

TECHNICAL REPORT

Marine Protected Areas in the Mediterranean Sea as Drivers of Local Development

Assessment of the
Socio-Economic Benefits of MPAs

MPAs in the Mediterranean: Why Does Protection Matter?

Assessing the Role of MPAs in Protecting Marine Ecosystems, Local Economies, and Social Cohesion

A Technical Report by ACTeon



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The views expressed in this report are those of the authors and do not necessarily reflect the views of the Med Sea Alliance.

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Executive Summary

Marine Protected Areas (MPAs) play a central role in the conservation of unique Mediterranean ecosystems. At present, MPAs cover 8.8% of the Mediterranean Sea¹: this figure remains well below the ambitious “30x30” target to designate 30% of terrestrial and aquatic areas as effectively protected by 2030, set by the Kunming-Montreal Global Biodiversity Framework at COP15 in 2022².

While this calls for a dramatic increase in the areas designated as MPAs in the Mediterranean Sea, several questions remain open with respect to the socio-economic costs and benefits of MPAs for economic sectors, particularly in terms of opportunity cost. While this study does not have the ambition to respond to all questions, it does aim to shed some light on the benefit side of the equation at an overall (national) scale by estimating the socio-economic benefits of coastal MPAs in the Mediterranean Sea. This study does not aim to conduct a full cost-benefit analysis of MPAs at the national scale and in three pilot countries: due to the time and budget constraints, this study focuses on estimating the average annual benefits of MPAs in all four pilot Mediterranean countries through a simple value transfer model, complemented by information from existing literature and interviews with MPA managers and national experts in Spain, Italy and Tunisia.

More specifically, this study conducted an in-depth assessment of socio-economic benefits in Spain, Italy and Tunisia, and a lighter assessment in Morocco. These countries were selected to represent the geographical diversity across the Mediterranean region, based on the availability of information on MPAs and their benefits and, when possible, on the level of development of their network of MPAs.

Our assessment of the socio-economic benefits of MPAs was structured around the different maritime sectors and activities mapped by MEDTRENDS³, a project by WWF Mediterranean (see right-hand side). Society and local communities (including carbon sequestration), and biodiversity and ecosystems were added to this framework⁴ to ensure comprehensive coverage of the expected socio-economic benefits—and, among others, these two sectors help effectively cover all aspects related to the local dimension of the benefits of MPAs, as well as resilience to climate change. Within this framework, particular attention was given to local communities, small-scale fisheries, and resilience to climate change.

¹ Gallon, S., Medori, M., Delettre, M., Kheriji, A., Guezguez, D., & Neveu, R. (2025, June). *Assessing the progress and effectiveness of Marine Protected Areas in the Mediterranean: A decade of insights* [Poster presentation]. Open Ocean Science Congress, Nice, France. MedPAN & SPA/RAC.

² <https://www.cbd.int/gbf/targets>

³ <http://www.medtrends.org/sectors.php>

⁴ Sectors already added to this framework as part of two previous studies by the Plan Bleu.

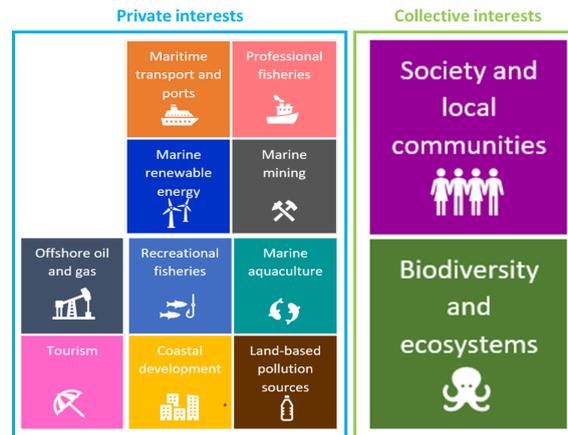


Figure 1. Maritime Economic Sectors

While most benefits to blue economy sectors, biodiversity, and ecosystems are quantifiable in economic terms, this is not always the case with benefits for society and local communities: there is, in fact, a range of impacts on society and local communities which cannot be captured in economic terms, but that can rather be described in qualitative or quali-quantitative terms. However, these wider social impacts can still be highly relevant for local communities and society as a whole, and might play a crucial role in determining the acceptance or rejection of MPAs. For this reason, socio-economic benefits quantifiable in economic terms and wider social impacts were assessed separately.

