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UN environment programme | Mediterranean Action Plan Barcelona Convention | SPA/RAC The Mediterranean Biodiversity Centre

THE FORUM of Marine Protected Areas in the Mediterranean

THE STATUS OF MARINE PROTECTED AREAS IN THE MEDITERRANEAN SEA

2020 EDITION

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MedPAN

MedPAN, the network of Mediterranean Marine Protected Areas managers, was initiated in the 1990s. Since 2008, the network has been coordinated by a permanent Secretariat established as a non-profit organisation under French law (Association de Loi 1901) with headquarters in Marseille. To date, MedPAN has 69 members managing 191 Marine Protected Areas (MPAs) and 57 partners from 21 countries around the Mediterranean. The mission of MedPAN is to actively contribute to the achievement of a representative, connected, integrated and effectively managed system of Mediterranean MPAs, through a strong and active networking of MPA managers and other actors at all levels, with the aim to increase MPA knowledge and capacity while improving awareness, MPA policy implementation and funding. The strategy of the MedPAN network is in line with international commitments (including the Convention on Biological Diversity, the Barcelona Convention and EU policies) and contributes to the implementation of concrete actions by and for MPA managers.

medpan.org : Mediterranean Protected Areas Network.

UNEP/MAP – SPA/RAC

The Specially Protected Areas Regional Activity Centre (SPA/RAC) was established in Tunis in 1985 by a decision of the Contracting Parties to the Barcelona Convention. It aims to contribute to the protection and sustainable management of marine and coastal areas of particular natural and cultural value and threatened species and ecosystems. The mission of SPA/RAC is to provide assistance to the Contracting Parties in meeting their obligations under the Protocol concerning Specially Protected Areas and Biological Diversity in the Mediterranean (SPA/BD Protocol). In this context, the main activities of SPA/RAC include supporting the establishment the establishment and management of marine and coastal protected areas, conducting scientific and technical research, preparing educational material, creating and updating databases, elaborating guidelines and studies, implementing training programmes, exchanging information, and cooperating with regional and international governmental and non-governmental organisations.

spa-rac.org : Specially Protected Areas Regional Activity Centre.

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EDITORIAL NOTE

MedPAN and SPA/RAC are working alongside their partners (IUCN, WWF, local NGOs, research organisation, etc.) to establish an ecological network of MPA to protect at least 30 % of the marine and coastal waters which is representative of the Mediterranean's diversity and made up of ecologically interconnected and well managed MPAs, in accordance with the latest guidelines from the Convention on Biological Diversity and the Barcelona Convention.

Every 4 years, MedPAN and SPA/RAC carry out the status of Mediterranean MPA to evaluate the progress that has been made, since the first inventory made in 2008, on the Mediterranean system of MPAs in view of the above-mentioned objectives: does the network cover 10 % of the Mediterranean in 2020, is it representative of the Mediterranean diversity, are MPAs well managed?

The main findings of the 2016 status of Marine Protected Areas in the Mediterranean Sea were that the target of 10 % protection was far from being achieved, that the network was not yet coherent and that MPA management was still insufficient.

This 2020 report has used the 2019-2020 inventory made on MPAs (MAPAMED) and a survey questionnaire sent to managers not only to assess the progress made since 2016 but also to assess the achievement of the 2020 objectives set for the network of MPAs by the Convention on Biological Diversity and the Barcelona Convention.

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FOREWORD

Khalil ATTIA, SPA/RAC Director

The Specially Protected Areas Regional Activity Centre (SPA/RAC) was established by the Contracting Parties to the Barcelona Convention in order to assist Mediterranean countries in implementing the Protocol concerning Specially Protected Areas and Biological Diversity in the Mediterranean. Since then, it has contributed decisively to the improvement of the knowledge of the Mediterranean ecosystem, the development of initiatives for the implementation of effective conservation policies, and has served as a supporting key element to building capacity of the signatory countries to the Barcelona Convention in the achievement of the objectives set up in the protocol.

Cooperation with other international institutions has always been a priority for SPA/RAC. Since 2008 we have worked side by side with the Mediterranean Network of MPA Managers, MedPAN, to elaborate a periodical review of the state of the art of the Mediterranean MPAs, to know where we were the moment the report was elaborated, and the position of the Mediterranean with respect of the targets and commitments set up for its conservation.

How are the managers tackling the issue of professional fishing activity in the protected waters of their area? And what about the sport anglers, or the diving activity? Are the managerial dispositions clearly established, and are the surveillance and enforcement rules of the area satisfactorily applied? It is indispensable to know which types of marine protected areas are established, how effectively they are managed, which habitat and species are monitored, and many other questions which make up the myriad of aspects that management of the protected areas encompasses. And it is necessary to gather the information dispersed among many MPAs, countries and managers, select the most informative, analyse it and arrange it in a comprehensive and readable format. So, in 2008, 2012 and 2016 respectively, the so-called Status Reports came to light. The corresponding one to the decisive turning point for the new decade 2020-2030 is now in your hands.

The new Report shows that the drivers which were threatening the Mediterranean in 2016 –direct human activities with an impact on the littoral and the Mediterranean waters and ecosystem, climate change and the invasion of alien species– remain relentlessly there, and that the ambitious objectives proposed in Nagoya for the just finished decade have not been accomplished. But there have been advances along the decade which cannot be dismissed, most especially in capacity building, progress in science-based decision taking procedures, in the growing impact of the manager's message on the political agenda, in the diversification of financial resources and in communication and networking efficiency. This has led to a modest growth of the network in surface terms, but to a much more robust consolidation in the structural aspects which support it. And we cannot forget that this has taken place in years of financial crisis and with the backdrop of the pandemic, which has deeply affected the operational aspects of the MPAs and which unfortunately is still menacing our lives.

There are reasons for hope, though. We, fortunately, preserve the enduring commitment of many people, authorities, and institutions which are doing their best to slow the pace of degradation of the Mediterranean, stop it and finally reverse the status of the Mediterranean habitats and species to a favourable condition. And a well-managed Marine and Coastal Protected Areas' system remains to be one of the most convenient devices to rely on in the toolkit available in conservation science and policy, to preserve the marine realm in good conservation status.

We strongly believe that this 2020 Status Report will be a valuable document, arriving at a time when speaking loud and clear is more necessary than ever. It clearly claims, with no ambiguities or hidden words, of the urgent necessity to act decisively, because we are running out of time. It will be our common responsibility to spread the message, and knock at the right doors and consciences on behalf of our common home sea.

UN environment programme | Mediterranean Action Plan Barcelona Convention | The Mediterranean Biodiversity Centre SPA / RAC

Purificacio CANALS, MedPAN President

MPAs are being globally recognised as one effective tool for the conservation and protection of the marine environment if they are managed effectively and have sufficient resources to address local management issues. Investing in MPA capacity development will result in high returns on investment for both people and nature. To achieve Post-2020 MPA targets, beyond the need for the creation of new protected areas and stronger protection measures, it is crucial to ensure the effective management of MPAs at the local level, including adequate human capacity and material resources, as well as securing sustainable financing. Over the years, MPA practitioners have come to realise that working together would help address some of the challenges they face, and MPA managers networks such as MedPAN have emerged and developed. Networks of MPA managers are indeed considered as a cornerstone to help improve the management effectiveness of MPAs. Networks of MPA managers are successful platforms to address common management and conservation challenges. By gathering MPA managers on a permanent basis and with an operational focus, they provide the stage for creative problem-solving, and for sharing knowledge, expertise and financial resources among protected areas facing the same challenges.

Together with SPA/RAC, MedPAN has accomplished important goals, including hosting the Mediterranean MPA Forum as a major event every four years, and producing the MPA Mediterranean Roadmap. The new Post-2020 MPA Roadmap envisions that by 2030, Mediterranean marine protected areas will form a well established, well funded, connected, ecologically representative, effectively managed and monitored network that will provide greater benefits to biodiversity, ecosystem services and the economic well-being of people and will be a model for resilience in the post-2020 and post-pandemic world. This roadmap is aligned with the Post-2020 Global Biodiversity Framework, the Barcelona Convention's Post-2020 Regional Strategy for MCPAs and OECMs in the Mediterranean and the EU Biodiversity Strategy for 2030. The roadmap further supports the ocean protection commitments made during the IUCN World Conservation Congress in September 2021 noted in the Marseille Manifesto (IUCN, 2021) and the Plan of Action for an Exemplary Mediterranean Sea by 2030 (PAMEX) launched at the IUCN Congress and supported by 8 Mediterranean countries and 5 international organisations (Government of France, Ministry for Europe and Foreign Affairs, Environment and Climate Department, 2021).

The Mediterranean is a complex case study. It is bordered by twenty-one countries, where thirteen different languages are spoken, and the governments range from republics to constitutional monarchies. Although the Barcelona Convention and the European Union (EU) provide a regional framework and sub-regional cohesion for countries, the implementation of policies, strategies, and actions to protect the marine environment varies considerably across the region, resulting in a significant divide in terms of environmental policy implementation. Additionally, the coverage of marine protected areas in the Mediterranean varies considerably, with many more found in the West and far fewer in the South. In cooperation with key partners, MedPAN supports the creation and operation of national, sub-regional and thematic networks of MPA managers to achieve a bigger impact. Networking activities, at all levels, facilitate capacity-building, transfer of lessons learnt, capitalisation of good practices and increased shared knowledge. Through joined forces of networks and a dynamic bottom-up approach linking experience on the ground and decision-making processes, MPA voices are coordinated and joined recommendations support policymaking at international, European, and national levels.

The 2020 MPA Status serves to identify needs and gaps within the network of Mediterranean MPAs, with the goal of sharing and amplifying best practices to enhance the capacity of MPA managers. As we strive to "build back better" in the post-Covid world, it is crucial to unite and strengthen the network of MPAs for the benefit of Mediterranean society, particularly those residing in fragile and vulnerable ecosystems.

We are stronger together!

MedPAN

LIST OF ACRONYMS

ACCOBAMS	Agreement on the Conservation of Cetaceans of the Black Sea, Mediterranean Sea and Contiguous Atlantic Area
CBD	Convention on Biological Diversity
CCH	Cetaceans Critical Habitat
CRS	Coordinate Reference System
EBSA	Ecologically or Biologically Significant Marine Area
EcAp	Ecosystem Approach
EEA	European Environment Agency
EFH	Essential Fish Habitat
EU	European Union
FRA	Fisheries Restricted Area
GADM	Global Administrative Areas
GFCM	General Fisheries Commission for the Mediterranean
GIS	Geographical Information System
IBA	Important Bird and Biodiversity Area
ICZM	Integrated Coastal Zone Management
IHO	International Hydrographic Organisation
IMAP	Integrated Monitoring and Assessment Programme of the Mediterranean Sea and Coast and related assessment criteria
IMMA	Important Marine Mammal Area

IMO	International Maritime Organisation
IUCN	International Union for Conservation of Nature
KBA	Key Biodiversity Area
MAPAMED	Database of Marine Protected Areas in the Mediterranean
MedPAN	Network of Marine Protected Area Managers in the Mediterranean
MPA	Marine Protected Area
MARPOL	International Convention for the Prevention of Pollution from Ships
MSFD	Marine Strategy Framework Directive
Natura 2000 or N2000	European ecological network of protected areas
NGO	Non-Governmental Organisation
OECM	Other Effective area-based Conservation Measure
PSCI	Natura 2000 proposed Sites of Community Importance
PSSA	Particularly Sensitive Sea Area
SPA/RAC	Specially Protected Areas Regional Activity Centre
SPA/BD	Specially Protected Areas and Biological Diversity
SPAMI	Specially Protected Area of Mediterranean Importance
SSC	Species Survival Commission
UNESCO	United Nations Educational, Scientific and Cultural Organisation
VME	Vulnerable marine ecosystem
WCPA	World Commission on Protected Areas

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EXECUTIVE SUMMARY

With regard to the quantitative component of Aichi Target 11, "*By 2020, at least [...] 10 % of marine and coastal areas [...] are conserved [...]*"[1], the expected result has not been achieved in the Mediterranean:

Officially designated MPAs (MPAs with a national statute, marine Natura 2000 sites and the Pelagos Sanctuary) represent around 8.3 % of the Mediterranean at the end of 2019 (an increase of 2 points since the end of 2016). If we exclude the two major sanctuaries dedicated to the protection of marine mammals, the percentage of coverage falls to around 3.7 % (an increase of 0.4 points since the end of 2016). If we focus only on MPAs with a national statute, by the end of 2019 they cover around 3.2 % of the Mediterranean (an increase of 1.9 points since the end of 2016), but if we exclude the Cetaceans Corridor, they will be reduced to just 1.3 % (an increase of 0.05 points since the end of 2016). Moreover, MPAs are very unevenly distributed between regions. In fact, 97.3 % of the areas protected by MPAs are located in the theoretical European's EEZ. Similarly, the Western Mediterranean is by far the most covered by MPAs (20.4 %, but only 6.7 % when excluding sanctuaries), ahead of the Adriatic (4.8 %). In 2020, the no-go, no-take, or no-fishing areas still only cover 0.04 % of the Mediterranean Sea, similar to 2016.

Considering the qualitative component of Aichi Target 11, "[...] through effectively and equitably managed, ecologically representative and well connected systems of protected areas [...]", efforts must be stepped up in the Mediterranean:

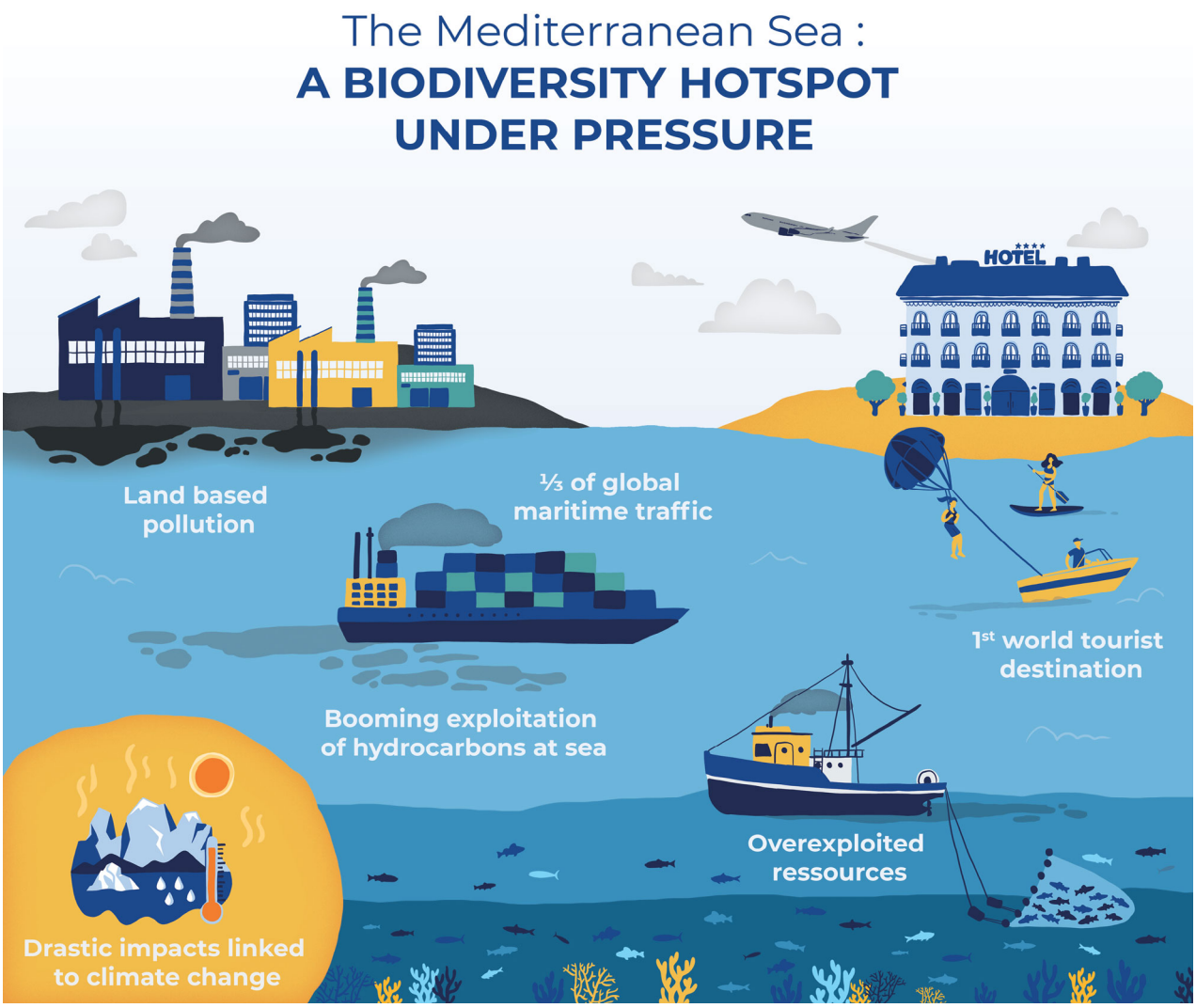
Only 13 % of MPAs with a national statute do have a business plan. Only 5 % have a suitable budget, all of which are located in EU member states and in the western basin. Similarly, this budget is fully secured in only 7 % of national MPAs, all of which are located in European countries. A small 12 % seemed to be satisfied with their human resources. The level of equipment and facilities appears to be suitable for 20 % of MPAs with a national statute. This 2020 MPA Status shows that only 26 % of MPAs with a national statute state that they have a management plan (being fully implemented for 7 %). Clearly measurable objectives have been defined for 23 % of national MPAs, and clearly defined scientifically-based indicators for 19 % of them. Regulation is suitable for 12 % of MPAs with a national statute, and regular surveillance is implemented for 13 % of them. Only 17 % have field staff qualified to carry out police missions, and sanctions are applied to a sufficient extent for 11 % of them.

Given the strong and intensifying pressures on the Mediterranean marine environment (human activities, pollution, invasive species, climate change, etc.), it is essential to strengthen the network of MPAs in areas where there are shortfalls, but also to create the right conditions for effective management and ecological benefits.

[1] https://www.cbd.int/doc/strategic-plan/2011-2020/Aichi-Targets-EN.pdf

GENERAL INTRODUCTION

1. The Mediterranean Sea



The Mediterranean Sea is one of the most biodiverse regions in the world, with a rich variety of marine life, including over 17,000 species, many of which are endemic. The sea's unique geography, climate, and history have contributed to its high levels of biodiversity. The Mediterranean is a semi-enclosed sea, with limited exchange with the Atlantic Ocean, creating a distinct environment for marine life. The sea's warm and shallow waters, combined with high levels of sunlight, provide ideal conditions for the growth of a wide variety of marine plants and animals. Additionally, the Mediterranean has a long history of human activity, with a rich cultural and economic heritage that has shaped the sea's ecology. The sea's biodiversity is threatened by a range of factors, including overfishing, pollution, and climate change, highlighting the need for conservation efforts. (Coll *et al.*, 2010; Katsanevakis *et al.*, 2014; Koutsoubas *et al.*, 2018).

Overfishing is a significant problem in the Mediterranean, with many fish populations declining due to unsustainable fishing practices. The use of destructive fishing methods, such as bottom trawling, also damages the seafloor and destroys important habitats for marine life. Pollution is another major issue affecting the Mediterranean, with plastic waste, oil spills, and sewage discharge, all contributing to the degradation of the marine environment. Plastic waste is particularly problematic, with the Mediterranean Sea being one of the most polluted seas in the world in terms of plastic debris. Climate change is also having an impact on the Mediterranean Sea, with rising sea temperatures and ocean acidification impacting marine life and ecosystems. These changes are leading to the loss of biodiversity and the decline of fish stocks. This is particularly concerning for the many species that are already under threat due to overfishing and pollution. Finally, habitat destruction is a significant issue in the Mediterranean, with coastal development, dredging, and the destruction of seagrass beds and coral reefs all contributing to the

loss of important habitats for marine life. This has implications for marine food webs as well as the integrity of ecosystem functioning and compromises the foundation of ecosystem services, essential for economic purposes and above all vital for food security and health.

Overall, the conservation challenges facing the Mediterranean Sea in 2020 are significant, and urgent action is needed to address these issues and protect the marine ecosystem in the region. Greater efforts are needed to adapt to unavoidable changes, mitigate drivers of change and increase resilience.

2. Legal & institutional framework

To address the need to protect the natural realm and help reduce the current rate of biodiversity loss, a set of legal instruments has been established at various levels.

2.1. Global level

At the global level, the Convention on Biological Diversity (CBD), which came into force in 1993, is the primary legal instrument aimed at conserving and sustainably using biodiversity. The CBD has established various protocols, including the Cartagena Protocol on Biosafety and the Nagoya Protocol on Access and Benefit-Sharing. During the 10th Conference of Parties in 2010, the Aichi Biodiversity targets were adopted as part of the 2011-2020 Strategic Plan for Biodiversity (CBD Secretariat, 2010a). In particular, Aichi Target 11 states that "by 2020, at least 10 % of coastal and marine areas [...] are conserved through effectively and equitably managed, ecologically representative, and well-connected systems of protected areas and other effective area-based conservation measures...". The CBD also promotes the Ecosystem Approach, which is a strategy for the integrated management of land, water, and living resources.

In addition to the CBD, the United Nations General Assembly has adopted the Sustainable Development Goals (SDGs), which include Goal 14: Life Below Water. These were adopted during the 2015 United Nations Sustainable Development Summit that set the 2030 Agenda for Sustainable Development (United Nations, 2015). SDG 14 aims to conserve and sustainably use the oceans, seas, and marine resources for sustainable development.

Other Treaties or Agreements are also of relevance, such as:

- the 1971 Ramsar Convention on Wetlands of International Importance (Ramsar Convention) which aims to develop and maintain an international network of wetlands which are important for the conservation of global biological diversity and for sustaining human life through the ecological and hydrological functions they perform,
- the Convention concerning the Protection of the World's Cultural and Natural Heritage (World Heritage Convention) which was adopted by the General Conference of UNESCO in 1972 and aims to catalogue, name, and conserve sites of outstanding cultural or natural importance to the common culture and heritage of humanity,
- the Convention on Migratory Species (CMS) signed in 1979 which provides a global platform for the conservation and sustainable use of migratory animals and their habitats (also known as the Bonn Convention),
- the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), an international agreement between governments signed in 1973 which aims to ensure that international trade in specimens of wild animals and plants does not threaten their survival and the UN Framework Convention on Climate Change (UNFCCC).

2.2. Mediterranean level

At the institutional level, the United Nations Environment Programme – Mediterranean Action Plan (UNEP/MAP) is the main regional body responsible for the protection of the marine environment in the Mediterranean. UNEP/MAP has established several legal instruments, including the Barcelona Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean.

The Barcelona Convention has various protocols, including the Protocol for the Protection of the Mediterranean Sea against Pollution from Land-Based Sources and Activities, which aims to prevent, reduce, and control pollution in the Mediterranean Sea. Another protocol, the Protocol concerning Specially Protected Areas and Biological Diversity in the Mediterranean, aims to protect and conserve marine and coastal biodiversity in the Mediterranean. This protocol follows up on the CBD objectives and encourages Contracting Parties to establish Specially Protected Areas, some of which may then be included in the List of Specially Protected Areas of Mediterranean Importance (SPAMIs). The Specially Protected Area Regional Activity Centre (SPA/RAC) is responsible for the implementation of this Protocol.

The Ecosystem Approach (EcAp), considered the overarching principle of the UNEP/MAP Barcelona Convention, is being integrated into all of its policies and activities. The implementation of the EU Marine Strategy Framework Directive (MSFD, 2008/56/EC) by the EU Member States in the region presents crucial opportunities and needs for the application of EcAp throughout the Mediterranean region ensuring that the MSFD and EcAp mutually strengthen and build on each other, without duplication of activities and obligations, with the common ultimate aim to achieve the Good Environmental Status (GES) of the Mediterranean Sea and coast.

In this context, the Mediterranean countries are updating/developing their national Integrated Monitoring and Assessment Programmes[2] (IMAP), which define objectives and corresponding indicators related to biodiversity, pollution, and hydrography.

Six other Protocols have been established under the Barcelona Convention and are likewise managed by specific Components of UNEP/MAP.

[2] http://wedocs.unep.org/bitstream/handle/20.500.11822/17012/imap_2017_eng.pdf?sequence=5&isAllowed=y

Box 1: Other Components of UNEP/MAP in charge of coordinating and implementing the Barcelona Convention and its Protocols

The Mediterranean Pollution Assessment and Control Programme (MED POL)

MED POL's main objective is to contribute to the prevention and elimination of land-based pollution in the Mediterranean. MED POL assists the Contracting Parties, through the planning and coordination of initiatives and actions, including promoting and catalysing synergies and investment programmes, to meet their obligations under the Barcelona Convention and the Dumping, the Land-Based Sources (LBS) and the Hazardous Wastes Protocols.

MED POL also facilitates the implementation of National Action Plans to address land-based pollution and LBS-related legally binding programmes and action plans, and continuously assesses the status and trends of pollution in the Mediterranean.

The Regional Marine Pollution Emergency Response Centre for the Mediterranean Sea (REMPEC)

REMPEC is administered by the International Maritime Organization (IMO) in cooperation with UNEP/MAP. REMPEC's main objective is to contribute to preventing and reducing pollution from ships and combating pollution in case of emergency. REMPEC assists the Contracting Parties in meeting their obligations under the Barcelona Convention and the Prevention and Emergency Protocol as well as in implementing the Regional Strategy for Prevention of and Response to Marine Pollution from Ships, whose key objectives and targets are reflected in the Mediterranean Strategy for Sustainable Development (MSSD).

The Centre also assists the Contracting Parties which request it in mobilising regional and international assistance in case of an emergency under the Offshore Protocol.

The Plan Bleu Regional Activity Centre (PB/RAC)

The PB/RAC's main objective is to contribute to raising awareness of Mediterranean stakeholders and decision makers concerning environment and sustainable development issues in the region, by providing future scenarios to assist in decision-making. In this respect and through its dual functions as an observatory of the environment and sustainable development and a centre for systematic and prospective analysis, PB/RAC provides the Contracting Parties with assessments of the state of the environment and development of the Mediterranean and a solid basis of environmental and sustainable development data, statistics, and indicators to support their action and decision-making process.

PB/RAC's activities are consistent with the priority fields of action of the MSSD and facilitate its implementation and follow-up.

The Priority Actions Programme Regional Activity Centre (PAP/RAC)

The specific objective of PAP/RAC is to contribute to the sustainable development of coastal zones and the sustainable use of their natural resources. PAP/RAC provides assistance to Mediterranean countries in the implementation of the Barcelona Convention, in meeting their obligations under the Integrated Coastal Zone Management (ICZM) Protocol and in implementing the MSSD.

PAP/RAC assists the Contracting Parties in strengthening their capacities, formulating and implementing national strategies under the ICZM Protocol, and implementing demonstration coastal management projects, such as Coastal Area Management Programme (CAMP) in selected local Mediterranean coastal areas.

The Sustainable Consumption and Production Regional Activity Centre (SCP/RAC also known as MedWaves)

The objective of SCP/RAC is to contribute to pollution prevention and sustainable and efficient management of services, products, and resources based on the Sustainable Consumption and Production integrated approach adopted by UNEP.

SCP/RAC provides assistance to the Contracting Parties in implementing the Barcelona Convention, the LBS Protocol, the Hazardous Waste Protocol, and the Offshore Protocol, in which sustainable production and consumption play a crucial role, as well as other Protocols in which the shift to sustainable consumption and production is key to attain their objectives. SCP/RAC also provides assistance to the Contracting Parties in promoting and using relevant mechanisms.

The Information and Communication Regional Activity Centre (INFO/RAC)

The objective of INFO/RAC is to contribute to collecting and sharing information, raising public awareness and participation and enhancing decision-making processes at the regional, national and local levels. In this context, the mission of INFO/RAC is to provide adequate information and communication services and infrastructure technologies to the Contracting Parties to implement the Barcelona Convention's Article 12 on public participation and Article 26 on reporting, as well as several articles related to reporting requirements under the different Protocols, thus strengthening MAP information management and communication capabilities. With a view to ensuring the availability of coherent and scientifically sound environmental knowledge, INFO/RAC strives for close cooperation with other key environmental institutions and international bodies working on environmental data and information management, to progressively move towards a shared environmental information system.

Another relevant legal entity specific to the Mediterranean region is the General Fisheries Commission for the Mediterranean (GFCM), the regional fisheries management organisation (RFMO) of the Food and Agriculture Organisation of the United Nations (FAO). The main objective of the GFCM is to ensure the conservation and sustainable use, at the biological, social, economic and environmental level, of living marine resources as well as the sustainable development of aquaculture in the Mediterranean and in the Black Sea. It has the authority to adopt resolutions and binding recommendations for fisheries conservation and management in its area of application, and plays a critical role in fisheries governance in the region.

ACCOBAMS, the Agreement on the Conservation of Cetaceans of the Black Sea, Mediterranean Sea and contiguous Atlantic area, is a legal conservation tool based on cooperation, established under the auspices of the Bonn Convention (UNEP/CMS) and specific to the Mediterranean region. Its purpose is to reduce threats to cetaceans, notably by improving current knowledge on these animals. This intergovernmental Agreement provides the demonstration of the commitment of riparian countries to preserve all species of cetaceans and their habitats within the geographical Agreement area by the enforcement of more stringent measures than those defined in the texts adopted previously.

2.3. European level

At the European Union (EU) level, several instruments, directives, and policies have been particularly important for marine conservation:

The Council of Europe's Convention on the Conservation of European Wildlife and Natural Habitats (1979), or Bern Convention, was the first international treaty to protect both species and habitats and to bring countries together to decide how to act on nature conservation in Europe and some African States.

The Birds Directive (adopted in 1979, replaced in 2009) and the Habitats Directive (adopted in 1995) require EU Member States to protect important habitats and species by establishing protected areas known as Natura 2000 sites.

The Marine Strategy Framework Directive (MSFD) which came into force in 2008 aims to achieve the Good Environmental Status (GES) of the European Union marine waters by 2020 through the development of national strategies for marine waters. This Directive promotes the Ecosystem Approach and encourages cooperation between EU Member States.

The Water Framework Directive, adopted in 2000 sets the broad scope for action and ambitious goals for the protection of inland surface waters, transitional waters, coastal waters and groundwater.

The Directive establishing a framework for Maritime Spatial Planning, adopted in 2014, recognises the benefits of environmental protection and the importance of sustainability in the development of maritime activities. This Directive also promotes an integrated approach in the planning of these activities.

The 1970 EU Common Fisheries Policy (CFP) is a set of rules for managing European fishing fleets and conserving fish stocks. Designed to manage a common resource, it gives all European fishing fleets equal access to EU waters and fishing grounds and allows fishers to compete fairly. While many fish stocks have been overfished, the policy was updated in 2014.

3. Objectives of the 2020 Status of MPAs in the Mediterranean Sea

"By 2020, at least 17 % of terrestrial and inland water, and 10 % of coastal and marine areas, especially areas of particular importance for biodiversity and ecosystem services, are conserved through effectively and equitably managed, ecologically representative and well-connected systems of protected areas and other effective area-based conservation measures, and integrated into the wider landscapes and seascapes." (Aichi Target 11, 2011-2020 Strategic Plan for Biodiversity, CBD Secretariat, 2010a).

The percentage covered by MPAs is the easiest criterion to evaluate, and most analyses tend to focus on this quantitative target. However, this approach conceals the rest of the objective, which proves to be more difficult to assess. This may lead to a false feeling of achievement once the 10 % coverage by a system of MPAs is reached. It is essential to ensure that this system is ecologically coherent and that MPAs are effectively managed (Watson *et al.,* 2014). Moreover, once the 10 % of well-managed and well-connected MPAs are eventually reached in a region, the remaining 90 % will consistently require similar conservation-driven marine spatial planning to sustain present ecosystem services and livelihoods.

This report aims to assess the progress made towards Aichi Target 11 in 2020, identify any remaining gaps and weaknesses, and provide key players with recommendations to achieve the new Post-2020 targets for MPAs and OECMs in the Mediterranean.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NE PROTÉGÉE

METHODOLOGY

In this section, the methodology carried out for the calculation of the spatial references used for the area-based analysis, as well as their estimated values in square kilometres and percentages, are presented. In addition, relevant technical changes between the 2017 and 2019 editions of the SPA/RAC's and MedPAN's MAPAMED database are included. Points of vigilance regarding the overlaps between sites, and the case of MPAs designated specifically for the conservation of cetaceans, are also specified. Finally, the context regarding the Mediterranean MPA management database (MedPAN, 2021) is described.

1. Spatial references

The analyses presented in this report provide information on the status and evolution of area coverage of MPAs since 2016 (the previous edition of the MPA Status Report). To understand how these changes have occurred in the geographical context of the Mediterranean, the evolution of protected areas is analysed in relation to:

1) The total area of the Mediterranean Sea and its four subregions considered under the Barcelona Convention,

2) The area covered by EBSAs,

3) The area covered by Internal Waters and Territorial Seas of the Barcelona Convention Contracting Parties,

4) The bathymetric distribution,

5) The theoretical EEZs of the Barcelona Convention Contracting Parties,

6) The EUNIS marine habitats.

1.1. Mediterranean Sea and Barcelona Convention areas

The spatial reference used for the Mediterranean Sea is the "*Scope of the Barcelona Convention (IHO-MSFD)*" GIS layer[3] (based on the coastline from the "*IHO Sea Areas*" GIS layer[4]. It represents an area of approximately 2,513,905 km^2 (value measured with QGIS 3.16 LTR, EPSG:3035). The four Mediterranean marine subregions of the Marine Strategy Framework Directive (MSFD) "*MSFD Europe's seas*" GIS layer[5] was also used. These subregions approximately correspond, with a minor variation in their geographic borders, with the Barcelona Convention subregions used for the implementation of the Ecosystem Approach (EcAp) and its related Integrated Monitoring and Assessment Programme (IMAP) (see section 2.1 of the MAPAMED user manual, MedPAN & SPA/RAC, 2021).

Table 01: Areas and percentages relating to the Mediterranean Sea and the four Mediterranean marine subregions, according to the scope of the Barcelona Convention (MedPAN & SPA/RAC, 2021).

Scope of the Barcelona Convention	Code	Estimated marine area (km^2)	Estimated percentage (%)
Western Mediterranean Sea	MWE	845,257	33.7
Adriatic Sea	MAD	139,291	5.5
Ionian Sea and the Central Mediterranean Sea	MIC	772,875	30.7
Aegean – Levantine Sea	MAL	756,482	30.1
Total: Mediterranean Sea	MED	2,513,905	100

The cartographic analyses and maps are produced using QGIS software version 3.16 LTR. The data used is based on the Coordinate Reference System (CRS) "*ETRS89-extended / LAEA Europe*"[6] (EPSG:3035), which preserves the surface units over the study area. In order to take into account the curvature of the Earth, the surface calculations are made according to the ellipsoid corresponding to the EPSG:3035, that is CRS: "*GRS 1980*"[7](EPSG:7019).

[3] MedPAN and SPA/RAC (2021). GIS layer representing the scope of the Barcelona Convention. Coastline based on IHO Sea Areas, version 3, 2018. Marine regions based on MSFD Europe's seas, 2018. (included in the MAPAMED dataset, available online at https://mapamed.org/)

[4] Flanders Marine Institute (2018). IHO Sea Areas, version 3. Available online at http://www.marineregions.org/ https://doi.org/10.14284/323

[5] European Environment Agency (2018). Europe's seas – Delineation of the MSFD Article 4 marine regions and subregions. Available online at https://www.eea.europa.eu/data-and-maps/data/europe-seas

[6] https://epsg.io/3035

[7] https://epsg.io/7019-ellipsoid

Figure 001: Scope of the Barcelona Convention indicating the four Mediterranean marine subregions (yellow line) and the Contracting Parties (MAPAMED 2019 edition; GADM database, version 3.6, May 2018).

The MAPAMED data consider the 22 Contracting Parties to the Barcelona Convention: Albania, Algeria, Bosnia and Herzegovina, Croatia, Cyprus, Egypt, European Union, France, Greece, Israel, Italy, Lebanon, Libya, Malta, Monaco, Morocco, Montenegro, Syrian Arab Republic, Slovenia, Spain, Tunisia, and Türkiye. For the sake of the readability of the graphs, the analyses use the ISO 3166-3 codes[8] of these countries (Table 02.)

Table 02: List of the 21 countries Contracting Parties to the Barcelona Convention with their ISO 3166-3 code and their EU membership statute.

ISO 3166-3 code	Name	Membership of the European Union[9]
ALB	Albania	Candidate
BIH	Bosnia and Herzegovina	Potential candidate
CYP	Cyprus	Member
DZA	Algeria	Not a Member State
EGY	Egypt	Not a Member State
ESP	Spain	Member
FRA	France	Member
GRC	Greece	Member
HRV	Croatia	Member
ISR	Israel	Not a Member State
ITA	Italy	Member
LBN	Lebanon	Not a Member State
LBY	Libya	Not a Member State
MAR	Morocco	Not a Member State
MCO	Monaco	Member
MLT	Malta	Candidate
MNE	Montenegro	Member
SVN	Slovenia	Not a Member State
TUN	Tunisia	Not a Member State
TUR	Türkiye	Candidate

1.2. Ecologically or Biologically Significant Marine Areas (EBSAs)

The spatial reference frame used is an extraction of the 15 "*EBSAs*" sites from the "MAPAMED 2019 edition, version 2" GIS layer[10] and their grouping into a single entity. This represents an area of about 1,158,616 km², or about 46 % of the Mediterranean Sea.

[8] Online consultation platform (OBP) ISO: https://www.iso.org/obp/ui/#search/code/

[9] Official website of the European Union: https://europa.eu/european-union/about-eu/countries_en

[10] MAPAMED, the database of MArine Protected Areas in the MEDiterranean. 2019 edition, version 2. © 2022 by SPA/RAC and MedPAN. Licensed under CC BY-NC-SA 4.0. Available online at https://www.mapamed.org/

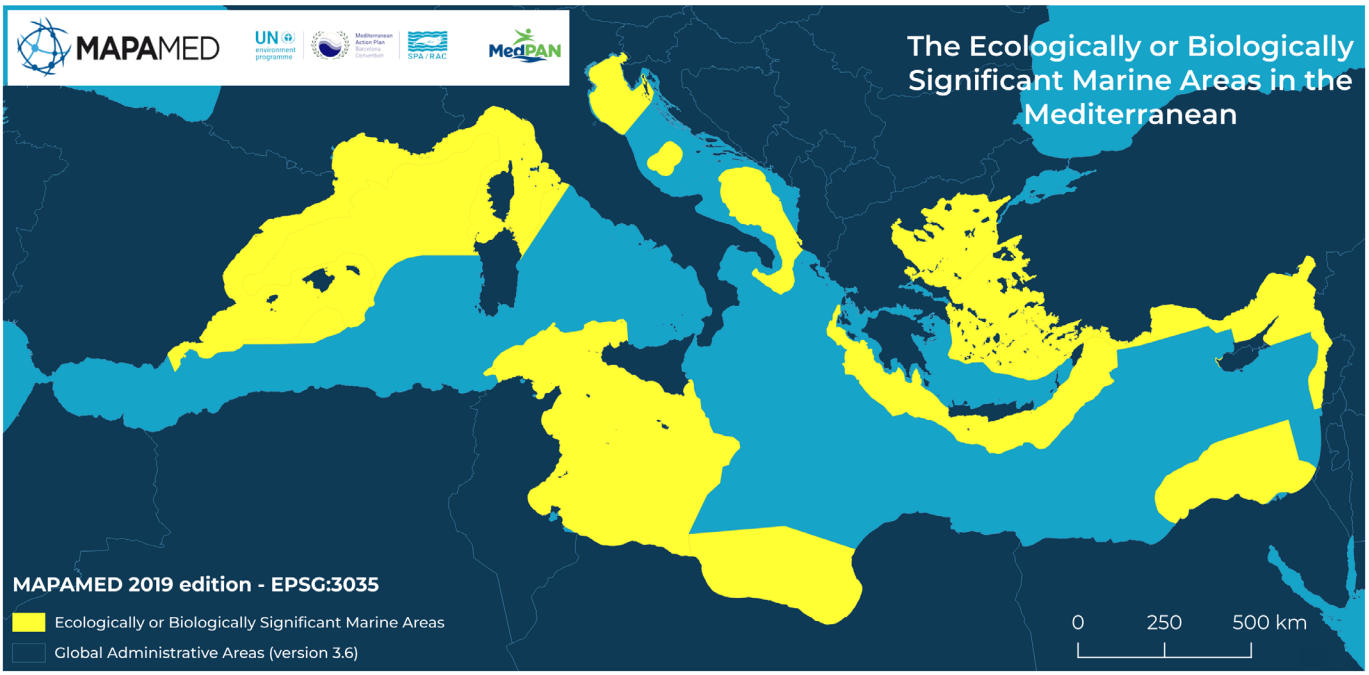


Figure 002: The 15 EBSA sites (yellow) in the Mediterranean Sea (MAPAMED 2019 edition; GADM database, version 3.6, May 2018).

1.3. Internal Waters and Territorial Seas

The spatial reference frames used are an extraction (according to the scope of the Barcelona Convention) of the GIS layers "*World Internal Waters v3*"[11] and "*World 12 Nautical Miles Zone (Territorial Seas) v3*"[12]. They represent an area of approximately 175,513 km^2 and 567,318 km^2, respectively. Territorial Seas are not always 12 nautical miles wide from the countries' baseline. Indeed, in some cases, the distance separating two Mediterranean opposite States (including their islands) does not allow them to expand their territorial waters out to 12 nautical miles.

Table 03: Areas and percentages related to inland waters and the Territorial Seas (Territorial Waters) of the Mediterranean Sea (Flanders Marine Institute, 2019).

Maritime borders	Estimated marine area (km^2)	Estimated percentage (%)
Internal Waters	175,513	7
Territorial Seas	567,318	23
Internal Waters + Territorial Seas	742,831	30
Total: Mediterranean Sea	**2,513,905**	**100**

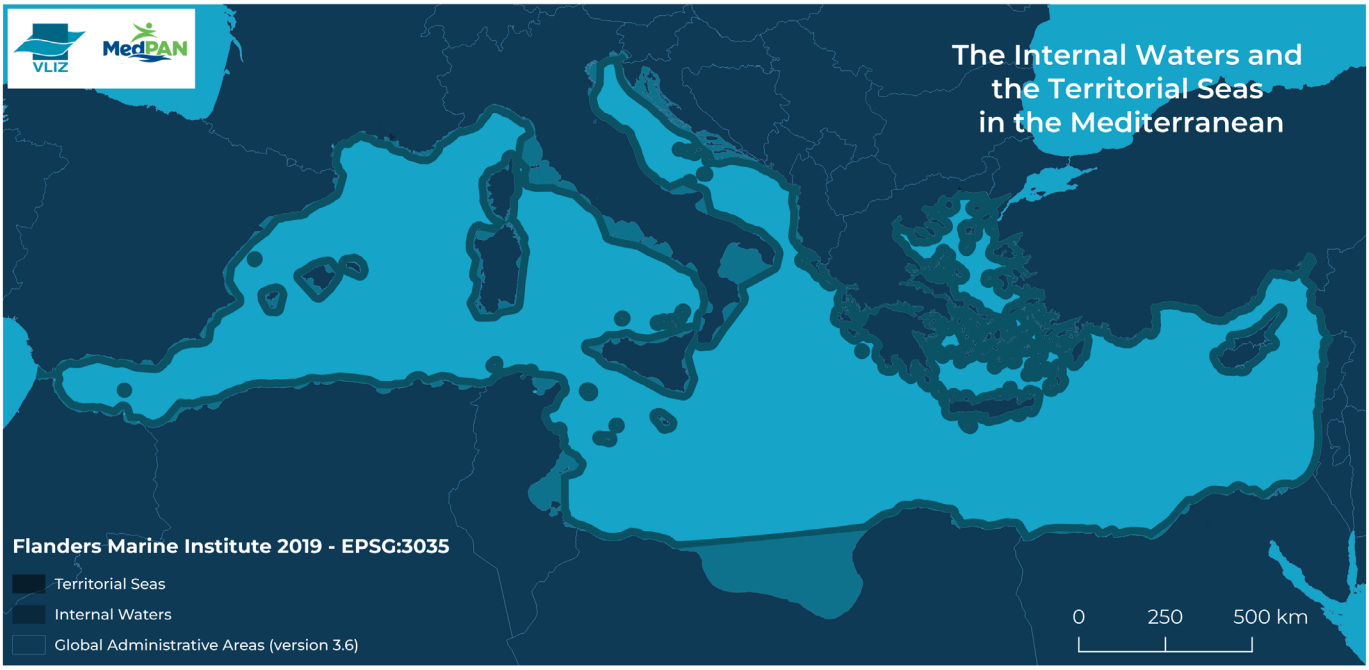


Figure 003: Internal Waters (light black) and Territorial Seas (dark black) in the Mediterranean Sea (Flanders Marine Institute 2019, Maritime Boundaries Geodatabase, version 11; GADM database, version 3.6, May 2018).

[11] Flanders Marine Institute (2019). Maritime Boundaries Geodatabase: Internal Waters, version 3. Available online at https://www.marineregions.org/ https://doi.org/10.14284/385

[12] Flanders Marine Institute (2019). Maritime Boundaries Geodatabase: Territorial Seas (12NM), version 3. Available online at https://www.marineregions.org/ https://doi.org/10.14284/387

1.4. Bathymetry

The spatial reference used is an extraction (according to the scope of the Barcelona Convention) of the GIS layer "*GEBCO 2014 Grid*"[13] which represents an area of about 2,502,460 km². As the coastline of this layer is different from that of the Barcelona Convention area, the area values differ slightly. This does not affect the orders of magnitude of the results obtained in the analyses.

Table 04: Areas and percentages, relative to the bathymetric layers of the Mediterranean Sea (GEBCO 2014).

Bathymetry layers	Estimated marine area (km²)	Estimated percentage (%)
1 – 50 m depth	162,350	7
50 – 250 m depth	389,786	16
250 – 5500 m depth	1,950,324	77
Total: Mediterranean Sea	**2,502,460**	**100**

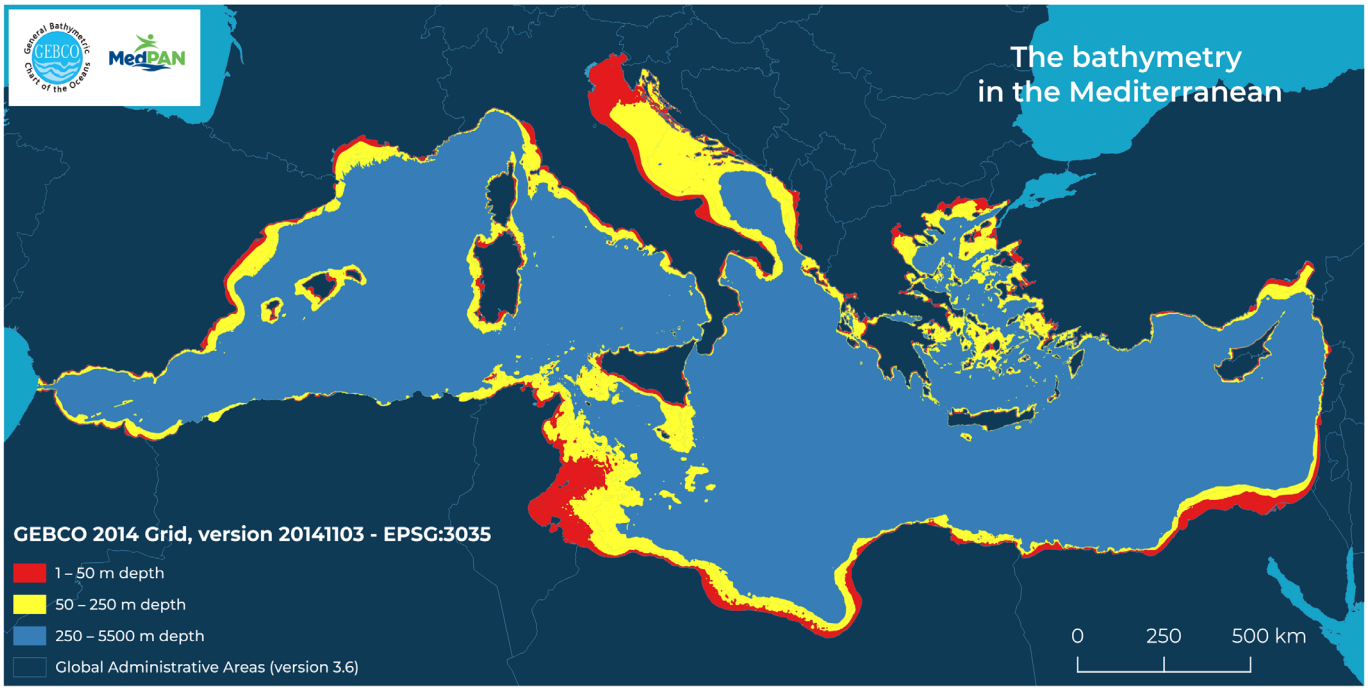


Figure 004: Bathymetric layers of the Mediterranean Sea. Legend: 1–50 m in red, 50–250 m in yellow, and 250–5500 m in blue (GEBCO 2014 Grid, version 20141103; GADM database, version 3.6, May 2018).

1.5. Exclusive Economic Zones (EEZs)

The spatial reference used is an extraction (according to the scope of the Barcelona Convention) of the GIS layer "*World EEZ v11*"[14] which represents an area of about 2,512,293 km². Not all Mediterranean countries have declared their EEZs yet, so these are to be considered as theoretical EEZs. Areas of disagreement between countries ("overlapping claims"), representing about 500 km², have been excluded from the analyses: the corresponding areas have been removed from the GIS layer. Thus, the MPAs included in or overlapping these areas of disagreement have not been taken into account in the analyses (only the overlapping area).

Table 05: Areas and percentages, related to the theoretical Exclusive Economic Zones of the Mediterranean Sea in Contracting Parties that are EU and non-EU members (Flanders Marine Institute, 2019).

Maritime borders	Estimated marine area (km²)	Estimated percentage (%)
Theoretical EEZs of Contracting Parties that are EU Member States	1,574,777	63
Theoretical EEZs of Contracting Parties that are not EU members	937,516	37
Total: Mediterranean Sea	**2,512,293**	**100**

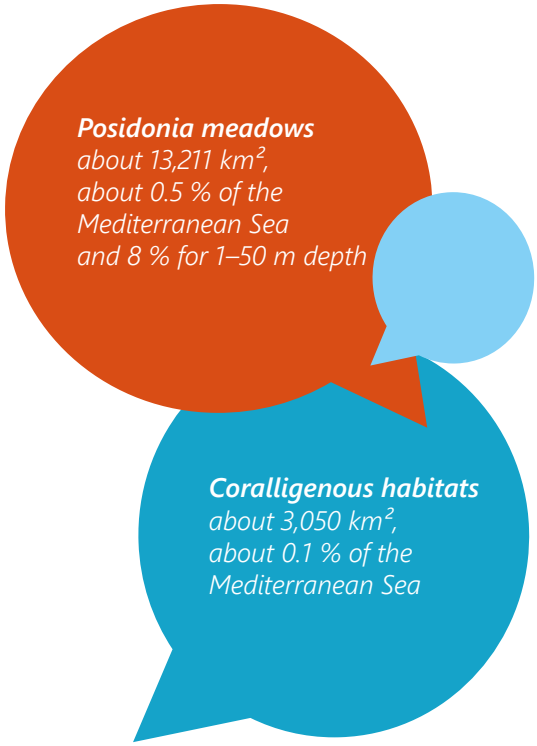
[13] The GEBCO_2014 Grid, version 20141103, www.gebco.net(polygons from https://opendem.info/download_bathymetry.html)

[14] Flanders Marine Institute (2019). Maritime Boundaries Geodatabase: Maritime Boundaries and Exclusive Economic Zones (200NM), version 11. Available online at https://www.marineregions.org/ https://doi.org/10.14284/386

1.6. EUNIS marine habitats

The spatial reference used is an extraction of two types of habitats from the GIS layer *"EUSeaMap (2021) habitat types (EUNIS 2019)"*[15] (based on the EUNIS marine habitat classification review 2019)[16]:

- Posidonia meadows (about 13,211 km², about 0.5 % of the Mediterranean Sea and 8 % for 1–50 m depth): habitats MB252 *"Biocenosis of Posidonia oceanica"* and MB2523 *"Facies of dead 'mattes' of Posidonia oceanica without much epiflora"*.
- Coralligenous habitats (about 3,050 km², about 0.1 % of the Mediterranean Sea): habitats MC151 *"Coralligenous biocenosis"*andMC251 *"Coralligenous platforms"*.



2. MAPAMED 2017 and 2019 editions: new GIS reference and selection criteria

The new edition of MAPAMED (MAPAMED 2019 edition v2) has defined a new marine baseline, which differs from the one used in the MPA Status Report of 2016. In addition, new site selection criteria have been defined, resulting in the removal or inclusion of numerous sites that were designated before 2017. Detailed information on these changes can be consulted in section 2 of the MAPAMED user manual and the release notes for the 2019 edition.

Due to these changes, a direct comparison of values in the MAPAMED 2019 edition with those reported in 2016 cannot be carried out.

In order to compare the status of MPAs between these two dates, the 2016 figures have been recalculated using the new marine baseline and considering the sites included in the 2019 edition designated before the end of 2016. The 2020 figures are calculated using the full 2019 edition (i.e., with all sites designated before the end of 2019).

The 2019 edition of MAPAMED lists 1,320 designated sites in the Mediterranean. Among them, 1,087 are Marine Protected Areas (i.e., MPAs with a national statute, marine Natura 2000 sites and the Pelagos Sanctuary[17]); the remaining sites are considered as potential OECMs (potential Other effective area-based conservation measures) or other sites of conservation interest.

3. Considering spatial overlaps between sites

A site belonging to one type of designation can overlap with other sites having different or identical designations. Some geographical areas may thus accumulate numerous overlaps of different designations.

These overlaps prevent surface analyses based solely on attribute data, because surfaces cannot be added. In the scope of this study, analyses using spatial data were carried out in order to take into account the different overlaps.

4. The specific case of the Pelagos Sanctuary and the Cetaceans Corridor

The MAPAMED dataset contains two MPAs, mostly offshore, specifically dedicated to the protection of marine mammals:

- the Pelagos Sanctuary for Mediterranean Marine Mammals (1999; France, Italy, and Monaco; about 88,000 km², covering approximately 3.5 % of the Mediterranean), and
- the Cetaceans Migration Corridor in the Mediterranean (2018; Spain; about 47,000 km², covering approximately 1.8 % of the Mediterranean).

Both have a SPAMI (Specially Protected Area of Mediterranean Importance) statute, the Pelagos Sanctuary being an international agreement and the Cetaceans Migration Corridor being an MPA with a national statute. Both MPAs are located in the marine subregion "MWE – Western Mediterranean" and represent 10.4 % and 5.5 % of its surface, respectively.

Because of their specific statutes and large areas, their systematic inclusion in the analyses may hide certain results. When relevant, results are presented with and without taking these two MPAs into account.

[15] EUSeaMap 2021 in the EUNIS 2019 classification: https://emodnet.ec.europa.eu/en/seabed-habitats

[16] https://www.eea.europa.eu/data-and-maps/data/eunis-habitat-classification

[17] Among these 1,087 MPAs, there are 39 that are included in the SPAMI list.

[18] In addition to the MAPAMED sites, MedPAN also contacted seven sites that do not yet have an officially designated marine area, but still have some management activity at sea ("paperless" MPAs). MedPAN obtained information for four of them.

5. The Mediterranean MPA management database by MedPAN

Every four years, mainly for the purpose of this regional report, an online questionnaire is sent to Mediterranean MPAs to collect data about various aspects of management. In 2019, a questionnaire was sent to 333 MPAs for which a valid email address was available to assess the progress made since 2016 and the situation in relation to the 2020 targets set by the Convention on Biological Diversity and the Barcelona Convention. Responses from MPA managers were collected between May 2019 and February 2020 and compiled in the Mediterranean MPA management database (MedPAN, 2021).

Data used for this regional report includes information directly gathered from the 2019 questionnaire and completed by data collected via other thematic questionnaires sent out in the context of regional workshops, exchange visits or training sessions organised by MedPAN. This brings the total number of MPAs for which information is available in 2019 to 249.

The composition of the sample is detailed in Figure 005.

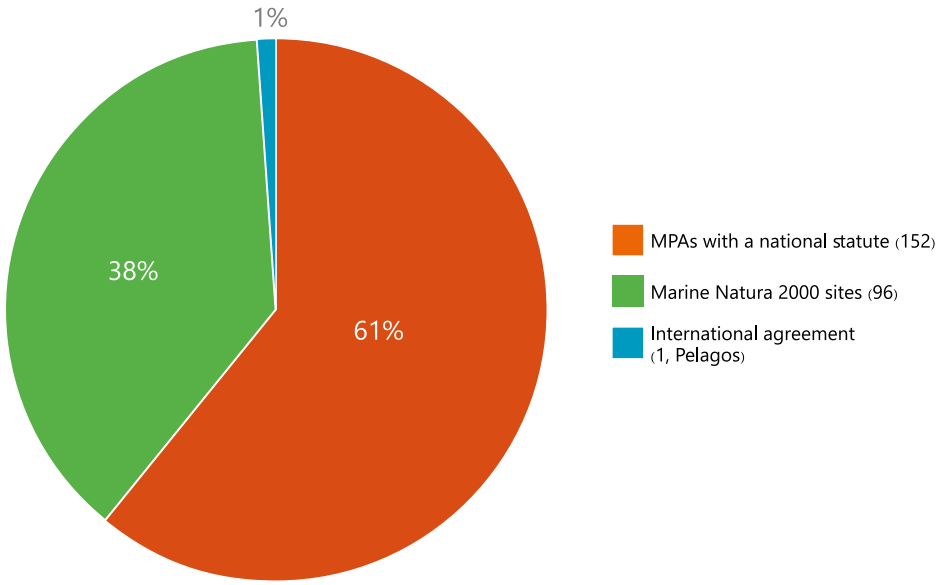


Figure 005: Sample composition by type of MPA (N=249).

It is important to note that, although the overall participation rate in relation to the number of questionnaires sent out is high (around 75 %), it is low compared to the total number of known MPAs included in MAPAMED (around 23 %). This is due to the fact that there are unfortunately many MPAs for which no contact could be identified. There are also many sites that are embedded in others and for which management is carried out by the management body of the main site (e.g., Natura 2000 sites run by an MPA with a national statute). When the management body was able to provide data for secondary sites, answers were often similar or even identical to those of the corresponding main site. This data is valuable for improving the understanding of Mediterranean MPAs, but cannot be directly integrated into the analyses because they would be giving more weight to answers from MPAs containing other sites within their boundaries.

For the purpose of this regional report, analyses were carried out on MPAs with a national statute. These represent a total of 152 responses for 264 known MPAs with a national statute (i.e., an overall participation rate of 58 %). Among those MPAs, 257 are officially designated MPAs and 7 are "paperless" MPAs (i.e., management actions in the field without an official designation) that are not yet included in MAPAMED (see Table 06 for more details and Box 2 for an example). The MPAs for which data is available represent approximately 75,999 km^2, that is about 95 % of the area covered by MPAs with a national statute in the Mediterranean (about 98 % of the area covered by MPAs in the EU waters; about 60 % of the area covered by MPAs outside the EU waters). Those available data for MPAs with a national statute overlap with 61 Natura 2000 sites for which data is available. The available data for Natura 2000 sites that don't overlap with MPAs with a national statute include 35 Natura 2000 sites, which represent only 4 % of the 829 known marine Natura 2000 sites (about 3,298 km^2).

Note: *In some graphs, the percentages may not add up to 100 %. This is due to the fact that some percentages have been rounded off to zero decimal places for the sake of legibility.*

Table 06: Participation rate of MPAs with a national statute to the MedPAN 2019 questionnaire and the corresponding percentage of MPA coverage (MAPAMED 2019 edition v2; the Mediterranean MPA management database 2019 edition - MedPAN, 2021).

Geographic areas	MPAs with a national statute (MAPAMED 2019 edition)	National MPAs without an official statute	National MPAs for which data is available (MedPAN, 2019)	Participation rate (%)	Participation coverage (%)
MED	257	7	**152**	**58**	**95**
EU	209	0	**126**	**60**	**98**
Non-EU	48	7	**26**	**47**	**60**
MWE	126	4	**75**	**58**	**97**
MAD	45	0	**25**	**56**	**92**
MIC	33	3	**31**	**86**	**98**
MAL	54	0	**22**	**41**	**72**

The geographical distribution of these MPAs with a national statute across the Mediterranean is very uneven, with the majority of MPAs being located in EU countries (Table 06 and Figure 006) and the western basin (Table 06 and Figure 007).

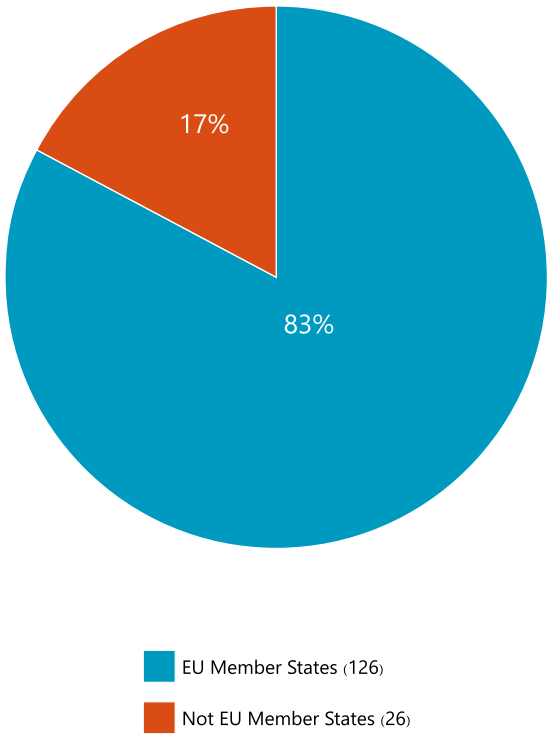


Figure 006: Distribution of MPAs with a national statute in the sample by EU membership (N=152).

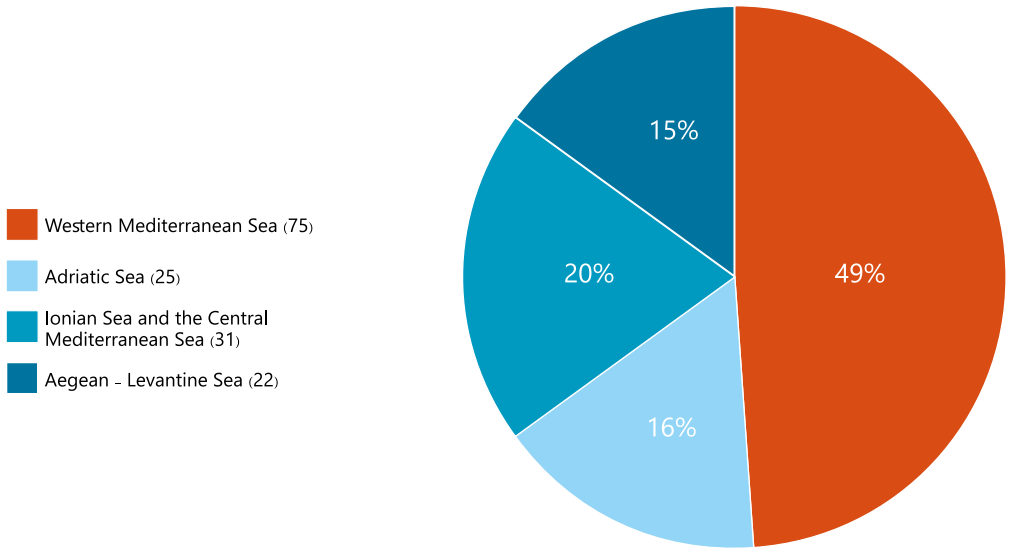


Figure 007: Distribution of MPAs with a national statute in the sample by subregion (N=153; Butrinti National Park (Albania) is counted in "Adriatic Sea" and "Ionian Sea and the Central Mediterranean Sea", as it straddles the two subregions).

Box 2: A local NGO plays its role: the future Marine Protected Area of Kuriat Islands

Kuriat Islands is a small archipelago located in the Bay of Monastir on the East coast of Tunisia. It is a functional MPA, but still waiting for its legal designation as such. It is composed of two sedimentary, uninhabited small flat islands, "*Kuria essghira*" ("*Petite Kuriat*" or small Kuriat) and "Kuria el-k'bira" ("*Grande Kuriat*" or great Kuriat), with sandy beaches, halophilic dry vegetation and some salty ponds. The area will protect 340 ha of land and 64,389 ha of sea waters, giving shelter to well-structured Posidonia meadows, nesting beaches of *Caretta caretta* (46 nesting sites in 2021) and colonies of Little tern (*Sternula albifrons*) and Cory's Shearwater (*Calonectris diomedea*) among others. The presence of invasive species is a matter of concern. The islands receive more than 20,000 summer visitors each year, and the waters surrounding the island are traditional fishing grounds.

Although it has not been officially declared, the preparatory or prospective phase I was finished long ago. Currently, there is effective surveillance on the spot, monitoring, and surveillance of sea turtles nesting beaches, Posidonia meadows and seabird colonies is conducted, and activities of environmental awareness and a communication strategy are already set in place and active. In 2015 a management plan was prepared with the direct participation of local stakeholders, and it is fully operational at present.

Kuriat Islands marine protected area is considered the first successful example of co-management in Tunisia: in 2017, the first agreement between the Coastal Protection and Planning Agency (APAL) and an NGO-Notre Grand Bleu- was signed as part of the MedFund project for the co-management of the future Kuriat MPA by setting up a joint management unit. Co-management involves both relationships with partners and donors and the work of monitoring in the field, carried out by the co-management unit assisted by volunteers. The role of co-management reflects the site protection strategy adopted in the management plan, as the best way to guarantee both the sustainability and conservation of the area, but also the respect to the equity principle of shared responsibility, involving local agents present in the area well ahead of its inception as an MPA.

The protected area has been granted with funds coming from The MedFund and other donors. Part of the funds has been invested in a remarkable project: scientific camps at Kuriat Islands, addressed specifically to the children of fishers operating in the area. Kids between 6 and 12 years and young teenagers could spend a few days on the islands, participating in research and monitoring activities in the islands and their surrounding waters, adapted to their age and capabilities. An awareness raising activity targeted precisely to the group which probably will become the necessary cooperators and co-managers of the area in the coming future.

Citation: Amengual P., Alvarez-Berastegui D., (2023). Box 2: A local NGO plays its role: the future Marine Protected Area of Kuriat Islands. In "The 2020 Status of Marine Protected Areas in the Mediterranean" (MedPAN and UNEP/MAP-SPA/RAC, 2023).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CHAPTER I – DESIGNATIONS AND GOVERNANCE OF MEDITERRANEAN MPAs

To date, as of January 2020, there are 1,087 officially designated MPAs in the Mediterranean Sea, covering a surface of 209,303 km^2 and representing 8.3 % of the Mediterranean Sea. Among those MPAs, 39 are currently on the Specially Protected Areas of Mediterranean Importance (SPAMIs) List. Officially designated MPAs are established at the national level, at the regional level (European or Mediterranean scale) or at the international level under a wide variety of designations. The MAPAMED database, the database of MArine Protected Areas in the MEDiterranean, currently lists 82 types of official designations of marine protected areas in the Mediterranean.

Since the end of 2016, 163 new MPAs have been designated in the Mediterranean and contributed to a 2 points overall net gain in the percentage of the surface under designation. A total of 23 nationally designated MPAs have been declared in 9 Mediterranean countries covering 48,764 km^2, or 1.9 % of the Mediterranean and a total of 140 new marine Natura 2000 sites have been created in 3 Mediterranean countries, covering about 17,782 km^2, or 0.7 % of the Mediterranean. MAPAMED data show that in 2020 MPAs are still mainly designated in waters subject to the sovereignty of EU member Contracting Parties. At the end of 2019, 97.3 % of the marine surface area covered by MPAs is within the theoretical Exclusive Economic Zones (EEZ) of EU member countries (96.9 % in 2016).

