OPERATIONAL GUIDE for USERS of the **MPA ENGAGE RESULTS & OUTPUTS** 

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# **1. THE MPA ENGAGE PROJECT IN A NUTSHELL**

Climate change is dramatically affecting the Mediterranean Sea, which is warming at a rate 3 times faster (0.41°C per decade) than the world's average (0.13°C per decade).

#### **MEDITERRANEAN AVERAGE**



Marine Protected Areas (MPAs), despite the nature-based solutiontheyoffertosupporteffortstowardsclimatechangeadaptation and mitigation, also experience the effects of climate change. In fact, several Mediterranean MPAs are already facing major biodiversity and functional alterations due to climate change, whereas others will likely face them within the next few decades. There is, therefore, an urgency to reduce these risks and to consider adaptation options, in partnership with local communities, decision-makers, civil society organizations, research bodies, and other socio-economic actors at local, national and regional level.

MPA Engage is an Interreg Med funded project that aims to support Mediterranean MPAs to adapt to and mitigate the ongoing climate change effects in the Mediterranean Sea. Within a period of three years, MPA Engage has provided essential support to managers of marine protected areas to fast-track actions against climate change. During this time, MPA managers and climate change experts from 14 entities and 6 different countries, namely Albania, Croatia, France, Greece, Italy and Spain, have been brought together and have evolved into a taskforce with a joint mission to promote MPAs as nature-based solutions for climate change adaptation.



**2. THE MPA ENGAGE** APPROACH FOR EFFECTIVELY ADDRESSING CLIMATE CHANGE **IN MEDITERRANEAN** MPAs

> MPAs are recognised as one of the strongest and effective tools for protecting marine life and the livelihoods of coastal communities.

The long-term, place-based nature of MPAs provides an advantage in addressing the impacts of climate change by providing a focal area for management and science to reduce stressors, to monitor conditions and trends, and engage with the public. MPAs and related networks that work together to meet objectives beyond those of a single area by protecting areas from degradation and allowing the recovery of ecosystems can contribute to addressing climate change through a number of different routes:

- . Reduce other non-climate ocean stressors
- 2. Function as important carbon sinks
- **3.** Provide ecologically connected corridors that allow for the movement of species
- 4. Provide refuge and replenishment zones
- 5. Reduce risk and promote resilience
- 6. Serve as sentinel (research) sites to monitor climate change effects
- 7. Raise awareness and educate local communities
- 8. Provide numerous ecosystem services

The MPA Engage approach and novel tools developed address the following five core actions:

- **1.** Assessment of the ecological and socio-economic vulnerability of MPAs to climate change
- 2. Harmonized monitoring of the climate change effects and impacts in MPAs
- 3. Engagement of local communities in citizen science activities to monitor the climate change effects and impacts in MPAs
- **4.** Elaboration of climate change adaptation plans
- 5. Engagement and mobilization of all key actors of the quintuple helix participatory framework







# **3. READING** GUIDE

The MPA Engage project entailed the testing, validation and consolidation of the aforementioned approaches and tools that successfully led to the definition and adoption of an effective societal response to manage the cumulative impacts of climate change in 7 pilot Mediterranean MPAs.



THE PRESENT DOCUMENT PROVIDES AN **OPERATIONAL** GUIDE AIMING TO ASSIST OTHER MPA MANAGERS IN THE **REGION TO PUT** MEDITERRANEAN MPAS AL THE FRONT LINE OF ADAPTATION MITIGATION TO **CLIMATE CHANGE** 

The document provides an overview of the strategic elements of the MPA Engage approach, which are organized in five main lines of action and feature the overall approach, the main tools and resources produced, the main lessons learned and recommendations, and the indicative involved costs.

# 4. VULNERABILITY ASSESSMENT

The analysis of the vulnerability of MPAs is fundamental to understand the current and future threats to these areas in view of implementing adaptation strategies

## 4.1 BRIEF DESCRIPTION & OVERALL APPROACH

The analysis of the vulnerability of MPAs is fundamental to understand the current and future threats to these areas in view of implementing adaptation strategies. Vulnerability Assessments allow to identify such impacts and enhance the role of MPAs as nature-based solutions to face climate change. MPA Engage developed a composite indicator-based index to evaluate the socio-ecological vulnerability of Mediterranean MPAs. Vulnerability to climate change refers to the predisposition to be adversely affected by the impacts of climate change, defining how severe the effects can be in a given system. Vulnerability comprises the exposure of the system to the changing climate, along with the degree to which the system could be affected, but it also involves the capacity of the system to reduce that disruption by taking actions that enhance resilience (Figure 4.1).





