

EFFECTIVE MANAGEMENT OF MARINE PROTECTED AREAS IN THE MEDITERRANEAN FOR AN INCLUSIVE, RESILIENT & COHERENT NETWORK OF MPAs



MedPAN NETWORK POLICY PAPER

KEY MESSAGES:

1. Fostering collaborative governance and co-management in the Mediterranean Sea
2. Increasing the level of High/Full protection of MPAs in the Mediterranean Sea
3. Expanding a network-based management of mobile species in the Mediterranean Sea
4. Supporting sustainable small-scale fisheries management as a key success factor of the Mediterranean culture of marine stewardship
5. Catalysing sustainable financing opportunities for the Mediterranean Sea
6. Enabling marine resilience in the Mediterranean Sea
7. Bolstering nature-based sustainable tourism in the Mediterranean Sea

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Background:

International biodiversity hotspot, the Mediterranean Sea hosts a unique share of the world's marine biodiversity. Representing only 0.8% of the ocean area, it shelters nearly 17,000 known marine species representing about 7-9% of the global marine biodiversity. The Mediterranean Sea, *Mare Nostrum*, is an inestimable historical and cultural cradle and represents one of the most economically important seas in the world, generating an estimated annual economic value of US\$450 billion from sea-related activities and valuable services to people (Randone *et al.*, 2017). The history and culture of the Mediterranean region are intimately linked to the sea.

The Mediterranean coastal and marine ecosystems are however under wide and intensive pressure. The Mediterranean Sea represents the highest proportion of threatened marine habitats in Europe (32%), with 21% of them listed as vulnerable and 11% as endangered. 48% of wetlands in the Mediterranean basin have disappeared since 1970, and the Mediterranean *Posidonia oceanica* seagrass meadows have decreased by 34%. 53% of shark species are at risk of extinction and marine mammals' populations have decreased by 41%. Fish species have declined by 34%, including commercial and non-commercial species, and nearly 80% of fish stocks are fished at biologically unsustainable levels. In terms of pollution, 229,000 tonnes of plastics reach the sea every year. The maritime traffic in the region is intense, with 15% of global shipping. A total of 1,011 non-indigenous marine species have been already recorded in the Mediterranean waters, 748 of which are currently considered established, which makes the overall establishment rate almost 74% (UNEP/MAP, 2022).

The expanding anthropic footprint is placing the Mediterranean Sea at risk at alarming rates. Exacerbating these pressures, the region is exhibiting a “notable warming” (IPCC Special Report on the Ocean and Cryosphere in a Changing Climate (SROCC), 2019), that is 20% faster than the global average (MedECC, 2020). The Mediterranean basin is one of the two most responsive regions to climate change globally, a “hotspot for highly interconnected climate risks”. As reiterated by the Intergovernmental Panel on Climate Change (IPCC), adaptation options for climate change impacts on marine ecosystems and fisheries include improving and enlarging the regional network of marine protected areas, transnational management of marine food resources and sustainable fishery practices (IPCC WGII Sixth Assessment Report, 2022).

The effective protection of the Mediterranean Sea is thus urgently needed. Governments from the 21 riparian coastal States have taken important steps in this regard in establishing marine protected areas (MPAs) and other marine conservation measures. MPAs are one of the most effective tools for marine biodiversity protection, while enhancing local opportunities for sustainable development. When effectively managed, they contribute to the sustainable economic activities such as small-scale fisheries and can host more than twice the biomass of fish as compared to unprotected areas (Giakoumi *et al.*, 2017) and can generate revenue from fishing and scuba-diving that is 2.3 times higher than their management costs (Merino *et al.*, 2009).

In 2010, the Aichi targets, adopted in the framework of the UN Biodiversity Convention, planned to have at least 10% of the sea and coast protected and effectively managed by 2020. In 2020, MPAs already covered 8.3% of the Mediterranean Sea, but only 4.1% of the Mediterranean is covered by MPAs that have fully or partially implemented their management plan (MAPAMED 2019 edition v2: SPA/RAC and MedPAN, 2022). To date, only one out of five Mediterranean MPAs has a management plan, and these are fully implemented in only 0.2% of the Mediterranean Sea area (MedPAN, SPA/RAC & WWF, 2022). 28% of MPAs in non-European Union (EU) countries MPAs declared to work with an insufficient budget or with no budget at all (MedPAN, 2021). The remaining progresses look bigger under the light of the draft Post-2020 Global Biodiversity Framework, the renewed European and Mediterranean

regional commitments that include a 30×30 target to protect 30% of the world's oceans and the Mediterranean Sea by 2030.

All these intergovernmental commitments recall the explicit support to effective MPAs management. The MedPAN* network takes the effective management of MPAs as the post-2020 main priority objective for the decades to come.

This Policy Paper is based on the largest MPA field experience in the region and on valuable lessons learnt from the Interreg-MED MPA NETWORKS project, MAVA MPA/NTZ COGITO projects, and FFEM and other donors, MedPAN annual regional experience-sharing workshops and Thematic Working Groups. Addressed to the decision-makers at all relevant levels, it defines, in line with the Mediterranean MPA Vision (see below), ways forward on common critical issues with operational recommendations*¹ and provides insights on how to further harness efforts for a healthy and resilient Mediterranean Sea.

***About MedPAN:** The Mediterranean network of MPA managers (MedPAN) supports the implementation of international agreements and marine policies, fostering partnerships with all the relevant marine conservation actors and key regional organisations. In 2022, the network is composed of over 130 members and partners representing 21 Mediterranean countries. MedPAN provides technical support to MPA directly at local level as well as through coordinated actions at the regional level. The strength of MedPAN lies in its ability to make the link between science, experiences on the ground, and the decision-making processes, providing a coordinated input to policy by voicing MPA managers' concerns, obstacles, and feedback.

Mediterranean MPA Vision from the Post-2020 Mediterranean MPA Roadmap (MedPAN, SPA/RAC & WWF, 2022):

To achieve by 2030 a connected, ecologically representative, effectively managed and monitored network of Marine Protected Areas in the Mediterranean which ensures the long-term conservation of key elements of marine biodiversity and gives significant support to the sustainable development of this region.

¹ Recommendations take stock of those of the Post-2020 Mediterranean MPA Roadmap, which is cited where relevant along the text. The Roadmap does not formally commit countries to actions, but it makes it possible to define the steps that Mediterranean countries, relevant organisations, and other stakeholders could individually and/or jointly undertake to achieve the 2030 strategic objectives set for the MPA network in the Mediterranean.

KEY MESSAGES and RECOMMENDATIONS

I. Fostering collaborative governance and co-management in the Mediterranean Sea

Rationale:

The effective management of MPAs relies not only on socio-economic aspects but also on governance efficiency, consistent competencies, and legal frameworks. As underlined by the Barcelona Convention Post-2020 Regional Strategy for MCPAs and OECMs and Post-2020 SAPBIO “today MPA governance gaps persist because of overlaps or even conflicting policies across the different sectors both inside and around MPAs”.

Legal frameworks should orchestrate, in good synergy, the different area-based tools for marine conservation, the complementarity and good coordination of competences inside different marine and coastal zoning but beyond them as well to prevent confusing overlaps, conflicts of legislations and regulations on environment, fisheries and aquaculture, tourism, maritime transportation, energy, and even defence.

Compliance and collaboration of stakeholders should also be eased and catalysed through participatory processes. The compliance with regulations works best indeed when the MPA objectives are clear, developed jointly and shared by the users of natural resources and local communities. The adoption of a management plan is, in this regard, important as it provides agreed objectives and facilitates the implementation of the regulations in place. Regarding the enforcement of regulations, essential collaboration may extend to the coastguard, police, and judiciary bodies.

The Barcelona Convention Contracting Parties (*i.e.*, 21 Mediterranean coastal States and the European Union) have agreed that MPAs cannot be managed in isolation and that stakeholders must be involved at all levels. **Inclusive governance** involves participation, shared and transparent decision-making, and fair benefit-sharing (Borrini *et al.*, 2013). **Collaborative governance** is not only consultative, since all stakeholders should have influence over actual decision-making (Ansell and Gash, 2008). **Co-management** is a higher-level participation in which stakeholders collaborate in regulatory decision-making and take part in the responsibility and authority for the management of a given resource. It is “a process of management in which the government shares power with resource users, with each given specific rights and responsibilities relating to information and decision-making”. Co-management acknowledges the need to move from a top-down and centralised approach to collaborative and more bottom-up participatory modes.