Data shows that for a majority of the nationally designated MPAs (30 %), the supervisory administration is a national authority and that a quarter of the nationally designated MPAs (2 %) have a governance council. The three groups that are the most represented in the governance councils are public administrations, scientists, and local elected officials. Interestingly, only 11 % of the national MPAs reported having a co-management system in place, 28 % reported operating on the principle of consultation, and 5 % reported having no type of co-management in place. Those results show that co-management *stricto sensu*, therefore, remains a fair minority practice in national MPAs in the Mediterranean, but MPAs generally involve local stakeholders via consultation processes.

Finally, conservation outcomes are not guaranteed by the designation of MPAs alone. The establishment of an MPA can go through various stages before effective management is implemented (see more details in Box 3). Additionally, the social-ecological outcomes of an MPA will ultimately depend on its level of protection and enforcement (Edgar *et al.,* 2014; Grorud-Colvert *et al.,* 2021). Data collected for this study show that in 2020 only 2 % of the nationally designated MPAs are strict nature reserves (IUCN Categories Ia) and only 1 % are Wilderness Areas (IUCN Categories Ib). Categories Ia and Ib under IUCN provide higher conservation outcomes because they represent the strictest levels of protection. These categories ensure that natural habitats and ecosystems are preserved in their natural state, allowing for the protection of biodiversity and the conservation of endangered species.

Box 3: The MPA Guide

The MPA Guide (Oregon State University *et al.,* 2019) stresses the need to refine the language already in use to avoid confusion and inconsistency in order to accelerate the process towards global marine conservation. The guide assigns 4 levels of protection and, interestingly, these levels are combined with 4 stages of establishment of an MPA:

Levels of protection

"FULLY PROTECTED": no extractive or destructive activities are allowed, and all abatable impacts are minimized.

"HIGHLY PROTECTED": only light extractive activities are allowed with low total impact, and other abatable impacts are minimized, for example by only allowing low-impact cultural or traditional activities with low levels of extraction.

"LIGHTLY PROTECTED": some protection of biodiversity exists but moderate to significant extraction and other impacts are allowed.

"MINIMALLY PROTECTED": extensive extraction and other impacts are allowed but the site still provides some conservation benefit in the area, as highly destructive activities like industrial fishing are prohibited.

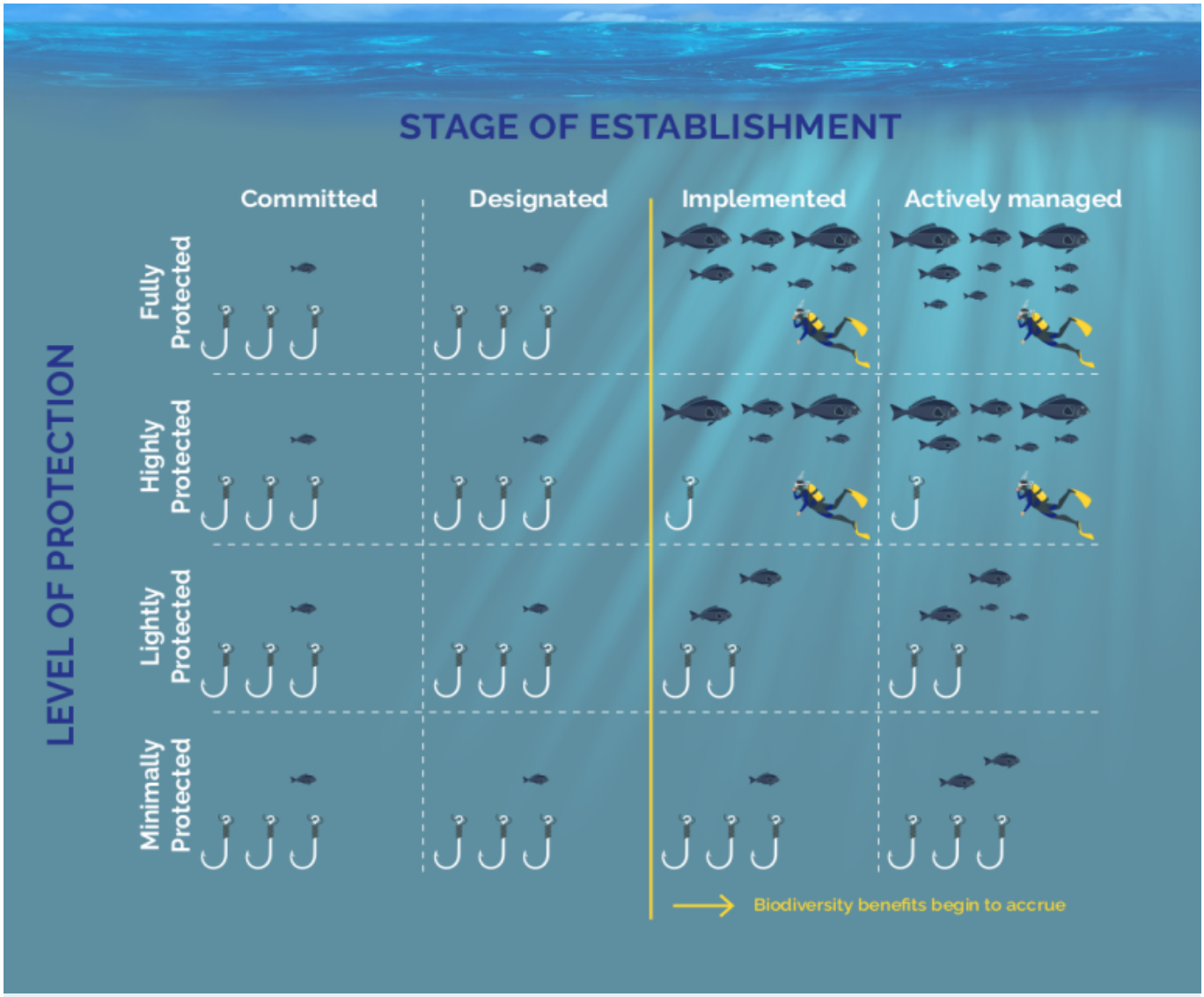
Stages of establishment

"ACTIVELY MANAGED": The MPA management is ongoing, including monitoring, periodic review, and changes made as needed to achieve biodiversity conservation and other ecological and social goals.

"IMPLEMENTED": An MPA transitions to being operational and 'in the water' with plans for management. The MPA has a defined boundary, objectives and management strategy for regulating activities, ideally including plans for protecting key habitats and species.

"DESIGNATED": An MPA is established or recognized through legal means or other authoritative rulemaking. The MPA now exists 'on paper' and in law or another formal process.

"PROPOSED/COMMITTED": The intent to create an MPA is made public, for example through a submission to the Convention on Biological Diversity or other instrument, conference announcement, official press release, or other official declaration.



Therefore, in order to achieve significant protection outcomes, an MPA must be implemented or actively managed (stage of establishment) and provide a highly or fully level of protection.

More information at https://mpa-guide.protectedplanet.net/resources.

Online tool to assign the protection level: https://mpa-guide.protectedplanet.net/protection-level-decision-tree.

I.1. Introduction on designations and governance of Mediterranean MPAs

The purpose of this chapter is to assess the progress made between 2016 and up to 2020 regarding the designation of MPAs. In addition, the status of MPAs is assessed in relation to the 2020 objectives set by the Convention on Biological Diversity (quantitative aspects of the Aichi Biodiversity Target 11) and the Barcelona Convention. It includes an overview of some specific characteristics of MPAs (year of designation, IUCN category, legal basis) and also their spatial distribution within the Mediterranean and according to other relevant characteristics (geographical position, bathymetry, etc.). The analyses also include governance mechanisms, with a particular focus on co-management.

I.2. Designations of MPAs and other area-based conservation sites in the Mediterranean

This section aims at providing the reader with a brief definition of each of the main designation categories used in the analysis. By the word "designation", we refer to a clearly defined marine geographical space that has been officially recognised at the international level and/or declared by national legal means. Different designations can overlap each other, so that a given location may be under several designations of different natures. The list of current designations is available in Annex 1.

More detailed explanations are available in the MAPAMED user manual (MedPAN & SPA/RAC, 2021)[19]. It is also relevant to consult the documentation associated with the different institutions in charge of the designations concerned.

[19] https://www.mapamed.org/data/2021-04_MAPAMED_user_manual_ENG.pdf

1.2.1. Marine Protected Areas

Aligned with the CBD[20] and IUCN[21] definitions of Protected Areas, SPA/RAC and MedPAN have defined Marine Protected Areas (MPAs) as follows: "**a clearly defined marine geographical space - including subtidal, intertidal and supratidal terrain and coastal lakes and lagoons connected permanently or temporarily to the sea, together with its overlying water -recognized, dedicated and managed, through legal or other effective means, to achieve the long-term conservation of nature with associated ecosystem services and cultural values.**" (Claudet *et al.*, 2011).

According to this definition and in the framework of the Status Report, three types of areas are considered as MPAs in the Mediterranean, following the MAPAMED user manual (MedPAN & SPA/RAC, 2021):

- **MPAs with a national statute:**

All MPAs that have been legally designated by a State are considered under this term. The legal and regulatory arrangements for these MPAs can vary greatly depending on the country and the designation (national park, nature reserve, etc.). The MAPAMED database currently lists 75 different designations of MPAs with a national statute (also named "nationally designated MPAs" or "national MPAs"), which we group together here under this general heading insofar as they meet the criteria defined above.

- **Marine Natura 2000 sites:**

This network is restricted to the European Union countries and therefore limited to the 8 Contracting Parties that are EU Member States (i.e., Cyprus, Croatia, France, Greece, Italy, Malta, Spain, and Slovenia). It is important to note that the four Natura 2000 designation categories do not offer the same level of protection. That is why the "Sites of Community Importance" are not considered as an MPA as long as they are in the "Proposed" step, but only when they are confirmed.

- **The Pelagos Sanctuary:**

This is currently the only MPA in the Mediterranean with an international statute, spreading over France, Italy, and Monaco thanks to an international agreement among these three States.

In addition, MPAs can be included in the **SPAMI** List (List of Specially Protected Areas of Mediterranean Importance) that was established in 2001. The SPAMI concept was developed in the framework of the Barcelona Convention, and more particularly its Protocol concerning Specially Protected Areas and Biological Diversity in the Mediterranean (SPA/BD Protocol), which implementation is coordinated by SPA/RAC[22].

I.2.2. Other Effective area based Conservation Measures

Until States officially declare Other Effective area-based Conservation Measures (OECMs), the sites included in MAPAMED are to be considered as **potential OECMs**[23]. That is to say: sites that could meet the OECM criteria in the future, but without any guarantee that it would effectively be the case. Indeed, neither SPA/RAC nor MedPAN has the authority to recognise and report a site as an OECM.

Aligned with the CBD definition of OECMs, SPA/RAC and MedPAN have defined potential marine OECMs as follows: **any area (except MPAs), totally or partially marine, clearly defined geographically, legally designated, and whose management might bring, directly or indirectly, long-term in situ marine biodiversity conservation outcomes.**

In the future, OECMs could be reported from a very wide diversity of relevant sectoral national entities. For now, MAPAMED does not include any potential OECM from sites designated at the national level. According to the adopted definition for OECMs and in the framework of the Status Report, two types of areas might be considered as potential marine OECMs in the Mediterranean, following the MAPAMED user manual (MedPAN & SPA/RAC, 2021):

- **Fisheries Restricted Areas:**

In the Mediterranean, Fisheries Restricted Areas (FRAs) are established by the General Fisheries Commission for the Mediterranean and Black Sea (GFCM). There are three categories of FRAs: Protection of vulnerable marine ecosystems (VME), Protection of Essential Fish Habitat (EFH) and Protection of deep-sea benthic habitats. The latter is rather a management measure, i.e., a ban on the use of towed dredges and trawls at depths greater than 1,000 m throughout the Mediterranean and Black Seas. It is, thereby, not included in the potential marine OECMs for the time being.

- **Particularly Sensitive Sea Areas:**

There is only one Particularly Sensitive Sea Area (PSSA) declared in the Mediterranean by the International Maritime Organisation (IMO) so far: the Strait of Bonifacio, between France (Corsica) and Italy (Sardinia).

I.3. Status of officially designated Marine Protected Areas in 2020

I.3.1. Status of designations

The MAPAMED database currently lists 82 official designations of marine protected areas in the Mediterranean (Annex 1).

Among the marine protected areas designations, 75 are with a national statute, 1 is international (the Pelagos Sanctuary) and 6 are regional (i.e., the 6 [out of 7] combinations of Natura 2000 categories at sea[24] since the Sites of Community Importance (SCIs) are not considered MPAs until they are confirmed). Most of the designations' diversity is therefore to be found in national designations. Even if these national designations often use homonymous names (e.g., national park, nature reserve, marine protected area, etc.), they cover a wide variety of protection levels depending on the jurisdiction, with some MPAs being governed at different sub-national levels. For example, France alone has 9 different national MPA designations, and Spain has at least 15 in the Mediterranean. Some of these designations comply with the IUCN nomenclature for protected areas, making it easier to classify and compare them; however, homonyms might be misleading, as some "national parks" are not recognised by the IUCN as belonging to category II ("national park").

[20] (CBD Convention, 1992: Article 2 and Article 8)
[21] (IUCN, 2012: When is a Marine Protected Area really a Marine Protected Area)
[22] To be included in the SPAMI List, an area must be awarded a legal statute guaranteeing its effective long-term protection. For that reason, generally, a SPAMI corresponds to an already existing MPA.
[23] See the MAPAMED User Manual (April 2021 version) for further details, MedPAN & SPA/RAC (2021)
[24] "Given that the same site can be designated under both Directives (at the same time or staggered), there are therefore seven combinations of Natura 2000 site categories." (MAPAMED user manual, MedPAN & SPA/RAC, 2021)

I.3.2. Surface area

I.3.2.1. Mediterranean basin

The inventory used for the analysis is based on the 2019 edition of MAPAMED, i.e., taking into account all sites designated until the end of 2019. In 2020, there are 1,087 designated MPAs in the Mediterranean (MPAs with a national statute, marine Natura 2000 sites and the Pelagos Sanctuary [International Agreement]; see Figure 008). Among those MPAs, 39 are included on the SPAMI List (Figure 009).

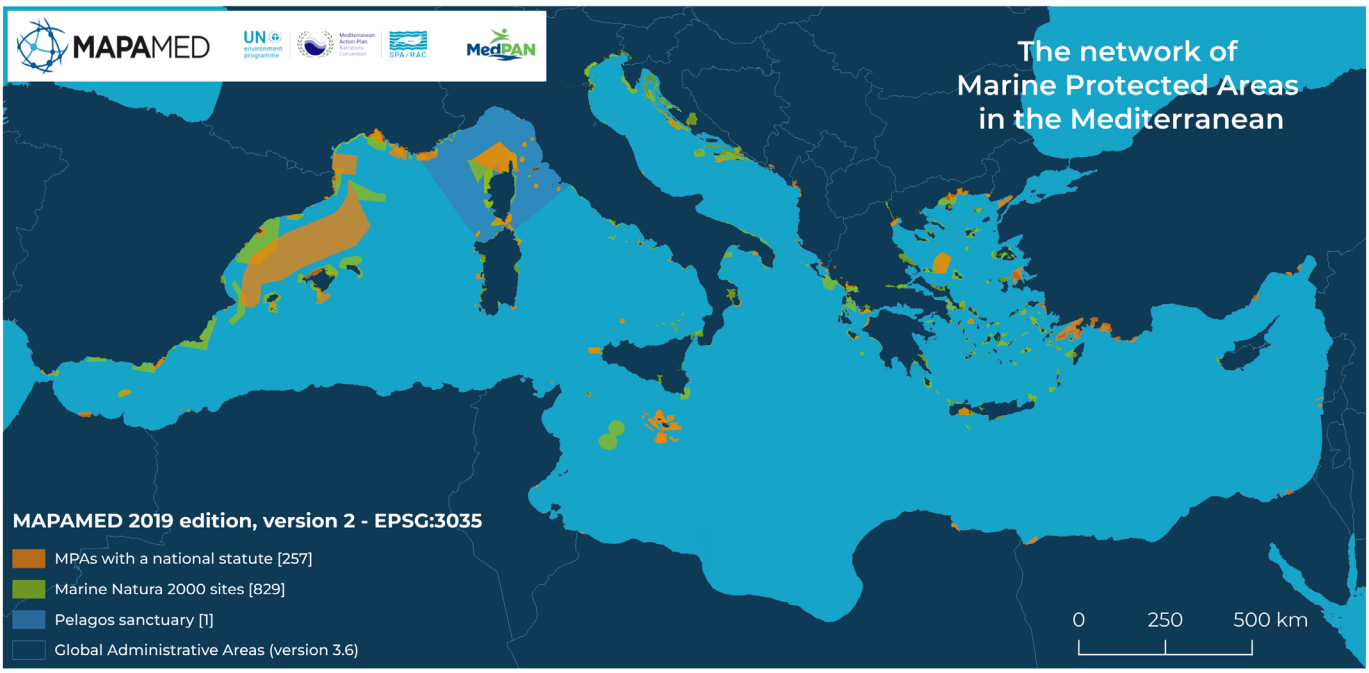


Figure 008: Marine Protected Areas in the Mediterranean (MAPAMED 2019 edition; GADM database, version 3.6, May 2018).

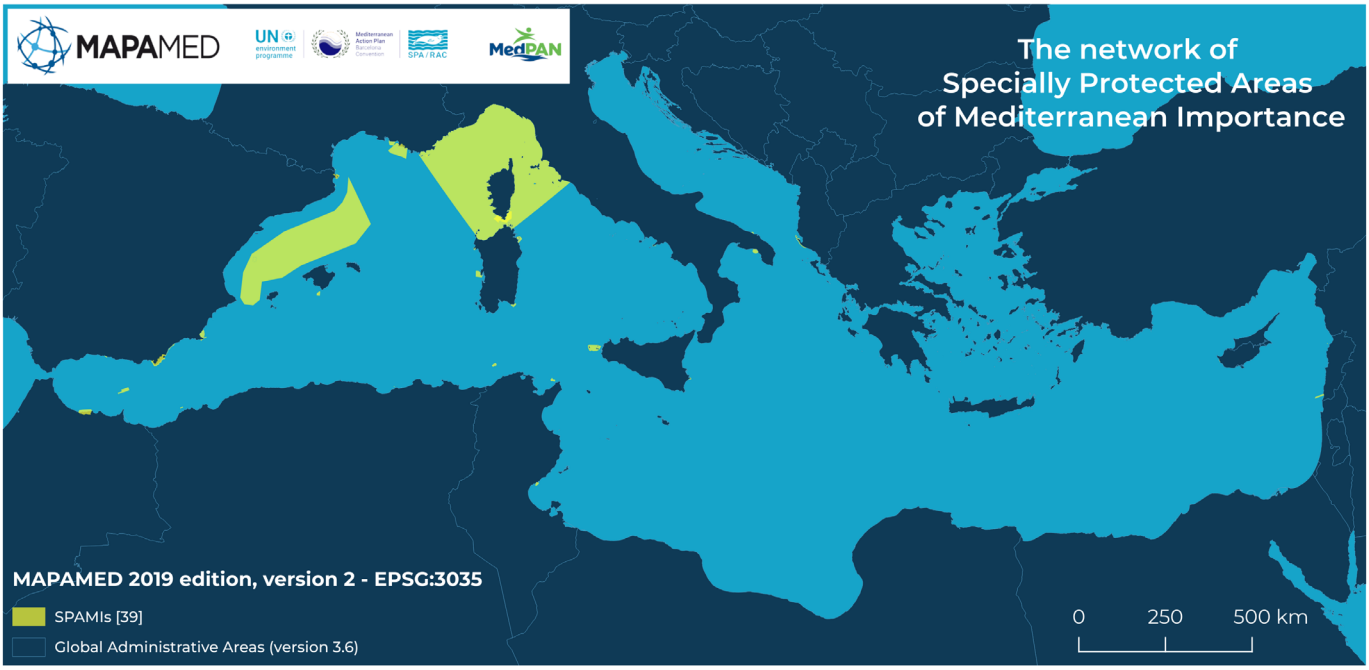


Figure 009: Specially Protected Areas of Mediterranean Importance (MAPAMED 2019 edition; GADM database, version 3.6, May 2018).

The MPAs cover a total surface area of 209,303 km² which represents 8.3 % of the Mediterranean Sea but only 92,899 km², i.e., 3.7 % of the Mediterranean if the Pelagos Sanctuary and the Cetaceans Corridor are not taken into account (see Table 07). The 10 % coverage target for 2020 set by Aichi Target 11 has not been achieved in the Mediterranean.

MPAs with a national statute, marine Natura 2000 sites, the Pelagos Sanctuary and SPAMIs cover respectively 3.2 %, 3.2 %, 3.5 % and 5.5 % of the Mediterranean Sea. However, without the Cetaceans Corridor, MPAs with a national statute only cover 33,573 km²,

or 1.3 % of the Mediterranean. It is important to note that overlaps were taken into account in the analyses (Table 07) as it is very common for an area to be under several types of designations.

Table 07: Marine surface areas and percentages, relative to the Mediterranean Sea, of MPAs with a national statute, marine Natura 2000 sites, the Pelagos sanctuary and SPAMIs (MAPAMED 2019 edition, Caution: surfaces cannot be added as numerous overlaps exist).

Type of MPA	Estimated marine area (km²)	Estimated percent coverage of the Mediterranean Sea (%)
MPAs with a national statute	79,872	3.2
without the Cetaceans Corridor	*33,573*	*1.3*
Marine Natura 2000 sites	79,566	3.2
Pelagos Sanctuary	87,659	3.5
SPAMIs	138,464	5.5
without Sanctuary and Corridor	*5,380*	*0.2*
Total for Marine Protected Areas (Aichi target 11)		
Marine Protected Areas	209,303	8.3
without Sanctuary and Corridor	*92,899*	*3.7*

Overall, marine protection in the Mediterranean is dominated, in terms of surface area, by the Pelagos Sanctuary and the Cetaceans Corridor (which have SPAMI statute) and in terms of numbers by the Natura 2000 network in EU water.

I.3.2.2. Mediterranean regions

Among the four marine subregions, the Western Mediterranean Sea has the highest coverage, with 20.4 % of its area covered by MPAs: it is the only marine subregion exceeding the 10 % coverage. This surface area, however, is reduced to 6.7 % when the Pelagos Sanctuary and the Cetaceans Corridor are not included. The Adriatic Sea, the Aegean-Levantine Sea, and the Ionian Sea and Central Mediterranean Sea have respectively 4.8 %, 2.1 % and 1.8 % of their surface area covered by MPAs (Table 08).

MPAs with a national statute represent a significant percentage of the marine surface area of the western basin (7.9 %). Marine Natura 2000 sites, existing only in EU member Contracting Parties, are mainly found in the western part of the basin (5.7 %) and the Adriatic Sea (4.6 %) with numerous small sites in Croatia and Italy, and fewer but larger sites in France and Spain. MPAs included in the SPAMI list are also found mainly in the western basin (16.3 %) because of the surface areas represented by the Pelagos Sanctuary and the Cetaceans Corridor (Table 08).

Table 08: Percentages of marine surface areas, relative to the four Mediterranean subregions, of MPAs with a national statute, marine Natura 2000 sites, the Pelagos sanctuary and SPAMIs (MAPAMED 2019 edition, MWE "Western Mediterranean Sea", MAD "Adriatic Sea", MIC "Ionian Sea and the Central Mediterranean Sea" and MAL "Aegean — Levantine Sea", Caution: surfaces cannot be added as numerous overlaps exist).

Type of MPA	Estimated percent coverage of Mediterranean subregions (%)			
	MWE	MAD	MIC	MAL
MPAs with a national statute	7.9	0.6	0.7	0.9
without the Cetaceans Corridor	2.4	-	-	-
Marine Natura 2000 sites	5.7	4.6	1.7	1.5
Pelagos Sanctuary	10.4	-	-	-
SPAMIs	16.3	0.1	0.03	0.02
without Sanctuary and Corridor	0.6	-	-	-
Total for Marine Protected Areas (Aichi target 11)				
Marine Protected Areas	20.4	4.8	1.8	2.1
without Sanctuary and Corridor	6.7	-	-	-

I.3.3. Year of designation of MPAs with a national statut and marine Natura 2000 sites

Data about the year of designation (Figure 010) was available for 1,087 MPAs in the Mediterranean (MAPAMED database).

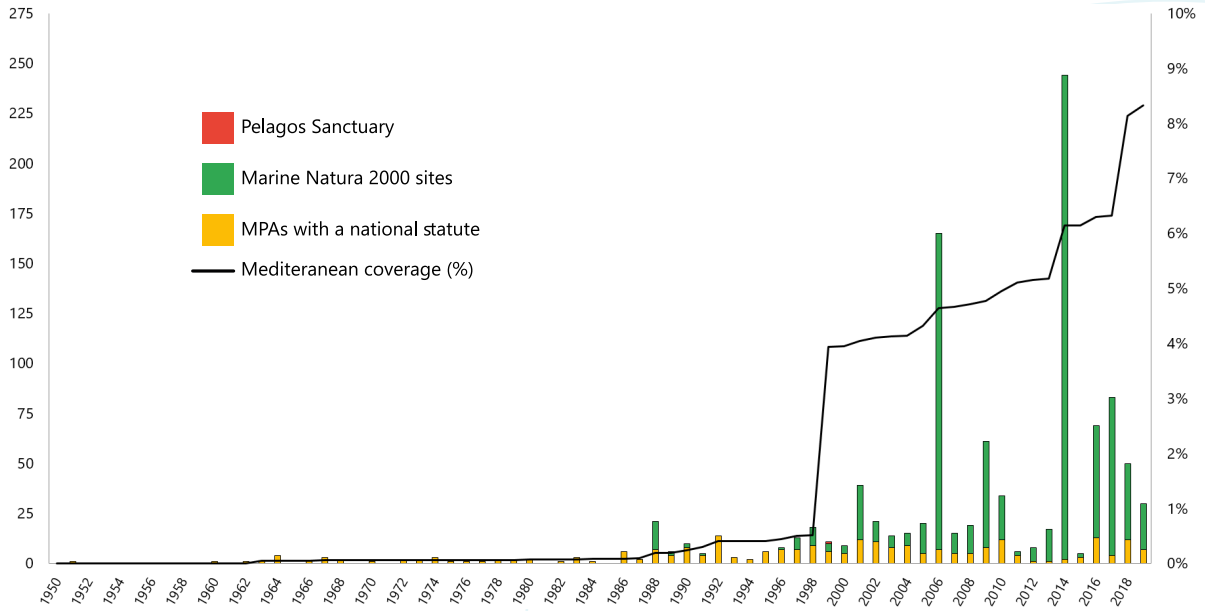


Figure 010: Number of MPAs created each year in the Mediterranean (left axis) and their cumulative coverage in percentage of the Mediterranean (right axis)(N=1,087).

The first MPA in the Mediterranean was created in 1951 in a marine cave: the Modra Spilja Natural Monument in Croatia. It was not until the 1960s that the first National Parks with a marine area appeared: Mljet (Croatia) in 1960, Samariá (Greece) in 1962 and Port-Cros (France) in 1963.

The creation of MPAs was very low until the late 1980s. The first marine Natura 2000 sites were created in 1988. MPAs reached a coverage rate of 1 % of the Mediterranean in 1997. This rate jumped to 3.9 % in 1999 with the creation of the Pelagos Sanctuary.

The network of MPAs with a national statute continued to develop slowly during the 2000s and 2010s. Over the same period, the marine Natura 2000 network has developed strongly, with two major peaks in creation in 2006 (mostly Greece and Spain, bringing the coverage rate to 4.7 %) and 2014 (mostly Croatia, bringing the coverage rate to 6.2 %). A major contribution came from the national MPAs in 2018, with the creation of the Cetaceans Corridor in Spain, making the MPAs cover 8.1 % of the Mediterranean.

At the end of 2019, the network of MPAs in the Mediterranean was composed of 1,087 sites, covering about 209,303 km², which is approximately 8.3 % of the Mediterranean Sea.

I.3.4. IUCN categories of MPAs with a national statute

"IUCN protected area management categories classify protected areas according to their management objectives. The categories are recognised by international bodies such as the United Nations and by many national governments as the global standard for defining and recording protected areas and as such are increasingly being incorporated into government legislation." (IUCN Protected Area Categories System[25])

Data about the IUCN categories (Figure 011), according to their overall management objectives, was available for 210 out of 257 MPAs with a national statute in the Mediterranean (82 %, MAPAMED database). This information is not available for the other sites in MAPAMED. The different IUCN categories are:

- Ia – Strict nature reserve
- Ib – Wilderness area
- II – National park
- III – Natural monument or feature
- IV – Habitat/species management area
- V – Protected landscape/seascape
- VI – Protected area with sustainable use of natural resources
- Not reported or not assigned

[25] https://www.iucn.org/theme/protected-areas/about/protected-area-categories

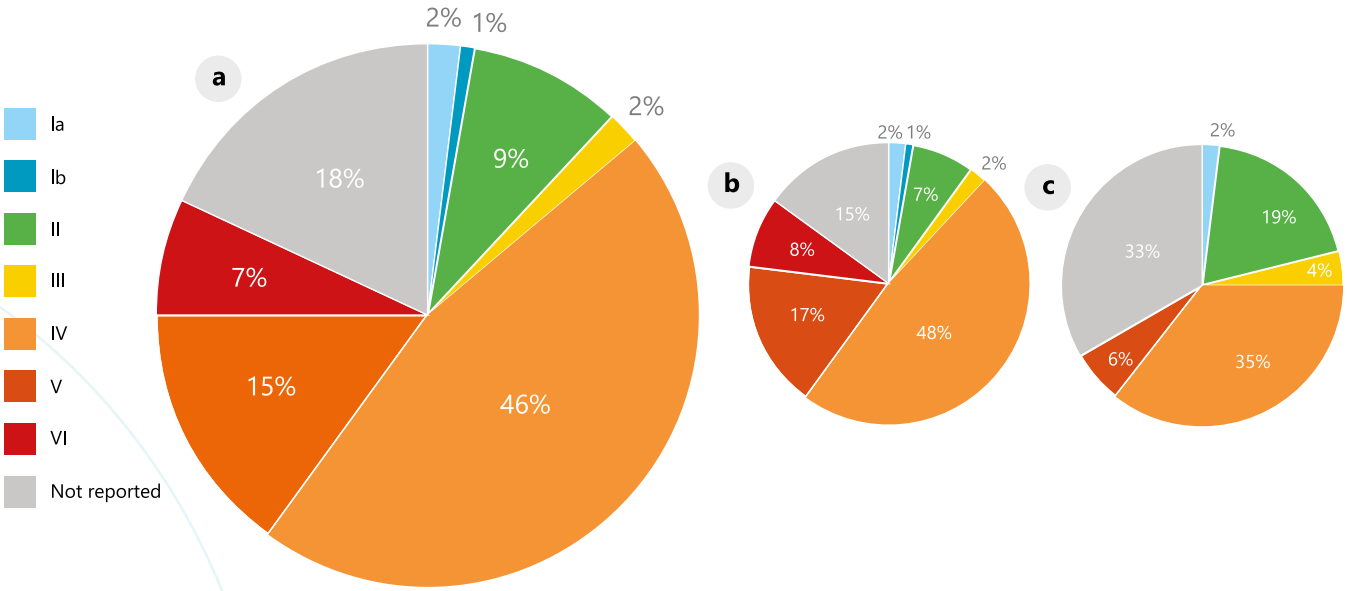


Figure 011: IUCN categories of MPAs with a national statute in the Mediterranean region (a, N=257), and more specifically in the EU (b, N=209) or non-EU (c, N=48) waters.

The majority of MPAs in the sample (46 %) belong to category IV (Habitat or species management area). Category V (Protected landscape or seascape) is the next most represented, with 15 % of the sample. This is followed by Category II (National Park) with 9 % and Category VI (Protected area with sustainable use of natural resources) with 7 % of the sample. Categories Ia (Strict Nature Reserve), Ib (Wilderness Area) and III (Monument or Natural Feature) are less represented with 2 %, 1 % and 2 % of the sample, respectively. Interestingly, the proportion of categories II and III is higher in non-EU waters, respectively 19% and 4% and there is no MPA of category VI. These results were also analysed spatially: the percentage of area according to the national MPAs' IUCN category is shown in Figure 012.

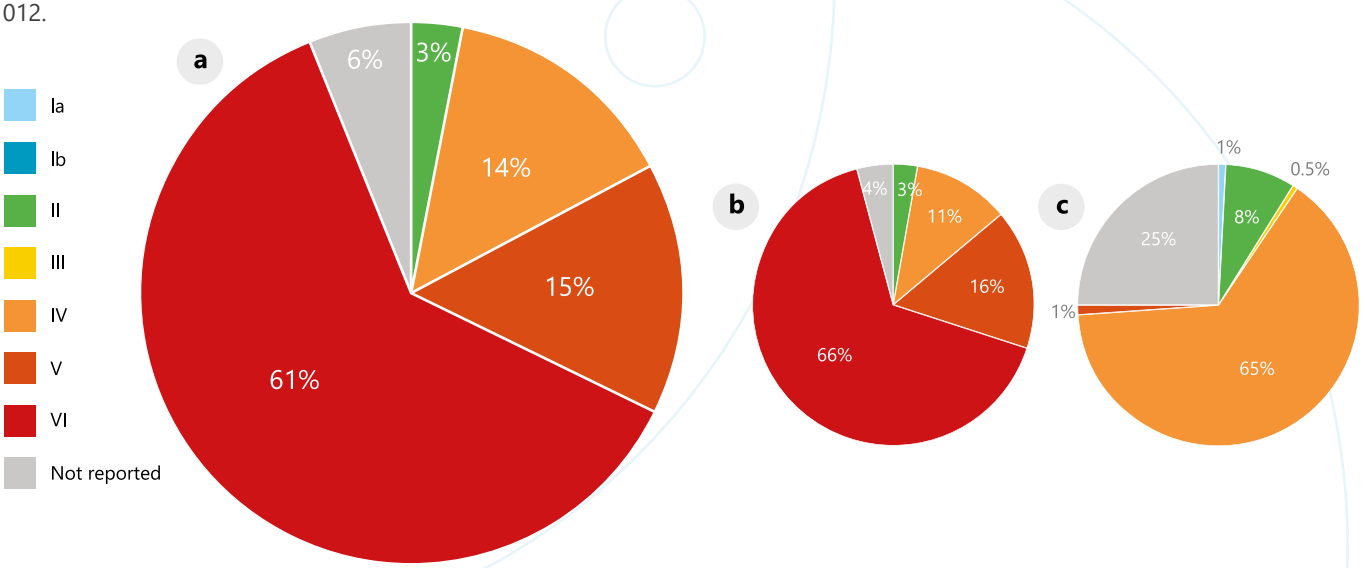


Figure 012: Percentage of MPAs with a national statute in the Mediterranean, in terms of surface area, according to their IUCN category (a, N=257), and more specifically in the EU (b, N=209) or non-EU (c, N=48) waters.

The territorial contribution of the strictest IUCN protection categories to the conservation of the Mediterranean is still low: about 3.5 % for the categories I to III, representing only 0.1 % of the Mediterranean. The lowest IUCN protection category in terms of MPA numbers, VI, represents the majority (i.e., 61 %) of the coverage of MPAs with a national statute (2 % of the Mediterranean; Figure 012). In non-EU waters, the majority of the coverage (about 65 %) is represented by the IUCN protection category IV.

In the Mediterranean, three MPAs are on the IUCN Green List of Protected and Conserved Areas : the Cerbère–Banyuls Marine Nature Reserve, France (2014), the Côte Bleue Marine Park, France (2014) and the Tuscany Archipelago National Park, Italy (2021).

I.3.5. Nature of the legal basis of MPAs with a national statute

The designation of a site is considered to have a legal basis if the creation text is endorsed by a legal provision (by decree or other executive or legislative means, at the national or local level). The nature of the legal texts that created MPAs in the Mediterranean can be very diverse. Data about the nature of the legal basis (Figure 013) was available for only 72 out of 264[27] MPAs with a national statute in the Mediterranean (27 %, MedPAN database).

[26] "The IUCN Green List of Protected and Conserved Areas is the first global standard of best practice for area-based conservation. It is a programme of certification for protected and conserved areas – national parks, natural World Heritage sites, community conserved areas, nature reserves and so on – that are effectively managed and fairly governed." (IUCN Green List of Protected and Conserved Areas).

[27] Among those MPAs, 257 are officially designated MPAs and 7 are "paperless" MPAs (i.e., management actions in the field without official designation) that are not yet included in MAPAMED (cf., Methodology).

The different types of legal texts have been classified into the 9 following categories:

- National legislative act (law, etc.)
- Regional [sub-national] legislative act (law, etc.)
- Presidential decree
- Decree law
- Inter-ministerial legal act
- Ministerial legal act
- Legal act from specialised public institution
- Local or regional [sub-national] legal act (autonomous community, county, municipality, prefecture, province, region, wilaya, etc.)
- Other

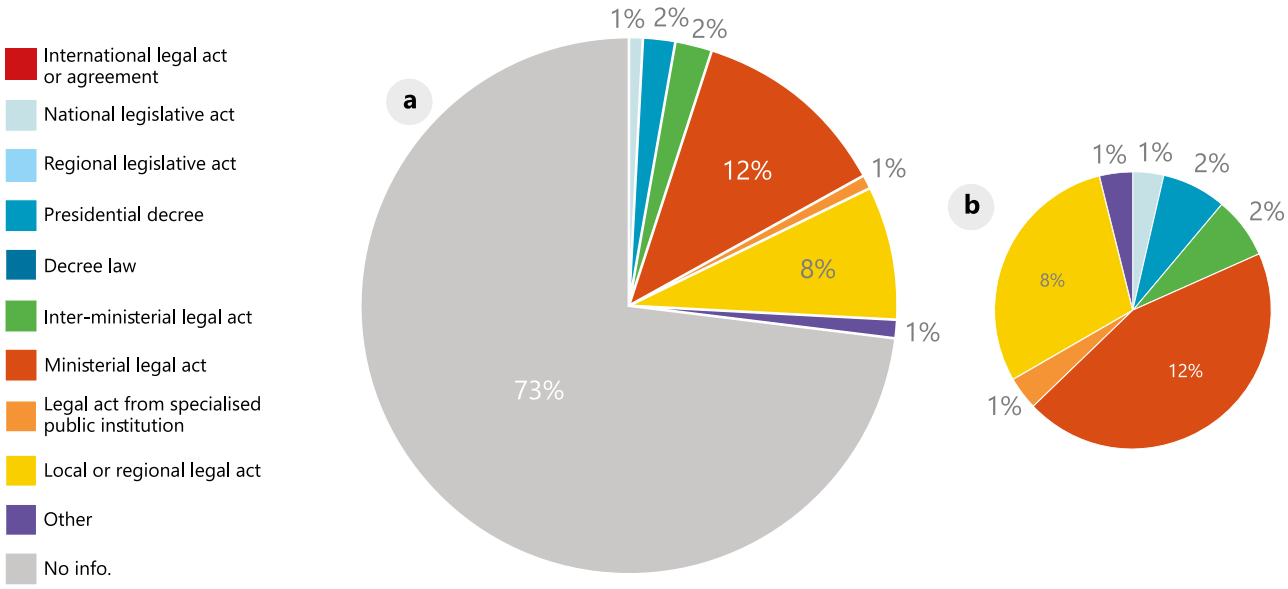


Figure 013: Nature of the legal basis of MPAs with a national statute in the Mediterranean region (a, N=264), and more specifically for MPAs with available data (b, N=72).

Figure 013 shows that the majority of national designations are endorsed by a ministerial legal act (45 %) or by a local or regional [sub-national] legal act (28 %). This is especially true for Spain, a country with a highly decentralised system. Next in order of importance are designations endorsed by an inter-ministerial legal act (8 %), a presidential decree (6 %), a national legislative act (4 %), a legal act of a specialised public institution (4 %), a regional legislative act (1 %) or a decree-law (1 %). Finally, 2 % of the nationally designated MPAs in the sample indicated a legal basis other than those presented above.

I.4. Status of some sites of interest for marine conservation in 2020

I.4.1. Potential marine OECMs

As mentioned previously, until States officially declare Other Effective area-based Conservation Measures (OECMs), the sites included in MAPAMED and presented in this report are to be considered as "potential OECMs". Those potential marine OECMs only include international or Mediterranean regional designations, like the PSSAs designated by the International Maritime Organisation and the FRAs (VME and EFH) designated by the General Fisheries Commission for the Mediterranean (Figure 014). There is no guarantee that any of these sites will ever be officially recognised as marine OECM. Therefore, the numbers presented here will be updated in MAPAMED when States officially declare OECM.

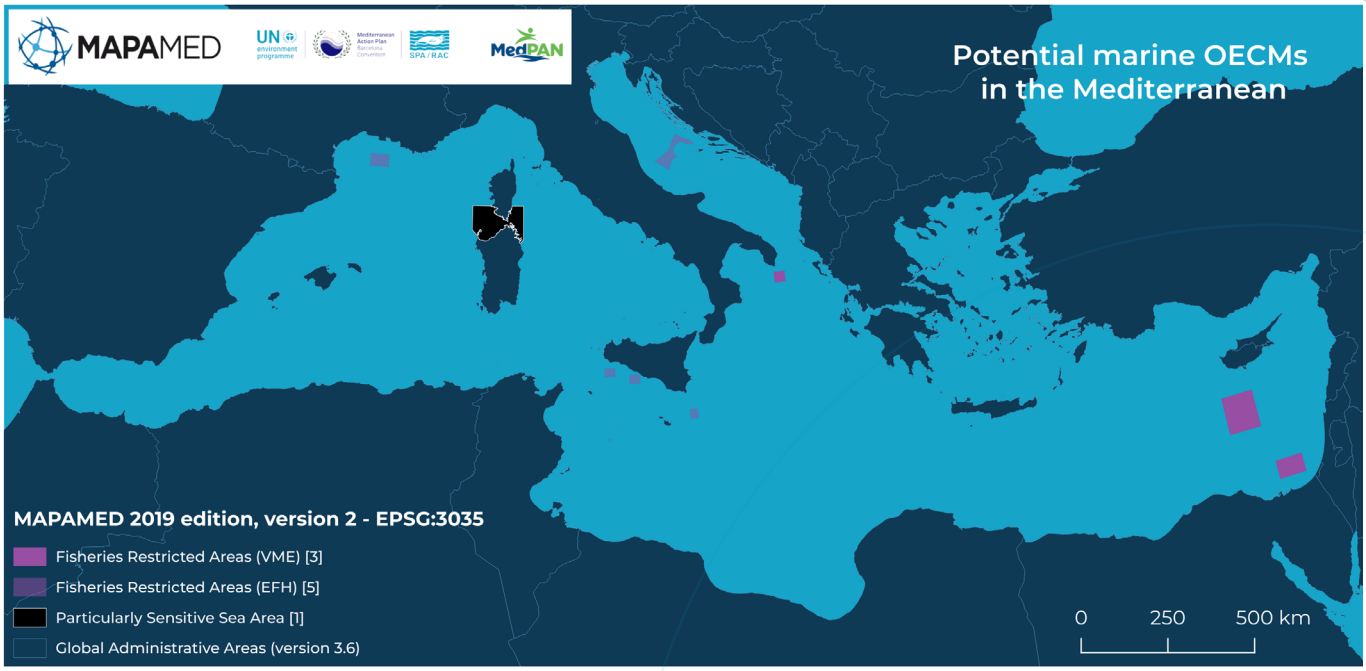


Figure 014: Potential marine OECMs in the Mediterranean (MAPAMED 2019 edition; GADM database, version 3.6, May 2018).

Table 09: Areas and percentages, relative to the Mediterranean Sea, of potential marine OECMs (MAPAMED 2019 edition, no overlaps).

Type of potential marine OECMs	Estimated marine area (km^2)	Estimated percent coverage of the Mediterranean Sea (%)
Fisheries Restricted Area (VME)	15,694	0.6
Fisheries Restricted Area (EFH)	7,429	0.3
Particularly Sensitive Sea Area	10,909	0.4
Total for potential marine OECMs		
Total: Potential marine OECMs	**34,032**	**1.4**

The estimated area covered by potential OECMs is 1.4 % of the Mediterranean. There are an important number of national potential marine OECMs, however, that could be reported by countries in the future and which could increase the overall coverage figure. For now, these considerations are only speculative until Mediterranean marine OECMs are officially reported. Potential OECMs do overlap with existing MPAs and thus the total estimated percent coverage of potential OECMs and MPAs in 2020 in the Mediterranean Sea is 9.3 %.

I.4.2. Marine Natura 2000 proposed sites

The procedure for designating a Natura 2000 site varies according to the directive which justifies the creation of the site: Birds (Directive 2009/147/EU of 30 November 2009) or Habitats (Directive 92/43/EEC of 21 May 1992).

Under the Habitats Directive, EU Member States submit lists of proposed Sites of Community Importance (pSCI) to the European Commission (Figure 015). Once adopted by the Commission, these proposed sites become Sites of Community Importance (SCIs) and Member States must then designate them as Special Areas of Conservation (SACs) within a maximum period of six years.

The procedure for establishing sites under the Birds Directive requires Member States to directly designate Special Protection Areas (SPAs) on the basis of scientific criteria.

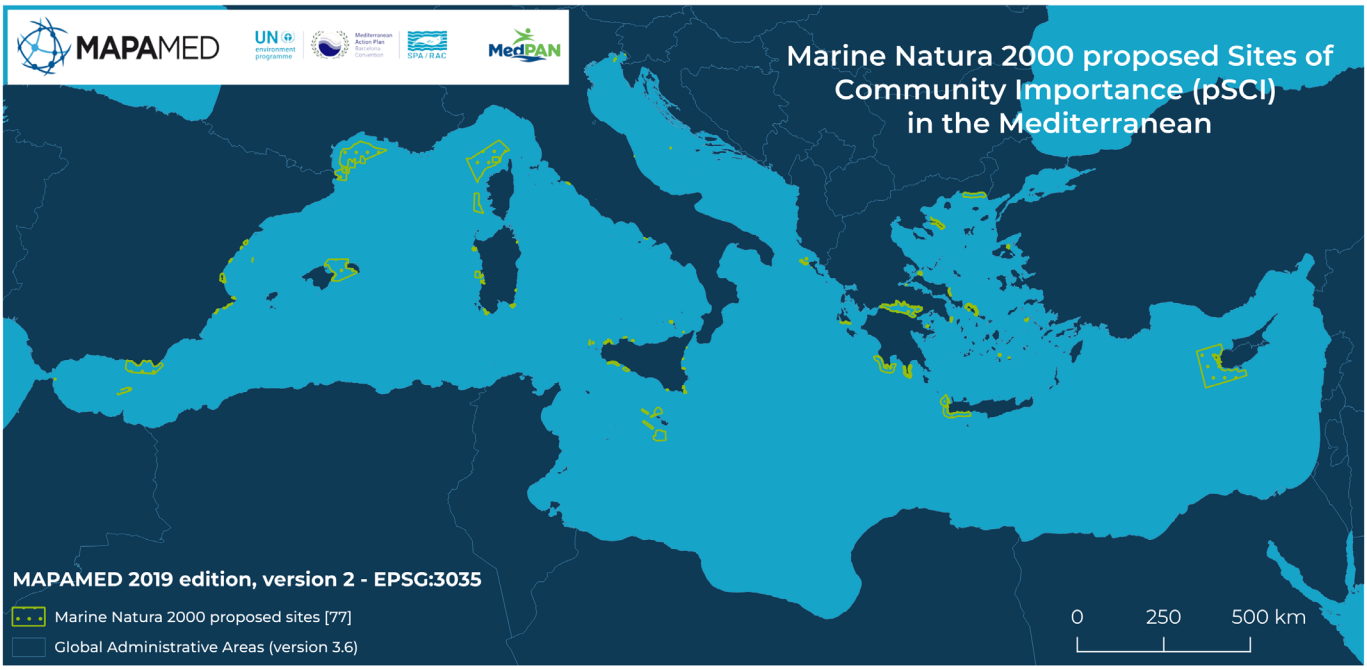


Figure 015: Marine Natura 2000 proposed Sites of Community Importance (pSCI) in the Mediterranean (MAPAMED 2019 edition; GADM database, version 3.6, May 2018).

pSCIs represent a total surface area of 39 089 km², which is approximately 1.6 % of the Mediterranean. In the event that all of these sites would be officially designated as SCIs or SACs, the total coverage of MPAs in the Mediterranean would reach 9.3 %, a 1-point increase. As stated in the directives, pSCIs should be designated as SCIs within six years after they have been proposed. Unfortunately, this is not always the case, as 52 of the 77 pSCIs in the Mediterranean are older than 6 years (68 %) and 20 sites (26 %) are older than 12 years, the oldest one being from 1994.

I.5. Changes between the 2016 and 2020 MPA Status Reports

I.5.1. New sites designated since the end of 2016

This section presents the 181 new sites that have been designated in 2017, 2018 and 2019. The full list of these new sites is available in Annex 2 and is shown on a map in Figure 016.

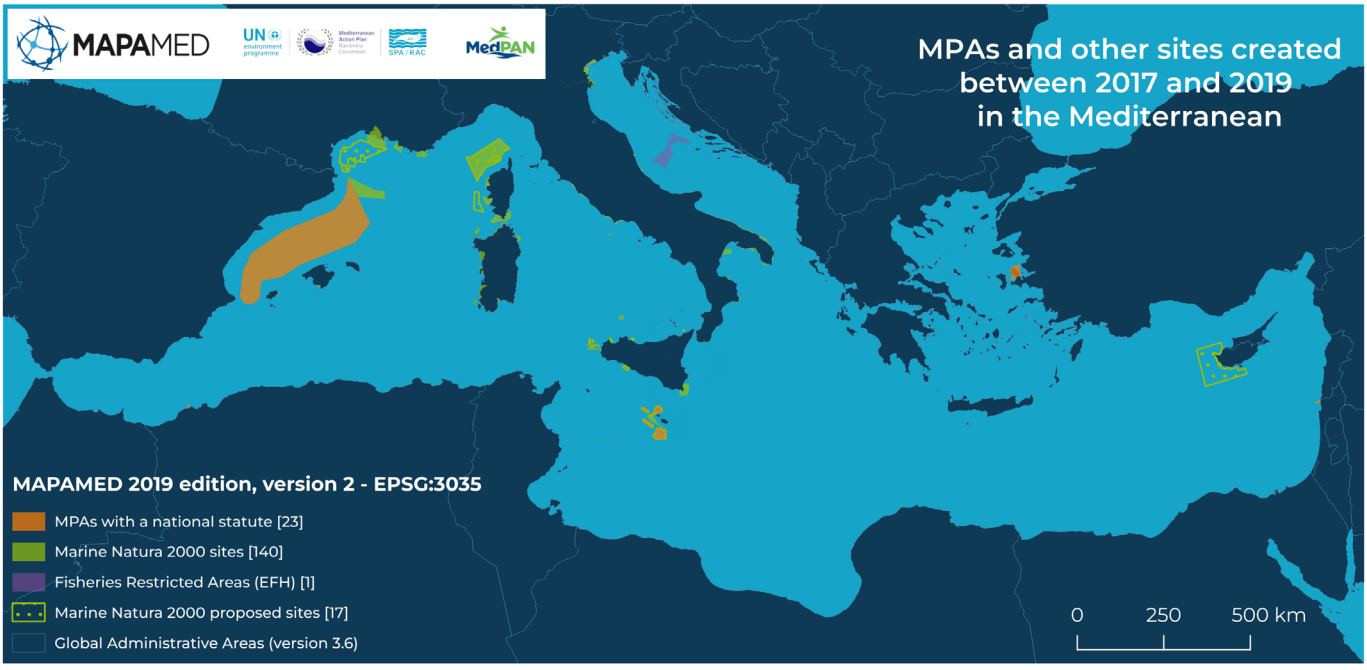


Figure 016: MPAs, potential OECMs and other sites of interest created between 2017 and 2019 in the Mediterranean (MAPAMED 2019 edition; GADM database, version 3.6, May 2018).

I.5.1.1. MPAs with a national statute

A total of 23 nationally designated MPAs have been declared since the end of 2016 in 9 Mediterranean countries (1 in Israel, 1 in Slovenia, 1 in Türkiye, 2 in Algeria, 2 in Italy, 3 in France, 4 in Cyprus, 4 in Malta, 5 in Spain), covering 48,764 km², or 1.9 % of the Mediterranean — but only 0.1 % of the Mediterranean when not taking into account the large Cetaceans Corridor created in Spain (Figure 016). At the end of 2019, nationally designated MPAs cover a total surface area of 79,872 km², or 3.2 % of the total area of the Mediterranean (or 1.3 % without the Pelagos Sanctuary and the Cetaceans Corridor).

These 23 new national MPAs represent about 3.1 % of the theoretical Exclusive Economic Zones (EEZ) of EU member countries (48,117.58 km²; 0.1 % and 1,764.12 km² without the Cetaceans Corridor) and about 0.1 % of the theoretical EEZ of non-EU member countries (646.77 km²). The IUCN categories for these new MPAs are: Ia (2 MPAs), II (1 MPA), IV (8 MPAs), V (1 MPA), VI (1 MPA), not assigned (9 MPAs) and not reported (1 MPA).

I.5.1.2. Marine Natura 2000 sites

A total of 140 new marine Natura 2000 sites have been created since the end of 2016 (Figure 016), covering about 17,782 km², or 0.7 % of the Mediterranean. They are gathered in 3 countries: 10 in France, 129 in Italy (including a large number in Sardinia) and 1 in Malta. This brings the total share of marine Natura 2000 sites to 79,566 km², or 3.2 % of the total area of the Mediterranean. This makes it one of the major designations in the Mediterranean both in terms of the number of sites and area covered, despite its designation being restricted to EU member states.

I.5.1.3. Specially Protected Areas of Mediterranean Importance (SPAMIs)

Since the end of 2016, the number of MPAs included in the Specially Protected Areas of Mediterranean Importance (SPAMIs) List has increased from 34 to 39 areas (Figure 017). The five MPAs newly included in the SPAMI List are the following:

- Calanques National Park (France, MPA designated in 2012; included in the SPAMI List in 2017)
- Cerbère–Banyuls Marine Nature Reserve (France, MPA designated in 1974; included in the SPAMI List in 2019)
- Riserva Naturale Marina Isole Egadi (Italy, MPA designated in 1991; included in the SPAMI List in 2019)
- Landscape Park Strunjan (Slovenia, MPA designated in 2004; included in the SPAMI List in 2019)
- Cetaceans Migration Corridor in the Mediterranean (Spain, MPA designated in 2018; included in the SPAMI List in 2019)

Figure 017: MPAs included in the SPAMI List between 2017 and 2019 (MAPAMED 2019 edition; GADM database, version 3.6, May 2018).

Those 5 sites newly added to the SPAMI List cover a total surface area of 48,181 km² or 1.9 % of the Mediterranean area, but only 0.1 % without the Cetaceans Corridor.

At the end of 2019, SPAMIs represent a total surface area of 138,464 km², or 5.5 % of the Mediterranean — but only 0.2 % outside the Pelagos Sanctuary and the Cetaceans Corridor (133,890 km² surface area coverage for these two MPAs).

I.5.1.4. Fisheries Restricted Areas (FRAs)

Only one FRA has been established since 2016: an Essential Fish Habitat (EFH) in the Pomo/Jabuka Pit in the Adriatic Sea between Croatia and Italy, covering 3,143 km² (Figure 016). This is a key breeding ground for hake and Norway lobster. Three "extensions" (addition of a buffer zone) were also created for the following sites (569 km² in total):

- East of Adventure Bank (Strait of Sicily), EFH protection, buffer = 197 km².
- Western Gela Basin (Strait of Sicily), EFH protection, buffer = 197 km².
- East of Malta Bank (Strait of Sicily), EFH protection, buffer = 175 km².

At the end of 2019, the total surface area of EFH sites represents 7,429 km², or 0.3 % of the Mediterranean.

I.5.1.5. Marine Natura 2000 proposed sites

17 Sites of Community Importance have been proposed since the end of 2016 (and therefore have provisional pSCI statute until they are confirmed as SCIs, and thus MPAs, Figure 016):

- OCEANID (Cyprus)
- Agriate Seamount Reefs (France)
- Ajaccio seamount reefs and Valinco rocky outcrops (France)
- Bottlenose dolphins of the Agriate (France)
- Bottlenose dolphins in the Gulf of Lions (France)
- Reefs of the Ichtys bank and the Sète canyon (France)
- Reefs of the Lacaze-Duthiers, Pruvot and Bourcart canyons (France)
- Banchi di Marettimo (Italy)
- Costa del Piceno - San Nicola a mare (Italy)
- Fondali di Torre Salsa (Italy)
- Fondali dello Zingaro (Italy)
- Seabed of Capo Milazzo (Italy)
- Seabed of Capo Zafferano (Italy)
- Marine area at the Medina Graben (Malta)
- Marine area in the North Gozo Graben (Malta)
- Marine area in the Northwestern area of the Malta Graben (Malta)
- Marine area in the western area of the Malta Graben (Malta)

These sites represent a total surface area of 23,315 km² (0.9 % of the Mediterranean). If all these sites were confirmed as Natura 2000 sites (SCIs), they would add 12,294 km² (0.5 % of the Mediterranean) of protected surface area in the Mediterranean.

I.5.2. Overall evolution of MPAs at the Mediterranean scale since the end of 2016

The total surface area covered by MPAs has increased since the end of 2016 (the previous edition of the MPA Status Report. We consider here MPAs created in 2017, 2018 and 2019. The 2 points overall net gain is presented in Table 10 and Figure 018. As mentioned previously in the methodology, it is important to note that the area covered by MPAs and the total number of MPAs in 2016 have been recalculated using the same 2020 methodology in order to be able to compare the 2016 and 2020 figures. Please see the MAPAMED user manual to find details related to the updated methodology for including sites in the database and for surface area calculation.

Table 10: Comparison of the surface areas and percentages, relative to the Mediterranean Sea, of officially designated MPAs between the end of 2016 and the end of 2019 (MAPAMED 2019 edition).

Type of sites	Estimated marine area (km²)		Estimated percentage (%)		
	End of 2016	End of 2019	End of 2016	End of 2019	Gain (points)
Marine Protected Areas	158,515	209,303	6.3	8.3	+ 2.0
without Sanctuary and Corridor	83,345	92,899	3.3	3.7	+ 0.4

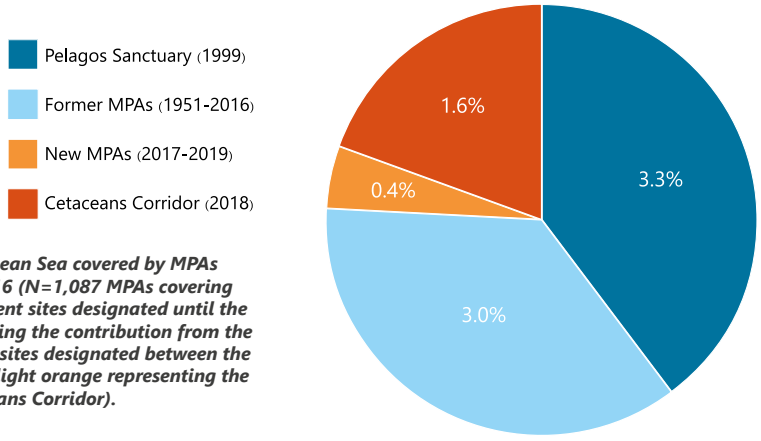


Figure 018: Percentage of the Mediterranean Sea covered by MPAs designated before and after the end of 2016 (N=1,087 MPAs covering about 8.3 % of the Med). Blue shades represent sites designated until the end of 2016 (6.3 %) with light blue representing the contribution from the Pelagos Sanctuary; orange shades represent sites designated between the end of 2016 and the end of 2019 (2 %) with light orange representing the contribution from the Cetaceans Corridor).

Since the 2016 MPA Status, 23 new national MPAs (including the Cetaceans Corridor), and 140 new marine Natura 2000 sites (Table 11), covering respectively 1.9 % and 0.7 % of the total area of the Mediterranean basin (Figure 018) have been designated. It is important to note that some of these new MPAs overlap with pre-existing MPAs: the gain in the area is therefore not systematically equal to the cumulative surface of the new areas, and the difference is represented in the last two columns of Table 11 ("Net gain by type of MPA"). For example, although the new Natura 2000 sites represent 17,782 km² (0.7 % of the Mediterranean), their contribution to the Natura 2000 network expansion is only 13,690 km² (0.5 % of the Mediterranean) because of their overlap with other pre-existing Natura 2000 sites. New and old MPAs with national statutes can also overlap.

Table 11: Number of new MPAs created and sites added to the SPAMI List between the end of 2016 and the end of 2019, surface areas and percentages related to the Mediterranean Sea and their contribution (surface areas and percentages) to the network of Mediterranean MPAs (MAPAMED 2019 edition, Caution: surface areas cannot be added as numerous overlaps exist).

Type of sites	Number of new sites	New sites only		Net gain by type of MPA	
		Estimated marine area (km²)	Estimated %	Estimated marine area (km²)	Estimated gain (points)
MPAs with a national statute	23	48,764	1.9	47,499	+ 1.9
without the Cetaceans Corridor	22	2,411	0.1	1,200	+ 0.1
Marine Natura 2000 sites	140	17,782	0.7	13,690	+ 0.5
SPAMI List	5	48,181	1.9	48,181	+ 1.9
without Sanctuary and Corridor	4	1,950	0.1	1,950	+ 0.1

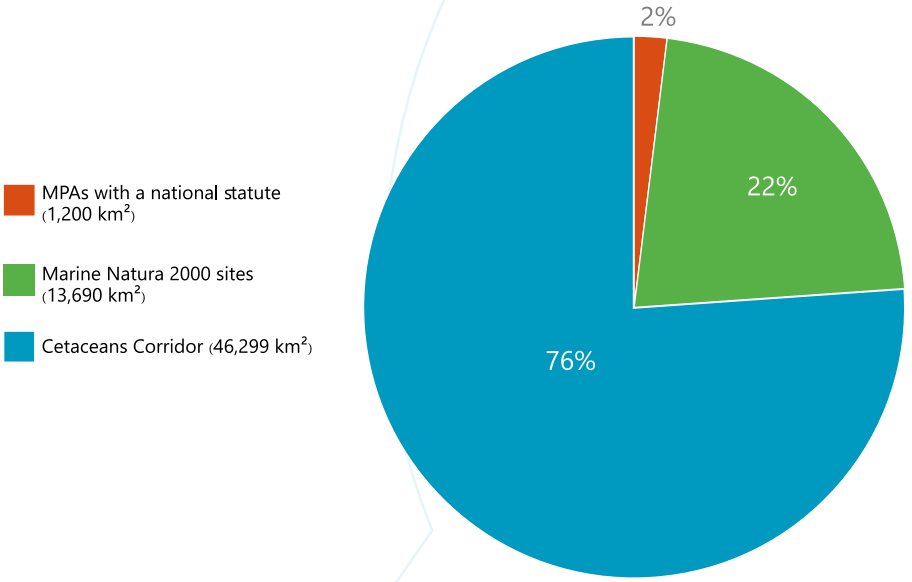


Figure 019: Percentage of surface area of new MPAs created between the end of 2016 and the end of 2019 (N=163; net gain in surface area for each type of MPA is included in km²).

The Cetaceans Corridor accounts for 1.8 % of the Mediterranean, making it the second-largest area after the Pelagos Sanctuary (3.5 %). The 2-point increase in MPA surface area coverage since the end of 2016, therefore, comes largely from this corridor (76 %, Figure 019).

It should also be noted that in addition to the new creations, some existing MPAs have had their surface area extended, for example, the Cabrera Archipelago National Park (Spain) in 2018 (from about 100.34 km² to about 909.23 km²).

I.5.3. Evolution of MPAs within EBSAs

Aichi Target 11 states that, in addition to numerical coverage targets, the aim is to cover areas of importance "for biological diversity and ecosystem services". It is therefore interesting to assess whether identified EBSAs (Ecologically or Biologically Significant Marine Areas) in the Mediterranean are covered by MPAs. The EBSAs are the result of a scientific and technical exercise, but are not per se MPAs, which need to be legally established under the relevant national legislation or an international treaty.

The percentage of EBSAs covered by MPAs has increased from 12.2 % at the end of 2016 to 16.4 % at the end of 2019 (Table 12).

Table 12: Comparison of surface areas and percentages of EBSA coverage by officially designated MPAs between the end of 2016 and the end of 2019 (MAPAMED 2019 edition, Caution: surface areas cannot be added as numerous overlaps exist).

Type of sites	Estimated marine area (km^2)		Estimated percentage (%)		
	End of 2016	End of 2019	End of 2016	End of 2019	Gain (points)
Marine Protected Areas	141,275	190,568	12.2	16.4	+ 4.2
without Sanctuary and Corridor	66,255	74,313	5.7	6.4	+ 0.7

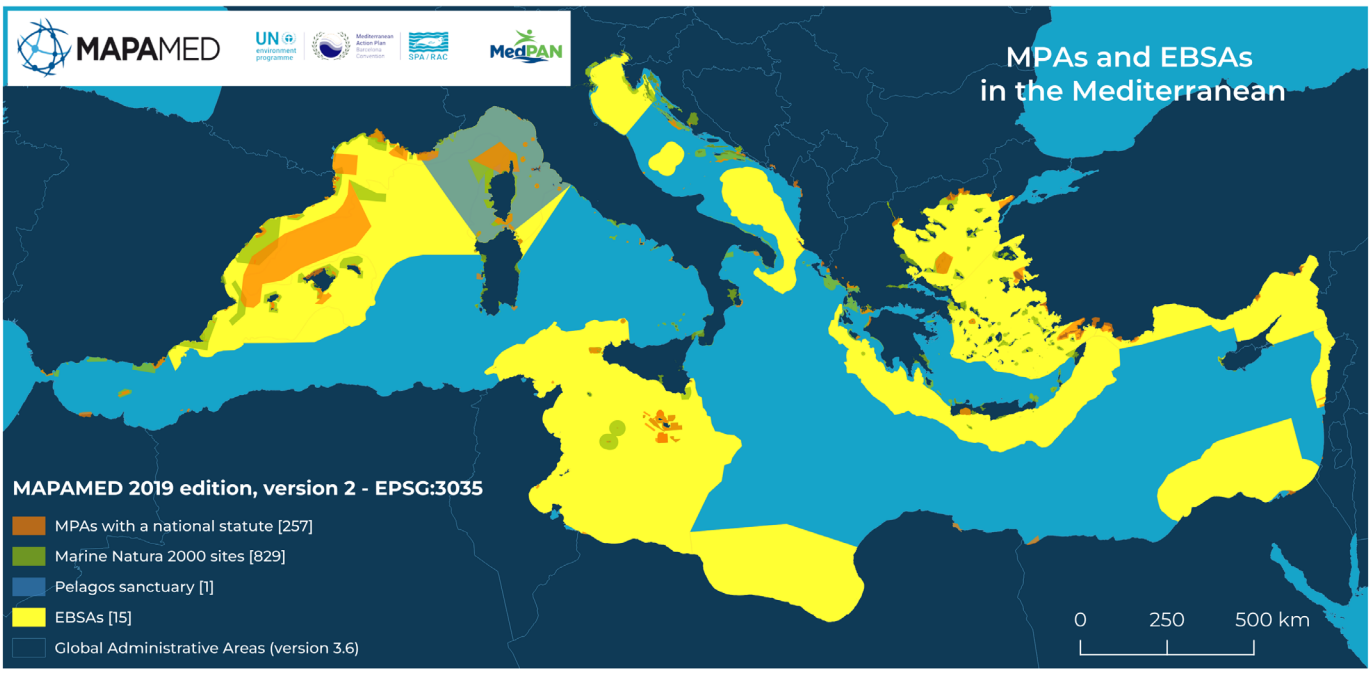


Figure 020: MPAs and EBSAs in the Mediterranean Sea (MAPAMED 2019 edition; GADM database, version 3.6, May 2018).

I.5.4. Evolution of MPAs in coastal area

The Mediterranean MPAs listed in the 2019 MAPAMED database are mostly coastal (i.e., Internal Waters and Territorial Seas). This trend was already visible at the end of 2016, with 13.9 % of Internal Waters and Territorial Seas covered by MPA designations. This percentage increased to 14.5 % at the end of 2019 (Table 13).

