



THE FISHMPABLUE APPROACH

A Governance Toolkit for managing  
Small-Scale Fisheries in Mediterranean  
Marine Protected Areas



The FishMPABlue2 project aimed to test a set of governance measures identified as key factors for the successful management of small scale fisheries within and around Marine Protected Areas (MPA) in the Mediterranean ('Governance toolkit') and to assess its ecological, economic and social impact. This 'Governance toolkit' has been tested in 11 pilot sites, located in 6 Mediterranean countries (Croatia, France, Greece, Italy, Slovenia, and Spain) in order to assess and quantify its success in achieving expected results in terms of MPA ecological effectiveness, benefits delivered to small scale fisheries and social acceptance of management measures by stakeholders.

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# Contents

<b>Introduction</b>	<b>4</b>
Purpose	4
How to use this toolkit	5
<b>Chapter 1:</b>	
<b>HOW THIS TOOLKIT WAS DEVELOPED</b>	<b>8</b>
FishMPABlue 1 – Identifying the challenges	8
<b>Chapter 2:</b>	
<b>TOWARDS EFFECTIVE SMALL-SCALE FISHERIES GOVERNANCE AND CO-MANAGEMENT</b>	<b>11</b>
<b>Chapter 3:</b>	
<b>THE MANAGEMENT TOOLS</b>	<b>14</b>
Overview of TOOLKIT tested tools	14
<b>a INVOLVEMENT IN DECISION MAKING</b>	<b>16</b>
Create a permanent and formal cooperation platform to engage fishers in decision making	17
<b>b ENFORCEMENT STRENGTHENING</b>	<b>20</b>
Increase of surveillance by MPA staff and improved infrastructure	21
Increase surveillance through cooperation with relevant authorities	23
Increase surveillance through fishers' direct involvement	24
<b>c KNOWLEDGE AND OWNERSHIP</b>	<b>26</b>
Directly engage fishers in monitoring	27
Raise the awareness of fishers, MPA managers and the local community	29
<b>d IMPROVE SMALL-SCALE FISHERIES (SSF) ENVIRONMENTAL SUSTAINABILITY</b>	<b>32</b>
Reduce fishing efforts	33
Modify/substitute fishing gear	34
Set-up Small-Scale Fishery Codes of conduct	36
<b>e IMPROVE SMALL-SCALE FISHERIES PROFITABILITY</b>	<b>38</b>
Add value to local fish and promote new commercial species	40
Support pescatourism development	42
<b>Chapter 4:</b>	
<b>FEASIBILITY &amp; EFFECTIVENESS OF THE TESTED TOOLS</b>	<b>44</b>
<b>Chapter 5:</b>	
<b>CONCLUSIONS</b>	<b>48</b>

## Purpose

Marine Protected Areas (**MPAs**) represent one of the principal **management tools** needed to address the cumulative threats facing the marine environment, fisheries collapse and the continued loss of marine biodiversity. In response, attempts worldwide are being made to establish a global network of MPAs.

However, despite the numerous benefits that can be accrued by MPAs there still remains a shortfall in their effectiveness. To some extent, this shortfall reflects that while MPAs are popular with scientists and NGOs, local communities and user groups often view them with hostility and there remains a lack of wider support which hinders their effectiveness, indicating that there is still work to be done to reverse this trend.

Although MPAs vary greatly in their shape, size, context, levels of restriction and objectives, it is clear that they are social and institutional constructs that are designed to govern human interactions within a specified area and allocate stakeholders' use of, and access to natural resources – a fact which is often overlooked when the management and governance strategies are designed. As MPAs ultimately stem from human needs, attitudes and desires (for example to: increase the number of fish; support traditional livelihoods or protect sensitive habitats), and they all involve a variety of stakeholders with particular and often conflicting interests and agendas, the **human dimension of MPAs cannot be ignored.**

The impacts of MPAs on different communities and users may vary hugely, providing endless scope for controversy over the fairness of their arrangements, especially when tackling Small-Scale Fisheries (SSF). When an MPA has been designated or established, opposition from local communities and other resource users to its working may be intense. Such controversy is not a trivial feature of MPAs, but a crucial matter for their successful management, since, as is being increasingly recognized, unless MPAs can attract the support of local communities and resource users, they are unlikely to succeed in meeting their ecological objectives.

Adopting **good governance principles** and **adaptive management strategies** that recognise and give sufficient consideration to the human dimension – offering genuine opportunities for participation – must be the ultimate goal of all MPAs. It is critical to note that participatory engagement of the local community in all steps of the MPA process is perhaps the most important

component to ensure increased support and hence MPA success. Meaningful engagement requires willingness from all actors to build healthy, lasting and trustful relationships that must lead to shared decisions.

The **management measures and governance principles** described in this Toolkit are intended to help MPA managers navigate the multi-dimensional tools available to improve MPA effectiveness in SSF management – aimed at reconciling conservation goals with societal needs – with particular focus on increased stakeholder engagement.

The Toolkit does not provide an exhaustive list of existing tools. Instead, this document serves as a resource for MPA practitioners who may find help on possible interventions and techniques to engage stakeholders and improve management effectiveness. These interventions and techniques were tested in **11 MPAs throughout the Mediterranean.**

**Participatory engagement of the local community in all steps of the MPA process is perhaps the most important component to ensure increased support and hence MPA success.**



The information presented illustrates the feasibility and effectiveness of each tool and provides guidance for generating the much needed societal support for MPAs.

The overall intention of this Toolkit is to highlight the inherent need for MPA and SSF management-related bodies to make the much needed shift towards **co-management**, where decision making is equitably and genuinely shared between all relevant actors. The interventions and tools included in this toolkit aim to support the protagonists involved in developing co-management approaches with the long term goal of improving the overall governance of natural resource management in the Mediterranean region.

Although we assume most MPA practitioners consulting this guide are already familiar with governance and management tools, we hope the focus of the toolkit on SSF, the lessons learned from the testing of the tools in 11 pilot MPAs, and the guidance – yielded from two years of pilot action – to better involve stakeholders in the process, can help MPAs shift towards SSF co-management with small-scale fishers.

**Engagement between stakeholders and MPAs is a progressive process that requires a significant amount of willingness from all parties.** The aspiration is to transform the governance system from one where stakeholders are less engaged and power sharing is less developed, to one where stakeholders are highly engaged and the management

responsibility is equitably shared and fully developed, which is genuine co-management. This needs a long process to build trust, and ultimately requires a strong commitment from all parties in applying the shared decisions.



A marine protected area officer helping a fisher to restore a net in Croatia. Cooperation between MPA and SSF is key to generate benefits for fishers and marine biodiversity. © N. Staglicic

## How to use this toolkit

Readers should first consider the main challenges they face in their MPA, with a focus on the relationship between SSF and MPAs (see Chapter 1 for main issues highlighted by the research conducted during the FishMPABlue2 project).

They should then decide which approach to follow in terms of governance to address such challenges: the approach tested in the FishMPABlue2 project is described in Chapter 2, where the final goal is to set up a local co-management governance (see also above).

Finally, readers should refer to Chapter 3, where management tools are described in relation to the SSF challenges they address.

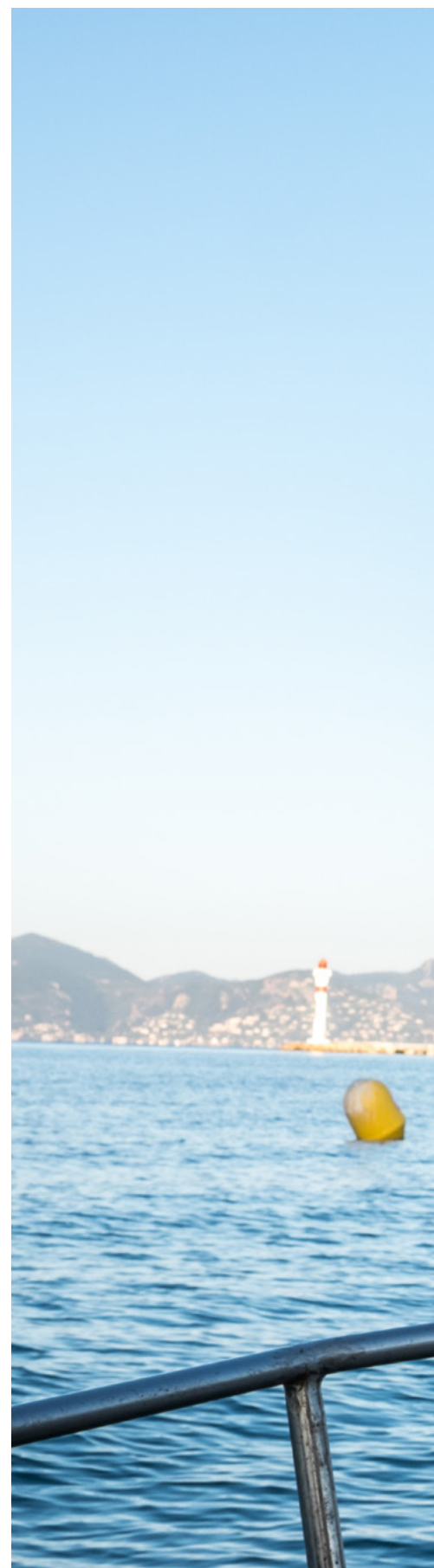
It is strongly recommended that the proposed management tools are not selected and applied blindly, without involving the local stakeholders that may be affected by the identified measures. The process to identify both the issues and the potential tools should be done in a participatory way. This could be through pre-existing committees/working groups or through the creation of a dedicated “Local Governance Cluster” (LGC, see below), including the MPA managing body and representatives of various stakeholder groups, to identify areas in need of strengthening and potential tools to improve SSF management.

The new “FishMPABlue2 SSF Governance toolkit” starts off in Chapter 1 with a description of how it was developed, implemented and tested; then a broad overview of why it is so essential that we take stock of the principles that lead to more effective MPA management

is described in Chapter 2. Chapter 3 provides a detailed account of the tools tested in 5 main areas:

- a INVOLVEMENT IN DECISION MAKING;**
- b ENFORCEMENT STRENGTHENING;**
- c KNOWLEDGE AND OWNERSHIP;**
- d IMPROVE SSF ENVIRONMENTAL SUSTAINABILITY;**
- e IMPROVEMENT OF SSF PROFITABILITY.**

Each subsection of Chapter 3 describes the problem that has been addressed by the selected tools; this is followed by a description of how the various tools were implemented with some results, and details of lessons learnt; case studies provide more details of the application of specific tools that were either challenging or very successful. Tips or recommendations are provided to guide the implementation of the different measures. Chapter 4 provides a basic assessment of the feasibility of each measure, based on the results of the testing and the feedback received from the Local Governance Clusters and other relevant actors in each of the 11 pilot MPAs. The final section (Chapter 5) provides key conclusions, which highlight the added value of the process of testing theoretical solutions in the field and the results achieved, taking into account the “representativeness” of the sample (11 pilot MPAs from 6 different countries) in the western-central Mediterranean region (northern shore).







Catch carried out by a fisherman close to the border of Fisheries Reserve of Cap Roux, France. © Cristina Mastrandrea / WWF Mediterranean / FishMPABlue



# How this toolkit was developed

## FishMPABlue 1 – IDENTIFYING THE CHALLENGES

The FishMPABlue1 project (2015-2016, see <http://www.medmaritimeprojects.eu/section/fishmpablue>) provided the foundations of this document. An analysis of existing SSF within and around 31 MPAs from 5 Mediterranean countries was conducted, focusing on the “professional” SSF sector, also usually called “artisanal fishers” in Mediterranean countries. The objective

was to propose strategies that would strengthen and enhance MPA capacities in SSF management that could be achieved through concrete interventions (gathered in a governance toolkit, proposing several measures for each identified area of concern). The original toolkit identified the following enabling conditions for a successful SSF management:

1. Fishers representation in MPA decision-making bodies
2. “Enforcement”, i.e. fostering MPA capacities in surveillance and patrolling
3. Fishers’ engagement in MPA activities (e.g. decision making, monitoring, patrolling)
4. Support to sustainable fishery-related products/services (e.g. short production and distribution chain, pescatourism, quality labels)
5. Management plans for SSF within MPAs, agreed with fishers

A list of measures and interventions potentially (and positively) contributing to improved MPA management effectiveness was prepared as a final output of FishMPABlue1 (see Table 1).