The approach developed enables to differentiate vulnerability at different levels, calculating an overall score for the MPA, but also the vulnerability of species, habitats and user groups. It also provides results for three different emission scenarios (low-RP2.5, mild-RCP4.5 and high emissions-RCP8.5) and for two future timeframes (2050 and 2100). The methodology developed provides MPA managers with a useful instrument that identifies where potential actions are needed within the MPAs, to preserve and protect the MPAs species and habitats from the impacts of climate change. The results from the 7 pilot MPAs showed that vulnerability levels are often high and very high in the near-term scenario, while they reach extreme values for some MPAs in the higher emission scenarios for the end of the century.

The vulnerability assessment was constructed considering the comparability of indicators and indices between MPAs by selecting a similar set of species, habitats and users. If applied to other MPAs of the basin, this vulnerability assessment can provide a more comprehensive understanding of the vulnerability of Mediterranean MPAs to the future impacts of climate change. The activity helps to understand the MPA starting point, by acknowledging which data are missing and where it should focus its attention and resources to establish and improve a monitoring system in order to get more data and cover an increased number of indicators. In addition, the involvement of stakeholders in the process can facilitate the acquisition of data and bring additional benefits as illustrated in the section related to participatory processes (see section 8). Finally, the approach can be adapted to explore vulnerability of other kinds of species, habitat and users widening the MPA capacity to assess the vulnerability to climate change.

## 4.2 TOOLBOX



The MPA Engage Vulnerability Assessment Guidelines: These guidelines provide a methodological description on how to implement a climate vulnerability assessment in MPAs. The methodology relies on an indicator-based approach, which combines exposure and sensitivity to climate change, with the adaptive capacity in both the ecological and social dimensions. The methodology is designed to be reproducible and replicable in other Mediterranean MPAs.

The MPA Engage Joint Vulnerability Assessment **Plans:** This document describes the methodology applied for the design and implementation of the socio-ecological vulnerability assessment in 7 pilot Mediterranean MPAs. It also provides a description and analysis of the vulnerability Indices results

The MPA Engage e-Learning Materials: MPA Engage run webinars aiming to enhance the capacities of participants on how to develop a social-ecological vulnerability assessment of MPAs to the impacts of climate change. The webinars featured methodological approaches and hands-on exercises on the development of vulnerability indicators in MPAs.

All tools and resources can be found here

The MPA Engage Vulnerability Assessment Reports of the 7 pilot MPAs: These documents present the results, findings and conclusions of the vulnerability assessment process run in each pilot MPA.



## 4.3 LESSONS LEARNED & RECOMMENDATIONS

The main challenges that might be encountered during the elaboration of a vulnerability assessment are:

- having limited time to proceed to data collection (due to staff capacity, financial restrictions, weather conditions, etc.);
- need for specific skills to understand the concepts and the structure of the vulnerability assessment developed (e.g.: concerning how the combination of indicators produces the different indices);
- **3.** related to the above, be aware that presenting this topic to the general public can be challenging;
- 4. facing scarcity of data (related to different factors such as the lack of or limited monitoring activities for specific indicators, the lack of a database gathering all relevant ecological indicators related to habitats and species, etc.).

This situation is additionally reinforced by the high number of indicators included in the assessment;

5. difficulties in involving local stakeholders due to the low level of engagement or past relationships with the MPA.

It is expected to be easier for an MPA to collect ecological indicators than the socio-economic ones, specifically the ones related to: habitats and species focus of MPA monitoring; data about the MPA management; data easily accessible from other entities such as universities, local institutions and regional governments. However, some difficulties can also be encountered during the gathering of ecological data related to: local climate change indicators; information on habitat cartography; data on species and habitats due to lack of monitoring programs.

On the other hand, the stronger difficulty relates to collecting the data related to socio-economic indicators, due to the fact that, generally, MPAs don't have a lot of practice in collecting socio-economic data and, additionally, many social indicators to be measured required the active participation of local stakeholders. This process can eventually be difficult to implement if the stakeholders are not often involved in the MPA activities and the process itself also takes time.

**Considering the above,** the recommendations that we would like to highlight to potential users of the MPA Engage results and outputs are as follows:

Managers are encouraged to repeat the vulnerability assessment periodically (i.e. every 2-3 years), including new data, when available, and updating existing indicators. This will contribute to the efficacy and impact of the tool on the management of the MPA;

The vulnerability assessment can be performed with a limited amount of data; however, it is important to continue with the data collection process to measure each indicator considered and increase the quality of the assessment over time;

**Integrate stakeholder** and expert participation into ecological and social monitoring in the MPAs for climate change adaptation.