Assessment methodologies:

- Quantifiable socio-economic benefits were estimated through value transfer, i.e. based on the benefit values found in the literature. To isolate the “MPA effect” on the benefits provided by marine ecosystems, the assessment was carried out for the actual protection levels in the countries, and for three hypothetical scenarios: full protection, no protection, and environmental degradation. It should be noted that this is a simple method, based on several assumptions that are illustrated in detail in the main text of the report and in the Annexes. The results of the value transfer models were complemented by interviews with national experts and MPA managers, to obtain qualitative insights into the benefits of MPAs and the trade-offs observed on the field.
- The wider impacts of MPAs on societies and local communities were assessed qualitatively, through literature review, interviews, and an online survey.

Warning: Limitations of the Value Transfer Model

The methodology is based on unitary values (EUR/ha) applied to the area of MPAs in each country, and this raises an additional challenge: in countries with large MPAs, such as Spain, the benefits might be overestimated—and, in turn, in countries with small MPAs, such as Tunisia the benefits might be underestimated. Additional limitations of the value transfer model, as well as details on the assumptions and literature sources used to build the model and derive the values, are illustrated in detail in the main text of the report and in the Annexes.

The Socio-Economic Benefits of MPAs in Spain, Italy, Tunisia, and Morocco—and Why Full Implementation Matters

According to the value transfer model, well-managed MPAs can significantly benefit local economies, while a lack of protection may result in economic losses and harm to biodiversity, society and local communities. In general terms, higher protection tends to generate greater socio-economic benefits, but the magnitude of these benefits varies across countries, influenced by differences in their economic contexts and baseline conditions.

The table below shows the estimated annual socio-economic benefits of Marine Protected Areas (MPAs) for four countries under different protection-level scenarios, referring to the total marine area of MPAs. For Spain and Morocco, only MPAs in the Mediterranean Sea were considered.

Table I. Total Annual Benefits of MPAs in Italy, Morocco, Spain, and Tunisia

Protection scenarios	Italy		Morocco		Spain		Tunisia	
	Benefits M€ /year	Deviation from actual protection	Benefits M€ /year	Deviation from actual protection				
Full implementation	259	+26%	7	+25%	164	+25%	0,022	+38%
Actual protection	191		5		131		0,016	
No protection	104	-46%	3	-50%	66	-50%	0,009	-44%
Environmental degradation⁵	52	-73%	1	-75%	33	-75%	0,004	-75%

Overall, according to the value/benefit transfer model—and the assumptions on which it is based—full enforcement of protection leads to increased benefits ranging from 25% to 36% across all countries. This suggests that strengthening the level of protection could

⁵ In the environmental degradation scenarios, it has to be noted that ecosystems are still in place, although degraded, and thus they still deliver some benefits.

yield substantial economic gains. Conversely, the absence of protection results in a 44% to 50% decline in benefits, while environmental degradation leads to even greater losses, with benefits dropping by 73% to 75% compared to the current situation.

The estimated socio-economic benefits of MPAs across the four countries revealed key insights into the relationship between protection levels and economic benefits. While all countries exhibit a similar trend, where higher protection levels yield greater benefits and lower protection levels lead to lower benefits, the magnitude of these changes varies considerably across countries.

Countries with stronger economies, like Spain and Italy, have more economic resources available for conservation and a higher willingness to pay for environmental protection. This results in higher estimated benefits. On the other hand, in Tunisia, where the economy is smaller, the estimated benefits are lower, even though fully protecting MPAs could still lead to significant percentage increases. Furthermore, MPAs in Tunisia are currently very small in size and, as also mentioned above, the value transfer approach might underestimate the benefits they deliver. In Morocco, by contrast, despite the economy being somewhat similar, the area of the MPA considered for this study is larger, which might influence the results of the model.