Marine National Park of Zakynthos, Greece. © Claudia Amico / WWF Mediterranean / FishMPABlue





THEME	IMPROVE MPA MANAGEMENT	HOW THEY IMPROVE MPA GOVERNANCE
Participative	Institutionalise a stable relationship with stakeholders, particularly SSF fishers, aiming to a transparent exchange of information and cooperation	Partnership programmes/agreements between fisheries and MPA management body
	Identify actual fields where the participation of different stakeholders groups, in particular professional fishers, in the decision making process is feasible	Adopt legal frameworks to involve fishers in decision making procedure
	Strengthen organisations representing local fishers	
Enforcement	Set limits and quota for fishing licenses (all types) to reduce fishing effort inside the MPA	Clarify the governance structures, i.e. roles and responsibilities of different authorities and organisations
	Establish territorial rights to safeguard the fishing efforts of local fishers and limit the entrance of new fishers	Better coordination between central and regional government systems
	Involve local fishers in surveillance activities	Increase the time units and surface of MPA surface controlled
	Involve local fishers in monitoring activities	Increase the number of monitoring campaigns and species monitored
	Develop specific regulations to promote other inter-sectorial income-generating activities (e.g. pescatourism)	Coordinate national and regional legislation on conservation, fishery and tourism
	Strictly enforce the management plan (technical measures, market traceability, etc.)	Design a management plan on SSF with the involvement of local fishers
	Promote the recognition of the actual benefits of MPAs for fisheries (i.e. spill-over effects, exchange of fishers experience) to build community support	Increase the monitoring of actual positive effects of SSF management within own MPA
	Promote the recognition of the benefits of fisheries reserves to biodiversity conservation	Develop a methodology to design management plan with this dual objectives (IUCN Category VI of MPA)
	Promote the integration of scientific knowledge with traditional knowledge and disseminate both	
	Promote the awareness of MPA zoning, objectives, and regulations e.g. use of GIS location devices)	
Economic	Allocate or re-enforce fisheries rights to local fishers	Specific fund-raising for joint activities involving MPA managing body and local artisanal fishers
	Give support to local fishers for the development of a "short supply chain" for the fish sector	Increase MPA fish-related promotion skills and actions
	Certification or labelisation of fisheries products	Increase MPA fish-related marketing skills and actions
	Promote cooperation among local fishers	Support the establishment of fishers cooperatives
Interpretative	Promote public communication, education and awareness raising	Increase the understanding of policy makers on SSF and their issues

Table 1

The FishMPABlue2 project (2017-2019, <https://fishmpablue-2.interreg-med.eu/>) was setup to test these management measures in 11 pilot MPAs. The objective was to assess and quantify the effectiveness of the measures in achieving expected results in terms of MPA ecological results, benefits delivered to SSF and social acceptance by stakeholders.

Each pilot MPA received modest financial support from the Project to establish a "Local Governance Group" (LGC), that aimed to be a stable cooperation platform including MPA management body representatives and local professional fishers (or their representative associations/cooperatives). The first decision of each LGC was to select which measures of the FishMPABlue1 toolkit (see Tables 1 & 2) to implement and test in their MPA. The LGCs were then responsible for managing the implementation of the selected tools.

The FishMPABlue2 SSF Governance Toolkit presented here refers to the measures that were selected and implemented in the pilot MPAs. The Toolkit makes a real contribution to our understanding of how we can take concrete actions, and what results can be expected for MPAs and the actors involved. A key contribution of the FishMPABlue project is that real lessons have been learned through the testing of different tools that can be useful for MPA practitioners. For example, while a particular governance measure may appear to be straightforward, and can expect to create a win-win scenario, there

are often unforeseen circumstances which can make the measure challenging. In other cases, simply listening to stakeholders and taking their needs, concerns and ideas into greater consideration can help generate a huge amount of support for the MPA and for marine conservation. Again, measures that may seem very time and resource consuming can be worth the extra effort as the outcomes (both from an ecological and social point of view) might end up significantly outweighing the investments.

The measures and tools tested are described in detail in Chapter 3.

## ACTIVITIES SELECTED BY THEME BY THE 11 LOCAL GOVERNANCE CLUSTER IN THE FRAMEWORK OF THE FISHMPABLUE2 PROJECT

MPA	a INVOLVE- MENT IN DECISION MAKING	b ENFORCE- MENT STRE- NGTHENING	c KNOWLEDGE & OWNERSHIP	d IMPROVE SSF ENVIRONMEN- TAL SUSTAI- NABILITY	e IMPROVEMENT OF SSF PROFI- TABILITY
EGADI ISLANDS MPA					
TORRE GUACETO MPA					
PORTOFINO MPA					
ZAKYNTHOS NATIONAL MARINE PARK					
ES FREUS MARINE RESERVE					
CABO DE PALOS MARINE RESERVE					
CAP ROUX FISHERIES RESERVE					
CÔTE BLEUE MARINE PARK					
BONIFACIO STRAIT NATURAL RESERVE					
STRUNJAN LANDSCAPE PARK					
TELAŠĆICA NATURAL PARK					

Table 2.

# Towards effective small-scale fisheries governance and co-management



Fishers and MPA agents work together in Scandola Nature reserve, France. © M. Mabari / MedPAN

Faced with increasing threats and limited resources, MPA managers are confronted with difficult decisions and there is increasing pressure to prioritise how and where to use time, money and other resources. Many MPAs worldwide are failing to meet thresholds for effective and equitable SSF management processes, with widespread shortfalls in staff and financial resources. We know that staff and budget capacities are among the strongest predictors of conservation impact, and in general it is agreed that top-down and centralised planning combined with failure to incorporate different actors and local communities into decision-making processes and management are major challenges for natural resource management. Public participation is recognised as a key ingredient of good governance: it is widely agreed that MPAs that are effectively regulated and actively managed through equitable and inclusive decision-making processes are more likely to meet ecological and social goals,

than those that are ruled from the top-down with exclusionary decision-making procedures and a consequent “command-and-control” operational approach.

Of course there are basic factors that help ensure sound MPA management:

- ▶ **the MPA needs to be legally gazetted;**
- ▶ **there are appropriate and operational regulations in place;**
- ▶ **the MPA has a clearly defined management plan that is being implemented with operational goals and objectives;**
- ▶ **there is acceptable enforcement capacity;**
- ▶ **there is acceptable budget capacity with plans for long-term financial stability;**
- ▶ **monitoring systems are in place that inform management activities allowing for adaptive management;**
- ▶ **the MPA has adequate staff capacity and staff presence;**
- ▶ **the governance system consists of inclusive decision-making processes;**
- ▶ **management is shared or at least not completely state managed.**

To reiterate and to emphasise the importance of this, a management plan is not just the MPA zoning plus the fishery-related part of MPA regulation on human activities; it is a document that must include short- and long-term goals, an overall strategy to fulfil them and an action plan (with indications on “who-does-what-and-when”) detailing the activities to be developed to achieve the set goals, with an ongoing monitoring system established to assess whether the implementation of such activities is consistent or needs to be re-evaluated. The ideal situation is that this plan is created in collaboration with all stakeholders to generate a shared vision for the SSF management plan. Through the FishMPABlue2 project, Telašćica Nature Park for instance took on the challenge to work together with local small-scale fishers and other relevant actors to develop an improved strategy and a detailed SSF management plan.

The scale of stakeholder engagement in decision-making processes can vary widely, and actually can be seen as a continuum from full top-down approaches, with no stakeholder participation, to genuine co-management where fishers and other actors are empowered to share decision-making power (see Figure 1). In all the pilot MPAs, engagement with stakeholders was already taking place. The aim of FishMPABlue 1 & 2 projects was to help MPAs identify and implement interventions that would make the best use of the resources available for a more successful management of SSF, and to search beyond the business-as-usual response to budget and staff shortfalls. Through the FishMPABlue2 project, MPAs were committed to creating a formalised LGC improving the level of engagement with fishers and helping to strengthen SSF co-management.



## DEGREE OF STAKEHOLDER PARTICIPATION

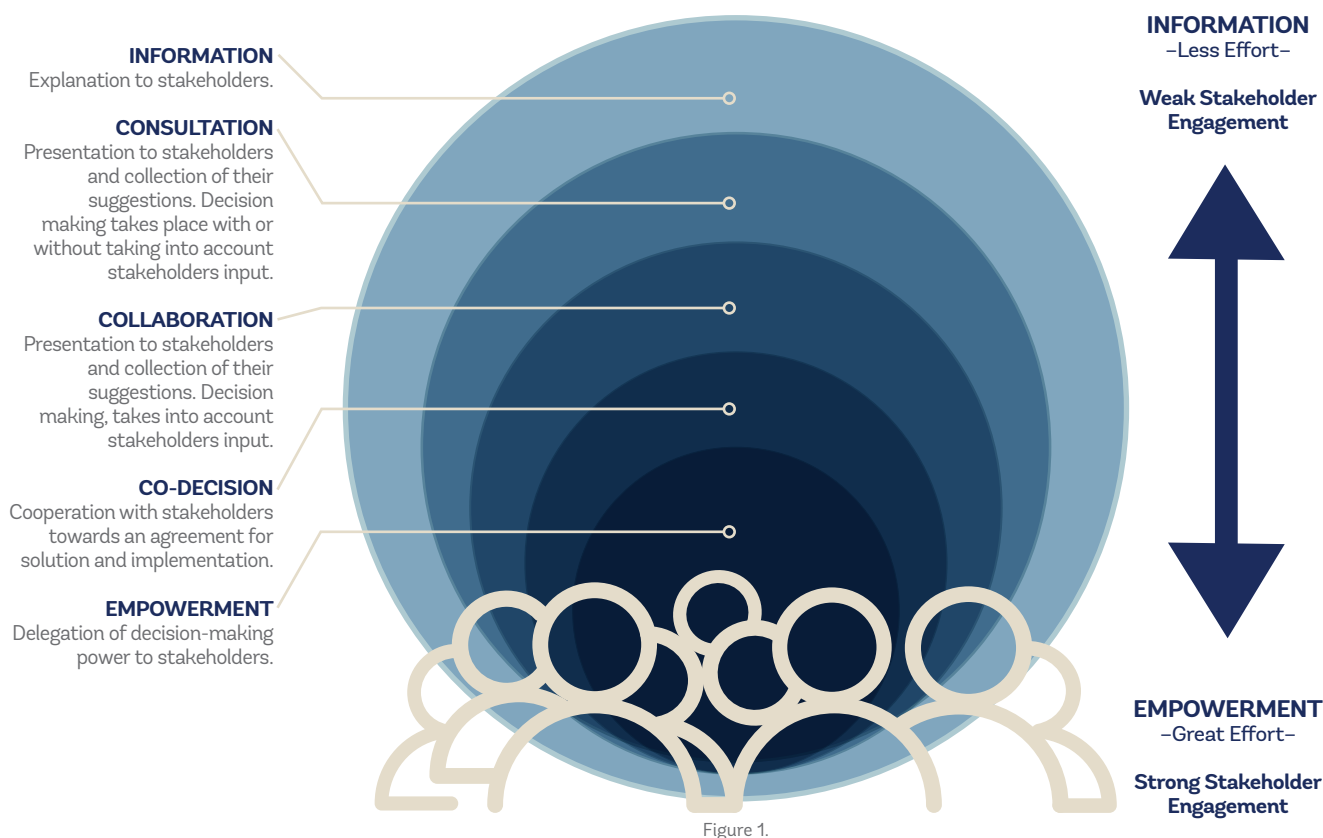


Figure 1.

## WHAT IS THE DIFFERENCE BETWEEN MANAGEMENT AND GOVERNANCE OF PROTECTED AREAS?

- **Management ...is about... what is done in pursuit of conservation objectives, the means and actions to achieve such objectives.**
- **Governance ...is about... who decides what to do, how those decisions are taken, who holds power, authority and responsibility, who is (or should be) held accountable.**

In this sense some examples can be: to search for ways to incorporate relevant actors into management processes; to support staffing tasks and increase the knowledge base and overall support for the MPA; to develop cost efficient technological solutions; to make up for both staff and financial gaps; to explore potential incentives to improve the sustainability of the small-scale fishers sector to help generate and maintain MPA support; and ultimately to stimulate the much needed shift towards shared and equitable decision-making processes, i.e. “co-management”.

This chapter helps set the scene for the following management tools. In this toolkit, we provide interventions that act at the management and governance level where participation of relevant stakeholders is always promoted as a crucial way to improve MPA success: one section in particular discusses the participation of stakeholders in shared decision making, taking engagement to the next level and addresses how SSF can be governed more effectively.