#### **4.4 INDICATIVE COSTS**

The main costs involved are related to staff salaries and travel expenses for training, which can be kept to a minimum if the trainings take place online. Based on the experience of the pilot MPAs participating in MPA Engage the vulnerability assessment activities require 60 to 90 working days. The main activities include training, data collection, stakeholder interviews and reporting; the estimated duration of each activity is as follows:

- 1. Training approximately 1 week;
- 2. Data collection between 2 and 60 days depending on the amount of data available in the MPA database;
- **3.** Interviews between 2 and 40 days depending on the number of interviews, the mode (in person, by phone, online), the relationship with the stakeholders;
- **4.** Evaluation report approximately 1 week.

We can conclude that for the implementation of a vulnerability assessment, 1 to 2 people allocating the equivalent of 2 to 3 months (the activities expand over an extended period of time) are needed to undertake the data collection activities involving literature review, field work and interviewing stakeholders. Furthermore, no specific materials are required for its implementation. With the above considerations in mind, an estimate of the costs required to implement the socio-ecological vulnerability assessment applying the methodology developed within the MPA Engage project for MPAs was 12.000€ on average, corresponding to the cost of personnel dedicated to this activity and the organization of meetings with different stakeholders. However, these costs highly depend on the specific context of each MPA, its geographical location, its governance, and most importantly, its available data.

## 5. HARMONIZED MONITORING

Mediterranean MPAs are sentinel sites to monitor climate change impacts on marine ecosystems.

## 5.1 BRIEF DESCRIPTION & OVERALL APPROACH

Mediterranean MPAs are considered sentinel sites to monitor climate change impacts on marine ecosystems. The monitoring protocols developed and tested in the MPA Engage project allow to track four main categories of climate change impacts: i) Changes in physico-chemical conditions, ii) shifts in distribution of both native and alien species, iii) episodic events and iv) changes in phenology. Based on the availability of 11 common protocols, MPAs can select the most appropriate monitoring protocols to adapt the monitoring strategy to their needs and local socio-ecological conditions. Upscaling the adoption of the monitoring protocols will contribute to build robust time series in a harmonized way providing crucial information for understanding climate related changes across the Mediterranean basin. The protocols are cost-effective and specifically designed to improve evidence-based adaptative management.













#### Figure 5-1.

Set of eleven protocols adopted in MPA Engage. The first five protocols have been previously developed in the framework of the MPA-Adapt project (Garrabou et al., 2019), while protocols from 6 to 11 have been developed within the MPA Engage project.



monitoring of mass mortality

#### NEW Protocols



#### **5.2 TOOLBOX**

The MPA Engage **Monitoring Protocols Toolkit:** The 11 MPA Engage monitoring protocols are provided in the form of complete toolkits, ready to be used and transferred. These toolkits are complemented by e-learning materials such as presentations, video-tutorials and tools to assist the process of data collection and analysis. All together, these materials provide a system to support the entire process, from the data collection (monitoring), to the analysis and interpretation of data, up to the final assessment of climate change impacts.

The MPA Engage e-Learning Materials: A series of webinars presenting the rationale, the goals, the materials, the field implementation and the outcomes for the 11 monitoring protocols are available.

The MPA Engage Joint Monitoring Plan in the MPAs: This document is intended to provide guidance to conservation practitioners, MPAs management bodies, and decision makers on how to integrate a series of common and harmonized protocols for monitoring climate change effects in the management plans of Mediterranean MPAs. Related outcomes and conclusions are based on the experience and feedback received by 7 pilot MPAs, which tested on the field the effectiveness of 11 monitoring protocols. The testing of multiple monitoring protocols across different MPA contexts has provided actionable insight into the overall feasibility and effectiveness of each protocol.