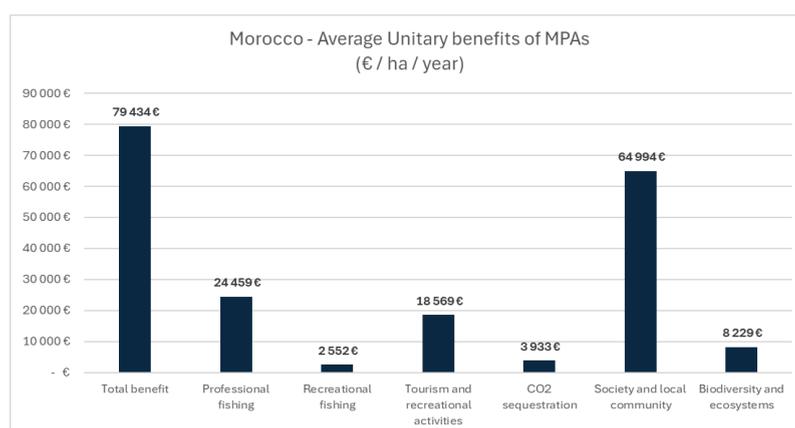
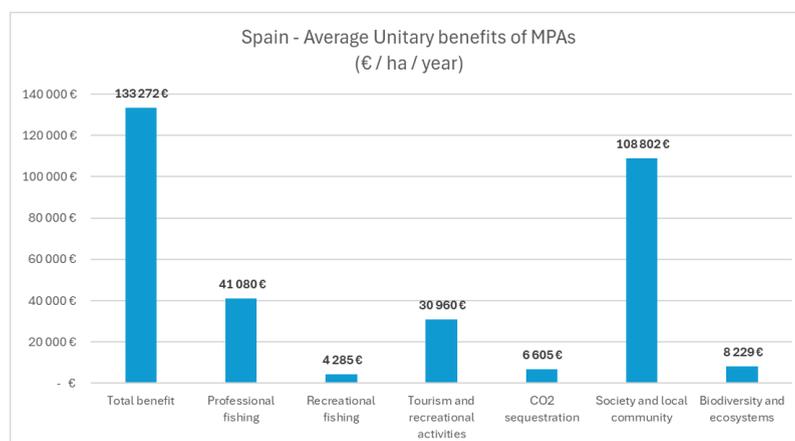
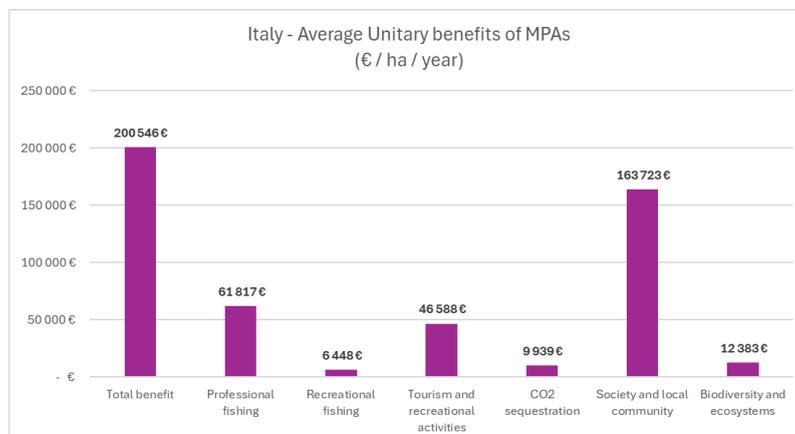
In addition to the overall benefit estimates provided above, available literature provides estimates for only some of the sectors identified in our framework, namely professional fishing (small-scale fisheries⁶), recreational fishing, tourism and recreational activities, CO₂ sequestration, society and local communities⁷, and biodiversity and ecosystems. Thus, this study could only assess the benefits for these sectors. This makes sense, as MPA managers interviewed for this study also mentioned these economic sectors as relevant in their MPAs—partly because several activities (e.g. mining, commercial transport) are obviously not allowed in protected areas.