Table 13: Comparison of surface areas and percentages of coverage of Internal Waters and Territorial Seas by officially designated MPAs between the end of 2016 and the end of 2019 (MAPAMED 2019 edition).

Type of sites	Estimated marine area (km^2)		Estimated percentage (%)		
	End of 2016	End of 2019	End of 2016	End of 2019	Gain (points)
Marine Protected Areas	102,971	107,781	13.9	14.5	+ 0.6
without Sanctuary and Corridor	*69,894*	*74,015*	*9.4*	*10.0*	*+ 0.6*

The gain in MPA coverage within Internal Waters and Territorial Seas is the same (+ 0.6) whether we consider the Pelagos Sanctuary and the Cetaceans Corridor or not. This is due to the fact that these specific MPAs are rather offshore and their contribution to conservation efforts make a difference in offshore waters.

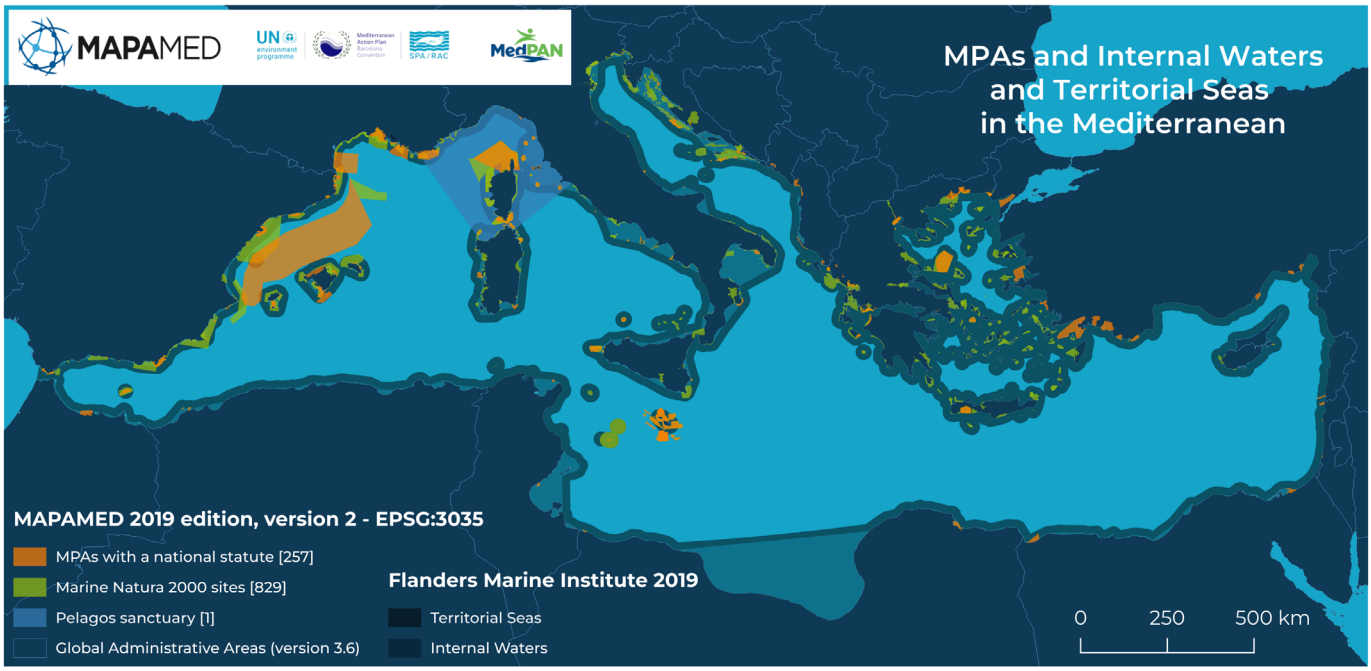


Figure 021: MPAs and Internal Waters and Territorial Seas in the Mediterranean Sea (MAPAMED edition 2019; GADM database, version 3.6, May 2018; Flanders Marine Institute 2019, Maritime Boundaries Geodatabase, version 11).

I.5.5. Evolution of MPAs distribution according to the bathymetry

Three ranges of bathymetry are considered in this analysis: the shallow waters (between 1 and 50 m depth), the medium depth waters (between 50 and 250 m depth) and the deep waters (beyond 250 m depth).

Shallow waters, between 1 and 50 m depth, covered by MPAs increased from 14 % to 15.5 % (25,123 km^2). The trend towards implementing MPAs in shallow waters has remained the same between the end of 2016 and the end of 2019. Indeed, it is in this "euphotic" zone and near the coast that the pressure exerted by human activities is the strongest. It is also where most of the photosynthesis takes place, and where the seagrass beds (with Posidonia oceanica, a species protected by the Barcelona and Bern conventions) and some coralligenous habitats are found. With adequate protection measures and regulations, MPAs

have a strong potential to ensure the conservation of these important and fragile ecosystems.

In medium-depth waters, between 50 and 250 m depth (the "mesophotic zone"), where activity can still be significant in the water column and on the seabed, MPAs covered 13.2 % of this area at the end of 2016 and 13.8 % at the end of 2019.

MPAs surface area coverage of deep waters, beyond 250 m depth ("aphotic zone"), has increased from 4.1 % to 6.5 % between the end of 2016 and the end of 2019 mainly due to the creation of the Cetaceans Corridor.

Table 14: Estimated percentage and gain of surface area coverage in relation to their bathymetry by officially designated MPAs between the end of 2016 and the end of 2019 (MAPAMED 2019 edition).

Type of sites	Estimated percentage (%) and gain (points) in the three range depth								
	1 – 50 m			50 – 250 m			250 – 5500 m		
	End of 2016	End of 2019	Gain	End of 2016	End of 2019	Gain	End of 2016	End of 2019	Gain
Marine Protected Areas	**14.3**	**15.5**	+ 1.2	**13.2**	**13.8**	+ 0.6	**4.1**	**6.5**	+ 2.4
without Sanctuary and Corridor	*12.1*	*13.3*	*+ 1.2*	*9.9*	*10.3*	*+ 0.4*	*1.1*	*1.4*	*+ 0.3*

The gain in MPA coverage in shallow waters (1 – 50 m) remains the same whether we consider the Pelagos Sanctuary and the Cetaceans Corridor or not. For medium-depth waters (50 – 250 m), the gain is slightly different, whereas, for deep waters (250 – 5500 m), the gain is important. This shows that these specific MPAs are contributing to increasing the area of deep waters covered by MPAs, even if they are not specifically dedicated to seabed protection.

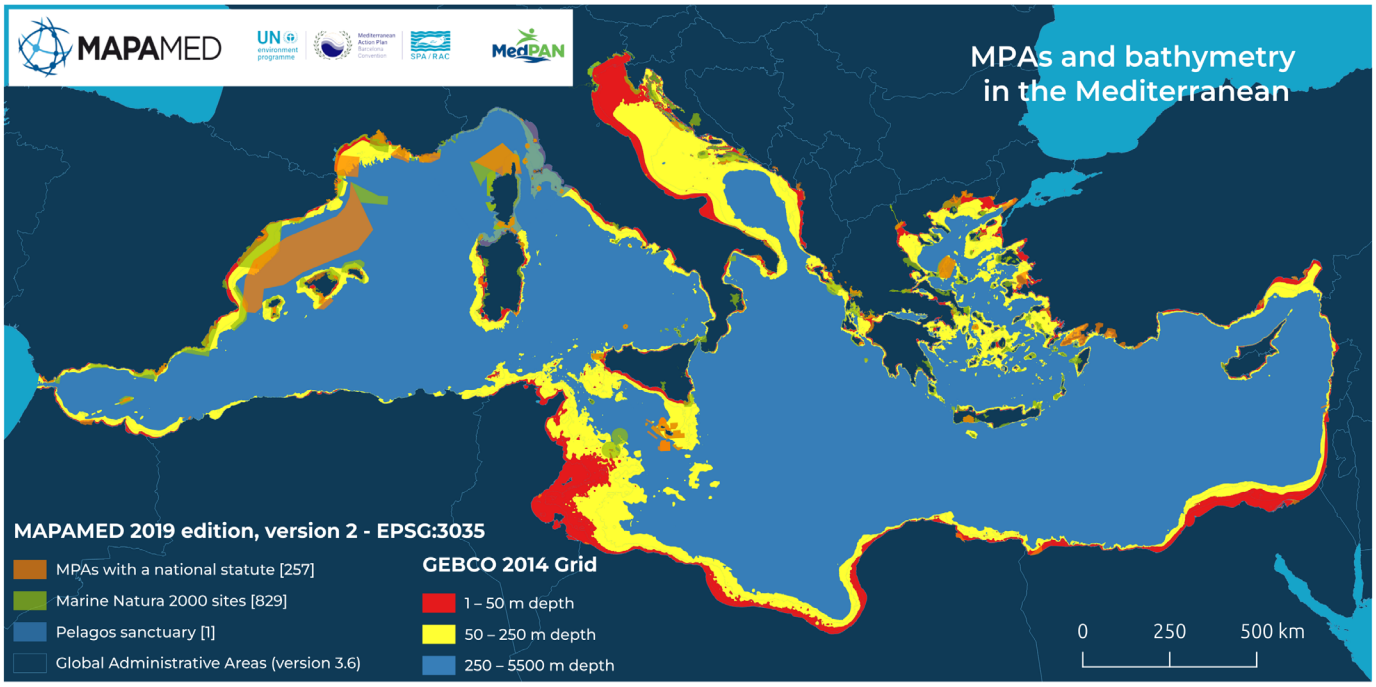


Figure 022: MPAs and bathymetry in the Mediterranean Sea (MAPAMED 2019 edition; GEBCO 2014 Grid, version 20141103; GADM database, version 3.6, May 2018).

I.5.6. Evolution of MPAs distribution among EU and non-EU countries

MAPAMED data show that in 2020 MPAs are still mainly designated in waters subject to the sovereignty of EU member Contracting Parties. At the end of 2019, 97.3 % of the marine surface area covered by MPAs is within the theoretical Exclusive Economic Zones[28] (EEZ) of EU member countries (96.9 % in 2016). MPA designation since the end of 2016 has been significant in EU member countries' waters, notably through the designation of Natura 2000 sites and the Cetaceans Corridor.

[28] Not all Mediterranean countries have declared their EEZs yet, so these are to be considered as theoretical EEZs. Areas of disagreement between countries ("overlapping claims"), representing about 500 km², have been excluded from the analyses (cf., Methodology).

Table 15: Distribution of coverage by officially designated MPAs of theoretical EEZs according to whether they belong to the European Union or not. Comparison between end of 2016 and end of 2019 (MAPAMED edition 2019, Flanders Marine Institute 2019).

Type of sites	Estimated percentage (%)			
	End of 2016		End of 2019	
	non-EU	EU	non-EU	EU
Marine Protected Areas	**3.1**	**96.9**	**2.7**	**97.3**
without Sanctuary and Corridor	*5.6*	*94.4*	*5.7*	*94.3*
MPAs with a national statute	**14.0**	**86.0**	**6.5**	**93.5**
without Sanctuary and Corridor	*14.0*	*86.0*	*15.5*	*84.5*

If we focus only on national MPAs (i.e., without the Pelagos Sanctuary or the marine Natura 2000 network), the gap is smaller between EU member and non-EU member countries but still large at the end of 2019 with 15.5 % for non-EU states and 84.5 % for EU states.

I.6. Governance in MPAs with a national statute

Governance primarily means the particular way of governing, managing, and thus how authority is exercised. More precisely, it is defined in the Mediterranean Coastal Wetlands Governance Handbook (PAP/RAC, 2019[29]) as: "[...] *who holds de facto power, authority and responsibility to take and implement decisions, how those decisions are taken, how effective and efficient they are, and how accountable*".

Data from MAPAMED and the MedPAN database (see the general methodology section for more information) were used to carry out the analysis of governance regarding the 264[30] MPAs with a national statute in the Mediterranean.

I.6.1. Governance in the legislation relating to the MPA

The term "legislation" encompasses all legal texts that are related to the MPA (national law on nature protection, MPA creation text, etc.). Data about how clearly defined is governance in the legislation (Figure 023) was available for 114 out of 264 MPAs with a national statute in the Mediterranean (43 %, MedPAN database). MPA managers could choose between the following possibilities:

- Yes (clearly defined in the legislation)
- Partially defined (need for clarification)
- No (not defined in the legislation)

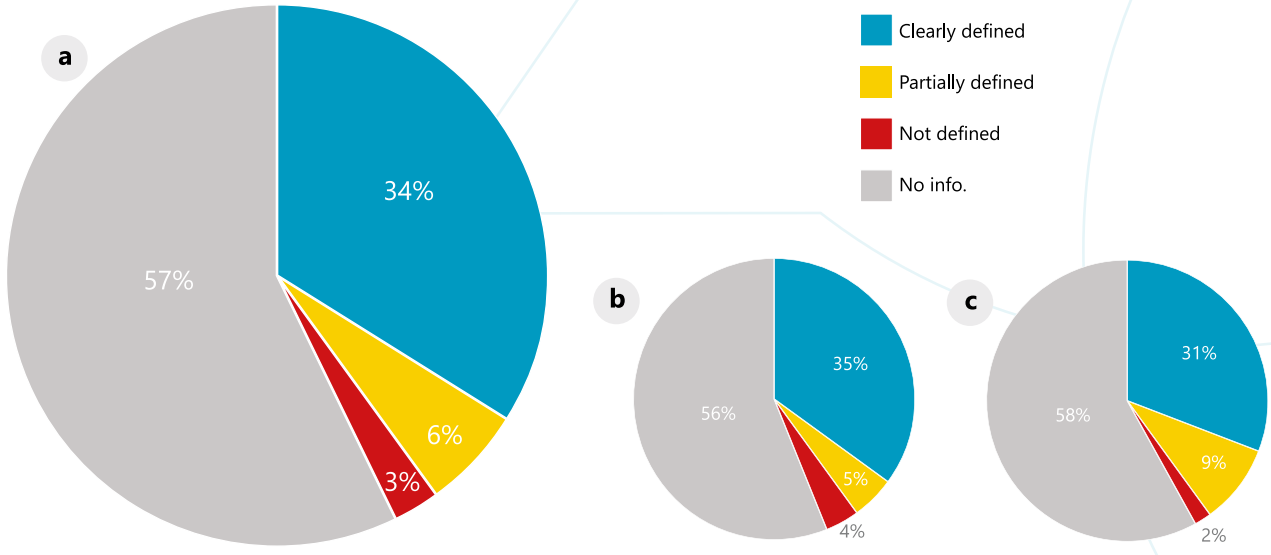


Figure 023: Level of definition of governance in the legislation for MPAs with a national statute in the Mediterranean region (a, N=264), and more specifically in the EU (b, N=209) or non-EU (c, N=55) waters.

[29] https://medwet.org/wp-content/uploads/2021/07/ENGLISH-Mediterranean-Coastal-Wetlands-Governance-Handbook.pdf

[30] Among those MPAs, 257 are officially designated MPAs and 7 are "paperless" MPAs (i.e., management actions in the field without official designation) that are not yet included in MAPAMED (cf., Methodology).

Figure 023 shows that for 34 % of national MPAs, governance is clearly defined in the legislation, for 6 % of them, governance is only partially defined in the legislation and would require clarification. Finally, for 3 %, governance is not defined in the legislation, and information being not available for 57 % of the national MPAs. Trends regarding the level of definition of governance in the legislation are similar between EU and non-EU countries.

I.6.2. Type of governance

The type of governance refers to the nature of the management body in charge of an MPA, as well as the nature of the supervisory administration related to that management body

I.6.2.1. Nature of the management body

The management body is the entity in charge of the management of the MPA. It does not necessarily have the authority to decide about the governance or the regulations to be applied in the MPA, and can be limited to their implementation. Data about the nature of the management body (Figure 024) was available for 120 out of 264 MPAs with a national statute in the Mediterranean (45 %, MedPAN database). MPA managers could choose between the following possibilities:

- Federal or national ministry or agency
- Sub-national ministry or agency
- Government-delegated management
- Transboundary governance
- Collaborative governance
- Joint governance
- Individual landowners
- Non-profit organisations
- For-profit organisations
- Indigenous peoples
- Local communities

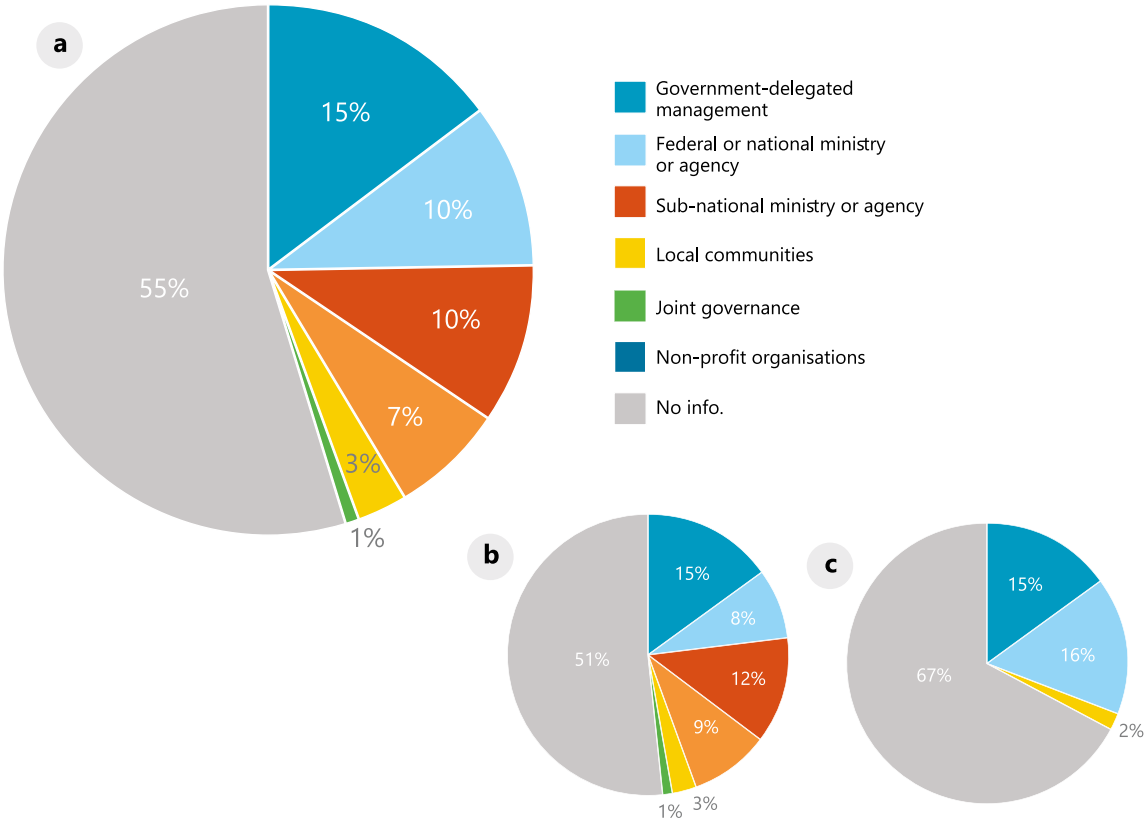


Figure 024: Nature of the management body of MPAs with a national statute in the Mediterranean region (a, N=264), and more specifically in the EU (b, N=209) or non-EU (c, N=55) waters.

At the Mediterranean level, management is delegated by the government in 15 % of the MPAs whilst in 10 % of the cases, governance is provided by a federal or national ministry or agency, and in another 10 % of the cases by a sub-national ministry or agency. Finally, only 7 % of MPAs are governed by local communities, 3 % by joint governance and 1 % are managed by non-profit organisations. There are significant variations in the management body between national MPAs in the EU member countries and those in other countries. Actually, in non-EU countries there are only three types of management bodies, the majority of which are a federal or national ministry or agency (16 %), then 15 % of the MPAs have management delegated by the government and 2 % have joint governance.

I.6.2.2. Nature of the supervisory administration

The supervisory administration designates the administration to which the management body of the MPA reports. (e.g., the management body of an MPA may depend on the Ministry of Environment, the Ministry of Agriculture and Fisheries, the Ministry of Spatial Planning, the Ministry of Tourism, etc.). Data about the type of supervisory administration (Figure 025) was available for 115 out of 264 MPAs with a national statute in the Mediterranean (44 %, MedPAN database). MPA managers could choose between the following possibilities:

- Local administration
- Sub-national administration
- National administration

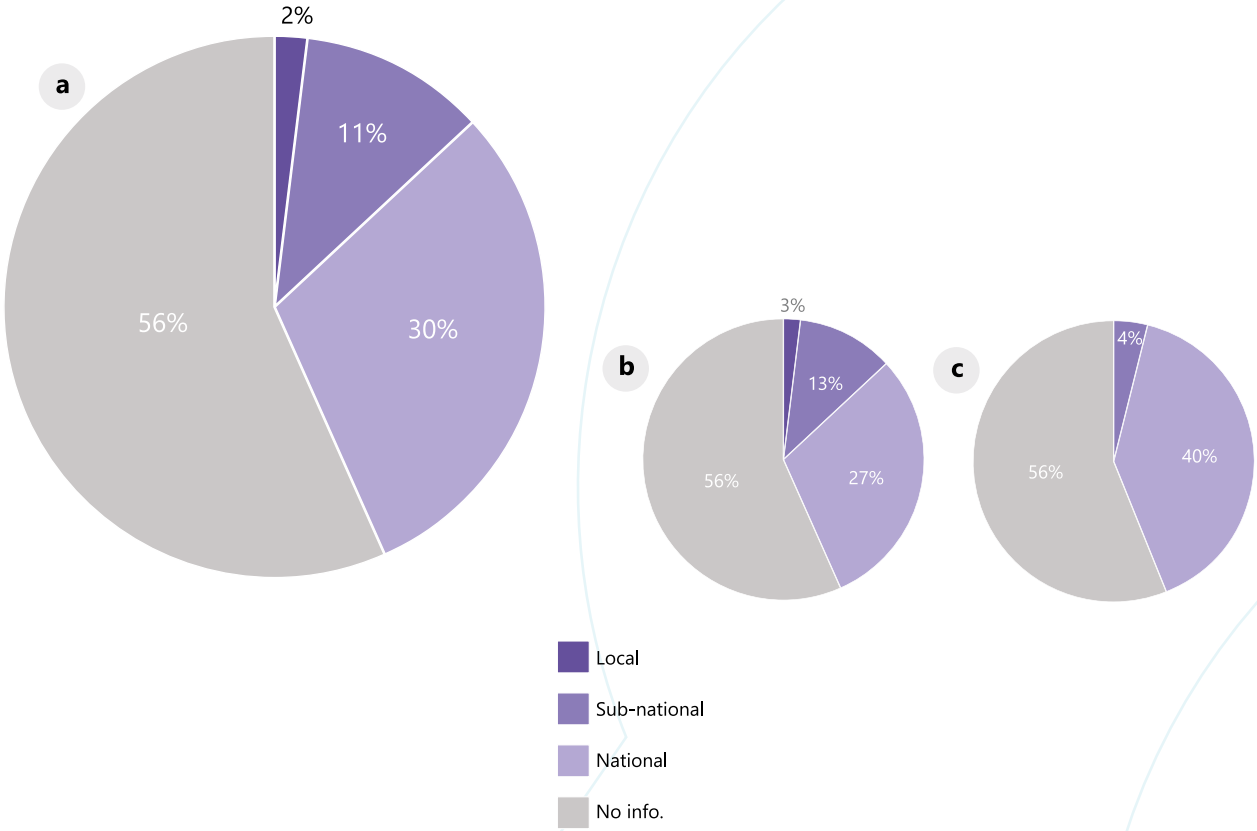


Figure 025: Type of supervisory administration for MPAs with a national statute in the Mediterranean region (a, N=264), and more specifically in the EU (b, N=209) or non-EU (c, N=55) waters.

Figure 025 shows that for a majority of the MPAs (30 %), the supervisory administration is a national authority. A sub-national authority was indicated by 11 % of the MPAs, and only 2 % indicated a local authority. The situation is quite similar in EU countries. On the other hand, in non-EU countries, almost all the MPAs sampled (40 % of all the national MPAs) have a supervisory administration from the national level. The remaining MPAs (4 %) are under a sub-national administration and none of them are under a local administration.

I.6.3. Scientific inputs to support the decision-making process

An internal or external scientific committee, dedicated scientific consultants or scientific staff can provide scientific advice if they are involved or consulted in the decision-making process. Data about the presence of scientific inputs to support the decision-making process in MPA governance (Figure 026) was available for 109 out of 264 MPAs with a national statute in the Mediterranean (41 %, MedPAN database).

Figure 026 shows that at the Mediterranean level, internal or external scientific committees, dedicated scientific consultants or scientific staff are generally always involved or consulted in the decision-making process (38 %). Some MPAs in the European Union, however, have indicated that they do not take into account scientific inputs to support the decision-making process (5 %).

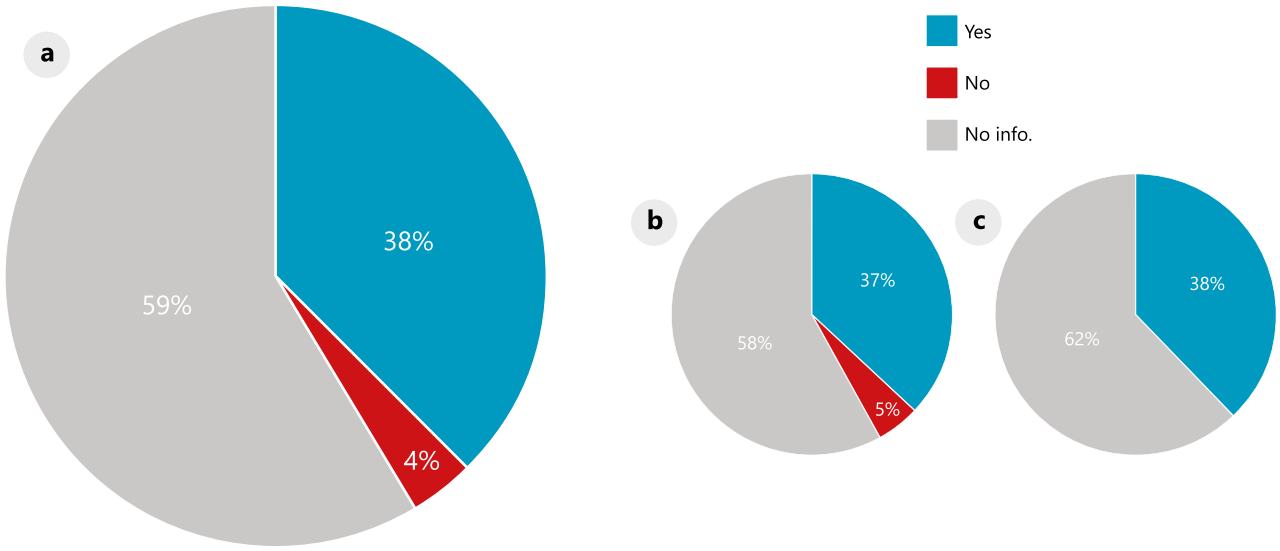


Figure 026: Scientific inputs to support the decision-making process of MPAs with a national statute in the Mediterranean region (a, N=264), and more specifically in the EU (b, N=209) or non-EU (c, N=55) waters.

Figure 026 shows that at the Mediterranean level, internal or external scientific committees, dedicated scientific consultants or scientific staff are generally always involved or consulted in the decision-making process (38 %). Some MPAs in the European Union, however, have indicated that they do not take into account scientific inputs to support the decision-making process (5 %).

I.6.4. Governance council

In the context of this report, the expression "governance council" refers to an organised group of actors, sometimes diverse, responsible for governing a site by issuing simple recommendations or mandatory decisions (e.g., management board, steering committee, etc.). Data about the presence of a governance council (Figure 027) was available for 126 out of 264 MPAs with a national statute in the Mediterranean (48 %, MedPAN database).

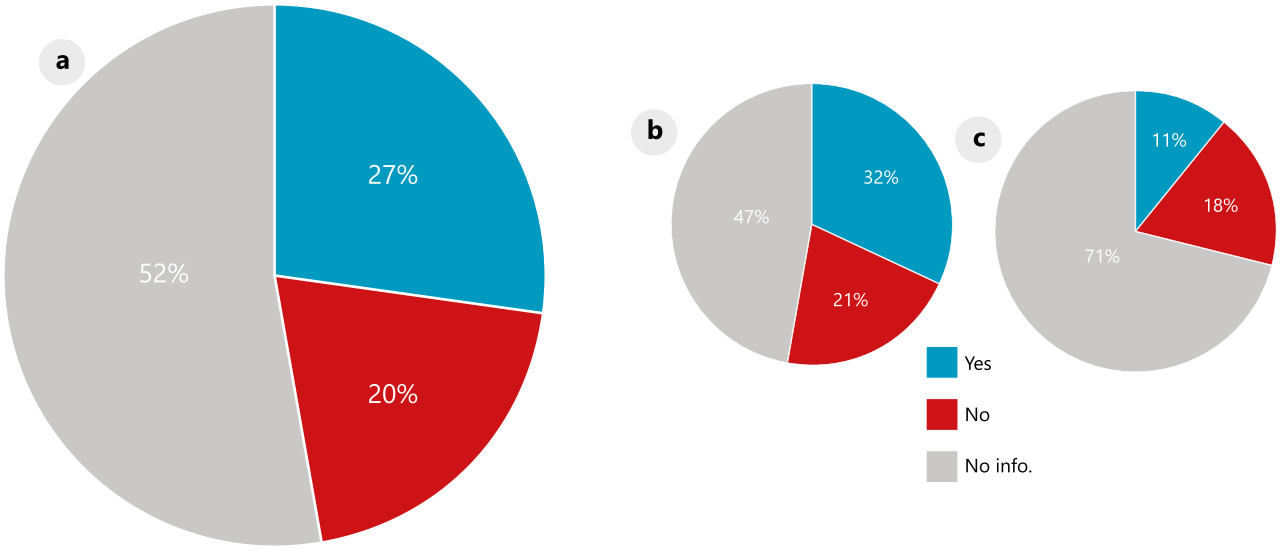


Figure 027: Presence of a governance council in MPAs with a national statute in the Mediterranean region (a, N=264), and more specifically in the EU (b, N=209) or non-EU (c, N=55) waters.

Figure 027 shows that 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 %).

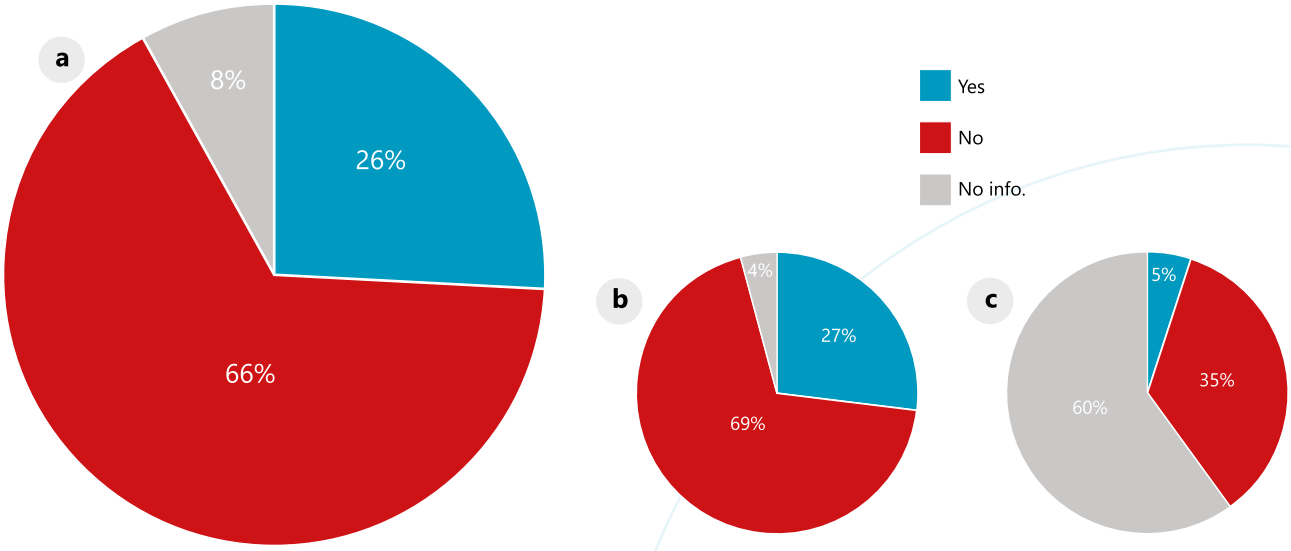


Figure 028: Percentage of MPAs with a national statute in the Mediterranean, in terms of surface area, according to the presence of a governance council (a, N=264), and more specifically in the EU (b, N=209) or non-EU (c, N=55) waters.

In addition, data were analysed spatially in order to calculate the percentage of the surface area of MPAs with a national statute according to the presence of a governance council. In terms of the surface covered by MPAs, Figure 028 shows that MPAs without a governance council prevail in the Mediterranean (66 %).

At the Mediterranean scale, data shows that the presence of a governance council varied according to the management body of the MPA (Figure 029).

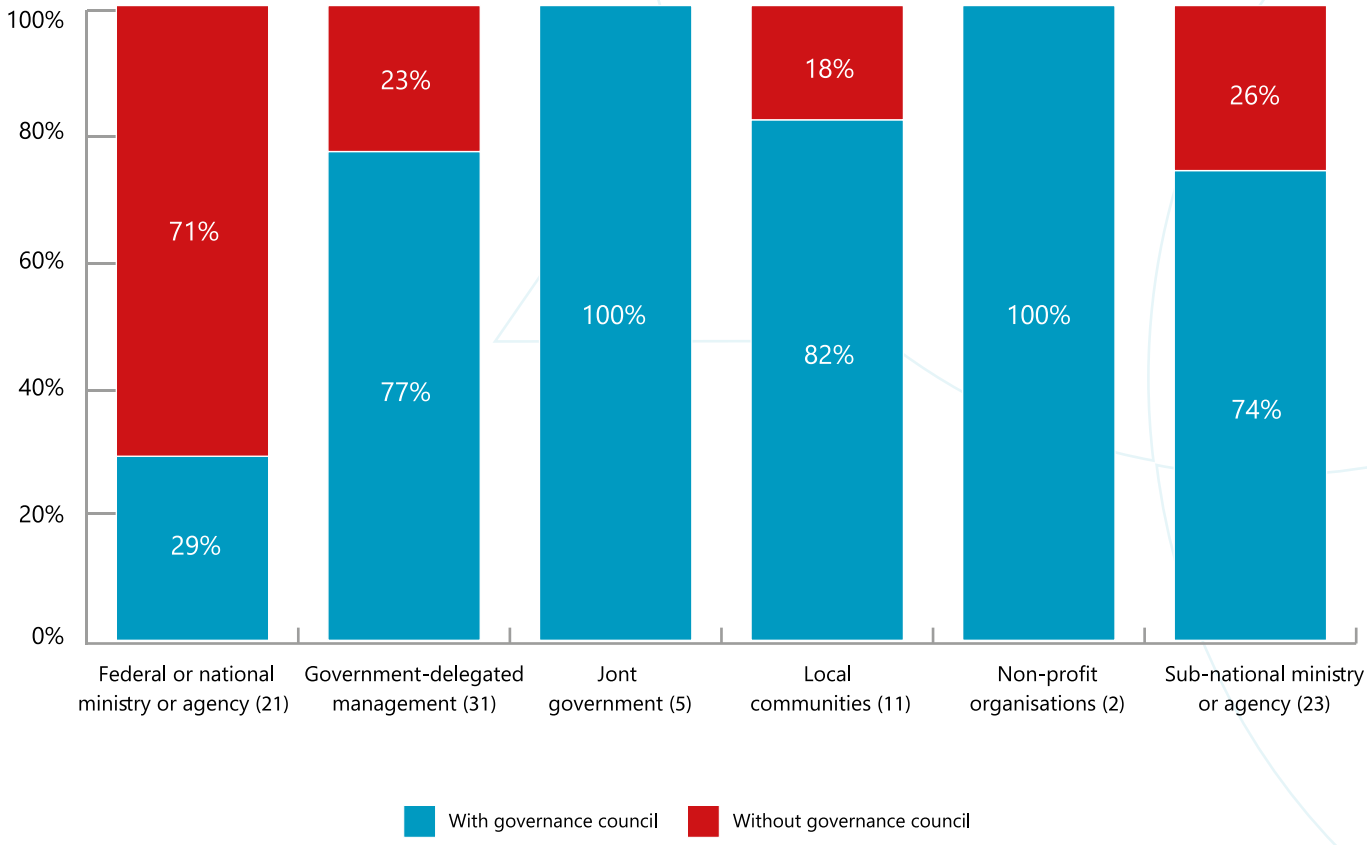


Figure 029: Presence of a governance council according to the nature of the management body of the MPA (N=93).

National MPAs with governance by local communities, delegated by the government or managed by a regional (sub-national) ministry or agency are most likely to have a participatory body (82 %, 77 % and 74 % respectively). Joint governance and non-profit organisations always have a governance council, but results cannot be generalised as the data sample is small for those management bodies. In contrast, the large majority of national MPAs under a federal or national ministry or agency do not have a governance council (71 %).

Among the 72 MPAs with a national statute that stated that they had a governance council, 59 MPAs (82 %) provided details of their composition (Figure 030).

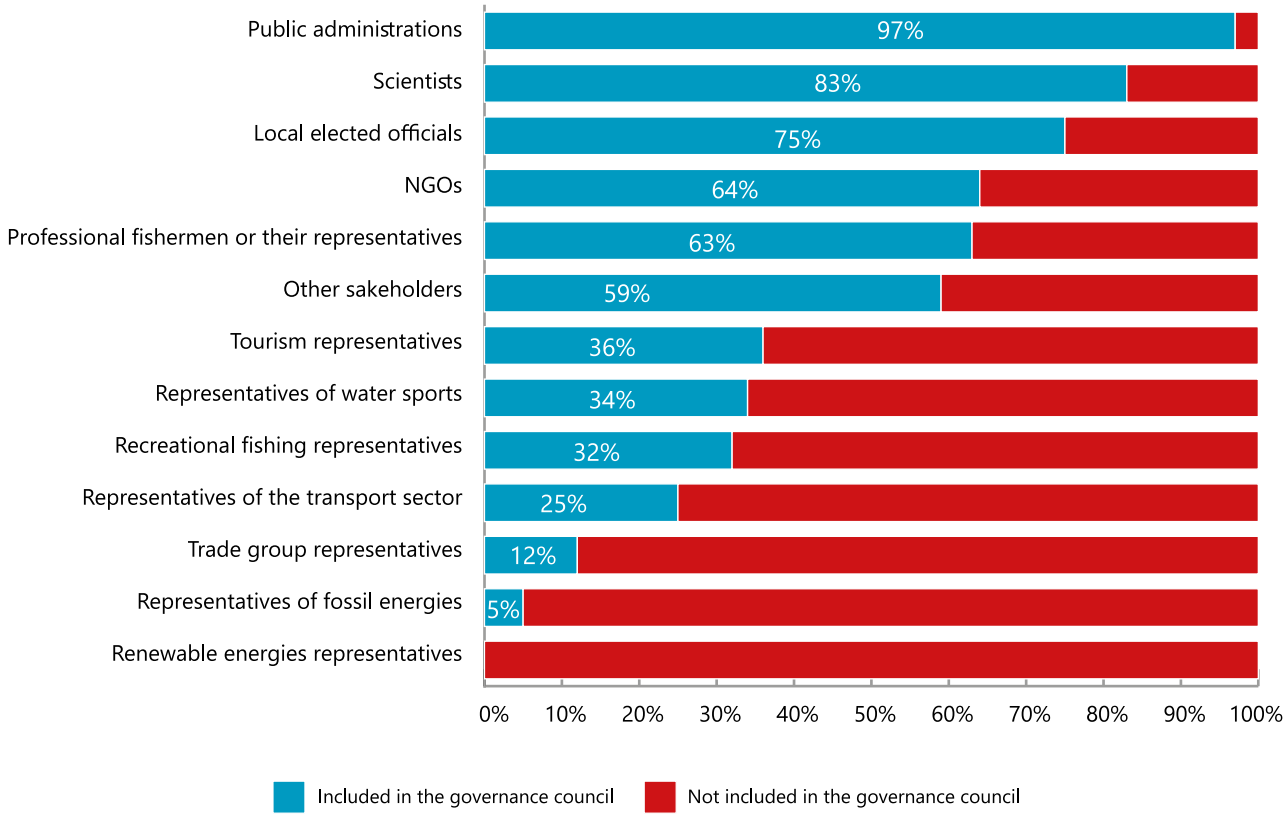


Figure 030: Inclusion rate, for each stakeholder category, in the governance councils of MPAs with a national statute in the Mediterranean region (N=59).

Figure 030 shows that the three groups that are the most represented in the governance councils are public administrations, scientists, and local elected officials. Next, come NGOs and professional fishers, who are present in more than half of the councils. Representatives of tourism, water sports, recreational fishing and transport are present in just under half to a quarter of the councils, and those of trade or energy groups are little represented in councils. No governance councils appear to include renewable energy sector representatives at this time. The "Other stakeholders" category deserves further attention in the future.

I.6.5. Co-management

I.6.5.1. Introduction to co-management

The success of a Marine Protected Area leans on two pillars: a biological and a social pillar, and the objective of effectiveness in the management of MPAs is inextricably linked with the concept of equity, as discussed and accepted in the framework of the CBD and the Aichi targets, the 17 goals for UN Sustainable Development and the Barcelona Convention. Thus, an ecologically ambitious MPA neglecting its inclusion in its administrative and social environment may be doomed to failure, as the compliance of the authorities, populations, and stakeholders to the regulations is essential for joint success. Furthermore, to be truly successful, the management of these areas must be integrated into the scale of coherent territories (Integrated Coastal Zone Management, ICZM and/or Marine Spatial Planning, MSP).

Currently, in the Mediterranean, stakeholders (fishermen, user associations, nature protection associations, etc.) are regularly represented on the management boards of natural areas, as shown in the previous section, but examples, where power and regulatory decision-making are shared, remain few.

The IUCN proposed the following definition for co-management: "*a partnership in which government agencies, local communities and resource users, non-governmental organizations and other stakeholders negotiate, as appropriate to each context, the authority and responsibility for the management of a specific area or set of resources*" (IUCN, 1996[31]).

However, it should be noted that co-management has no standard definition (Carlsson & Berkes, 2005), and that each author places its threshold at one level or another of a gradient of involvement (Figure 031). Co-management, broadly defined, thus appears to be a collaborative and participatory process of regulatory decision-making between relevant representatives of user groups, government agencies, research institutes, NGOs and others who share common goals for the territory.

[31] https://portals.iucn.org/library/sites/library/files/documents/WCC-1st-002.pdf

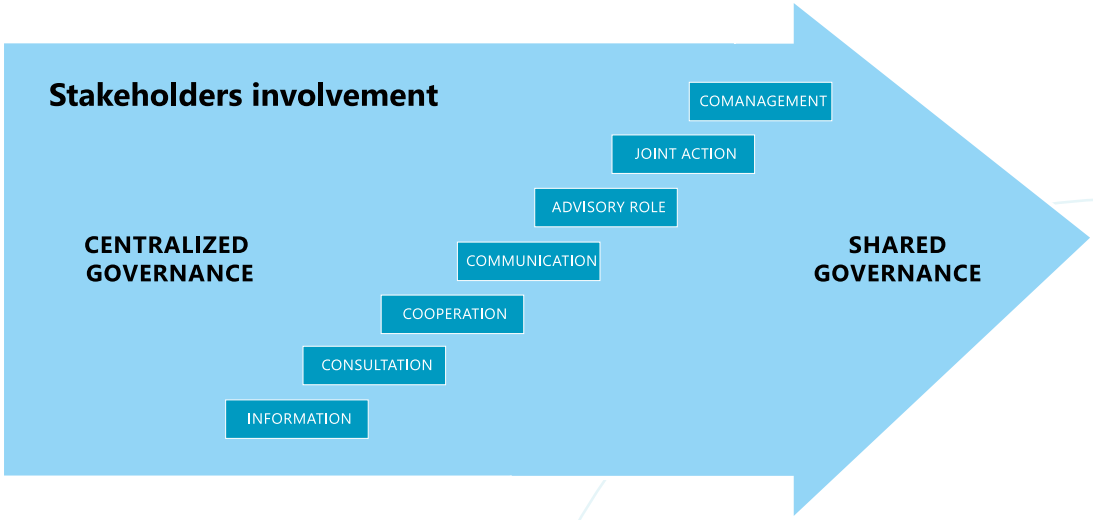


Figure 031: Gradient of co-management according to the degree of stakeholder involvement (inspired by Pomeroy & Berkes, 1997).

There are therefore several levels of involvement: stakeholders can be involved in the implementation of the management plan, in the discussion or directly in the decision-making. Only the latter is co-management *stricto sensu*. The other modalities (which could be dubbed stakeholder engagement, participatory approach, or collaboration) are grouped here under the term "consultation". The different forms of consultation can be considered as co-management lato sensu. There are also cases of co-construction when stakeholders contribute to the creation of MPAs (such as the Côte Bleue Marine Park in France, or several MPAs in the Balearic Islands like the Costa nord-est d'Eivissa-Tagomago marine reserve, etc.), which are typical cases of "bottom-up" processes. A good example of shared governance between a national environment administration and an NGO is the MPA of Gokova in Türkiye (See Box 4 for more details).

Box 4: A relevant example of co-management and gender politics in an MPA: Gökova Bay Special Environmental Protection Area

The bay of Gökova is a hotspot of global biodiversity and an MPA of 270 km² of land and 827 km² of sea protected. It was declared a Special Environmental Protection Area (SEPA) in 1988, with 30 km² designated as a "No Fishing Zone" (NFZ, 3.4 % of the marine area), comprising six different areas. Additionally, 30,800 ha have been declared as "No Trawling and No Purse Seine" areas. Gökova Bay and its variety of marine habitats are home to some charismatic marine species such as the Sandbar shark *Carcharhinus plumbeus*, and the Mediterranean monk seal *Monachus monachus*.

The bay of Gökova is a good example of co-management between an NGO, the Mediterranean Conservation Society (MCS), and the Turkish national environmental administration, but also of the participation of a local stakeholder, the artisanal professional fishermen and fisherwomen, as active actors of the fishing activity in the bay.

MCS, with the support of local public institutions, has been implementing its Marine Ranger System (MRS) since 2013 to inspect and monitor illegal fishing activities in the NFZs in Gökova Bay. The marine rangers report the illegal activities (illegal fishing in NFZs, etc) to local law enforcement authorities -Coast Guard, Fisheries and Aquaculture General Directorate, etc. They also distribute informative leaflets to raise awareness among the people of the region and other users who visit the area and warn those who are involved in illegal activities. The protection afforded to the NFZs has meant a 10-fold increase in fish biomass when compared to unprotected areas, and since the establishment of NFZs in 2010, the income of fishers raised by 400 per cent (data from Akyaka Fisheries Cooperative).

More than 200 fishermen and fisherwomen work regularly in the bay. One of the central parts of MCS' campaigns in the area is an example of an inclusive gender project: it was aimed to support and train more than 100 local fisherwomen in sustainable fishing techniques. In Türkiye, fisherwomen have always fished, but the profession is facing extinction due to overfishing. Tourism is becoming a more reliable and sustainable business for younger women who have never relied on fishing as a profession. Fisherwomen have to deal with other issues related to gender roles on board fishing boats as well. In a profession still largely dominated by men, the female crew members have long been numerous, however rare have been the female captains. Women's calls for gender equality and the empowerment afforded to them by the MCS project are finally causing a social change in the traditional way of fishing in the area, towards a more gender-balanced assignment of roles in the fisher community.

Citation: Amengual P., Alvarez-Berastegui D., (2023). Box 4: A relevant example of co-management and gender politics in an MPA: Gökova Bay Special Environmental Protection Area. In "The 2020 Status of Marine Protected Areas in the Mediterranean" (MedPAN and UNEP/MAP-SPA/RAC, 2023).

I.6.5.2. Status of co-management

Data about the co-management (Figure 032) was available for 119 out of 264 MPAs with a national statute in the Mediterranean (45 %, MedPAN database). MPA managers could choose between the following possibilities:

- Co-management *stricto sensu* : Stakeholders contribute directly to decision-making on the management of the MPA
- Consultation : Stakeholders can contribute to discussions, but do not participate in decision-making on the management of the MPA
- There is no system in place for stakeholders to contribute to decision-making on the management of the MPA.

The term "management of the MPA" may refer to management planning, daily management or adaptive management. The term "stakeholders" refers to individual or collective actors that are affected by the MPA (economic actors or NGOs).

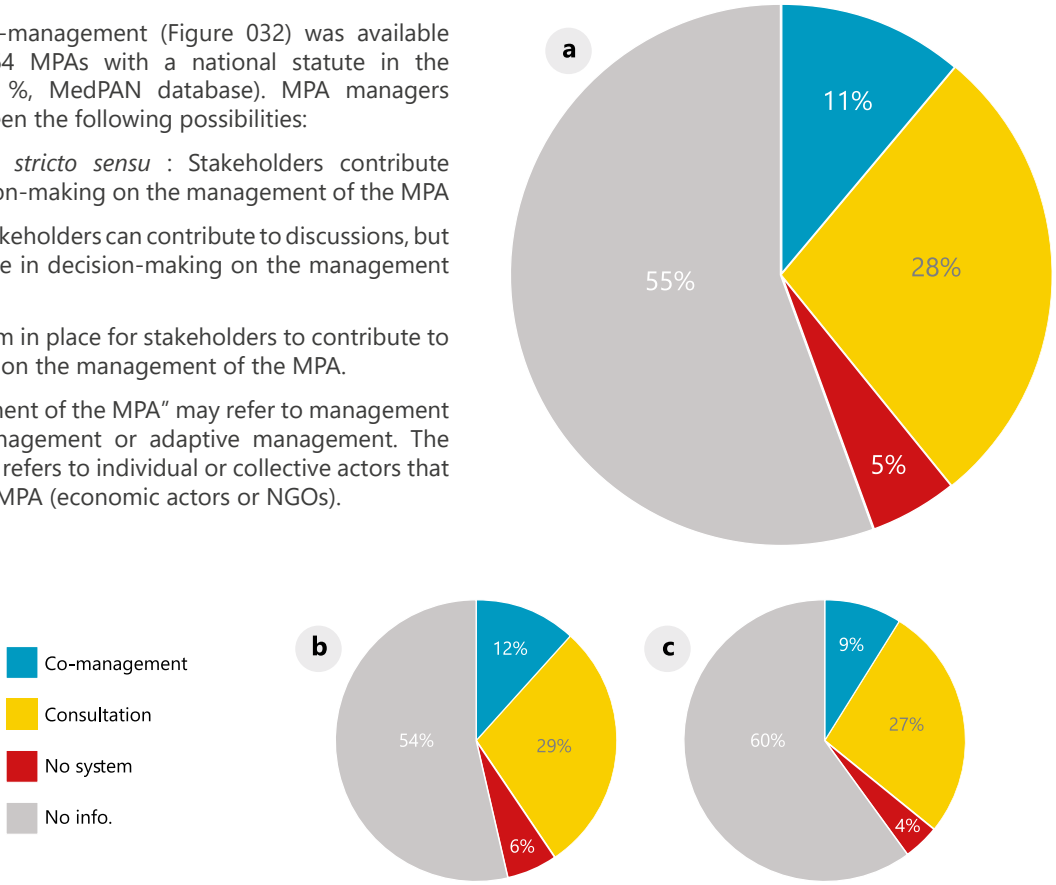


Figure 032: Co-management in MPAs with a national statute in the Mediterranean region (a, N=264), and more specifically in the EU (b, N=209) or non-EU (c, N=55) waters.

11 % of the national MPAs reported having a co-management system in place, 28 % reported operating on the principle of consultation, and 5 % reported having no type of co-management in place. The trend found at the basin level is also observable within and outside the European Union. Those results show that Co-management *stricto sensu*, therefore, remains a fair minority practice in national MPAs in the Mediterranean, but MPAs generally involve local stakeholders in the discussion on MPA management (consultation).

Among the 105 national MPAs that indicated a co-management or consultation system, 99 MPAs (94 %, MedPAN database) provided details about the state of cooperation between the management body and stakeholders (Figure 033). MPA managers could choose between the following possibilities:

- Excellent (most stakeholders cooperate and there is a mutual understanding and trust)
- Average (some stakeholders cooperate, but there is still suspicion toward the MPA or a lack of understanding)
- Difficult (most stakeholders refuse to cooperate)
- Inexistent

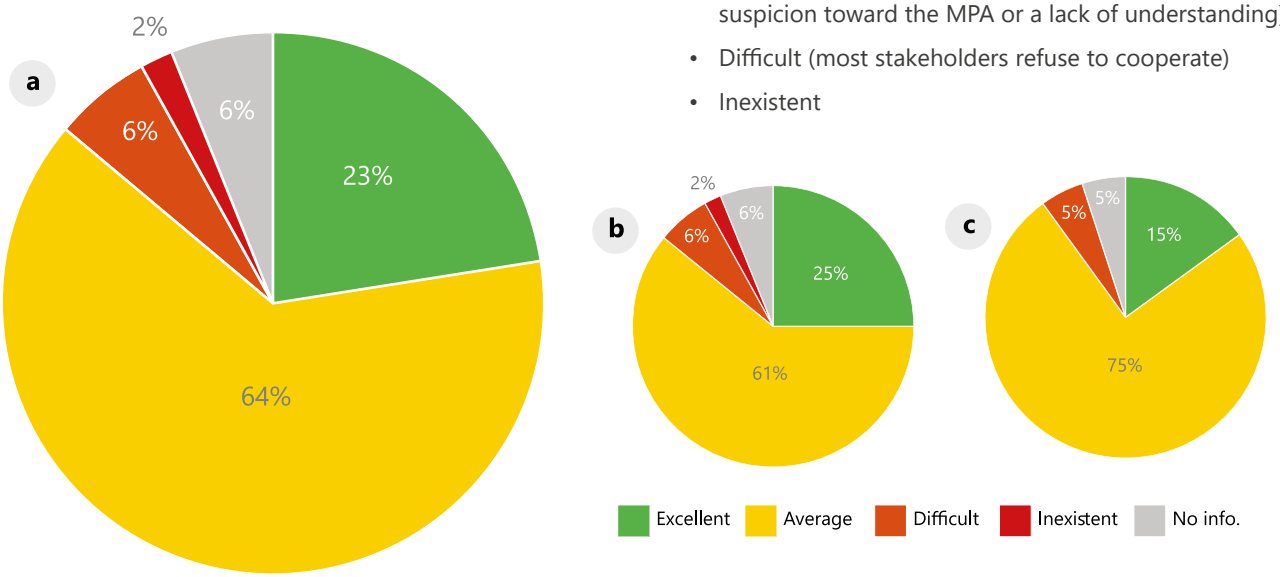


Figure 033: State of cooperation between management bodies and stakeholders for MPAs with a national statute (having a co-management system in place) in the Mediterranean region (a, N=105), and more specifically in the EU (b, N=85) or non-EU (c, N=20) waters.

23 % of the national MPAs (having a co-management or consultation system) considered this cooperation to be excellent, the majority (64 %) considered it to be average, 6 % considered it to be difficult, and 2 % considered it to be non-existent (Figure 033). In EU member countries, a higher proportion of MPAs rate cooperation as excellent (25 %) compared to MPAs from non-EU countries (15 %). There is a comparable trend in reporting the state of cooperation as difficult in EU and non-EU countries (6 % and 5 %), however, only some EU MPAs reported it as inexistent (2 %), which was not the case outside the EU.

I.7. Concluding remarks on designations and governance of Mediterranean MPAs

The status of MPAs in the Mediterranean indicates that in 2020, the Aichi target 11 has not been met with regard to the coverage goal. Specifically, 42,736 km^2 are still required to achieve the 10 % coverage goal. Furthermore, the objective of conserving a representative portion of the environment has not been achieved, as over 97 % of MPAs are located in EU waters in the Mediterranean.

The new Post-2020 Mediterranean Marine Protected Area Roadmap, which can be found in Box 5 below for more details, aligns with the Kunming-Montreal Global Biodiversity Framework, the Barcelona Convention's Post-2020 Regional Strategy for MCPAs and OECMs in the Mediterranean, and the EU Biodiversity Strategy for 2030. The key target of these international, regional, and European policies is to ensure that by 2030, at least 30 % of coastal and marine areas, particularly those of significant importance for biodiversity and ecosystem functions and services, are effectively conserved and managed through ecologically representative, well-connected, and equitably governed systems of protected areas and other effective area-based conservation measures. A key strategic objective of this new Post-2020 Mediterranean Marine Protected Area Roadmap, to achieve this 30 × 30 target, is to "further develop Mediterranean MPA policy and governance structures to be more equitable, incorporating local authorities, integrated with other sectors, and responsive to local MPA conditions" (MedPAN, SPA/RAC, WWF, Prince Albert II of Monaco Foundation, 2022).

The above shows the need for a more standardised and harmonised approach to MPA designations and governance across the Mediterranean region, and the importance of involving local communities and stakeholders in the decision-making process for MPA designations and management. To address the latter challenge, many MPAs are implementing participatory governance models that involve local communities in decision-making processes. This approach not only ensures that diverse perspectives are considered, but also promotes greater buy-in and support for conservation efforts. In this respect, the post-2020 roadmap and regional strategy call for further development of MPA policy and governance structures to be more equitable, incorporating local authorities, integrated with other sectors and responsive to local MPA conditions.

Box 5: The Mediterranean MPA Roadmap

Every four years, MedPAN, SPA/RAC, and their key partners organise the Mediterranean MPA Forum, which brings together governmental and non-governmental actors concerned with MPAs, as well as MPA practitioners in the Mediterranean and beyond. The updated Mediterranean MPA status report is shared and discussed during the Forum, contributing to the assessment and redefinition of the MPA roadmap for the Mediterranean and its adaptation beyond 2020.

The Post-2020 Roadmap (MedPAN, SPA/RAC, WWF, Prince Albert II Foundation, 2022) is the result of a large participatory process including all stakeholder groups involved with MPAs in the Mediterranean (medmpaforum.org). The roadmap includes a vision, six strategic objectives, and recommendations on how to achieve the objectives. Achieving the recommendations in the roadmap will allow the Mediterranean to make a significant contribution to achieving the goals and targets in the Kunming-Montreal Global Biodiversity Framework (2022) and Post-2020 Regional Strategy for MCPAs and OECMs (2021).

This Post-2020 Roadmap is more focused than past efforts. There are a limited number of recommendations based on the principle that "less is more" and that an overabundance of recommendations and actions can divide attention and produce a less-than-optimal outcome. Every effort has been made to ensure that recommendations are operationalized, measurable and clearly indicate the responsible parties for implementation, making it easier for stakeholders and governments and partners to find themselves in the roadmap. It is meant to be a living plan to build engagement momentum with a built-in mechanism to track progress.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CHAPTER II – MEANS FOR EFFECTIVE MANAGEMENT OF MEDITERRANEAN MPAs

Mediterranean MPAs are essential tools for conserving marine biodiversity, managing fisheries, and promoting sustainable development in the region. However, their effectiveness in achieving their objectives and fulfilling their mission depends on the means available to them, such as funding, governance mechanisms, and management practices. Therefore, having a good understanding of these means is crucial for evaluating and enhancing the effectiveness of Mediterranean MPAs. This knowledge can inform policy decisions, guide resource allocation, and help improve the overall performance of MPAs in the region. Moreover, it is widely recognized that the conservation outcomes of MPAs are influenced by both their stage of establishment and the level of protection they provide, which, in turn, depend on enabling conditions (Grorud-Colvert *et al.,* 2021).

In 2020, a budget which is considered to be sufficient is available for only 5 % of national MPAs, whereas 8 % of national MPAs declare that there is no specific budget for the management. In addition, there is a strong disparity between budget security in EU and non-EU countries with, unfortunately, none of the non-EU countries declaring their budget to be fully secured. Moreover, 23 % of national MPAs consider that they are understaffed in relation to the scope of their mission and 8 % state that they have no dedicated staff on site. Insufficient budget and lack of staff in Mediterranean MPAs are worrying, as adequate staff capacity and budget capacity are the strongest predictors of conservation impact (Gill *et al.,* 2017).

A good knowledge and understanding of the context of an MPA is essential to set objectives, plan and implement relevant management measures. For national MPAs in the Mediterranean, less than a quarter of them have baseline maps on habitats or substrates and a good monitoring and evaluation system in place. Another key ingredient for an effective MPA is the legislative framework of MPAs that should be flexible enough to permit adaptive management in response to environmental changes, trends of populations, new pressures detected, or any indication that an undesirable change is taking place in the protected area. Data show the legislation to be more flexible in MPAs from EU countries (21 %) than from non-EU countries (11 %).

Finally, this study found that a management plan is fully implemented in only 7 % of the national MPAs, whilst it is partially implemented in 19 %. Moreover, 23 % of national MPAs have no management plans. For those national MPAs that have a management plan, the priority operational objectives are considered to be achieved in the majority (37 %), while 35 % are defined as almost achieved and a quarter (24 %) are reported as far from being achieved. This figure is similar between EU and non-EU countries.

II.1. Introduction on means for effective management of Mediterranean MPAs

Being able to demonstrate whether an MPA is achieving its objectives is essential to be able to adapt the management measures adopted and to reinforce their legitimacy. After several years of focusing on the surface area covered by MPAs, institutions at all levels are now targeting the effectiveness of existing MPAs by assessing their conservation outcomes. Management effectiveness is indeed a key objective of the post-2020 agenda of the Convention on Biological Diversity (CBD), the European Commission's Green Deal and the Post-2020 MCPA and OECM Regional Strategy adopted under the Barcelona Convention.

The purpose of this chapter is to present the resources that are available to Mediterranean MPAs to carry out their mission and achieve their objectives. It addresses various topics such as the flexibility of legislation, the availability of economic, material and human resources, baseline knowledge on the area under protection, the presence of management plans, targets and objectives, and available communication tools.

II.2. Available resources in MPAs with a national statute

A study by Gill *et al.* (2017) found that adequate staff capacity and budget capacity were the strongest predictors of conservation impact: MPAs with adequate staff capacity had ecological effects 2.9 times greater than MPAs with inadequate capacity. For this study, three types of resources were considered to assess if conditions are favourable to ensure effective management in Mediterranean MPAs: financial, human but also material resources in order to address gaps and needs in the future.

It is important to note that establishing the MedFund, a regional trust fund, in 2015 was a significant achievement. It has mobilized more than 8 million Euros for Mediterranean MPAs so far (See Box 6 for more details).

Data from MAPAMED and the MedPAN database (see the general methodology section for more information) were used to carry out the analysis of resources regarding the 264[32] MPAs with a national statute in the Mediterranean.

[32] Among those MPAs, 257 are officially designated MPAs and 7 are "paperless" MPAs (i.e., management actions in the field without official designation) that are not yet included in MAPAMED (cf., Methodology).

Box 6: The MedFund, the only environmental fund specifically addressed to finance Mediterranean MPAs

The MedFund initiative is a Mediterranean cooperation platform set up to create an environmental fund, supported by different bilateral and multilateral donors who are historically interested in the conservation of the marine realm, but also on funding from other sources, particularly the private and philanthropic endeavours. The Fund should be capable of generating revenues directly invested in MPAs in the Mediterranean, with the objective of creating stable financing in time and space for them. The MedFund currently has 15 members including 6 Mediterranean countries having explicitly expressed their support for the initiative (France, Tunisia, Monaco, Morocco, Albania, and Spain). Additionally, it aggregates to the Fund, several organisations such as the Prince Albert II of Monaco Foundation as well as regional organisations involved in the conservation of the marine and coastal ecosystems of the Mediterranean, such as the UNEP/MAP-SPA/RAC, the Critical Ecosystem Partnership Fund, MedPAN network of Mediterranean MPA Managers, WWF Mediterranean, IUCN Mediterranean, the French coastal protection agency "*Conservatoire du Littoral*" and the Mediterranean Small Islands Initiative. In terms of financing, the MedFund is supported by an alliance of private and public donors such as the GEF, AFD, FFEM, Government of Monaco, Government of Spain, Prince Albert II Foundation, Foundation MAVA and a network of aquariums and zoos including the Oceanographic Institute of Monaco.

The target of the endowment fund is to reach a capital of 30 million euros by 2025, which will make it possible to generate regular and sufficient interest to provide long-term support to around 20 MPAs in the Mediterranean covering 7,000 km^2. To date, the initiative has mobilised more than 8 million euros of which 5 million euros of capitalisation have already been invested for the Mediterranean, providing funds for 8 MPAs covering 3,000 km^2.

The MedFund directly supports local NGOs and national agencies in charge of MPA management in Morocco, Tunisia, Albania, and Türkiye. As an example, Kuriat Islands have been beneficiaries of the Fund: 350,000 € have been committed through APAL and Notre Grand Bleu for a 5 years period of time, which have benefited the area by improving governance and scientific monitoring, ameliorating surveillance of the marine and coastal protected area and producing communication and educational materials.

Other MPAs benefited from this fund have been Jbel Moussa (under establishment) and Al-Hoceima National Park in Morocco, La Galite Nature Reserve, Zembra and Zembretta National Park, and the Kneiss Islands Nature Reserve in Tunisia, Karaburun Sazan National Park in Albania and Gökova Bay SEPA in Türkiye. The initiative plans to extend its action to other Mediterranean countries on the southern and eastern shores of the Mediterranean.

Citation: Amengual P., Alvarez-Berastegui D., (2023). Box 6: The MedFund, the only environmental fund specifically addressed to finance Mediterranean MPAs. In "The 2020 Status of Marine Protected Areas in the Mediterranean" (MedPAN and UNEP/MAP-SPA/RAC, 2023).

II.2.1. Financial resources

II.2.1.1. Business plan

Data about the presence of a business plan (Figure 034) was available for 75 out of 264 MPAs with a national statute in the Mediterranean (28 %, MedPAN database).

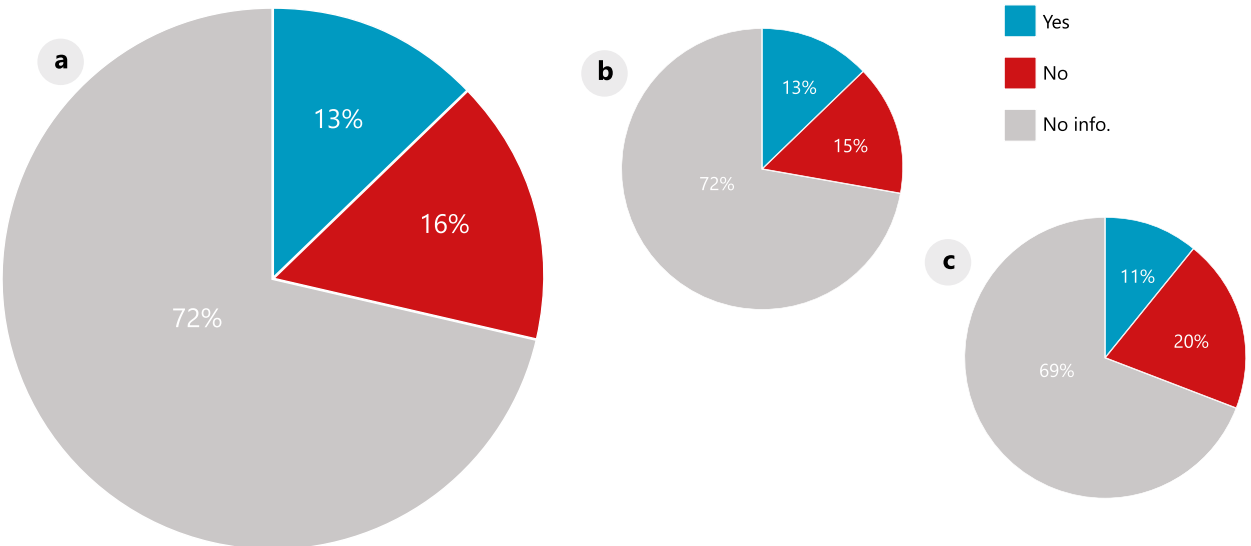


Figure 034: Presence of a business plan in MPAs with a national statute in the Mediterranean region (a, N=264), and more specifically in the EU (b, N=209) or non-EU (c, N=55) waters.

