDI

Ratio no-take/total area

Only local fishermen allowed

Number of artisanal boats

Numerus clausus licence

Ratio boats/total area

MPA total area (km²)

Fishermen financially compensated

Fishermen predominantly organized in associations

Licence needed

Recreational fishing allowed

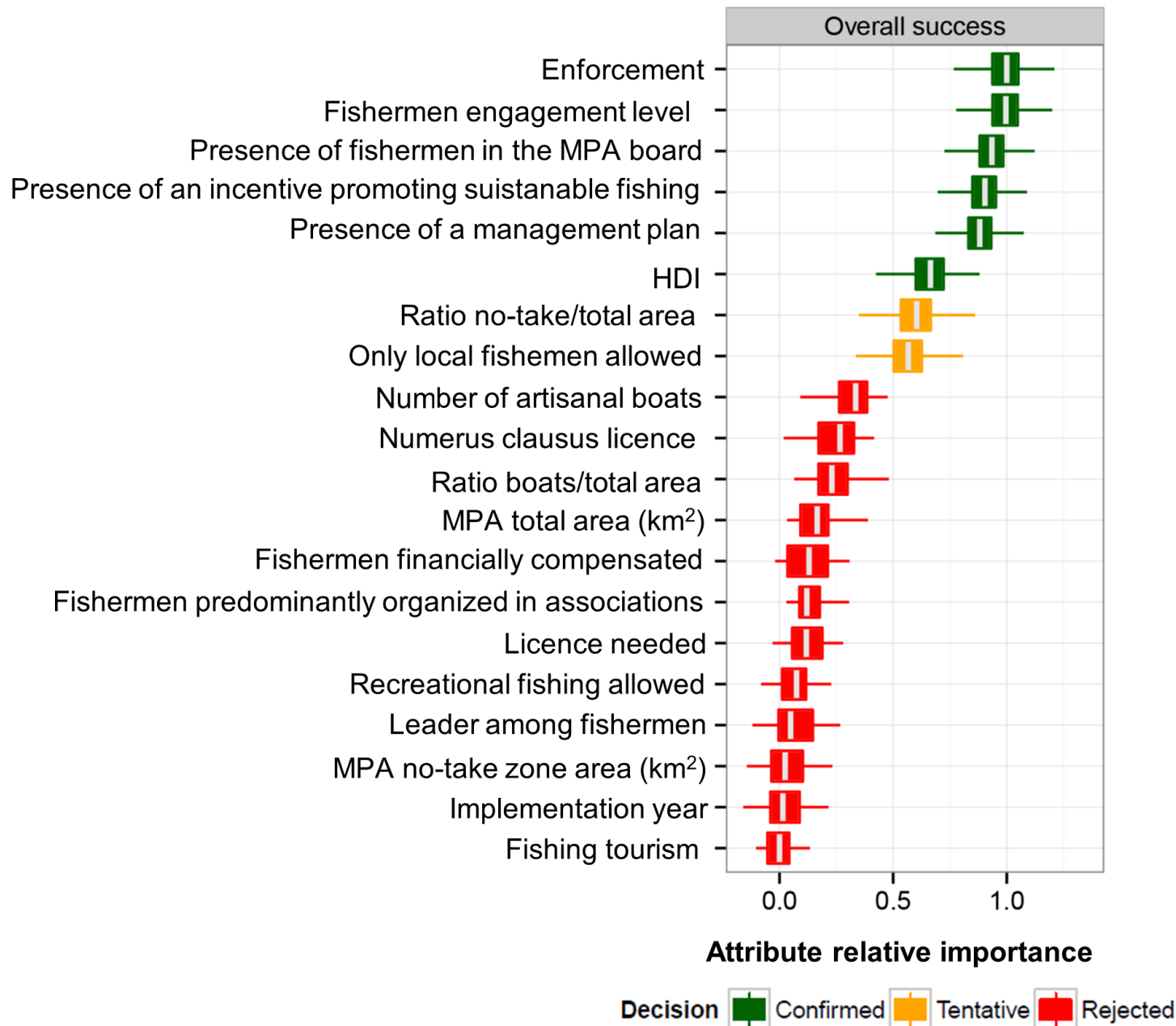
Leader among fishermen

MPA no-take zone area (km²)