## CO-MANAGEMENT IN A NUTSHELL

### What do we mean by co-management?

Co-management practices applied to natural resources have existed for centuries, yet it is only in the last decade that it is gaining recognition as a much needed governance strategy to address the failings of top-down centralised management.

In essence when we talk about co-management, we are referring to a **collaborative and participatory process of regulatory decision making** between relevant representatives of user-groups, government agencies, research institutions, NGOs and others.

### What is confusing about co-management?

In reality there is no blueprint for co-management. The degree of responsibility and consequent balance of power between the top (government) and bottom (users) can vary substantially. However, it is commonly agreed that for co-management to be real, **power sharing is essential**.

### Why is everyone talking about co-management?

The reasons that co-management is taking centre stage are both ethical and practical. From an ethical point of view, it is considered just to give people a right to a say in decisions that ultimately affect their lives and livelihood. It also offers a tool for empowerment and a way to reinforce self-esteem. This is of particular importance when we consider Small-Scale Fishers who are ordinarily marginalised (especially fisher women). From a practical point of view, participating in decision making strengthens resource users' commitments to outcomes; enhances the legitimacy of management; promotes transparency and accountability; encourages greater levels of compliance and stewardship; elicits a more extensive knowledge base for decisions; and fosters a greater awareness of sustainability issues and ownership of marine environment resilience and good status.

### How can we foster co-management?

There is no quick fix for co-management, yet several factors can help make the shift: a resource crisis often stimulates local communities to engage; an external agent such as an NGO can help facilitate the process; local leaders can help set an example and provide energy and motivation; a willingness from all involved to try new approaches is essential, this much needed mind-shift can be the biggest hurdle; having the government at the table and having a legislative basis for co-management can be extremely helpful to ensure the process can withstand any unplanned external disturbances; finally having sufficient long-term financial resources to support the planning, implementation, coordination and monitoring of the co-management is a necessity.

Don't be put off. Achieving good SSF co-management can take years, and may not be suitable in all settings. However, co-management is being increasingly recognised within international policies and recommendations which highlight that we are shifting in the right direction and it is strongly believed that it offers the best way forward for more effective natural resource management in the Mediterranean.

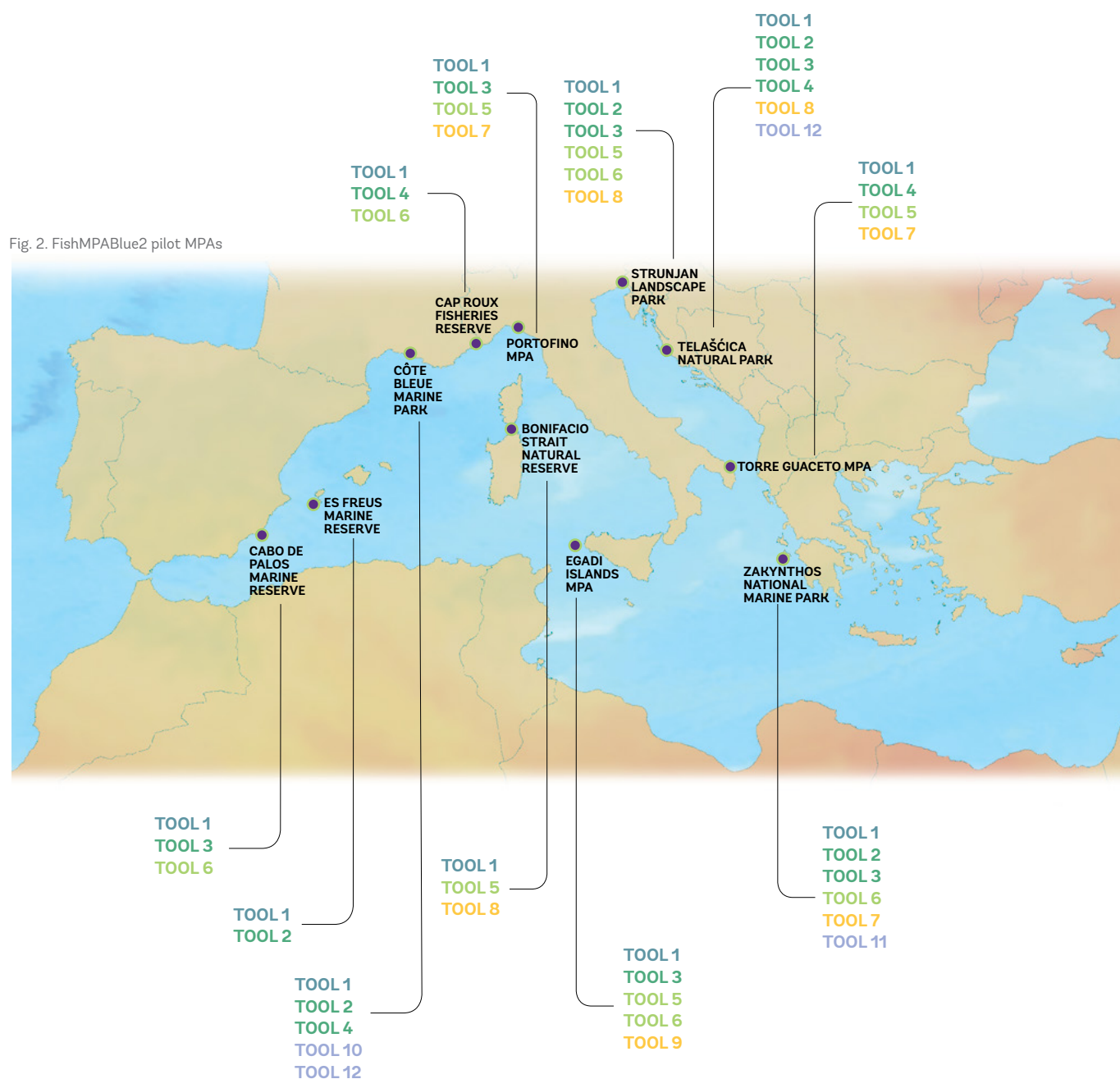
# The Management Tools

## OVERVIEW OF TOOLKIT TESTED TOOLS

FishMPABlue2 governance toolkit for managing SSF in Mediterranean MPAs

THEME	TOOL	MPAs THAT IMPLEMENTED THE TOOL
<b>a</b> <b>INVOLVEMENT IN DECISION MAKING</b>	<b>TOOL 1:</b> Create collaborative platforms to engage fishers in decision making	<b>11</b> Bonifacio Strait Natural Reserve, Cabo de Palos Marine Reserve, Cap Roux Fisheries Reserve, Côte Bleue Marine Park, Egadi Islands MPA, Portofino MPA, Es Freus Marine Reserve, Strunjan Landscape Park, Telašćica Nature Reserve, Torre Guaceto MPA and Zakynthos National Marine Park
<b>b</b> <b>ENFORCEMENT STRENGTHENING</b>	<b>TOOL 2:</b> Increase surveillance by MPA staff and improved infrastructure  <b>TOOL 3:</b> Increase surveillance through fishers' direct involvement  <b>TOOL 4:</b> Increase surveillance through the cooperation with relevant authorities	<b>5</b> Côte Bleue Marine Park, Es Freus Marine Reserve, Strunjan Landscape Park, Telašćica Nature Reserve, Zakynthos National Marine Park  <b>6</b> Cabo de Palos Marine Reserve, Egadi Islands MPA, Portofino MPA, Strunjan Landscape Park, Telašćica Nature Reserve, Zakynthos National Marine Park  <b>4</b> Cap Roux Fisheries Reserve, Côte Bleue Marine Park, Telašćica Nature Reserve, Torre Guaceto MPA
<b>c</b> <b>KNOWLEDGE &amp; OWNERSHIP</b>	<b>TOOL 5:</b> Engage fishers in monitoring activities  <b>TOOL 6:</b> Raise the awareness of fishers, MPA managers and the local community	<b>5</b> Bonifacio Strait Natural Reserve, Egadi Islands MPA, Portofino MPA, Strunjan Landscape Park, Torre Guaceto MPA  <b>5</b> Egadi Islands MPA, Zakynthos National Marine Park, Cabo de Palos Marine Reserve, Strunjan Landscape Park, Cap Roux Fisheries Reserve
<b>d</b> <b>IMPROVE SSF ENVIRONMENTAL SUSTAINABILITY</b>	<b>TOOL 7:</b> Reduce fishing effort  <b>TOOL 8:</b> Modify/substitute fishing gear  <b>TOOL 9:</b> Set-up SSF Code of conduct	<b>3</b> Portofino MPA, Torre Guaceto MPA, Zakynthos National Marine Park  <b>3</b> Bonifacio Strait Natural Reserve, Strunjan Landscape Park, Telašćica Nature Reserve  <b>1</b> Egadi Islands MPA
<b>e</b> <b>IMPROVEMENT OF SSF PROFITABILITY</b>	<b>TOOL 10:</b> Add value to local fisheries products  <b>TOOL 11:</b> Promote new commercial species  <b>TOOL 12:</b> Support Pescatourism	<b>1</b> Côte Bleue Marine Park  <b>1</b> Zakynthos National Marine Park  <b>1</b> Telašćica Nature Reserve





# Involvement in decision making

The level of uncertainty in managing natural resources is a real and permanent issue that all MPA managers face.

It is necessary to examine conservation problems hand-in-hand with the societal contexts in which they are found.

To do this successfully requires giving consideration to the local interests of resource users and wider community and also their perceptions and knowledge of natural resources and how they should be managed. Engaging stakeholders, primarily fishers, in the management of marine resources and MPAs is extremely beneficial as it facilitates representation of diverse views and values; provides local knowledge and solutions tailored to specific contexts; prepares the ground for more effective implementation of policies for long-term management; and helps legitimise MPA governance in the eyes of all involved.

**Participative processes: provide different stakeholders and interest groups the opportunity to participate in and influence decision making; encourage ownership of the MPA; and assure cooperation in the implementation of decisions and management.**

Good communication channels and open on-going dialogue are necessary to overcome distrust between stakeholders.

Creating platforms and channels for communication offers an opportunity for a much needed two-way dialogue: helping fishers feed their experiential knowledge into management decision making; and allowing managers to explain decisions taken and how fishers' information has been used to make the decisions.

In addition these stable platforms can be taken one step further and developed into formalised co-management committees where fishers can be empowered and along with other actors share decision-making power.

Exchange visit is to allow MPA managers and other stakeholders to benefit from lessons learnt from successful experiences at the Telašćica Nature Park, Croatia. © M. Mabari / MedPAN





## CREATE A PERMANENT AND FORMAL COOPERATION PLATFORM TO ENGAGE FISHERS IN DECISION MAKING

### TESTED IN:

Bonifacio Strait Natural Reserve, Cabo de Palos Marine Reserve, Cap Roux Fisheries Reserve, Côte Bleue Marine Park, Egadi Islands MPA, Es Freus Marine Reserve, Strunjan Landscape Park, Telašćica Nature Park, Torre Guaceto MPA and Zakynthos National Marine Park

### COST:

Low

### TIME NEEDED:

Medium

### STAKEHOLDER INVOLVEMENT:

Medium

### PERCEIVED EFFECTIVENESS:

High impact

### TEST AND OUTCOMES:

There are several ways to set up a collaborative platform depending on the overall objective, with varying levels of participation and legitimacy. For example: working groups that unite to discuss specific needs of an MPA, or legally recognised co-management bodies where all participants play an equal role in the decision-making process.

The demand and desire for increased involvement in decision making processes is evident as all 11 pilot sites within the FishMPABlue2 project selected to implement governance tools and measures within the "Increase fishers' engagement" theme. This theme included tools/measures discussed in other sections of this report, such as fishers engaged in surveillance and in monitoring activities. The main method chosen to increase the involvement of fishers in the decision-making process was the creation of collaborative platforms.

In the FishMPABlue2 project, all MPAs were already engaging fishers to some degree, yet through the initiative they took an additional step to better engage fishers in decision making through the formal establishment of a LGC. The LGC was a formalised joint committee composed mainly of MPA managing bodies and local fishers' representatives who were responsible for the main decisions concerning the implementation of the FishMPABlue2 project pilot action. In some cases, this was the first time fishers had been involved beyond just being informed while attending meetings and were actively engaged in decision making.