Figure 034 shows that only 13% of national MPAs declare having a business plan, and that data is not available for 72 % of the MPAs with a national statute in the Mediterranean. The situation in the EU and outside the EU is similar to that observed at the Mediterranean level, although the percentage of national MPAs with a business plan is slightly higher in the EU.

II.2.1.2. Budget adequacy

Data about budget adequacy (Figure 035) was available for 111 out of 264 MPAs with a national statute in the Mediterranean (42 %, MedPAN database). MPA managers were able to choose among the four following possibilities:

- The available budget is sufficient and fully meets the management needs and objectives of the MPA.
- The available budget is acceptable and meets the priority objectives of the MPA, but should be increased to ensure effective management taking into account all MPA objectives.
- The available budget is insufficient and constitutes a serious constraint to meet the priority management needs of the MPA.
- There is no budget for the management of the MPA.

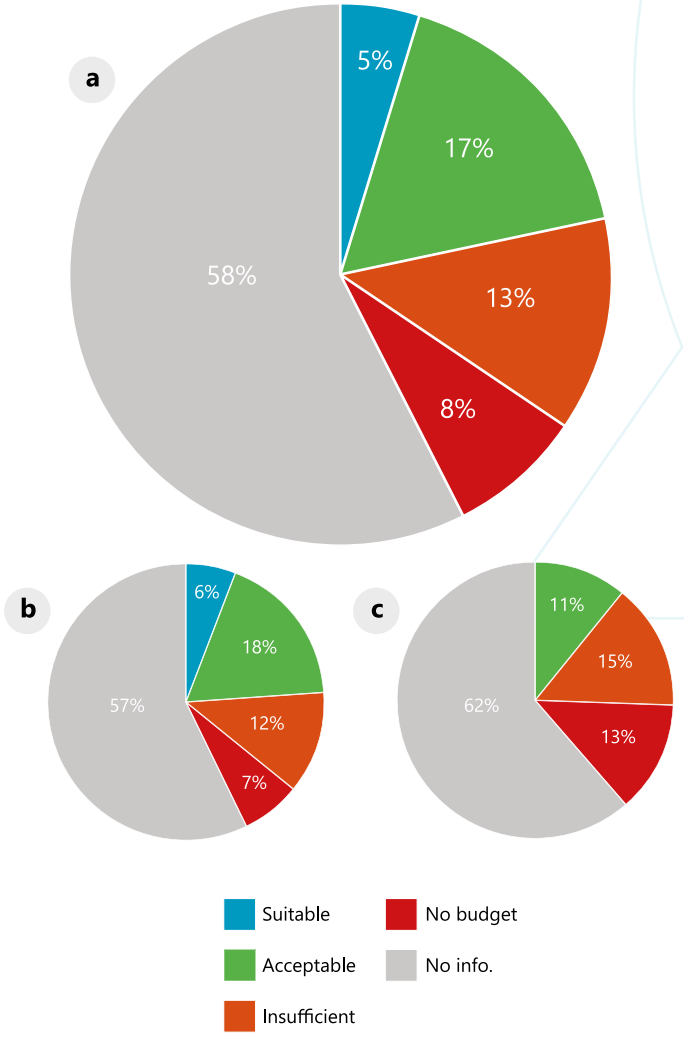


Figure 035: Budget adequacy in MPAs with a national statute in the Mediterranean region (a, N=264), and more specifically in the EU (b, N=209) or non-EU (c, N=55) waters.

Figure 035 shows that a budget which is considered to be sufficient is available for only 5 % of the national MPAs. For 17 % of them, the available budget is acceptable, whilst in 13 % of national MPAs the available budget is considered as insufficient and 8 % of national MPAs declare that there is no specific budget for their management. Interestingly, only national MPAs from EU countries indicated they had budgets considered as sufficient. 28 % of MPAs from non-EU countries declared to work with an insufficient budget or with no budget at all.

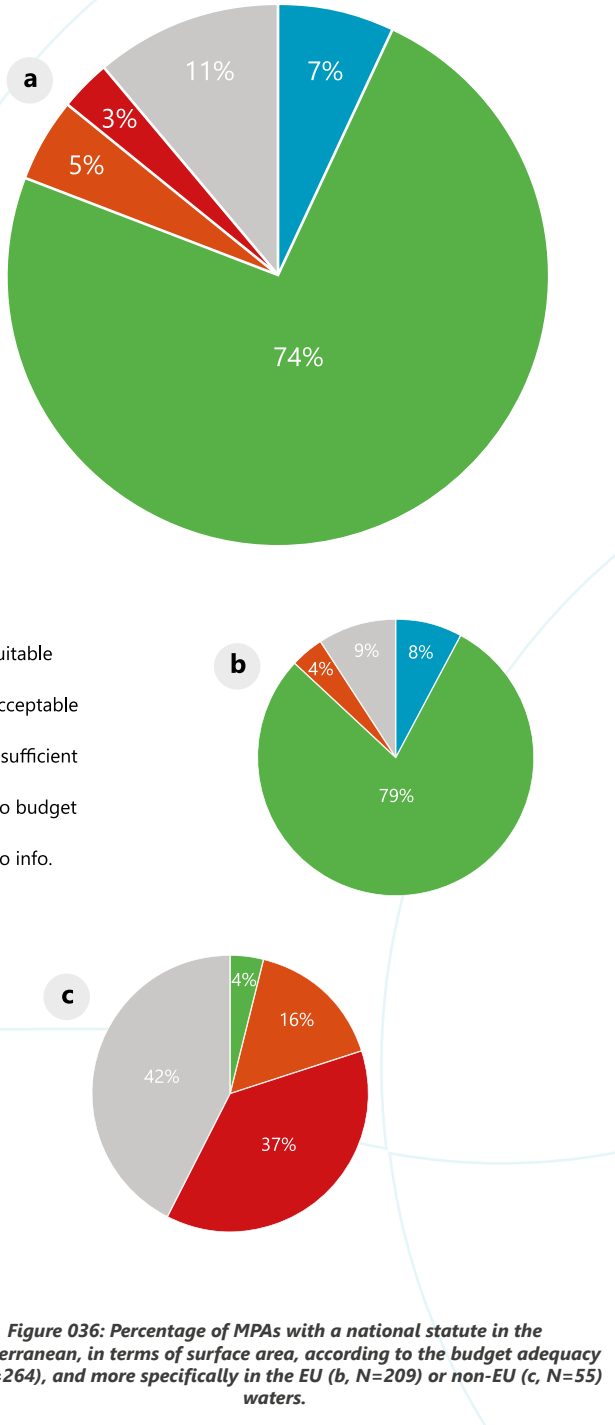


Figure 036: Percentage of MPAs with a national statute in the Mediterranean, in terms of surface area, according to the budget adequacy (a, N=264), and more specifically in the EU (b, N=209) or non-EU (c, N=55) waters.

In addition, data were analysed spatially in order to calculate the percentage of surface area of MPAs with a national statute according to budget adequacy. In terms of the surface covered by MPAs, Figure 036 shows that MPAs with an acceptable budget prevail in the Mediterranean (74 %). However, this is driven by MPAs in the EU, which represents more than 97 % of MPAs in the Mediterranean (see Chapter 1 for more details). Outside the EU, the situation is highly different, since 53 % of the covered area concerns MPAs with insufficient or no budget at all.

II.2.1.3. Budget security

Data about budget security (Figure 037) was available for 101 out of 264 MPAs with a national statute in the Mediterranean (38 %, MedPAN database). MPA managers were able to choose among the four following possibilities:

- There is a secure budget for the MPA that meets its management needs.
- A reasonable part of the budget is secured for the regular functioning of the MPA, but many innovations and initiatives depend on external funding.
- A very small part of the budget is secured and the MPA could not function properly without external financing (such as project financing).
- There is no secure budget for the MPA and management depends entirely on external or highly variable funding (such as project funding).

Figure 037 shows that 19 % of the national MPAs in the sample, declared their budget to be secured and meeting their management needs whilst, for 20 % of the MPAs, the budget is not secured. There is a strong disparity between budget security in EU and non-EU countries with, unfortunately, none of non-EU countries declaring their budget to be fully secured.

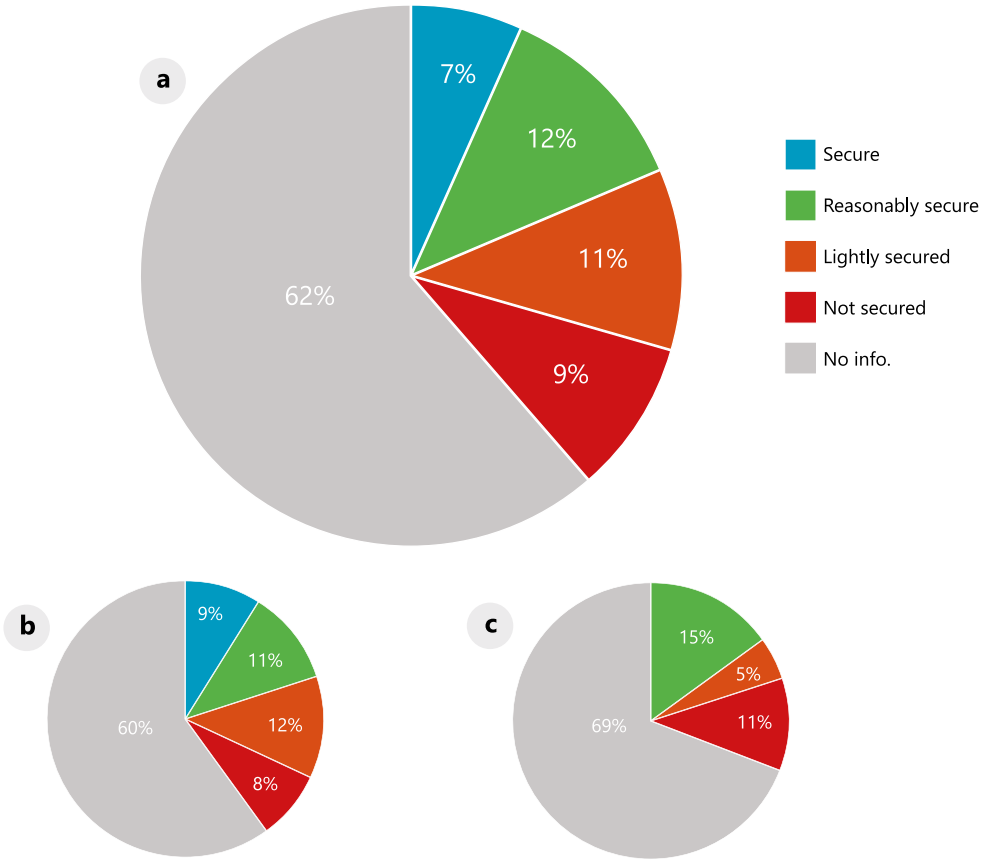


Figure 037: Budget security in MPAs with a national statute in the Mediterranean region (a, N=264), and more specifically in the EU (b, N=209) or non-EU (c, N=55) waters.

II.2.1.4. Main sources of funding

Data about the main sources of funding (Figures 038 and 039) was available for 77 out of 264 MPAs with a national statute in the Mediterranean (29 %, MedPAN database). In the following analysis, the sources of funding have been classified under the following 5 categories:

- Public funding
- International donors
- Incomes
- Private sector
- Other

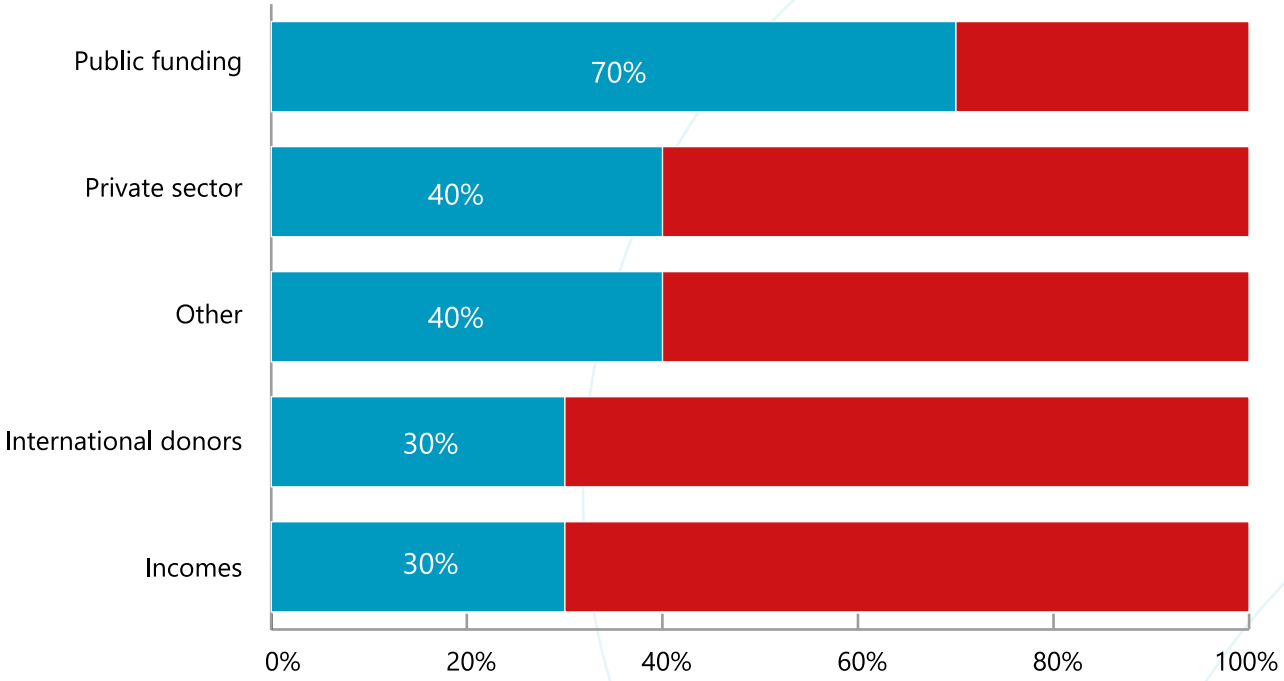


Figure 038: Average contribution to the budget, according to the source of funding, in MPAs with a national statute in the Mediterranean EU waters (N=67).

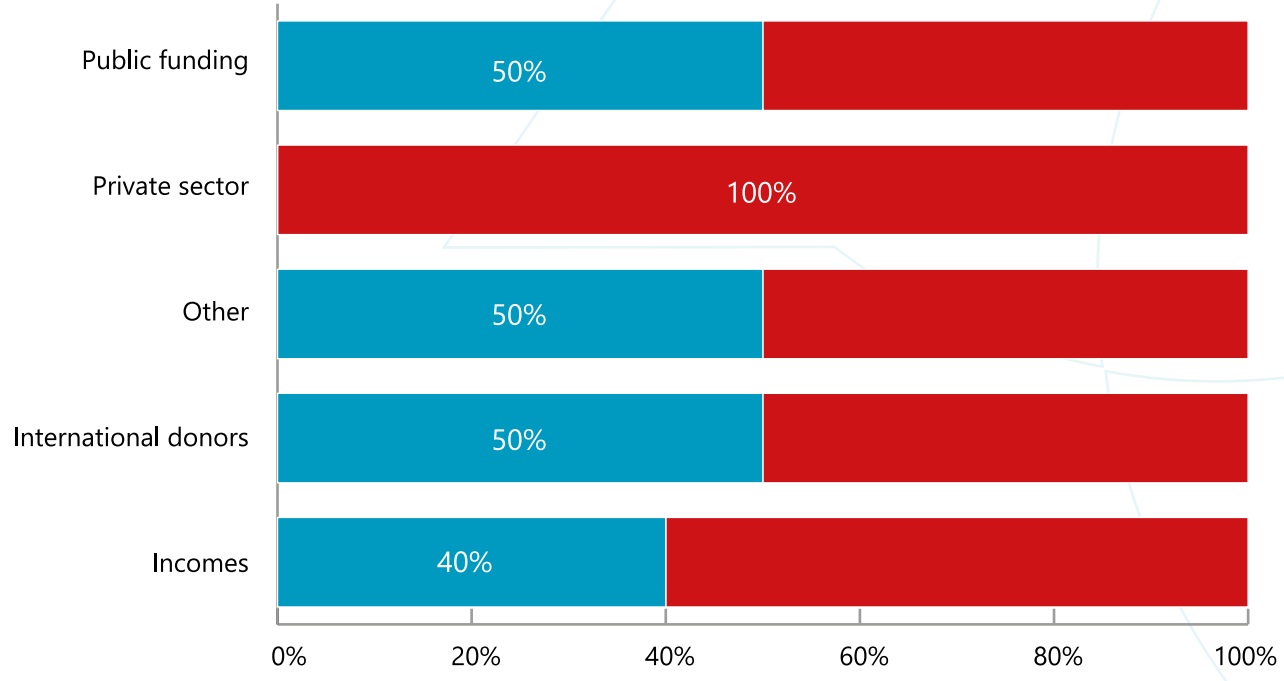


Figure 039: Average contribution to the budget, according to the source of funding, in MPAs with a national statute in the Mediterranean non-EU waters (N=10).

Within EU countries' national MPAs, the main source of funding comes from public funds, followed by private funds or other sources (like projects), and, to a lesser extent, donors and incomes. However, within the non-EU countries, the main sources of funding are public funds, donors or other types of funds (projects). Interestingly, no funding is coming from the private sector. Further work is needed to identify the types of funds listed under the "other" category, but it could refer to project-based funding. The lack of budget security in non-EU countries may be a result of insufficient public funding.

Data collected for this report show that there is often one main source of funding in the majority of cases (96 %), whatever that source may be, and the other sources remain secondary within the same MPA. This suggests that the sources of funding for MPAs are not sufficiently diversified.

II.2.2. Human resources

II.2.2.1. Staff adequacy

Data about staff adequacy (Figure 040) was available for 114 out of 264 MPAs with a national statute in the Mediterranean (43 %, MedPAN database). MPA managers were able to choose among the three following possibilities:

- Staff numbers on site are adequate for MPA management.
- Staff numbers on site are insufficient for MPA management.
- There are no dedicated staff on site.

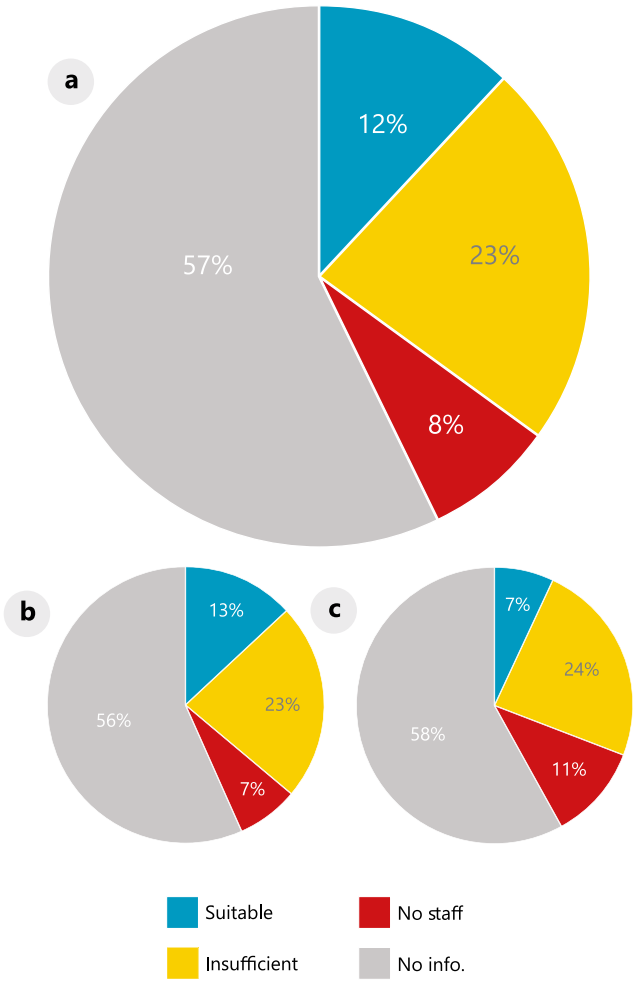


Figure 040: Staff adequacy in MPAs with a national statute in the Mediterranean region (a, N=264), and more specifically in the EU (b, N=209) or non-EU (c, N=55) waters.

Figure 040 shows that 23 % of national MPAs consider that they are understaffed in relation to the scope of their mission, compared with 12 % who consider that they are adequately staffed. Moreover, 8 % state that they have no dedicated staff on site. Results are similar for EU and non-EU countries. Available data show that the EU have adequate staff number in 13 % of their MPAs (7 % for non-EU countries). Nevertheless, they also indicated having no dedicated staff on site for 8 % of their MPAs (11 % for non-EU countries).

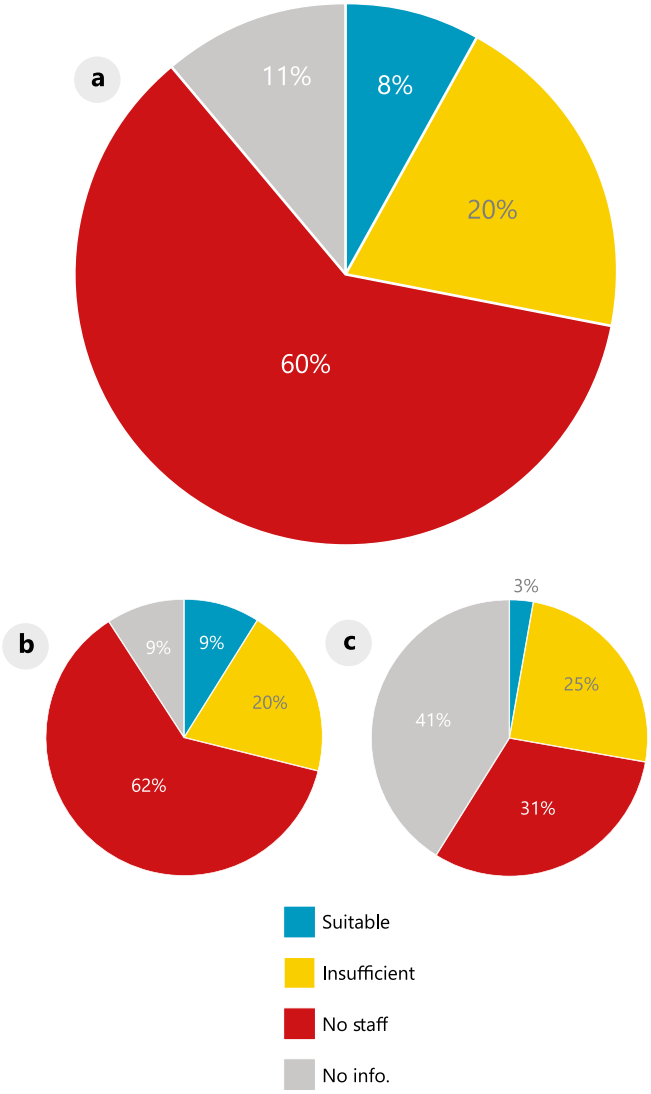


Figure 041: Percentage of MPAs with a national statute in the Mediterranean, in terms of surface area, according to the staff adequacy (a, N=264), and more specifically in the EU (b, N=209) or non-EU (c, N=55) waters.

In addition, data were analysed spatially in order to calculate the percentage of surface area of MPAs with a national statute according to staff adequacy. In terms of the surface covered by MPAs, Figure 041 shows that MPAs with no dedicated staff prevail in the Mediterranean (60 %). This trend is strong within MPAs from the EU (62 %) but outside the EU, only 3 % of the MPAs have a suitable staff.

II.2.2.2. Staff training

Data about staff training (Figure 042) was available for 100 out of 264 MPAs with a national statute in the Mediterranean (38 %, MedPAN database). MPA managers were able to choose among the three following possibilities:

- Staff training and skills are aligned with the management needs of the MPA.
- Staff training and skills are not sufficient for the management needs of the MPA.
- Staff are untrained or lack the skills needed for MPA management.

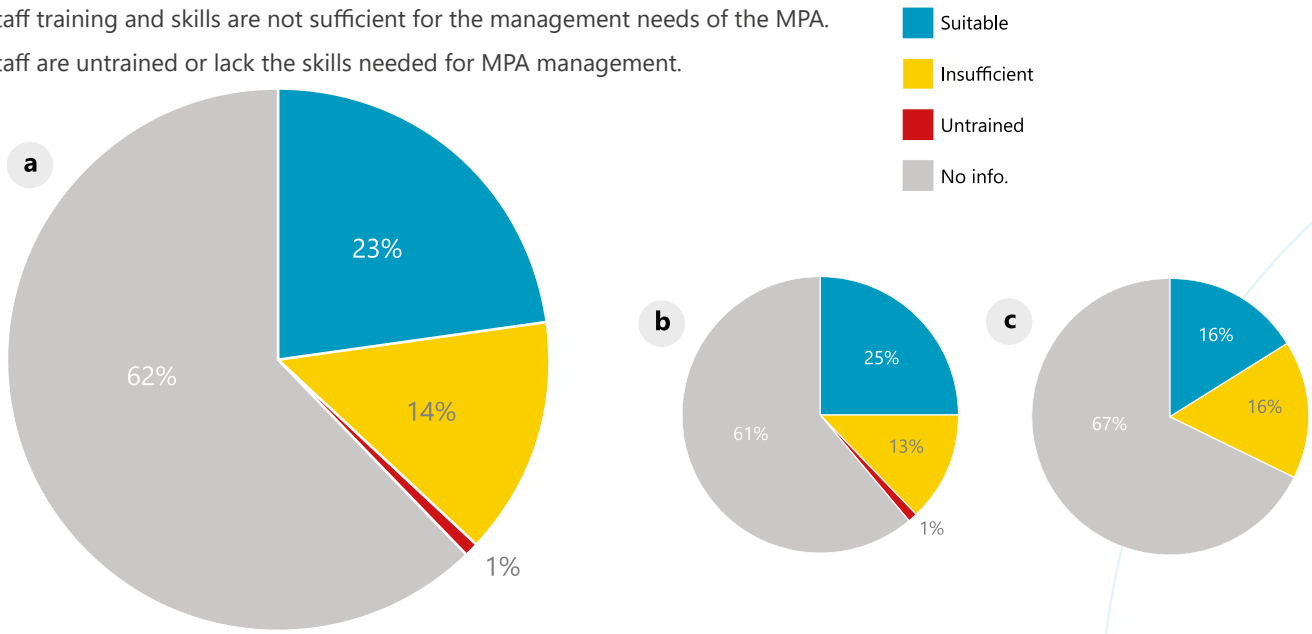


Figure 042: Staff training in MPAs with a national statute in the Mediterranean region (a, N=264), and more specifically in the EU (b, N=209) or non-EU (c, N=55) waters.

Figure 042 shows that the level of competence of staff seems satisfactory for 23 % of national MPAs, whilst it is considered insufficient for 14 % and non-existent for only 1 % (only MPAs from the EU). Results are quite similar for EU and non-EU countries.

II.2.3. Material resources

Data about equipment adequacy (Figure 043) was available for 113 out of 264 MPAs with a national statute in the Mediterranean (43 %, MedPAN database). MPA managers were able to choose among the three following possibilities:

- The equipment and facilities available are adequate.
- There are equipment and facilities, but they are insufficient or inadequate to meet management needs.
- There is little or no equipment and facilities to meet management needs.

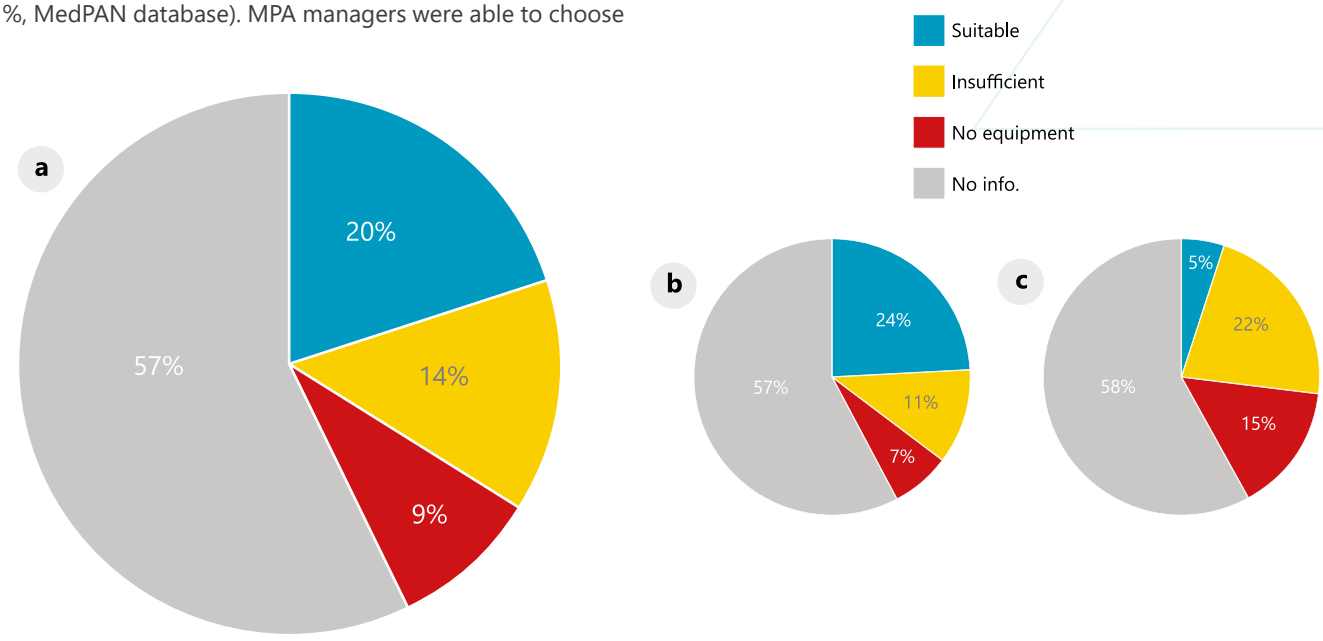


Figure 043: Equipment adequacy in MPAs with a national statute in the Mediterranean region (a, N=264), and more specifically in the EU (b, N=209) or non-EU (c, N=55) waters.

Figure 043 shows that overall 20 % of the national MPAs consider that the equipment and facilities available are adequate. This is mainly true for EU countries (24 %) whilst only 5 % of non-EU countries consider their equipment and facilities to be adequate. Moreover, overall 23 % of the national MPAs state that there is little or no equipment and facilities to meet management needs, this is especially the case in non-EU countries (37 %).

The 59 national MPAs that indicated insufficient or inexistent equipment provided details about the equipment and facilities needs (Figure 044). In the following analysis, the equipment and facilities have been classified under the following 8 categories:

- Environmental education building
- Boat for research
- Boat for surveillance
- Snorkelling or diving equipment
- Office for the management body (inside or close to the MPA)
- Computer
- Demarcation buoys
- Other.

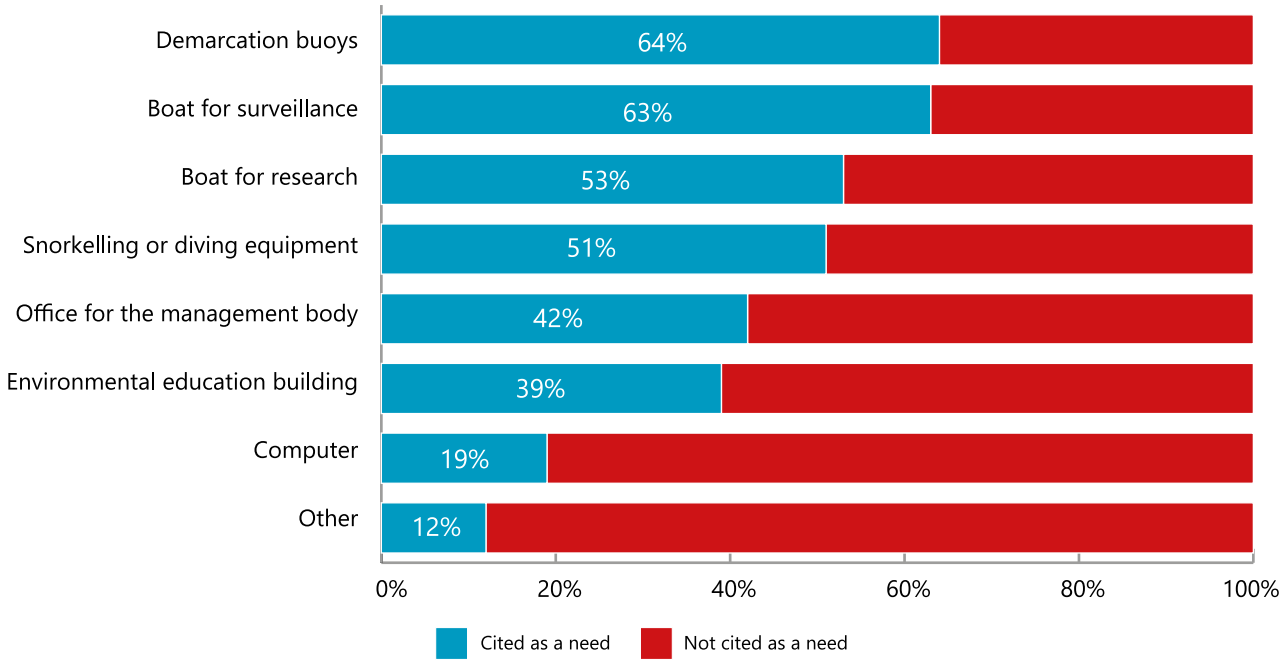


Figure 044: Need rate, for each type of equipment, in MPAs with a national statutein the Mediterranean region (having insufficient or inexistent equipment, N=59).

Figure 044 shows that demarcation buoys, materialising the area (64 %), and boats for surveillance (63 %) are the main missing equipment cited by MPAs having insufficient or no equipment. Next comes, by order: a boat for research (53 %), snorkelling or diving equipment (51 %), an office for the management body (42 %), an environmental education building (39 %) and a computer (19 %).

II.3. Knowledge in MPAs with a national statute

A good knowledge and understanding of the context of an MPA is essential to set objectives, plan, and implement relevant management measures because it enables decision-makers to tailor their approaches to the specific needs and challenges of the MPA. This includes understanding the ecological and socio-economic characteristics of the area, the threats, and pressures facing the marine environment, and the interests and values of stakeholders. Without this contextual knowledge, management measures may not be effective or may even have unintended negative consequences. Therefore, a good understanding of the context of an MPA is crucial for setting objectives that are realistic, relevant, and achievable, and for planning and implementing management measures that are effective, socially acceptable, and sustainable in the long term.

Data from MAPAMED and the MedPAN database (see the general methodology section for more information) were used to carry out the analysis of knowledge regarding the 264[33] MPAs with a national statute in the Mediterranean.

II.3.1. Baseline data (initial inventory)

Baseline data is fundamental in order to adopt the appropriate management measures, monitor effectiveness over time and allow adaptive approaches.

[33] Among those MPAs, 257 are officially designated MPAs and 7 are "paperless" MPAs (i.e., management actions in the field without official designation) that are not yet included in MAPAMED (cf., Methodology).

Data about the availability of baseline data (Figures 045, 046 and 047) was available for 109 out of 264 MPAs with a national statute in the Mediterranean regarding baseline maps (habitats or substrate), 106 for ecological reference data and 104 for socio-economic and cultural reference data (41 %, 40 % and 39 %, respectively, MedPAN database). MPA managers could choose between the following possibilities:

- Fully completed: available data are sufficient for key areas of planning and decision-making with regard to management needs.
- Partially completed: data exist but should be further developed or completed to better meet the management needs.
- No data.

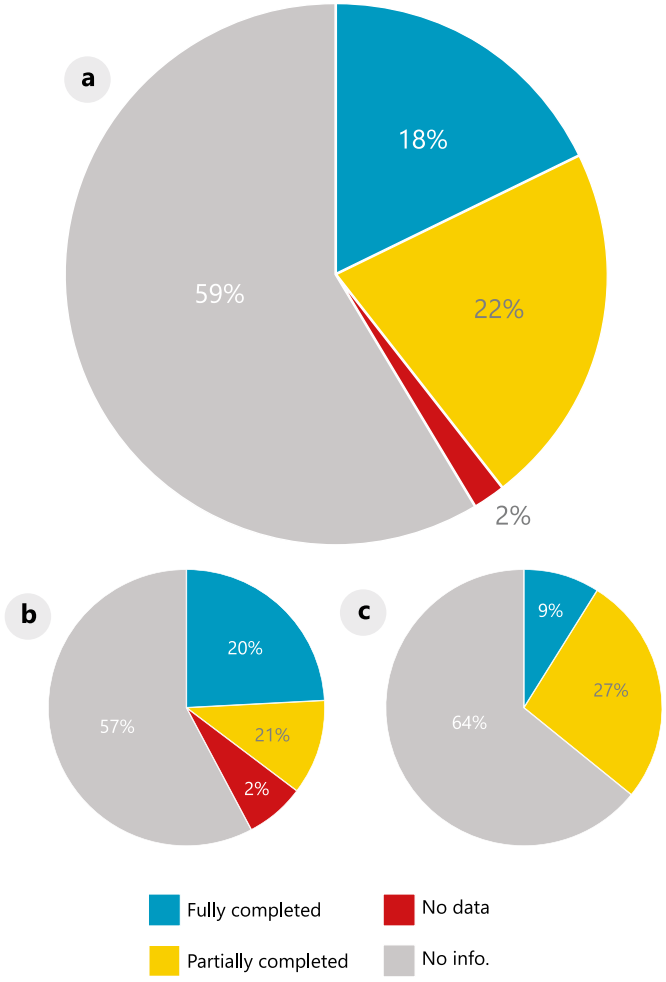


Figure 045: Baseline maps, on habitats or substrate, available in MPAs with a national statute in the Mediterranean region (a, N=264), and more specifically in the EU (b, N=209) or non-EU (c, N=55) waters.

Figure 045 shows that for 18 % of the national MPAs in the Mediterranean basin, there are baseline maps on habitats or substrates, whilst 22 % have only partial baseline maps and 2 % of the national MPAs have none. Interestingly, none of the non-EU MPA has declared that it has no data at all contrary to the EU (2 %). However, the majority of national MPAs in non-EU countries (27 %) have only partial baseline maps.

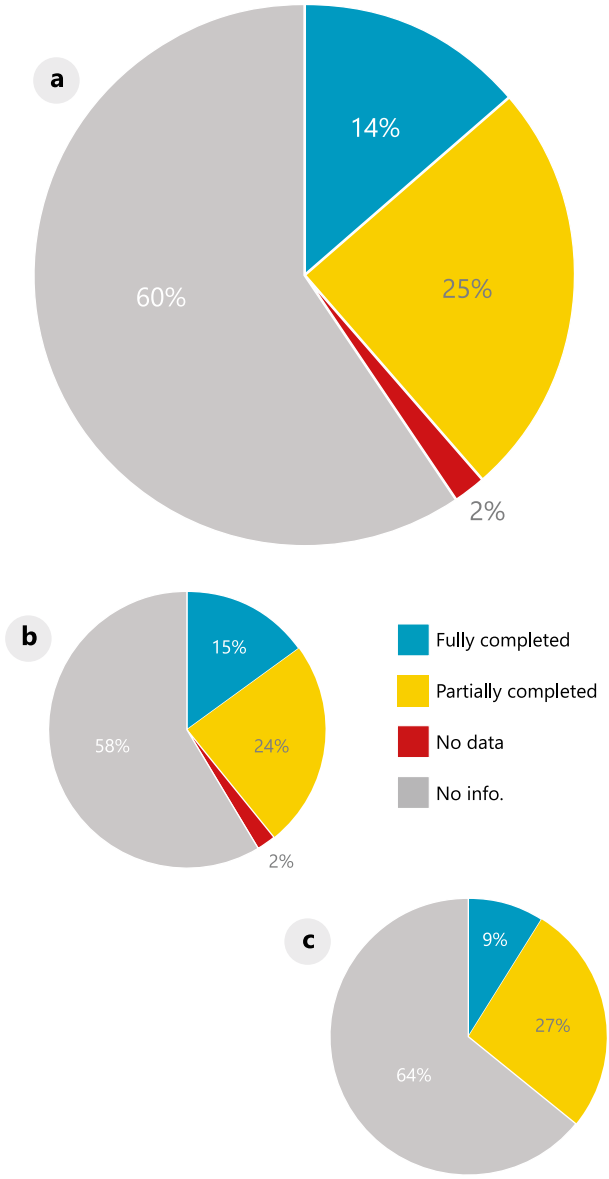


Figure 046: Ecological reference data available in MPAs with a national statute in the Mediterranean region (a, N=264), and more specifically in the EU (b, N=209) or non-EU (c, N=55) waters.

Figure 046 shows that ecological reference data is fully available for 14 % of the national MPAs or partially available for 25 % of them. Interestingly, only MPAs found in EU countries report having no baseline ecological data (2 %).

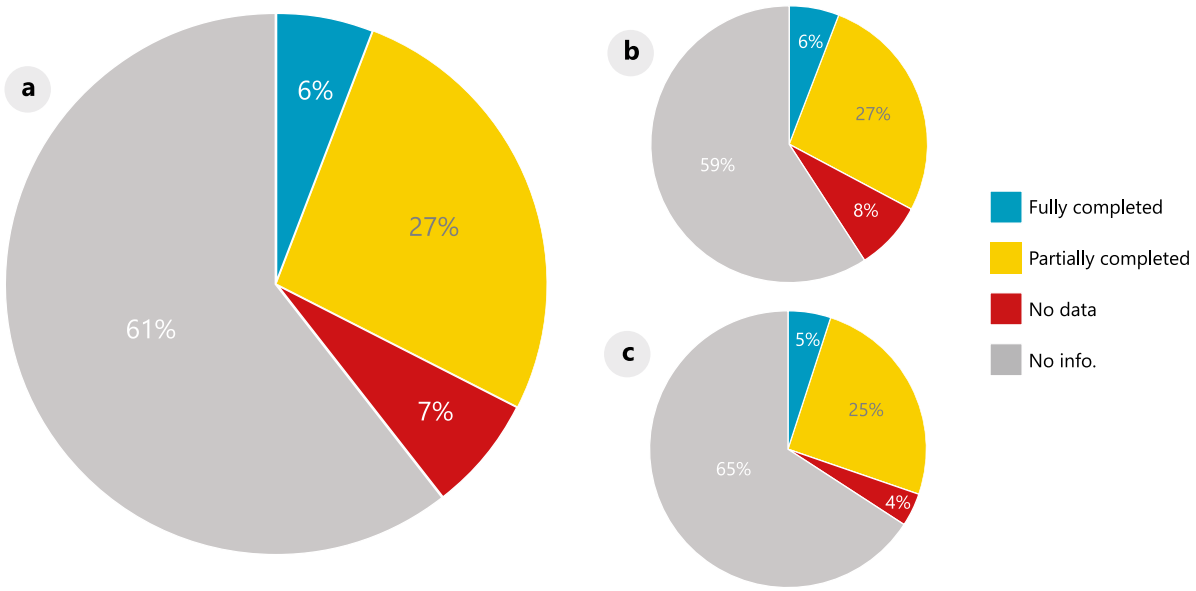


Figure 047: Socio-economic and cultural reference data available in MPAs with a national statute in the Mediterranean region (a, N=264), and more specifically in the EU (b, N=209) or non-EU (c, N=55) waters.

Regarding the presence of socio-economic and cultural reference data in national MPAs, Figure 047 shows that only 6 % of the MPAs with a national statute have complete data on this subject, the majority of the MPAs have only partial data (27 %) and 7 % have no reference data on this subject. The results are similar for both EU and non-EU countries.

II.3.2. Monitoring and evaluation system

Although basic data is often only partially available, the implementation of a monitoring programme can help to improve the availability of data. Having baseline knowledge in MPAs allows for the establishment of monitoring goals and strategy that should ideally be included in a management plan. Regular monitoring also allows assessment of management effectiveness through the development and use of indicators and is used for adaptive management. An example of a successful monitoring strategy for vulnerable species in the Marine Reserves of the Balearic Islands is presented in Box 7. Data about monitoring and evaluation (Figure 048) was available for 105 out of 264 MPAs with a national statute in the Mediterranean (40 %, MedPAN database). MPA managers were able to choose among the following possibilities:

- A good monitoring and evaluation system exists, is implemented and is used for adaptive management.
- A monitoring and evaluation system is implemented, but the results are not taken into account for the management of the MPA.
- There is some sort of monitoring or evaluation, but no overall strategy or no regular collection of results.
- There is no monitoring or evaluation in the MPA.

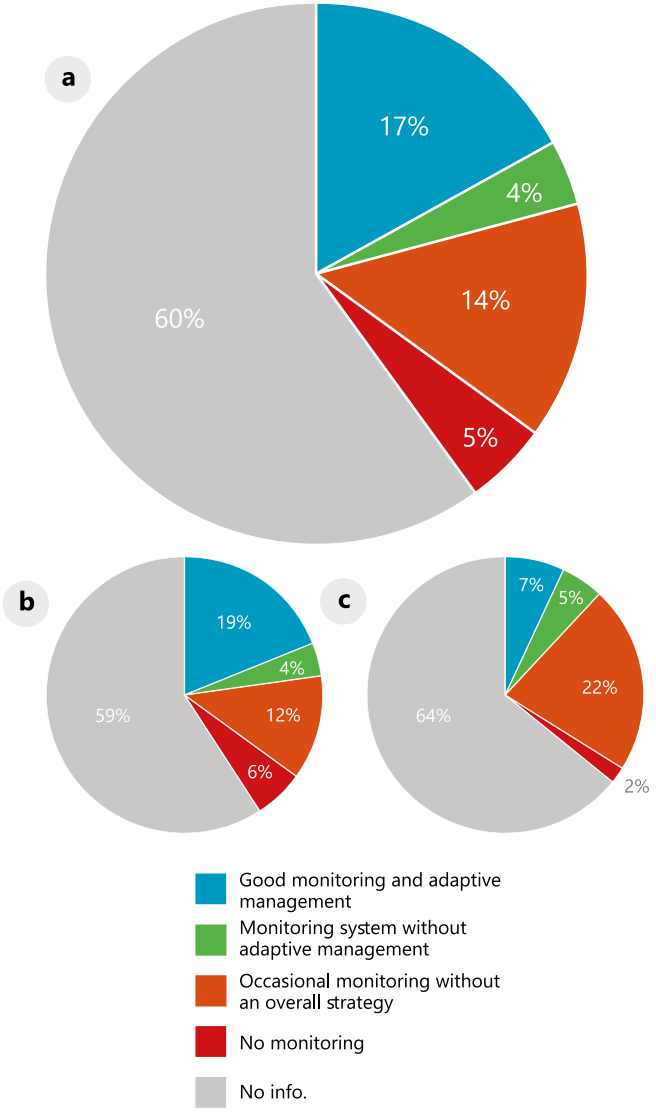


Figure 048: Monitoring and evaluation in MPAs with a national statute in the Mediterranean region (a, N=264), and more specifically in the EU (b, N=209) or non-EU (c, N=55) waters.

Figure 048 shows that 17 % of MPAs consider that a good monitoring and evaluation system exists, is implemented and is used for adaptive management. 4 % of MPAs consider that a monitoring and evaluation system is implemented, but the results are not taken into account for the management of the MPA. For 14 % of MPAs, there is some sort of monitoring or evaluation, but no overall strategy or no regular collection of results. Finally, 5 % declare that there is no monitoring or evaluation in the MPA. Data shows that outside the EU the proportion of MPAs with a good monitoring and evaluation system is lower (13 %), monitoring is done in a more opportunistic way and the most frequent system is the implementation of occasional monitoring without a general strategy (22 %).

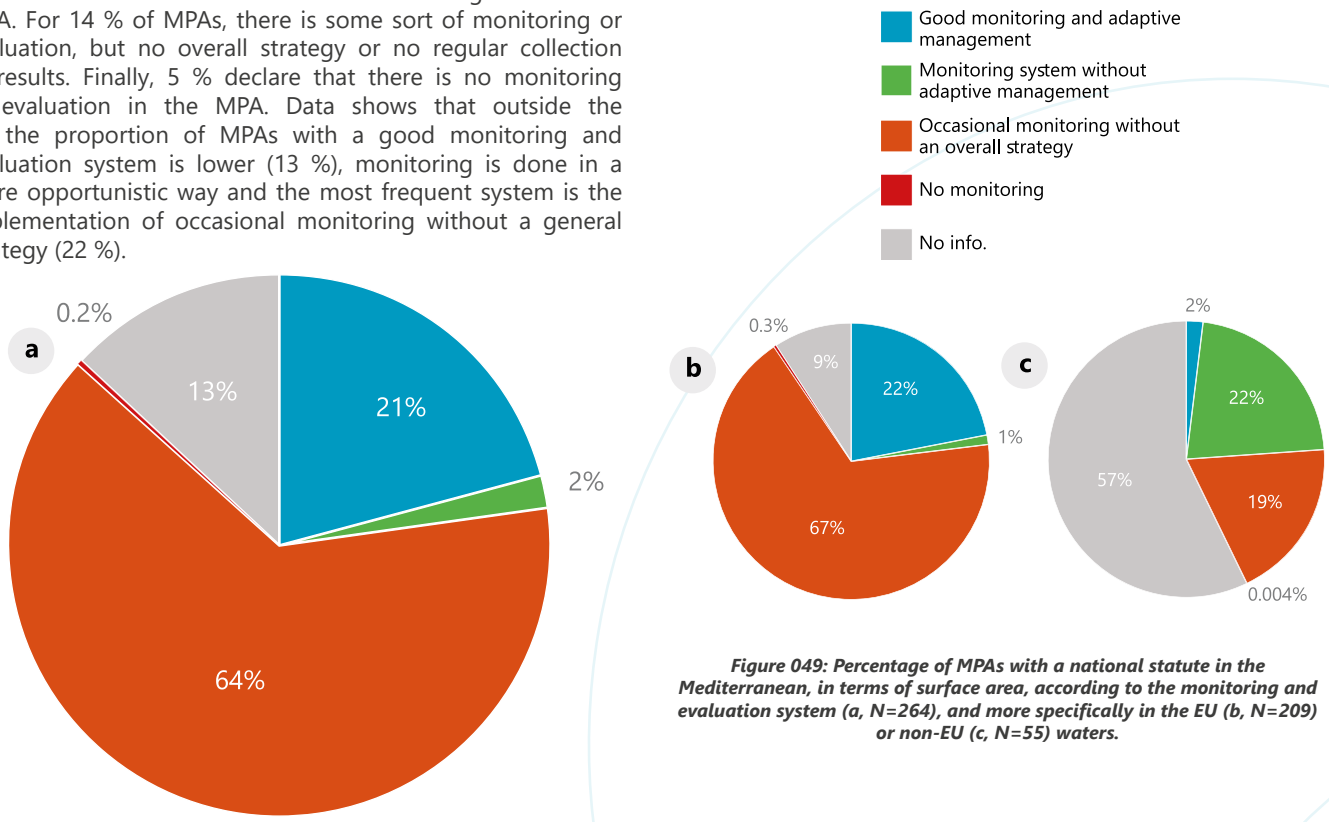


Figure 049: Percentage of MPAs with a national statute in the Mediterranean, in terms of surface area, according to the monitoring and evaluation system (a, N=264), and more specifically in the EU (b, N=209) or non-EU (c, N=55) waters.

In addition, data were analysed spatially in order to calculate the percentage of the surface area of MPAs with a national statute according to the monitoring and evaluation system. In terms of surface covered by MPAs, Figure 049 shows that MPAs with an occasional monitoring system prevail in the Mediterranean (64 %). This comes from the MPAs from the EU (67 %). Outside the EU, only 2 % of the area covered concerns MPAs with a good monitoring system. Most of the surface concerns MPAs with a monitoring system without adaptative management (22 %) or an occasional monitoring system (19 %).

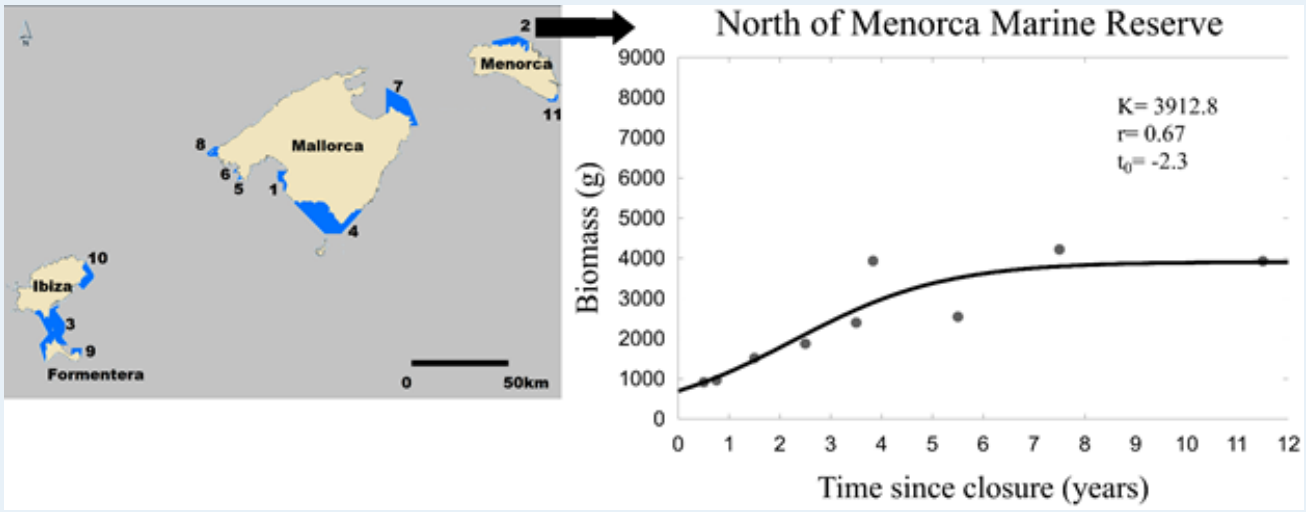
Box 7: The Marine Reserves in the Balearic Islands: a sub-regional MPA network under the scrutiny of science

A network of marine reserves has been established in the Balearic Islands (Spain) with the objective of regenerating the fisheries under exploitation and preserving the marine ecosystem.

The network is composed of 11 marine reserves (MR)[34], protecting 63,700 ha of marine waters along the different Islands of the archipelago (see Map 1). The system of MRs is trusted as a key tool for the management of local fisheries in the Balearic Islands. In 2000, the regional fisheries' administration in charge of the network set up a monitoring programme of the vulnerable fish species based on an underwater visual census. The programme has generated a valuable long-term series which provides precise information on how the biomass of vulnerable species responds to fishing closures and to the artisanal and recreational fishing activity operating in the fishing grounds of the MPAs. The results of this monitoring programme are used to assess managers on the establishment of fishing effort measures, which are designed in cooperation with the professional fishing sector. It has also provided a key tool to manage fisheries not only within the limits of the MPAs.

The time series of fish biomass within the integral reserves (closures or no-take areas) of these MPAs allowed managers to identify the carrying capacity of the vulnerable infralittoral rocky fish assemblages, thus the maximum fish biomass that these areas can support (Coll *et al.,* 2012). Further research demonstrated that this carrying capacity is strongly driven by the characteristics of the habitat protected. The finding allowed the development of numerical models predicting which would be the maximum potential biomass of fishes of any infralittoral rocky area eventually under protection, serving as a reference point, thus served to evaluate the potential in the conservation of any area (exploited or not) by comparing with the "good environmental status". This predictive model is a novel approach to managing littoral artisanal fisheries, monitoring marine ecosystems, and surveying and designing new MPAs (Coll *et al.,* 2013). It is also a fine example of the convergence of action between science and management and the positive effects that cooperation with local fishers operating in marine protected areas in the Mediterranean could provide.

[34] 1) Bahía de Palma (1982), 2) Norte de Menorca, 3) Freus de Ibiza y Formentera (1999), 4) Migjorn de Mallorca (2002), 5) isla del Toro and 6) Islas Malgrats (2004); 7) Levante de Mallorca and Cala Rajada (2007), 8) Freu de sa Dragonera (2016); 9) Punta de sa Creu and 10) costa noreste de Ibiza-Tagomago, 11) Illa de L'Aire (2019)



Map 1: The fisheries marine reserves in the Balearic Islands (left); Evolution of fish biomass within the no-take area of the Norte de Menorca MPA after 12 years of protection. Asymptotic values determine the carrying capacity (K), which informs about the maximum biomass in the MPA.

Citation: Amengual P., Alvarez-Berastegui D., (2023). Box 7: The Marine Reserves in the Balearic Islands: a sub-regional MPA network under the scrutiny of science. In "The 2020 Status of Marine Protected Areas in the Mediterranean" (MedPAN and UNEP/ MAP-SPA/RAC, 2023).

II.3.3. Socio-economic benefits

II.3.3.1. Assessment of socio-economic benefits

Data about the assessment of socio-economic benefits (Figure 050) was available for 103 out of 264 MPAs with a national statute in the Mediterranean (39 %, MedPAN database).

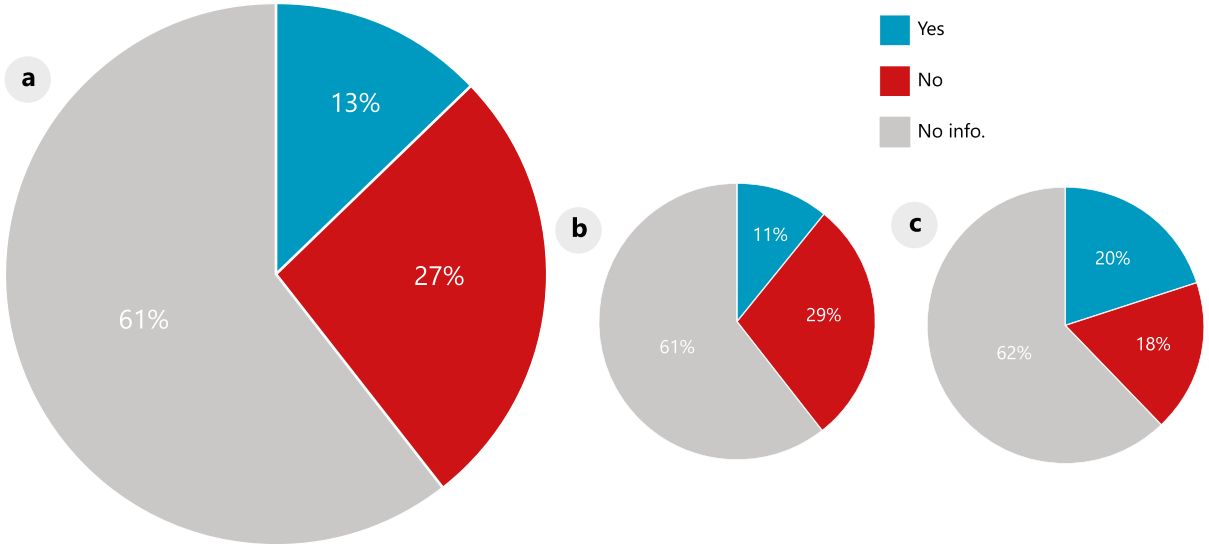


Figure 050: Assessment of socio-economic benefits in MPAs with a national statute in the Mediterranean region (a, N=264), and more specifically in the EU (b, N=209) or non-EU (c, N=55) waters.

Results show that among the national MPAs, 13 % declare having carried out an assessment of the socio-economic benefits provided by the MPA to the local community (in and around the MPA). For 27 % of them, no assessment has been carried out. This information is not available for 61 % of the national MPAs. The assessment of the socio-economic benefits provided by the national MPAs surveyed is more common in non-EU countries, with 20 % of them indicating that they had carried out such an assessment. In EU countries' MPAs, only 11 % have carried out an assessment of these benefits.

II.3.3.2. Socio-economic benefits provided to local communities

A successful MPA is an MPA that achieves conservation results and is likely to provide socio-economic benefits to local communities (income for local actors, tourist attractiveness, sense of well-being of the local population, etc.). Data about the socio-economic benefits provided to local communities (Figure 051) was available for 101 out of 264 MPAs with a national statute in the Mediterranean (38 %, MedPAN database). MPA managers were able to choose among the following possibilities:

- There are significant socio-economic benefits for local communities.
- There are some socio-economic benefits for local communities, but they are of moderate importance.
- The potential socio-economic benefits are recognised and plans to take advantage of them are being developed.
- The MPA does not provide any socio-economic benefits to local communities.

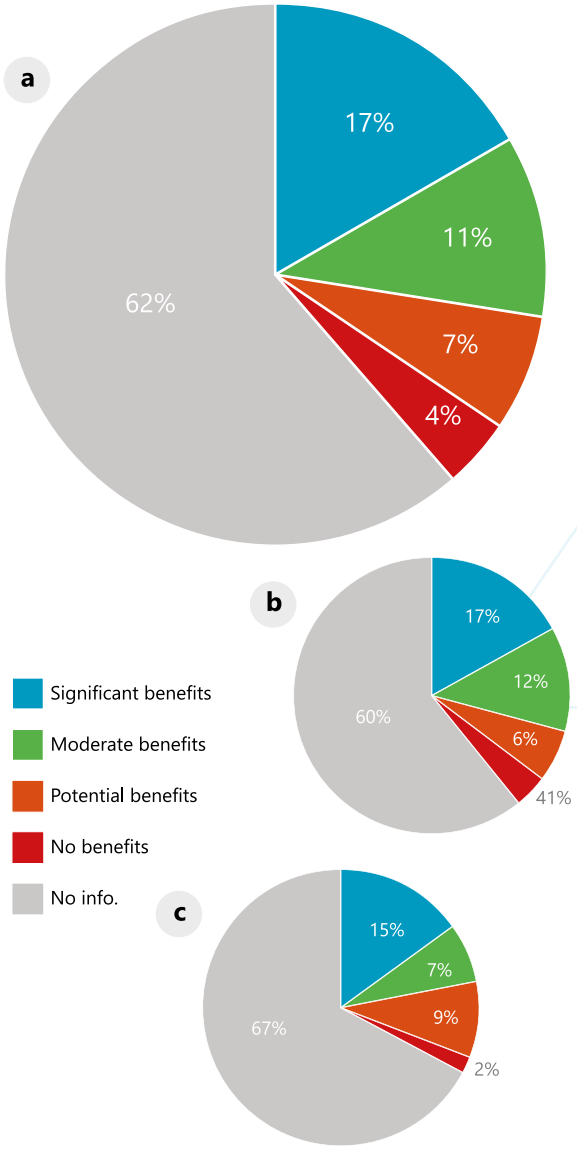


Figure 051: Socio-economic benefits to local communities in MPAs with a national statute in the Mediterranean region (a, N=264), and more specifically in the EU (b, N=209) or non-EU (c, N=55) waters.

Figure 051 shows that the majority of national MPAs (17 %) consider that there are significant socio-economic benefits for local communities. For 11 % of the MPAs, there are some moderate socio-economic benefits, 7 % consider that potential socio-economic benefits are recognised. Finally, 3 % stated that the MPA does not provide any socio-economic benefits to local communities. Trends are similar for EU and non-EU countries.

II.4. Key ingredients for effective MPAs with a national statute

There are several factors that determine the success of an MPA, and their specific weight will depend on the characteristics of each MPA. In general terms, the following factors have been widely identified as clear contributors to MPA success (e.g., Giakoumi *et al.*, 2018, IUCN-WCPA 2018) and are included as enabling conditions in the MPA Guide (Grorud-Colvert *et al.*, 2021):

- Resources and capacity to effectively implement.
- Baseline and monitoring data (ecological and socio-economic).
- Supporting legislation.
- Sound planning and design.
- Explicit objectives.
- Strong social networks and communication.
- Good governance and high level of stakeholder participation.
- Enforcement and surveillance.
- Effective management.
- Conservation outcomes.
- Leadership.

Some of these factors have already been analysed in this study in previous sections of this chapter (i.e., Resources and capacity to effectively implement; Baseline and monitoring data (ecological and socio-economic)) or in other chapters (Good governance and high level of stakeholder participation in Chapter 1; Enforcement and surveillance in Chapter 3). In this section, four more factors are being investigated from that list: Supporting legislation; Sound planning and design (i.e., management plan); Explicit objectives; and Strong social networks and communication.

Data from MAPAMED and the MedPAN database (see the general methodology section for more information) were used to carry out the analysis of key ingredients for effectiveness regarding the 264[Among those MPAs, 257 are officially designated MPAs and 7 are "paperless" MPAs (i.e., management actions in the field without official designation) that are not yet included in MAPAMED (cf., Methodology).] MPAs with a national statute in the Mediterranean.

II.4.1. Flexibility of legislation

The legislative framework of MPAs should be flexible enough to permit adaptive management in response to environmental changes, trends of populations, new pressures detected, or any indication that an undesirable change is taking place in the protected area. Data about the flexibility of legislation (Figure 052) was available for 113 out of 264 MPAs with a national statute in the Mediterranean (43 %, MedPAN database). MPA managers were able to choose among the three following possibilities:

- Yes, the legislation provides sufficient flexibility to implement adaptive management (operational objectives and related regulations may be changed quite easily according to emerging needs and challenges).
- Partially, the legislation provides flexibility to some extent, but there is limited room to adapt management.
- No, the legislation is quite rigid and adapting the management would require changing the law.

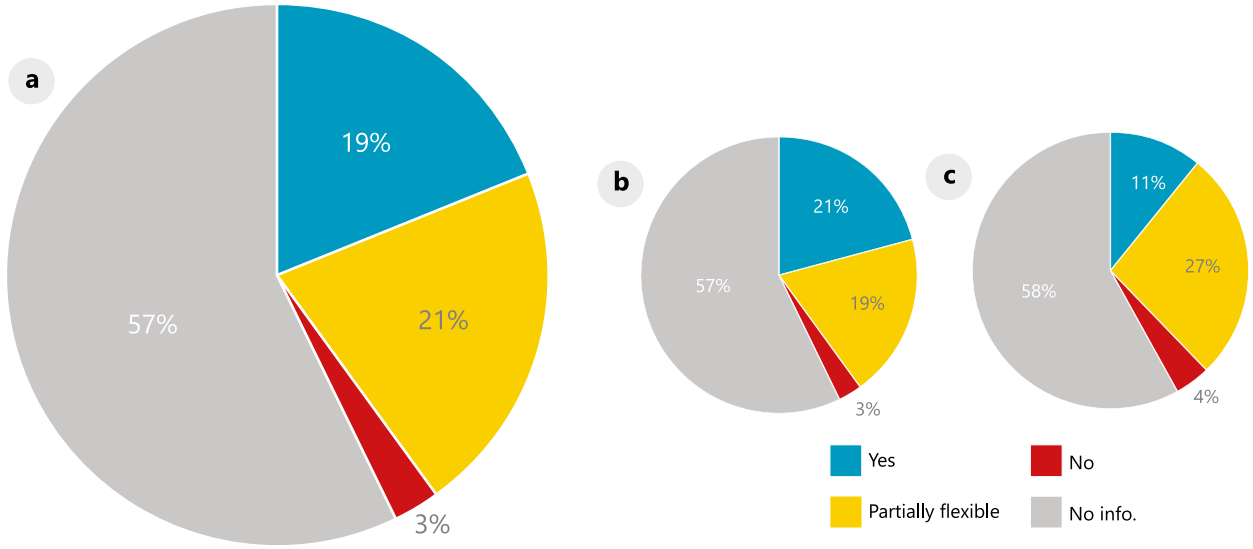


Figure 052: Flexibility of legislation of MPAs with a national statute in the Mediterranean region (a, N=264), and more specifically in the EU (b, N=209) or non-EU (c, N=55) waters.

Figure 052 shows that for 19 % of the national MPAs in the sample, the legislation is considered flexible enough to allow for adaptive management. For 21 % of the national MPAs, the legislation provides flexibility to some extent, but there is limited room to adapt management. Finally, for 3 % of national MPAs, the legislation is quite rigid and adapting the management would require changing the law. Results show that the legislation seems more flexible in MPAs from EU countries than from non-EU countries, with 21 % describing the legislation as flexible in the EU compared to 11 % outside the EU. In fact, in non-EU countries, the majority of respondents rate the legislation as partially flexible (27 %).