The results of our assessment show similar trends across the four countries, as shown in the figure below. The value transfer uses benefits values existing in the literature “as they stand”: it means that if a source provides a value for overall benefits of MPAs, that value is transferred to the estimation of the overall benefits of MPAs; if a source, in turn, provides benefit values for one specific sector, that value is transferred to the estimation of benefits of MPAs for that specific sector, and sector-specific values are not summed up to reach an overall value, as that would be a flawed estimate. It follows that the value of the overall average unitary benefits shown in the table does not correspond to the sum of the sector-specific unitary values included in the same graphs. It should be noted that, for its relevance and significance, the

⁶ While, in principle, all economic sectors were included in the assessment, in practice the costs or benefits of MPAs for industrial fisheries were not assessed, for two related reasons: industrial fisheries are not allowed in MPAs and – probably as a result of this – such costs or benefits are not assessed in available literature. Also, many MPAs are very small, so the losses of not using that marine space for industrial fishing would be almost negligible.

⁷ Benefits for this sector include benefits for the society as a whole (e.g. CO₂ sequestration) as well as benefits at the local level (e.g. improved social cohesion at the local level): as mentioned earlier, the benefits related to CO₂ sequestration are presented separately in light of their relevance and significance.

benefits related to carbon sequestration are presented separately from other benefits for society and local communities (the sector to which they belong), to highlight the crucial role of MPAs in providing such benefits⁸.



⁸ As shown extensively in the report, the value transfer uses benefits values existing in the literature “as they stand”: it means that if a source provides a value for overall benefits of MPAs, that value is transferred to the estimation of the overall benefits of MPAs; if a source, in turn, provides benefit values for one specific sector, that value is transferred to the estimation of benefits of MPAs for that specific sector, and sector-specific values are not summed up to reach an overall value, as that would be a flawed estimate. It follows that the value of the overall average unitary benefits shown in the table does not correspond to the sum of the sector-specific unitary values included in the same graphs.

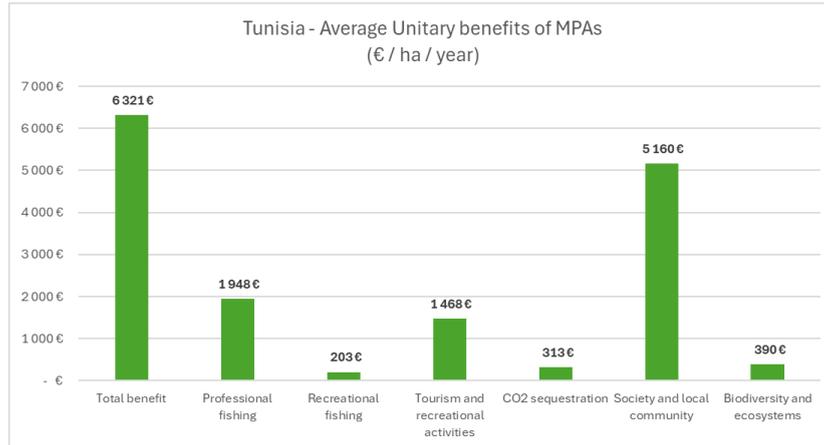


Figure III. Annual Benefits per Hectare of MPAs in Spain, Italy, Tunisia and Morocco

At the sectoral level, the results of the value transfer model suggest that MPAs can deliver significant benefits related to collective interests, such as CO₂ sequestration, society and local communities, and biodiversity and ecosystems. The benefits to society and local communities, in particular (value of ecosystem services, coastal protection, and erosion protection) far outnumber the benefits delivered to other sectors.

In other words, the MPAs' contribution to collective well-being is highly significant—and this is precisely the reason why MPAs are created in the first place.

In addition, the creation of an MPA also promotes the growth of sectors like tourism and recreation and professional small-scale fishing. This is further supported by the empirical evidence collected during interviews with MPA managers in the three countries.

At the same time, it must be kept in mind that benefits can vary across different MPAs, as some might benefit a lot from tourism and others very little. This level of detail, however, cannot be captured by this estimation, which is an overall estimation conducted at the national level.

The administration of MPAs is often financed through public budgets, and this may pose a question on whether funding MPAs is a good use of public money. A useful way to look at it is to compare estimates of annual administrative costs with the overall annual benefits—in other words, does (often public) expenditure in MPAs generate value?

Administrative cost figures were derived by applying the same value transfer method applied to the estimation of benefits, i.e. relying on administrative costs figures available in the literature. The results are shown in the table below.