Research has shown that fishers in the Mediterranean have been using co-management for decades (Jentoft, 2003). In a fishers’ community, it allows unveiling and sharing the local knowledge and concerns and can lead to agreed zoning and fishing regulations together with scientists and governmental officers (López *et al.*, 2014). NGOs can also receive delegated competences to manage MPAs. Some MPAs (in France, Italy, Spain, Tunisia, Turkey) have adopted this participatory model with significant results for effective management (Guidetti and Claudet, 2010; Giakoumi *et al.*, 2017; D’Armengola *et al.*, 2018).

Another important dimension of governance is the gender sensitive and/or responsive approach. Achieving gender equity is a fundamental contribution to address the pressing challenges the Mediterranean region is facing today (UFM, 2017). In the Mediterranean, significant progress has been made in recent years in closing the gender gap. In many countries, there are positive trends in women’s participation in the economic, political, civil, social, and cultural spheres of life. However, gender equality remains a key issue in the field of marine conservation, even if conservation impacts and protection of natural resources and habitats are enhanced when women contribute at all levels.

Policy framework

- Tangier Declaration adopted at the 2016 Forum of Marine Protected Areas (MPAs) in the Mediterranean (Tangier declaration 2016; 2.3; 2.5; 2.6; 3.3)
- The Road to 2030: Post-2020 Mediterranean Marine Protected Areas Roadmap (MedPAN, SPA/RAC & WWF Post-2020 MPA Roadmap 2022; Strategic Objective 1, Rec.1.4; Rec.1.5; Strategic objective 3, Rec.3.3; Strategic objective 4, Rec.4.6; Rec.6.4)
- UNEP Marine and Coastal Strategy 2020-2030 (UNEP-MCS 2019; Strategic Objectives 3a and 3d)
- UNEP/MAP – Barcelona Convention Protocol concerning Specially Protected Areas and Biological Diversity in the Mediterranean (SPA/BD; 1995; entered into force in 1999)
- UNEP/MAP – Barcelona Convention Post-2020 Regional Strategy for Marine and Coastal Protected Areas and Other Effective area-based Conservation Measures in the Mediterranean (Post-2020 Regional Strategy for MCPAs and OECMs 2021; Strategic Pillar 1, Outputs 1.1., 1.2, 1.3.)
- UNEP/MAP – Barcelona Convention Post-2020 Strategic Action Programme for the Conservation of Biodiversity and Sustainable Management of Natural Resources in the Mediterranean Region (Post-2020 SAPBIO 2021; Target 2.9; and Actions 28 and 29)
- FAO-GFCM 2030 Strategy for sustainable fisheries and aquaculture in the Mediterranean and the Black Sea (GFCM 2030 Strategy 2021, Target 4)
- ACCOBAMS Strategy 2014-2025 (2013, B.4.2.3)
- EU Biodiversity Strategy for 2030 (2020, 3.1. and 4.2.1.)
- EU guidelines for the establishment of Natura 2000 in the marine environment. Application of the Habitats and the Birds Directives (EU Natura 2000 marine network, 2007, 2.4. and 6.2)
- UN Sustainable Development Goals (SDGs; Target 16)
- CBD draft Post-2020 Global Biodiversity Framework (CBD-draft GBF 2022; enabling conditions 14 and 15)
- The UNEP/MAP – Barcelona Convention MedProgramme Gender Mainstreaming Strategy (2018)

GOVERNANCE RECOMMENDATIONS

❖ At the national & local level:

- I.1 Develop appropriate governance schemes by defining the institutional framework, appointing a dedicated administration for MPAs, formalising the appropriate national or decentralised coordination bodies, empowering MPA managers through legal and other mechanisms to apply a decentralised governance system that features participatory processes and co-management approaches and be more responsive to local conditions.
- I.2 Design a national system of MPAs and clarify the different governance models, including for e.g. the co-management.
- I.3 Enhance governance arrangements to advance gender equity in and around MPAs and OECMs².
- I.4 Support collaborative governance and exchanges between stakeholders' networks (protected areas, cities, prosecutors, local communities, small scale fishers, NGOs, divers, scientists, citizens, etc.) and communicate to support a change in the paradigm for shared governance and responsibility in MPAs.
- I.5 Involve and raise awareness in the legislative and judicial system: inform the police and coastguard (law enforcement authorities) to disseminate environmental rules and ensure control and enforcement.

² Defined as: A geographically defined area other than a protected area, which is governed and managed in ways that achieve positive and sustained long-term outcomes for the in-situ conservation of biodiversity, with associated ecosystem functions and services and, where applicable, cultural, spiritual, socio-economic, and other locally relevant values. (CBD 2018). Contracting Parties to the CBD agreed on a definition, guiding principles, common characteristics, and criteria for the identification of OECMs (Decision 14/8). The CBD decision however highlights that the criteria should be applied "in a flexible way and on a case-by-case basis".

❖ **At Mediterranean level:**

- I.6 Support the identification of good practices, experience exchanges and capacity-building on MPA management decentralisation, participatory processes, co-management schemes, and coordinated enforcement.
- I.7 Support the elaboration of regional guidelines on the possible co-management and participatory governance arrangements at the national level and transboundary level also and support their replication and scaling-up in the Mediterranean region.
- I.8 Bolster regional science-policy interfaces and foster multi-stakeholder dialogue to enable evidence-based, inclusive policy making and support the adoption of a Joint Cooperation Strategy on Spatial-based Protection and Management Measures for Marine Biodiversity.
- I.9 Develop a strategy and action plan for gender equity in MPA governance for the Mediterranean.
- I.10 Support collaborative regional leadership forum and visibility of Mediterranean Marine conservation champions who can act as ambassadors regionally and internationally.
- I.11 Support networking of MPA managers and other stakeholders (cities, prosecutors, small-scale fishers, NGOs, divers, scientists, etc.) at regional, sub-regional, and national levels and on key topics to enable scaling-up of good practices, sharing of experiences, mutual understanding, and establish permanent connections between MPA stakeholders at all levels to bring the voice from the field into decision-making processes.
- I.12 Mobilise the parliamentary diplomacy in support of regional multilateralism and solidarity for environmental protection and sustainable development to support the MoU signed between the Mediterranean Action Plan of the United Nations Environment Programme (UNEP/MAP) – Barcelona Convention Secretariat and the Circle of Mediterranean Parliamentarians for Sustainable Development (COMPSUD).
- I.13 Initiate a collaborative regional MPA4ALL campaign showcasing the marine conservation actions in the Mediterranean Sea and the multitude of stakeholders with testimonies of constructive and fruitful engagement.
- I.14 Support an increased cooperation both north/south and south/south and between governmental and non-governmental actors at all relevant levels on marine conservation.
- I.15 Support the joint cooperation strategy on spatial-based protection and management measures for marine biodiversity among the secretariats of ACCOBAMS, GFCM, IUCN-MED and UNEP/MAP that aims at bolstering effective regional cooperation and embodying a strategic alliance at the regional level.

❖ **At the EU Level:**

- I.16 Support and foster a blue “true Trans-European Nature Network” that takes into account links between MPAs in the EU and those in other European countries” and considers ecological corridors as stated by the European Commission.

❖ **At global level:**

- I.17 Share good practices on the different participatory governance models and co-management from the Mediterranean Sea with other networks and promote them in international fora.
- I.18 Support the coordination / joint action of networks of MPA managers to contribute to CBD, UN SDG and UNFCCC to make links between actions on the ground and decision-making processes at those international levels.
- I.19 Support WTO negotiations and adopt an agreement on fisheries subsidies that supports the United Nations Sustainable Development Goals (UN SDGs).

II. Increasing the level of High/Full protection of MPAs in the Mediterranean Sea

Rationale:

MPAs come in a variety of statutes which are diverse in objectives, management approaches, levels of protection and regulations of activities. The MPAs' levels of protection³ vary schematically from:

- **Fully protected:** all human activities, including visitation, may be prohibited, except as needed for scientific monitoring.
- **Highly protected:** allow limited low impact, small scale, highly selective extractive activities, strongly regulated and enforced provided the available resources are sufficient.
- **Lightly protected:** extractive activities allowed with varying restrictions.
- **Minimally protected:** despite some legal restrictions, these are not wide or stringent enough to counter significant impacts from human activities.