II.4.2. Management plan

II.4.2.1.Presence and implementation of a management plan

Data about the presence and implementation of a management plan (Figure 053) was available for 270 out of 1,087 MPAs in the Mediterranean (25 % of the MPAs in terms of numbers, 75% of the area covered by MPAs in the Mediterranean, MAPAMED database). We consider as a management plan any document describing all the four following elements:

- Governance of the MPA,
- Long-term objectives of the MPA,
- Management objectives of the MPA,
- Regulations and zoning of the MPA.

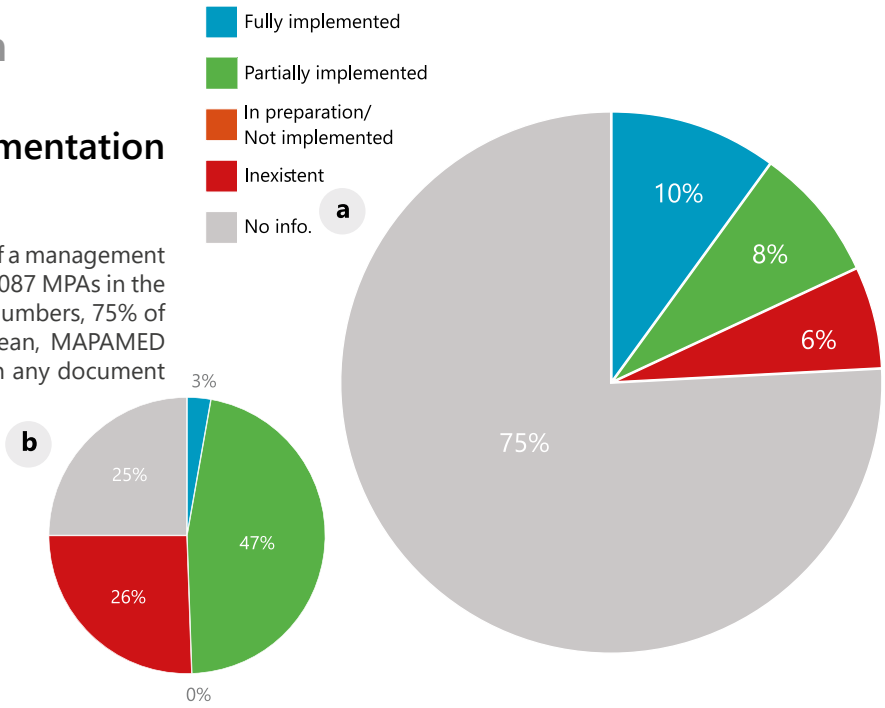


Figure 053: Status of management plans in MPAs in the Mediterranean region (a, N=1,087), and percentage, in terms of surface area (b), according to the degree of implementation of the management plans.

[35] Among those MPAs, 257 are officially designated MPAs and 7 are "paperless" MPAs (i.e., management actions in the field without official designation) that are not yet included in MAPAMED (cf., Methodology).

Figure 053 a shows that a management plan is fully implemented for 10 % of the MPAs, whilst it is partially implemented for 8 %. Moreover, in 6 % of the MPAs, there is no management plan. This information is not available for 75 % of the MPAs in the Mediterranean. In terms of the surface covered by MPAs, Figure 053b shows that MPAs with a partially implemented management plan prevail in the Mediterranean (47 %, i.e., about 3.9 % of the Mediterranean). MPAs with no management plan represent 26 % of the covered area (i.e., about 2.1 % of the Mediterranean), while the MPAs with a fully implemented management plan represent only 3 % (i.e., about 0.2 % of the Mediterranean).

If we focus on national MPAs, data about the presence and implementation of a management plan (Figure 054) was available for 129 out of 257 MPAs with a national statute in the Mediterranean (50 %, MAPAMED database).

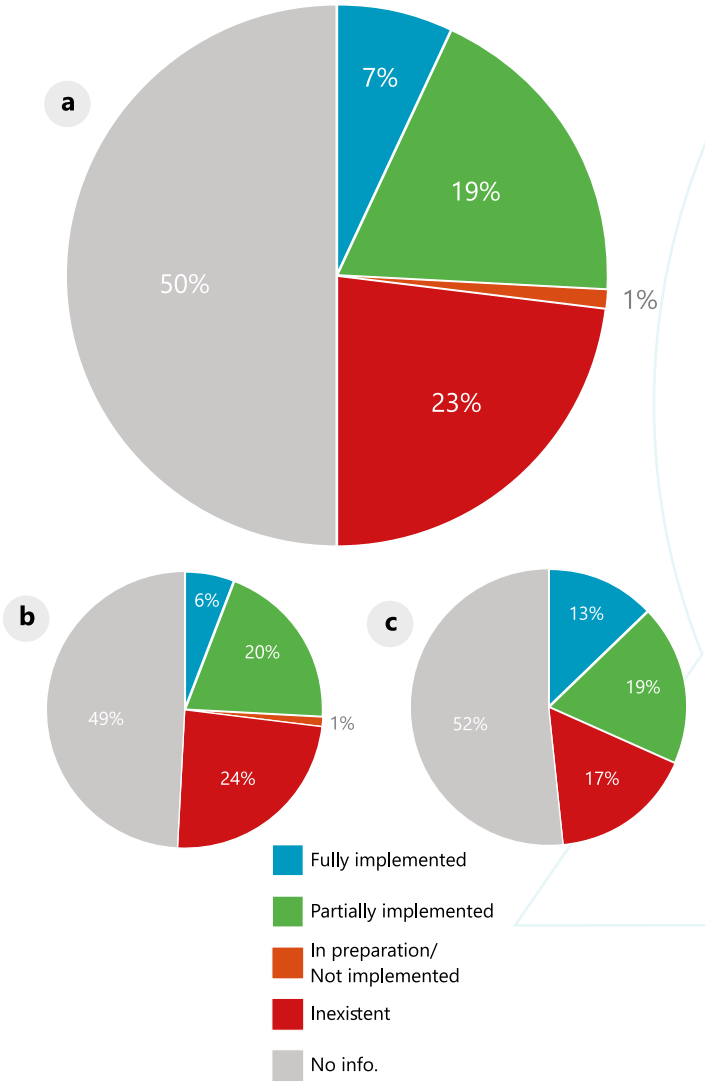


Figure 054: Status of management plans in MPAs with a national statute in the Mediterranean region (a, N=257), and more specifically in the EU (b, N=209) or non-EU (c, N=48) waters.

Figure 054 shows that a management plan is fully implemented in only 7 % of the national MPAs, whilst it is partially implemented in 19 %. Moreover, there is no management plan in 23 % of the national MPAs. The presence and implementation of a management plan are more common in national MPAs outside the EU, with 13 % of non-EU MPAs having a fully implemented management plan, compared to 6 % in European national MPAs. In the EU, 24 % do not have a management plan.

In addition, data were analysed spatially in order to calculate the percentage of the surface area of MPAs with a national statute according to the degree of implementation of their management plan (Figure 055).

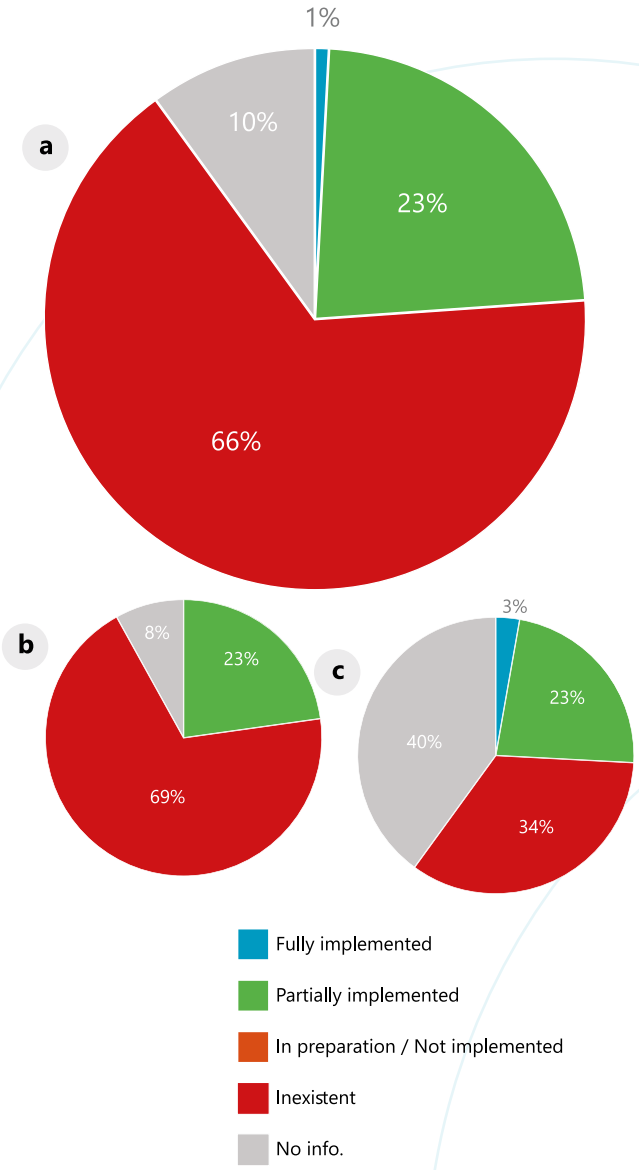


Figure 055: Percentage of MPAs with a national statute in the Mediterranean, in terms of surface area, according to the degree of implementation of the management plan (a, N=264), and more specifically in the EU (b, N=209) or non-EU (c, N=55) waters.

The analysis by area of the implementation of management plans reveals a very different picture from the analysis by number (Figure 055): in terms of coverage, the vast majority (66 %) of the MPAs do not have a management plan, and 23 % have a partially implemented management plan. The portion covered by an operational management plan amounts to 1 %, a figure that is close to zero when considering Europe alone, and about 3 % for non-European countries.

II.4.2.2. Revision and update of the management plan

In this analysis, we only considered the national MPAs that indicated a fully or partially implemented management plan. Data about the revision and update of the management plan (Figure 056) was available for 57 out of 70 MPAs with a national statute in the Mediterranean, having an implemented management plan (81 %, MedPAN database). A management plan was considered updated if it had been reviewed and updated at the end of its stipulated period of validity, or if it was less than 10 years old.

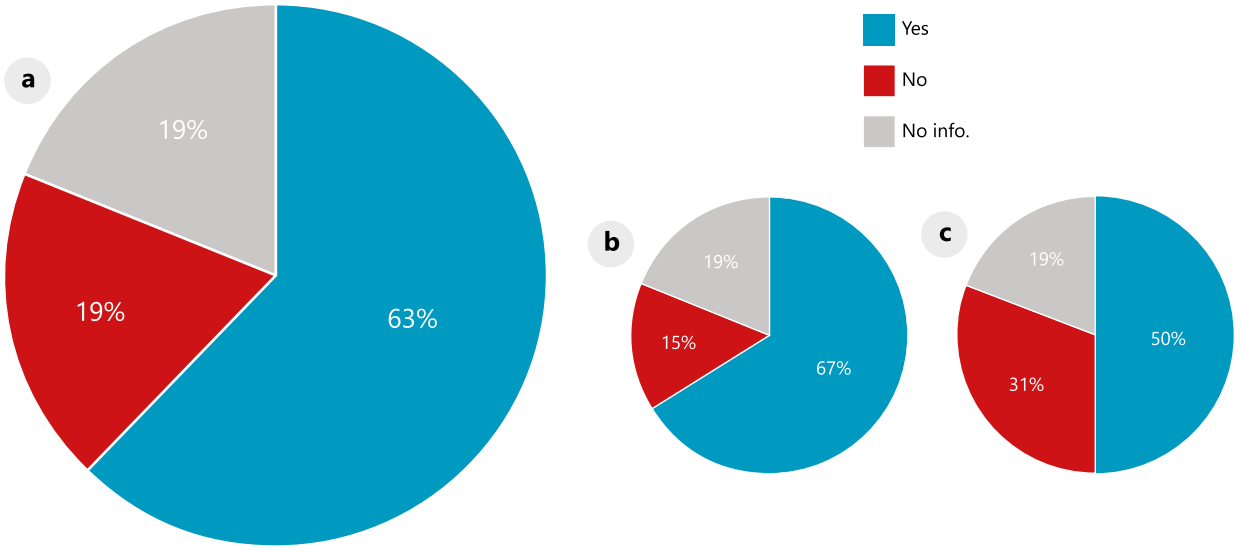


Figure 056: Revision and update of the management plan in MPAs with a national statute (having an implemented management plan) in the Mediterranean region (a, N=70), and more specifically in the EU (b, N=54) or non-EU (c, N=16) waters.

Figure 056 shows that 63 % of national MPAs in the sample have a management plan that has been updated or is less than 10 years old. For 19 % of them, it is not the case. This information is not available for 19 % of national MPAs that have implemented their management plan. In EU MPAs, there is a higher percentage of updated or recent (i.e., < 10 years) management plans (67 %) than in non-EU national MPAs (50 %).

II.4.2.3. Legal value of the management plan

In this analysis, we only considered the national MPAs that indicated a fully or partially implemented management plan. Data about the legal value of the management plan (Figure 057) was available for 57 out of 70 MPAs with a national statute in the Mediterranean, having an implemented management plan (81 %, MedPAN database).

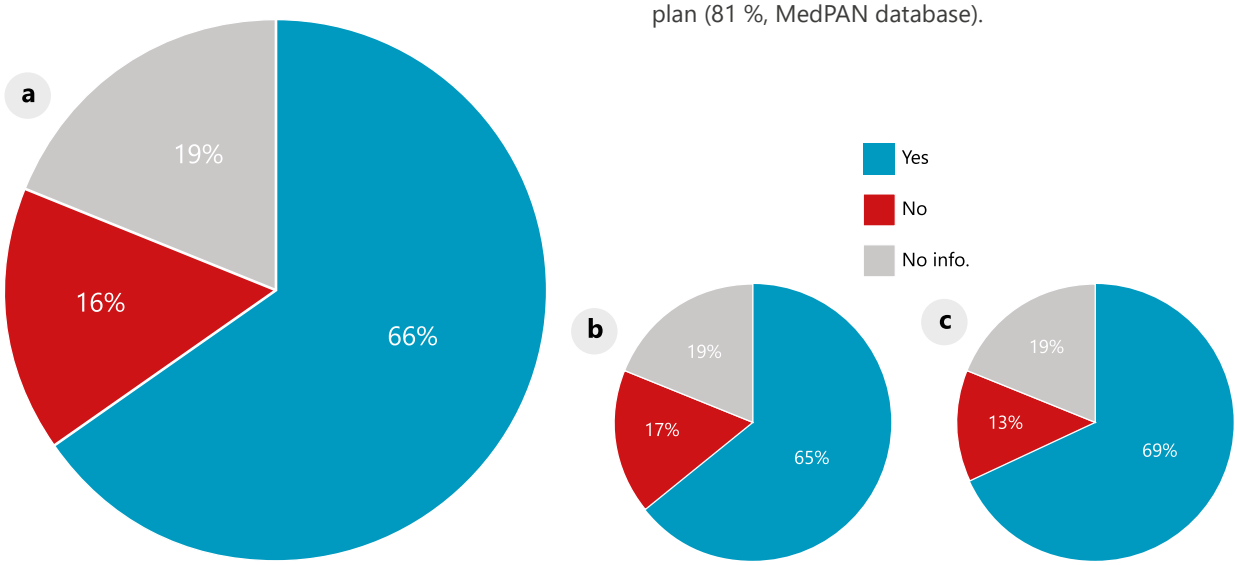


Figure 057: Legal value of the management plan in MPAs with a national statute (having an implemented management plan) in the Mediterranean region (a, N=70), and more specifically in the EU (b, N=54) or non-EU (c, N=16) waters.

Figure 057 shows that for the majority of MPAs with a national statute (66 %), the management plan is endorsed by a legal provision. For 16 % it is not the case. This information is not available for 19 % of the national MPAs that have implemented their management plan. There are no significant differences between EU and non-EU MPAs: for the vast majority of national MPAs, the management plan is endorsed by a legal provision (65 % in the EU and 69 % outside the EU).

II.4.3. MPAs objectives

II.4.3.1. Long-term objectives

MPAs' long-term objectives are the reasons behind the decision to create them, and they may vary depending on the type of MPA designated. They can be described in the MPA creation text or derived from the type of designation. Data about the long-term objectives (Figure 058) was available for 126 out of 264 MPAs with a national statute in the Mediterranean (48 %, MedPAN database). In the following analysis, the long-term objectives have been classified under the following 11 categories[36]:

- To maintain, conserve and restore biodiversity, natural heritage of habitats, species and landscapes under protection status.
- To maintain, conserve and restore biodiversity, natural heritage of habitats, species and landscapes out of protection status.
- To maintain key ecological functions (spawning areas, nursery, feeding zones, rest areas, productivity areas, etc.).
- To protect, preserve and restore cultural heritage.
- To promote sustainable management / development of socio-economic activities.
- To manage natural resources exploitation.
- To improve governance on the MPA territory.
- To improve water quality.
- To educate in environmental issues and improve public awareness.
- To foster scientific research.
- To create socio-economic added value.

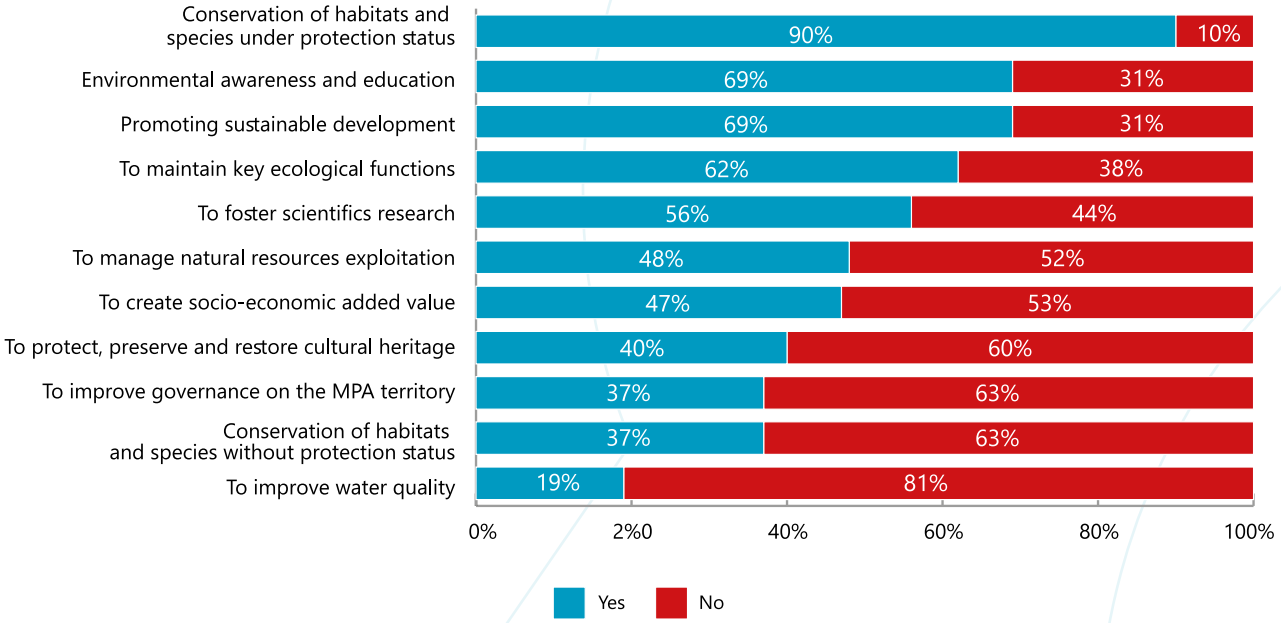


Figure 058: Occurrence rate, for each long-term objective, in MPAs with a national statute in the Mediterranean region (N=126).

Figure 058 shows that for almost all national MPAs in the Mediterranean (90 %), the conservation of habitats and species under protection status is a long-term objective of the MPA. The next most represented objectives of national MPAs are to promote sustainable development (69 %), raise environmental awareness and education (69 %) and maintain key ecological functions (62 %). Roughly half of the national MPAs also report having the objective of encouraging scientific research (56 %), managing the exploitation of natural resources (48 %) or creating socio-economic added value (47 %). Improving water quality is less of a priority (19 %) for Mediterranean MPAs.

[36] Inspired by the eight purposes for creating an MPA formulated in the French "National Strategy for the creation and management of marine protected areas" (version adopted in March 2012).

II.4.3.2. Definition of clearly measurable management objectives

In addition to long-term objectives, often linked to the type of designation of a site, MPAs also have management objectives. These are linked to the local context and are therefore specific from one MPA to another, although similarities may be found from one site to another. These objectives help to guide the management actions of the MPA more precisely. If they are clearly defined, it will then be possible to measure, through indicators, their level of achievement and adapt management actions accordingly. Data about the definition of clearly measurable management objectives (Figure 059) was available for 97 out of 264 MPAs with a national statute in the Mediterranean (37 %, MedPAN database).

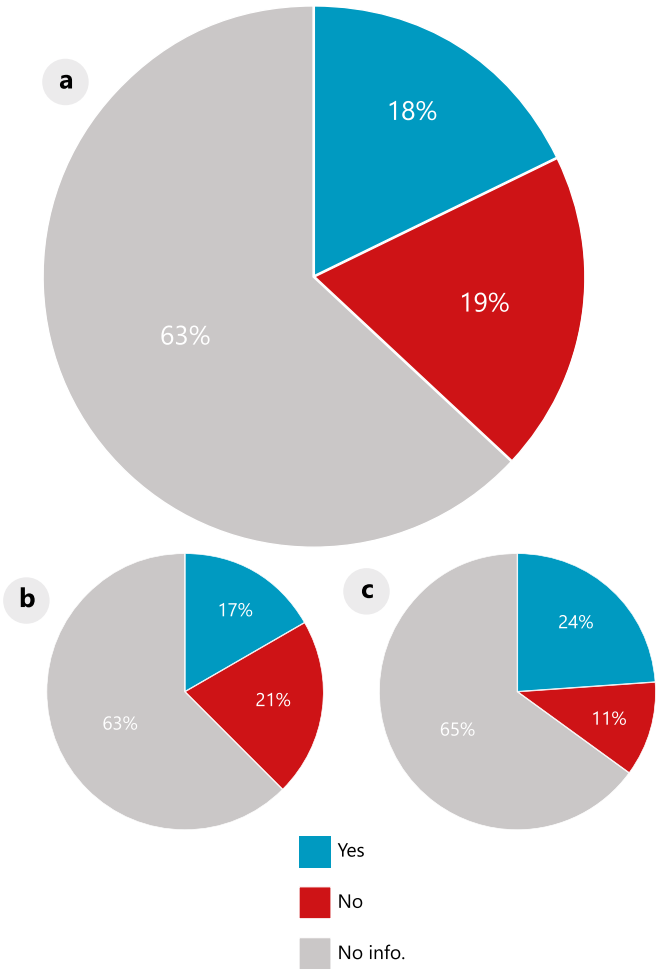


Figure 059: Definition of clearly measurable management objectives in MPAs with a national statute in the Mediterranean region (a, N=264), and more specifically in the EU (b, N=209) or non-EU (c, N=55) waters.

Figure 059 shows that for national MPAs, only 18 % have clearly defined measurable objectives and 19 % have declared having no clearly measurable management objectives. This information is not available for 63 % of the national MPAs. Interestingly, in non-EU national MPAs 24 % have reported having clearly defined measurable objectives, whereas only 17 % of EU national MPAs report having such objectives in place.

II.4.3.3. Achievement of management objectives

Among the 48 MPAs with a national statute that indicated that they had defined management objectives, 35 MPAs (73 %) provided more information. They were asked to list between 1 and 10 objectives and to indicate, for each, the following information:

- its priority,
- the degree to which they thought the objective is met,
- the trend or evolution of the situation with regard to the objective.

The number of objectives listed by those 35 MPAs is 195, which represents an average of about 5 objectives per MPA. The priority level was indicated for 160 of these objectives (Figure 060).

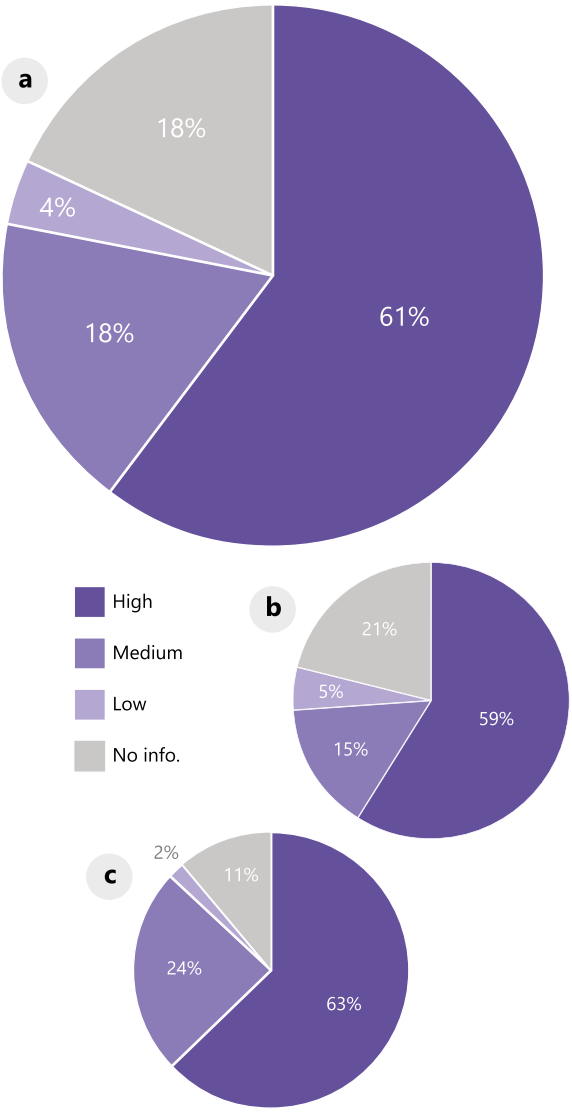


Figure 060: Description of the priority levels of the management objectives in MPAs with a national statute in the Mediterranean region (a, 195 objectives listed by 35 MPAs), and more specifically in the EU (b, 133 objectives listed by 25 MPAs) or non-EU (c, 62 objectives listed by 10 MPAs) waters.

Of these 195 objectives, 61 % are classified as high priority, 18 % as medium priority and 4 % as low priority. The level of priority was not provided for 35 objectives (18 %).

Regarding the level of achievement, the analyses were carried out on the 118 management objectives with a high priority.

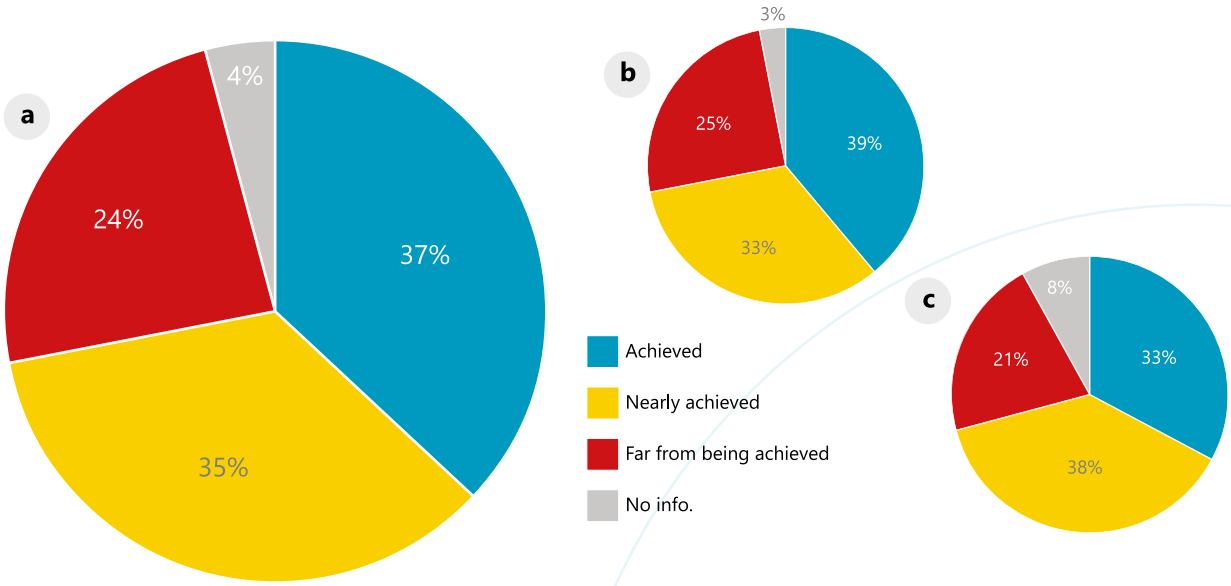


Figure 061: Achievement of the high priority management objectives in MPAs with a national statute in the Mediterranean region (a, 118 objectives listed by 29 MPAs), and more specifically in the EU (b, 79 objectives listed by 20 MPAs) or non-EU (c, 39 objectives listed by 9 MPAs) waters.

Focusing on the priority operational objectives within these national MPAs (Figure 061), the majority of these (37 %) are considered to be achieved, 35 % are defined as almost achieved and a quarter (24 %) are declared as far from being achieved. This figure is similar between EU and non-EU countries.

Regarding the trend or evolution of the situation concerning the objectives, the analyses were also carried out on the 118 management objectives with a high priority.

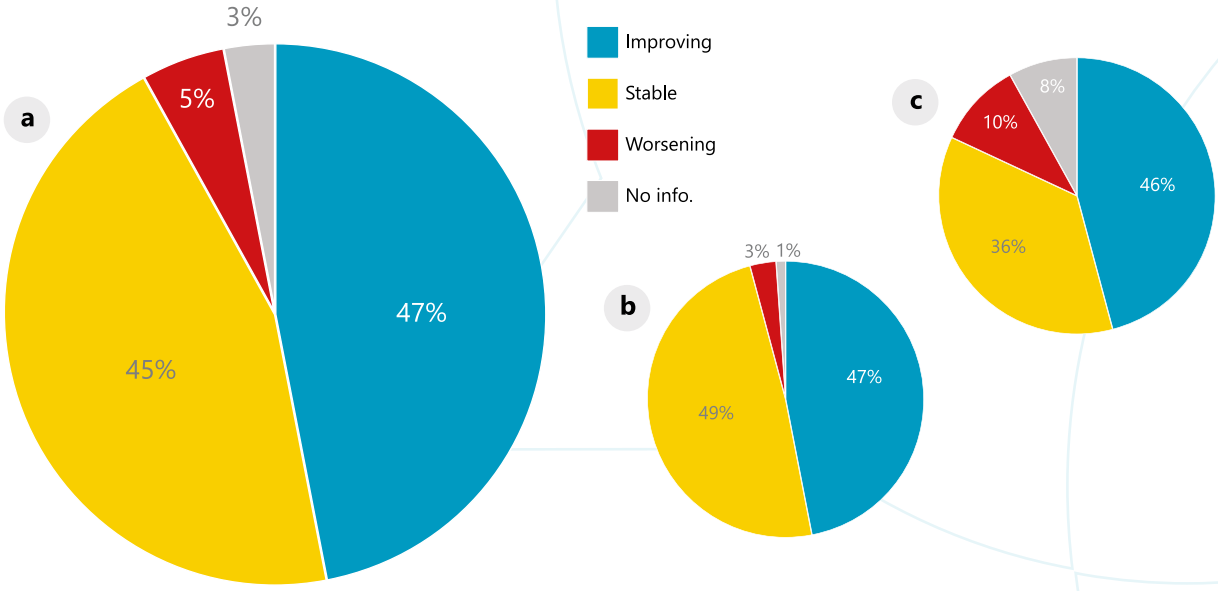


Figure 062: Trend of the high priority management objectives in MPAs with a national statute in the Mediterranean region (a, 118 objectives listed by 29 MPAs), and more specifically in the EU (b, 79 objectives listed by 20 MPAs) or non-EU (c, 39 objectives listed by 9 MPAs) waters.

Figure 062 shows that for 47 % of the high-priority management objectives, the situation has evolved positively, whilst for 45 % of these objectives the situation has been reported as stable and not improving. For 5 % of the high-priority objectives, MPAs reported a worsening of the situation. This trend is less prevalent in EU MPAs with only 3 % of their priority objectives worsening against 10 % in the non-EU MPAs.

II.4.3.4. Scientifically-based indicators to assess MPA management effectiveness

Data about scientifically-based indicators to assess MPA management effectiveness (Figure 063) was available for 93 out of 264 MPAs with a national statute in the Mediterranean (35 %, MedPAN database).

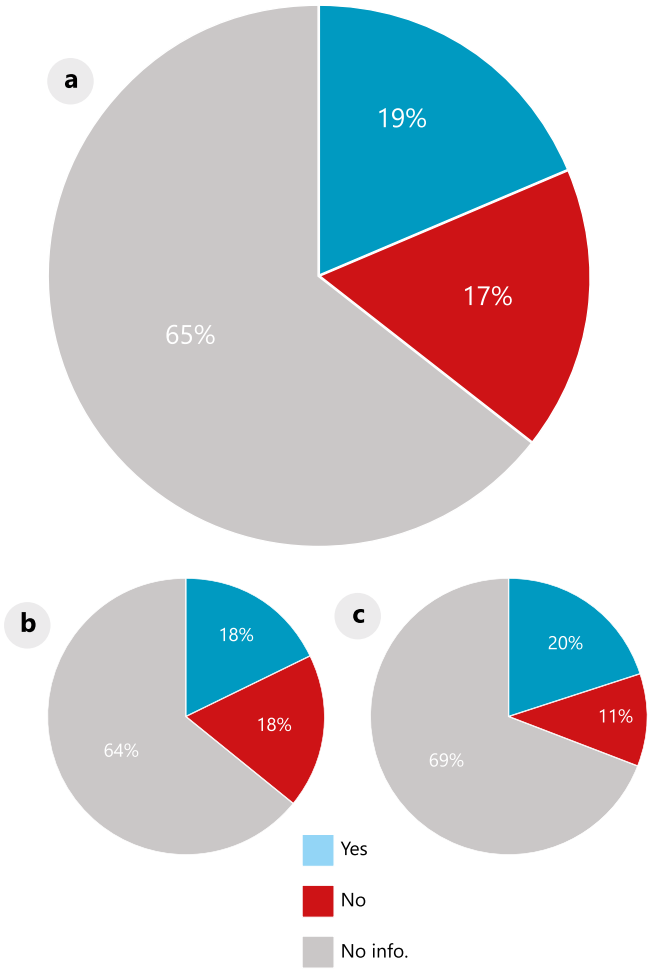


Figure 063: Scientifically-based indicators to assess MPA management effectiveness in MPAs with a national statute in the Mediterranean region (a, N=264), and more specifically in the EU (b, N=209) or non-EU (c, N=55) waters.

Figure 063 shows that 19 % of national MPAs have scientifically-based indicators to assess MPA management and that 17 % do not have such indicators. This information is not available for 65 % of the national MPAs. The results were similar for EU and non-EU MPAs.

II.4.4. Communication

II.4.4.1. Communication strategy

Data about the presence of a communication strategy (Figure 064) was available for 81 out of 264 MPAs with a national statute in the Mediterranean (31 %, MedPAN database).

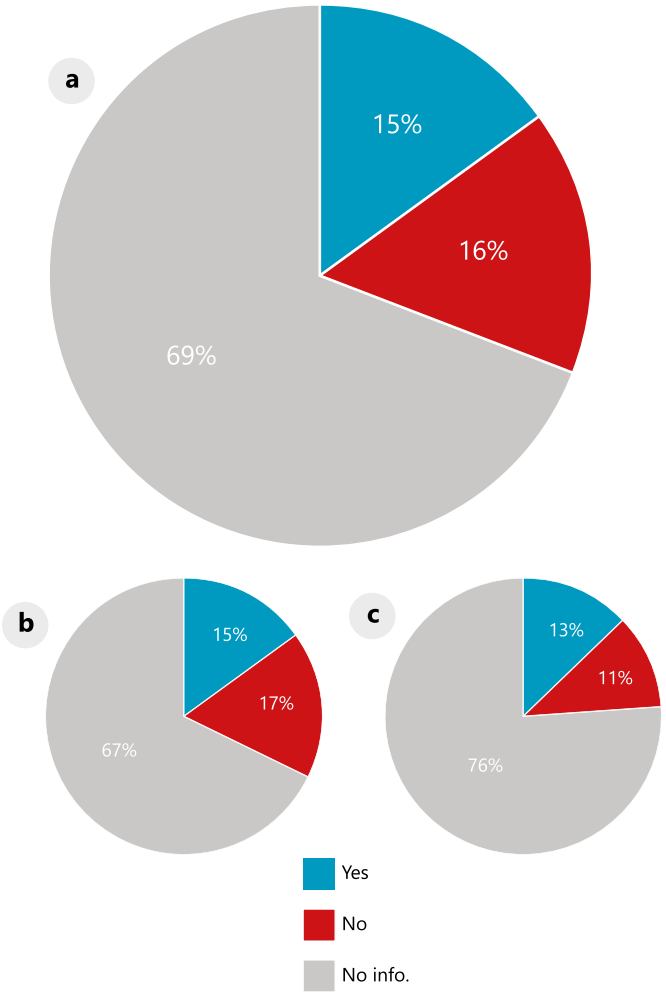


Figure 064: Communication strategy in MPAs with a national statute in the Mediterranean region (a, N=264), and more specifically in the EU (b, N=209) or non-EU (c, N=55) waters.

Figure 064 shows that 15 % of national MPAs report that they have a communication strategy, 16 % that they do not, and for the other 69 % the information is not available. This figure is similar between EU and non-EU countries.

II.4.4.2. Communication tools

Data about the tools used by MPA managers to communicate (Figures 065 and 066) was available for a maximum of 89 sites, out of 264 MPAs with a national statute in the Mediterranean (34 %, MedPAN database).

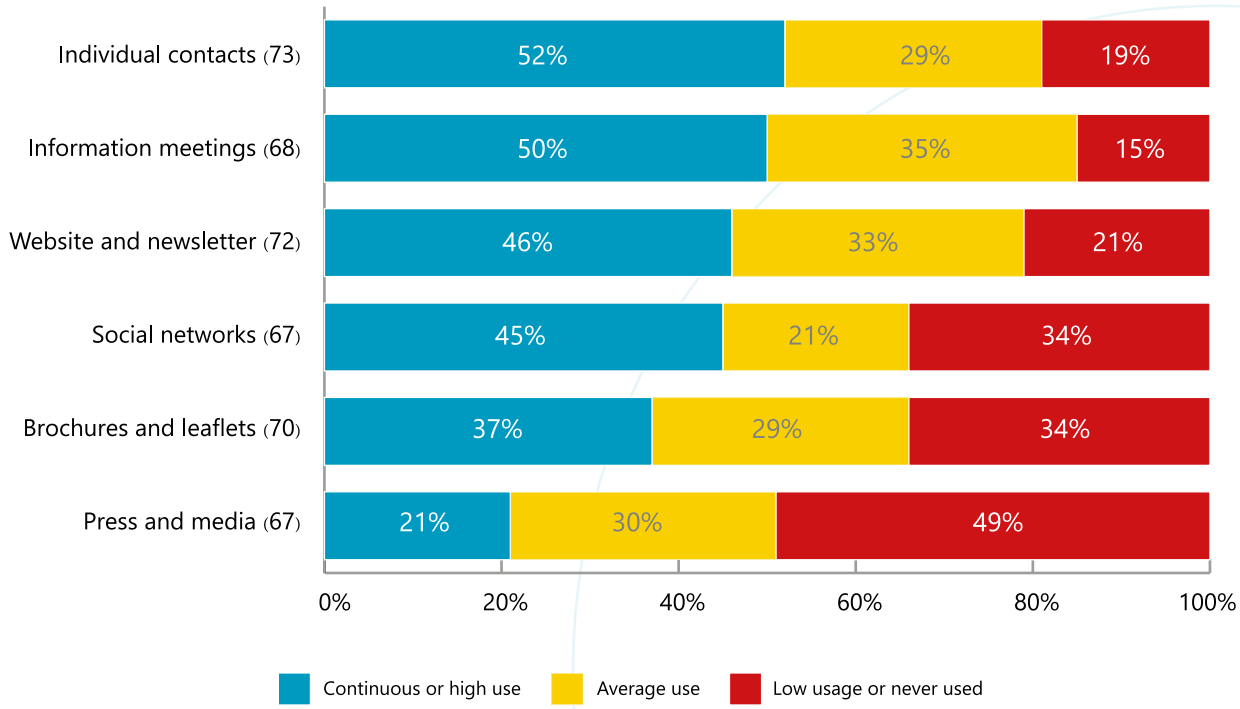


Figure 065: Preferred means of communication in MPAs with a national statute in the EU waters (numbers in brackets indicate the sample size).

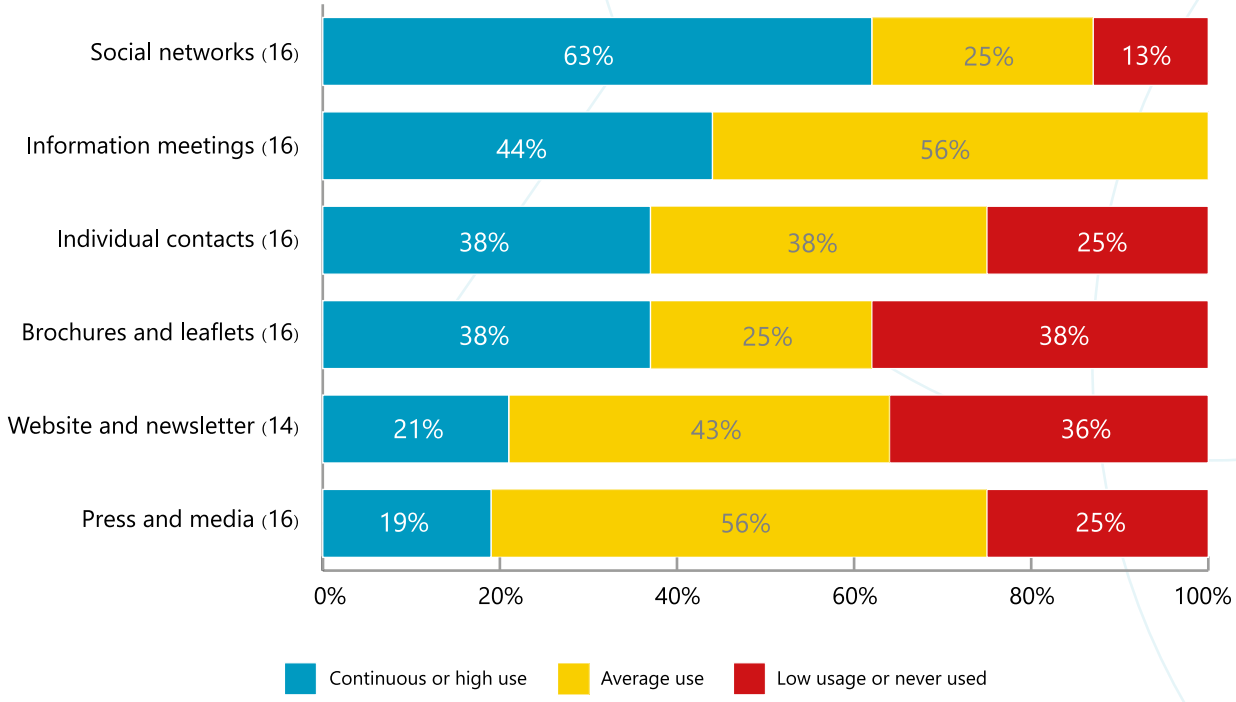


Figure 066: Preferred means of communication in MPAs with a national statute in the non-EU waters (numbers in brackets indicate the sample size).

At the EU level, Figure 065 shows that direct contact with users remains the preferred means of communication for national MPAs, with 52 % of them being regular users (continuous or high use). It is ahead of information meetings (50 %), which are still ahead of websites and newsletters (46 %), and ahead of social networks (45 %). Paper media (brochures, flyers, etc.) are used slightly less frequently (37 %), and press and media come last, with 21 % of regular users. At the non-EU level, Figure 066 shows that social network is the preferred means of communication for national MPAs, with 63 % of them being regular users. Even if information meetings only have 44 % of regular users, there is no MPA in the sample that never uses it (at least an average use). Then, direct contact and paper media have both 38 % of regular users. It is worth noting that direct contact has more average users than paper media, which is also the communication tool with the most important rate of low usage or non-users (38 %). The less frequently used communication tools are websites and newsletters (21 %) and press and media (19 %).

II.4.4.3. Quality of communication

Data about the quality of communication with the different actors (Figure 067) was available for 101 out of 264 MPAs with a national statute in the Mediterranean (38 %, MedPAN database).

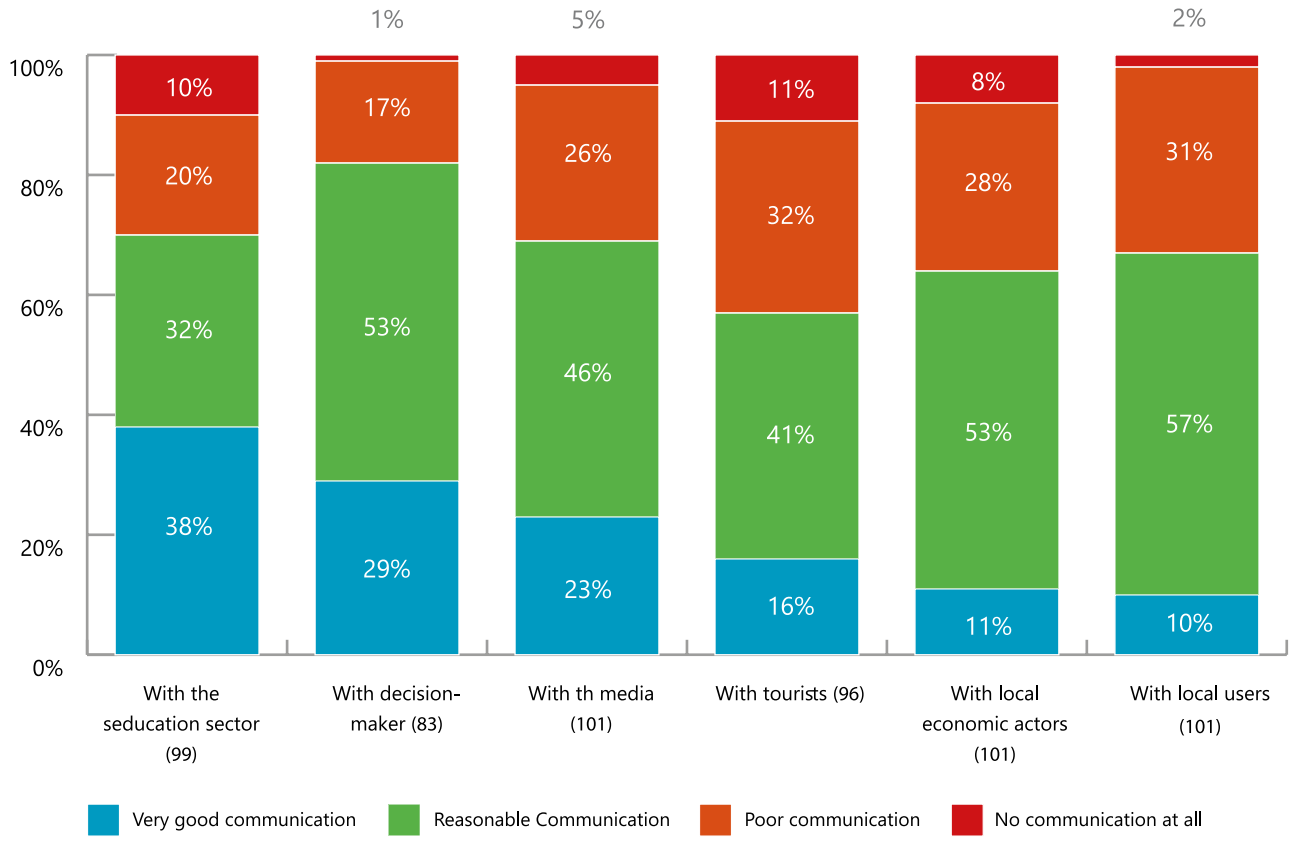


Figure 067: Quality of communication in MPAs with a national statute in the Mediterranean region. Numbers in brackets indicate the number of MPAs with a national statute for which the data is available.

Figure 067 shows that the education sector appears to be a privileged partner with whom communication is judged satisfactory by more than two-thirds of the sample, including 38 % who consider it "very good". Decision-makers also seem to provide effective communication, even if it is perceived with less enthusiasm (29 % 'very good' and 53 % 'reasonable'). Communication with the media, local users and economic players appears to be fairly satisfactory overall. Communication between MPAs and tourists seems to be the most challenging (32 % considered insufficient and 11 % no communication), but 16 % of MPAs still find it very good.

II.5. Concluding remarks on means for effective management of Mediterranean MPAs

The results of this chapter are based on a total of 152 responses for 264 known MPAs with a national statute in the Mediterranean, resulting in an overall participation rate of 58 %. This provides a good understanding of the current situation in Mediterranean MPAs, although the situation may be worse than what is portrayed by the results. It is likely that the majority of those who answered were able to do so because their MPA is established, the staff is present, and baseline data is available. Nevertheless, this chapter demonstrates that in 2020, MPA managers generally lack the necessary resources and means to carry out their mission and ensure proper management of MPAs in the Mediterranean.

Effective management of Mediterranean MPAs requires a combination of measures that address the specific needs and challenges of each site. This includes the establishment of clear objectives and management plans, adequate funding and resources, and effective monitoring and enforcement mechanisms. It is also crucial to involve local communities and stakeholders in the decision-making process and to ensure effective communication channels are in place.

Enhancing management effectiveness is once again a crucial goal of the post-2020 agenda of the Convention on Biological Diversity, the European Commission's Green Deal, and the Post-2020 MCPA and OECM Regional Strategy adopted under the Barcelona Convention. In the upcoming years, additional aid will be required to support MPA managers and stakeholders in accomplishing their objectives.

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CHAPTER III – REGULATION AND USAGES IN MEDITERRANEAN MPAs

The establishment of marine protected areas (MPAs) is an important step towards conserving and protecting marine ecosystems. However, regulating human activities within these areas is crucial to achieving these objectives. This is because it impacts the level of protection provided by the MPAs and, consequently, their conservation outcomes (Grorud-Colvert *et al.*, 2021).

This study reveals that clear boundaries and zoning are defined in the legislation for 42 % of national MPAs, while associated uses and regulations are clearly defined in the legislation for 31 %. Additionally, enforcement procedures are clearly defined in the legislation for 23 % of national MPAs. Conversely, 11 % have significant weaknesses in their regulation, and 5 % have no regulation at all.

The knowledge of MPA boundaries and regulations among users still seems unsatisfactory. Indeed, only 10 % of the MPA managers in the sample consider that the MPA's boundaries, zoning, and associated regulations are well-known by users. The dominant response (16 %) is that MPA boundaries, zoning, and associated regulations are relatively well-known, but MPA visibility could be further improved.

Illegal non-extractive activities are reported in 28 % of national MPAs, and only 5 % consider themselves spared. Spearfishing and other professional fisheries are the activities that are most often forbidden by national MPAs (33 % and 26 %, respectively). Other recreational fishing activities and small-scale fisheries are the activities that are most frequently regulated by national MPAs (34 % and 33 %, respectively). Scuba diving and yachting are the activities that are mostly authorized by national MPAs (13 % and 12 %, respectively).

This study identified 235 no-go, no-take, or no-fishing areas in 97 MPAs: 89 MPAs with a national statute and 8 marine Natura 2000 sites from 14 Mediterranean countries. In 2020, the no-go, no-take, or no-fishing areas cover 1,095.89 km^2, which represents only 0.04 % of the Mediterranean Sea. Moreover, there has been no significant increase in no-go, no-take, or no-fishing areas during the last 10 years in the Mediterranean. Their number and area coverage remain low when compared to global values or conservation proposals for the near future (Claudet *et al.,* 2020).

III.1. Introduction on regulation of activities in Mediterranean MPAs

Marine ecosystems are declining worldwide, threatened by overexploitation, pollution, invasive species, diseases, alteration, loss of habitat, and global climate change. In this context, Marine Protected Areas (MPAs) have become an essential conservation tool (Lubchenco & Grorud-Colvert, 2015). However, there is a wide spectrum of protected areas and area-based conservation measures (Grorud-Colvert *et al.,* 2021). From areas where no uses are allowed (no-take, no-go) to multiple-use areas, where some uses are permitted or regulated. Additionally, the majority of MPAs include a wide variety of zoning and management schemes, ranging from single to multiple zoning and from no-take to multiple-use areas.

The purpose of this chapter is to provide an overview of existing regulations within Mediterranean MPAs and in particular their implementation and their enforcement. This analysis also looks at the existing uses in MPAs and their level of regulation, their monitoring by MPA managers, and their impact within MPAs. The status of no-go, no-take or no-fishing areas in the Mediterranean is also presented.

III.2. Regulations, surveillance, and control in MPAs with a national statute

Natural resources such as fish, oil, gas, and minerals are essential for human development and economic growth. However, their extraction and use can have negative impacts on the marine environment, including habitat destruction, pollution, and the depletion of fish populations. MPAs are established to protect marine ecosystems and biodiversity, and one of their primary objectives is to regulate human activities that can cause harm to the marine environment. Therefore, the use of natural resources should be regulated in a more restrictive way inside an MPA than outside its borders to protect marine ecosystems and biodiversity, maintain the ecological integrity of marine ecosystems, and promote sustainable development and the conservation of natural resources. The establishment of MPAs is an important step towards conserving and protecting marine ecosystems. Regulating human activities within these areas is thus crucial to achieving these objectives. This is because it impacts the level of protection provided by the MPAs and, consequently, their conservation outcomes. (Grorud-Colvert *et al.,* 2021). For MPAs to be effective, all interested parties should comply with regulations, users should know the regulations and managers should be able to enforce them (Lopez & Vignes, 2015).

Data from MAPAMED and the MedPAN database (see the general methodology section for more information) were used to carry out the analysis of regulations, surveillance, and control regarding the 264[37] MPAs with a national statute in the Mediterranean.

[37] Among those MPAs, 257 are officially designated MPAs and 7 are "paperless" MPAs (i.e., management actions in the field without official designation) that are not yet included in MAPAMED (cf., Methodology).

III.2.1. Legislation relating to the MPA

The term "legislation" encompasses all legal texts that are related to the MPA (e.g. national law on nature protection, MPA establishment text, Management Agencies' decisions, etc.).

III.2.1.1. Boundaries and zoning

Data about how clearly defined are boundaries and zoning in the legislation (Figure 068) was available for 120 out of 264 MPAs with a national statute in the Mediterranean (45 %, MedPAN database). MPA managers were able to choose among the following possibilities:

- Yes (clearly defined in the legislation).
- Partially defined (need for clarification).
- No (not defined in the legislation).

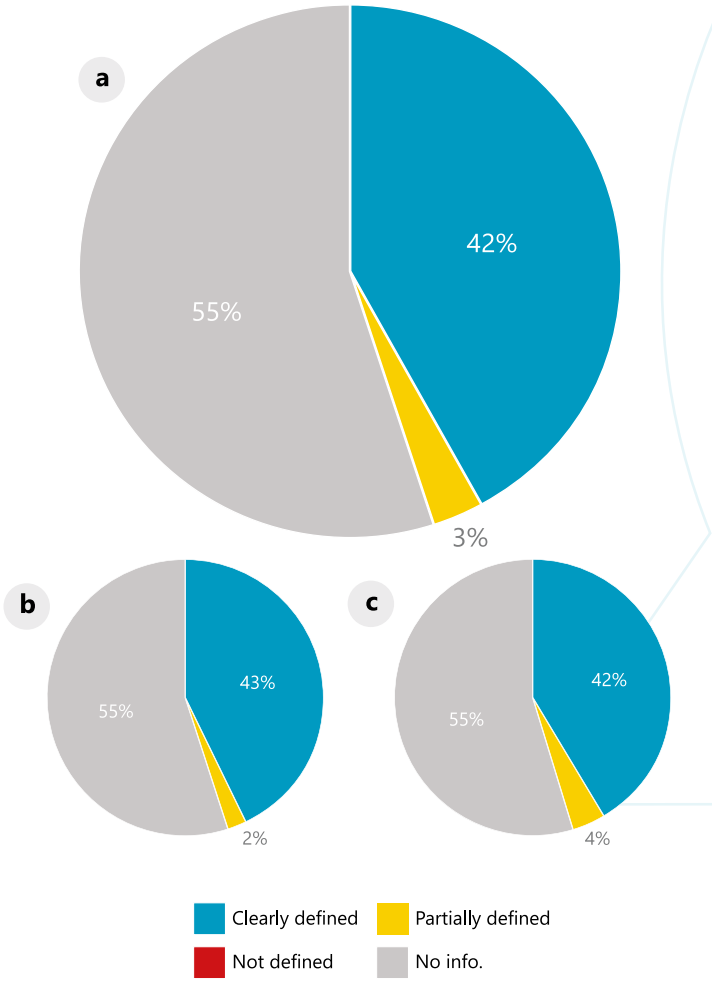


Figure 068: Boundaries and zoning in the legislation of MPAs with a national statute in the Mediterranean region (a, N=264), and more specifically in the EU (b, N=209) or non-EU (c, N=55) waters.

For 42 % of the national MPAs, boundaries and zoning are clearly defined in the legislation.

For 3 % of them, it is only partially defined in the legislation and would require clarification. For 1 % of the sample, boundaries, and zoning are not defined in the legislation (Figure 068). There is no significant difference in the definition of boundaries and zoning in the legislation between European and non-European MPAs.

III.2.1.2. Uses and associated regulations

Data about how clearly defined are uses and associated regulations in the legislation (Figure 069) was available for 115 out of 264 MPAs with a national statute in the Mediterranean (44 %, MedPAN database). MPA managers were able to choose among the following possibilities:

- Yes (clearly defined in the legislation).
- Partially defined (need for clarification).
- No (not defined in the legislation).

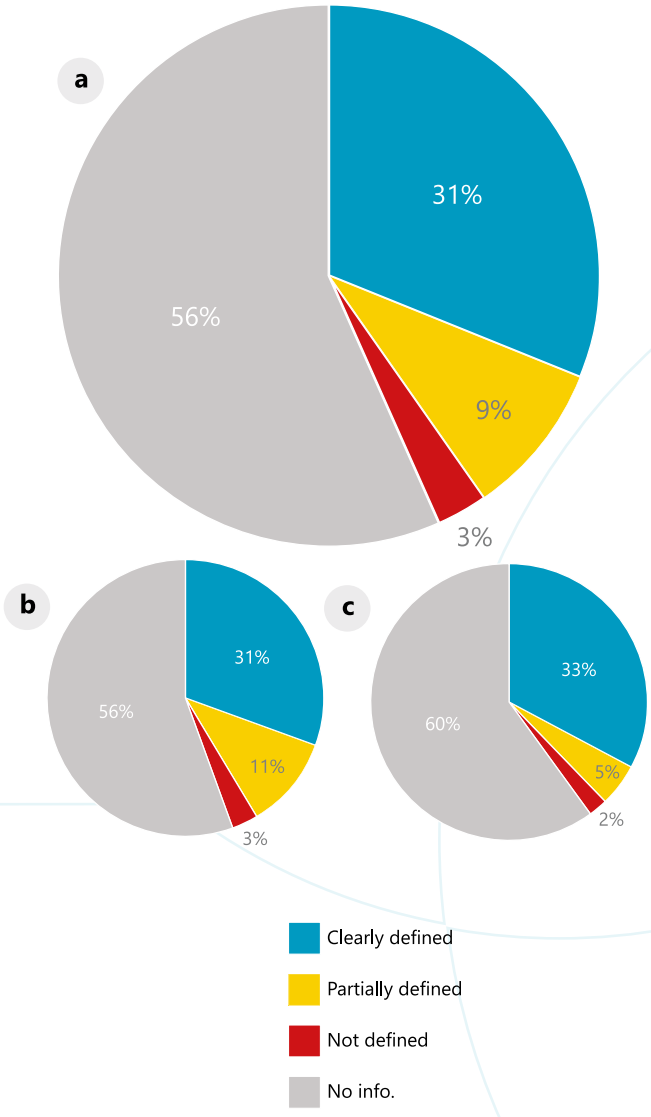


Figure 069: Level of the definition of uses and associated regulations in the legislation of MPAs with a national statute in the Mediterranean region (a, N=264), and more specifically in the EU (b, N=209) or non-EU (c, N=55) waters.

There 31 % of the national MPAs indicate that the associated uses and regulations are clearly defined in the legislation. For 9 %, this information is only partially defined in the legislation and clarification is needed, and 3 % state that the associated uses and regulations are not defined in the legislation.

III.2.1.3. Enforcement procedures

Data about how clearly defined are enforcement procedures in the legislation (Figure 070) was available for 109 out of 264 MPAs with a national statute in the Mediterranean (41 %, MedPAN database). MPA managers were able to choose among the following possibilities:

- Yes (clearly defined in the legislation).
- Partially defined (need for clarification).
- No (not defined in the legislation).

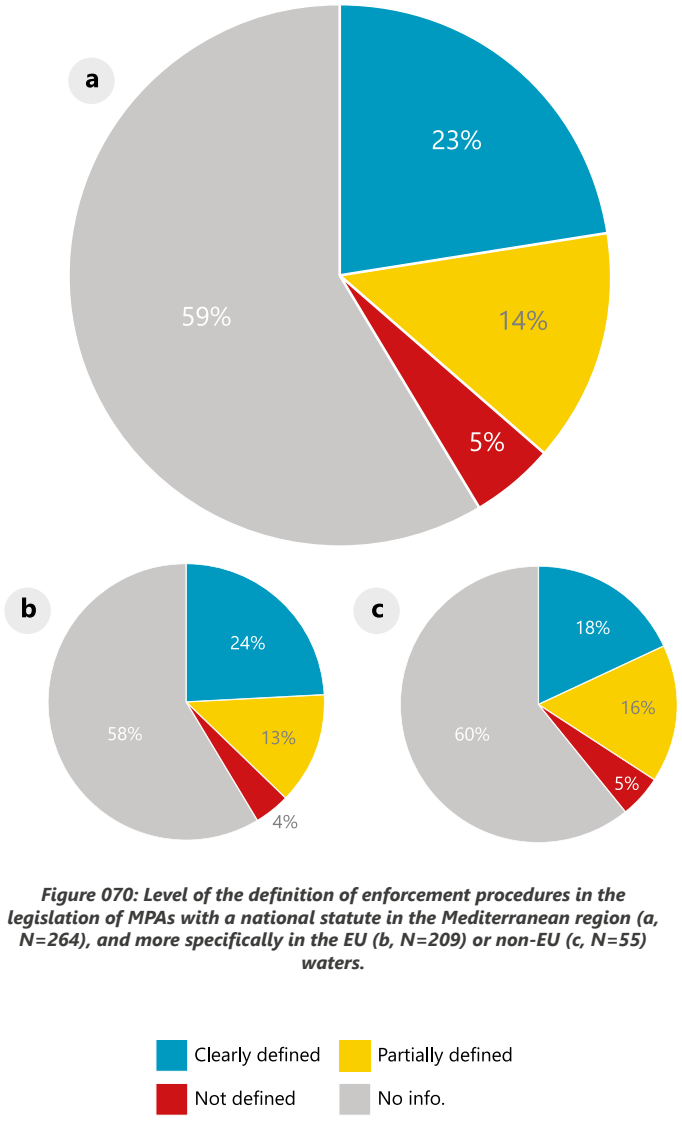


Figure 070: Level of the definition of enforcement procedures in the legislation of MPAs with a national statute in the Mediterranean region (a, N=264), and more specifically in the EU (b, N=209) or non-EU (c, N=55) waters.

For 23 % of the national MPAs, the enforcement procedures are clearly defined in the legislation. For 14 %, enforcement procedures are only partially defined in the legislation and there is a need for clarification. Finally, 5 % of the national MPAs in the sample state that enforcement procedures are not defined in the legislation.

III.2.2. Regulations and enforcement

Data about the presence of regulations (Figure 071) was available for 114 out of 264 MPAs with a national statute in the Mediterranean (43 %, MedPAN database). MPA managers were able to choose among the following possibilities:

- Regulations for controlling uses and activities in the MPA exist and provide an excellent basis for management.
- Regulations for controlling uses and activities in the MPA exist but there are some weaknesses or gaps.
- Some regulations for controlling uses and activities in the MPA exist but there are major weaknesses.
- There are no regulations for controlling uses and activities in the MPA.

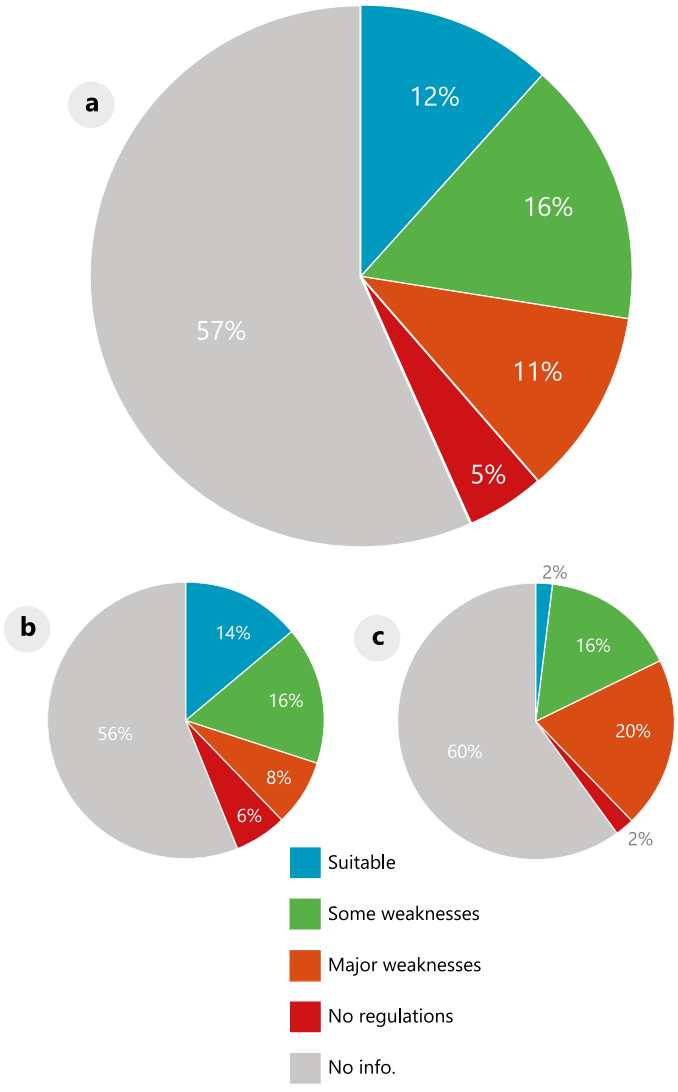


Figure 071: Presence of regulations in MPAs with a national statute in the Mediterranean region (a, N=264), and more specifically in the EU (b, N=209) or non-EU (c, N=55) waters.

Results show that 12 % of national MPA managers consider that there are suitable regulations on activities and 16 % have regulations with some weaknesses. On the other hand, 11 % have major weaknesses in their regulation and 5 % do not have any regulation. In this respect, European countries seem to be better equipped than non-European countries, where only 2 % of national MPAs have suitable regulations.

Of these 101 national MPAs that indicated the presence of regulations, 100 (99 %) provided details about the enforcement of these regulations (Figure 072). MPA managers were able to choose among the following possibilities:

- Protection systems are largely or wholly effective in enforcing MPA regulations.
- Protection systems are fairly effective in controlling access or resource use. There is acceptable capacity to enforce MPA legislation and regulations but some deficiencies remain.
- Protection systems exist but are only partially effective in enforcing regulations due to major deficiencies (e.g. lack of skills, no patrol budget, problems with legal processes, MPA too large...).
- Protection systems (patrols, permits...) do not exist or are ineffective in controlling access or resource use.