Table II. Total Average Administrative Costs (Million EUR/year) and Comparison with Overall Average Benefits of MPAs (Million EUR/year)

Country	Total average costs (Million EUR/year)	Overall average benefits (Million EUR/year)	Average benefits / average costs
Tunisia ⁹	0,0085	0,016	1,9
Spain	4,6	131	28,5
Italy	11,8	191	16,2

In all three countries, when compared to the benefits, the estimated administrative costs appear minimal, and this strengthens the case for allocating public expenditure to MPAs. One euro spent each year on the administration of MPAs corresponds to €1.9 per year of benefits in Tunisia, €28.5 of benefits in Spain, and €16.2 in Italy.

It should be noted that, for Tunisia, the total average administrative costs of MPAs are significantly lower compared to the other two countries, as is also the case for overall benefits. The low cost can be attributed to two primary factors:

1. Adjustments made by the value transfer methodology for GDP and PPP, which reduce cost estimates for countries with lower economic capacities.
2. Limited MPA surface area, as Tunisia has a smaller MPA area, resulting in a much smaller zone to manage compared to other countries.
3. Value transfer methodology adjustments for GDP and PPP, which reduce cost estimates for countries with lower economic capacities.
4. Limited MPA surface area, as Tunisia has lower MPA surface, resulting in a much smaller area to manage compared to other countries.

At the same time, one euro spent to finance MPA administration is still yielding almost double the amount in benefits, which makes public expenditure on MPAs still convenient.

⁹ For Tunisia, the total average administrative costs of MPAs are significantly lower as compared to the other two countries, as it is also the case for overall benefits. The low cost can be attributed to two primary factors:

The Wider Impacts on Societies and Local Communities: What Numbers Cannot Measure

Wider social impacts were qualitatively assessed for all key categories identified in the literature. The results are summarized in the table below.

Key Categories of Wider Social Impacts		Main Results
	Well-being and Health	<p>Positive impacts on well-being and health, both physical and mental</p> <p>Improved marine environmental quality is perceived by users</p> <p>The creation of MPAs can be accompanied by an increase in comfort for local communities through the development of new infrastructures and services</p>
	Access to Resources and Livelihoods	<p>Conservation efforts support human well-being (in a broad sense) through economic growth and employment opportunities, particularly in the tourism and fisheries sector.</p>
	Knowledge and Education	<p>Conservation efforts within MPAs contribute significantly to the creation of scientific knowledge.</p>
	Local Culture and Values	<p>Coastal citizens show greater support for MPAs than inland ones. This support can be linked to place-based attachment; citizens living closer to the coast are more likely to develop an emotional, spiritual, and cultural bond with the marine environment.</p>
	Social Relations	<p>Conflicts among stakeholder groups concerning access to benefits provided by marine ecosystem services, as well as conflicts over the use of common resources and/or areas, are potential negative impacts that might occur when an MPA is implemented. However, some MPAs are only minimally affected by conflicts, and a reduction in tensions can also be observed over time. In particular, setting up spaces for communication within and between sites and among all stakeholders, can help foster better dialogue and relations between users within MPAs.</p> <p>MPAs can also contribute to retaining local population by supporting the development of sectors such as tourism, which generates jobs.</p>
	Inclusion and Empowerment	<p>Examples of successful inclusion are often reported—and inclusion is usually growing as management plans evolve and improve.</p>

A key social aspect to be considered in relation to MPAs is the public perception and acceptance of the MPA: very often, the establishment of an MPA is met—at least initially—with the opposition of local communities and economic operators. However, anecdotal evidence collected during our interviews with MPA managers reveals that public perception of MPAs changes over time, from opposition to (often open) support. This is in line with qualitative evidence found in the literature (available in the main text of the report), and it is also why the duration since the MPA was established is identified as a key factor in the public perception and acceptance of MPAs.

The stories of the MPAs presented above are all different when it comes to their relationship with local communities. However, not only do they have some elements in common, they also outline some **key success factors on how to accompany local communities and economic operators towards acceptance of—and even support for the MPA**, namely:

- **Dialogue and negotiations must start from the very beginning**, and they must become a regular, constant process—it must be an integral part of management activities, hand in hand with conservation and protection activities;
- Local communities and businesses **may not always see the socio-economic benefits of marine protected areas right away**. That's why **good management** is important—not just to help people understand these benefits, but also to support the shift to more sustainable ways of making a living and to create new opportunities connected to healthier ecosystems;
- Often, residents and economic operators know very little about marine ecosystems, and why it is important to protect them: **raising awareness** is key.