Eight of the 11 MPAs opted to take the LGC a step further and implement governance tools focused on increasing fishers' engagement through the strengthening of existing and development of new cooperation platforms that would permit improved two-way dialogue, following different strategies:

**Regular meetings:** in 7 MPAs<sup>1</sup>, these platforms were used to ensure regular meetings with all relevant stakeholders, allowing fishers to have greater involvement in the management of the MPAs and to discuss and decide upon several new strategies to improve governance, including territorial rights, and introduction of an agreed upon and formalised SSF "Code of conduct". In some of the cases where committees existed but were no longer meeting or only infrequently, specific support was offered to strengthen their role through the organisation of more regular meetings with clearly defined objectives.

### Strengthening fishers' organisations:

in Telašćica Natural Park, efforts were made to strengthen an existing fisheries organisation (a Fisheries Local Action Group - FLAG) through actions that increased the capacity of fishers and representatives, supporting these organisations in the application for relevant funds (e.g. European Maritime and Fisheries Fund - EMFF), and offering support to fishers to participate in or contribute to other SSF-related organisations such as the Low Impact Fishers of Europe - LIFE network.

These regular meetings have helped build relationships and trust and also developed a shared vision for the MPAs in question, and the fishers reported that they perceived a much better relationship with the management bodies and the decision taken.

<sup>1</sup> Es Freus Marine Reserve, Cabo de Palos Marine Reserve, Côte Bleue Marine Park, Bonifacio Strait Natural Reserve, Torre Guaceto MPA, Egadi islands MPA, Zakynthos National Marine Park



## CASE STUDY

### CREATING FORMALISED LOCAL GOVERNANCE CLUSTERS

The analysis of the specific interests and needs of each stakeholder group allowed managers to plan strategies that can be adopted to work with stakeholders in other MPAs throughout the Mediterranean. The MPA managers were advised to take some time analysing the stakeholders to ensure that those people invited to participate really were the most appropriate representatives possible, and that these people were willing and committed to acting as a communication channel between their sector and the committee. Each MPA created a committee that included representatives from the MPA management bodies and local fisheries sector. In some cases, where appropriate, other actors were incorporated in the committee, including researchers, local NGOs, and representatives of other business sectors such as scuba diving or tourism. Once all the actors were identified, they agreed to sign a formal commitment to say that

they agreed to participate in and to meet the expectations of the committee. The next step after signing the formal commitment was for the Local Governance Cluster (LGC) to meet regularly and begin a participatory process to assess the needs of the MPA and the local community. By involving all the actors it was assured that the actual needs of the community were well understood. The LGC then followed a process to assess which of the tools in the governance toolkit would best help address the issues identified and meet the interests and needs of the local community. Once identified, the LGC committed to finding

suitable ways to implement and test the tools. The analysis of the specific interests and needs of each stakeholder group allowed the MPA to plan better strategies that could improve the effectiveness of the MPA whilst at the same time ensuring greater support for the MPA and compliance with the newly agreed upon initiatives.



The Local Governance Cluster created in Telascica Nature Park, Croatia. © J. Grbin



Fisher in Torre Guaceto Marine Protected Area, Italy. © M. Mabari / MedPAN



## TIPS FOR ENGAGING FISHERS IN DECISION MAKING

equitable participation and empowerment of the different stakeholders.

**Invest time to identify & characterise stakeholders and ensure they are good representatives.** Attention must be given to the selection of representatives from all sectors, to ensure that they are representative of the whole sector, that they understand the responsibility of representing the views of the whole sector (not just their own interests), and that they report back any key messages, decisions and information to those they are representing.

**Capacity building.** Each stakeholder group involved must be provided with some capacity building to increase their training and experience with participatory processes that will ensure more

**Build a foundation.** A foundation built from transparent and accountable trustful relationships can create an excellent starting point for a long term working relationship between MPA management bodies and stakeholders.

**Be reliable, consistent and neutral.** Neutral facilitators should be used; if the MPA facilitates meetings they need to receive some facilitation training.

**Encourage equal participation.** Ensure that both men and women (who fish &/or are involved in satellite activities of the sector/functioning of the family fishing business) are represented and that groups that are often marginalised are given equal opportunities to participate.

**Identify a common ground.** Develop with the stakeholders a common and shared vision for the ideal state of the MPA, which manages stakeholders' expectations for what can realistically be achieved, but sets contextually suitable goals.

# Enforcement strengthening

Users' support and consequent compliance with the rules and regulations of the MPA has a strong influence on the overall effectiveness of an MPA in achieving its goals and objectives. Non-compliance can take many forms and essentially refers to any breaching of MPA regulations, for example: illegal fishing (by both professional and recreational fishers), entering no-go-areas, exceeding dive quotas, anchoring in restricted areas, or breaking navigation speed restrictions. It is well known, however, that illegal fishing operations (also known as poaching) are of greatest concern and are very common within MPAs. The motives for non-compliance can be numerous and complex; results from FishMPABlue1 indicated that non-compliance is closely linked to major limitations in MPA enforcement capacity, related to scarcity/lack of resources. This can generate a perception that there is a low probability of detection, which when associated with the perception of higher catches in MPAs, can potentially result in a widespread non-compliant behaviour.

**Enforcement can improve users' compliance with MPA regulations, with this being the primary requirement for MPAs to be able to deliver ecological and therefore socio-economic benefits. Effective enforcement of MPA regulations through surveillance and patrolling is key in order to legitimise the management process in the eyes of rule-abiding users.**

In order to combat illegal fishing and increase compliance, MPA managers can pursue 2 (not mutually exclusive) approaches:

1- increase enforcement (through surveillance and patrolling) thus implying a probability of detecting illegal activities.

2- engage stakeholders to foster stewardship and norms of personal responsibility, illustrating first-hand the negative impacts of illegal activities for rule-abiding users (with this point being especially relevant in the case of MPA users making income from their activities e.g. Small Scale Fishers).

A number of different strategies can be adopted to increase enforcement and enhance users' compliance with regulations. The most appropriate strategy for each MPA can depend on its features (e.g. size, remoteness, usage pressure etc.) and the social context of the area. However, regardless of the specificity of each MPA, the need to increase enforcement was evident in most of the pilot MPAs engaged in FishMPABlue2. In fact 10 out of 11 identified a gap in enforcement as a major issue for the MPA. The measures tested by FishMPABlue2 pilot MPAs are ascribable to 3 tools detailed below.





## INCREASE SURVEILLANCE BY MPA STAFF AND IMPROVED INFRASTRUCTURE

### TESTED IN:

Côte Bleue Marine Park, Es Freus Marine Reserve, Strunjan Landscape Park, Telašćica Nature Park and Zakynthos National Marine Park

### COST:

Medium

### TIME NEEDED:

High

### STAKEHOLDER INVOLVEMENT:

High

### PERCEIVED EFFECTIVENESS:

High impact

### TEST AND OUTCOMES:

MPA management bodies are responsible for ensuring enforcement and compliance with regulations. This can be done by patrolling the MPA area (e.g. using boats or surveillance from the coast) and/or by installing infrastructure (e.g. remote surveillance systems) aimed at monitoring users' compliance with specific MPA regulations.

In FishMPABlue2, 5 LGCs decided to reform enforcement, increasing surveillance and patrolling operations by MPA personnel (i.e. rangers and/or managers) and enhancing MPA surveillance infrastructure. The strategies adopted varied yet the overall

objective was to make up for shortfalls and increase the time and effort made for surveillance:

**Time spent for surveillance:** 2 MPAs (Zakynthos National Marine Park & Côte Bleue Marine Park) increased the number of hours spent at sea by MPA rangers and enhanced patrolling at night, as this is the time that managers and Small-Scale Fishers perceived higher levels of illegal fishing, especially related to poaching in no-take zones.

**Capacity Building:** a training programme for rangers was developed and trialled in Telašćica Natural Park, operated by national fisheries inspectors to enhance the rangers capacity to enforce fisheries regulations within MPA boundaries. Before the training, rangers only had the authority to issue warnings to transgressors and ask them to leave the territory or to call fisheries inspectors or the marine police to report illegal activities. Following the training MPA rangers were more aware of the laws and regulations and were granted the authority to issue sanctions.

**Infrastructure:** steps were taken to improve the surveillance infrastructure in 2 MPAs (Es Freus Marine Reserve & Strunjan Landscape Park) through surveillance camera systems. When developing the infrastructure, it became evident that the individual characteristics of each place allow for different levels of coverage, for example one system will cover the entire MPA, even at night, while in the other, it will just cover the no-take zone. Of importance to note with this tool was the strong level of support for its development, both within the fishing community and at administrative level.

**Monitoring of infractions:** a database to monitor and record illegal activities was set up and tested (Telašćica Natural Park & Strunjan Landscape Park). This can allow MPAs to systematically keep track of non-compliant behaviours, note periods of peak illegal activities and adopt surveillance strategies accordingly, providing a valuable tool to guide future enforcement strategies and ensure compliance with regulations.



Underwater visual census by a researcher of the FishMPABlue 2 team

## CASE STUDY

### A VIDEO SURVEILLANCE SYSTEM, ES FREUS, MARINE RESERVE, SPAIN

Es Freus Marine Reserve located in the Balearic Islands, Spain was created in 1999. The MPA is located between the islands of Formentera and Ibiza and is under the management of the Regional Balearic government. The LGC opted to install a surveillance camera system that would provide real-time 24-hour surveillance. The fishers were particularly supportive of the initiative as they increasingly suffer from the unfair competition associated with illegal fishing. Thanks to the extremely high level of interest shown by the local fishers and the regional administration, there was a strong drive to find a feasible solution that would ensure

that the cameras could identify potential poaching activities in the reserve, especially during the night and summer (the months of greatest tourist pressure). The first step was to contract a company familiar with these technologies, and how they should be installed to avoid potential vandalism. The no-take zone of the MPA is located on a small uninhabited island (S'Espardell) and is not supplied by any electric power. In order to support the system a self-sustaining system (including solar panels) was required. This system demanded higher equipment and installation costs than available. Alternative solutions were explored, including locating

the camera on the main islands. As this would result in limited coverage and therefore defeat the purpose of the cameras, a decision was taken to search for a strategy to continue the installation as planned. Thanks to the participatory process set up by the project, the regional administration agreed to cover half the costs of the equipment necessary for the infrastructure on the island of S'Espardell. They have also expressed an interest in installing similar camera systems in other MPAs in the Balearic region. In parallel, the steps to obtain the legal authorisation to install such devices are in progress.

The director of Bonifacio Strait Natural Reserve in a exchange visit in order to know more about the surveillance system installed in Es Freus Marine Reserve, Balearic Islands, Spain.  
© M. Mabari / MedPAN





## INCREASE SURVEILLANCE THROUGH COOPERATION WITH RELEVANT AUTHORITIES

### TESTED IN:

Cap Roux Fisheries Reserve, Côte Bleue Marine Park, Telašćica Nature Park and Torre Guaceto MPA

### COST:

Medium

### TIME NEEDED:

High

### STAKEHOLDER INVOLVEMENT:

Medium

### PERCEIVED EFFECTIVENESS:

High impact

### TEST AND OUTCOMES:

Having no legal authority to issue sanctions is a limitation of most MPA managers and rangers. MPAs rely on the competent authorities that do have the legal power to raise sanctions (e.g. coast guards, maritime police, etc.). In many cases these enforcement bodies are limited by financial and

capacity shortfalls, with other issues such as immigration, drug trafficking, maritime traffic taking precedence over ensuring compliance in MPAs. It is essential that MPAs work to improve the communication and cooperation between the MPA management and the competent authorities to enhance surveillance within the MPA borders. In FishMPABlue2, MPAs adopted the following strategies:

**Reinforce cooperation:** several LGCs (Torre Guaceto MPA, Telašćica Nature Park & Côte Bleue Marine Park) committed to reinforcing the level of communication and cooperation with local authorities and police to increase surveillance in their MPAs. In one case, the MPA stipulated an agreement with the police to provide additional funds to these authorities to cover the costs of increased hours of surveillance within the MPA territory. In other cases, LGCs promoted collaboration with national fisheries inspectors to increase surveillance in the MPA, improve synergies of intervention with the State surveillance services and more efficiently detect professional, non-professional and leisure activities that break MPA rules.

### Grant authoritative powers:

an interesting case in one MPA (Cap Roux Fisheries Reserve) was the proposal by the MPA managing body to hire a dedicated patrolling officer as a “sworn guard” (garde juré in French) to patrol the MPA and enforce its regulation. The measure couldn’t be put in place because the MPA managing body (the “Prud’homie”) is not allowed by the law to hire a police-like worker.