Scientific research shows evidence that effective higher protection increases biomass, the size, and density of organisms and the richness and diversity of species, the reproductive potential of commercially exploited species; it helps also restore benthic communities, facilitates the restoration of lost trophic interactions; and may provide resilience, both to climate change and to invasive alien species². However, recent assessments consider most MPAs as only partially protected areas (PPAs) due to weak enforcement or inappropriate regulations⁴ and raise questions on the effectiveness of partially protected and enforced MPAs (PPAs) in generating ecological benefits particularly when not adjacent to a strictly protected zone (Zupan *et al.*, 2018; Dimitriadis *et al.*, 2018).

Only 4.1% of the Mediterranean is effectively protected (MAPAMED 2019 edition v2: SPA/RAC and MedPAN, 2022). No-go, no-take or no-fishing areas currently represent only 0.04% of the Mediterranean, a figure that has remained unchanged since the last analysis in 2016 despite an increase in MPA coverage from 6.3% to 8.3% (MedPAN, 2021).

In 2016, the Tangier Declaration of the Forum of Marine Protected Areas in the Mediterranean stated the following objective “By 2020, increase the coverage and implementation of no-entry, no-take and no-fishing zones, within either existing or future MPAs, from the current coverage of 0.04% of the Mediterranean Sea to reach at least 2% of no-take zones, especially in key functional areas”. Few years later, the Post-2020 Mediterranean Marine Protected Areas Roadmap (MPA Forum 2021), echoes this need and recommends to “increase the number and size of MPAs that include zones with enhanced protection levels (e.g., no-take, no-access, strictly protected), to contribute to the recovery of marine ecosystems, based on scientific data and community engagement” (Recommendation 2.1)⁵. Enhancing the level of protection of the Mediterranean Sea is supported by the current policy framework (see below).

To date, the establishment of highly protected marine areas lays far behind the biological needs and the political ambition expressed in the current policy framework. Protection levels should be increased and more evenly distributed across the Mediterranean ecoregions.

Policy framework	

-	The Tangier Declaration (2016; 1.2)
-	Post-2020 MPA Roadmap (2022; Strategic objective 2, Rec. 2.1; Rec.2.2; Strategic objective 3, Rec.3.2; RFec.3.3)

³ Adapted from the MPA Guide 2021. The MPA Guide: A Framework to Achieve Global Goals for the Ocean <https://mpa-guide.protectedplanet.net/>

⁴ PPAs still provide biodiversity increases, creating an ecological buffer that helps to improve the governance of the sea and minimises the edge effect (a negative influence in biodiversity up to 1 km inside the MPA (Ohayon 2021).

<p>UNEP/MAP - Barcelona Convention Post-2020 Regional Strategy for Marine and Coastal Protected Areas and Other Effective area-based Conservation Measures in the Mediterranean (2021; Post-2020 Targets i) and ii); Output 2.4)</p> <p>UNEP/MAP - Barcelona Convention Post-2020 Strategic Action Programme for the Conservation of Biodiversity and Sustainable Management of Natural Resources in the Mediterranean Region (Post-2020 SAPBIO) (2021; T.1.5)</p> <p>UfM 2030 Greener Med (2nd Ministerial Declaration on Environment and Climate Action, 2021; THEMATIC AXIS 3; KA3.1; KA3.4)</p> <p>The EU Biodiversity Strategy for 2030: Nature protection: key commitments by 2030 (COM (2020) 380 final; 2.2.6)</p> <p>EC Criteria and guidance for protected areas designations (2022)</p> <p>CBD-draft GBF (2022; Target 3)</p>

HIGH/FULL PROTECTION RECOMMENDATIONS:

❖ At the national & local level:

- II.1** Increase the number and size of effectively managed MPAs with enhanced levels of protection towards high and full levels of protection, to achieve the regional and international commitments by the national system of MPAs.
- II.2** Define a national system of area-based marine conservation measures where enhanced levels of protection are buffered by complementary conservation measures or other effective conservation measures with different zoning, tools, and regulations that play in synergy.
- II.3** When a national system is not yet defined, undertake the elaboration of the necessary legal framework that defines strong level(s) of protection statutes (high, full) with clearly defined objectives, modalities of their establishment⁵, unambiguous regulations of activities and dissuasive sanctions of infringements on the basis of Mediterranean standards, EU criteria⁶ and national multi-stakeholders' consultations.
- II.4** Address the critical need to ensure proper means for enhanced protection levels, including human resources for surveillance and efficient enforcement activities. Those activities can be facilitated by participatory, co-management approaches that associate stakeholders (fishers, divers, citizens) and can be combined with remote sensing technologies.
- II.5** Empower the MPA authorities and rangers with the necessary legal competences of control and enforcement.

❖ At Mediterranean level:

- II.6** Support assessment of the needs in terms of knowledge sharing, networking, and training on enhanced protection levels and peer-to-peer exchanges, capacity building activities at the Mediterranean level.
- II.7** Pursue expert brainstorming, within dedicated Working Groups and participation of stakeholders, to support the development of common standards on enhanced protection levels of MPAs in the Mediterranean Sea with clear criteria and definitions and the inclusion of enhanced protection levels in the guidelines to support the implementation of the Barcelona Convention Post-2020 Regional Strategy for MPCAs and OECMs.
- II.8** Support the insertion into the Post-2020 SAPBIO baseline of indicators of specific indicators on enhanced protection efforts (fully and highly protected MPAs) to assess the progresses at the regional level.
- II.9** Advocate for the amplification of the MedFund Highly Protected Mediterranean Initiative.

⁵ See the step-by-step schematic representation of the process for establishing no-take zones (MedPAN, 2019)

⁶ Criteria for the identification of areas under strict protection (10% target), European Commission SWD (2022) 23 final

❖ At the EU level:

II.10 Amend the Directive 2014/89/EU – Maritime Spatial Planning to include a provision ensuring that MPAs and enhanced protection levels are taken into account in maritime spatial planning.

❖ At global level:

II.11 Support the countries with the development of common standards for establishing enhanced protection levels of MPAs (e.g., no-go, no-take, no-fishing, strictly protected) with clear criteria, definitions, and indicators.

II.12 Promote the implementation of biophysical modelling and evaluate ecological connectivity in each regional sea and beyond to better identify where strongly protected areas could act as stepping-stone connectivity corridors to support marine conservation and marine ecosystem resilience.

II.13. Foster experience and best practice sharing between regional networks of MPAs' managers on enhanced protection levels in close collaboration with the CBD SOI and the EU Ocean Governance project (twinning of networks).

II.14. Support, in close collaboration with the UNEP Regional Seas conventions and relevant RACs (Regional Activity Centres), the monitoring of countries' efforts in increasing the number and size of enhanced protected areas, ensuring their representativeness, their collaborative governance and their effectiveness.

II.15 Promote Mediterranean actions in terms of enhanced protection models at international level.

II.16 Advocate with the support of the Global Alliance for Marine Protection⁷, the allocation of dedicated funds to foster the creation and effective management of highly, fully MPAs as powerful tools for the SDG 14, Post-2020 Global Biodiversity Framework and UNFCCC Nature-based solutions to climate change.

⁷ The [Global alliance for marine protection](#) or Alliance of Conservation Trust Funds, networks of Conservation Trust Funds and Networks of MPA managers was launched in 2021 at the IUCN World Conservation Congress. It aims to **create** a global community of actors to support effectively managed and sustainably financed MPAs, to make sure the Post 2020 MPA targets are fully implemented on the ground.

III. Expanding a network-based management of mobile species in the Mediterranean Sea

Rationale:

Some of the most prominent marine protected vertebrates in the Mediterranean Sea, such as cetaceans, elasmobranchs, marine birds and marine turtles, are highly mobile species. They are characterised by their large home ranges and long migrations. These species have indeed improved their survival and reproductive success by moving between different habitats. Many of them are top predators that play an important role in marine ecosystems and are considered “marine focal species”. Their status acts thus as significant indicators of marine ecosystems, their state reflecting oceanographic processes and anthropogenic pressures.