All tools and resources can be found here

### **5.3 LESSONS LEARNED & RECOMMENDATIONS**

- 1. Monitoring should be preferably performed by MPA staff and not be externalized
- 2. It is advisable to identify a responsible person for monitoring activities, eventually for each protocol
- 3. Do not miss the opportunity to involve local communities in the monitoring process. Local Ecological Knowledge and Citizen Science approaches provide powerful opportunities to amplify observation capacity, in partnership with key stakeholders such as local fishers and management.
- 4. Try to monitor Climate Change impacts on a regular robust and harmonized methodologies represent a crucial information to assess the consequences of climate change on marine ecosystems;
- 5. Think that the results of monitoring strategy can
- 6. Act local and think Mediterranean means that with establish a first network of sentinel sites where to monitor the impacts of Climate change in the Mediterranean region.

divers. Stakeholder involvement benefits the MPA

basis to build timeseries. Time series collected through

be used to conceive mitigation measures but also to promote behavioural/political changes at all levels adequate support, the MPA Engage MPAs and other MPAs joining the proposed monitoring strategy, could

## **5.4 INDICATIVE COSTS**

**Costs for implementing** the monitoring protocols vary among MPAs due to their different socio-economic conditions (salary rates, staff expertise, need for training sessions, logistics, etc.). Field work accounted for the majority of costs, followed by data treatment and reporting and preparation. On average the implementation of each protocol had a cost of up to 3,000 euros per year, at least for protocols P3, P4, P6, P7, P8.

## **6.2 TOOLBOX**

# 6. CITIZEN SCIENCE

Citizen science is an effective research approach where community groups and science professionals work together in a meaningful way to generate scientific data.

## **6.1 BRIEF DESCRIPTION & OVERALL APPROACH**

#### Citizen Science activities contribute to:

- the cost-effective long-term and large-scale monitoring efforts, not only in terms of the quantity of data collected but also in terms of the uniqueness of these data. For example, some of the Marine Protected Areas have engaged technical divers in the monitoring which provided data from deeper depths difficult to be collected by the MPA staff;
- the increase in citizens' awareness primarily on climate change but also on issues related to the activities and management strategies of the MPAs;
- boost participatory approaches and MPA management effectiveness, strengthening the collaboration with local stakeholders and developing a sense of cohesion with the MPA objectives and staff.

The MPA Engage three monitoring protocols for citizen science activities: The selected protocols are: the a) Mass Mortality Monitoring, the b) Fish Visual Census and the c) Pinna nobilis fast assessment. For these 3 protocols the marine CS web platform Observadores del Mar already presents three projects ensuring that the data collected could be uploaded, validated and transferred to the MPAs that potentially might use these data.

The MPA Engage Joint Plan on Citizen Science: Mainly focusing on the three applied protocols, this document aims to serve as a guide for MPAs that seek to implement citizen science campaigns. Moreover, the costs associated with the implementation of the citizen activities are described and the main challenges encountered, as well as the ways to overcome them.

**Basic Research Operator - Methodology and Work**ing Plan: A powerful tool, the specific training program "Basic Research Operator" (BRO), has been designed by PADI and DAN with the support of UNIVPM to provide new skills to the diving center operators. The program has a dedicated manual including different well tested CS projects. The manual includes not only written detailed explanations on the protocols but also tutorials to support the training of volunteers and the procedures to follow for the data upload on dedicated repositories. BRO is a PADI/DAN specialty, but it is not exclusive. It can also inspire other initiatives in different diving schools, widening the audience interested in marine citizen science.

The MPA Engage Citizen Science e-Learning Materials: Among the products of the project there is also a collection of webinars and presentations which are very useful training tools on various citizen science related topics.

All tools and resources can be found here

## **6.3 LESSONS LEARNED & RECOMMENDATIONS**

The main challenges and lessons learned in implementing citizen science activities are depicted below:

- **1.** Data gathered via citizen science activities may be perceived as not reaching the data guality standards: The data uploaded in the online repository is of crucial importance since the data uploaded are then validated by expert researchers and only after the validation process may be used for scientific purposes (e.g. tracking the arrival of invasive species, detecting mass mortality events). Without this last step of the data collection, all the training and monitoring efforts risk to become or remain an educational and awareness raising action only.
- 2. The implementation of citizen science activities is time-consuming for the MPA staff and stakeholders: Stakeholders, particularly diving centers, need a constant motivation by the MPA staff to make citizen science actions part of their routine activities. On the contrary, fishers' lack of interest is reported to be related with the existence of several other studies or citizen science project, requesting their knowledge. Some MPAs also reported the challenge of transferring the goal of the project to the stakeholders together with the difficultiesto put in place continuous monitoring with citizen science sometimes impeded by bad sea conditions preventing the constant data collection in the same site each year. Citizen science activities may not be a priority for some of the diving clubs which had to focus more on the recovery of the usual diving activities (either in terms of economic/business benefits or in terms of maintaining the number of customers).

**3.** The number of protocols and their complexity: When we increased the number of protocols to be deployed by citizen science some project partners got concerned that too much workload would discourage the collaboration in the implementation of citizen science activities which are ultimately carried out on a voluntary basis. It was highlighted that the protocols should be simple and easy-to-implement and performed by trainers with consolidated experience.