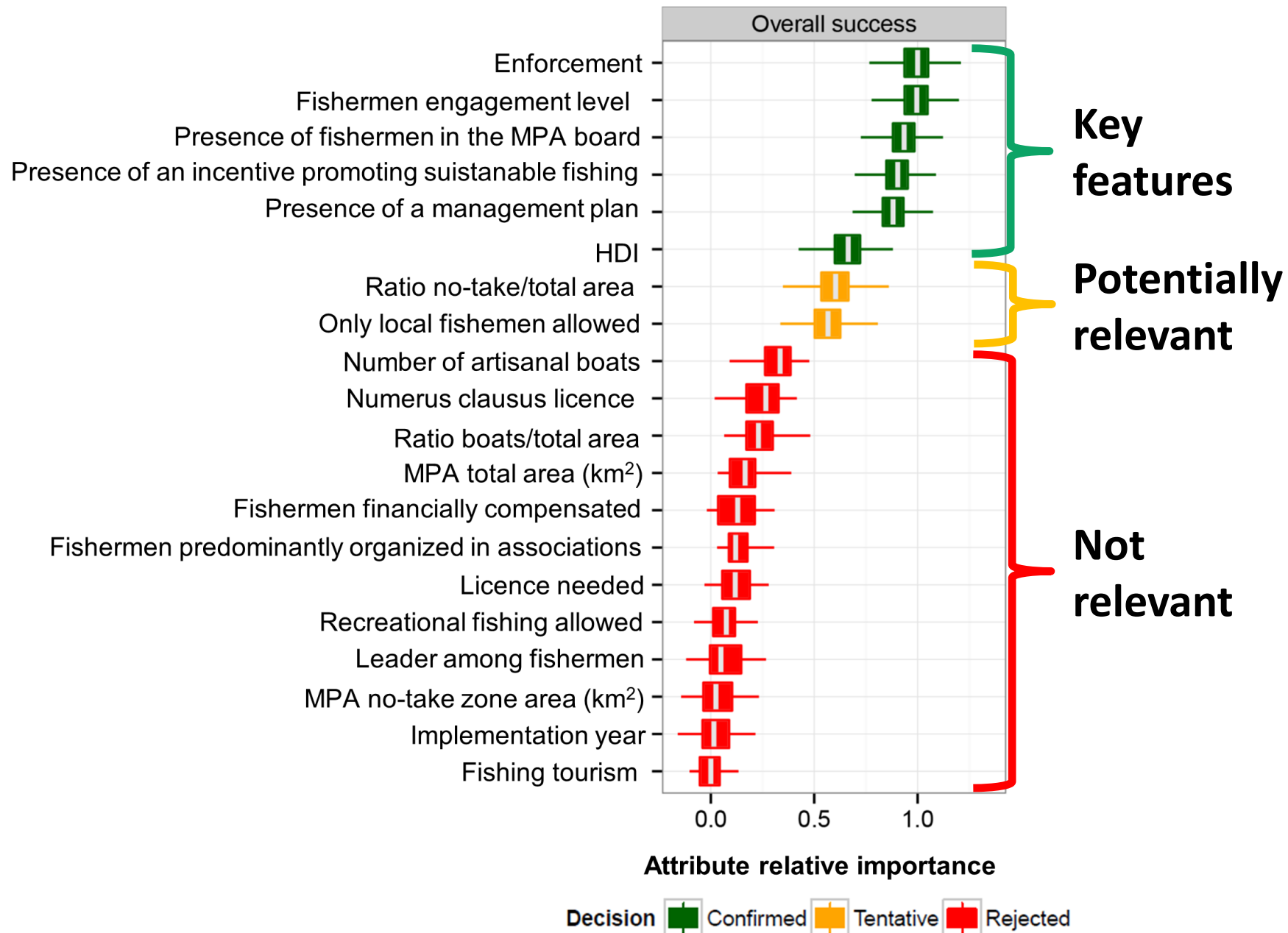
Implementation year

Fishing tourism

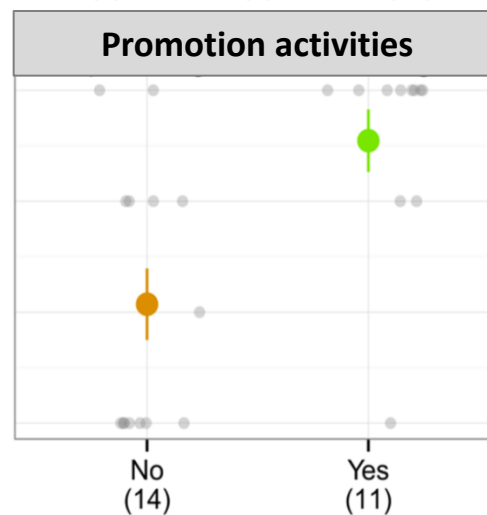
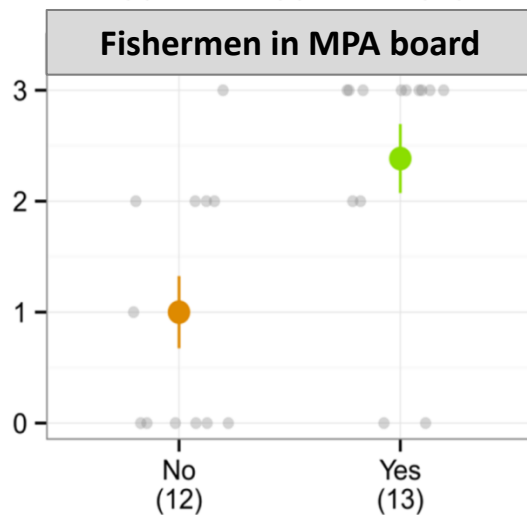