The actions implemented in the pilot MPAs have increased the attention of the police regarding the relevance of enforcing MPAs and more practically have increased the hours of surveillance. In one case (Cap Roux Fisheries Reserve, France) it was extremely useful to highlight a loophole in the national legislation.





## INCREASE SURVEILLANCE THROUGH FISHERS' DIRECT INVOLVEMENT

### TESTED IN:

Cabo de Palos Marine Reserve, Egadi Islands MPA, Portofino MPA, Strunjan Landscape Park, Telašćica Nature Park and Zakynthos National Marine Park

### COST:

Medium

### TIME NEEDED:

High

### STAKEHOLDER INVOLVEMENT:

High

### PERCEIVED EFFECTIVENESS:

High impact

### TEST AND OUTCOMES:

The immediate results of involving fishers in patrolling include an increase in the overall surveillance of MPAs and the probability of detecting more illegal activities than in the past. However directly involving fishers in surveillance activities as stewards has another advantage as it can generate an increased sense of ownership and awareness of the MPA. It can offer an alternative perspective reinforcing the importance of the rules and regulations that guarantee protection of the MPA and its natural resources. By becoming stewards fishers' commitment to an MPA can be increased and compliance with rules and regulations can be improved. In some cases this newfound sense of stewardship can have the most marked results when the fishers who are most resistant to the MPA are engaged in this capacity.

Although there can be some social difficulties associated with peer-to-peer enforcement, it can have very positive results if well prepared and relayed to other stakeholders and the wider community. Six of the 11 LGCs opted to implement strategies to engage fishers in surveillance activities. The details and contexts of each tool varied case by case, however some overall strategies were shared:

**Training:** specific training courses were designed and implemented for interested fishers to build their capacity in surveillance activities, ensuring fishers understood well the MPA regulations, the importance of compliance and how to report any illegal activities witnessed.

**Steward system:** one MPA (Cabo de Palos Marine Reserve, Spain) signed a contract between the fishers' representative body (in this case the Cofradía associated with the reserve) and the MPA administrators to train and hire a fisher to perform surveillance activities within the MPA. The fisher added an additional 8 hours per day during peak periods to the surveillance conducted by the MPA and coastguards. The agreement stipulated that while the fisher is engaged in surveillance, they must not partake in fishing activities, providing an additional benefit of reducing the fishing pressure on the reserve. The fisher reported transgressions to the enforcement bodies with sanctioning capacity, and took images and/or footage of the offending activity/vessel, that they sent to the public body responsible and the administration to be used as evidence. Fishers reported a greater sense of empowerment when employed in this capacity.

**Support systems:** in 2 cases (Portofino MPA and Zakynthos National Marine Park) a system was put in place in which any appointed fisher could report potential irregularities during their fishing trips to the MPA staff, supported with photos recorded in real time (illegal fishing, anchoring/transiting in forbidden areas, etc.). The MPA staff would then transfer the information to the competent authority (the Coast Guard). These systems were put in place in a way to ensure fisher's anonymity. In Portofino MPA this activity was hampered by the lack of phone signal coverage in some parts of the MPA, and delayed the intervention of the competent authorities.

Engaging fishers in surveillance most likely increased their empowerment and sense of belonging to the MPAs. MPA managers also perceived that engaging fishers in surveillance was a deterrent to infringements. Fishers were remunerated for surveillance activities, which provided them with enough money to cover fuel costs and potential lack of earnings. The need for reimbursement will depend on the surveillance strategy adopted.



Ioanna Austoustinouaka Vana with her husband, both work together as small scale fishers at Zakynthos Marine National Park, Greece. © Claudia Amico / WWF Mediterranean / FishMPABlue



## TIPS FOR STRENGTHENING ENFORCEMENT

surveillance and increase MPA enforcement.

**Ensure sanctioning capacity.** MPAs should pursue all the legal means to provide MPA rangers with legal powers to enforce regulations.

**Keep records of transgressions.** A database of illegal activities, compiling infringement records recorded by all the competent authorities, can be an extremely useful tool to evaluate temporal and spatial trends of infringements, assess the effectiveness of specific measures to increase users compliance, and identify (in time and space) potential hot-spots of illegal activities where (and when) to concentrate surveillance activities.

**Improve infrastructure & make use of technology.** MPAs should soundly plan and put in place remote surveillance systems (e.g. video cameras) to ensure surveillance of potential "hot-spots" of infringements (e.g. no-take areas).

### Capacity building.

MPA rangers should be trained and provided with logistical means to effectively perform

**Open up clear channels of communication.** MPAs should enhance as far as possible their communication with competent police bodies to facilitate their interventions in preventing and sanctioning infringements.

**Ensure that new roles of stakeholders are well communicated.** When engaging fishers in the surveillance system, all stakeholders in the area should be informed about this agreement to avoid conflicts, and the actions that can be conducted and how infractions are to be reported are clearly outlined in a contract (such as whether boats or individuals can be approached by the fisher and issued with a verbal warning, or if the fishers are permitted to take photos etc.)

**Ensure systems and protocols to support 'stewards' are in place.** Consideration must also be given to the social consequences of being seen as a 'whistle-blower' and adequate support be given to the fishers who are involved in the surveillance initiative. Specific protocols should be put in place to allow fishers to report infringements to MPA management bodies and police authorities in real time and guarantee confidentiality.

# Knowledge & Ownership

The multitude of threats and limited resources to counter or mitigate them is an everyday challenge for MPA practitioners. Deciding how and where resources must be used is often a top-down process of problem prioritisation and resource allocation, which sometimes conflicts with what stakeholders, who interact daily with the marine environment, view as the most urgent issues or primary concerns that need to be addressed.

**Drawing on all forms of knowledge and information from the different MPA stakeholders (scientific knowledge, fishers' traditional ecological knowledge...) ensures management decisions are based on the best data available on the local context and also fosters education and awareness among MPA stakeholders.**

This reiterates that we must examine conservation problems hand-in-hand with the societal contexts in which they are found. This includes giving plenty of consideration to the local interests of resource users and the wider community and also their perceptions and knowledge of natural resources and how they should be managed.

Public participation, particularly engagement in monitoring and knowledge sharing are recognised as key ingredients of good governance. Involving the



Marine Protected Area staff and FishMPABlue 2 researchers in Torre Guaceto MPA (Italy) work with fishers to monitor the catch.  
© M. Mabari / MedPAN

relevant actors facilitates a common understanding of such a complex ecosystem and our human influence on it. It also provides opportunities: to examine human uses of the ocean; to resolve conflicts; and to address the threats faced together. Informal local knowledge is key to understanding complex systems, as MPAs typically affect diverse communities and actors from different sectors and levels of society who often have varied types of knowledge and hold divergent and opposing positions. These complex views, values and images that people associate with the marine environment and its conservation, define the problems and solutions they face and how they interact with an MPA, and are what ultimately determine its social acceptability and potential success. For example, stakeholders' perceptions of marine conservation initiatives affect their compliance with reserve rules and their support to the MPA. Without broad and diverse input, decision making too often frames problems and potential solutions that overlook the real needs of the local context. Participatory

processes that focus on knowledge and interpretative mechanisms can result in better environmental outcomes in the long run because they lead to more complete understanding of ecological and socioeconomic dynamics and greater stakeholder buy-in.

## Tested tools and results

Varied ways with differing levels of involvement can be used to improve our knowledge of MPAs that will help inform decision making and raise awareness increasing support for MPAs and buy-in. Activities range from simple campaigns to involving the public in citizen science programmes or engaging fishers in the design and monitoring of MPAs. Within the context of the FishMPABlue2 project, the tools implemented fell under two broad categories, which encompass a broad array of options and examples of useful tools that can be adapted to MPA needs as described below.





## DIRECTLY ENGAGE FISHERS IN MONITORING

### TESTED IN:

Bonifacio Strait Natural Reserve, Egadi Islands MPA, Portofino MPA, Strunjan Landscape Park and Torre Guaceto MPA

### COST:

Medium

### TIME NEEDED:

Medium

### STAKEHOLDER INVOLVEMENT:

High

### PERCEIVED EFFECTIVENESS:

Medium impact

### TEST AND OUTCOMES:

Directly involving local fishers in MPA monitoring activities offers an opportunity for knowledge co-production and for the development of participatory research projects. Creating and designing monitoring strategies hand-in-hand with fishers, researchers and the MPA administration fosters

an increased support from fishers and other actors. Acknowledging the rich local knowledge fishers have about the resources they rely upon empowers fishers and also increases their confidence in the information gathered. Even more importantly, it can help ensure that research is more in-line with local user needs.

Within the FishMPABlue2 project, 5 of the 11 MPAs opted to implement strategies to engage fishers in monitoring activities. The details and specific objectives of each monitoring strategy varied (for example reporting catches, sightings of endangered cetaceans & sea turtles, rare sightings & invasive species, marine litter) as did the specific level of involvement of fishers, yet they shared several common aspects:

**Deciding what to monitor:** the initial stage in each case was to decide what was of key interest to be monitored and what could be monitored effectively by fishers. In some cases, fishers took on the responsibility to monitor pre-defined indicators, and in others, fishers were more involved in determining what additional monitoring could be done through their involvement.

**Training:** interested fishers were required to attend workshops designed to introduce the specifics of the data collection process, the monitoring protocols, how to complete forms and/or logbooks, how to report the data, and ensure their reliability etc. Capacity building was a fundamental step within the process.

**Equipment:** it was necessary to provide fishers with the equipment and/or tools needed to carry out the monitoring. For example, logbooks were required by fishers in some pilot sites and a database was created in another to collate data collected.

Fishers were remunerated for monitoring activities (to cover fuel costs). The need for compensation will depend on the experimental design selected for the monitoring activities.

## CASE STUDY

### A VOLUNTARY SSF CODE OF CONDUCT, EGADI ISLANDS MPA

Egadi Islands MPA, established in 1991, covers approximately 540km<sup>2</sup>, forming one of the largest MPAs in the Mediterranean, it is located in Sicily, Italy.

The MPA faces quite a challenge in terms of enforcement given its large area and the fact that fishers from all the islands and the mainland (including the port of Trapani) have access to the MPA. Consequently the area faces a significant level of fishing pressure and the dispersion of the fishing sector creates a challenging dynamic for cohesion and successful engagement. Through the FishMPABlue 2 initiative Egadi MPA attempted to improve the cohesion of the fishing sector by developing a participatory process designing a voluntary "Code of Conduct" that included guidance for monitoring the MPA. The Code of Conduct developed was aligned with the FAO "Code of Conduct for Responsible Fishing". Along with general statements of agreement to abide by MPA regulations and to adopt, where possible, the most

sustainable and selective gear, the Code of Conduct also includes specific reference to fishers' involvement in the surveillance of the MPA and many detailed agreements related to helping MPA staff monitor the MPA. For example, the MPA developed identification cards and sightings sheets for fishers to complete if they see rare or protected species (including monk seals, cetaceans and marine turtles). The fishers agreed to communicate immediately with MPA staff when any sightings took place, and agreed to fill in the sightings card and return them to the management body, including taking photos and videos when possible.

The Code of Conduct includes protocols of how to manage these accidental catches including instructions for delivery of any injured animals to the rescue centres. In addition, the fishers were trained and provided with

logbooks to record their catches and agreed to provide the MPA with information on fishing activities and catches to ensure a more effective monitoring of the MPA. On 5 July 2018, the fishers of the Egadi Islands attended a public event in which they signed the voluntary Code of Conduct. One fisher stated: *"We trust in what the marine protected area is doing because we also live on the sea... there is also the new generation: we want to transmit to young people what it is to protect the sea, tomorrow we must make our children understand that we have to eliminate plastics from the sea... For now there are these projects, they are a good thing for the fishers, but we have to do more. We have to restore populations [of fish]."* This will require a continued effort from the MPA to ensure the fishers are well engaged and continue to work well together to implement the Code of Conduct.