Travelling through territorial waters, Exclusive Economic Zones (EEZs) and Areas Beyond National Jurisdiction (ABNJs), mobile species are going, during their life cycle, across varied, changing legislation and management frameworks. These migratory movements geographically link locations and stressors in distant ecosystems. This highlights the challenge of their conservation that requires coordinated actions at different scales by many nations, international and regional organisations, and stakeholders. Mobile species’ conservation requires it to be designed and implemented over a very large geographical area. This stresses the importance of capturing ecological connectivity between and beyond the MPA borders and the national boundaries. In this regard, MPAs and networks of MPAs managers play unarguably a key role. They protect important habitats of mobile species and facilitate the implementation of harmonised protocols. But to embrace the geographical scale⁸ relevant to the ecology of these species, additional measures beyond the spatial boundaries of MPAs should be used. As an example, over recent years, reports on the mortality of Mediterranean monk seals due to fisheries are scarce, following the implementation of protection policies such as MPAs and closure of fisheries in those areas where monk seals occur. This has significantly helped to reduce the incidence of interactions with fisheries. Signs of population recovery, albeit minimal, have been recognised (Carpentieri *et al.*, 2021).

Throughout their full life and seasonal cycles, mobile species encounter indeed different pressures and numerous anthropogenic threats: by-catch, pollution (oil spills, plastics, underwater noise, light pollution), ship-strikes, deliberate killing or accidental killing. The Mediterranean has the highest marine turtle threat scores in the world (Lewison *et al.*, 2014); foraging grounds tend to be largely dispersed up to 2,000 km from the breeding sites, making them vulnerable to by-catch, ship-strikes, intentional killing, pollution and coastal development. Changes in marine food-webs are registered throughout; underwater noise impacts the behaviour of species, such as feeding and mating, which leads to population declines; seismic surveys by many Mediterranean coastal nations present a 10-fold increase since 2005 (Magglio *et al.*, 2016), and the incidence of ship strikes has neither decreased. Marine birds also travel long distances and some endemic species, such as the Balearic Shearwater (*Puffinus mauretanicus*) may become extinct due to by-catch. The European Union countries can apply measures through the process detailed under Article 11 of the Common Fisheries Policy – specifically for measures related to MPAs. However, non-European Union countries have yet proposed joint measures to tackle seabird bycatch in their MPAs through this process. In general, based on the recent publications, Seabird bycatch has mainly been recorded from the western Mediterranean and in longline fisheries. Bottom trawlers, on the other hand, have the greatest impact on marine turtles, especially in the northern Adriatic Sea, Tunisia, Egypt, and Turkey. The vessel groups most implicated in elasmobranch bycatch vary by subregion, with longliners accounting for nearly 80 percent of incidental captures in the central Mediterranean, for example, while pelagic trawlers are responsible for an even greater majority of incidental captures in the neighbouring Adriatic Sea. Historically,

⁸ ACCOBAMS, 2021. Conserving Whales, Dolphins and Porpoises in the Mediterranean Sea: an ACCOBAMS status report, (2021). By: Notarbartolo di Sciara G., Tonay A.M. Ed. ACCOBAMS, 160 pp.

marine mammals were often caught in large-mesh driftnets, but the incidental capture of these species has declined since bans on driftnets were put in place in the late 1990s (Carpentieri *et al.*, 2021).

Mobile species conservation needs an ecosystem and threat-based approach that call for a combination of area-based conservation tools and measures from the main sectors using the sea (fisheries, shipping, tourism, oil, and gas; etc.) In this regard, the Post-2020 Mediterranean Marine Protected Areas Roadmap (MPA Forum 2021) calls to “Boost biodiversity conservation beyond MPAs through other sectoral and spatial tools including in Areas Beyond National Jurisdiction (ABNJs), Particularly Sensitive Sea Areas (PSSAs), Fisheries Restricted Areas (FRAs) and Other Effective Area-Based Conservation Measures (OECMs)” (Recommendation 6.4).

Policy framework

- The Tangier Declaration (2016; 2.13)
- UNEP/MAP – Barcelona Convention Post-2020 Regional Strategy for MCPAs and OECMs (2021; Output 2.2.)
- UNEP/MAP – Barcelona Convention Protocol concerning Specially Protected Areas and Biological Diversity in the Mediterranean (SPA/BD; 1995; entered into force in 1999)
- UNEP/MAP – Barcelona Convention Post-2020 SAPBIO (2021; Target 1.1.; Actions 2, 3, and 18)
- UNEP/MAP – Barcelona Convention Action Plan for the Management of the Mediterranean Monk Seal (1987) and Regional Strategy for the Conservation of Monk Seal in the Mediterranean (2013; last updated 2019)
- UNEP/MAP – Barcelona Convention Action Plan for the Conservation of Cetaceans in the Mediterranean Sea (1991; last updated 2021)
- UNEP/MAP – Barcelona Convention Action Plan for the Conservation of Cartilaginous Fishes (Chondrichthyan) in the Mediterranean Sea (2003; last updated 2013)
- UNEP/MAP – Barcelona Convention Action Plan for the Conservation of Marine and Coastal Bird Species listed in Annex II to the Protocol concerning Specially Protected Areas and Biological Diversity in the Mediterranean (2003; last updated 2017)
- UNEP/MAP – Barcelona Convention Action Plan for the Conservation of Marine Turtles in the Mediterranean (1989; last updated 2019).
- UNEP/MAP – Barcelona Convention Integrated Monitoring and Assessment Programme of the Mediterranean Sea and Coast and Related Assessment Criteria (IMAP; 2016)
- ACCOBAMS: a multilateral agreement specifically focused on the conservation of cetaceans in the Mediterranean and Black seas, and the contiguous Atlantic area (signed in 1996 and entered into force in 2001).
- ACCOBAMS Strategy 2014-2025
- ACCOBAMS Survey Initiative (ASI; 2018-2019)
- FAO-GFCM “Strategy to 2030” (2021; Target 1.3. on avoiding by-catch).
- Key Commitments 13 and 14 in the EU Biodiversity Strategy for 2030 (2020).
- EU Natura 2000 marine network (2.5., 2.10., 4.3., 4.4., 4.5, 5.9)
- Convention on the Conservation of Migratory Species of Wild Animals (Bonn - CMS) protecting species that move, regularly and predictably, across national borders and between areas beyond and within national jurisdictions
- UNEP Marine and Coastal Strategy (2019; Strategic objective 3, e, iii), iv)
- UNEP Regional Seas Strategic Directions (RSSD) 2022-2025 (2021; Targets 1.2; 3.3)
- CBD/draft GBF (2022; Target 2, Target 4)

MOBILE SPECIES RECOMMENDATIONS

❖ At the national & local level:

- III.1** Identify priorities and needs for Mediterranean mobile species conservation, map, protect their critical habitats and identify hotspots of negative interaction areas in water under national jurisdiction to comply with the Barcelona Convention regional Action Plans (on marine turtles, marine and coastal birds, Mediterranean monk seal, cartilaginous fishes, and cetaceans), ACCOBAMS and GFCM/FAO recommendations.
- III.2** For EU countries, comply with the Natura 2000 framework and further designate Special Areas of Conservation (SACs) for the protected mobile species and ensure consistency of the legal frameworks to avoid conflicting activities in the Natura 2000 sites.
- III.3** Combine area-based measures including MPAs, ecological corridors, Other Effective Area-Based Conservation Measures (OECMs) and mitigation sectoral measures in a trans-sectoral approach through national marine spatial planning activities and foster trans-sectoral collaboration between ministries to ensure policy coherence.
- III.4** Establish national networks of stranding, rescue, and rehabilitation centres, both for cetaceans and marine turtles.
- III.5** Define national (or transboundary) mobile species corridors, having appropriate legal statute, and protection and management measures, for inclusion in the Barcelona Convention's List of Specially Protected Areas of Mediterranean Importance (SPAMI List).
- III.6** Welcome and promote code of conduct initiatives on data sharing on mobile species, and contribute to harmonised monitoring protocols.

❖ At Mediterranean level:

- III.7** Foster at the sub-regional and regional levels, identification, and mapping efforts with combined maps of all mobile species important areas Important Bird Areas (IBAs), Important Marine Mammals Areas (IMMAs), Important Marine Turtles Areas (IMTAs), ACCOBAMS Cetacean Critical Habitat (CCH) and encourage/support designation of protection /management measures for those areas.
- III.8** Support the joint cooperation strategy on spatial-based protection and management measures for marine biodiversity among the secretariats of ACCOBAMS, GFCM, IUCN-MED and UNEP/MAP that aims at bolstering effective regional cooperation and embodying a strategic alliance at the regional level.
- III.9** Support the adoption of new agreements on marine mammals' conservation between countries at the sub-regional scale, like the Pelagos Sanctuary agreement, to catalyse and support the national and regional efforts in the implementation of the post-2020 Global Biodiversity Framework, the Post-2020 Regional Strategy for MCPAs and OECMs in the Mediterranean, and the EU Biodiversity strategy 30x30 target (and the 10% strict protection target for the EU) and more particularly the EUSAIR strategy for the Adriatic and Ionian region.
- III.10** Pursue capacity-building efforts and promote the implementation of harmonised monitoring protocols that are cost-efficient, cost-effective, and easy to implement.
- III.11** Support transnational experience sharing on mobile species conservation involving different actors (MPAs, municipalities, regions, State services, scientists, NGOs, fishers, boaters, economic actors) such as the one of the Pelagos area and using networks of MPA managers (MedPAN and its mobile species working group, national and sub-regional networks).