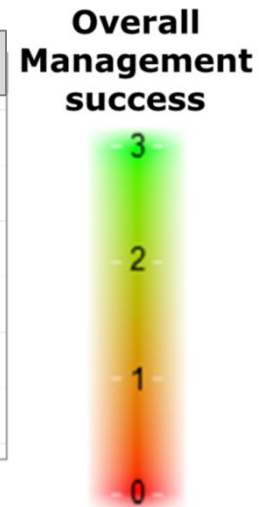
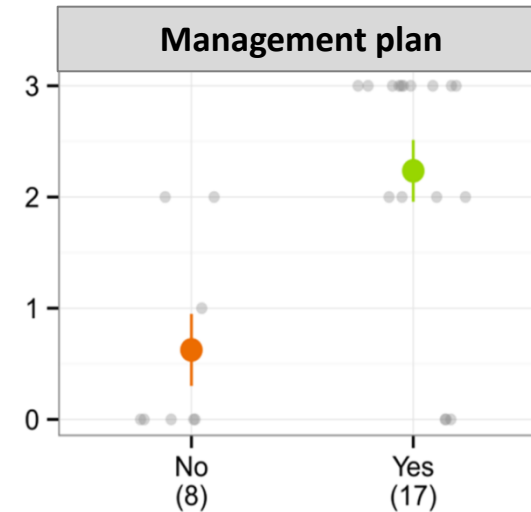
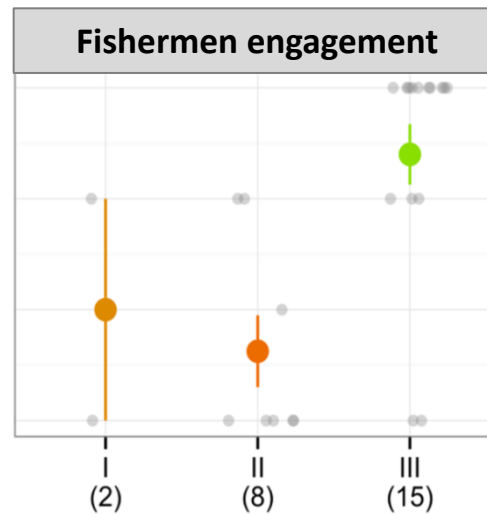
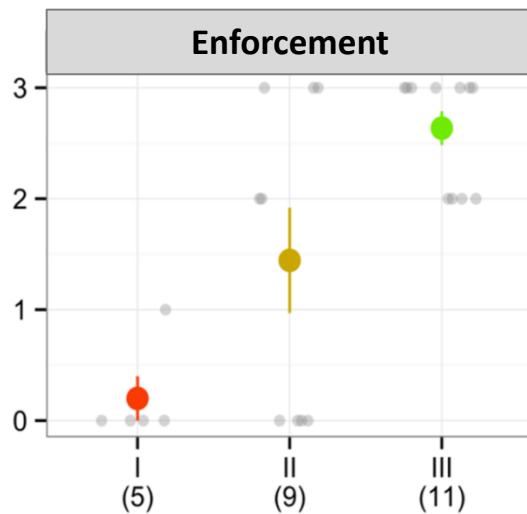
Key features – overall success