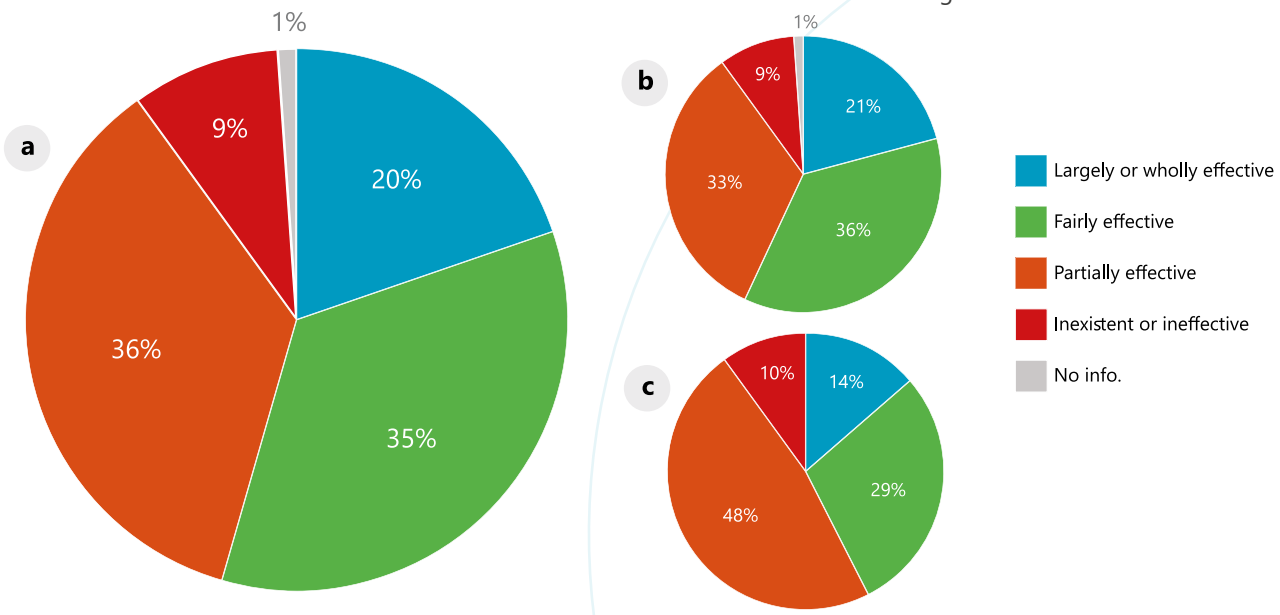


Figure 072: Enforcement of regulations in MPAs with a national statute (having regulations in place) in the Mediterranean region (a, N=101), and more specifically in the EU (b, N=80) or non-EU (c, N=21) waters.

A large majority of MPAs (90 %) have protection systems in place for the enforcement of MPA regulations. However, only a minority (20 %) are largely or completely effective, with the remainder having shortcomings (about 35 % fairly effective and 36 % partially effective). Results are similar for EU and non-EU countries.

III.2.3. Surveillance

Data about the presence and regularity of surveillance (Figure 073) was available for 115 out of 264 MPAs with a national statute in the Mediterranean (44 %, MedPAN database). MPA managers were able to choose among the following possibilities:

- Yes, the MPA is patrolled regularly and sufficiently.
- Partially, monitoring in the MPA is irregular or insufficient.
- No, the MPA is not patrolled.

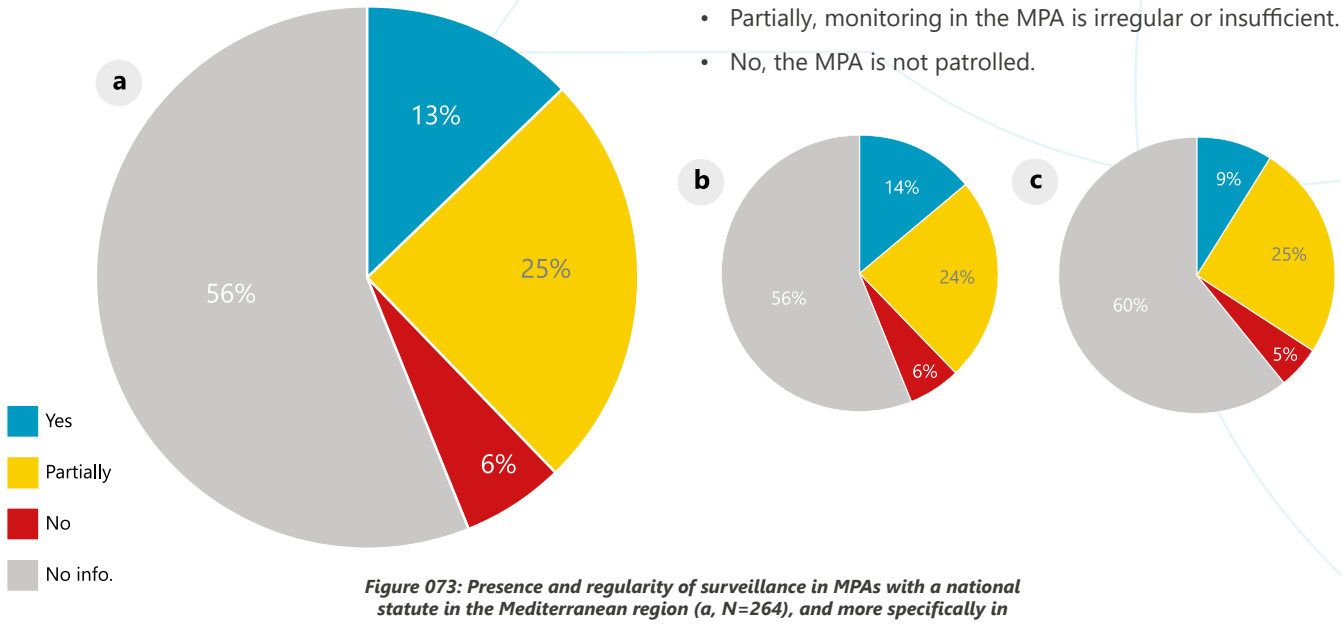


Figure 073: Presence and regularity of surveillance in MPAs with a national statute in the Mediterranean region (a, N=264), and more specifically in the EU (b, N=209) or non-EU (c, N=55) waters.

13 % of MPAs report having a regular and sufficient monitoring system in place. For 25%, this monitoring system is irregular or insufficient and for 6 % there is no monitoring system in place. These figures are similar between the European and non-European samples.

Of these 99 national MPAs that indicated surveillance, 89 (90 %) provided details about the involvement of the MPA in that surveillance (Figure 074). MPA managers were able to choose among the following possibilities:

- Only MPA staff.
- Only external administrations (coast guard, police, gendarmerie, customs services, fisheries administration, etc.).
- Both (MPA staff and external administrations).

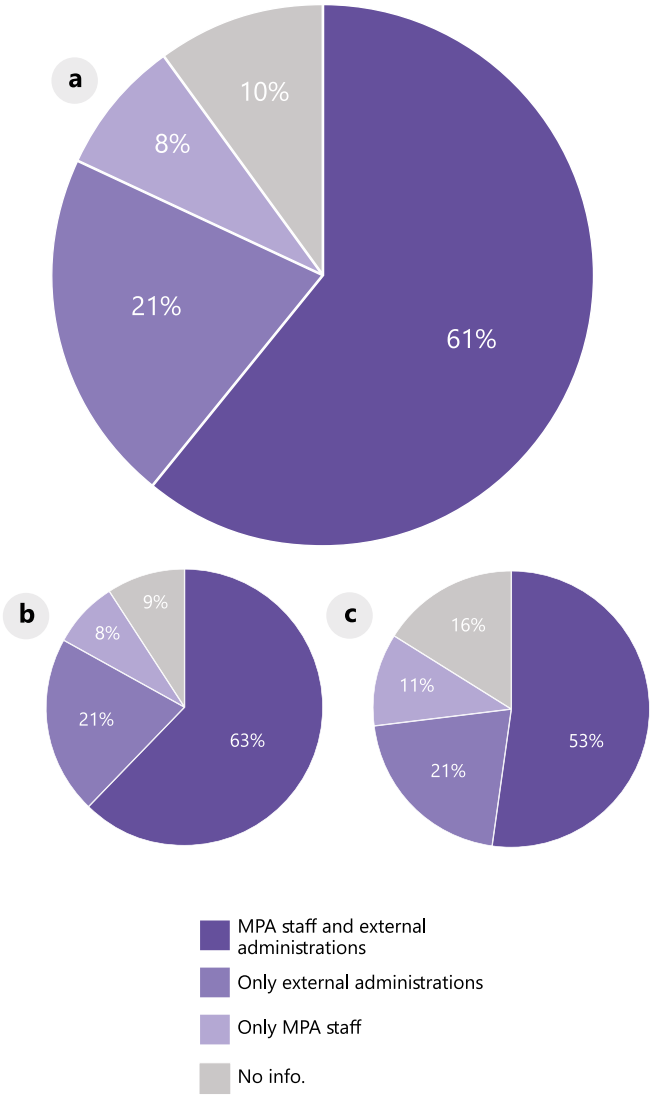


Figure 074: Involvement of the MPA in surveillance in MPAs with a national statute (having surveillance in place) in the Mediterranean region (a, N=99), and more specifically in the EU (b, N=80) or non-EU (c, N=19) waters.

A good majority (61 %) of MPAs with national statutes benefit from joint surveillance by external administrations (coastguard, police, gendarmerie, customs services, fisheries administration, etc.) and MPA staff. 21 % are monitored exclusively by third-party administrations, and 8 % only by MPA staff. Joint surveillance seems to be less frequent in non-EU MPAs and surveillance by the staff alone is slightly more frequent.

III.2.4. Police missions and sanctions

III.2.4.1. Qualification of the staff to carry out police missions

Data about the qualification of the staff to carry out police missions (Figure 075) was available for 109 out of 264 MPAs with a national statute in the Mediterranean (41 %, MedPAN database). MPA managers were able to choose among the following possibilities:

- Yes, the MPA has field staff authorised to carry out police missions (control, recording of offences, fines).
- In part, the MPA has field staff empowered to record offences and report them to the judicial authorities.
- No, the AMP does not have field staff authorised to carry out police missions.

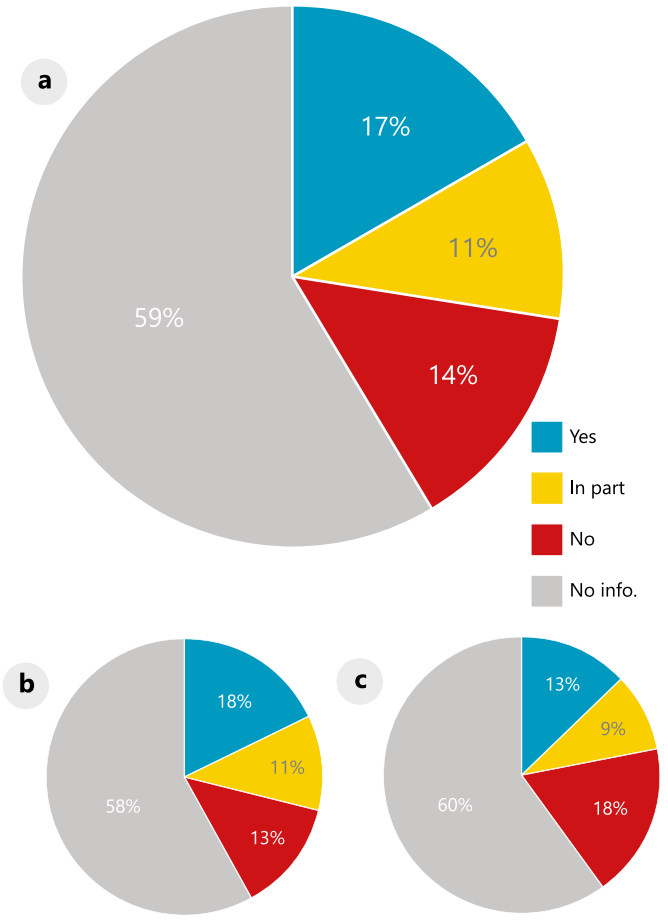


Figure 075: Qualification of the staff to carry out police missions in MPAs with a national statute in the Mediterranean region (a, N=264), and more specifically in the EU (b, N=209) or non-EU (c, N=55) waters.

17 % of the MPAs in the sample have staff empowered to carry out police tasks (control, recording of offences, fines). 11 % of the MPAs have staff entitled to record offences and report them to the judicial authorities. The remainder (14 %) do not have sworn personnel, and must therefore systematically notify the competent authorities if an offence is detected, increasing the time taken and reducing the clearance rate. There is no significant difference in the qualification of the staff to carry out police missions between European and non-European MPAs.

III.2.4.2. Application of sanctions

Data about the application of sanctions (Figure 076) was available for 100 out of 264 MPAs with a national statute in the Mediterranean (39 %, MedPAN database). MPA managers were able to choose among the following possibilities:

- Penalties are applied to a sufficient extent (most serious offences, cases of recidivism, and sufficiently dissuasive sanctions).
- Penalties are applied, but not enough (few offences sanctioned or few dissuasive sanctions).
- No penalties are applied for the offences found.
- No offences were found in the MPA.

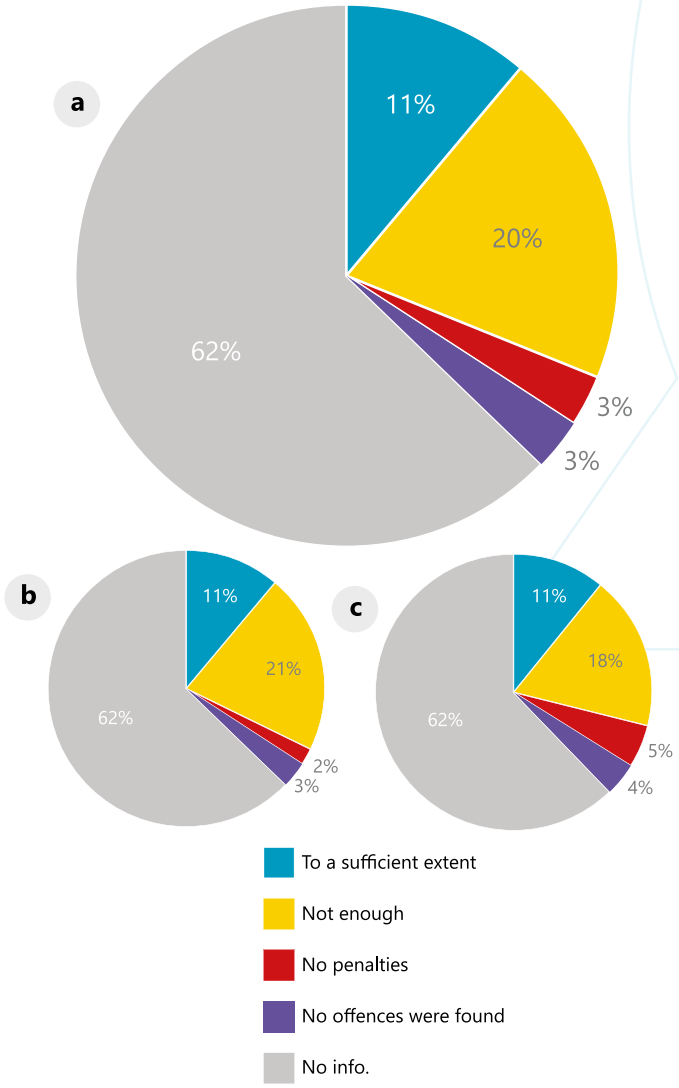


Figure 076: Application of sanctions for the offences found in MPAs with a national statute in the Mediterranean region (a, N=264), and more specifically in the EU (b, N=209) or non-EU (c, N=55) waters.

The first result that emerges from these data is that very few MPAs seem to escape infringement: only 3 %. The need for dissuasive penalties is therefore clear. The proportion of MPAs where sanctions seem to be applied to a satisfactory extent (most serious offences, repeat offences, and sufficiently dissuasive sanctions) is low: 11 % of national MPAs. While the proportion of MPAs where insufficient penalties are applied is the most important figure with 20 % of national MPAs. Finally, in 3 %, no sanctions are applied even though infringements have been observed. Results are similar between European and non-European Union countries.

III.3. Users management in MPAs with a national statute

The enforcement of regulations represents much more than just surveillance; it is a cross-cutting issue based on legal frameworks, institutional competencies, management procedures, stakeholders' compliance, information, and awareness (Lopez & Vignes, 2015). Engaging stakeholders and securing their participation and involvement is key to the acceptance of an MPA at the local level and plays a role towards compliance (Pomeroy & Douvere, 2008; Walton *et al.*, 2013).

Data from MAPAMED and the MedPAN database (see the general methodology section for more information) were used to carry out the analysis of user management regarding the 264[38] MPAs with a national statute in the Mediterranean.

III.3.1. Users' knowledge of the regulations

Data about the users' knowledge of the regulations (Figure 077) was available for 114 out of 264 MPAs with a national statute in the Mediterranean (43 %, MedPAN database). MPA managers were able to choose among the following possibilities:

- Yes, MPA's boundaries, zoning and associated regulations are well known by users.
- MPA's boundaries, zoning and associated regulations are relatively well known, but MPA visibility could be further improved.
- MPA's boundaries, zoning and associated regulations are very little known by users and there is a clear need to improve MPA visibility.
- No, MPA's boundaries, zoning and associated regulations are not known at all.

[38] Among those MPAs, 257 are officially designated MPAs and 7 are "paperless" MPAs (i.e., management actions in the field without official designation) that are not yet included in MAPAMED (cf., Methodology).

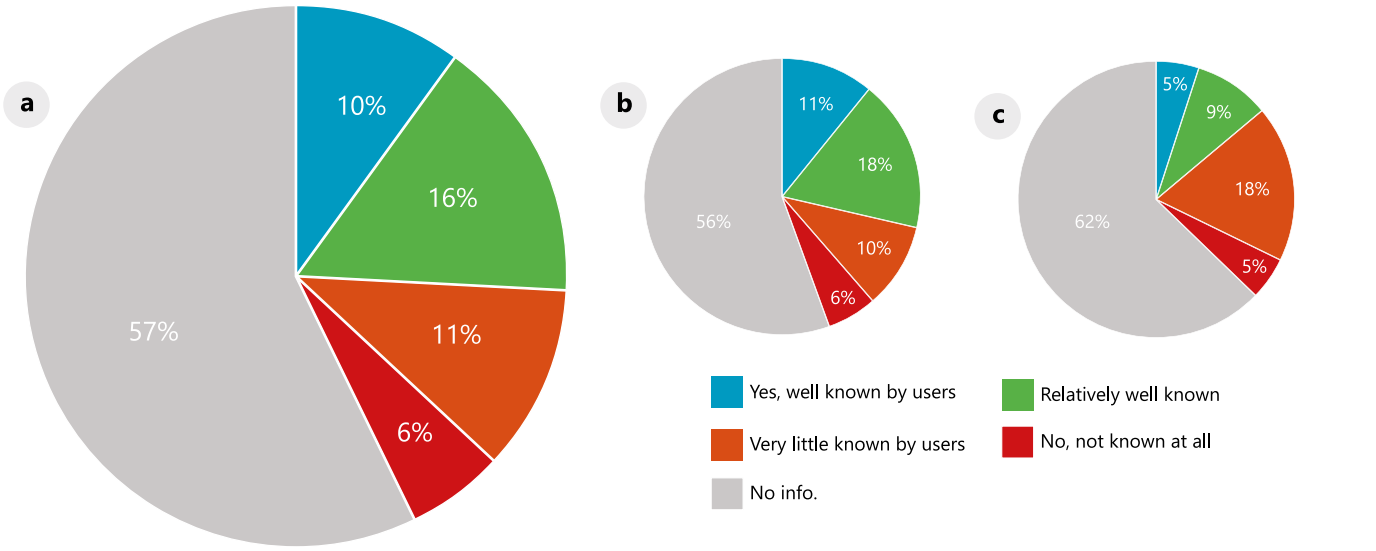


Figure 077: Users' knowledge of the regulations in MPAs with a national statute in the Mediterranean regiona, N=264), and more specifically in the EU (b, N=209) or non-EU (c, N=55) waters.

The user's knowledge of MPA boundaries and regulations still seems very unsatisfactory. Indeed, only 10 % of the MPAs managers in the sample consider that the MPA's boundaries, zoning and associated regulations are well known by users. The dominant response (16 %) is that MPA's boundaries, zoning and associated regulations are relatively well known, but MPA visibility could be further improved. Results show that for 11 % of the sample, these elements are very little known by users. Finally, for 6 % of cases, the boundaries of the MPA, its zoning and associated regulations are not known at all by the public, leading to a risk of unintentional counter-productive behaviour, and thus the failure of protection. In Europe, users' knowledge is evaluated as good or relatively well known in 29 % of MPAs, whilst outside Europe, 23 % of national MPAs suggest that these elements are not or very little known by users.

III.3.2. Charters of good practices for users

III.3.2.1. Presence of good practice charters

Data about the presence of good practice charters (Figure 078) was available for 105 out of 264 MPAs with a national statute in the Mediterranean (40 %, MedPAN database).

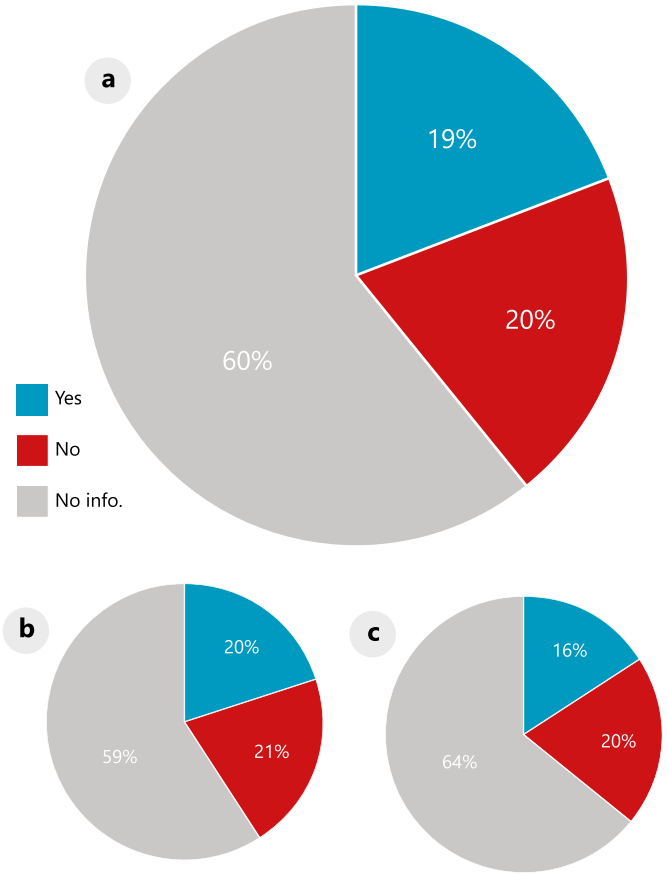


Figure 078: Presence of good practice charters in MPAs with a national statute in the Mediterranean region (a, N=264), and more specifically in the EU (b, N=209) or non-EU (c, N=55) waters.

19 % of nationally designated MPAs report the existence of a charter promoting good practice and setting out rules for MPA users. In the European and non-European subsamples, the proportions of MPAs with and without a charter are similar.

All of these 51 national MPAs that indicated the presence of a charter (19 % of the 264 national MPAs) provided details about the nature of the activities that are subject to a charter (Figure 079).

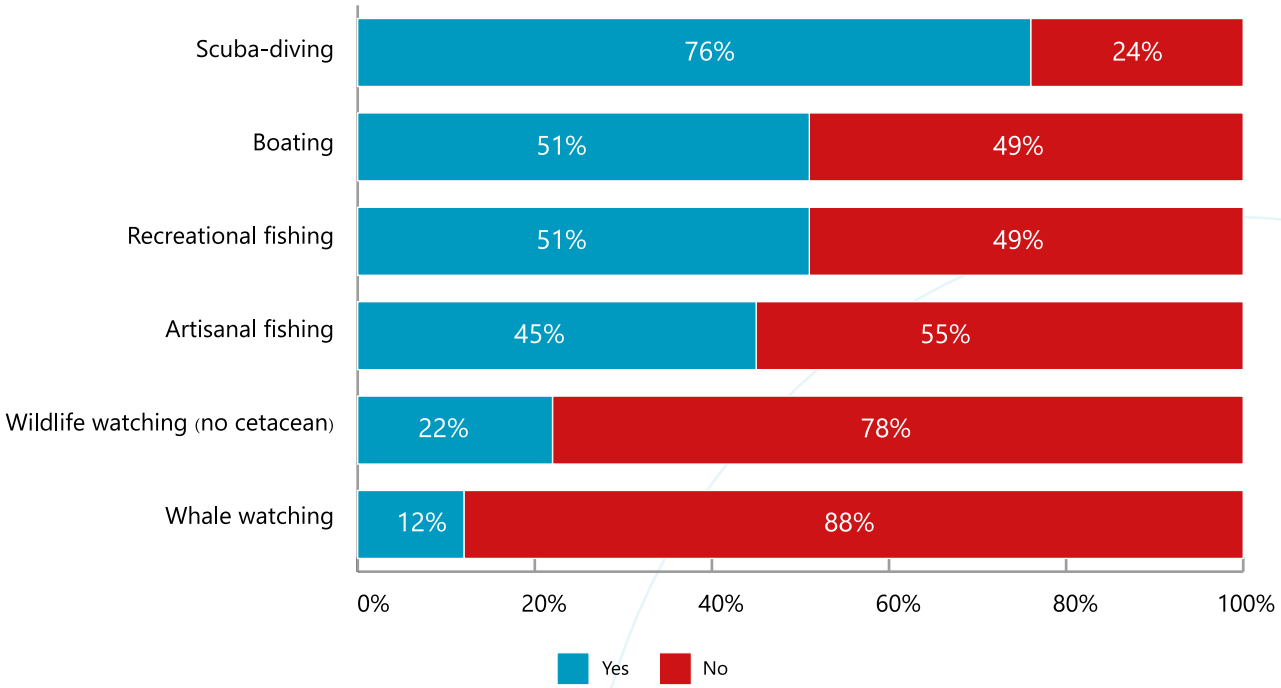


Figure 079: Occurrence rate, for each type of activity regulated by charter, in MPAs with a national statute (n=51).

Scuba diving is by far the most frequently mentioned activity in the charters (76 % of cases), far ahead of a group including pleasure boating, recreational fishing and small-scale fishing (all around 50 %). Observation of wildlife other than cetaceans (especially breeding birds) is mentioned in only 22 % of cases, and that of cetaceans in only 12 %. This low figure can be explained by the fact that this mention is only useful if cetaceans (or breeding birds in the previous case) are significantly and regularly present in the MPA, which is not the case everywhere.

III.3.2.2. Presence of sustainable or responsible tourism initiatives

Data about the presence of sustainable or responsible tourism initiatives (Figure 080) was available for 77 out of 264 MPAs with a national statute in the Mediterranean (29 %, MedPAN database). MPA managers were able to choose among the following possibilities:

- Yes.
- In project.
- No.

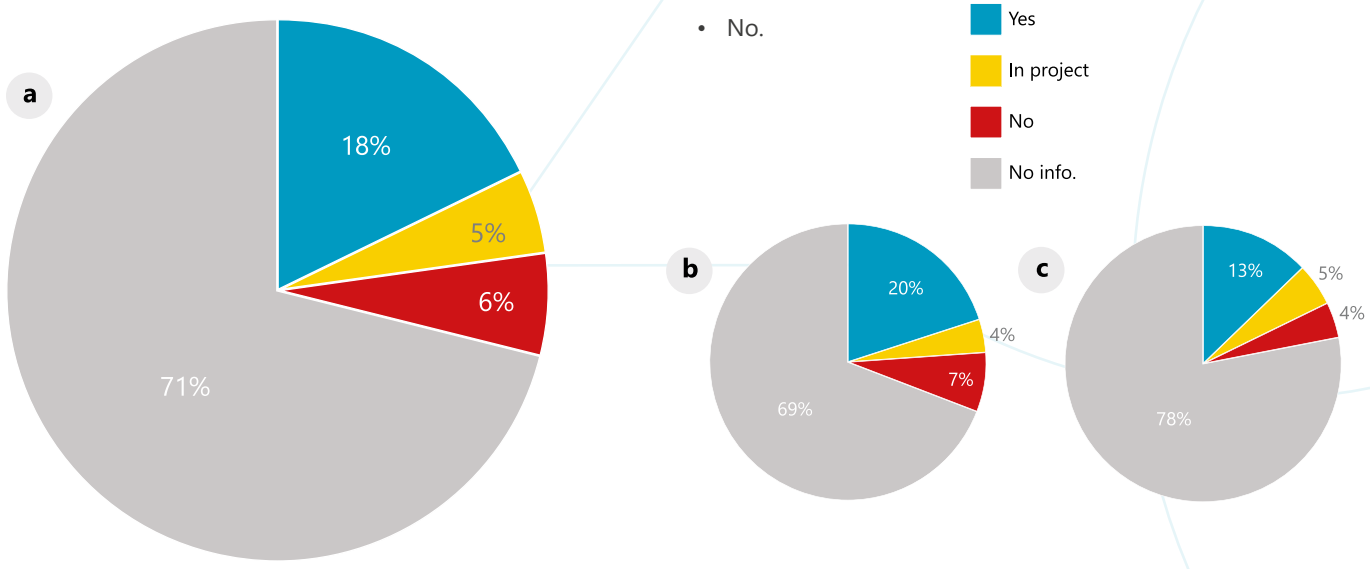


Figure 080: Presence of sustainable or responsible tourism initiatives in MPAs with a national statute in the Mediterranean region (a, N=264), and more specifically in the EU (b, N=209) or non-EU (c, N=55) waters.

18 % of the national MPAs report the existence of sustainable or responsible tourism initiatives within their perimeter, 5 % report projects on this theme and 6 % are without such initiatives. These initiatives seem to be more frequent in MPAs within EU waters.

III.3.2.3. Participation in a charter of sustainable tourism

Data about the participation in the European Charter of Sustainable Tourism or other similar initiatives (Figure 081) was available for 72 out of 264 MPAs with a national statute in the Mediterranean (27 %, MedPAN database). MPA managers were able to choose among the following possibilities:

- Yes.
- No but thinking of taking part.
- No.

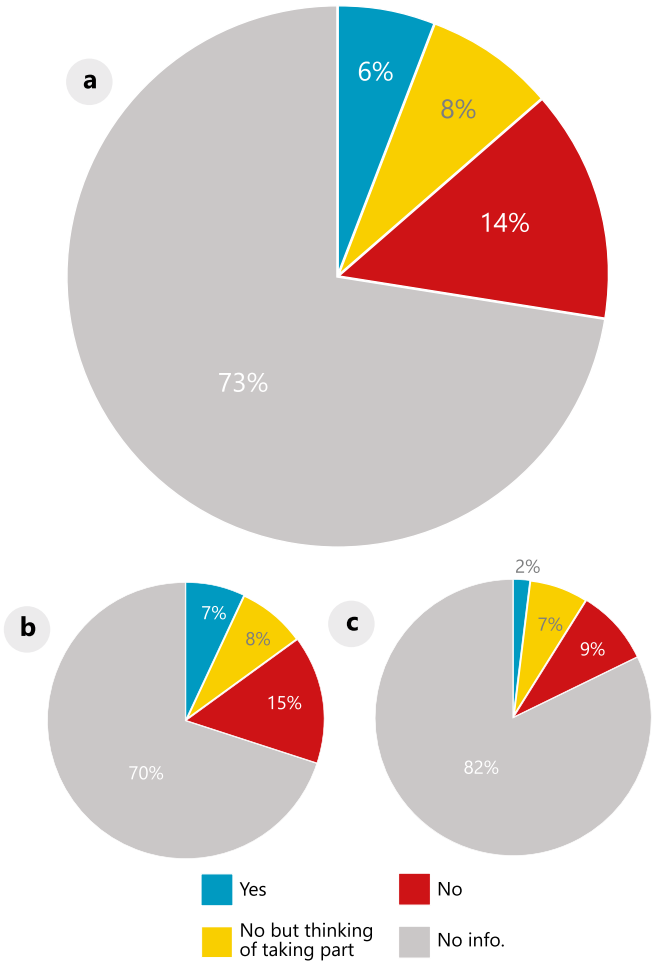


Figure 081: Participation in the European Charter of Sustainable Tourism or other similar initiatives in MPAs with a national statute in the Mediterranean region (a, N=264), and more specifically in the EU (b, N=209) or non-EU (c, N=55) waters.

14 % of the national MPAs indicated that they had not signed up for any sustainable tourism charter and are not thinking of taking part. Only 6 % of them currently adhere to a charter of sustainable tourism (mostly in the EU waters). Finally, 8 % indicate that a reflection is underway — a fairly stable figure in the various subsamples — which could significantly increase the number of MPAs adhering to charters in the years to come.

III.3.3. Users' compliance to rules

III.3.3.1. Non-extractive illegal activities

Data on the pressure intensity of illegal non-extractive activities (e.g. speeding, access to unauthorised areas, voluntary pollution, etc., Figure 082) was available for 86 out of 264 MPAs with a national statute in the Mediterranean (33 %, MedPAN database).

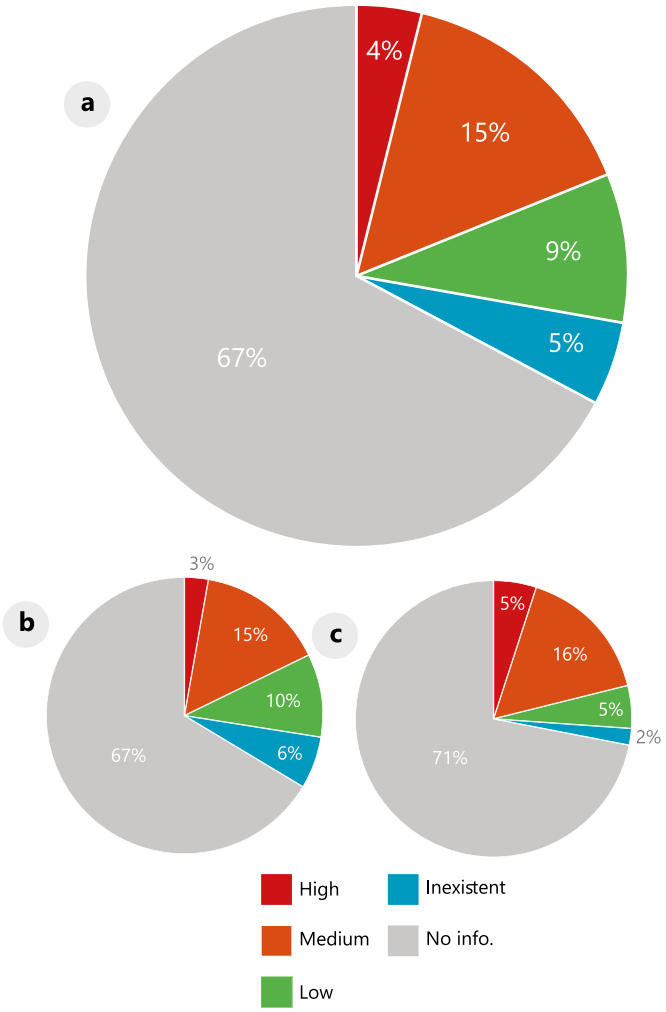


Figure 082: Pressure intensity of non-extractive illegal activities in MPAs with a national statute in the Mediterranean region (a, N=264), and more specifically in the EU (b, N=209) or non-EU (c, N=55) waters.

Illegal non-extractive activities are reported in 28 % of national MPAs. Only 5 % consider themselves spared. The pressure exerted by these illegal non-extractive activities is largely of medium magnitude (15 %) and secondarily low (9 %). However, it is high in 4 % of cases. The pressure of illegal non-extractive activities is high in 3 % of national MPAs in the European sample and 5 % in the non-European sample.

III.3.3.2. Extractive illegal activities

Data about the pressure intensity of extractive illegal activities (e.g. illegal fishing, red coral harvesting, etc., Figure 083) was available for 87 out of 264 MPAs with a national statute in the Mediterranean (33 %, MedPAN database).

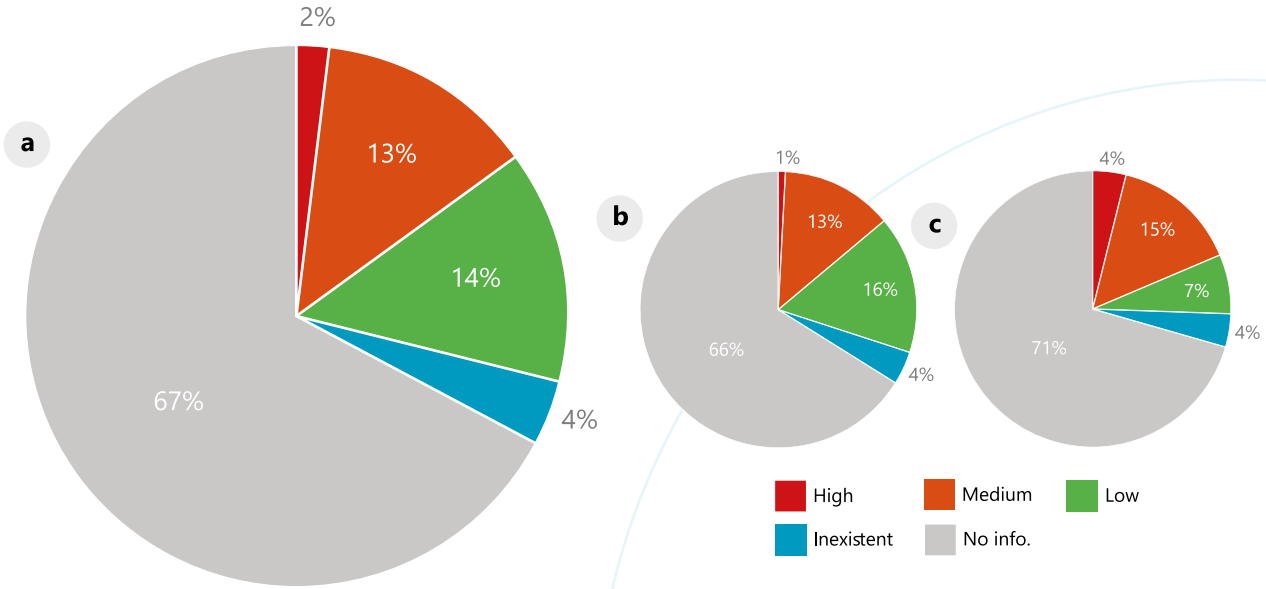


Figure 083: Pressure intensity of extractive illegal activities in MPAs with a national statute in the Mediterranean region (a, N=264), and more specifically in the EU (b, N=209) or non-EU (c, N=55) waters.

Illegal extractive activities are present in 29 % of nationally designated MPAs. The intensity of these illegal extractive activities is considered as "low" by 14 % of MPAs, as "medium" by 13 % of MPAs, and "high" by 2 %. The results are similar in EU and non-EU MPAs, but illegal extractive activities are more intense in the non-EU MPAs sample with 15 % considering it as moderately intense, and 4 % as high.

III.4. Human activities in MPAs with a national statute

The Mediterranean Sea, the first tourism destination in the world, is vastly used, and numerous activities put pressure on ecosystems and species and can become threatening. Except for professional fisheries, all traditional sectors of the Mediterranean maritime economy such as tourism, shipping, aquaculture and offshore oil and gas are expected to keep growing during the coming 15 years (Piante & Ody, 2015).

Data from MAPAMED and the MedPAN database (see the general methodology section for more information) were used to carry out the analysis of human activities regarding the 264 MPAs with a national statute in the Mediterranean.

A great diversity of activities can be found at sea or in the coastal area. For this analysis, activities have been classified under the following groups:

- **Professional fishing**
  - Small-scale fisheries
  - Other professional fisheries
- **Recreational fishing**
  - Spear fishing
  - Other recreational fishing activities
- **Recreational activities**
  - Scuba diving
  - Anchoring
  - Yachting
  - Motorised water sports
  - Non-motorised water sports
  - Wildlife watching (cetaceans, birds, turtles, etc.)
  - Swimming or snorkelling
- **Extraction activities**
  - Oil and gas extraction at sea
  - Mining, sand extraction, detonations
  - Other bottom structure (aside artificial reefs)
- **Aquaculture**
  - Fish and shrimp cages in shallow waters
  - Fish and shrimp cages in deep water
  - Mussels, oysters or algae
- **Energy production (wind farms, etc.)**
- **Maritime traffic**
  - Oil or chemical tankers or gas carriers
  - Other merchant ships (cargo ships)
  - Large passenger ships (>250 passengers: ferries, cruise ship, etc.)
  - Medium passenger ships (50 – 250 passengers)
  - Small passenger vessels (<50 passengers: glass-bottom boats, small sightseeing boats, etc.)

- **Coastal development (tourist infrastructure, dikes, artificial reefs, etc.)**
- **Port operations (dredging, disposal, etc.)**

The regulations concerning these activities within MPAs are often adapted to the local context. This results in an infinite number of regulations, particularly concerning fishing, making many MPAs unique cases. For this analysis, regulations have been classified into three categories:

Authorised without MPA's specific regulations:

a use is allowed in the whole MPA the same way that it is outside the MPA. The regulation of the MPA concerning this use does not provide any added value regarding the existing law in the MPA's country.

Regulated (authorised with MPA's specific regulations):

a use is allowed in the MPA, but this one imposes more constraints than those in the existing law in the MPA's country. These constraints can apply throughout the entire MPA or in some zones. The regulation of the MPA, or its zones, can have a wide range of constraints, from "authorised with small restrictions" to "forbidden with few exceptions".

Forbidden:

a use is forbidden without exception (aside from monitoring, scientific or emergency purposes) in the full MPA. If the prohibition of a use is only limited to some zones of the MPA, then this use is not forbidden at the MPA's scale, but only regulated.

III.4.1. Overview of regulated activities in MPAs

Among the 26 activities listed above, a focus has been made on the 7 groups of activities that are the most present and the most addressed by MPA managers: small-scale fisheries, other professional fisheries, spearfishing, other recreational fishing activities, scuba diving, yachting and motorised water sports.

Regarding the other activities, too little data was available to present meaningful results. Most of these activities fall within the industrial framework, and their regulation is often at the national and sectoral level rather than area-based. When regulation includes a spatial dimension, it is frequently to prohibit or strongly regulate industrial activities on the shoreline and coastal areas and to provide more flexibility offshore. Therefore, these activities are rather outside the scope of MPAs and often not described in the MPAs' regulations.

III.4.1.1. Regulation of fishing or recreational activities

Data about the regulation of fishing or recreational activities (Figure 084) were available for a maximum of 144 sites, out of 264 MPAs with a national statute in the Mediterranean (55 %, MedPAN database).

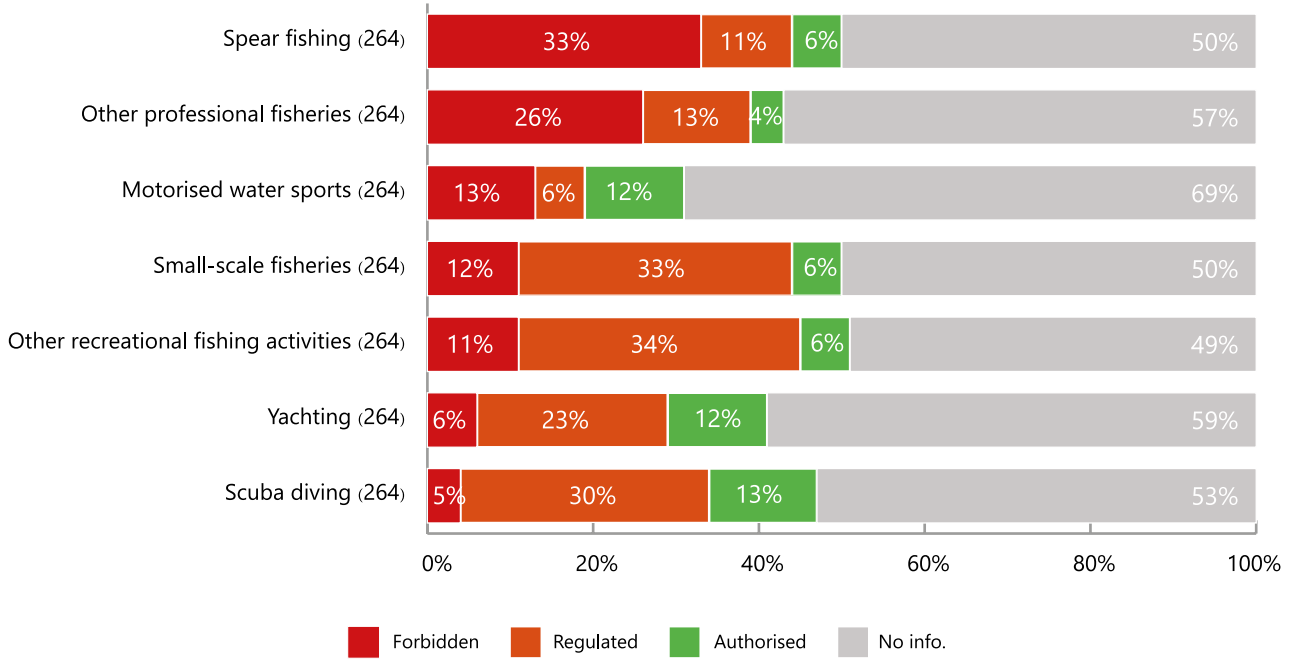


Figure 084: Regulation of fishing or recreational activities in MPAs with a national statute in the Mediterranean region (numbers in brackets indicate the sample size).

Spearfishing and other professional fisheries are the activities that are most often forbidden by national MPAs (33 % and 26 %, respectively). Other recreational fishing activities and small-scale fisheries are the activities that are most frequently regulated by national MPAs (34 % and 33 %, respectively). Scuba diving and yachting are activities that are mostly authorised by national MPAs (13 % and 12 %, respectively).

III.4.1.2. Monitoring of regulated fishing or recreational activities

Among the 116 national MPAs that indicated fishing or recreational activities as regulated, a maximum of 60 MPAs (52 %, MedPAN database) provided details about the monitoring (Figure 085).

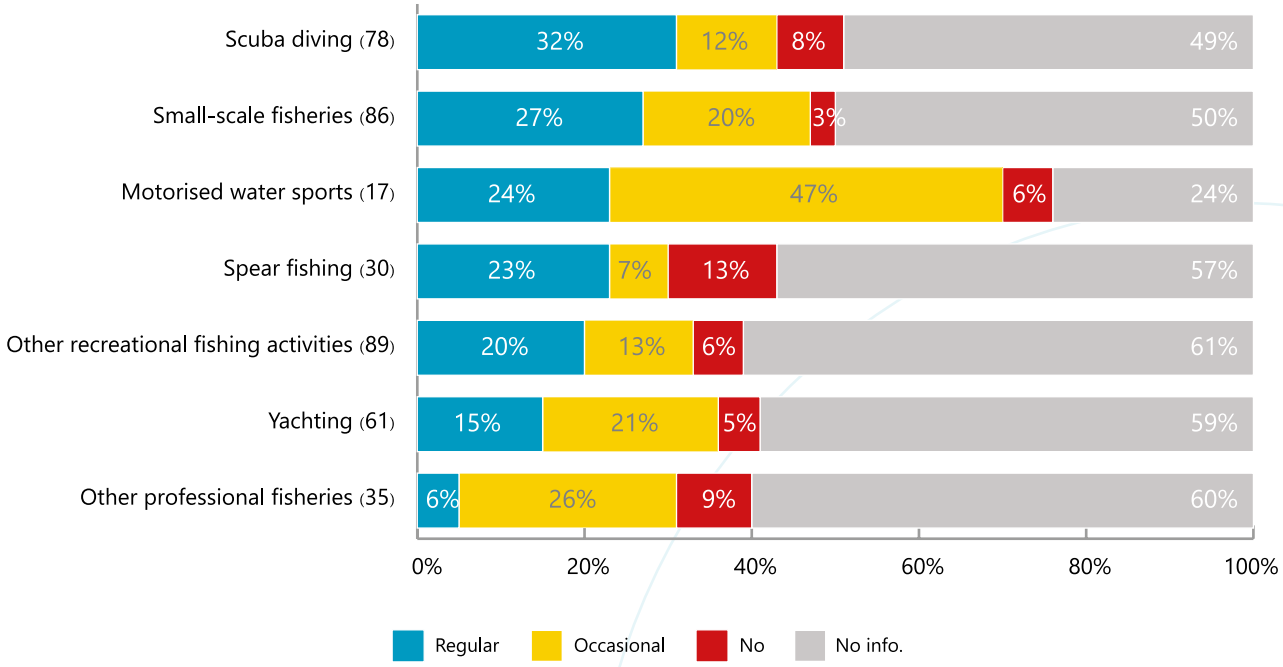


Figure 085: Monitoring of fishing or recreational activities (when the activity is regulated) in MPAs with a national statute in the Mediterranean region (numbers in brackets indicate the sample size).

When regulated in the national MPAs, scuba diving and small-scale fisheries are the activities that are most often monitored regularly (32 % and 27 %, respectively). Spearfishing, the most forbidden recreational activity, is the activity that is less frequently monitored by national MPAs (13 %). Forbidden activities are not monitored in MPAs, but surveillance at sea allows for the prevention of illegal activities.

III.4.1.3. Intensity of regulated fishing or recreational activities

Among the 116 national MPAs that indicated fishing or recreational activities as regulated, a maximum of 61 MPAs (53 %, MedPAN database) provided details about the intensity of the pressure (Figure 086).

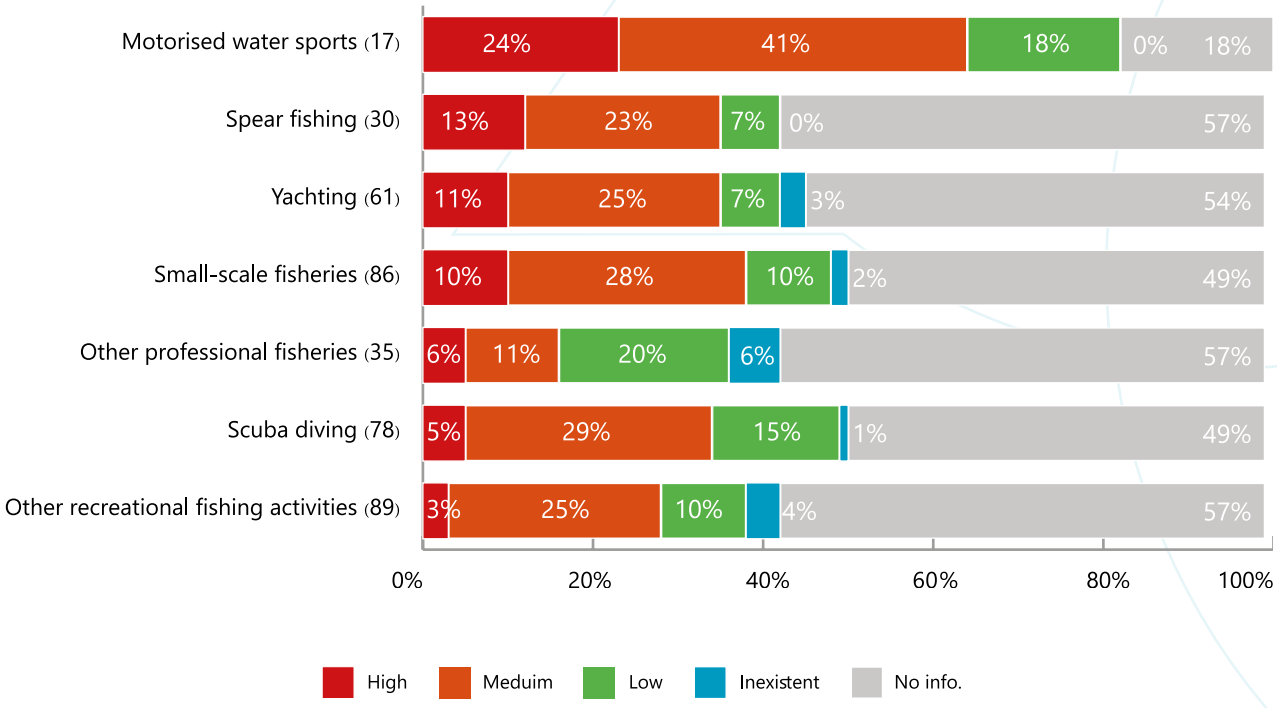


Figure 086: Intensity of the pressure of fishing or recreational activities (when the activity is regulated) in MPAs with a national statute in the Mediterranean region (numbers in brackets indicate the sample size).

When regulated in the national MPAs, motorised water sports are the activities that are most often exerting significant pressure (24 % high and 41 % medium). Spearfishing, yachting and small-scale fisheries represent also pressure in national MPAs (high between 10 % and 13 %; medium between 23 % and 28 %).

III.4.2. Fisheries management plan

Data about the existence of a fisheries management plan (Figure 087) was available for 91 out of 264 MPAs with a national statute in the Mediterranean (34 %, MedPAN database). The fisheries management plan may be included in the MPA's management plan or a specific document. It is important to note that in some cases, it may not always be relevant for an MPA to have a fishery management plan (i.e., fisheries activities are non-existent or forbidden).

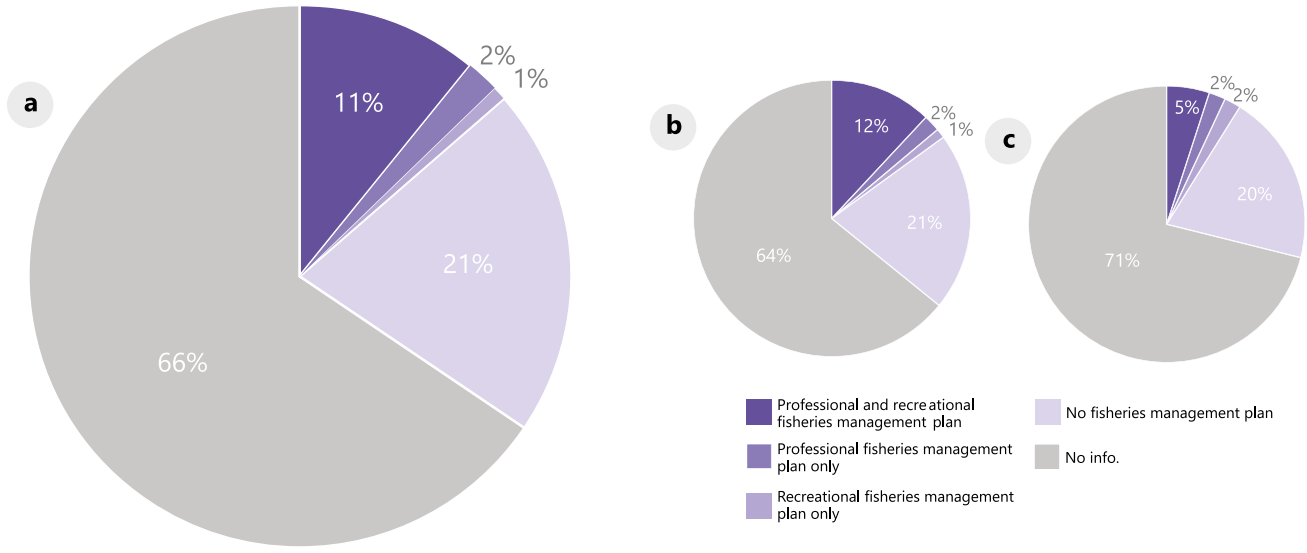
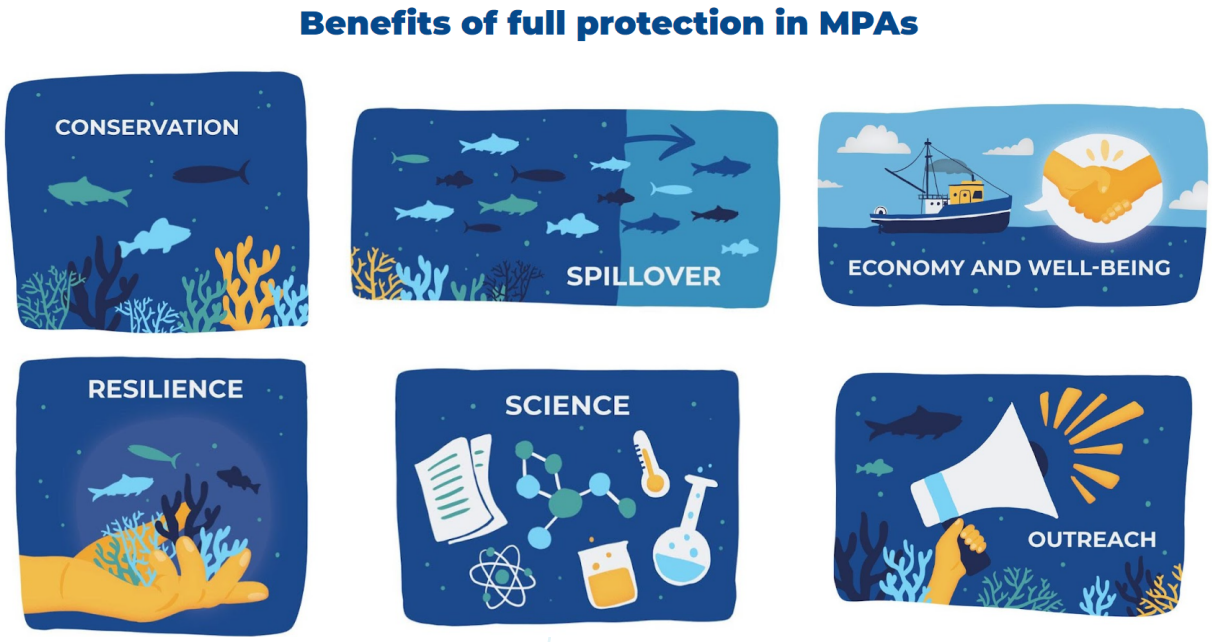


Figure 087: Fisheries management plan in MPAs with a national statute in the Mediterranean region (a, N=264), and more specifically in the EU (b, N=209) or non-EU (c, N=55) waters.

Figure 087 shows that for 11 % of the national MPAs, there is a management plan for both professional and recreational fisheries, for 2 % there is a management plan for professional fisheries only, and for 1 % there is a management plan for recreational fisheries only. However, for 21 % of national MPAs, there is no fisheries management plan. The implementation of a fisheries management plan is more common in EU countries, with 12 % of national MPAs having both a professional and recreational fisheries management plan, compared to 5 % in non-EU countries.

Concerning the 5 MPAs having a management plan for professional fisheries only, none of them has declared having a medium or high level of pressure from recreational fisheries. Likewise, considering the 3 MPAs having a management plan for recreational fisheries only, none of them has declared having a medium or high level of pressure from professional fisheries. However, regarding the 55 MPAs without any fisheries management plan, 21 have declared having a medium or high level of pressure from professional or recreational fisheries (23 % of the sampled MPAs).

III.5. No-go, no-take or no-fishing areas in 2020



Benefits of no-take areas in the Mediterranean Sea are widely reported, from spillover (Goñi *et al.,* 2010, Di Lorenzo *et al.,* 2016) to much greater effectiveness in recoveries when compared to partially protected areas (Guidetti *et al.,* 2014), or as climate change sentinel sites (Kersting et *al.,* 2013). However, their number and area coverage remain low when compared to global values or conservation proposals for the near future (Claudet et *al.,* 2020).

The participants in the 2016 Forum on MPAs in the Mediterranean (Tangier, 28 November – 1 December 2016) agreed to update the Mediterranean MPA Roadmap with a series of elements, including a key operational step, which states: "*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 0.04% of the Mediterranean Sea to reach at least 2% of no-take zones, especially in key functional areas*" (MedPAN & SPA/RAC, 2016).

In the following analysis, MPAs, or MPA's internal zones, where certain activities are forbidden without exception, aside for monitoring, scientific or emergency purposes, have been classified into 3 categories:

- **No-fishing area**, where fishing activities (professional or recreational) and aquaculture are forbidden;
- **No-take area**, where all extractive activities are forbidden;
- **No-go area**, where all activities are forbidden without exception (aside for monitoring, scientific or emergency purposes).

It is important to note that some areas that are designated as "no-take" or "no-fishing" actually authorise some limited fishing activities and are therefore not included in those 3 categories based on our strict definition. In addition, certain areas are considered "no-fishing" because their regulation does not address all extractive uses, while they are de facto "no-take" because the existing national law is prohibiting extractive activities even though it is not mentioned in the MPA regulation.

Data from MAPAMED and the MedPAN database (see the general methodology section for more information) were used to carry out the analysis on no-go, no-take and no-fishing for the 264[39] MPAs with a national statute in the Mediterranean.

III.5.1. Status of no-go, no-take or no-fishing areas

Data about no-go, no-take or no-fishing areas is taken from the MedPAN database. To our knowledge, there are 235 no-go, no-take or no-fishing areas that can be found in 97 MPAs: 89 MPAs with a national statute and 8 marine Natura 2000 sites from 14 Mediterranean countries (Figure 088).

[39]Among those MPAs, 257 are officially designated MPAs and 7 are "paperless" MPAs (i.e., management actions in the field without official designation) that are not yet included in MAPAMED (cf., Methodology).

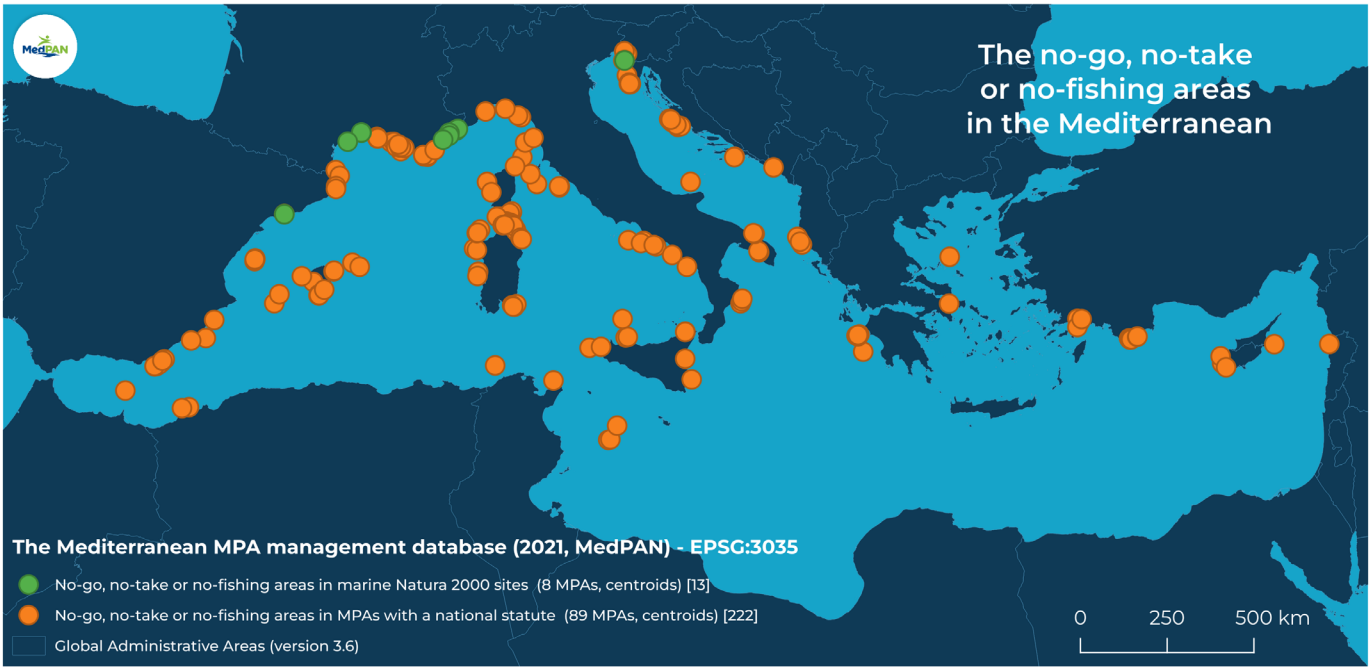


Figure 088: No-go, no-take or no-fishing areas in the Mediterranean (centroids, MedPAN 2021, The Mediterranean MPA management database).

Among those 97 MPAs, 21 are entirely no-go, no-take or no-fishing MPAs (19 national MPAs and 2 Natura 2000 sites). The remaining 76 MPAs (70 national MPAs and 6 Natura 2000 sites) contain at least one no-go, no-take or no-fishing area within their boundaries. These no-go, no-take or no-fishing areas can be unique or several, with a small or large area compared to the total marine extent of the MPA. In 2020, the no-go, no-take or no-fishing areas cover 1,095.89 km^2, which represents only 0.04 % of the Mediterranean Sea (Figure 089).

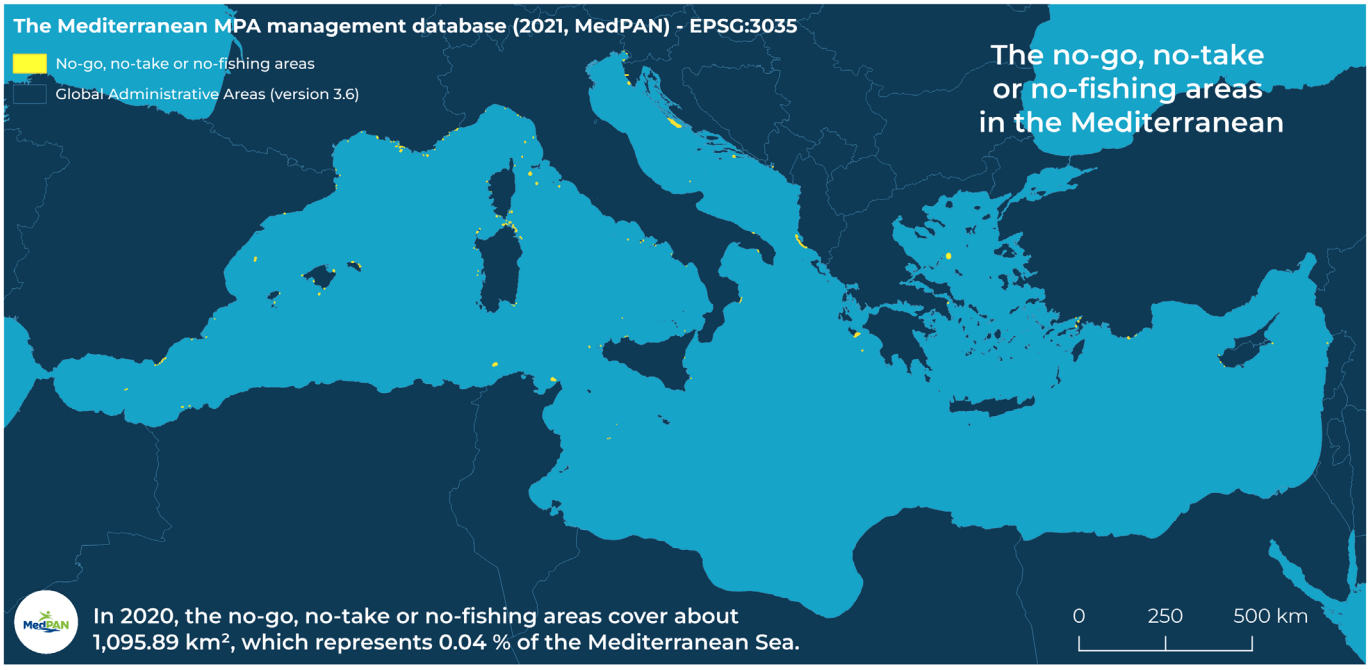


Figure 089: No-go, no-take or no-fishing areas in the Mediterranean (areas, MedPAN 2021, The Mediterranean MPA management database).

Regarding the cumulative surface of no-go, no-take or no-fishing areas in MPAs, the smallest area is 0.01 km^2, the average area is 11.39 km^2, and the largest is 156.08 km^2. In half of these MPAs, the cumulative surface of no-go, no-take or no-fishing areas is under 2 km^2 and three-quarters are below 6 km^2. Only 18 MPAs have a cumulative area over 10 km^2, and only 2 over 100 km^2: Alónnisos, Vóreies Sporádes National Marine Park (Greece) and Kornati National Park (Croatia).

Regarding the percentage of the cumulative surface of no-go, no-take or no-fishing areas in the MPAs compared to the total marine extent of the MPA, the smallest percentage is 0.04 %, the average percentage is 35.7 %, and the largest is 100 %. In half of these MPAs, the percentage is under 12 %.