- III.12** Organise periodic regional surveys and support joint actions among all relevant regional institutions on mobile species.
- III.13** Support more synergy between the different working groups (*i.e.*, MedPAN Fisheries working group, CGPM working groups) that tackle bycatch, depredation and other harmful interactions.
- III.14** Develop guidelines to adapt or ban the use of fishing gears that are the most harmful to marine vulnerable species to countries and relevant regional and intergovernmental organisations.

❖ **At global level:**

- III.15** Pursue exchanges and twinning between MPAs on mobile species with the support of MPA networks.
- III.16** Advocate for transnational corridors within and beyond the Mediterranean Sea and long-distance twinning programmes such as in the transatlantic to protect marine mobile species' long migratory paths or superhighways.
- III.17** Support tracking of large-scale movements of mobile species to mitigate threats with sectoral measures over superhighways.
- III.18** Support the adoption of an international, legally binding instrument under the United Nations Convention on the Law of the Sea on the conservation and sustainable use of marine biological diversity of areas beyond national jurisdiction.

IV. Support sustainable small-scale fisheries management as a key success factor of the Mediterranean culture of marine stewardship

Rationale:

Decades of overfishing and mismanagement have severely degraded the fish stocks in the Mediterranean Sea, with over 80% of those assessed being overfished. This situation threatens both the marine biodiversity and the survival of small-scale fisheries (SSFs), which represent 83% of the Mediterranean fleet and 57% of employment onboard (FAO-GFCM 2020).

SSF can be found almost in every Mediterranean MPA and must be considered in MPA management. SSF have indeed a deep socio-economic and cultural dimension in the Mediterranean region (FAO 2015; Randone *et al.*, 2017; WWF, 2021). Because of its scale and its practices, small-scale fishing can be compatible with the sustainable use of coastal resources. Some of the most successful MPAs in the Mediterranean were built around the active participation of professional small-scale fishers. Gökova National Park in Turkey, Torre Guaceto MPA in Italy, or Côte Bleue Marine Park in France have developed pioneering agreements where responsibility for resource management is shared supporting local knowledge sharing, MPA ownership, compliance with local regulations and effective management (Giakoumi *et al.*, 2017; D'Armengola *et al.*, 2018). Fishers benefit from larger (Guidetti and Claudet, 2010; Di Franco *et al.*, 2014; Giakoumi *et al.*, 2017) and more predictable captures with less fishing effort and costs. Small-scale fisheries are regulated in 33% of national MPAs in the Mediterranean, forbidden in 12% and authorised in 6% (no information for 50% of the MPAs; MedPAN, 2021). When existing, the control of fishing activities sometimes lacks the appropriate legal framework while collaboration and complementarity between the fishing, the environment authorities and coastguards is important (Gomei *et al.* 2019). A quarter of the Mediterranean MPAs (27 %) have a governance council. This is more common in EU countries (32 %) compared to non EU countries (11 %) (MedPAN, 2021).

In addition, sustainability issues still need to be addressed. The use of non-selective gears, the illegal, unregulated and unreported fishing, are still widely practised in the Mediterranean (FAO-GFCM, 2020) and occur in MPAs. The SSF reporting and data collection are heterogeneous and incomplete, preventing knowledge of the fishing effort (CPUE) and precluding both the monitoring of results and the compliance and adaptation of the protection measures. By-catch remains threatening a variety of species including marine mammals, birds, sea turtles, sharks and rays, or benthic habitat builders (Lloret *et al.*, 2018; 2020).

Recreational fisheries⁹ are also a growing concern in some coastal areas where the economic value of recreational fisheries exceeds that of commercial fishing (FAO, 2015; Venturini *et al.*, 2017), targeting 41% of vulnerable species, frequently anchoring in sensitive habitats, using exotic bait, also causing the loss of fishing gears, and illegal competition in local markets (Font *et al.*, 2012). Effectively managed MPAs must regulate these activities and improve compliance from all users. Only 50% of MPAs require some type of fishing licence, and less than 30% of MPAs impose fees. The increasing number of recreational fishers and the fast evolution of gears and techniques (particularly tracking techniques) call in many MPAs (and beyond) for a rapid adaptation of regulations (licence, quota, zoning and enforcement).

⁹ The General Fisheries Commission for the Mediterranean defines them as: "Fishing activities exploiting marine living aquatic resources for leisure or sport purposes from which it is prohibited to sell or trade the catches obtained".

Policy framework

- The Tangier Declaration (2016; 2.6; 3.2; 3.3; 3.4)
- Post-2020 MPA Roadmap (2022; Strategic objective 2; Rec.2.5)
- FAO-GFCM Strategy to 2030 (2020; Target 4)
- FAO-GFCM Regional Plan of Action for Small-Scale Fisheries in the Mediterranean and the Black Sea (RPOA-SSF; 2021)
- UNEP/MAP-Barcelona Convention Post-2020 Regional Strategy for MCPAs and OECMs (2021; Outputs 1.3 and 3.3)
- UNEP/MAP-Barcelona Convention Post-2020 SAPBIO (2021; Target 2.5 and Action 23)
- EU Biodiversity Strategy for 2030 (2020; 2.2.6.)
- Natura 2000 marine (Art.6.3)
- ACCOBAMS Strategy 2014-2025 (Chapter B.2)
- UN-SDG (Goal 14, 4 and 6),
- CBD/draft GBF (Targets 5 and 18)

SMALL SCALE FISHERIES RECOMMENDATIONS:

❖ At the national & local level:

- IV.1** Set up a national programme to improve knowledge on fishing efforts within the MPAs and their surroundings to identify effective area-based management strategies (benefit of no-take zones in particular) and, if needed, to change and adapt, when necessary, regulations (e.g., change the perimeter of a no-take zone, prohibit certain gears on habitats that they can damage).
- IV.2** Set up national licence systems for recreational fisheries so that the numbers and efforts of recreational fishers (among other parameters) can be better assessed with the obligation to report all catches. Complete the licence system with additional measures and regulations (fees, quota, gear, prohibition of fishing methods impacting vulnerable species zoning, prohibition of competitions and enforcement).
- IV.3** Clearly define and update old and new techniques/gear that should be banned from MPAs, combat poaching and the illegal resale of recreational fishing catches with dissuasive sanctions and fines.
- IV.4** Improve legal frameworks to support fishers' participation in the management and scientific monitoring activities of MPAs to better take into account in decision-making the fishers' local and traditional knowledge.
- IV.5** Enhance coordination of all competent administrations (environment, fisheries), police and judicial authorities and stakeholders, provide MPA managers with the necessary legal competences and means to manage fisheries within their boundaries and empower MPA rangers with police competencies allowing them to impose fines on offenders.
- IV.6** Equip MPAs with technologies such as video-surveillance, drones, radars which allow maintaining 24-hour surveillance on large areas.

IV.7 Support regeneration of fish stocks with the creation, on the basis of scientific information and fishers' knowledge, of permanent no-take zones targeting key functional areas and complete them with other measures such as seasonal or temporary closures in adjacent zones.

IV.8 Support artificial reefs planning and monitoring.

IV.9. Clarify administrative procedures to facilitate the development of pescatourism activity

❖ **At Mediterranean level:**

IV.10 Identify and share cost-effective fisheries monitoring protocols and methodologies.

IV.11 Continue training modules with a strong operational focus on habitat mapping and monitoring of fishing efforts, including recreational fisheries, to enable a more accurate understanding of ecological, social and economic impacts of all fisheries and develop a co-training approach of MPA managers and stakeholders at the same time (fishers, décision-makers) and further engage decision-makers.

IV.12 Promote synergies between the MedPAN, the Low Impact Fishers of Europe LIFE Platform, the Maghreb SSF Platform and the Slow Food/Slow Fish networks as a structuring approach to enhance, sustain, and bring value on collaborations between MPAs, SSF, and local communities for the benefit of biodiversity conservation and the sustainability of small-scale fisheries.