Code of Conduct for Sustainable Fisheries in the Egadi Islands Protected Marine Area reading and signed by fishers of the area. © Anne Remy / WWF Mediterranean



## RAISE THE AWARENESS OF FISHERS, MPA MANAGERS AND THE LOCAL COMMUNITY

### TESTED IN:

Cabo de Palos Marine Reserve, Cap Roux Fisheries Reserve, Egadi Islands MPA, Strunjan Landscape Park and Zakynthos National Marine Park

### COST:

Medium

### TIME NEEDED:

Medium

### STAKEHOLDER INVOLVEMENT:

Medium

### PERCEIVED EFFECTIVENESS:

Medium impact

### TEST AND OUTCOMES:

For MPAs to succeed, buy-in and support need to be increased. This buy-in, awareness and support for the marine environment and protected areas must be generated at all levels, be it from MPA managers, governing bodies, fishers, other stakeholders or the wider community. It is well understood that how the wider community perceives an MPA has direct consequences on its success. Finding appealing and engaging ways to get people to appreciate

the local marine environment is not straightforward, but is an essential first step in getting them to see the importance of MPAs and thus to support them.

Within the FishMPABlue2 project, different strategies were employed or attempted to reach different sectors of society. Specifically 5 out of 11 pilot MPAs focused on awareness-raising campaigns and public events to highlight specific topics of interest:

**Invasive species consumption promotion** (Zakynthos National Marine Park) aimed at the wider public (detailed in Theme 5)

**Showcasing the importance of the Small-Scale Fisheries sector** aimed at policy makers and the wider society (Egadi Islands MPA and Côte Bleue Marine Park).

Reaching a new target through an **Underwater photo competition** in Cap Roux Fisheries Reserve, which created a partnership with the Federations and diving clubs of the area allowing the MPA to communicate with this group of stakeholders

Highlighting the benefits and unique characteristics of a specific MPA through an **outreach video** (Strunjan Landscape Park) <https://www.youtube.com/watch?v=KIVuDmuL67k&feature=youtu.be>

In Cabo de Palos Marine Reserve, it was planned to increase awareness of Small-Scale Fisheries by **taking the general public on-board fishing vessels** to show first-hand the life of a fisher and to illustrate the high quality of catch and speed to which the fish reaches the plate. Unfortunately, the implementation of this tool faced legal obstacles: current legislation in Spain forbids such activities in very small vessels, which has prevented

its implementation during the pilot action period. The activity will however be developed in the near future with a larger fishing boat. This is the kind of outdoor interactive activity that has been shown to have the most impact on increasing awareness to the marine environment, its need for protection and understanding of Small-Scale Fishers and their value for food security, so it is still recommended as a useful tool in other contexts.

A series of “learning exchanges” involving MPAs managers, small-scale fishers and scientists were implemented during the project. These exchanges aimed to share best practices, collect suggestions to improve and strengthen the governance tools tested, foster new ideas or approaches and also create or strengthen the bond between the players involved resulting in stronger network within the Mediterranean. “Learning exchanges” are a popular tool in the field of natural resource management as they allow stakeholders to share information and experiences regarding best practices, with the goal of replicating those practices and improving conservation efforts. In the case of MPAs, learning exchanges offer a very interesting opportunity to bring together fishers, managers, researchers and NGOs to share experience and exchange information on how to improve MPA management effectiveness. Such multidirectional sharing of experience, where all insights from the varied stakeholders are valued, has a key role in co-producing knowledge and stimulating best practices.





A better management of SSF based on collaboration between fishers and MPA staff will help increase marine biodiversity. © Pexels



## TIPS TO IMPROVE KNOWLEDGE & OWNERSHIP OF MPAS

### **Include broad interests.**

Not all stakeholders or community members have the same interest or knowledge. Efforts must be made to find ways to manage this plurality.

**Acknowledge diverse backgrounds.** Individuals' affiliations (clubs, organisations, cooperatives, religious groups...), as well as sources of information (news broadcasts, TV, newspapers, social media...) or first-hand practical experience all act to shape perceptions, actions and behaviour, influence what people pay attention to in complicated situations and define how people approach and solve problems.

**Value your stakeholders.** Fishers must be involved as far as possible in all activities of the MPA monitoring programme, including in the design of the strategy, and in a joint analysis process where results can be discussed and further verified.

**Be transparent.** The final results of the monitoring should also be regularly reported back to the fishers and to the local community. Following these steps will ensure there is increased confidence in the information gathered, and also will reinforce the necessity to report the data accurately as the management decisions taken based on the data will affect future fishing activities.

**Be creative.** Awareness campaigns focused on first hand and outdoor activities are known to be effective for generating long term change in perceptions and behaviour. Efforts should be made to design campaigns and awareness raising activities that find engaging and appealing ways for people to "get their hands dirty" and really get involved.

**Socialise.** When planning "learning exchanges" make sure to give plenty of consideration to the objective of the exchange and how you can keep the learning going once individuals return home. Sufficient attention should also be given to the translation requirements and ensuring that there is sufficient organised "free" time during the exchange as during these moments often the most fruitful discussions take place.



# Improvement of small-scale fisheries environmental sustainability

In the last decade, MPA creation has accelerated with the aim of better protecting natural resources and ecosystems and the goods and services they provide to society. With effective protection, MPAs have the potential to improve local fisheries, SSF in particular, and stimulate the sustainable development of local economies.

**Environmental sustainability of SSF is about the future: it is an ongoing process that needs continuous improvement through the development of new tools and ways of fishing to reduce the impacts on marine resources and enhance their degree of conservation.**

Unsustainable fishing is often the cause of serious declines in fish stocks and increasing pressure on marine ecosystems. Unsustainable fishing has a direct impact on marine habitats and the use of unselective fishing gear can damage and deplete fish stocks, which can ultimately lead to the collapse of complex food chains. Sustainable SSF can be much less impacting on the resource and habitats than other types of fishing. With practices that factor in a control of the fishing effort and less impacting gear, small-scale fishers



Portofino MPA staff and fishers agree to cooperate. © Portofino MPA

have a chance to look to the future with more confidence.

There are various and well documented ways to control the fishing effort, for example, by direct regulation through licensing or implementing territorial rights. Indirect methods can also be adopted, such as closed seasons, closed areas or gear restrictions (bans on certain gear or mesh size regulations). The selection and the correct implementation of the above-mentioned measures, where responsibility for decision making is shared between relevant stakeholders, moves us closer to achieving sustainable and responsible fisheries.

Two of the primary reasons for establishing MPAs are for nature conservation and/or for fisheries management. Whether the MPA is large and for multiple use or small and highly protected, the permitted levels of use are primarily achieved through establishing area boundaries for specific activities, the zoning, and setting resource use limitations, especially for fishery-related activities.

The process by which an MPA is planned and implemented greatly influences the benefits and costs it generates, and hence its ecological and social impact. Although protection of species and habitats is widely considered to be the basic objective of MPAs, it is important to analyse the compatibility between this objective and the interests and needs of stakeholders. In the context of fisheries management, small-scale fishers are central stakeholders to engage with, as they have traditional knowledge about resource dynamics and ecosystems that will be important when determining levels of sustainable use. Integrating their views (and validating their information) with scientific information into the decision-making process can ensure management measures are more applicable and effective, while bypassing them puts the whole process at risk of failure.

In the FishMPABlue2 project, 3 types of tools to improve the sustainability of SSF were tested in 5 of the 11 MPAs, in close co-operation with fishers.





## REDUCE FISHING EFFORTS

### TESTED IN:

Portofino MPA, Torre Guaceto MPA and Zakynthos National Marine Park

### COST:

Medium

### TIME NEEDED:

High

### STAKEHOLDER INVOLVEMENT:

High

### PERCEIVED EFFECTIVENESS:

Medium impact

### TEST AND OUTCOMES:

This tool can be applied though different strategies yet it indicates resource-use restrictions that are likely to affect different groups of people and stakeholders in different ways. When planning the implementation of this tool, it is important to ensure that it will not deprive fishers of their livelihoods without providing alternatives. The designation needs to be based on a combination of bio-ecological and socio-economic criteria, ensuring long-term sustainability, that give consideration to mitigating short-term costs. During the FishMPABlue2 project, 3 out of 11 pilot sites implemented this tool using different strategies:

**Time restrictions:** the MPA of Torre Guaceto already has an agreement with fishers specifying that they may only enter the MPA once a week to fish, that they fish on different days and that deploy only up to 1 km of net per fishing operation. As part of FishMPABlue2 project, these fishers agreed to an experimental period where they further reduced fishing effort by approximately 40% and therefore



Marine National Park of Zakynthos, Greece. © Claudia Amico / WWF Mediterranean / FishMPABlue

only fished about once a fortnight. A web application was designed and implemented to allow fishers to register the days of the voluntary stops. Fishers were 'compensated' for loss of earnings through an agreement to undertake compensated monitoring activities in the MPA (see below).

**Area restrictions/closures and licence quotas:** the MPA of Portofino tested a scheme to limit the quota of fishing licences to access areas of vulnerable habitat. Unfortunately not all stakeholders were in agreement; recreational fishers proved to be strong opponents and it was not possible to implement a full closure of the area. The final agreement with professional fishers was to reduce the numbers of gear permitted each day in the area (down to one net per day). Yet recreational fishing licensing and access remains an issue. Zakynthos National Marine Park has started initial discussions with stakeholders to create a no-take zone in the MPA.

As described in the previous section, reduction of fishing efforts can be achieved by engaging fishers in alternative activities such as monitoring or surveillance, as tested in several MPAs. Experience has shown that the success of conservation management can be enhanced by establishing **financial arrangements for fishers** to conduct monitoring or surveillance as compensation for lost earnings from fishing. These incentives and collaborations between MPAs and SSFs can contribute to the economic sustainability of artisanal fisheries.



## MODIFY/SUBSTITUTE FISHING GEAR

### TESTED IN:

Bonifacio Strait Natural Reserve,  
Strunjan Landscape Park and  
Telašćica Nature Park

### COST:

Medium

### TIME NEEDED:

High

### STAKEHOLDER INVOLVEMENT:

High

### PERCEIVED EFFECTIVENESS:

Medium impact

### TEST AND OUTCOMES:

Modification of fishing gear plays an important role in helping to better regulate fishing activities and to promote best practices. New by-catch reduction devices and other innovative gear modifications are continuously being proposed and tested to move the practice towards sustainable fishing. Modified fishing gear can significantly mitigate by-catch without reducing a fisher's target catch as well as ensuring that only individuals of the correct size are captured more efficiently. Gear modifications are often more acceptable to a fishing community when they have fewer practical, social, or economic

consequences. For example, fishing traps are a good candidate for modification because they are used widely, represent one of the most profitable gears, and often catch key species known to promote ecological resilience. However, it must be noted that changes in gear only potentially reduce the impact on fish stocks (i.e. fishing effort should not be increased), not eliminate it completely. In the FishMPABlue2 project, 3 out of 11 LGCs implemented different measures for modification/substitution of fishing gear:

**Larger mesh size:** two MPAs (Telašćica Nature Park & Strunjan Landscape Park) replaced existing nets with new ones with a larger mesh size. This measure should reduce negative environmental impacts on undersized fish while increasing the market value of the catch. Fishers who agreed to adopt the new nets agreed to hand over the old nets to the authorities. Fishers in one MPA were relatively slow to adopt the new larger mesh, however when given enough information and time to process the measure, many of them opted to implement more sustainable fishing practices.

**Alternative gear:** Bonifacio Strait Natural Reserve implemented an experimental fishing trap to assess the profitability and selectivity of this fishing gear to assess whether they can reduce the pressure on the most commercial species. This intervention is interesting as it allows fishers to discover new and modernised gear, or rediscover old techniques with the integration of new materials and technologies. Along with the new type of gear, fishers can experiment with different baits, fishing times and areas. All the information collected serves as a basis for an evaluation of the profitability of the new gear and the development and commercialisation of new species on the market.