Considering the above, some recommendations are depicted below:

- . There is a need for simple protocols well-tested by experienced trainers; these protocols should be implemented in close collaboration with scientists;
- 2. tools should be elaborated in order to build the necessary skills for carrying out citizen science projects; this could become a business opportunity and a source of income for the diving centres that decide to implement it (e.g.: the BRO training);
- **3.** When implemented citizen science programmes and campaigns a limited number of protocols should be selected, taking into consideration which ones are better suited for the categories of stakeholders involved in the monitoring and which ones are more suitable for the ecological characteristics of each MPA.





#### **6.4 INDICATIVE COSTS**

Having all these considerations in mind, an estimation of the costs required for the implementation of citizen science activities applying the methodology developed within the MPA Engage project depends on the specific context of each MPA, its geographical position, its governance, etc. Nevertheless, the main steps to be considered are: organization of citizen science outreach events to identify potential stakeholders willing to participate, organization of specific trainings on the protocols, development of a strategy to follow up on the implementation of citizen science activities in the MPAs. The cost of the citizen science activities implemented by the project pilot MPAs was on average around 1,500 euros per protocol implemented.

# **7. CLIMATE CHANGE ADAPTATION AND** MITIGATION PLANS

The collective experience of the pilot MPAs sets the foundations for a joint approach in Mediterranean MPAs to deal with the rapidly increasing challenge of climate change.

### 7.1 BRIEF DESCRIPTION **& OVERALL APPROACH**

There is an overwhelming scientific consensus that supporting marine conservation under climate change is one of the grand challenges for the coming decade. The Mediterranean MPAs face an urgent need to pursue evidence-based solutions to the biodiversity decline and the unprecedented pressures from climate change in the region. There is, therefore, an imperativeness to mitigate these risks and to consider adaptation options in partnership with local communities, decision-makers, civil society organizations, research bodies, and other socio-economic actors at local, national and regional level.

Within the framework of the MPA Engage project, a participatory five-phase decision-making process was run by the 7 pilot Mediterranean MPAs with the aim to identify and adopt priority climate change adaptation measures. Based on the climate change adaptation options endorsed or shortlisted by the pilot MPAs, common priority actions that should implemented by all Mediterranean MPAs in response to the lurking effects of climate change were defined. The collective experience of the pilot MPAs sets the foundations for a joint approach in Mediterranean MPAs to deal with the rapidly increasing challenge of climate change.

The deployed decision-making process consisted of the following five phases:

- Phase 1 Establishment: The overall aim of the establishment phase is to make known the intention for drafting the plan and identify the convening body responsible for the overall coordination of the planning.
- Phase 2 Analysis and Scenarios: The aim of the analysis phase is to establish the foundation on which the preparation of the plan and its implementation will be based.
- Phase 3 Setting the Vision: The aim of this stage is to achieve the engagement and consensus building with the stakeholders and the wider community on the action plan based on the findings from the phases 1 and 2.
- Phase 4 Designing the Future: The aim of this stage is the actual drafting and finalization of the local climate change adaptation plan, which will contribute in shaping the future of the MPA.
- Phase 5 Realizing the Vision: The aim of this final phase is to operationalise the adopted climate change adaptation plan and provide for its constant improvement.

It should be highlighted that the completion of the first four phases (Phase 1-4) were achieved within the scope of the MPA Engage project, while the actual implementation of the action plan (Phase 5) will be dealt with through follow-up projects and/or initiatives.



Overview of the five-phase planning process and associated tasks.



The main typologies of climate change adaptation and mitigation measures considered within the MPA Engage project are the following:

- 1. Capacity Building & Awareness Raising
- 2. Economic
- **3.** Protection & Restoration
- **4.** Regulation & Governance
- 5. Research & Monitoring
- 6. Technological

#### 7.2 TOOLBOX

The MPA Engage Guidelines on how to Develop a Local Climate Change Adaptation and Mitigation Plan: These guidelines aim to facilitate the elaboration of local climate change mitigation and adaptation plans. This document is a quick guide that will lead through a step-by-step process to the elaboration of the aforementioned plans via setting up a participatory decision-making process.

The MPA Engage Joint Plan for Climate Change Adaptation in Mediterranean MPAs: methodological approach & priority actions: This document is a synthesis report of the results and outcomes of the participatory 5-phase decision-making process run by 7 pilot Mediterranean MPAs with the aim to identify and adopt priority climate change adaptation measures. The report features the climate change adaptation options endorsed or shortlisted by the pilot MPAs and defines the common priority actions that should implemented by all Mediterranean MPAs in response to the lurking effects of climate change.