IV.13 Support experience sharing and technical exchange visits to meet fishing communities organised in cooperatives and with a successful experience in certification schemes.

IV.14 Support experience sharing, and lessons learnt on artificial reefs, and develop practical guidelines for MPAs.

❖ **At the EU Level:**

IV.15 Strengthen MPA managers and fishers' knowledge and understanding of Natura 2000 conservation objectives, as well as awareness of EU fisheries policy framework and funding opportunities.

IV.16 Enable access of MPAs and Natura 2000 marine sites to the EMFAF (European Maritime Fisheries and Aquaculture Fund).

IV.17 Stop harmful fisheries subsidies in the post-2020 funding strategy for the maritime and fisheries sector (EMFAF) that directly undermine EU objectives to create sustainable business models for fishers and to end overfishing, as laid out in the Common Fisheries Policy (CFP).

IV.18 Promote certification mechanisms for small scale fisheries.

IV.19 Enhance collaborations between MedPAN and FARNET (the European Fisheries Areas Network) to raise awareness of the possible role of Fisheries Local Action Groups (FLAGs) to facilitate interactions between MPAs and stakeholders (including SSF) and the involvement of small-scale fisheries in the MPA governance (from setting up to management).

IV.20 Support a more effective interplay between the possibilities provided for under the common fisheries' policy to effectively contribute to the environmental objectives and Article 6 of the Birds and Habitats Directives and Article 15 of the Marine Strategy Framework Directive and the implementation of the Action plan to conserve fisheries resources and protect marine ecosystems.

❖ **At global level:**

IV.21 Contribute to increasing the visibility of Pescatourism locally and internationally.

IV.22 Pursue exchanges and twinning between MPAs on sustainable fisheries' management with the support of MPA networks.

V. Catalysing sustainable financing opportunities for the Mediterranean Sea

Rationale:

The estimated needs for the effective management of the existing MPAs in the Mediterranean are of around 800 M€/year. In comparison, this represents only 0.2 % of the economic output of the tourism sector (BlueSeeds, 2020) or 0.17% of the assets delivered by the marine resources in the Mediterranean (WWF, 2021) while the overall cost/benefit ratio of an effective programme to globally conserve wild nature has been estimated to be at least one to 100 (Balmford *et al.*, 2002). Despite this advantageous ratio, MPA financing remains a recurring obstacle in all Mediterranean countries. National financial sources are largely irregular and insufficient, and regionally, less than 15% of the needs for MPAs are covered. MedPAN's management database shows that only 22% of MPAs with a national statute report having a budget that is considered suitable or acceptable, and 8% have no budget at all (MedPAN, 2021). In another survey, 36% of the reporting MPAs have a self-financing component, and just a few receive funds from NGOs, from international donors, or from the private sector (BlueSeeds, 2020). The general funding situation is yet weaker and discontinuous within the non-EU Mediterranean countries.

The MedFund was established in 2015 with the commitment of several Mediterranean States and international environmental organisations, in support of the sustainable funding of Mediterranean MPAs. It has thus far mobilised over 8 million Euros for Mediterranean MPAs.

Policy framework

- Tangier declaration (2016; 4.1; 4.2; 4.3; 4.4; 4.5)
- Post-2020 MPA Roadmap (2022; Strategic Objective 5; Rec.5.1; Rec.5.2; Rec.5.3; Rec.5.4)
- UNEP/MAP – Barcelona Convention Post-2020 Regional Strategy for MCPAs and OECMs (2021; Strategic Pillar 4, Outputs 4.1 and 4.2)
- UNEP/MAP – Barcelona Convention Post-2020 SAPBIO (2021; Target 3.9, Actions 15 and 41)
- UNEP/MSC (Strategic Objective 4a)
- ACCOBAMS Strategy (A.3).
- EU Biodiversity Strategy for 2030 (Enabling Condition 3.3.2)
- UN SDG Goals (14 and 17, 1.4.6.9)
- CBD/draft GBF (2022; Goal D, T.19, App.3)
- UfM Greenermed agenda (2021)

SUSTAINABLE FUNDING RECOMMENDATIONS

❖ At the national & local level:

V.1 Conduct funding needs assessment of MPAs and the national system of MPAs, including needs for adequate human resources, to have a clear view of these funding needs, the legal adjustments and what is expected from national sources and what the private funders could contribute to.

V.2 Support business planning and fundraising strategy at individual level for all MPAs.

- V.3** Back-up the national strategy for marine ecosystems and MPAs with a sustainable funding plan based on a combination of funding solutions at national and local levels, that includes activities of regional and international cooperation, and diversify income generation opportunities beyond tourism, to ensure greater resilience to the financial impacts of future pandemics, human-made risks or natural hazards.
- V.4** Further support basic data collation to enable natural capital accounting in MPAs and fundraising efforts.
- V.5** Develop finance mechanisms that support government revenue generation from ecosystem related elements – such as polluter pays (Green taxes, etc.).
- V.6** Elaborate enabling national regulatory frameworks for fees, including user fees, to be captured by the MPA at the local level and the possibility to allocate the generated income to the different needs for effective management.

❖ **At Mediterranean level:**

- V.7** Promote/Support the need of economic analysis of the entire Mediterranean MPA network that consolidates the economic value of marine conservation efforts to address the policymakers, economic sectors in highlighting the add-on of marine protection efforts in addition to the existing economic value of the ecosystem.
- V.8** Create and/or support sustainable financing mechanisms dedicated to MPAs at national level, continue to support conservation trust funds such as “The MedFund and further explore the feasibility to create funding windows dedicated to specific countries within the MedFund to reduce the funding gap particularly in the South and East of the Mediterranean Sea.
- V.9** Support the MedFund in exploring opportunities for international revenue capture, such as shipping fees (a % of) port fees, aquarium fees, tourism fees (cruise...), to further support MPAs through the MedFund.
- V.10** Support alliances of donors and pooled fund where the different funding support can be implemented in synergy both for public and private funding for core management, including surveillance and more targeted activities.
- V.11** Support a review of best practice on governance and implementation of Conservation Trust Funds.
- V.12** Expand capacity-building activities on MPA business planning and financial strategies with innovative funding mechanisms and support experience sharing.

❖ **At the EU level:**

- V.13** Promote the launch of a new BLUELivingMED initiative that translates a clear Blue European ambition for the Mediterranean Sea, and expand, in the Mediterranean region, the EU efforts of the “More than...” series for Africa, Latin America and Asia and the EU NaturAfrica initiative. Such an initiative would highly support a tangible implementation of the UfM 2030 GreenerMed Agenda and the 2021 UfM Declaration on Blue economy with an innovative people-centred approach of marine conservation.
- V.13** Further enhance synergies between EU Interreg programmes and other European Union funds, aligning them to the extent possible to address the needs of the Mediterranean region to enhance marine and coastal ecosystems' protection.

❖ **At global level:**

- V.14** Support the Global alliance for marine protection and its objective to create a global learning community of practice related to sustainable financing and effective management of MPAs to act as a global mechanism to support the 30×30 implementation on the ground.

VI. Enabling marine resilience in the Mediterranean Sea

Rationale:

Climate change is dramatically affecting the Mediterranean region, which is warming at a rate 20% faster than the world's average (MedECC, 2019). Climate change is amplifying the effects of existing threats to marine ecosystems in reshaping their biophysical and chemical characteristics, from increased water temperature, sea-level rise, and extreme events to ocean acidification, with serious consequences for natural systems (Cramer *et al.*, 2018; Grorud-Colvert *et al.*, 2021) and more particularly for highly vulnerable ones (e.g., coralligenous, posidonia habitats, marine caves, infralittoral habitats; Coll *et al.*, 2010; MedECC, 2020). As a matter of consequence, the Mediterranean marine ecosystems are already experiencing the following macroscopic and measurable impacts: (i) the shift towards more thermophilic biota; (ii) an increased vulnerability to tropical invaders; (iii) the increased occurrence of phenological shifts; (iv) the occurrence of unprecedented large-scale mass mortality events (Cramer *et al.*, 2018; Garrabou *et al.*, 2019; D'Amen, M., & Azzurro, E., 2020; MedECC, 2020).