## CASE STUDY

# MAKING A COLLABORATIVE SHIFT TO MORE SUSTAINABLE FISHING PRACTICES IN TELAŠĆICA NATURE PARK, CROATIA

Telašćica Nature Park located in the central part of the eastern coast the Adriatic was founded in 1988 to protect the valuable flora and fauna found in the region. The bay is surrounded by 13 islands and islets, with 6 islets inside the bay which create a unique and spectacular geological and geomorphological phenomenon. The area is also special given its interesting archaeological heritage. The island of Dugi Otok, is home to a small yet productive Small-Scale Fishing fleet. There are 11 Small-Scale Fishing boats actively engaged in fishing, providing employment to 15 full-time fishers. Through the FishMPABlue2 initiative, the LCG, with the participation of the local fishing sector, devised a scheme to shift fishing towards more sustainable fishing practices. The MPA purchased a number of single mesh nets (i.e. gillnet) with a mesh size of 40-50mm to replace old triple mesh nets (i.e. trammel) with a mesh size of 26-28mm. The new nets were then offered to fishers in exchange for their old 3-layer nets. Initially the scheme was slow to take off, with only three fishers exchanging their nets on the first proposal of the idea. However, the park managing body worked hard to communicate with the fishers the long-term benefits of a more

sustainable use of marine resources. With time as well as careful and well considered communication and interactions, 8 fishers exchanged their nets. The MPA then disposed of all old nets responsibly, to ensure any kind of pollution was minimised. A shift to more responsible gear is a big step towards a long-term future for fishing, and demonstrates the clear willingness of the fishers to make short-term sacrifices for a longer-term gain. The larger single mesh net permits young fish to escape and grow to adult size, contributing to the biomass of the fish stock in subsequent years. This is traditionally one of the main methods for controlling the pattern of fishing mortality, yet it does have an initial potential cost for fishers as it is common for catch rates to decrease as the gear is more selective. The short-term economic losses are often a

concern for fishers, however when well implemented a switch to more selective gear will provide a much longer-term economic benefit. It must be clearly explained to fishers that the speed of stock recovery can vary depending on species biological characteristics: for long-lived species with a low mortality rate, recovery can take several years, for short-lived species benefits can be expected within a few months. The fishers in Telašćica Nature Park recognised that if they did not act, and did not act together, there would be no future for fishing in the area. Even now, more fishers are coming forward to request an exchange in nets, illustrating that the initiative has been a success, and that with time, clear communication and the engagement of fishers, real positive results for the marine ecosystem can be achieved.

Dugi Otok, Croatia. © Telašćica Nature Park







## SET-UP SMALL-SCALE FISHERY CODES OF CONDUCT

### TESTED IN:

Egadi Islands MPA

### COST:

Medium

### TIME NEEDED:

High

### STAKEHOLDER INVOLVEMENT:

High

### PERCEIVED EFFECTIVENESS:

Medium impact

### TEST AND OUTCOMES:

A “Code of conduct” is usually a formal commitment on a voluntary basis that obliges fishers to accept some restrictions to their activities, which are additional to those legally prescribed. According

to the FAO, any Small-Scale Fishery-related code of conduct should establish international principles and models of behaviour, for responsible practices, to ensure the effective conservation, management and development of living aquatic resources, with due respect for the ecosystem and biodiversity. Such an ideal code must recognise the nutritional, economic, social, environmental and cultural importance of fishing, and the interest of all those involved in fisheries; it must take into account the biological characteristics of the resources and their environment, the interests of consumers and other users.

Egadi Islands MPA decided to develop a Code of conduct. The purpose of the Code was to ensure the commitment of fishers to fish in a sustainable manner, to cooperate with the MPA through monitoring and surveillance and to participate in programmes related to marine litter collection and sea turtle conservation. More than half of the local fishers (31 in total) signed the Code of conduct committing to respect this Code. After the Code was signed in a public event, a 6-month period was scheduled to check fishers’ participation and possible violation of the Code; during this period, no violation of the Code was registered.

Egadi Islands MPA. © Cristina Mastrandrea / WWF Mediterranean / FishMPABlue





Traditional fish trap tested in Bonifacio Strait Natural Reserve, France. © M.C. Santoni



## TIPS TO IMPROVE SUSTAINABILITY OF SSF IN MPAS

substitution of fishing gear it should be clear among all participants that the implementation of this measure must not increase fishing effort. Therefore, old nets with smaller mesh size need to be handed over to the MPA authority that can discard them properly.

**Ensure agreements are reached and strategies are in place to manage gear that are no longer to be used.**

Before arranging the process of modification/

**Ensure fishers receive adequate training and support to undergo experimental fishing.** Fishers who want to participate in an experimental fishing campaign need to go through extensive training. As was seen in Bonifacio Strait Natural Reserve, because of a lack of experience with the new fishing techniques, many fishers obtained very low returns, damaged or lost the equipment.

**Be inclusive.** It is fundamental to design the code of conduct together with the fishers. Preferably, after signing the code, a certain period of time (at least 6 months) should be set to allow the MPA to check if any signing fisher is respecting the code.



# Improvement of small-scale fisheries profitability

Faced with increased competition and dwindling fish stocks, the economic viability of fisheries, particularly Small-Scale ones, is increasingly threatened. In the Mediterranean region SSF constitutes more than 80% of the fishing fleet and plays a significant social and economic role: it directly employs around 140,000 fishers and generates jobs for another 150,000 people. Although MPAs and the economic returns they can yield (if well managed and effective) offer a valid long-term prospect for fishers, the short-term loss associated with fisheries restrictions or loss of grounds can be hard to manage. Fishers cannot always manage a reduction in fishing effort if it leads to a decrease in fishing-generated income and cannot cope with the increased competition and threats from recreational fishers. It is clear that a financial compensation from public money for such reduction is not the most viable solution (at least in the long term) for making SSF sustainable. There is therefore an inherent need to improve the economic profitability of the product (the fish) and to diversify the range of services that SSF can offer.

**Profitability of SSF is a key factor for making co-management systems sustainable: fishers become allies of an MPA if they see that this can maintain/increase the income they get from their activities.**

Improving the profitability of SSF can also contribute to alleviate one of the main problems of SSF: the ageing of fishers. If the sector becomes attractive thanks to the promise of a fair income, it can start to be viewed as a more viable employment opportunity for the next generations.

In the FishMPABlue2 project, 3 out of the 11 tested an economic-sustainability related tool. Fully implementing the interventions did not come without challenges, such as difficulties reaching an agreement on one measure to test,

external factors that prevented new initiatives from being developed in full, as well as a lack of resources available for such complex goals. The results of the testing – and the enthusiasm of the fishers involved – demonstrated that this is an area of actions that should be given more attention and fully developed in future initiatives. For example applying the “added value chain” approach at local level represents an effective strategy for improving fishers well-being: an entrepreneurial system can be set up to reform product collection (i.e. fishing); new ways to transform the product to suit the market (cooking/packaging) can be introduced; strategies for marketing and selling locally (or beyond) can be developed... All these measures can ultimately allow consumers to identify the fish caught in an MPA by SSFs using responsible fishing practices.

In the project, 2 types of tools were tested.







## ADD VALUE TO LOCAL FISH AND PROMOTE NEW COMMERCIAL SPECIES

### TESTED IN:

Côte Bleue Marine Park and Zakynthos National Marine Park

### COST:

Low

### TIME NEEDED:

Medium for “add value” and low for “promote new species”

### STAKEHOLDER INVOLVEMENT:

High for “add value” and low for “promote new species”

### PERCEIVED EFFECTIVENESS:

Medium impact

### TEST AND OUTCOMES:

To understand how to add value to the fish catch at local level and to local species which are “typical” of a specific area, consideration should be given to: identifying the species to be promoted; really taking time to assess the market and the level you want to aim for; reviewing the promotional tools already tested elsewhere; selecting possible promotion/marketing, actions/tools together with fishers; designing (and producing) the promotional tools and organising the marketing-related actions/events; and supporting the fishers in the ownership (i.e. self-based management) of these actions/tools, to assure the sustainability of the strategy in the long term.

Within the FishMPABlue2 project, the local market (local dealers, restaurants, etc.) was the main focus and target of interventions and several strategies were adopted to increase consumers’ awareness of locally caught produce and to ensure that the product was of high quality:

**Increasing consumer knowledge:** efforts were made to improve the information fish dealers/sellers (and the Small-Scale Fishers themselves) provide to potential buyers/customers. Although the information (common name, local name and scientific Latin name of species, picture or drawing) are already requested by EU and national legislation, the way this information is presented to the consumer is not effective. In one MPA, the intervention involved finding more creative ways to display the information about the products and their local value and devised the use of display boards. These also promoted the benefits of sustainable SSF carried out in the MPA, as well as the MPA and project’s logos.

**Campaigning to “eat local”:** a couple of MPAs (Côte Bleue Marine Park and Zakynthos National Marine Park) distributed communication tools (among the local community and especially to tourists) including flyers and brochures that communicated the special value of buying/eating local fish. In the materials, emphasis was placed on how the species in question were important and typically eaten locally, but also on the low environmental impact of the fish collection (“buy SSF instead of industrial!”).

### Campaigning to “eat the unknown”:

when talking about fish-related products, attention is usually on the products (i.e. fish species) that the market knows. However, there are many more species in the sea that are good to eat, they are just not known as well. Climate change is introducing a new challenge for MPAs with the introduction of invasive species. An interesting measure was tested in Zakynthos Marine National Park: identify a new species to be sold and marketed, i.e. to create a “commercial channel” for a species that was relatively unknown on the local market. The driver behind this intervention was the increasing presence of an invasive species that is dramatically affecting the ecosystem balance and species that have high commercial value, too. Previous attempts to find an effective solution had failed, so through the LGC it was decided to involve small-scale fishers in a stock reduction-related action, using an economic market-driven lever. This fishing campaign was matched with a consumer campaign including public events, promotional material and actions, such as the promotion of new recipes in local taverns and hotels. The intervention stimulated a new demand from the local market towards this species, with a consequent economic benefit for fishers.

**Improved infrastructure:** The LGC in Zakynthos National Marine Park purchased ice-producing machines, for the local small-scale Fishers, which allow the fishers to maintain and improve the quality of their product with subsequently greater opportunities to target different markets.

CASE STUDY

## LEARNING TO LOVE THE UN-LOVEABLE, PROMOTING CONSUMER AWARENESS OF A TASTY YET, INVASIVE SPECIES IN ZAKYNTHOS NATIONAL MARINE PARK, GREECE

Zakynthos National Marine Park in Greece, created in 1999, has a rich and vibrant ecosystem as an important breeding ground for loggerhead turtles and an important site for Mediterranean monk seals. The aim of the MPA is to preserve the natural heritage and conserve the ecological balance of the marine and coastal area of Laganas bay and the Strofadia islets. However, like many other Mediterranean MPAs, Zakynthos National Marine Park has in recent years received more and more unwanted visitors in the form of invasive species – in particular, two species of rabbitfish (*Siganus luridus* and *Siganus rivulatus*). These invasive species are extremely problematic as they are outcompeting local and endemic species and overgrazing algae, thus altering the natural balance of the ecosystem. All the stakeholders in the Park are greatly concerned about this ever increasing threat and decided that engagement with the FishMPABlue2 project could provide an opportunity to address the issue. The LGC agreed on a strategy to promote

the consumption of these invasive species. The initiative involved directly engaging fishers to target these species in an attempt to reduce their numbers. To guarantee that the fishers' efforts were not wasted the LGC planned and implemented an outreach campaign that promoted consumption of these fish that are unknown to the local market. To this end, promotional material was circulated to the local community and to the food market. After introducing the rabbitfish to consumers, the MPA provided several recipes for cooking them. The campaign also involved several chefs who are well-known on the island of Zakynthos. The MPA organised several local events generating a lot of interest from the general public. The overall verdict at these events was that these new species are desirable. Finding cunning ways to encourage the

consumer to start buying these invasive species, for example throwing a few of these fish in with other fish being bought for free along with a recipe suggestion, making it known that the fishers themselves eat these fish, informing the customers that these species are highly appreciated and prized in other areas (e.g. Cyprus, Crete) and starting the price for these fish low can help to promote their sale. With time they can become more profitable, creating a win-win situation for both the fishers and the ecosystem. Finally other alternative ideas regarding the exploitation of the fished rabbitfish have been discussed, such as using them as fish feed in aquaculture. real positive results for the marine ecosystem can be achieved.

Marine National Park of Zakynthos, Greece.  
© Claudia Amico / WWF Mediterranean / FishMPABlue







## SUPPORT *PESCATOURISM* DEVELOPMENT

### TESTED IN:

Telaščica Nature Park

### COST:

Medium

### TIME NEEDED:

High

### STAKEHOLDER INVOLVEMENT:

High

### PERCEIVED EFFECTIVENESS:

Medium impact

### TEST AND OUTCOMES:

*Pescatourism* is usually understood as an economic activity that involves professional (usually Small-Scale) fishers welcoming a certain number of tourists on their boats, to discover the world of fishing. This activity usually complements (not substitutes) the income coming from the usual fishery activity and also creates public support for SSF and its cultural heritage and value. When implemented and managed responsibly, diversifying fishers' activities through *pescatourism* can be an effective measure for lowering the fishing effort inside MPAs.