> The MPA Engage Climate Change Adaptation Plans of the 7 pilot MPAs: These documents present the results and outcomes of the participatory 5-phase decision-making process run in each pilot MPA. They feature the climate change adaptation options endorsed or shortlisted by each pilot MPAs.

**The MPA Engage e-Learning Materials:** The MPA Engage run a webinar focused on the participatory elaboration of a climate change adaptation plan.

All tools and resources can be found here

## 7.3 LESSONS LEARNED & RECOMMENDATIONS

The main typologies of measures endorsed by the pilot MPAs are those related to capacity building & awareness raising, research & monitoring, regulation & governance. Measures related to technological solutions, protection & restoration, and economic instruments are the least favoured ones, most probably because they are more difficult to implement, are more resource-intensive, stir more conflicts and/or disagreements among and between the different stakeholders, etc.

The measures adopted and/or shortlisted by the pilot MPAs, differ in levels of sophistication, in levels of detail or in levels of comprehensiveness, depending also on the natural, political, organizational and institutional context of the MPAs. However, these have been processed and a set of 10 common no-regret priority measures that should be jointly adopted by Mediterranean MPAs have been identified. The list of recommended actions and measures listed below gives shape and form to a Joint Plan for action to face climate change in Mediterranean MPAs.

1. Implement awareness raising campaigns on the climate change effects targeting key local stakeholders, such as artisanal and recreational fishermen, divers, boaters and others;

**2.** Develop awareness raising activities targeting MPA visitors on climate change effects and best practice approaches and responses at MPA level;

**3.** Carry out sector-specific capacity building to reduce and manage the impact of coastal and marine users' activities on MPAs and enhance ocean literacy towards ocean-informed actions and the adoption of good practices;



**4.** Set up comprehensive monitoring schemes focused on climatic variables, species or habitats, extreme events, ecological and social processes;

**5.** Carry out research on the effects of climate change, vulnerability and capacity for adaptation;

6. Engage with wide-ranging volunteers in citizen science activities to monitor the effects of climate change on marine ecosystems;

7. Apply and/or reinforce restrictions for professional and recreational users to avoid or decrease damages on marine ecosystems;

8. Develop or update emergency response plans to address potential greater frequency of extreme weather events;

**9.** Promote the consumption and commercialization of warm-water species of either native or exotic origin;

**10.** Implement restoration activities targeting protected, endangered and rare species.

**Considering that the participatory approach** is an inherent aspect of the entire decision-making process for the elaboration of climate change adaptation and mitigation plans the lessons learned and recommendations are depicted in Chapter 8. The same applies for the indicative costs.

## 7.4 INDICATIVE COSTS

See Chapter 8



## 8. PARTICIPATORY APPROACHES

Participatory processes are key to ensuring transparent, appropriate and effective decision-making.

#### 8.1 BRIEF DESCRIPTION & OVERALL APPROACH

**Participatory approaches** are at the heart of the MPA Engage project; through a participatory approach, MPA Engage elaborated vulnerability assessments, developed climate change adaptation and mitigation action plans and supported citizen science activities to monitor the climate change impacts in the pilot MPAs. In its simplest terms, a participatory approach is one in which everyone who has a stake in an intervention has a voice, either in person or by representation. Anyone affected by a decision has the right to be involved in the decision-making process. This is the basic premise of a participatory approach and public participation. Public participation allows stakeholders to influence decisions that affect their lives and activities. It is the process by which an organisation/body consults with interested or affected individuals, communities, organisations, and public entities, before making a decision. Public participation is a two-way communication and collaborative problemsolving process with the goal of achieving better and more acceptable decisions.

Within the MPA Engage project the quintuple helix participatory approach was deployed, where the engagement of the following five groups was ensured in the elaboration process (planning process) of the local climate change mitigation and adaptation plans:

- 1. MPA-managers
- 2. Socio-economic actors
- **3.** Scientists
- **4.** Public authorities
- 5. Citizens

**Participatory decision-making processes** are very contextdriven processes, and needs and requirements of each process vary. There is no blueprint to follow. Every case is unique, with specific needs, goals, stakes, interests, stakeholders, history, setting, etc.