During the last decade, the close relation between climate change and the ocean has been acknowledged particularly in the framework of the UNFCCC driving a special attention to the threats and risks of climate change on marine ecosystems but also opening discussions on the opportunities they could offer in terms of nature-based solutions. The Union for the Mediterranean Climate Change Adaptation Framework, Ministerial Declarations on Environment (Athens, 2014) and on Blue Economy (Brussels, 2015) recognise strong links between the marine ecosystem and the climate change concerns. The Barcelona Convention agreed the “Regional Climate Change Adaptation Framework for the Mediterranean Marine and Coastal Areas” (2016), and additionally considers climate change adaptation as a cross-cutting issue in the ICZM Protocol (2016) and the UNEP/MAP Mid-Term Strategies for 2016-2021 and 2022-2027. At the UNFCCC COP 26, Governments recognised the need for a cross-cutting incorporation of the ocean under the work of all relevant constituted bodies and workstreams.

As reminded by the UNFCCC SBSTA (2021), protecting, and restoring nature is fundamental for resilience “*nature-based solutions include preserving and restoring blue carbon ecosystems, establishing and maintaining climate-smart MPAs, supporting climate-smart fisheries and small-scale fisheries, ecosystem-based adaptation, sustainable natural resource management, and protecting and restoring coastal ecosystems*”. By design, MCPAs protect important coastal and marine habitats and reduce other non-climate ocean stressors (Pisco, 2016; Roberts *et al.*, 2017; Sala *et al.*, 2021). They reduce risk and support resilience in allowing the recovery of ecosystems (Tittensor *et al.*, 2019). In doing so, they support the effective functioning of the land-sea interface and the carbon sink function of ecosystems. They provide refuge, replenishment zones, and ecologically connected corridors for shifting species. They serve as sentinel (research) sites to monitor climate change effects and climate change “schools” to increase understanding and awareness (Garrabou *et al.*, 2019).

The Mediterranean MPAs have both a privileged role and responsibility in climate change mitigation, resilience, and adaptation, but there is still significant room for progress. The latest Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) Global Assessment indicates that there are “few protected areas whose objectives and management take climate change into account” while only limited studies exist on this issue, with no comprehensive synthesis (Rilov *et al.*, 2020; IPBES, 2019). Even for the most famous marine World Heritage sites the available information is still incomplete and fragmented, 75% of them lack knowledge to understand how climate change will impact their biodiversity and ecosystem functioning (UNESCO, 2021). In the Mediterranean region, 90% of MPAs do not have the essential capacity, technology, and resources to generate and process data, including the baseline observations, data collection and interpretation (MPA Roadmap 2016).

Policy framework

- Tangier declaration (2016; 2.9; 3.1)
- Post-2020 Mediterranean MPA Roadmap (2022; Strategic objective 2; Rec.2.3)
- UNEP/MAP – Barcelona Convention Post-2020 SAPBIO (2021; Targets 1.8. and 2.7. and Actions 12 and 13)
- UNEP/MAP – Barcelona Convention Post-2020 Regional Strategy for MCPAs and OECMs (2021; Strategic Pillar 5; Output 5.3)
- UfM 2030 GreenerMed Agenda (2021; Thematic Axis 2;3)
- FAO-GFCM (Target 14)
- ACCOBAMS (B.2.7)
- EU Biodiversity Strategy for 2030 (2.1. and 2.2.1)
- Natura 2000 marine network (5.6)
- UN SDG Goals 13 and 14
- UNEP-MCS Strategic Objectives 3b and 3c
- UNEP Marine and Coastal Strategy (2019; Strategic objective 1,a)i,iii); 1,b); Strategic objective 3,c); 3,d), i), iii)
- Regional Seas Strategic Directions (RSSD) 2022-2025 (2021; Targets 1.1; 2.2;2.3)
- CBD/ draft GBF (2022; Goal A, Target 8)
- UNFCCC art.1.3; 2; 4; 5
- Paris Agreement (2015)
- UNFCCC COP 26; Decisions 1/CP.26, 16/CP.26,

CLIMATE CHANGE RESILIENCE RECOMMENDATIONS

❖ At the national & local level:

- VI.1** Designate, within the national system of MPAs, climate change sentinel MPAs that can act as observatories of the impacts of climate change on the different marine and coastal ecosystems as well as pilot site of adaptation and mitigation actions.
- VI.2** Support the implementation of climate change vulnerability assessment to MPAs (each 2-3) years as part of the national strategy on marine conservation that includes citizen science.
- VI.3** Identify and plan restoration of carbon-rich ecosystems, important fish spawning and areas predicted to remain climatically suitable in the future for keystone species.
- VI.4** Develop and coordinate in synergy the implementation of policies for marine and coastal ecosystems and climate change.
- VI.5** Strengthen the National Adaptation Plans (NAPs) and Nationally Determined Contribution (NDC) ambition and include marine ecosystems-based mitigation and adaptation solutions involving MPAs as powerful and cost-effective nature-based solution tools for climate change adaptation and mitigation.

❖ At Mediterranean level:

- VI.6** Promote harmonised climate change monitoring, common protocols and indicators, vulnerability assessments and adaptation action plans model to support enhanced climate change action at the regional level.
- VI.7** Support the creation of a regional network of sentinel MPAs to improve knowledge on the impacts and consequences of climate change over the Mediterranean Sea and harmonised monitoring efforts for informing decision-making processes and contributing to the Mediterranean Experts on Climate and environmental Change (MedECC) works.
- VI.8** Support expert working group discussions on Climate change and “Climate-Smart”¹⁰ MPAs to further work and exchange on the mitigation and adaptation role of MPAs and OECMs in the Mediterranean region.
- VI.9** Expand capacity-building efforts for MPA managers to develop MPA adaptation action plans and to contribute to national and regional climate change strategies and actions.
- VI.10** Promote and articulate the role of MPAs in the adaptation and mitigation of climate change.

❖ At global level:

- VI.11** Participate in the annual Ocean and Climate Change Dialogue, that brings together State and non-State actors, including civil society, NGOs and scientists, to support Mediterranean countries in bolstering strengthened ocean-based action under the UNFCCC multilateral process.
- VI.12** Promote MPAs as key tools and key areas of work under the Article 6 of the Paris Agreement (designed to facilitate international cooperation to enable Parties to reach goals set out in their Nationally Determined Contributions (NDC)) to support climate change nature-based solutions and foster climate change finance support in MCPAs and resilient networks.
- VI.13** Further explore the potential of the Green Climate Fund, market and non-market approach under the Article 6.8 of the Paris Agreement for the region and Mediterranean countries in close collaboration with the MedFund.
- VI.14** Pursue efforts undertaken under the Twining resilience of the Ocean Governance project and strengthen collaboration between MPA networks on climate change resilience.

¹⁰ “Climate-smart” MPAs, are meant to augment traditional marine protection outcomes, to have enhanced climate benefits in a) protecting or restoring the mitigation potential of ocean ecosystems and/or b) maximising the “climate resilience” of ocean ecosystems or coastal communities—i.e., their ability to tolerate or adapt to ocean changes due to climate—including their resilience over time, specifically considering changing ocean conditions (Ocean Conservancy, 2020).

VII Bolstering nature-based sustainable tourism in the Mediterranean Sea

Rationale:

The Mediterranean is among the world's leading tourism destinations, both in terms of domestic and international tourism. Receiving more than 300 million international tourist arrivals, the tourism in the Mediterranean represents 30% of total world tourism (MED QSR; UNEP/MAP, 2017). The World Tourism organisation forecasts an increasing growth with 500 million by 2030 (UN WTO, 2012). Tourism is thus unarguably one of the major economic sectors for the region, which is among the most important cruise areas in the world, with nearly 31 million reached in 2019. The Mediterranean region is the first destination area for European cruise passengers, and the second-largest market in the world (Plan Bleu, 2022). As far as recreational boating is concerned, the region hosts a notable proportion of the world's mega-yachts (around 70%) and remains a very popular area for sailing. As a sea-related economic sector, tourism represents 92% of the Mediterranean gross marine product (GMP) with US\$300 billion annually for coastal tourism and US\$110 billion for marine tourism (WWF, 2019).

The tourism economic sector in the Mediterranean region is however characterised by a strong seasonality and has been inducing multiple negative environmental impacts on the coastal and marine ecosystems: artificialisation, natural habitats' destruction, water and energy consumption, pollution, and waste production. In some Mediterranean tourism areas, more than 75% of the annual waste production is generated during the tourist season of summer (Giulietti *et al.*, 2018). All these impacts have negative feedback on the tourism industry and jeopardise the natural assets that make the regional destinations attractive and provide numerous intangible benefits to the populations and countries. In addition, climate change exacerbates these threats with the associated lack of water, coastal erosion, rising sea levels to name a few. This reality has been acknowledged by the UfM Ministerial declaration on blue economy in 2021, that highlights that “preserved marine and coastal ecosystems and marine cultural heritage contribute to the attractiveness of coastal areas” and agrees to “promote ecotourism¹¹ and niche tourism”.