In 2016, these no-go, no-take or no-fishing areas were covering a total surface area of about 1,051.42 km^2, which represents 0.04 % of the Mediterranean Sea. During the last 4 years, the overall net gain in no-go, no-take or no-fishing is about 44.48 km^2, which represents 0.002 % of the Mediterranean Sea.

III.5.2. Year of designation

Data about the year of designation (Figure 090) was available for the 97 MPAs in which no-go, no-take or no-fishing areas can be found in the Mediterranean (100 %, MedPAN database).

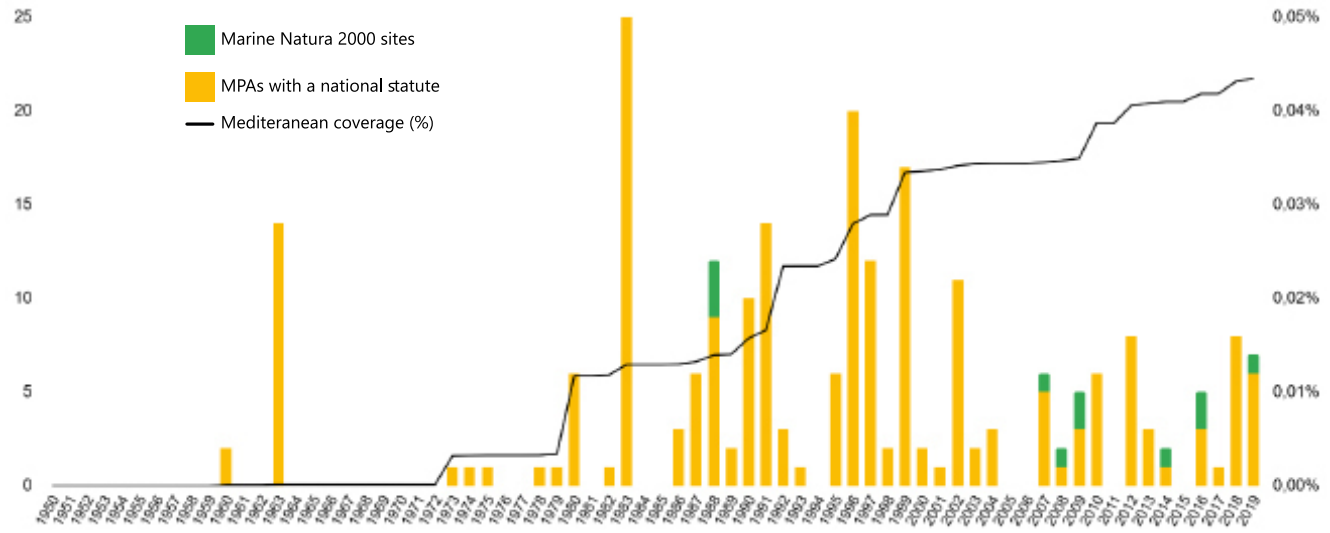


Figure 090: Number of no-go, no-take or no-fishing areas designated each year in the Mediterranean MPAs (left axis) and their cumulative coverage in percentage of the Mediterranean (right axis)(N=97).

The first no-fishing zones in a Mediterranean MPA with a national statute were declared in 1960 in the Mljet National Park (Croatia). The first no-go or no-take zones in a national MPA were declared in 1963 in the Port-Cros National Park (France). The first no-fishing zones in a Mediterranean Natura 2000 site were declared in 1988 in the three Special Areas of Conservation (Habitats Directive) of Baie et cap d'Antibes - îles de Lerins, Cap Ferrat and Cap Martin (France). The only no-go zone in a Natura 2000 site was declared in 2008 in the Special Area of Conservation (Habitats Directive) of Grapissar de la Masia Blanca (Spain). The only no-take zone in a Natura 2000 site was declared in 2019 in the Special Area of Conservation (Habitats Directive) of Posidonies du cap d'Agde (France).

The creation of no-go, no-take or no-fishing areas has remained low throughout the years, but the notable advances in coverage happened in 1973 (Zembra Biological Protection Zone, Tunisia), 1980 (Kornati National Park, Croatia and Galiton Nature Reserve, Tunisia), 1992 (Alónnisos, Vóreies Sporádes National Marine Park, Greece), 1996 (Arcipelago Toscano National Park, Italy), 1999 (Zákynthos National Marine Park, Greece) and 2010 (Karaburun-Sazan National Park, Albania). There has been no significant increase in no-go, no-take or no-fishing areas in the last 10 years.

III.5.3. Budget adequacy

Data about budget adequacy (Figure 091) was available for 60 out of 97 MPAs in which no-go, no-take or no-fishing areas can be found in the Mediterranean (62 %, MedPAN database). MPA managers were able to choose among the four following possibilities:

- The available budget is sufficient and fully meets the management needs and objectives of the MPA.
- The available budget is acceptable and meets the priority objectives of the MPA, but should be increased to ensure effective management taking into account all MPA objectives.
- The available budget is insufficient and constitutes a serious constraint to meet the priority management needs of the MPA.
- There is no budget for management of the MPA.

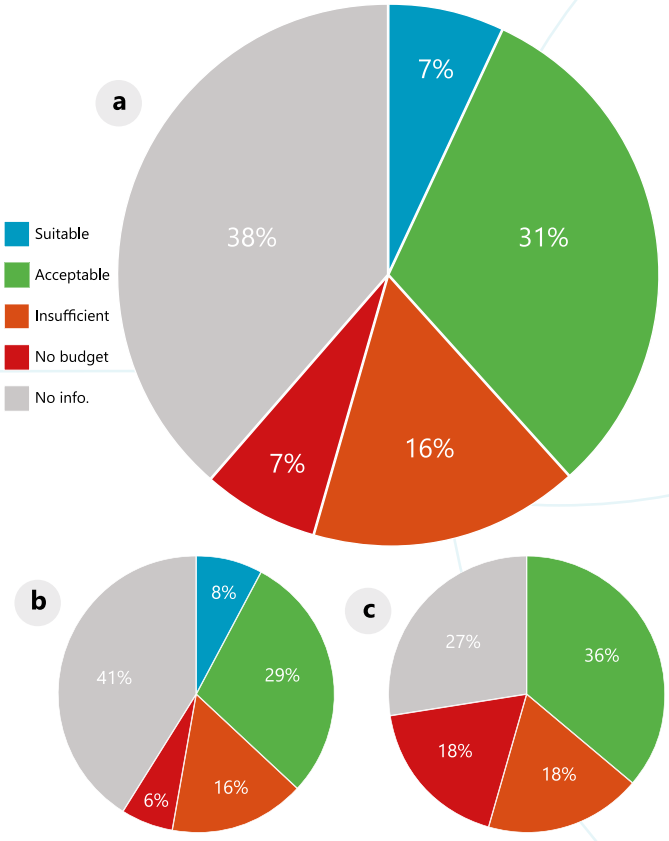


Figure 091: Budget adequacy in MPAs in which no-go, no-take or no-fishing areas can be found in the Mediterranean region (a, N=97), and more specifically in the EU (b, N=86) or non-EU (c, N=11) waters.

Figure 091 shows that a budget which is considered to be sufficient is available for only 7 % of the MPAs in which no-go, no-take or no-fishing areas can be found in the Mediterranean. For 31 % of them, the available budget is acceptable, whilst in 16 % of MPAs the available budget is considered as insufficient and 7 % of MPAs declare that there is no specific budget for the management of the MPA. Interestingly, only MPAs from EU countries indicated they had budgets considered as sufficient. A majority of the MPAs that declared not having a specific budget for their area were from non-EU countries: 36 % of them declared to work with an insufficient budget or with no budget at all.

III.5.4. Staff adequacy

Data about staff adequacy (Figure 092) was available for 63 out of 97 MPAs in which no-go, no-take or no-fishing areas can be found in the Mediterranean in the Mediterranean (65 %, MedPAN database). MPA managers were able to choose among the three following possibilities:

- Staff numbers on site are adequate for MPA management.
- Staff numbers on site are insufficient for MPA management.
- There are no dedicated staff on site.

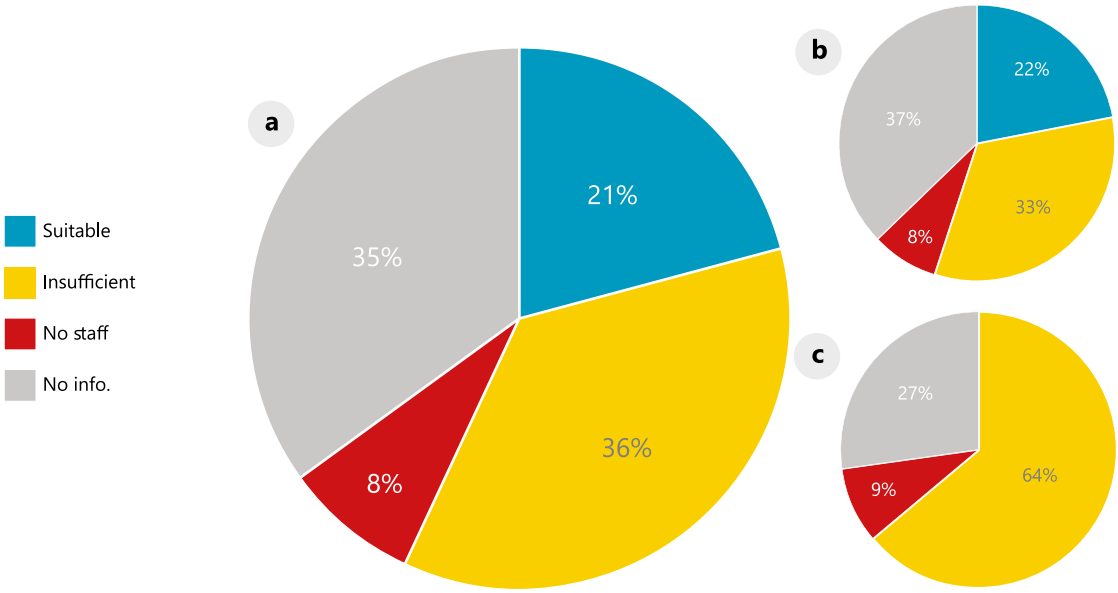


Figure 092: Staff adequacy in MPAs in which no-go, no-take or no-fishing areas can be found in the Mediterranean region (a, N=97), and more specifically in the EU (b, N=86) or non-EU (c, N=11) waters.

Figure 092 shows that 36 % of MPAs in which no-go, no-take or no-fishing areas can be found in the Mediterranean consider that they are understaffed in relation to the scope of their mission, compared with 21 % who consider that they are adequately staffed. Moreover, 8 % state that they have no dedicated staff on site. Available data show that the EU is more suitably equipped than non-EU countries, with 22% of their MPAs indicating that they have adequate staff number, while none of the non-EU countries have indicated having suitable staff. Moreover, 8 % of the MPAs in EU countries indicated having no dedicated staff on-site and 9 % for non-EU countries.

III.5.5. Management plan

Data about the presence and implementation of a management plan (Figure 093) was available for 71 out of 97 MPAs in which no-go, no-take or no-fishing areas can be found in the Mediterranean (73 %, MAPAMED and MedPAN databases). We consider as a management plan any document describing the four following elements:

- Governance of the MPA,
- Long-term objectives of the MPA,
- Management objectives of the MPA,
- Regulations and zoning of the MPA.

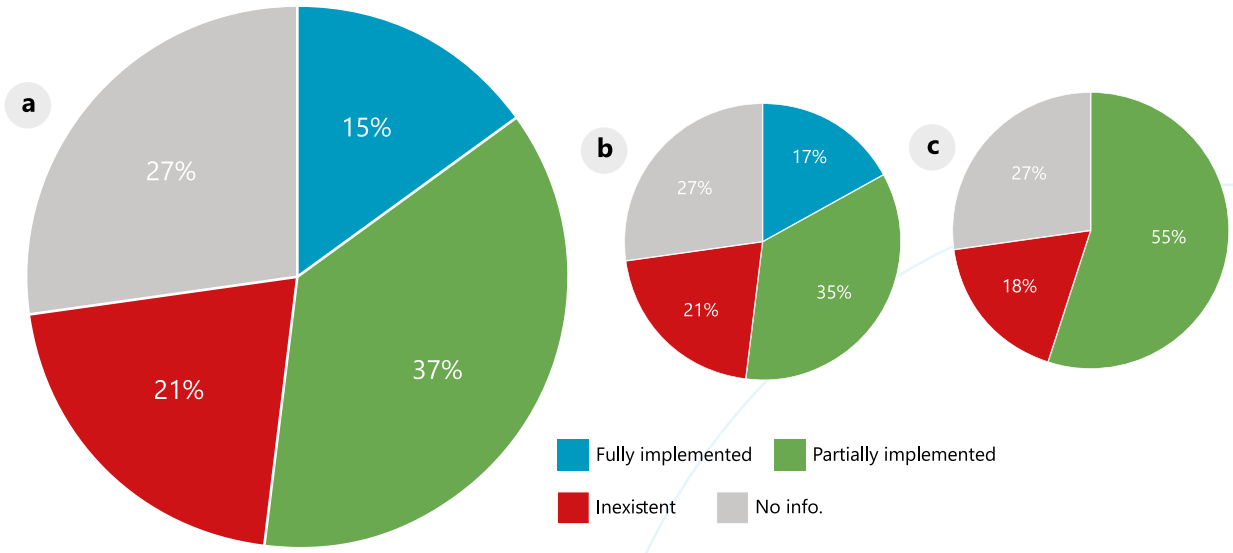


Figure 093: Status of management plans in MPAs in which no-go, no-take or no-fishing areas can be found in the Mediterranean region (a, N=97), and more specifically in the EU (b, N=86) or non-EU (c, N=11) waters.

Figure 093 shows that a management plan is fully implemented in only 15 % of the MPAs in which no-go, no-take or no-fishing areas can be found in the Mediterranean, whilst it is partially implemented in 37 %. Moreover, in 21 % of the MPAs, there is no management plan. The presence and implementation of a management plan are more common in MPAs outside the EU, with 55 % of non-EU MPAs having a partially implemented management plan, compared to 53 % of European MPAs having a fully or partially implemented management plan. In the EU, 21 % do not have a management plan.

III.5.6. Regulations and enforcement

Data about the presence of regulations (Figure 094) was available for 63 out of 97 MPAs in which no-go, no-take or no-fishing areas can be found in the Mediterranean (65 %, MedPAN database). MPA managers could choose between the following possibilities:

- Regulations for controlling uses and activities in the MPA exist and provide an excellent basis for management.
- Regulations for controlling uses and activities in the MPA exist but there are some weaknesses or gaps.
- Some regulations for controlling uses and activities in the MPA exist but there are major weaknesses.
- There are no regulations for controlling uses and activities in the MPA.

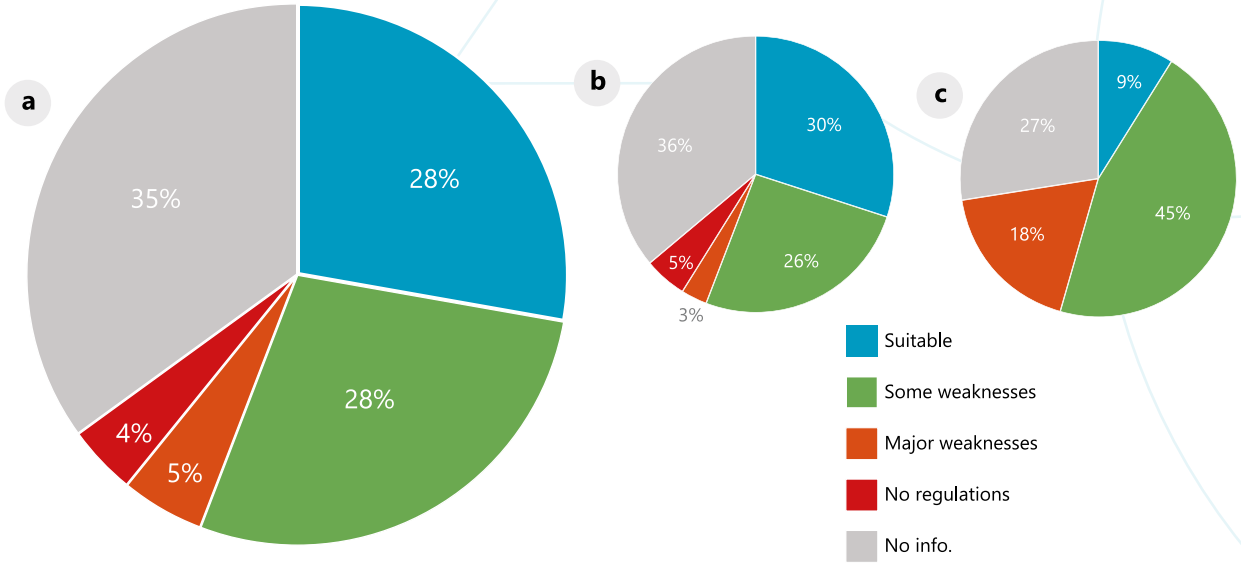


Figure 094: Presence of regulations in MPAs in which no-go, no-take or no-fishing areas can be found in the Mediterranean region (a, N=97), and more specifically in the EU (b, N=86) or non-EU (c, N=11) waters.

The MPAs in which no-go, no-take or no-fishing areas can be found in the Mediterranean declare that their regulation system for controlling the uses in the MPA is an excellent (28 %) or acceptable (28 %) basis for the management. A small part declares that the regulation system suffers from major weaknesses (5 %). The remaining MPAs (4 %) declare that they have no regulations for controlling the uses in the MPA. Only 9% of MPAs in non-EU countries indicated having a suitable regulation system.

The 59 MPAs that indicated the presence of regulations provided details about the enforcement of these regulations (Figure 095). MPA managers were proposed to choose among the following possibilities:

- Protection systems (patrols, permits...) do not exist or are ineffective in controlling access or resource use.
- Protection systems exist but are only partially effective in enforcing regulations due to major deficiencies (e.g. lack of skills, no patrol budget, problems with legal processes, MPA too large...).
- Protection systems are fairly effective in controlling access or resource use. There is acceptable capacity to enforce MPA legislation and regulations but some deficiencies remain.
- Protection systems are largely or wholly effective in enforcing MPA regulations.

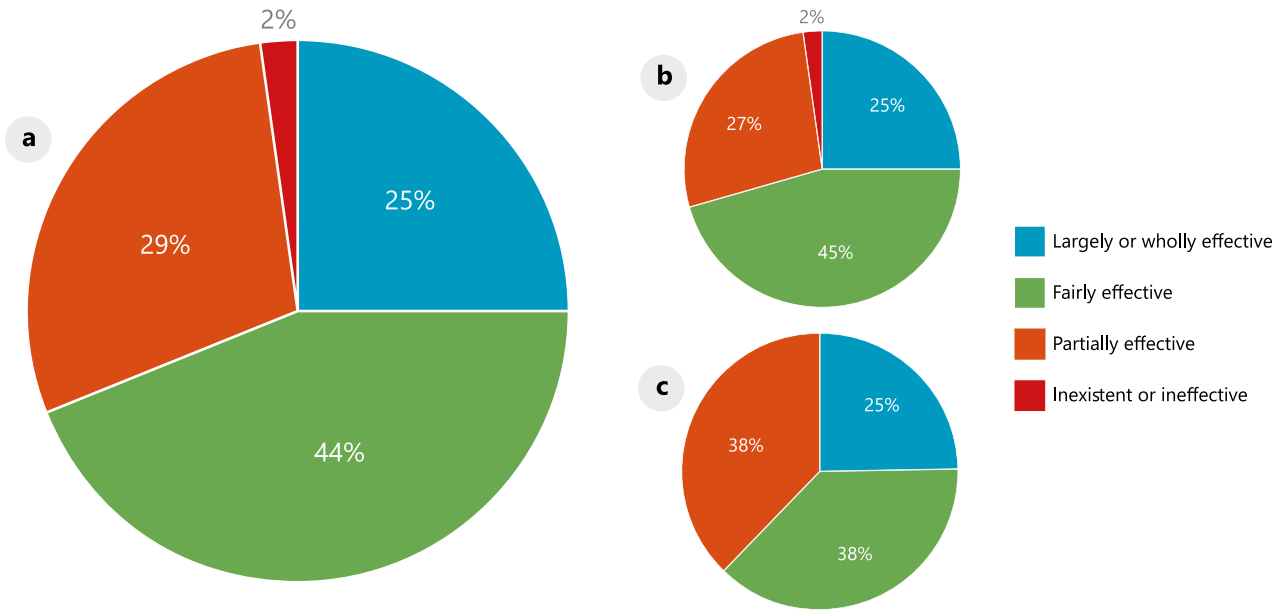


Figure 095: Enforcement of regulations in MPAs in which no-go, no-take or no-fishing areas can be found, having regulations, in the Mediterranean region (a, N=59), and more specifically in the EU (b, N=51) or non-EU (c, N=8) waters.

A quarter of these MPAs declare that the enforcement of their regulations is wholly effective. The majority (44 %) declare that their enforcement system is fairly effective, 29 % that it is partially effective and only 2 % that it is inexistent or ineffective. Results are similar for EU and non-EU countries.

III.6. Concluding remarks on the regulation of activities in Mediterranean MPAs

As emphasised in this chapter, regulating human activities within MPAs is crucial for achieving their objectives, as the level of protection provided by the MPAs directly impacts their conservation outcomes. This aligns with one of the six strategic objectives of the new Post-2020 Mediterranean Marine Protected Area Roadmap, which aims to "strengthen national legislation and ensure effective enforcement mechanisms to produce better outcomes for MPAs" (MedPAN, SPA/RAC, WWF, Prince Albert II of Monaco Foundation, 2022). This chapter shows that in 2020, the no-go, no-take, or no-fishing areas (the highest level of protection provided by MPAs) cover 1,095.89 km^2, which represents only 0.04 % of the Mediterranean Sea.

Overall, the enforcement of regulations in Mediterranean MPAs appears to be fairly effective. While there are some areas for improvement, such as increasing the percentage of MPAs with wholly effective enforcement systems, the majority of MPAs seem to be doing a good job at regulating activities within their boundaries. It is encouraging to see that these results are consistent across both EU and non-EU countries. However, it is important to continue monitoring and evaluating the effectiveness of these regulations in order to ensure that they remain successful in protecting the biodiversity and ecological health of these important marine ecosystems.

Additionally, it is important for stakeholders, including governments, local communities, scientists, and NGOs, to collaborate closely in the design and enforcement of regulations. Transparent and participatory processes can help foster stakeholder engagement, promote compliance, and enhance the overall effectiveness of regulatory measures (See box 8 for more details on the successful case study of Torre Guaceto MPA). Furthermore, continuous monitoring, evaluation, and adaptive management are crucial to ensure that regulations are achieving their intended objectives and adapting to changing environmental and socio-economic conditions.

Box 8: Torre Guaceto Marine Protected Area: agreement between actors works

The Nature Reserve of Torre Guaceto is located on the coast of Salento, 17 km north of Brindisi. Established in 1991, the Marine Protected Area covers an area of 2,227 hectares at sea along the Adriatic coast of Italy, plus 1,016 ha of land protected on the coastline. Rocky bottoms alternate with sand and *Posidonia oceanica* seagrass beds at about 12–20 m depth. From about 25 to 35–40 m, coralligenous formations alternate with sand, and at deeper stands sandy–muddy bottoms widely dominate. The protection of the area started in 1981 with the declaration of Torre Guaceto as a "Wetland of International Interest" under the Ramsar Convention.

Six years later, WWF Italy carried out the feasibility plan for the establishment of a marine reserve, which became a reality on 4 December 1991. This MPA became the first example of integrated management of a protected coastal zone in the country.

From 2001-2005, all fishing activities were effectively banned in the entire MPA, with the frontal opposition of local fishers, who were also routinely using illegal fishing tools. Local fishermen mostly use fixed nets (trammels and gillnets depending on season and target species).

With the aim to overcome permanent conflict between local stakeholders, in 2009 a regulation of the fishing activity was introduced in the zone buffering the two no-take zones, covering 342 ha, based on an agreement between the fishers and the MPA authority, with the collaboration of researchers. This eventually put an end to the dispute, and most importantly, was an inclusive movement towards the local fishers, who became co-managers of the area on an informal basis. Fishers who adhered to what became in 2005 as a "co-management protocol" committed to the protection of top predator species, fish in juvenile stages and benthic communities and habitats, agreeing to set a limit of fishing once a week. The community could now fish in buffer zones surrounding two no-take zones demarcated in the area.

In order to reduce the impact of fishing activities, the community agreed to use shorter trammel nets (1 km long as opposed to the usual 2-3 km) with a larger mesh size (3 cm), and to haul the nets only once every week. They also agreed to reduce fishing as soon as signs of overfishing would be detected. Data routinely collected through the monitoring of fishery yields have shown consistently higher CPUEs inside than outside the MPA, multiplying the fish captured per net and the corresponding revenues[40]

The science-based monitoring[41] continues uninterrupted since 2005, thus helping manage fishing activities in an adaptive co-management. In 2009, the site was included in the List of Specially Protected Areas of Mediterranean Importance (SPAMIs) established under the SAP/BD Protocol of the Barcelona Convention.

Citation: Amengual P., Alvarez-Berastegui D., (2023). Box 8: Torre Guaceto Marine Protected Area: agreement between actors works. In "The 2020 Status of Marine Protected Areas in the Mediterranean" (MedPAN and UNEP/MAP-SPA/RAC, 2023).

40. Di Franco, A., Thiriet, P., Di Carlo, G. *et al.* Five key attributes can increase marine protected areas performance for small-scale fisheries management. Sci Rep 6, 38135 (2016). https://doi.org/10.1038/srep38135

41. Guidetti, P. , Simona Bussotti , Fausto Pizzolante, Alessandro Ciccolella, 2010. Assessing the potential of an artisanal fishing co-management in the Marine Protected Area of Torre Guaceto (southern Adriatic Sea, SE Italy) Fisheries Research 101 (2010) 180–187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CHAPTER IV – CONSERVATION OF HABITATS AND SPECIES IN THE MEDITERRANEAN MPAs

Marine litter and plastic pollution are the most reported types of pollution in Mediterranean MPAs, both of which are of major concern for managers of national MPAs (62 % for litter and 51 % for plastic pollution). Another main concern for MPA managers is invasive species and 22 % of the MPAs state that they carry out monitoring of invasive species, at least occasionally, within their perimeter.

Posidonia meadows, rocky shores, and beaches are the most common natural features in the MPAs. The three habitats with conservation targets that were mostly cited by MPAs with a national statute, however, are Posidonia oceanica meadows (69 %), coralligenous biocenosis (43 %) and hard beds and rocks (24 %). Results show that among the 67 national MPAs that stated that Posidonia justified the designation of their site as MPAs, 42 (about 63 %) are carrying out monitoring activities and also specific conservation or restoration measures. In addition, officially designated MPAs cover about 39 % of Posidonia meadows mapped in the Mediterranean. Another habitat of primary interest for much of the Mediterranean biodiversity and the ecosystem processes, Coralligenous habitats, is listed in 33 national MPAs and officially designated MPAs cover about 39 % of Coralligenous habitats mapped in the Mediterranean.

MPAs with a national statute are particularly important feeding grounds for seabirds (82 %) followed by cetaceans (64 %), marine turtles (58 %), elasmobranchs (47 %), and monk seals (23 %). A majority of MPAs with a national statute also host essential reproduction areas for seabirds (81 %). The other groups of highly mobile species are less represented: reproduction areas for cetaceans, marine turtles and elasmobranch are identified in respectively 35 %, 35 % and 32 % of national MPAs. The most cited species with conservation targets are emblematic ones such as large charismatic vertebrates, like marine mammals and marine turtles, but also other species of priority conservation interest, such as *Pinna nobilis* and the dusky grouper (*Epinephelus marginatus*). However, invertebrates and plants were also listed, in particular keystone, engineer or indicator species, such as Posidonia, or red coral. In 2020, about 25 % of the existing IMMAs are covered by MPAs in the Mediterranean and about 50 % of the existing IBAs are covered by MPAs in the Mediterranean.

IV.1. Introduction on conservation of habitats and species in the Mediterranean MPAs

The conservation of habitats and species in Mediterranean Marine Protected Areas (MPAs) is crucial due to the diverse range of threatened or endangered species that call these areas home. Monitoring and reporting on the status of these habitats and species allow MPA management and governance bodies to take appropriate conservation measures to protect them. Many Mediterranean MPAs are also important for fisheries, tourism, and other economic activities. By improving the management of these areas, it is possible to ensure that these resources are used sustainably, without compromising the health of the ecosystem. Overall, improving the conservation status of habitats and species in Mediterranean MPAs is essential for ensuring the long-term health and sustainability of the region's marine ecosystem, as well as supporting the economic and cultural well-being of local communities. This chapter delves into the challenges posed by pollution, marine litter and invasive species, as well as the natural features and key life cycle areas of species of interest in Mediterranean MPAs. It also examines the monitoring and conservation measures implemented for habitats and species with conservation targets listed by MPA managers. Overall, the purpose of this chapter is to provide an overview of the conservation measures implemented for habitats and species of interest for MPAs across the Mediterranean.

IV.2. Marine habitats in MPAs with a national statute

The Mediterranean Sea is one of the most diverse and unique marine ecosystems in the world, hosting a vast array of species and habitats. However, the increasing human activities and climate change have put significant pressure on the health of the Mediterranean Sea, threatening the survival of many species and ecosystems. To mitigate these threats, Marine Protected Areas (MPAs) have been established throughout the Mediterranean to conserve and protect these valuable habitats. Protecting these habitats is crucial to safeguarding the biodiversity of the Mediterranean and ensuring the sustainability of its resources for future generations. The identification of important habitats and their ecological functions, as well as their study and protection, is, therefore, a key issue for MPA management.

Data from MAPAMED and the MedPAN database (see the general methodology section for more information) were used to carry out the analysis of marine habitats regarding the 264[42] MPAs with a national statute in the Mediterranean.

IV.2.1. Water quality, pollution, and marine litter

Maintaining water quality is one of the core tasks of MPAs. MPAs must carry out regular monitoring, maintenance operations and, if necessary, investigations into the sources of pollution. However, the particular nature of the marine environment means that some types of pollution may be difficult to address locally (i.e., diffuse pollution, whether diluted in the water or originating from a source beyond the jurisdiction of the MPA). In such cases, the MPA may report the problem to the relevant public authorities.

[42] Among those MPAs, 257 are officially designated MPAs and 7 are "paperless" MPAs (i.e., management actions in the field without official designation) that are not yet included in MAPAMED (cf., Methodology).

IV.2.1.1. Water quality monitoring

Data about the water quality monitoring (Figure 096) was available for 86 out of 264 MPAs with a national statute in the Mediterranean (33 %, MedPAN database).

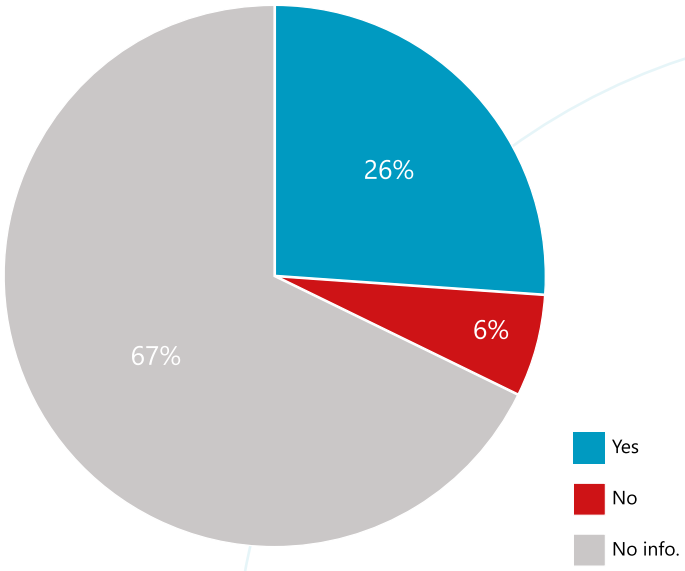


Figure 096: Water quality monitoring in MPAs with a national statute in the Mediterranean region (N=264).

26 % of the national MPAs appear to carry out regular water quality analyses within their protected area.

IV.2.1.2. Types of pollution

This analysis is about the types of pollution that are most hampering the achievement of the MPA's conservation objectives. Data about the types of pollution (Figure 097) was available for 108 out of 264 MPAs with a national statute in the Mediterranean (41 %, MedPAN database).

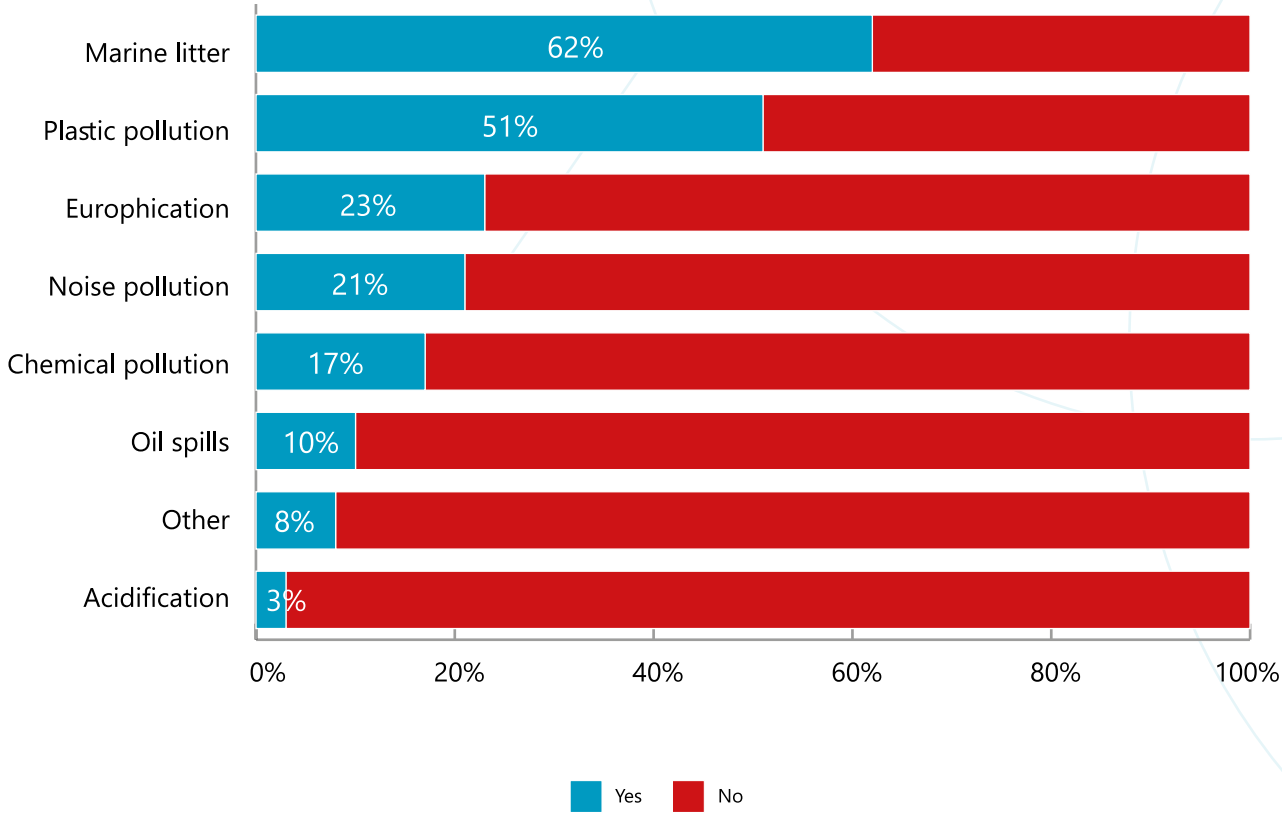


Figure 097: Presence rate of the most hampering types of pollution in MPAs with a national statute in the Mediterranean region (N=108).

The most frequently reported types of pollution are marine litter and plastic pollution, both of which are of major concern for managers of national MPAs (62 % for litter and 51 % for plastic pollution; the same proportion in the EU and outside the EU). Eutrophication, which mainly concerns more or less enclosed marine areas, is reported in almost a quarter of national MPAs (23 %). The last four types of pollution (noise, chemical — including heavy metals or radioactivity —, oil spills and acidification) are the least frequently reported. Oil spills account for 20 % of pollution outside the EU (4 MPAs out of 21).

IV.2.1.3. Sources of pollution

This analysis is about the sources of pollution that are most hampering the achievement of the MPA's conservation objectives. Data about the sources of pollution (Figure 098) was available for 108 out of 264 MPAs with a national statute in the Mediterranean (41 %, MedPAN database).

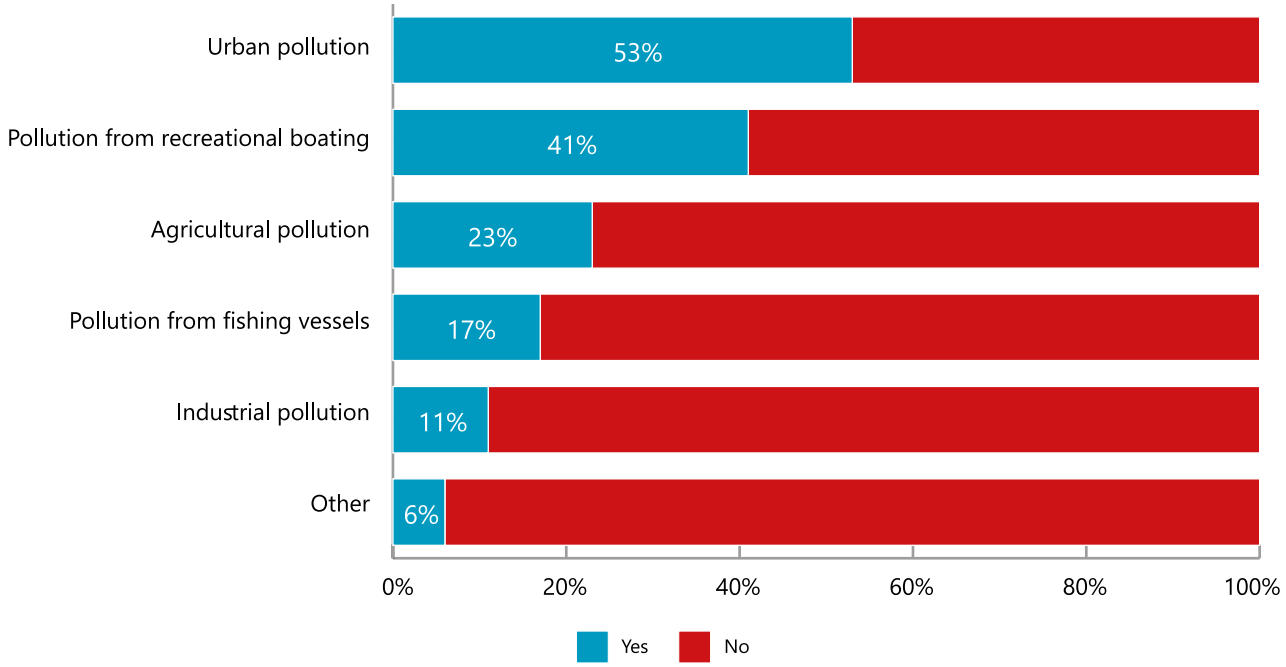


Figure 098: Presence rate of the most hampering source of pollution in MPAs with a national statute in the Mediterranean region (N=108).

Urban pollution appears to bethe major source of pollution (53 %) both within and outsidethe EU. However, pollution from recreational boating comes in a close second, again both within and outside the EU, and similarly in the subregions. Agricultural pollution is reported in less than a quarter of cases, as is pollution from fishing vessels and industry. However, it should be kept in mind that some types of pollution are difficult for MPA managers to detect, particularly soluble pollution (whether organic or chemical).

IV.2.1.4. Activities carried out concerning marine litter

Data about marine litter (Figure 099) was available for 80 out of 264 MPAs with a national statute in the Mediterranean (30 %, MedPAN database).

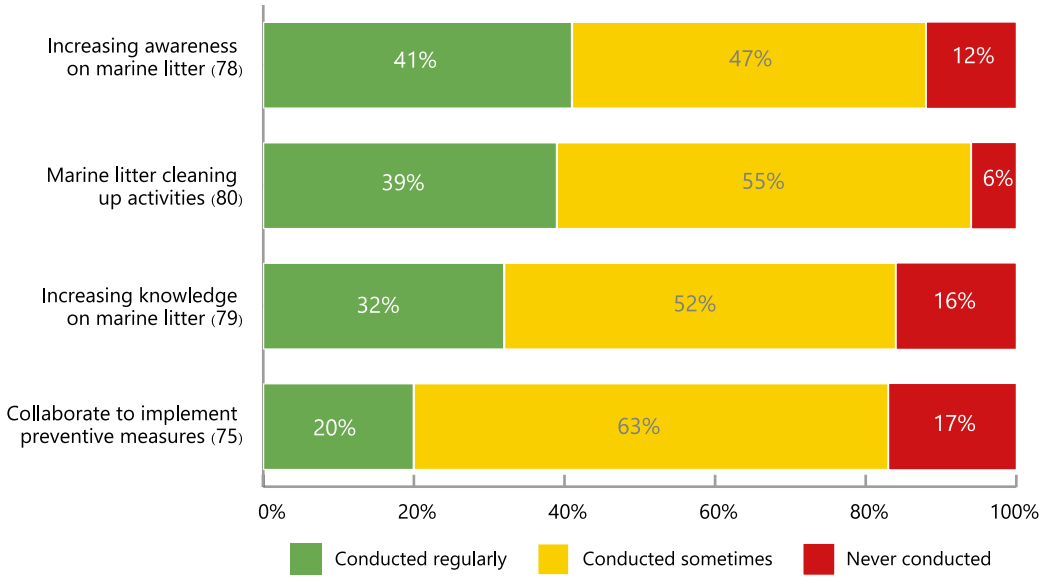


Figure 099: Activities carried out by the MPAs with a national statute concerning marine litter. Numbers in brackets indicate the sample size.

The MPAs in the sample appear to be very involved in actions against marine pollution. More than 90 % of them engage, at least occasionally, in marine litter cleaning-up activities, and almost as many in increasing awareness or knowledge of marine litter. Prevention achieves almost the same score, but with only 20 % of the sample conducting it regularly (compared to 32 to 41 % for the other actions).

IV.2.2. Natural features

Data about the natural features (Figure 100) was available for 111 out of 264 MPAs with a national statute in the Mediterranean (42 %, MedPAN database).

The natural features most present in the MPAs in the sample are Posidonia meadows (84 occurrences, i.e., 76 % of the sample), rocky shores (75 %) and beaches (64 %). This is followed by coralligenous habitats, small islands, cliffs, and seagrass meadows other than Posidonia, forming a second group of around 55 %. This is followed by one-third or less by underwater caves (37 %) or semi-submerged caves (35 %), sand dunes (33 %), subtidal rocky reefs (29 %) and maerl beds (27 %). Around a quarter are salt marshes (25 %) and coastal lagoons permanently connected to the sea (22 %), followed by underwater canyons, mud flats, large islands, estuaries, coastal lagoons temporally connected to the sea, and seamounts and knolls at around 15 %. Zones of upwelling, hydrothermal vents and cold seeps, requiring great depths and rare tectonic features, are represented by 8 % (9 MPAs), 3 % (3 MPAs) and 2 % (2 MPAs), respectively.

In addition to these natural features, almost a quarter of the MPAs in the sample (24 %) indicate having artificial reefs, whether their purpose is settlement, fishing or combating illegal trawling. This figure is stable within and outside the EU, but mostly concentrated in the western basin.

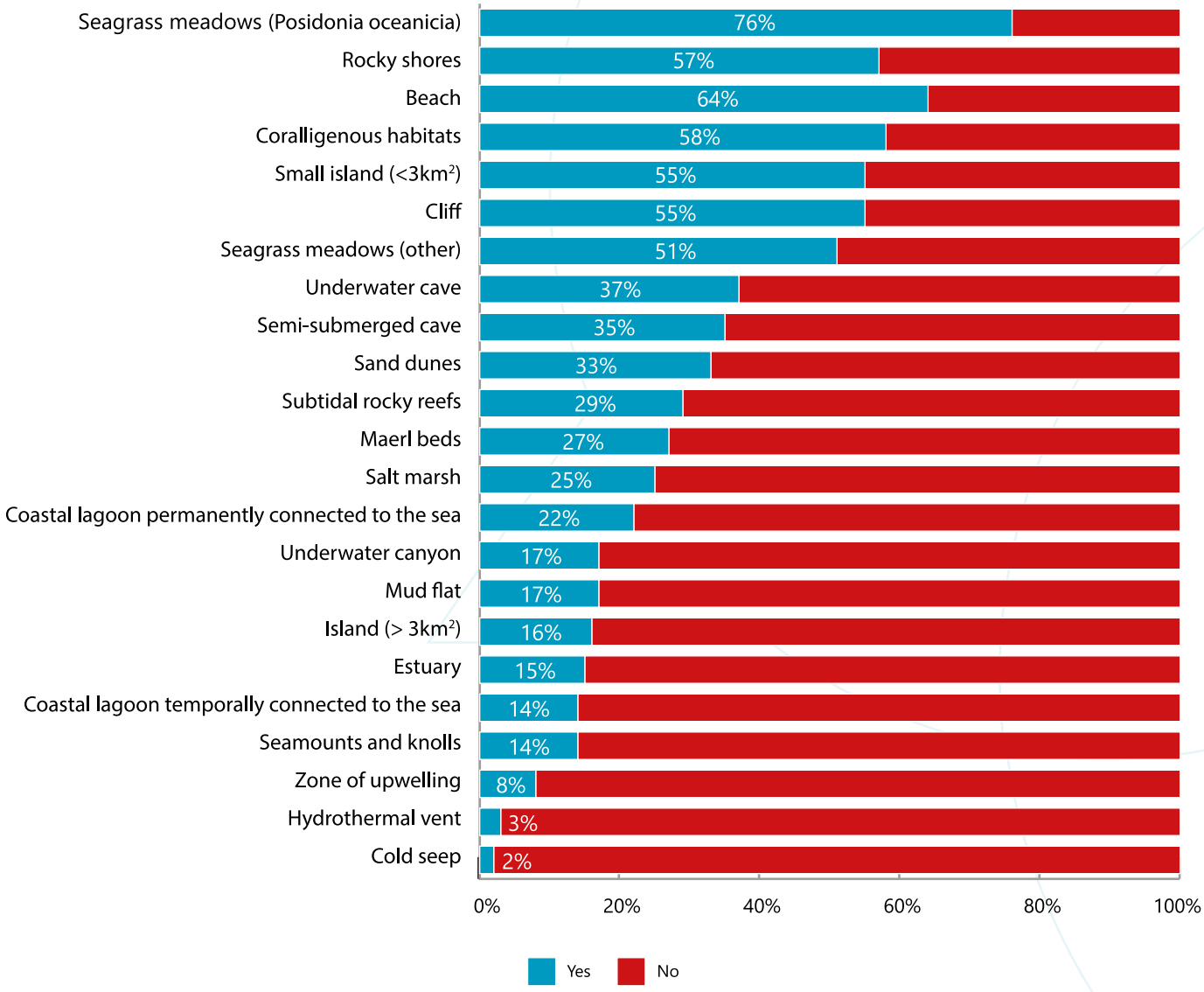


Figure 100: Occurrence rate of natural features in MPAs with a national statute (n=111). Contribution according to the Mediterranean subregions: MWE: "Western Mediterranean Sea" (n=63), MAD "Adriatic Sea" (n=20), MIC: "Ionian Sea and the Central Mediterranean Sea" (n=11) and MAL: "Aegean — Levantine Sea" (n=18).

IV.2.3. Habitats with conservation target

Data about habitats with conservation target was available for 94 out of 264 MPAs with a national statute in the Mediterranean (36 %, MedPAN database). MPA managers were asked to list between 1 and 10 habitats from the main ones that can be found in the MPA. For each, they were also asked to indicate the following information:

- whether it justifies the designation of the site as MPA,
- whether it is monitored in the MPA or not,
- whether it is subject to specific conservation or restoration measures in the MPA.

The total number of records is 411, which represents an average of about 4 habitats listed per MPA. The number of distinct habitats listed is 75. The 7 most cited habitats, those that represent more than 50 % of the records, are presented in Table 16. The questionnaire is based on the "list of Mediterranean benthic biocenoses" from the "Handbook for interpreting types of marine habitat for the selection of sites to be included in the national inventories of natural sites of conservation interest" (UNEP/MAP-RAC/SPA, 2015[43]).

Table 16: List of the habitats with conservation targets that can be found in the Mediterranean MPAs (411 records listed by 94 MPAs with a national statute; among the 75 distinct habitats, the list is limited to the 7 more frequently cited by MPA managers — which represent more than 50 % of the records).

Code	Name	Frequencies
III.5.1.	*Posidonia oceanica* meadows	69 %
IV.3.1.	Coralligenous biocenosis	43 %
III.6.	Hard beds and rocks	24 %
III.6.1.	Biocenosis of infralittoral algae	24 %
IV.3.2.	Semi-dark caves (also in enclave in upper stages)	23 %
II.4.3.	Mediolittoral caves	21 %
I.2.1.	Biocenosis of supralittoral sands	18 %

The three habitats with conservation targets that were mostly cited by MPAs with a national statute are *Posidonia oceanica* meadows (69 %), coralligenous biocenosis (43 %) and hard beds and rocks (24 %).

IV.2.3.1. Posidonia meadows

The *Posidonia oceanica* meadow is considered to be the most important ecosystem in the Mediterranean, both in terms of its extent and the role it plays (i) at the ecological level (high primary production, the value of which is estimated at 4.2 tonnes per hectare per year, partly exported to other ecosystems, oxygenation of the waters, (ii) at the sedimentary level (stabilisation of the seabed and protection of beaches against erosion), (iii) at the economic level (spawning grounds, nurseries, temporary or permanent habitat for many species of commercial interest). It is also an excellent indicator of the overall quality of the natural environment. On the other hand, the *Posidonia oceanica* meadow plays a major role in the fixation and sequestration of blue carbon (carbon sink); the matte constitutes a unique reservoir estimated at more than 1,500 tonnes of carbon per hectare, i.e. 4 to 10 times more important than the forest (Pergent, 2016). 67 MPAs with a national statute have listed Posidonia as a habitat or species with a conservation target in their MPA (Figure 101; including beds of Posidonia dead leaves, which are also a habitat of interest[44]).

[43] https://rac-spa.org/sites/default/files/doc_mkh/msdf/msdf_eng_cover.pdf

[44] Either data for the species "Posidonia oceanica" (N=31) or data for the habitats "II.3.1.1. Facies of banks of dead leaves of Posidonia oceanica and other phanerogams" (N=2), "III.5.1. Posidonia oceanica meadows" (N=65) or "III.5.1.3. Facies of dead 'mattes' of Posidonia oceanica without much epiflora" (N=4) (list of Mediterranean benthic biocenoses, UNEP/MAP-RAC/SPA, 2015; different entries could have been listed by the same MPA).

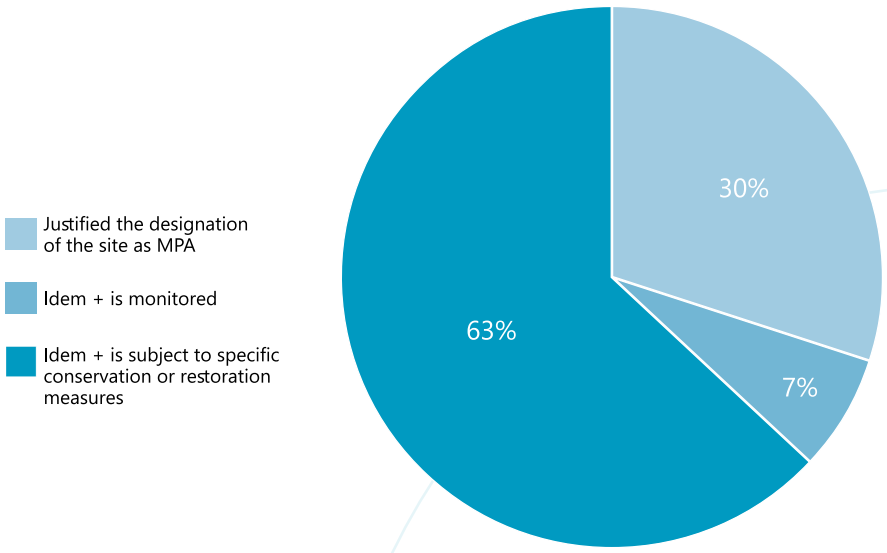


Figure 101: Management actions from MPAs with a national statute concerning Posidonia oceanica meadows (N=67).

Among the 67 national MPAs that stated that Posidonia justified the designation of their site as MPAs, 42 (about 63 %) are carrying out monitoring activities and also specific conservation or restoration measures.

In addition, data were analysed spatially in order to calculate the percentage of Posidonia meadows covered by officially designated MPAs in the Mediterranean (Table 17). The spatial data is from the GIS layer "*EUSeaMap (2021) habitat types (EUNIS 2019)*"[45](based on the EUNIS marine habitat classification review 2019[46]).

Table 17: Surface areas and percentages of Posidonia meadows coverage by officially designated MPAs (EUSeaMap 2021, MAPAMED 2019 edition, Caution: surface areas cannot be added as overlaps exist).

Type of MPAs	Estimated area of Posidonia meadows included in MPAs (km²)	Estimated percentage of Posidonia meadows included in MPAs (%)
MPAs with a national statute	**1,887**	**14.3**
where Posidonia justified the designation of the site as MPA	*74*	*0.6*
idem + Posidonia is monitored	*138*	*1.0*
idem + Posidonia is subject to specific conservation or restoration measures	*1,195*	*9.0*
no information	*480*	*3.6*
Marine Natura 2000 sites	**3,856**	**29.5**
where Posidonia is listed in the Standard Data Form	*3,617*	*27.6*
where Posidonia is not listed in the Standard Data Form	*239*	*1.8*
Marine Protected Areas	**5,094**	**38.9**
where Posidonia justified the designation of the site as MPA	*3,623*	*27.4*

[45]EUSeaMap 2021 in the EUNIS 2019 classification: https://emodnet.ec.europa.eu/en/seabed-habitats

[46] https://www.eea.europa.eu/data-and-maps/data/eunis-habitat-classification: habitats MB252 "Biocenosis of Posidonia oceanica" and MB2523 "Facies of dead 'mattes' of Posidonia oceanica without much epiflora".

Table 17 shows that officially designated MPAs covers about 38.9 % of Posidonia meadows mapped in the Mediterranean. The coverage at the end of 2016 was about 34.3 % (4.6 points gain). Posidonia is mainly covered by Natura 2000 sites (29.5 %) compared to national MPAs (14.3 %), but it is not known to what extent protection measures are implemented in the field. This being said, it seems that most of the coverage done by national MPAs is where specific conservation or restoration measures are implemented towards Posidonia meadows (9 %).

IV.2.3.2. Coralligenous habitats

Coralligenous is another habitat of primary interest for much of the Mediterranean biodiversity and the ecosystem processes due to its high biodiversity and ecological importance. Coralligenous habitats are characterized by the presence of a complex community of organisms, including algae, invertebrates, and fishes, which form a three-dimensional structure that provides shelter and food for a variety of species (Ballesteros 2006). Moreover, coralligenous habitats are important for ecosystem functioning, including nutrient cycling, carbon sequestration, and sediment stabilization (Teixido *et al.*, 2011). In addition, coralligenous habitats are highly vulnerable to anthropogenic impacts, such as coastal development, pollution, and overfishing. Their destruction or degradation can have significant consequences for the health and functioning of Mediterranean marine ecosystems. As a result, there is a growing interest in the conservation and management of coralligenous habitats, both for their ecological value and for the significant ecosystem services they provide (Ballesteros *et al.*, 2019). 33 national MPAs have listed Coralligenous[47] as a habitat with a conservation target in their MPA (Figure 102).

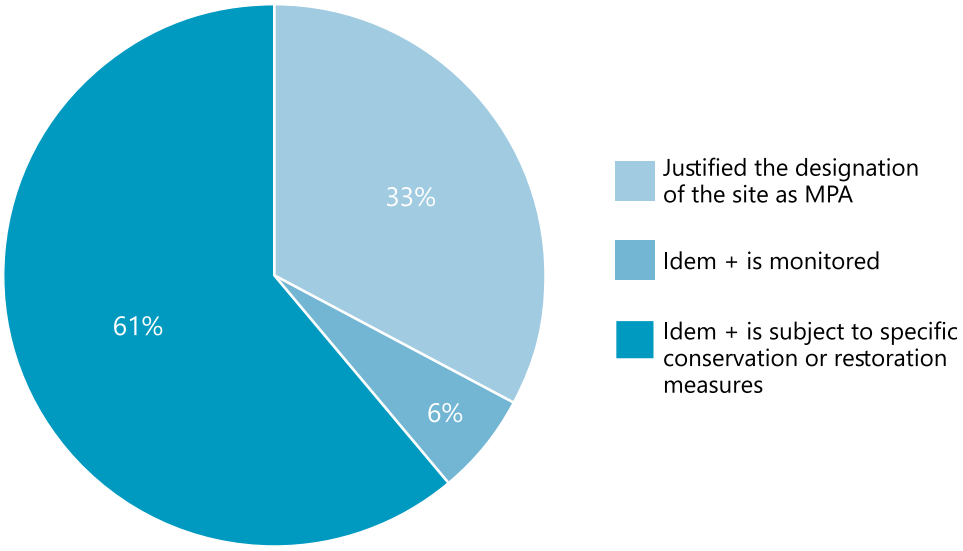


Figure 102: Management actions from MPAs with a national statute concerning Coralligenous habitats (N=33).

Among the 33 national MPAs that stated that Coralligenous justified the designation of their site as MPAs, 20 (about 61 %) are doing monitoring and also specific conservation or restoration measures. Moreover, 2 MPAs (about 6 %) are doing monitoring only.

In addition, data were analysed spatially in order to calculate the percentage of Coralligenous habitats covered by officially designated MPAs (Table 18). The spatial data is from the GIS layer "*EUSeaMap (2021)* habitat types (*EUNIS 2019*)"[48] (based on the EUNIS marine habitat classification review 2019[49]).

[47] Data for the habitats "III.6.1.35. Facies and association of the coralligenous biocenosis (in enclave)" (N=6), "IV.3.1. Coralligenous biocenosis" (N=40) or "IV.3.1.15. Coralligenous platforms" (N=1) (list of Mediterranean benthic biocenoses, UNEP/MAP-RAC/SPA, 2015; different entries could have been listed by the same MPA).

[48] EUSeaMap 2021 in the EUNIS 2019 classification: https://emodnet.ec.europa.eu/en/seabed-habitats

[49] https://www.eea.europa.eu/data-and-maps/data/eunis-habitat-classification: habitats MC151 "Coralligenous biocenosis" and MC251 "Coralligenous platforms".

Table 18: Surface areas and percentages of Coralligenous habitats coverage by officially designated MPAs (EUSeaMap 2021, MAPAMED 2019 edition, Caution: surface areas cannot be added as overlaps exist).

Type of MPAs	Estimated area of Coralligenous habitat included in MPAs (km²)	Estimated percentage of Coralligenous habitat included in MPAs (%)
MPAs with a national statute	**354**	**11.6**
where Coralligenous justified the designation of the site as MPA	*42*	*1.4*
idem + Coralligenous is monitored[50].	*0*	*0*
idem + Coralligenous is subject to specific conservation or restoration measures	*47*	*1.5*
no information	*265*	*8.7*
Marine Natura 2000 sites	**848**	**27.8**
Marine Protected Areas	**1,182**	**38.8**

Table 18 shows that officially designated MPAs covers about 38.8 % of Coralligenous habitats mapped in the Mediterranean. The coverage at the end of 2016 was about 33.5 % (5.3 points gain). Most of the Coralligenous is covered by Natura 2000 sites (27.8 %) compared to national MPAs (11.6 %), but it is not known to what extent its protection measures are implemented in the field. Regarding national MPAs, in most of the cases, the coverage is done by MPAs where it is not known if specific objectives or actions are implemented towards Coralligenous habitats (8.7 %).

IV.2.3.3. Red Coral

The Red Coral (*Corallium rubrum*), a sub-endemic gorgonian species of the Mediterranean basin, has been the subject of intense poaching for several centuries due to its interest in jewellery and its alleged medicinal virtues in certain beliefs. As a result, it is classified as "endangered" on the IUCN Red List, in Annex V of the European Habitats-Fauna-Flora Directive, in Annex III of the Bern Convention and Annex III of the Barcelona SPA/BD Protocol, and is also subject to national regulations. A total of 17 species of gorgonian are actually on the IUCN Red List, but *Corallium rubrum*, although not the most threatened (it is *Isidella elongata*, a victim of deep-sea trawling) is the most emblematic. Only 19 national MPAs (7 % of MPAs with a national statute) have listed Red Coral[51] as a habitat or species with a conservation target in their MPA (Figure 103).

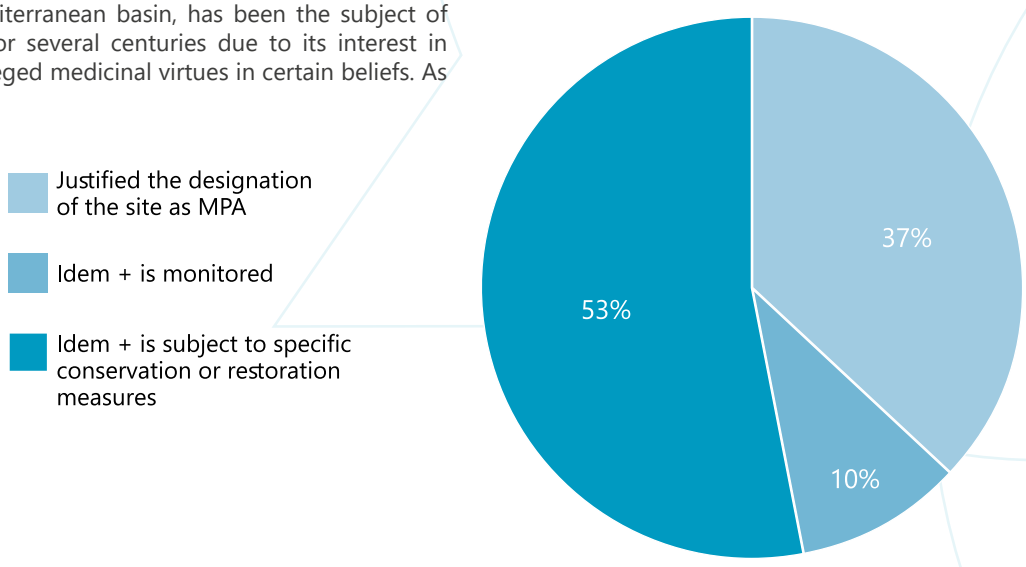


Figure 103: Management actions from MPAs with a national statute concerning facies with Red Coral (N=19).

Among the 19 national MPAs that stated that Red Coral justified the designation of their site as MPAs, 10 (about 53 %) are doing monitoring and also specific conservation or restoration measures. Moreover, 2 MPAs (about 11 %) are doing monitoring only.

[50] The estimated area is 0 km² because the 2 concerned MPAs are not overlapping the GIS layer "EUSeaMap (2021) habitat types (EUNIS 2019)".

[51] Either data for the species "Corallium rubrum" (N=18) or data for the habitat "IV.3.2.2. Facies with Corallium rubrum" (N=4) (list of Mediterranean benthic biocenoses, UNEP/MAP-RAC/SPA, 2015; different entries could have been listed by the same MPA).

IV.3. Marine species in MPAs with a national statute

The identification of a certain number of species of interest is important for the protection of nature in the Mediterranean because it allows for targeted conservation efforts to be put in place. By focusing on specific species that are essential for the ecosystem, such as those that are in danger of extinction, engineer species, indicators, or "umbrella species," conservation efforts can be more effective in preserving the overall health of the ecosystem. Additionally, identifying and protecting charismatic species can help raise public awareness and support for conservation efforts.

Data from MAPAMED and the MedPAN database (see the general methodology section for more information) were used to carry out the analysis of marine species regarding the 264[52] MPAs with a national statute in the Mediterranean.

IV.3.1. Invasive species

Alien species, sometimes called exotic, introduced, non-indigenous or non-native species, are organisms that have been intentionally or unintentionally introduced, have established populations and have spread into the wild in the new host region (IUCN, 2000). In their home ranges, these species live in balance with their environment, where populations are controlled by ecosystem interactions such as predation, parasitism, and disease. However, once they arrive in a new environment, they may become established and invasive. The introduction of alien species is one of the main threats to the maintenance of biodiversity in ecosystems and a serious menace to their correct functioning when they become invasive (Elton 1958, Mack *et al.*, 2000). Invasive species must therefore be intensively monitored in order to identify potential invasions at an early stage so that measures can be taken in time, which requires good training for agents.

IV.3.1.1. Pressure intensity

Data about the pressure intensity of invasive species (Figure 104) was available for 69 out of 264 MPAs with a national statute in the Mediterranean (26 %, MedPAN database).

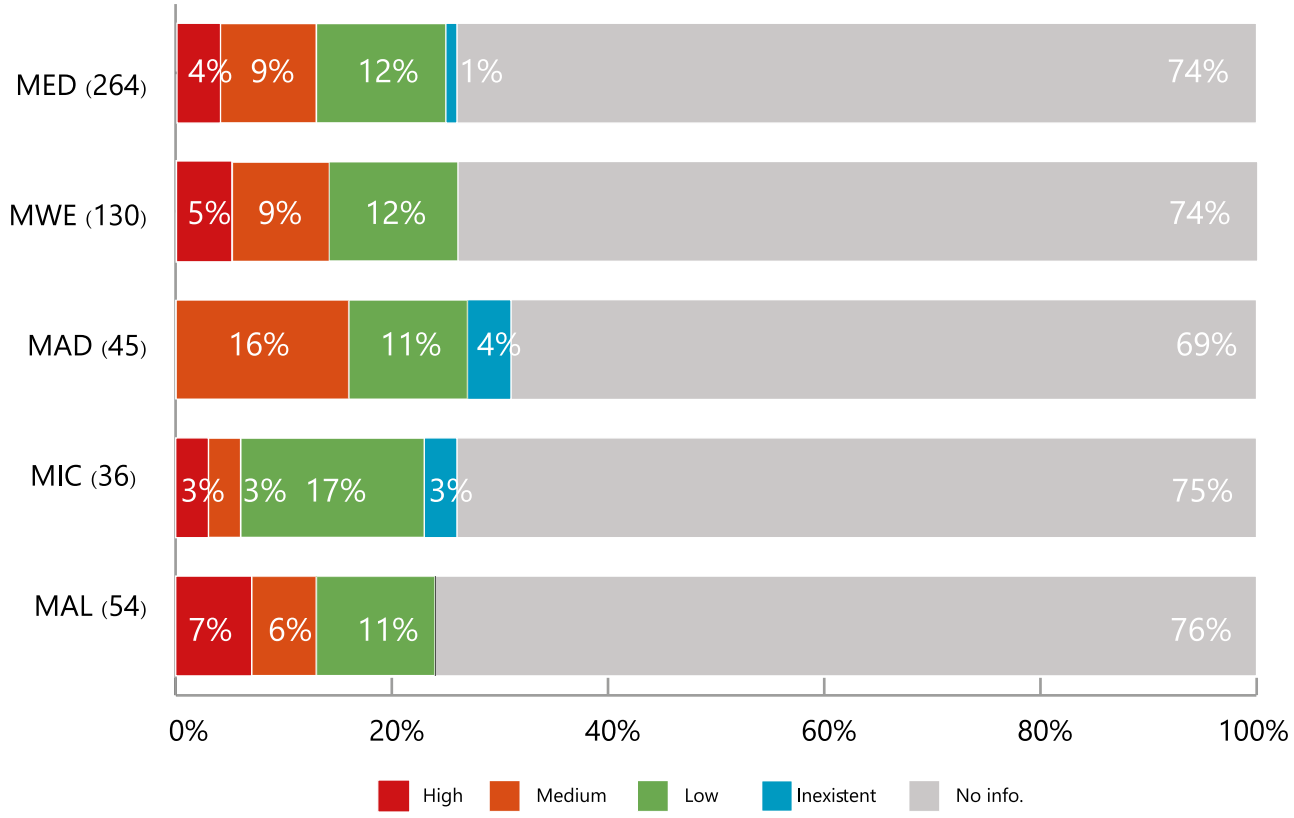


Figure 104: Pressure intensity of invasive species in MPAs with a national statute in the Mediterranean region and subregions (MWE: "Western Mediterranean Sea" / MAD: "Adriatic Sea" / MIC: "Ionian Sea and the Central Mediterranean Sea" / MAL: "Aegean — Levantine Sea"). Numbers in brackets indicate the sample size.