**During a participatory process** there can be different levels of involvement of participants, reflected by the so called "participation ladders". The different "steps" of the ladder describe the level of involvement of participants. The ladder goes from simply informing the stakeholders (the minimum in any participatory approach process) to empowering the participants, which is the highest level of involvement (the final decision-making is placed in stakeholders' hands). Within the MPA Engage participatory process we opted for the highest level of involvement.



#### **INCREASING LEVEL OF STAKEHOLDER'S IMPACT**



Figure 8-2.

The participation ladder: the different "steps" in the ladder describe the level of involvement of participants.

## **EMPOWERING**

## INVOLVING

# INFORMING

# CONSULTING

## COLLABORATING





**3.** ESTABLISHMENT OF THE PARTICIPATORY PROCESS OBJECTIVES

**4.** LINKING PUBLIC PARTICIPATION & THE DECISION PROCESS

The 6-step MPA Engage scheme for designing a participatory

#### **8.2 TOOLBOX**

The MPA Engage Guidelines for applying a Quintuple Helix Participatory Approach: These guidelines aim to guide the stakeholders' engagement and public participation processes that are key for the elaboration of a climate change mitigation and adaptation action plan. These guidelines help identify the stakeholder groups to be involved in the elaboration of an action plan and also feature the tools to inform and engage them in the decision-making process.

The MPA Engage Synthesis on Deploying the Quintuple Helix Participatory Approach in Mediterranean MPAs for effective decision-making against Climate Change: showcases & essential elements for success: This document is a synthesis report of the results, outcomes and lessons learned of the quintuple helix participatory approach implemented in 7 Mediterranean MPAs with the aim to identify and adopt priority climate change adaptation and mitigation measures. The report features the experiences obtained by deploying the MPA Engage "Guidelines for applying a Quintuple Helix Participatory Approach" and features the essential elements for success for any participatory process plan implemented in Mediterranean MPAs.

> The MPA Engage Quintuple Helix Participatory Approach Reports in the 7 pilot MPAs: These documents present the results, outputs and lessons learned of the quintuple helix participatory approach implemented by each pilot MPAs.

The MPA Engage e-Learning Materials: The MPA Engage run a webinar focused on the design and implementation of participatory processes in Mediterranean MPAs for effective decision-making against climate change.

## 8.3 LESSONS LEARNED & RECOMMENDATIONS

Participation means many things to many people. It carries potential benefits but it also poses challenges:

**1.** Multiple understandings and expectations of those involved, may to misinterpretations and disappointment, which can contribute to mine the process.

2. Plans, methods, tools and techniques do not guarantee participation.

**3.** Public participation is a context-driven process, where the full understanding of the political, cultural and institutional context at local, national, regional and global level is needed.

4. The successful outcome of the participatory process relates to factors at different levels such as at individual, community, organizational, political, economic, etc., levels. It should be highlighted that these factors are intertwined and affect each other in very complex ways.

Despite the challenges that had to be dealt with, the overall MPA Engage experience was positive as it strengthened the capacities of all those involved in the participatory processes, generated commitment to promote MPAs as naturedbased solutions to tackle climate change, established and/ or strengthened alliances among key stakeholders, and emphasized the potential of the participatory process as a powerful tool to generate constructive discussion among communities related to climate change. Overall the MPA Engage showcases demonstrated that supporting the implementation of participatory processes can successfully lead to effective decision-making for climate change adaptation and mitigation in Mediterranean MPAs. The project's pilot MPAs tested the MPA-Engage quintuple helix participatory approach, which allowed to identify and/ or reinforce the essential elements for success towards achieving stakeholder consensus throughout a five-phase planning process and resolving any conflicts. To that end the main recommendations are depicted below:

- Setting up an interdisciplinary team: In order to ensure that a variety of viewpoints are considered from the very beginning and throughout the participatory decisionmaking process, the team tasked to elaborate the climate change adaptation and mitigation plan should be interdisciplinary and include scientific experts as well as relevant policy and socio-economic experts.
- Engaging stakeholders early: Early engagement of the stakeholders is critical to any participatory decisionmaking process in order to build trust and ensure transparency, commitment and ownership of the process.
- Defining roles and contributions: It's essential to set up a clear participatory decision-making process where all stakeholders have a common understanding of how it works. Ensuring all stakeholders are aware of the planning process, what each implementation phase entails and how they are expected to contribute, is key.
- Ensuring good framing of the issue(s) at stake: Good framing of the issue(s) at stake on the basis of a consolidation of the various scientific views, integrating multi-disciplinary perspectives, is key towards providing an undisputed, solid knowledge basis to feed into the participatory decision-making process.
- Working towards consensus: All stakeholders need to share a clear common goal and be willing to work together towards it. Within the scope of a participatory planning process, focus should be placed on obtaining agreement when it comes to defining the purpose and the scope of the local climate change mitigation and adaptation plan. Initially, instead of identifying the elements that should be included in the common vision, it should be sought to identify and obtain consensus on those elements that should not be included in the common vision.