Well-managed MPAs and OECMs that maintain healthy biodiversity and ecosystems are also an important driver of tourism demand, as underlined by the Barcelona Convention Post-2020 Regional Strategy for MCPAs and OECMs. Nature-based tourism¹² also generates an economic value. The recreational value of an MPA in the region can range between 4 and 8 million EUR (Nicolini *et al.*, 2019) and nature-based tourists are ready to pay a daily fee of between €4.11 and €7.78 on average to fund marine conservation projects (Nicolini *et al.*, 2019). There is thus room for more sustainable models of tourism and leisure behaviours in the region, including nature-based and ecotourism. Useful initiatives have already been undertaken to that end. Addressing a lack of common rules in the cruise and boating sector in the Mediterranean region and the need to adopt environmentally sustainable practices, the Plan Bleu developed dedicated guidelines that capitalised on the results produced by specific modular projects (Plan Bleu, 2022). The Mediterranean Experience of Ecotourism (MEET) Standard for Ecotourism product development has also been tested and fine-tuned, on the basis of European Interreg projects, a set of criteria and indicators to manage the quality and sustainability of ecotourism products and services. Following recommendation of the DestiMED policy brief¹³, a Mediterranean Ecotourism Consortium (MEC) has been established and a Joint Mediterranean Ecotourism Policy Roadmap is under process. These efforts must be pursued and completed from a

¹¹ Defined by the Mediterranean Experience EcoTourism (MEET) manual (MedPAN, 2019) as “Environmentally responsible visiting of relatively unspoilt natural areas, in order to enjoy and appreciate nature (and any accompanying cultural features – both past and present), that promotes conservation, has low negative visitor impact, and provides for beneficially active socio-economic involvement of local populations.”

¹² Defined by the Australia Manifesto, the Nature Based Tourism is the fact to travel “for the purpose of enjoying natural attractions and engaging in a variety of nature-based activities – from scuba diving and bushwalking to simply going to the beach”.

¹³ [Del 4.2.2_DestiMED_Policy_brief_oct19.pdf \(interreg-med.eu\)](#)

legal and financial point of view to enable a shift of unsustainable tourism models in the region that would contribute to a sustainable and equitable blue economy in the region and that would empower stakeholders to steward valuable coastal and marine ecosystems.

Policy framework

- Tangier declaration (2016, Rec. 14; 17; 42; 43; 44)
- Post-2020 Mediterranean MPA Roadmap (2022; Strategic objective 1)
- UNEP/MAP – Barcelona Convention Protocol on Integrated Zone Management in the Mediterranean (ICZM; 2008)
- UNEP/MAP – Barcelona Convention Mediterranean Strategy for Sustainable Development 2016-2025 (MSSD; 2016)
- UNEP/MAP – Barcelona Convention Action Plan for Sustainable Consumption and Production in the Mediterranean (2016)
- UNEP/MAP – Barcelona Convention Post-2020 SAPBIO (2021; Targets 1.8.; Goal 2.25)
- UNEP/MAP – Barcelona Convention Post-2020 Regional Strategy for MCPAs and OECMs (2021)
- UfM Ministerial declaration on Sustainable Blue Economy (2021; 51-57)
- UfM 2030 GreenerMed Agenda (2021, Thematic Axis 1; 3)
- EU Marine Strategy Framework Directive (MSFD) approved (2002)
- EU Water Directive (2006)
- EU Maritime Spatial Planning Framework Directive (2014)
- EU coastal and marine tourism strategy (2014)
- Natura 2000 marine network (5.6)
- EU Biodiversity Strategy for 2030 (2020)
- European Parliament resolution on establishing an EU strategy for sustainable tourism (2021)
- European Commission Transition pathway for tourism (2022)
- European charter for sustainable tourism in protected areas (2010)
- UN SDG Goals (T.8.9; 12.b)
- UNEP Marine and Coastal Strategy (2019; Strategic objective 4)

NATURE-BASED SUSTAINABLE TOURISM RECOMMENDATIONS

❖ At the national and local levels

- VII.1** Co-design, with all relevant stakeholders, a national strategy for sustainable tourism including nature-based tourism that promotes the key role of MPAs in preserving coastal and marine ecosystems.
- VII.2** Undertake review of the national legal frameworks to avoid counter-productive contradictions, harmful incentives and to support an integrated approach of sustainable nature-based tourism.
- VII.3** Support in the national tourism strategy alternative and less seasonal models of tourism that seek more environmental sustainability and social benefits and that fosters circular economy schemes as well as climate-smart and carbon-neutral touristic infrastructures.
- VII.4** Support the implementation of assessment of the impacts, from a socio-economic point of view, of tourism activities within MPAs and their surroundings to better understand the reality of

cumulative impacts on marine and coastal ecosystems, including those from new recreational practices.

- VII.5** Promote and support the implementation of carrying capacity as a flexible tool for adaptive management of the MPAs and their surroundings that complete tourism impact assessment.
- VII.6** Assess, rationalise, and harmonise existing eco-labelling, eco-certification processes and charters that reconcile MPA's conservation objectives and territorial socio-economic development¹⁴.
- VII.7** Investigate potential resource generation for MPAs, such as fee for services (such as ecological mooring) and undertake the necessary legal and regulatory revisions to better enable tourism activities to sustainably contribute to the different MPA funding needs for their effective management.

❖ At Mediterranean level

- VII.8** Further promote the unique diversity of Mediterranean cultural and natural assets and enable, through dedicated programmes, the tourism sector to better connect nature and culture as well as to better value and respect coastal and marine conservation efforts in the region.
- VII.9** Support the development of harmonised indicators to assess the impact of tourism on marine and coastal ecosystems and identify hotspots of pressure where priority actions should be undertaken to mitigate impacts on marine and coastal biodiversity (including habitat destruction, connectivity disruption, noise, light, water quality, marine litter).
- VII.10** Support an ecosystem approach for a better environmental management of coastal and marine tourism and the Mediterranean Ecotourism Consortium (MEC) to strengthen governance and policy frameworks on climate-smart and ecotourism across the Mediterranean.
- VII.11** Identify good practices and pursue experience sharing of successful experiences of win-win collaboration between tourism and conservation stakeholder.
- VII.12** Assess and address capacity-building needs of MPA managers on tourism and sustainable development skills (public-private partnerships, eco-certification and offer diversification, etc...) and monitoring needs also (monitor attendance, tourism activities and their impact, carrying capacity).

❖ At the EU level

- VII.13** Pursue and amplify projects of Mediterranean Sustainable Tourism Community (MED STC)¹⁵, its Athens declaration¹⁶ and expand regional cooperation between EU and non-EU countries on the strategic issue of marine and coastal nature-based tourism.
- VII.14** Support, through dedicated programmes, an ecosystem approach for a better environmental and climate smart management of coastal and marine tourism, particularly in MPAs.
- VII.15** Support the involvement of MPAs in the co-implementation approach of the European Commission transition pathway for tourism.

❖ At global level

- VII.16** Highlight Mediterranean MPAs' tourism experience and promote the MEET Network¹⁷ of Mediterranean protected areas developing high-quality ecotourism in the frame of international and global fora (CBD, Agenda 2030, UNFCCC).

¹⁴ The European Charter for Sustainable Tourism, which is now open to non-EU members, allows MPAs to invite companies to join the sustainable development effort.

¹⁵ [Sustainable Tourism \(interreg-med.eu\)](https://interreg-med.eu)

¹⁶ <https://planbleu.org/wp-content/uploads/2020/05/athens-declaration.pdf>

¹⁷ <https://www.meetnetwork.org/>

VII.17 Collaborate with Local2030 Network and Local2030 Islands Network to contribute to and amplify exchanges on good practices for sustainable tourism.

VII.18 Foster exchanges with other protected area networks (EUROPARC, other regional MPA networks) and expand twinning initiatives of Ocean Governance on nature-based tourism.

VII.19 Support UNWTO and the Mediterranean Tourism Foundation activities advancing knowledge and tourism policies, advocating for responsible tourism, and promoting tourism as a driving force towards economic growth, inclusive development, and environmental sustainability.

Annex 1: Main Policy references

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