The fishers are responsible for assuring that adequate safety standards to take tourists on board are in place and respected, including the required safety equipment. In general these are stricter than those for traditional fishing activities. Additionally, depending on the tourist market, it may be necessary to give consideration to the language skills of the fishers if they are hosting foreigners. In Telaščica Nature Park, preparatory activities were implemented that took fishers one step closer to introducing *pescatourism* in the Park:



Pescatourism in Vlorë, Albania. © Tatjana Mëhillaj, National Agency for Protected Areas of Albania (NAPA)

**Legal framework analysis:** the first step was to understand the feasibility of *pescatourism* from a legal point of view. For example, in some countries there are very strict regulations related to the size of a vessel and how many people can be carried on board, in other cases to take tourists it may be necessary to have a toilet on board and an area with shelter. Understanding the legal system, the safety equipment required, restrictions associated with the cost of *pescatourism* licenses and how to apply are essential first steps.

**Equipment and training:** In Telaščica Nature Park, fishers interested were helped to obtain their *pescatourism* license through the FishMPABlue2 project. The next step was to make the changes to the boat so that it would meet legal requirements, and to buy and install all the regulatory safety equipment. The fishers interested in *pescatourism* were also offered training courses and given guidance on marketing the service within the tourism sector.



## TIPS TO IMPROVE PROFITABILITY OF SSF IN MPAS

where a PPP (Public-Private-Partnership) approach is the pillar for establishing and maintaining such strategy.

### Ensure fishers are involved in all steps of the chain.

Preferably, a more effective – towards improved profitability of fishery activity – tool is the “added value chain” approach, where all stakeholders (from fishers to the large intermediaries in far markets) should be involved.

**Take time to really understand your market.** Promoting and marketing fish in the local market needs a comprehensive and integrated strategy,

**Support fishers in the administrative burden management.** While providing support for the development of *pescatourism*, it is necessary not only to secure equipment purchase for the boat but also to assist fishers in the collection of administrative documentation, which, depending on the country legislation, can be really demanding for a Small-Scale Fisher.

**Ensure fishers receive adequate training and support to develop *pescatourism*.** *Pescatourism* in itself is a good source of complementary revenue for Small-Scale Fishers, but can become more profitable if linked with activities where these fishers host tourists – willing to take part in fishing activities – in their own homes.

Pescatourism boat on the harbour of Bonifacio, France. © M. Lang / MedPAN



# Feasibility & Effectiveness of the Tested Tools

Each of the governance/management tools and interventions described in this Toolkit require a different approach for their implementation and have different costs in terms of time and resources.

The degree of stakeholder involvement and the time required for engaging them also need to be taken into consideration, both on the MPA and the stakeholders' sides.

As each tool has a different cost, requires a different amount of time to implement, and engages stakeholders to differing degrees, consideration must also be given

to the context of each MPA: MPA location (remote or close to communities), MPA surface, zoning, total budget available for management and whether it is financially stable in the long term, number of staff, type of governance/strategy in place, stakeholder community, previous levels and experience with engagement and so on.

As part of FishMPABlue2 project pilot activities, managers of the 11 pilot MPAs were asked to rank on a 3-point scale the cost, the time and involvement of stakeholders needed to implement each tool they tested, taking as a reference the

annual budget of their MPA, the staff they have available in their MPA and the number of stakeholders they have to engage with in their MPA. Moreover, each LGC was asked to provide feedback on the results of tool implementation and how they perceived their usefulness, feasibility and effectiveness. The values reported in the table below provide a context-independent and overall (per theme) perception of the tools' usefulness and a general guide for managers and practitioners interested in implementing specific tools.

Marine National Park of Zakynthos, Greece. © Claudia Amico / WWF Mediterranean / FishMPABlue





The results of the ecological and socio-economic monitoring campaigns (which took place before and after the tools were implemented) as part of the FishMPABlue2 project have revealed that the implementation of the governance toolkit led to positive effects on protected fish assemblages when compared to the unprotected ones (see <https://fishmpablue-2.interreg-med.eu/what-we-achieve/deliverable-database/>).

The data gathered illustrates early signs of positive effects on fish diversity, density and biomass, despite the high variability in MPA sizes, ages, local regulations, fishing efforts within MPA boundaries and even differences in national level legislation in the 11 pilot MPAs.

The significant increase of biomass in buffer zones after one year of toolkit implementation (especially evident for high level trophic predators) suggests that the set of measures implemented (e.g. enforcement, fishers' engagement, reduction in fishing effort, increase of fishing gear selectivity) have generated some ecological benefits for the pilot MPAs. It is important to highlight that after implementation of the governance toolkit in the pilot MPAs, a significant "reserve effect" was detected both in "no take areas" and "buffer zones" in terms of fish biomass.

No difference in temporal trend was observed for CPUE (catch per unit of effort) and RPUE (revenue per unit of effort) for catches inside MPAs when compared to catches outside the MPA, during the implementation period. This is a good sign considering that usually

stringent measures regulating fisheries can generate short-term reduction in fisheries catches and fishers' revenues. The reserve effect on CPUE and RPUE was also recorded, indicating the positive effects of MPAs for small-scale fishers, and emphasising the importance of effective management of these areas.

What is most interesting to consider is the perception of the tools: in general they were received positively by all stakeholders. Having selected the tools themselves through the LGC, stakeholders had increased buy-in and improved willingness to implement the toolkit. The results from the second socio-economic surveys and the feedback obtained in the closure meetings (where the implementation of the toolkit was deliberated and discussed at length) indicate positive impacts.

The toolkit was perceived to have the potential to have a positive effect on fish stocks, habitat health, fish catch, and fishers' income. Sixty seven percent of fishers reported that the new set of management measures had enhanced their relationship with the management board in the MPA: this is a very positive outcome.

All LGCs selected tools to enhance fishers' involvement in MPA management, offering opportunities to be involved in decision making, monitoring or surveillance, which helped facilitate and open up channels of communication. It has offered a way for fishers to be empowered, improved the dialogue between all the actors involved and generated renewed support for the MPAs.

In the MPAs where tools to strengthen enforcement were implemented, there was a positive perception that the actions had a real impact in reducing illegal activities within the MPA.

The overall positive perception of the toolkit and the implementation of the tools is of particular relevance as these perceptions ultimately drive MPA success: a positive perception can promote pro-environmental behaviour and improve support for the MPA.

## **The results obtained from this project have highlighted that the FishMPABlue2 toolkit has the potential to improve the effectiveness of MPAs in delivering ecological, economic and social benefits for Small-Scale Fisheries.**

In addition, beside the outcomes-oriented view, it is important to highlight the merit of the governance toolkit implementation process which promotes MPA managers and fishers working together to engage and agree upon strategies to improve conservation and fisheries-related outcomes, and to assess the feasibility, advantages and disadvantages of each specific tool.





















































Fisher from the village of Saint-Raphaël, close to Cap Roux, is cleaning his net. © Cristina Mastrandrea / WWF Mediterranean / FishMPABlue



## COST, TIME AND LOCAL STAKEHOLDER INVOLVEMENT NEEDED TO IMPLEMENT EACH TOOL, AND PERCEIVED EFFECTIVENESS (PER THEME).

	THEME	TOOL	COST	TIME NEEDED	LOCAL STAKEHOLDERS INVOLVEMENT	PERCEIVED EFFECTIVENESS	MPAS THAT IMPLEMENTED THE TOOL
a	INVOLVEMENT IN DECISION MAKING	Create collaborative platforms to engage fishers in decision making	 LOW COST	 MEDIUM TIME	 MEDIUM STAKEHOLDERS INVOLVEMENT	 HIGH IMPACT	11 RNBB, Cabo, Cap Roux, PMCB, Egadi, Portofino, Es Freus, Strunjan, Telašćica, Torre Guaceto and Zakynthos
b	ENFORCEMENT STRENGTHENING	Increase surveillance by MPA staff and improved infrastructure	 MEDIUM COST	 LONG TIME	 MEDIUM STAKEHOLDERS INVOLVEMENT	 HIGH IMPACT	5 PMCB, Es Freus, Strunjan, Telašćica and Zakynthos
		Increase surveillance through fishers' direct involvement	 MEDIUM COST	 LONG TIME	 HIGH STAKEHOLDERS INVOLVEMENT	 HIGH IMPACT	6 Cabo, Egadi, Portofino, Strunjan, Telašćica, Zakynthos
		Increase surveillance through the cooperation with relevant authorities	 MEDIUM COST	 LONG TIME	 MEDIUM STAKEHOLDERS INVOLVEMENT	 HIGH IMPACT	4 Cap Roux, PMCB, Telašćica, Torre Guaceto
c	KNOWLEDGE & OWNERSHIP	Engage fishers in monitoring activities	 MEDIUM COST	 MEDIUM TIME	 HIGH STAKEHOLDERS INVOLVEMENT	 MEDIUM IMPACT	5 RNBB, Egadi, Portofino, Strunjan, Torre Guaceto
		Raise the awareness of fishers, MPA managers and the local community	 MEDIUM COST	 MEDIUM TIME	 MEDIUM STAKEHOLDERS INVOLVEMENT	 MEDIUM IMPACT	5 Egadi, Zakynthos, Cabo, Strunjan, Cap Roux
d	IMPROVE SSF ENVIRONMENTAL SUSTAINABILITY	Reduce fishing effort	 MEDIUM COST	 LONG TIME	 HIGH STAKEHOLDERS INVOLVEMENT	 MEDIUM IMPACT	3 Portofino, Torre Guaceto, Zakynthos
		Modify/substitute fishing gear	 MEDIUM COST	 LONG TIME	 HIGH STAKEHOLDERS INVOLVEMENT	 MEDIUM IMPACT	3 RNBB, Strunjan, Telašćica
		Set-up SSF Code of conduct	 MEDIUM COST	 LONG TIME	 HIGH STAKEHOLDERS INVOLVEMENT	 MEDIUM IMPACT	1 Egadi
e	IMPROVE SSF PROFITABILITY	Add value to local fisheries products	 LOW COST	 MEDIUM TIME	 HIGH STAKEHOLDERS INVOLVEMENT	 MEDIUM IMPACT	1 PMCB
		Promote new commercial species	 LOW COST	 SHORT TIME	 LOW STAKEHOLDERS INVOLVEMENT	 MEDIUM IMPACT	1 Zakynthos
		Support Pescatourism	 MEDIUM COST	 LONG TIME	 HIGH STAKEHOLDERS INVOLVEMENT	 MEDIUM IMPACT	1 Telašćica

NOTE: The values reported for each tool provide an overview of the views of managers who implemented the tool, and feedback obtained from all stakeholders in project closure meetings. Number of icons per each variable indicates value on a 3-point scale:

PMCB: Côte Bleue Marine Park, Cap Roux: Cap Roux Fisheries Reserve, RNBB: Bonifacio Strait Natural Reserve, Es Freus: Es Freus Marine Reserve, Cabo: Cabo de Palos Marine Reserve, Strunjan: Strunjan Landscape Park, Telašćica: Telašćica Nature Reserve, Zakynthos: Zakynthos National Marine Park, Portofino: Portofino MPA, Egadi: Egadi Islands MPA, Torre Guaceto: Torre Guaceto MPA



## CHAPTER 5:

# Conclusions

To conclude, we hope that this toolkit can be a useful instrument for any MPA manager wanting to improve his/her MPA's effectiveness through better cooperation with local small-scale professional fishers and other relevant stakeholders.

As many of the issues now being faced are shared by all MPAs, the tools presented and tested in this Toolkit have the potential to be useful and can easily be adapted to suit the local context. The information presented here goes beyond best practice guidance by presenting the

results of tools actually tested in more than one of the FishMPABlue2 pilot MPAs, assuring their transferability. The detailed case studies also provide extra lessons learned of how a specific context hindered or helped in improving the management capacities of the MPA.

In addition to providing information on the interventions implemented and tested, the main message reiterated throughout this Toolkit is to underline the importance of setting up an honest and open dialogue with small-scale fishers and other stakeholders, and the necessity of formalising and

making stable collaborations. The willingness of the MPA managing body to progressively involve stakeholders in management to define agreed upon and realistic conservation-related MPA goals takes us one step closer to genuine co-management.

The examples presented in this Toolkit illustrate that even where a formal co-management system is not in place, cooperation with local small-scale fishers can often bring unexpected benefits for the MPA managing body: it is hoped that this vision is shared with all readers.



Fisheries Reserve of Cap Roux, France. © Cristina Mastrandrea / WWF Mediterranean / FishMPABlue









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FishMPABlue 2