- Creating a respectful and trusting atmosphere: Helping to create a respectful and trusting atmosphere is of paramount importance. Making space for everyone to express their ideas and opinions, and remembering that stakeholders have different needs, values and ways of communicating, is a must. Stakeholders are knowledge agents themselves and treating them as such not only fosters trust but also leads to more creative and dynamic solution identification and problem-solving approaches. It must also be ensured that marginalised groups are engaged in the process and participation is facilitated for those who may be facing difficulties in doing so.
- Exploring differences: Some people shy away from conflict situations, others get into arguments to prove they're right. The key to finding win-win solutions is to understand all the different needs and perspectives before forming a proposal. Once a good understanding of what is important to the different stakeholders is obtained, then all the ideas for moving forward should be collected and explored. Looking at the pros and cons of different ideas helps the stakeholder group with really understanding everyone's key needs and concerns.
- Taking a pragmatic approach to decision-making: Finding a balance between ambition and realism is of utmost importance. Effort should be streamlined towards overcoming obstacles and bottlenecks while remaining within the sphere of "doable".
- **Confirming** agreement: It should be ensured that agreement has been achieved by clearly stating the final proposal and asking people to signal whether they agree or disagree. This stage is important to check if there are concerns that haven't been heard. If consensus has not been reached, then it is considered essential to go back to an appropriate earlier stage in the process.
- Being open and flexible: Being responsive, consistent and timely in communications is imperative. Communicating well in advance, documenting the engagement rationale and process, and allowing for stakeholder feedback will yield the desirable consensus. Being open to the ideas and opinions of others is often the most difficult aspect of participatory processes; but it is one of the most integral factors of success.





#### **8.4 INDICATIVE COSTS**

**Overall, we can state** that the implementation of the quintuple helix participatory process and the elaboration of a climate change adaptation plan have a rather moderate cost, depending of course on the circumstances of the MPA. In particular the relationship and frequency of communication that each MPA has with local stakeholders will influence the time required and the budget devoted for their engagement in the participatory process.

The main costs involved refer to the following: (i) plann ing, implementing and reporting of the activities, (ii) coordination of the external contractors (when applicable), (iii) organization of stakeholder events and/or participation in related events, (iv) communication actions. Overall, the average cost for the implementation of the participatory planning process and the elaboration of the climate change adaptation plans is estimated around 13,000€. Of course, this cost may be lower or even higher depending on the number of stakeholder events needed to be organized, the number of stakeholders engaged during the process, the extend of working relations with stakeholders (in some MPAs long-standing working relations with stakeholders may be in place), the number of comments received and processed during the decision-making process.



## 9. CONCLUDING REMARKS

At the sub-regional and regional levels, the adoption of common tools, protocols and plans is expected to enhance the management effectiveness of Mediterranean MPAs and to promote their role as nature-based solutions to face climate change.

PROBABLY, THE MPA ENGAGE **APPROACH** RFI ATFD TO MONITORING **PROTOCOLS IS THE** MOST ADVANCED IN THE REGION



The outcomes of MPA Engage offer a first real opportunity to develop a solid Mediterranean network of diverse communities and actors (citizens, scientists, practitioners and entrepreneurs in the maritime sector) engaged in the conservation of marine and maritime natural heritage via supporting mitigation strategies and effective adaptation plans.



The protocols respond to the principles of the Ecosystem-Based Approach and the Aichi targets (UN CBD), providing a complementary contribution to the Integrated Monitoring and Assessment Programme of the Mediterranean Sea and Coast (IMAP) (UNEP/MAP, 2006) and the EU Marine Strategy Framework Directive (MSFD; Directive 2008/56/EC) (EC 2008). MPA Engage developed similarly comprehensive approaches to implement other key lines of action namely vulnerability assessments, citizen science activities, participatory decision making for the elaboration of climate change adaptation plans. Therefore, enlarging the number of MPAs and MPA practitioners willing to adopt the outcomes of the MPA Engage will accelerate the effectiveness of Mediterranean MPAs. We aspire that this document is stepping stone towards building a Mediterranean network of MPAs resilient to climate change.

Join the network!















Generalitat de Catalunya Departament de Territori i Sostenibilitat





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# Act local, think **Mediterranean!**