In short, what emerged clearly from these stories is that, although local communities and economic operators might seem like opponents at first, they can become the strongest allies of MPAs. Building that trust takes time and effort, but it's well worth it—it has a decisive impact on the overall effectiveness of MPAs.

Bringing the Assessment into the Real World: How to Use These Results

The evolution over time of public perception of MPAs, from initial opposition to the recognition of the benefits for the local community and economic operators, shows that MPAs do deliver visible, substantial socio-economic benefits to local communities and operators.

Notably, the results of this study provide an estimate of the magnitude of these benefits at the national level, showing that the contributions of MPAs to the national economies are far from being negligible. In fact, MPAs emerge as genuine economic assets with substantial monetary value.

In Short: The Key Messages of This Study

- Well-managed MPAs can be a valuable resource for local economies, while no protection can lead to losses for certain economic sectors as well as biodiversity, society and local communities. In general terms, higher protection was observed to bring greater benefits, but the magnitude of benefits varies across countries based on their economic contexts and baseline conditions.
- At the same time, restrictions on certain economic activities may lead to losses for some economic sectors—in other words, they can create opportunity costs. While such disbenefits could not be estimated through the value transfer model, evidence from the literature as well as from the interviews with MPA managers highlights that some uncertainty exists for the professional and recreational fishing sectors. In some cases, spill-over effects might prevail, increasing fish stocks in the areas surrounding the MPA; in other cases—particularly in the short term—losses due to restrictions might play a stronger role.
- Other economic sectors, such as tourism, biodiversity and ecosystems, society, and local communities appear to consistently increase with higher protection levels. In particular, the sectors that benefit the most from the creation of MPAs are those linked to the collective goods such as biodiversity and ecosystems, society and local communities.
- The estimated administrative costs appear minimal relative to the benefits, reinforcing the case for allocating public expenditure in MPAs.
- Initially, the establishment of an MPA is often met with resistance from local communities and economic operators. However, public perception shifts over time—from initial opposition to, in many cases, open support—and this is also due to stakeholders directly experiencing the benefits of the MPA on their activities.

1. MPAs In The Mediterranean Sea: Current Status And Protection Target

1.1. Overview

The Mediterranean Sea, ‘a sea in the middle of the land’, is the largest semi-enclosed sea in the world, and it is connected to the Atlantic Ocean, the Red Sea, and the Black Sea. Even though it covers less than 1% of the global ocean surface, the Mediterranean Sea is a biodiversity hotspot of global significance. Shaped by millions of years of evolution and a distinct blend of temperate and subtropical influences, it ranks second globally for endemic species richness¹⁰.

Biodiversity in the Mediterranean Sea – Key Facts

≈ 17 000

Species of fauna and flora, representing...

...7.5% to 18%

of the world’s marine flora and fauna¹¹

20% to 30%

of marine endemic species over total species, i.e., species that can be found nowhere else in the world¹²

At the same time, rapid population and tourism growth, and the intensification of maritime activities, have placed significant strain on the Mediterranean marine ecosystem. The Mediterranean sea is one of the busiest maritime regions globally, with more than 450 ports and terminals facilitating approximately 30% of global sea-borne trade by volume¹³. Key industries such as coastal and maritime tourism, shipping, fisheries, aquaculture, and energy production are exerting immense pressure on marine environments. These activities are contributing to habitat degradation, overfishing, and pollution, with long-term consequences

¹⁰ Mediterranean Quality Status Report: The State of the Mediterranean Sea and Coast from 2018-2023 (United Nations Environment Programme, 2024) - <https://wedocs.unep.org/20.500.11822/46733>

¹¹ Mediterranean Quality Status Report: The State of the Mediterranean Sea and Coast from 2018-2023 (United Nations Environment Programme, 2024) - <https://wedocs.unep.org/20.500.11822/46733>