Figure 104 shows that 4 % of the national MPAs reported a high intensity of pressure caused by invasive species in their area; about 13 % reported high or medium pressure, a figure that is fairly stable in the subsamples except for the central Mediterranean (MIC). The whole of the Mediterranean appears to be affected, albeit in slightly varying proportions. In line with current knowledge, pressure is highest in the eastern basin (MAL, one-third of answering MPAs report high pressure), while it is more moderate in the Adriatic basin (MAD) and the central basin (MIC, only 6 % of MPAs in high or medium pressure). It should be noted, however, that in this sample we have little data, especially from several countries at particular risk of biological invasion: only one Egyptian MPA, two from Lebanon, one from Israel, and none from Libya, or Syria.

IV.3.1.2. Monitoring

Data about the invasive species monitoring (Figure 105) was available for 86 out of 264 MPAs with a national statute in the Mediterranean (33 %, MedPAN database).

[52] Among those MPAs, 257 are officially designated MPAs and 7 are "paperless" MPAs (i.e., management actions in the field without official designation) that are not yet included in MAPAMED (cf., Methodology).

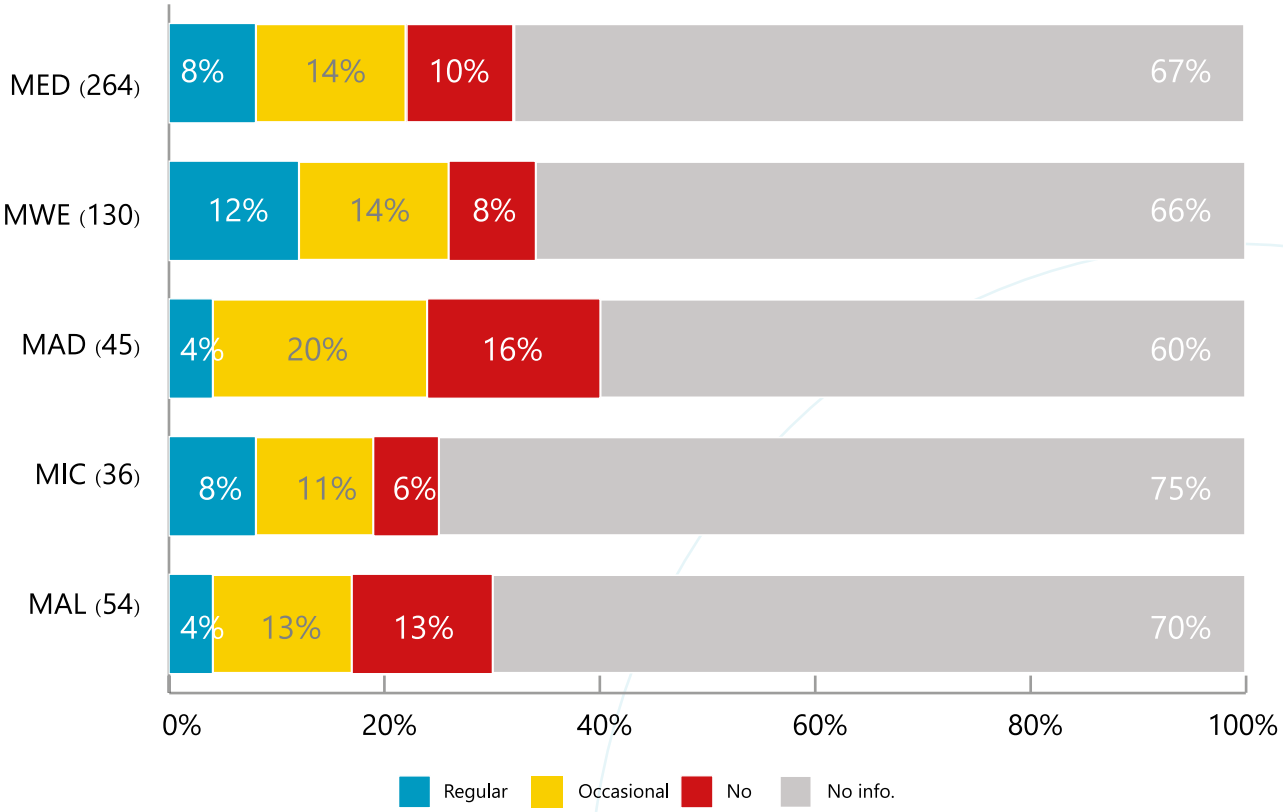


Figure 105: Monitoring of invasive species in MPAs with a national statute in the Mediterranean region and subregions (MWE: "Western Mediterranean Sea" / MAD: "Adriatic Sea" / MIC: "Ionian Sea and the Central Mediterranean Sea" / MAL: "Aegean — Levantine Sea"). Numbers in brackets indicate the sample size.

22 % of the MPAs state that they carry out monitoring of invasive species, at least occasionally, within their perimeter (8 % regularly). This rate is slightly lower in two subregions: the Adriatic Sea (MAD, which is the most closed subregion and the farthest from invasion sources) and the Eastern Basin (MAL, where 13 % of the MPAs do not carry out any action in this respect), which is more problematic, as it is a major gateway for lessepsian invasions.

IV.3.2. Key life cycle areas for mobile species

This section focuses on the key life cycle areas that could be found in the MPAs for different groups of mobile species: monk seals, cetaceans, seabirds, marine turtles, and elasmobranchs. Information about the presence of a functional area is demanded regardless of whether the corresponding species is present in the MPA. We used the following types of areas:

- **Feeding area:**

refers to the zones where individuals can feed.

- **Reproduction area:**

refers to the zones related to the reproduction of the individuals. Depending on their life cycle, these zones may include one or more of these functionalities:

- Breeding area: refers to the zones where adults can breed (reproduction, spawning ground, etc.).

- Nesting area: refers to the zones where adults can build a nest or lay eggs, regardless of whether the adults take care of the eggs or juveniles.

- Nursery area: refers to the zones where juveniles can feed, rest, grow and reach their adult habitat (Beck *et al., 2001*[53]), regardless of whether adults are present.

For some species, one area can serve several functions, such as feeding and breeding, for example. The purpose of this analysis is not to census the number of potential living areas, but to identify the presence of potential functional areas in the MPAs regarding a species group.

IV.3.2.1. Feeding areas

Data about feeding areas (Figure 106) was available for 74 out of 264 MPAs with a national statute in the Mediterranean (28 %, MedPAN database).

[53] https://academic.oup.com/bioscience/article/51/8/633/220580

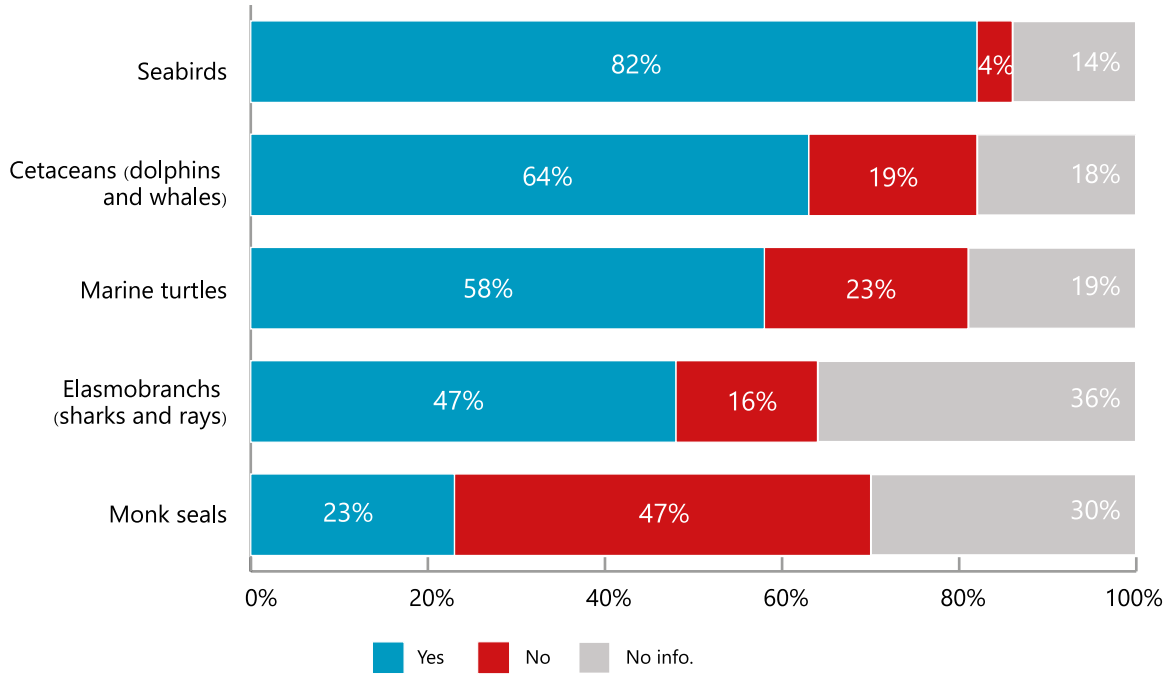


Figure 106: Presence rate of foraging areas, regarding each species group, in the MPAs with a national statute in the Mediterranean region (N=74).

Figure 106 shows that MPAs with a national statute are known to be a feeding area mainly for seabirds (82 %) followed by cetaceans (64 %), marine turtles (58 %), elasmobranchs (47 %) and monk seals (23 %).

IV.3.2.2. Reproduction areas

Data about breeding, nesting or nursery areas (Figure 107) was available for 79 out of 264 MPAs with a national statute in the Mediterranean (30 %, MedPAN database).

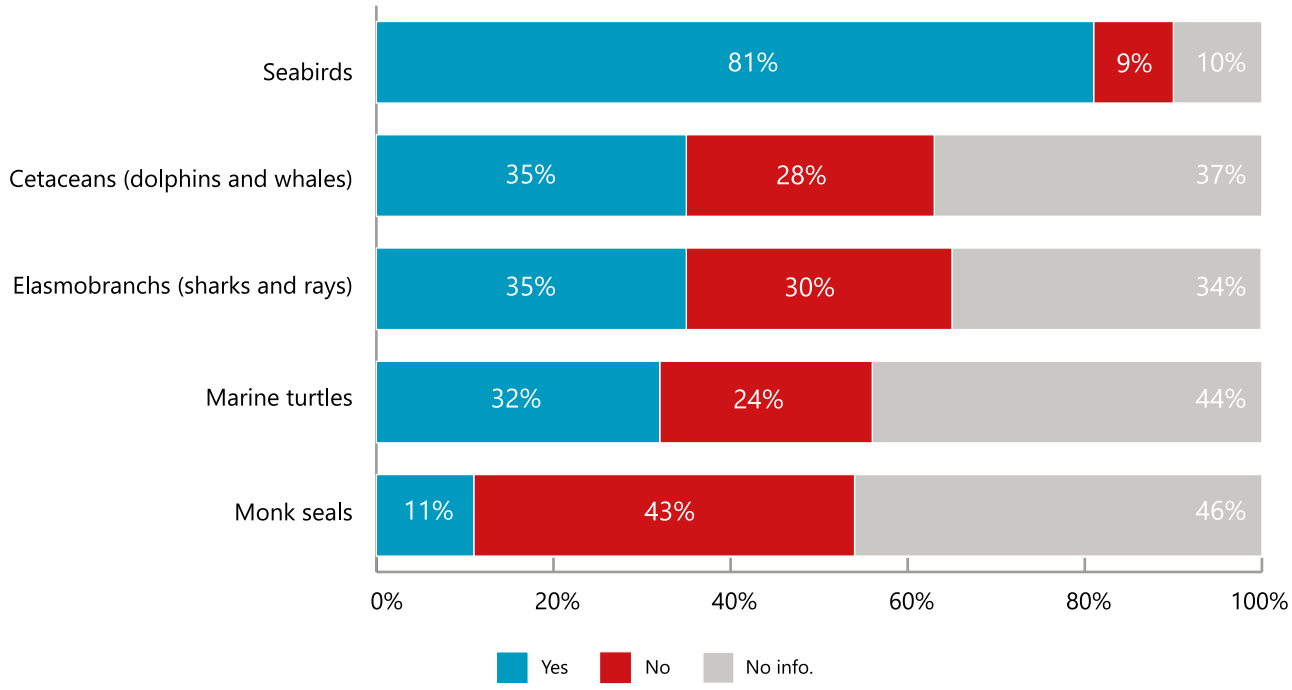


Figure 107: Presence rate of breeding, nesting or nursery areas, regarding each group of mobile species, in the MPAs with a national statute in the Mediterranean region (N=79).

A majority of MPAs with a national statute host important reproduction areas for seabirds (81 %). The other groups of highly mobile species are less represented: reproduction areas for cetaceans, marine turtles and elasmobranchs are identified in respectively 35 %, 35 % and 32 % of national MPAs. Reproduction areas for monk seals are indicated in 11 % of MPAs with a national statute.

IV.3.3. Species with conservation target

Data about species with conservation target was available for 103 out of 264 MPAs with a national statute in the Mediterranean (39 %, MedPAN database). MPA managers were asked to list between 1 and 10 species from the main ones that can be found in the MPA. For each species listed, they were asked to provide the following information:

- whether it justifies the designation of the site as MPA,
- whether it is monitored in the MPA or not,
- whether it is subject to specific conservation or restoration measures in the MPA.

The number of records is 573, which represents an average of 6 species listed per MPA. The number of distinct species is 171. The most cited ones are shown in Table 19.

Table 19: List of the species with a conservation target that can be found in the Mediterranean MPAs (573 records listed by 103 MPAs with a national statute; among the 171 distinct species, the list is limited to the 15 more frequently cited by MPA managers — which represent more than 50 % of the records).

Scientific name	Taxa	Frequencies
Caretta caretta	Marine turtles (Reptiles)	41 %
Pinna nobilis	Mollusca	36 %
Tursiops truncatus	Cetaceans (Mammalia)	35 %
Epinephelus marginatus	Bony fishes (Pisces)	33 %
Posidonia oceanica	Magnoliophyta	30 %
Corallium rubrum	Cnidaria	17 %
Monachus monachus	Seals (Mammalia)	16 %
Sciaena umbra	Bony fishes (Pisces)	14 %
Calonectris diomedea	Seabirds (Aves)	13 %
Ichthyaetus audouinii	Seabirds	10 %
Scyllarides latus	Crustacea	10 %
Dentex dentex	Bony fishes (Pisces)	9 %
Hydrobates pelagicus	Seabirds	9 %
Palinurus elephas	Crustacea	9 %
Patella ferruginea	Mollusca	9 %

The most cited species with conservation target are emblematic ones such as large charismatic vertebrates, like marine mammals and marine turtles, but also other species of priority conservation interest, such as *Pinna nobilis* and the dusky grouper (*Epinephelus marginatus*). However, invertebrates and plants were also listed in particular keystone, engineer or indicator species, such as Posidonia, or red coral.

IV.3.3.1. Monk seal

Data about management actions concerning monk seals (Figure 108) was available for 51 out of 264 MPAs with a national statute in the Mediterranean (19 %, MedPAN database). Among these, 16 stated that monk seals justified the designation of their site as MPAs.

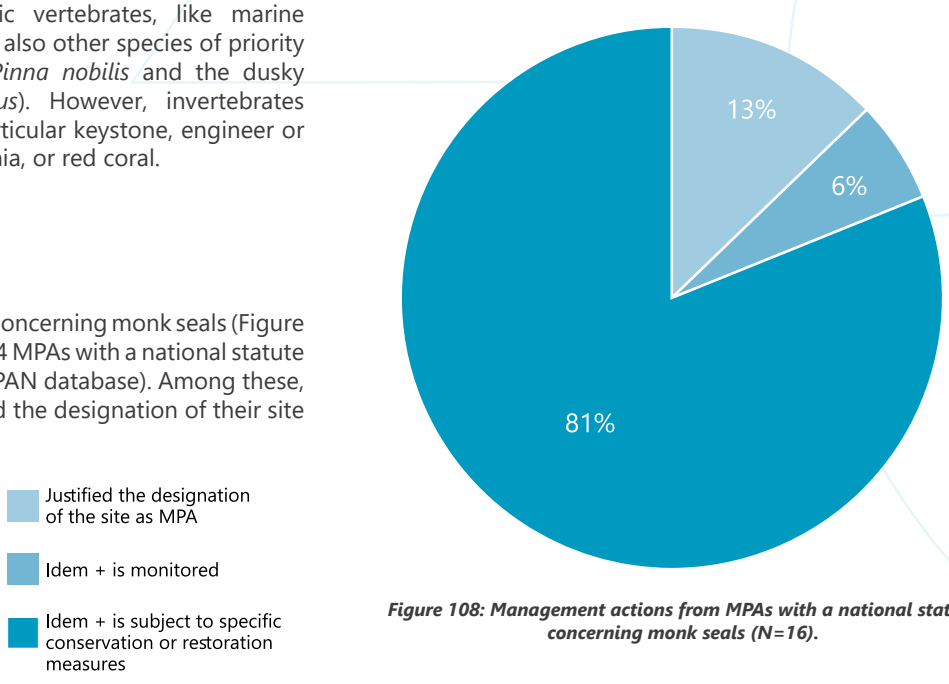


Figure 108: Management actions from MPAs with a national statute concerning monk seals (N=16).

Among the 16 national MPAs that stated that monk seals justified the designation of their site as MPAs, 13 (about 81 %) are carrying out monitoring activities and also specific conservation measures.

IV.3.3.2. Cetaceans

Data about management actions concerning cetaceans (Figure 109) was available for 85 out of 264 MPAs with a national statute in the Mediterranean (32 %, MedPAN database). Among these, 38 stated that cetaceans justified the designation of their site as MPAs.

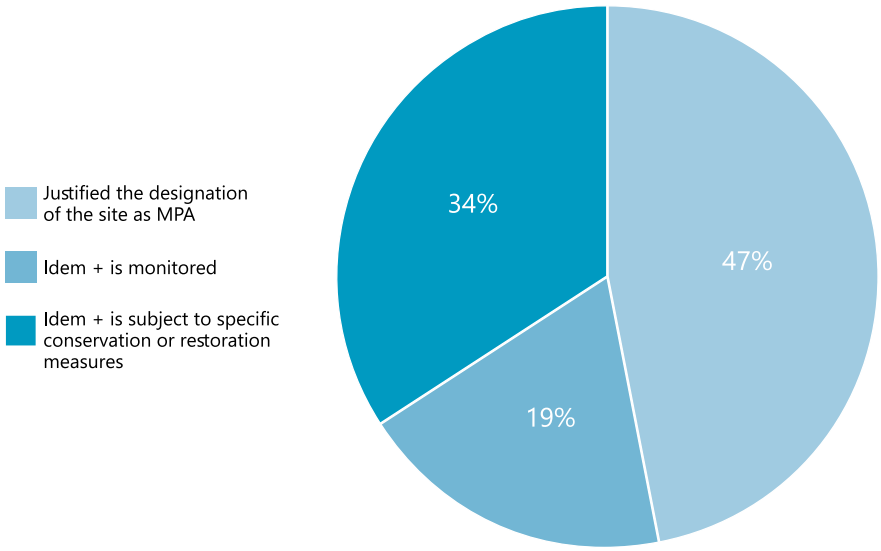


Figure 109: Management actions from MPAs with a national statute concerning cetaceans (N=38).

Among the 38 national MPAs that stated that cetaceans justified the designation of their site as MPAs, 13 (about 34 %) are carrying out monitoring activities and also specific conservation measures.

In addition, data were analysed spatially in order to calculate the percentage of Important Marine Mammal Areas (IMMAs) covered by officially designated MPAs whose designation was justified by cetaceans (Table 20). The spatial data is from the IUCN IMMA GIS Dataset (December 2018 Version Release)[54].

Table 20: Surface areas and percentages of IMMAs coverage by officially designated MPAs whose designation was justified by cetaceans (IUCN IMMA GIS Dataset 2018, MAPAMED 2019 edition, Caution: surface areas cannot be added as overlaps exist).

Type of actions in MPAs	Estimated area of IMMAs included in MPAs (km^2)	Estimated percentage of IMMAs included in MPAs (%)
Marine Protected Areas	**110,100**	**24.5**
where cetaceans justified the designation of the site as MPA	31,195	6.9
idem + cetaceans are monitored	5,733	1.3
idem + cetaceans are subject to specific conservation measures	59,926	13.3
no information	13,246	2.9

Table 20 shows that about 25 % of the existing IMMAs are covered by MPAs in the Mediterranean. Among these MPAs, the ones where cetaceans justified the designation of the site are covering about 7 % of the IMMAs. The MPAs that are also monitoring cetaceans cover about 1 % of the IMMAs. Finally, the ones that are also implementing specific conservation measures towards cetaceans are covering about 13 % of the IMMAs.

IV.3.3.3. Seabirds

Data about management actions concerning seabirds (Figure 110) was available for 88 out of 264 MPAs with a national statute in the Mediterranean (33 %), MedPAN database). Among these, 37 stated that seabirds justified the designation of their site as MPAs.

[54] IUCN-MMPATF (2018) Global Dataset of Important Marine Mammal Areas (IUCN-IMMA). December 2018. Made available under the agreement on terms of use by the IUCN Joint SSC/WCPA Marine Mammal Protected Areas Task Force and made available at www.marinemammalhabitat.org/imma-eatlas

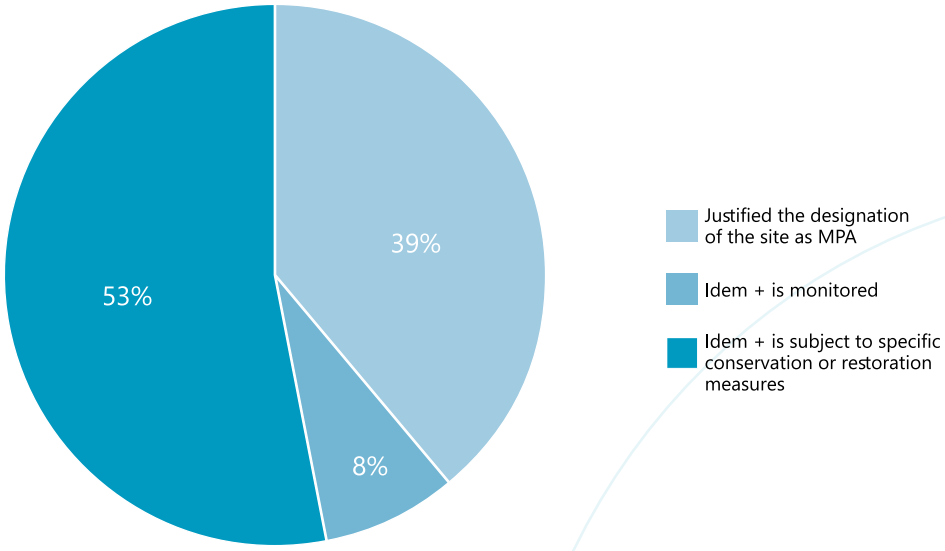


Figure 110: Management actions from MPAs with a national statute concerning seabirds (N=36).

Among the 36 national MPAs that stated that seabirds justified the designation of their site as MPAs, 19 (about 53 %) are carrying out monitoring activities and also specific conservation measures. Moreover, 3 MPAs (about 8 %) are doing monitoring only.

In addition, data were analysed spatially in order to calculate the percentage of Important Bird Areas (IBAs) covered by officially designated MPAs whose designations were justified by seabirds (Table 21). The spatial data is from the IBA GIS dataset (2018)[55].

Table 21: Surface areas and percentages of IBAs coverage by officially designated MPAs whose designation was justified by seabirds (IBA GIS dataset 2018, MAPAMED 2019 edition, Caution: surface areas cannot be added as overlaps exist).

Type of actions in MPAs	Estimated area of IBAs included in MPAs (km^2)	Estimated percentage of IBAs included in MPAs (%)
Marine Protected Areas	**40,534**	**50.1**
where seabirds justified the designation of the site as MPA	9,005	11.1
idem + seabirds are monitored	78	0.1
idem + seabirds are subject to specific conservation or restoration measures	6,451	8.0
no information	24,999	30.9

Table 21 shows that about 50 % of the existing IBAs are covered by MPAs in the Mediterranean. Among these MPAs, the ones where seabirds justified the designation of the site are covering about 11 % of the IBAs. The MPAs that are also monitoring cetaceans cover about 0.1 % of the IBAs. Finally, the ones that are also implementing specific conservation measures towards seabirds are covering about 8 % of the IBAs. More information is needed for about 31 % of the IBAs' area overlapping with MPAs.

[55] BirdLife International (2018). Important Bird Area (IBA) GIS dataset. Made available at http://www.datazone.birdlife.org/site/requestgis

IV.3.3.4. Marine turtles

Data about management actions concerning marine turtles (Figure 111) was available for 81 out of 264 MPAs with a national statute in the Mediterranean (31 %, MedPAN database). Among these, 38 stated that marine turtles justified the designation of their site as MPAs.

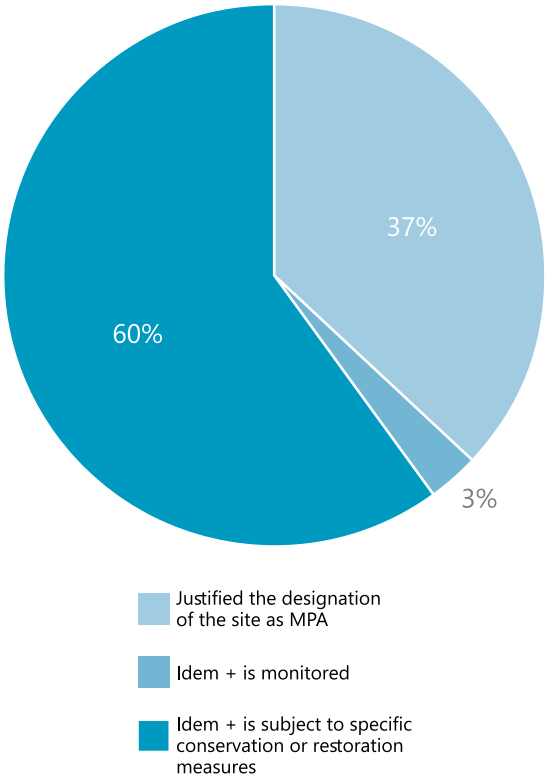


Figure 111: Management actions from MPAs with a national statute concerning marine turtles (N=38).

Among the 38 national MPAs that stated that marine turtles justified the designation of their site as MPAs, 23 (about 61 %) are carrying out monitoring activities and also specific conservation measures.

IV.3.3.5. Elasmobranchs

Data about management actions concerning elasmobranchs was available for 52 out of 264 MPAs with a national statute in the Mediterranean (20 %, MedPAN database). Among these, only 6 MPAs with a national statute stated that elasmobranchs justified the designation of their site as MPAs whilst Figures 106 and 107 previously showed that 47 % of MPAs with a national statute in the Mediterranean are feeding grounds and 32 % are reproduction areas for those species.

Among the 6 national MPAs that stated that elasmobranch justified the designation of their site as MPAs, 1 MPA is carrying out monitoring activities and 4 MPAs are carrying out monitoring activities and implementing specific conservation measures.

This low level of conservation measures at the MPA level is worrying considering that:

- Of all the species or groups of species considered in this analysis, elasmobranchs, are the only group containing species that are commercially fished in large numbers.
- Many elasmobranch species have a conservation status of special or high concern on the IUCN Red List, including species targeted by commercial fisheries, which reinforces the importance of MPAs in their conservation.

IV.3.3.6. Dusky Grouper

Data about management actions concerning dusky grouper, Epinephelus marginatus (Figure 112), was available for 35 out of 264 MPAs with a national statute in the Mediterranean (13 %, MedPAN database). Among these, 35 stated that dusky grouper justified the designation of their site as MPAs.

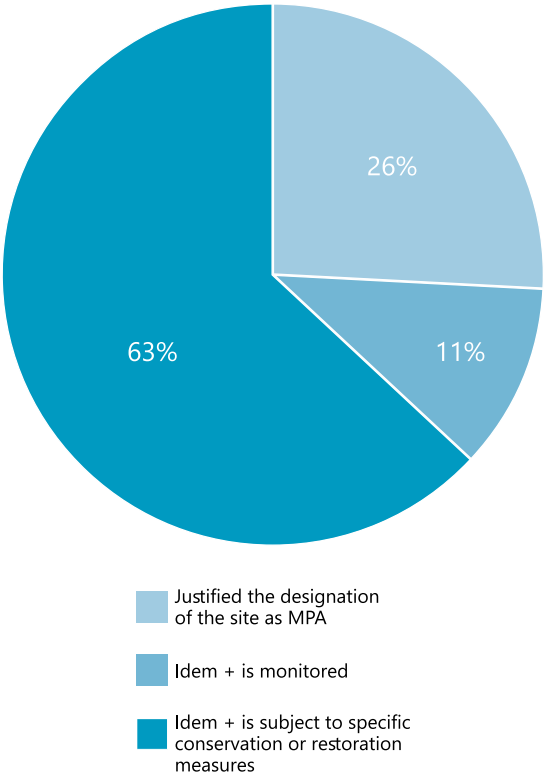


Figure 112: Management actions from MPAs with a national statute concerning Dusky Groupers (N=35).

Among the 35 national MPAs that stated that dusky grouper justified the designation of their site as MPAs, the majority (about 63 %) are carrying out monitoring activities and are implementing specific conservation measures.

IV.3.3.7. Fan Mussel

Data about management actions concerning fan mussel, Pinna nobilis (Figure 113), was available for 32 out of 264 MPAs with a national statute in the Mediterranean (12 %), MedPAN database). Among these, 32 stated that fan mussel justified the designation of their site as MPAs.

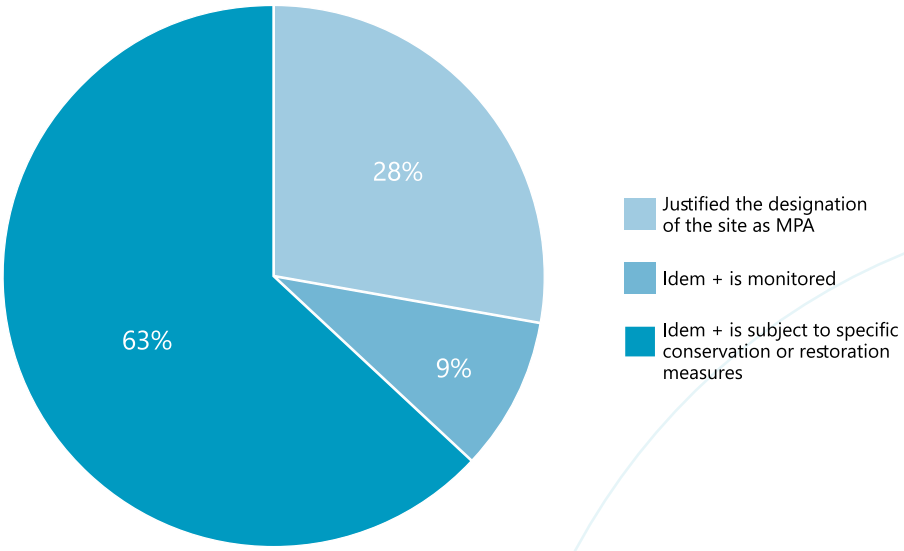


Figure 113: Management actions from MPAs with a national statute concerning Fan Mussel (N=32).

Among the 32 national MPAs that stated that fan mussel justified the designation of their site as MPAs, the majority (about 63 %) are carrying out monitoring activities and implementing specific conservation measures.

IV.4. Concluding remarks on management of habitats and species in Mediterranean MPAs

This chapter illustrates that Mediterranean MPAs target key habitats and species for protection due to their ecological significance, vulnerability, and conservation needs. This protection is crucial as the Mediterranean Sea is a biodiversity hotspot facing numerous threats, including increasing human activities and climate change. The report also highlights the lack of implemented conservation measures within Mediterranean MPAs, which are essential to safeguard key species and habitats, preserve biodiversity, mitigate human impacts, promote ecological resilience, and support the long-term sustainability of marine ecosystems. A significant challenge and target of the post-2020 to reverse the loss of biodiversity through the 30×30 protection target will be to improve, implement, and enforce relevant conservation or restoration measures targeting key habitats and species within Mediterranean MPAs.

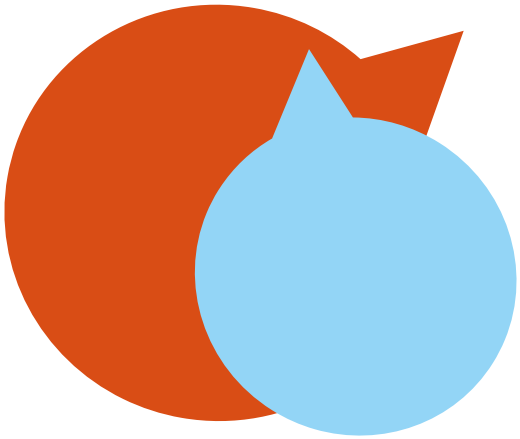
CONCLUSIONS

The political world was being driven forwards by the need to achieve the *Convention on Biological Diversity (CBD) Aichi Biodiversity Target 11: By 2020, at least 17 per cent of terrestrial and inland water, and 10 per cent of coastal and marine areas, especially areas of particular importance for biodiversity and ecosystem services, are conserved through effectively and equitably managed, ecologically representative and well connected systems of protected areas and other effective area-based conservation measures, and integrated into the wider landscapes and seascapes.* This target was also reflected in other global targets such as the Sustainable Development Goal 14: Life Below Water, and through agreements at the regional level led by the Barcelona Convention and its Protocols in the Mediterranean. However, this report shows that the Mediterranean community failed to meet the 10 % quantitative target by 2020, as well as the qualitative elements in terms of representation, effectiveness, networking, and connectivity. The High Seas are virtually absent from the above figures, and most of the MPAs are currently located in EU waters.

As the global community finalised the post-2020 Kunming-Montreal Global Biodiversity Framework (GBF) adopted at the 15th Meeting of the Conference of the Parties to the CBD in 2022, the Mediterranean has a strong role to play in ensuring we "take urgent action across society to conserve and sustainably use biodiversity and ensure the fair and equitable sharing of benefits from the use of genetics resources, to put biodiversity on a path to recovery by 2030 for the benefit of planet and people." At the regional level, the 22nd Meeting of the Contracting Parties to the Barcelona Convention and its Protocols (December 2021) adopted the "Post-2020 Strategic Action Programme for the Conservation of Biodiversity and Sustainable Management of Natural Resources in the Mediterranean Region" (Post-2020 SAPBIO). This is a 15-year Mediterranean action-oriented marine and coastal biodiversity conservation strategy aimed at improving the environmental status of the Mediterranean, helping achieve the Sustainable Development Goals and their respective targets, and the mission, goals, and targets of the post-2020 Global Biodiversity Framework.

The 22nd Meeting of the Parties to the Barcelona Convention also adopted the "Post-2020 Regional Strategy for marine and coastal protected areas and other effective area-based conservation measures in the Mediterranean". This 2030 horizon strategy has set two main targets that are in line with the GBF's targets: (i) "By 2030, at least 30 per cent of the Mediterranean Sea is protected and conserved through well connected, ecologically representative and effective systems of marine and coastal protected areas and other effective area-based conservation measures, ensuring adequate geographical balance, with the focus on areas particularly important for biodiversity." and "By 2030, the number and coverage of marine and coastal protected areas with enhanced protection levels is increased, contributing to the recovery of marine ecosystems." Increasing enhanced protection will be a key challenge for this new decade. The new EU Biodiversity Strategy for 2030 calls for 10% strict protection in EU waters, while only 0.04 % of the Mediterranean Sea was fully protected in 2020.

To facilitate the implementation of new targets, the Mediterranean MPA community has developed a new Post-2020 Mediterranean MPA Roadmap through a large participatory process that lasted for two years and involved more than 700 in-person or virtual participants. This new roadmap includes a vision, six strategic objectives, and recommendations on how to achieve the objectives. Achieving the recommendations in the roadmap will allow the Mediterranean to make a significant contribution to achieving the goals and targets in the Kunming-Montreal Global Biodiversity Framework and the Post-2020 Regional Strategy for MCPAs and OECMs. Implementing this Roadmap until 2030 will require significant attention, action, and investment by the responsible parties identified through the roadmap process. It will also require unprecedented national, regional, and international cooperation centred on increasing the capacity of MPA managers and stakeholders, which is a major focus of action in the new Post-2020 Mediterranean MPA Roadmap (MedPAN, SPA/RAC, WWF, Prince Albert II of Monaco Foundation, 2022).

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ANNEXES

Annex 1: Full list of the different designations for MPAs in the Mediterranean

ISO3	Designation	Type	Category
ALB	National Park (Albania)	National	MPA with a national statute
ALB	Protected Landscape (Albania)	National	MPA with a national statute
ALB	Managed Nature Reserve (Albania)	National	MPA with a national statute
CYP	Marine Protected Area (Cyprus)	National	MPA with a national statute
DZA	Nature Reserve (Algeria)	National	MPA with a national statute
DZA	Marine Nature Reserve (Algeria)	National	MPA with a national statute
DZA	Protected Natural Area (Algeria)	National	MPA with a national statute
EGY	Marine Protected Area (Egypt)	National	MPA with a national statute
EGY	Nature Reserve (Egypt)	National	MPA with a national statute
ESP	Marine Protected Area (Spain)	National	MPA with a national statute
ESP	Espace Naturel (Spain)	National	MPA with a national statute
ESP	Natural Monument (Spain)	National	MPA with a national statute
ESP	National Park (Spain)	National	MPA with a national statute
ESP	Natural Park (Spain)	National	MPA with a national statute
ESP	Regional Park (Spain)	National	MPA with a national statute
ESP	Plan for Areas of Natural Interest (Spain, Catalonia)	National	MPA with a national statute
ESP	Marine Reserve (Spain)	National	MPA with a national statute
ESP	Marine Reserve (Spain, Balearic Islands)	National	MPA with a national statute
ESP	Marine Reserve (Spain, Valencia)	National	MPA with a national statute
ESP	Nature Reserve (Spain)	National	MPA with a national statute
ESP	Natural Wildlife Reserve (Spain, Catalonia)	National	MPA with a national statute
ESP	Integral Nature Reserve (Spain, Catalonia)	National	MPA with a national statute
ESP	Partial Nature Reserve (Spain, Catalonia)	National	MPA with a national statute

ISO3	Designation	Type	Category
ESP	Closed area (Spain, Catalonia)	National	MPA with a national statute
FRA	Biotope Protection Order (France)	National	MPA with a national statute
FRA	Public maritime domain (Conservatoire du littoral, France)	National	MPA with a national statute
FRA	Marine Park (France)	National	MPA with a national statute
FRA	National Park (France)	National	MPA with a national statute
FRA	Marine Nature Park (France)	National	MPA with a national statute
FRA	Regional Nature Park (France)	National	MPA with a national statute
FRA	Nature Reserve (France)	National	MPA with a national statute
FRA	Corsica Nature Reserve (France)	National	MPA with a national statute
FRA	Land acquired by the Conservatoire du Littoral (France)	National	MPA with a national statute
GRC	National Marine Park (Greece)	National	MPA with a national statute
GRC	National Park (Greece)	National	MPA with a national statute
GRC	Marine Wildlife Refuge (Greece)	National	MPA with a national statute
GRC	Wildlife Refuge (Greece)	National	MPA with a national statute
GRC	Nature Reserve (Greece)	National	MPA with a national statute
HRV	Natural Monument (Croatia)	National	MPA with a national statute
HRV	National Park (Croatia)	National	MPA with a national statute
HRV	Nature Park (Croatia)	National	MPA with a national statute
HRV	Significant Landscape (Croatia)	National	MPA with a national statute
HRV	Special Reserve (Croatia)	National	MPA with a national statute
ISR	Marine Protected Area (Israel)	National	MPA with a national statute
ISR	National Park (Israel)	National	MPA with a national statute
ISR	Nature Reserve (Israel)	National	MPA with a national statute
ITA	Marine Protected Area (Italy)	National	MPA with a national statute
ITA	Blue Oasis (Italy)	National	MPA with a national statute
ITA	National Park (Italy)	National	MPA with a national statute
ITA	Submarine Park (Italy)	National	MPA with a national statute
ITA	Nature Reserve (Italy)	National	MPA with a national statute

ISO3	Designation	Type	Category
ITA	Integral Nature Reserve (Italy)	National	MPA with a national statute
ITA	Oriental Nature Reserve (Italy)	National	MPA with a national statute
ITA	Regional Nature Reserve (Italy)	National	MPA with a national statute
LBN	Nature Reserve (Lebanon)	National	MPA with a national statute
LBY	Marine Protected Area (Libya)	National	MPA with a national statute
MAR	National Park (Morocco)	National	MPA with a national statute
MCO	Marine Reserve (Monaco)	National	MPA with a national statute
MCO	Underwater Reserve (Monaco)	National	MPA with a national statute
MLT	Special Protection Area (Malta)	National	MPA with a national statute
MLT	Special Area of Conservation – International Importance (Malta)	National	MPA with a national statute
MLT	Area closed to anchoring and navigation, except for fishing (Malta)	National	MPA with a national statute
MNE	Protected area by municipal decision (Montenegro)	National	MPA with a national statute
MNE	Special Nature Reserve (Montenegro)	National	MPA with a national statute
SVN	Natural Monument (Slovenia)	National	MPA with a national statute
SVN	Landscape Park (Slovenia)	National	MPA with a national statute
SVN	Nature Reserve (Slovenia)	National	MPA with a national statute
SYR	Coastal Forest Environmental Reserve (Syria)	National	MPA with a national statute
SYR	Natural Reserve for Marine Fauna (Syria)	National	MPA with a national statute
TUN	Nature Reserve (Tunisia)	National	MPA with a national statute
TUN	Biological Protection Zone (Tunisia)	National	MPA with a national statute
TUR	Nature Conservation Area (Türkiye)	National	MPA with a national statute
TUR	Special Environmental Protection Area (Türkiye)	National	MPA with a national statute
TUR	National Park (Türkiye)	National	MPA with a national statute

ISO3	Designation	Type	Category
TUR	Wildlife Refuge (Türkiye)	National	MPA with a national statute
–	Site of Community Importance (Habitats Directive)	Regional	Marine Natura 2000 site
–	Special Protection Area (Birds Directive)	Regional	Marine Natura 2000 site
–	Special Area of Conservation (Habitats Directive)	Regional	Marine Natura 2000 site
–	SPA (Birds Directive) + SCI (Habitats Directive)	Regional	Marine Natura 2000 site
–	SPA (Birds Directive) + SCIp (Habitats Directive)	Regional	Marine Natura 2000 site
–	SPA (Birds Directive) + SAC (Habitats Directive)	Regional	Marine Natura 2000 site
–	Pelagos Agreement	International	International Agreement

Annex 2: List of new sites created in 2017, 2018, 2019

MAPAMED ID	WDPA ID	N2000 code	Name (English)	Designation	Category	ISO3	Creation
1522	555623617	MT0000113	Marine area in Western Maltese Sea	Site of Community Importance (Habitats Directive)	Marine Natura 2000 site	MLT	2017
1719		IT9220300	Mare della Magna Grecia	SPA (Birds Directive) + SCIp (Habitats Directive)	Marine Natura 2000 site	ITA	2019
1726	555635624	IT9120012	Hermit Rock	SPA (Birds Directive) + SAC (Habitats Directive)	Marine Natura 2000 site	ITA	2017
635	555529506	IT9210015	Acquafredda di Maratea	Special Area of Conservation (Habitats Directive)	Marine Natura 2000 site	ITA	2017
636	555529483	IT9150011	Alimini	Special Area of Conservation (Habitats Directive)	Marine Natura 2000 site	ITA	2018
637	555529475	IT9150003	Aquatina di Frigole	Special Area of Conservation (Habitats Directive)	Marine Natura 2000 site	ITA	2018
648	555529938	ITB020012	Berchida e Bidderosa	Special Area of Conservation (Habitats Directive)	Marine Natura 2000 site	ITA	2017
652	555529466	IT9140001	Bosco Tramazzone	Special Area of Conservation (Habitats Directive)	Marine Natura 2000 site	ITA	2018
653	555529978	ITB040051	Bruncu de Su Monte Moru - Geremeas (Mari Pintau)	Special Area of Conservation (Habitats Directive)	Marine Natura 2000 site	ITA	2017
1686	555529752	ITA020009	Cala Rossa and Capo Rama	Special Area of Conservation (Habitats Directive)	Marine Natura 2000 site	ITA	2017
654	555529679	IT9350144	Calanchi di Palizzi Marina	Special Area of Conservation (Habitats Directive)	Marine Natura 2000 site	ITA	2017
660	555529988	ITB042216	Capo di Pula	Special Area of Conservation (Habitats Directive)	Marine Natura 2000 site	ITA	2017
661	555529927	ITB010009	Capo Figari and Isola Figarolo	Special Area of Conservation (Habitats Directive)	Marine Natura 2000 site	ITA	2017
664	55529976	ITB040030	Capo Pecora	Special Area of Conservation (Habitats Directive)	Marine Natura 2000 site	ITA	2017
666	555529676	IT9350141	Capo S. Giovanni	Special Area of Conservation (Habitats Directive)	Marine Natura 2000 site	ITA	2017
667	555529677	IT9350142	Capo Spartivento	Special Area of Conservation (Habitats Directive)	Marine Natura 2000 site	ITA	2017
668	555529926	ITB010007	Capo Testa	Special Area of Conservation (Habitats Directive)	Marine Natura 2000 site	ITA	2017
674	555529968	ITB040021	Costa di Cagliari	Special Area of Conservation (Habitats Directive)	Marine Natura 2000 site	ITA	2019

MAPAMED ID	WDPA ID	N2000 code	Name (English)	Designation	Category	ISO3	Creation
675	555529975	ITB040029	Costa di Nebida	Special Area of Conservation (Habitats Directive)	Marine Natura 2000 site	ITA	2017
677	555529536	IT9220080	Costa Ionica Foce Agri	Special Area of Conservation (Habitats Directive)	Marine Natura 2000 site	ITA	2017
678	555529537	IT9220085	Costa Ionica Foce Basento	Special Area of Conservation (Habitats Directive)	Marine Natura 2000 site	ITA	2017
679	555529538	IT9220090	Costa Ionica Foce Bradano	Special Area of Conservation (Habitats Directive)	Marine Natura 2000 site	ITA	2017
680	555529539	IT9220095	Costa Ionica Foce Cavone	Special Area of Conservation (Habitats Directive)	Marine Natura 2000 site	ITA	2017
1696	555529474	IT9150002	Costa Otranto - Santa Maria di Leuca	Special Area of Conservation (Habitats Directive)	Marine Natura 2000 site	ITA	2018
1697	555529693	IT9350158	Costa Viola e Monte S. Elia	Special Area of Conservation (Habitats Directive)	Marine Natura 2000 site	ITA	2017
685	555529931	ITB010043	Coasts and islets in North West Sardinia	Special Area of Conservation (Habitats Directive)	Marine Natura 2000 site	ITA	2017
1698	555529365	IT8030006	Costiera amalfitana tra Nerano e Positano	Special Area of Conservation (Habitats Directive)	Marine Natura 2000 site	ITA	2019
686	555530004	ITB042250	Da Is Arenas a Tonnara (Marina di Gonnesa)	Special Area of Conservation (Habitats Directive)	Marine Natura 2000 site	ITA	2017
687	555529979	ITB040071	Da Piscinas a Riu Scivu	Special Area of Conservation (Habitats Directive)	Marine Natura 2000 site	ITA	2017
689	555528673	IT3270017	Po Delta: final stretch and Veneto delta	Special Area of Conservation (Habitats Directive)	Marine Natura 2000 site	ITA	2018
690	555529461	IT9130003	Duna di Campomarino	Special Area of Conservation (Habitats Directive)	Marine Natura 2000 site	ITA	2018
692	555529942	ITB020041	Entroterra e zona costiera tra Bosa, Capo Marargiu e Porto Tangone	Special Area of Conservation (Habitats Directive)	Marine Natura 2000 site	ITA	2017
1701	555529401	IT8050010	Fasce litoranee a destra e a sinistra del Fiume Sele	Special Area of Conservation (Habitats Directive)	Marine Natura 2000 site	ITA	2019
1702	555529680	IT9350145	Fiumara Amendolea (incluso Roghudi, Chorio e Rota Greco)	Special Area of Conservation (Habitats Directive)	Marine Natura 2000 site	ITA	2018
694	555529965	ITB040018	Foce del Flumendosa - Sa Praia	Special Area of Conservation (Habitats Directive)	Marine Natura 2000 site	ITA	2019

MAPAMED ID	WDPA ID	N2000 code	Name (English)	Designation	Category	ISO3	Creation
1704	555529352	IT8010028	Foce Volturno - Variconi	Special Area of Conservation (Habitats Directive)	Marine Natura 2000 site	ITA	2019
698	555529924	ITB010004	Foci del Coghinas	Special Area of Conservation (Habitats Directive)	Marine Natura 2000 site	ITA	2017
700	555529056	IT6000007	Fondali antistanti S. Marinella	Special Area of Conservation (Habitats Directive)	Marine Natura 2000 site	ITA	2017
706	555529661	IT9340094	Fondali Capo Cozzo - S. Irene	Special Area of Conservation (Habitats Directive)	Marine Natura 2000 site	ITA	2017
709	555529064	IT6000015	Seabed around the island of Palmarola	Special Area of Conservation (Habitats Directive)	Marine Natura 2000 site	ITA	2017
710	555529065	IT6000016	Seabed around the island of Ponza	Special Area of Conservation (Habitats Directive)	Marine Natura 2000 site	ITA	2017
713	555529066	IT6000017	Seabed around the island of Zannone	Special Area of Conservation (Habitats Directive)	Marine Natura 2000 site	ITA	2017
714	555529583	IT9310048	Fondali Crosia-Pietrapaola-Cariati	Special Area of Conservation (Habitats Directive)	Marine Natura 2000 site	ITA	2017
715	555529625	IT9320097	Seabed from Crotone to Le Castella	Special Area of Conservation (Habitats Directive)	Marine Natura 2000 site	ITA	2018
716	555529707	IT9350172	Seabed from Punta Pezzo to Capo dell'Armi	Special Area of Conservation (Habitats Directive)	Marine Natura 2000 site	ITA	2017
718	555578867	ITA090030	Fondali del Plemmirio	Special Area of Conservation (Habitats Directive)	Marine Natura 2000 site	ITA	2019
722		ITA010024	Seabed of the Egadi Islands Archipelago	Special Area of Conservation (Habitats Directive)	Marine Natura 2000 site	ITA	2019
720	555529743	ITA010026	Marsala Stagnone Island seabed	Special Area of Conservation (Habitats Directive)	Marine Natura 2000 site	ITA	2017
724	555529785	ITA020046	Seabed of the island of Ustica	Special Area of Conservation (Habitats Directive)	Marine Natura 2000 site	ITA	2019
719	555578863	ITA040014	Fondali delle Isole Pelagie	Special Area of Conservation (Habitats Directive)	Marine Natura 2000 site	ITA	2019
728	555529569	IT9310033	Fondali di Capo Tirone	Special Area of Conservation (Habitats Directive)	Marine Natura 2000 site	ITA	2017
729	555529660	IT9340093	Capo Vaticano seabed	Special Area of Conservation (Habitats Directive)	Marine Natura 2000 site	ITA	2017
730	555529624	IT9320096	Fondali di Gabella Grande	Special Area of Conservation (Habitats Directive)	Marine Natura 2000 site	ITA	2017
732	555529659	IT9340092	Seabed of Pizzo Calabro	Special Area of Conservation (Habitats Directive)	Marine Natura 2000 site	ITA	2017
733	555529708	IT9350173	Fondali di Scilla	Special Area of Conservation (Habitats Directive)	Marine Natura 2000 site	ITA	2017

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734	555529639	IT9320185	Fondali di Staletti	Special Area of Conservation (Habitats Directive)	Marine Natura 2000 site	ITA	2017
740	555529572	IT9310036	Fondali Isola di Cirella-Diamante	Special Area of Conservation (Habitats Directive)	Marine Natura 2000 site	ITA	2017
741	555529571	IT9310035	Seabed Island of Dino-Capo Scalea	Special Area of Conservation (Habitats Directive)	Marine Natura 2000 site	ITA	2017
763	555529575	IT9310039	Seabed Rocks of Isca	Special Area of Conservation (Habitats Directive)	Marine Natura 2000 site	ITA	2017
764	555529062	IT6000013	Fondali tra Capo Circeo e Terracina	Special Area of Conservation (Habitats Directive)	Marine Natura 2000 site	ITA	2017
765	555529061	IT6000012	Seabed between Capo Portiere and Lago di Caprolace (mouth)	Special Area of Conservation (Habitats Directive)	Marine Natura 2000 site	ITA	2017
767	555529052	IT6000003	Seabed between the mouths of the Arrone and Marta Rivers	Special Area of Conservation (Habitats Directive)	Marine Natura 2000 site	ITA	2017
768	555529053	IT6000004	Seabed between Marina di Tarquinia and Punta della Quaglia	Special Area of Conservation (Habitats Directive)	Marine Natura 2000 site	ITA	2017
771	555529063	IT6000014	Fondali tra Terracina e Lago Lungo	Special Area of Conservation (Habitats Directive)	Marine Natura 2000 site	ITA	2017
772	555529060	IT6000011	Fondali tra Torre Astura e Capo Portiere	Special Area of Conservation (Habitats Directive)	Marine Natura 2000 site	ITA	2017
776	555529961	ITB032228	Is Arenas	Special Area of Conservation (Habitats Directive)	Marine Natura 2000 site	ITA	2019
777	555529962	ITB032229	Is Arenas S'Acqua e S'Ollastu	Special Area of Conservation (Habitats Directive)	Marine Natura 2000 site	ITA	2017
778	555530003	ITB042247	Is Compinxius - Campo Dunale di Bugerru - Portixeddu	Special Area of Conservation (Habitats Directive)	Marine Natura 2000 site	ITA	2017
1711	555529892	ITA080005	Isola dei Porri	Special Area of Conservation (Habitats Directive)	Marine Natura 2000 site	ITA	2017
784	555529932	ITB010082	Isola dell'Asinara	Special Area of Conservation (Habitats Directive)	Marine Natura 2000 site	ITA	2017
794	555529521	IT9210160	Island of S. Ianni and Costa Prospiciente	Special Area of Conservation (Habitats Directive)	Marine Natura 2000 site	ITA	2017
795	555529973	ITB040027	Isola di San Pietro	Special Area of Conservation (Habitats Directive)	Marine Natura 2000 site	ITA	2017

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800	555529937	ITB012211	Isola Rossa - Costa Paradiso	Special Area of Conservation (Habitats Directive)	Marine Natura 2000 site	ITA	2017
808	555529181	IT6040020	Isole di Palmarola e Zannone	Special Area of Conservation (Habitats Directive)	Marine Natura 2000 site	ITA	2017
813	555529928	ITB010010	Isole Tavolara, Molara e Molarotto	Special Area of Conservation (Habitats Directive)	Marine Natura 2000 site	ITA	2019
1713	555528293	IT1345103	Isole Tino - Tinetto	Special Area of Conservation (Habitats Directive)	Marine Natura 2000 site	ITA	2017
1714	555529438	IT9110011	Isole Tremiti	Special Area of Conservation (Habitats Directive)	Marine Natura 2000 site	ITA	2018
1715	555529407	IT8050018	Isolotti Li Galli	Special Area of Conservation (Habitats Directive)	Marine Natura 2000 site	ITA	2019
815	555529936	ITB011155	Lago di Baratz - Porto Ferro	Special Area of Conservation (Habitats Directive)	Marine Natura 2000 site	ITA	2017
816	555528660	IT3250013	Laguna del Mort and Pinete di Eraclea	Special Area of Conservation (Habitats Directive)	Marine Natura 2000 site	ITA	2018
817	555528663	IT3250033	Caorle Lagoon - Mouth of the Tagliamento River	Special Area of Conservation (Habitats Directive)	Marine Natura 2000 site	ITA	2018
819	555529798	ITA030012	Laguna di Oliveri - Tindari	Special Area of Conservation (Habitats Directive)	Marine Natura 2000 site	ITA	2017
821	555528661	IT3250030	Laguna medio-inferiore di Venezia	Special Area of Conservation (Habitats Directive)	Marine Natura 2000 site	ITA	2018
822	555528662	IT3250031	Laguna superiore di Venezia	Special Area of Conservation (Habitats Directive)	Marine Natura 2000 site	ITA	2018
823	555529501	IT9150032	The Cesine	Special Area of Conservation (Habitats Directive)	Marine Natura 2000 site	ITA	2018
824	555529946	ITB022214	Lido di Orrì	Special Area of Conservation (Habitats Directive)	Marine Natura 2000 site	ITA	2019
827	555529481	IT9150009	Litorale di Ugento	Special Area of Conservation (Habitats Directive)	Marine Natura 2000 site	ITA	2018
829	555529520	IT9210155	Marina di Castrocucco	Special Area of Conservation (Habitats Directive)	Marine Natura 2000 site	ITA	2017
833	555529480	IT9150008	Montagna Spaccata and Rupi di San Mauro	Special Area of Conservation (Habitats Directive)	Marine Natura 2000 site	ITA	2018
834	555529977	ITB040031	Monte Arcuentu and Rio Piscinas	Special Area of Conservation (Habitats Directive)	Marine Natura 2000 site	ITA	2017
836	555529925	ITB010006	Monte Russu	Special Area of Conservation (Habitats Directive)	Marine Natura 2000 site	ITA	2017

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840	555529485	IT9150013	Palude del Capitano	Special Area of Conservation (Habitats Directive)	Marine Natura 2000 site	ITA	2018
841	555529496	IT9150027	Palude del Conte, dunes of Punta Prosciutto	Special Area of Conservation (Habitats Directive)	Marine Natura 2000 site	ITA	2018
842	555529939	ITB020013	Palude di Osalla	Special Area of Conservation (Habitats Directive)	Marine Natura 2000 site	ITA	2017
850	555528776	IT4070008	Pineta di Cervia	Special Area of Conservation (Habitats Directive)	Marine Natura 2000 site	ITA	2019
853	555529994	ITB042230	Porto Campana	Special Area of Conservation (Habitats Directive)	Marine Natura 2000 site	ITA	2017
855	555529497	IT9150028	Porto Cesareo	Special Area of Conservation (Habitats Directive)	Marine Natura 2000 site	ITA	2018
860	555529503	IT9150034	Posidonieto Capo San Gregorio - Punta Ristola	Special Area of Conservation (Habitats Directive)	Marine Natura 2000 site	ITA	2018
861	555529465	IT9130008	Posidonieto Island of San Pietro - Canneto Tower	Special Area of Conservation (Habitats Directive)	Marine Natura 2000 site	ITA	2018
862	555529456	IT9120009	Posidonieto San Vito - Barletta	Special Area of Conservation (Habitats Directive)	Marine Natura 2000 site	ITA	2018
863	555529178	IT6040016	Promontorio del Circeo (Quarto Caldo)	Special Area of Conservation (Habitats Directive)	Marine Natura 2000 site	ITA	2017
868	555529987	ITB042210	Punta Giunchera	Special Area of Conservation (Habitats Directive)	Marine Natura 2000 site	ITA	2017
869	555529974	ITB040028	Punta S'Aliga	Special Area of Conservation (Habitats Directive)	Marine Natura 2000 site	ITA	2017
870	555529478	IT9150006	Rauccio	Special Area of Conservation (Habitats Directive)	Marine Natura 2000 site	ITA	2018
872	555528781	IT4070026	Wreck of the Pagurus platform	Special Area of Conservation (Habitats Directive)	Marine Natura 2000 site	ITA	2019
1723	555529724	ITA010007	Saline di Trapani	Special Area of Conservation (Habitats Directive)	Marine Natura 2000 site	ITA	2017
877	555529960	ITB032219	Sassu - Cirras	Special Area of Conservation (Habitats Directive)	Marine Natura 2000 site	ITA	2019
1725	555529379	IT8030027	Scoglio del Vervece	Special Area of Conservation (Habitats Directive)	Marine Natura 2000 site	ITA	2019
881	555529587	IT9310053	Secca di Amendolara	Special Area of Conservation (Habitats Directive)	Marine Natura 2000 site	ITA	2017
884	555529057	IT6000008	Shoals of Macchiatonda	Special Area of Conservation (Habitats Directive)	Marine Natura 2000 site	ITA	2017

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887	555529058	IT6000009	Secche di Torre Flavia	Special Area of Conservation (Habitats Directive)	Marine Natura 2000 site	ITA	2017
888	555529990	ITB042220	Serra is Tres Portus (Sant'Antioco)	Special Area of Conservation (Habitats Directive)	Marine Natura 2000 site	ITA	2017
889	555529695	IT9350160	Spiaggia di Brancaleone	Special Area of Conservation (Habitats Directive)	Marine Natura 2000 site	ITA	2017
891	555529966	ITB040019	Colostrai and Saline ponds	Special Area of Conservation (Habitats Directive)	Marine Natura 2000 site	ITA	2019
1727	555529954	ITB030036	Stagno di Cabras	Special Area of Conservation (Habitats Directive)	Marine Natura 2000 site	ITA	2017
1730	555529970	ITB040023	Cagliari Pond, Macchiareddu Salt Pans, Santa Gilla Lagoon	Special Area of Conservation (Habitats Directive)	Marine Natura 2000 site	ITA	2017
896	555529922	ITB010002	Pilo and Casaraccio Ponds	Special Area of Conservation (Habitats Directive)	Marine Natura 2000 site	ITA	2017
897	555529989	ITB042218	Stagno di Piscinnì	Special Area of Conservation (Habitats Directive)	Marine Natura 2000 site	ITA	2017
898	555529993	ITB042226	Stagno di Porto Botte	Special Area of Conservation (Habitats Directive)	Marine Natura 2000 site	ITA	2017
899	555529956	ITB030038	Stagno di Putzu Idu (Salina Manna e Pauli Marigosa)	Special Area of Conservation (Habitats Directive)	Marine Natura 2000 site	ITA	2019
901	555529949	ITB030016	Stagno di S'Ena Arrubia e territori limitrofi	Special Area of Conservation (Habitats Directive)	Marine Natura 2000 site	ITA	2019
902	555529923	ITB010003	Stagno e ginepreto di Platamona	Special Area of Conservation (Habitats Directive)	Marine Natura 2000 site	ITA	2017
906	555578834	IT3250047	Tegnùe di Chioggia	Special Area of Conservation (Habitats Directive)	Marine Natura 2000 site	ITA	2018
907	555578835	IT3250048	Tegnùe di Porto Falconera	Special Area of Conservation (Habitats Directive)	Marine Natura 2000 site	ITA	2018
908	555529459	IT9130001	Torre Colimena	Special Area of Conservation (Habitats Directive)	Marine Natura 2000 site	ITA	2018
910	555578851	IT7120215	Torre del Cerrano	Special Area of Conservation (Habitats Directive)	Marine Natura 2000 site	ITA	2018
913	555529469	IT9140005	Torre Guaceto and Macchia S. Giovanni	Special Area of Conservation (Habitats Directive)	Marine Natura 2000 site	ITA	2018
915	555529495	IT9150025	Torre Veneri	Special Area of Conservation (Habitats Directive)	Marine Natura 2000 site	ITA	2018

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922	555529658	IT9340091	Zona costiera fra Briatico e Nicotera	Special Area of Conservation (Habitats Directive)	Marine Natura 2000 site	ITA	2017
1684	555703312	ITA090031	Area Marina di Capo Passero	Special Protection Area (Birds Directive)	Marine Natura 2000 site	ITA	2019
370	555539548	FR9310019	Camargue	Special Protection Area (Birds Directive)	Marine Natura 2000 site	FRA	2018
406	555539581	FR9410023	Gulf of Porto and Scandola peninsula	Special Protection Area (Birds Directive)	Marine Natura 2000 site	FRA	2018
413	555539580	FR9410022	Cerbical Islands	Special Protection Area (Birds Directive)	Marine Natura 2000 site	FRA	2018
415	555539549	FR9310020	Islands of Hyères	Special Protection Area (Birds Directive)	Marine Natura 2000 site	FRA	2018
1565	555539584	FR9410097	Finocchiarola Islands and North Coast	Special Protection Area (Birds Directive)	Marine Natura 2000 site	FRA	2018
417	555539579	FR9410021	Lavezzi Islands, Bouches de Bonifacio	Special Protection Area (Birds Directive)	Marine Natura 2000 site	FRA	2018
418	555539563	FR9312007	Iles Marseillaises - Cassidaigne	Special Protection Area (Birds Directive)	Marine Natura 2000 site	FRA	2018
419	555539583	FR9410096	Sanguinaires Islands, Gulf of Ajaccio	Special Protection Area (Birds Directive)	Marine Natura 2000 site	FRA	2018
1566	555643664	FR9412011	Marine birds of the Agriate	Special Protection Area (Birds Directive)	Marine Natura 2000 site	FRA	2018
1621	555703285	FR9112038	Southern Gulf of Lion seabirds	Special Protection Area (Birds Directive)	Marine Natura 2000 site	FRA	2019
1614			Mouth of the river Var	Biotope protection order (France)	MPA with a national statute	FRA	2019
1567	555597292		Cape Corsica Islands	Corsica Nature Reserve (France)	MPA with a national statute	FRA	2017
1553	555641767		Debeli Rtič	Landscape Park (Slovenia)	MPA with a national statute	SVN	2018
1576			Kakoskali	MPA (Cyprus)	MPA with a national statute	CYP	2019
1518	555596200		Kavo Gkreko	MPA (Cyprus)	MPA with a national statute	CYP	2018
1539			Mpania	MPA (Cyprus)	MPA with a national statute	CYP	2017
1540			Peyia sea caves	MPA (Cyprus)	MPA with a national statute	CYP	2019
1689	555691182		Capo Millazzo	MPA (Italy)	MPA with a national statute	ITA	2018
1690	555641768		Capo Testa - Punta Falcone	MPA (Italy)	MPA with a national statute	ITA	2018
1568	555596226		Corredor de Migracion de Cetaceos del Mediterraneo	MPA (Spain)	MPA with a national statute	ESP	2018

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1588			Costa North-East of Eivissa-Tagomago	Marine Reserve (Spain, Balearic Islands)	MPA with a national statute	ESP	2018
1591			Illa de l'Aire	Marine Reserve (Spain, Balearic Islands)	MPA with a national statute	ESP	2019
1601			Punta de sa Creu	Marine Reserve (Spain, Balearic Islands)	MPA with a national statute	ESP	2018
1538			Esterel-Théoule Departmental Maritime Park	Maritime public domain (Conservatoire du littoral, France)	MPA with a national statute	ESP	2017
1589	555638694		Es Trenc - Salobrar de Campos	Natural Park (Spain)	MPA with a national statute	ESP	2017
1579			Ile Plane (Paloma)	Nature Reserve (Algeria)	MPA with a national statute	DZA	2018
1744			Yam Rosh HaNikra - Akhziv	Nature Reserve (Israel)	MPA with a national statute	ISR	2019
1578	555698157		Cape Lindles	Nature Reserve (Algeria)	MPA with a national statute	DZA	2019
1558	555589827		Marine area at the Medina Graben	SAC – International Importance (Malta)	MPA with a national statute	MLT	2018
1556	555589822		Marine area in the North Gozo Graben	SAC – International Importance (Malta)	MPA with a national statute	MLT	2018
1562	555634474		Marine area in the Northwestern area of the Malta Graben	SAC – International Importance (Malta)	MPA with a national statute	MLT	2018
1560	555634475		Marine area in the Western area of the Malta Graben	SAC – International Importance (Malta)	MPA with a national statute	MLT	2018
1743			Karaburun-Ildır Körfezi	Special Environmental Protection Area (Türkiye)	MPA with a national statute	TUR	2019

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