Key features – overall success

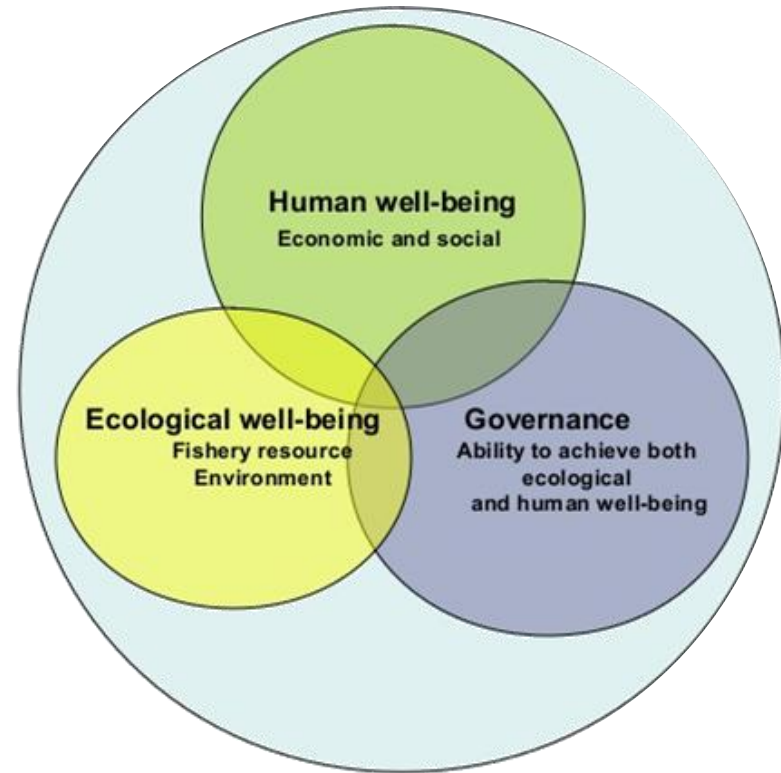


Key features - overall success



**Five key features
determining
successful
management**

- We should collect data on multidimensional features of SSFs and MPAs....

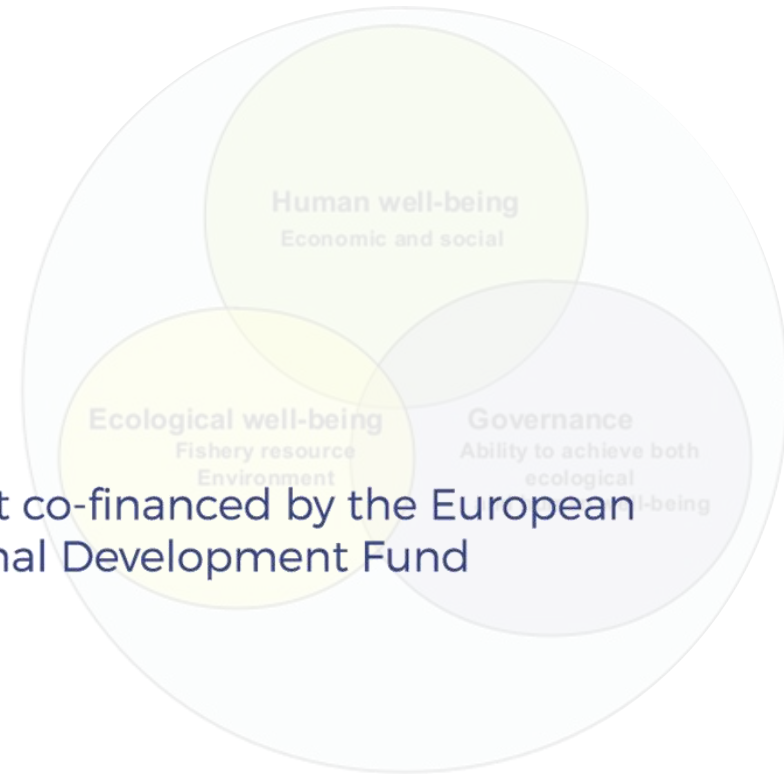


- Use appropriate design, methods and skilled operators (data quality matters!!!)
- Inform stakeholders and adapt your management

- We should collect data on multidimensional features of SSFs and MPAs....



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- Use appropriate design, methods and skilled operators (data quality matters!!!)
- Inform stakeholders and adapt your management

If you want to know more...TEASER!

Think tank B “Assessing ecological and socio-economic outcomes of MPAs for small scale Fisheries”



Thank you



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Adria



Medpo