¹² Mediterranean Quality Status Report: The State of the Mediterranean Sea and Coast from 2018-2023 (United Nations Environment Programme, 2024) - <https://wedocs.unep.org/20.500.11822/46733>

¹³ Medtrends reports: Blue Growth in the Mediterranean/Adriatic (Piante and Denis, 2015; Randone, 2015) - http://www.medtrends.org/reports/MedTrends_AD-Report.pdf

that threaten the region’s ecological integrity¹⁴. Additionally, extreme weather events are wreaking havoc on fragile marine habitats, from seagrass meadows to coral beds, while rising sea levels threaten cities and coastlines¹⁵. Invasive species further endanger biodiversity, ecosystems, and even human health.

Recognizing this threat, the Mediterranean Sea is safeguarded by international legal and policy frameworks that aim to conserve marine ecosystems and promote sustainable use. A central element of these conservation initiatives is the establishment of Marine Protected Areas (MPAs), which are designated zones of ecological significance placed under protection to preserve biodiversity and safeguard marine ecosystems. In the Mediterranean, MPAs fall into three main categories¹⁶: MPAs with a national statute, Marine Natura 2000 sites, and the Pelagos Sanctuary.

Marine Protected Areas in the Mediterranean Sea – Key facts in 2021¹⁷

1,126

Number of MPAs¹⁸

209,303 km²

Area coverage¹⁹

163

New MPAs designated between 2016 and 2020:

23 MPAs with a national statute, and 140 new marine Natura 2000 sites²⁰.

¹⁴ Safeguarding MPAs in the growing Mediterranean Blue Economy (Pharos4MPAs, 2019) - https://www.msp-platform.eu/sites/default/files/owf_recommendations_19june.pdf

¹⁵ The climate change effect in the Mediterranean. Six stories from an overheating sea (WWF Mediterranean Marine Initiative, Rome, Italy, 2021) - https://www.wwf.fr/sites/default/files/doc-2021-06/20210607_Rapport_The-Climate-Change-Effect-In-The-Mediterranean-Six-stories-from-an-overheating-sea_WWF-min.pdf

¹⁶ MAPAMED User manual (MedPAN & SPA/RAC, 2021)

¹⁷ More recent figures on MPA coverage in the Mediterranean will soon be available: are still pending the validation by the focal points of the Barcelona Convention so they have not been published yet

¹⁸ Mediterranean Quality Status Report: The State of the Mediterranean Sea and Coast from 2018-2023 (United Nations Environment Programme, 2024) - <https://wedocs.unep.org/20.500.11822/46733>

¹⁹ Mediterranean Quality Status Report: The State of the Mediterranean Sea and Coast from 2018-2023 (United Nations Environment Programme, 2024) - <https://wedocs.unep.org/20.500.11822/46733>

²⁰ The System of Mediterranean Marine Protected Areas in 2020, MedPAN and UNEP/MAP-SPA/RAC, November 2021



Figure 1 Marine Protected Areas in the Mediterranean (source: MAPAMED²¹, a joint initiative by MedPAN and SPA/RAC)

1.2. International Protection Targets: Progress and Gaps

The number of MPAs has thus seen an increase in recent years, suggesting that protecting marine ecosystems in the Mediterranean is getting the attention and importance it deserves.

Nevertheless, this has not been enough to reach international protection targets, as shown in the box below. Furthermore, protection is unevenly distributed across political boundaries. As illustrated in Figure 1, most MPA coverage is concentrated in the northern and western Mediterranean. Additionally, MPAs are disproportionately distributed by sea depth, with less than 4% of areas deeper than 1,000 m covered by MPAs²².

MPAs in the Mediterranean Sea: Protection Targets		Current Coverage ²³
30% by 2030	Kunming-Montreal Global Biodiversity Framework (GBF)	8.8% in 2023
10% by 2030	EU Biodiversity Strategy for 2030	

²¹ <https://mapamed.org/>

²² Mediterranean Quality Status Report: The State of the Mediterranean Sea and Coast from 2018-2023 (United Nations Environment Programme, 2024) - <https://wedocs.unep.org/20.500.11822/46733>

²³ Gallon, S., Medori, M., Delettre, M., Kheriji, A., Guezguez, D., & Neveu, R. (2025, June). *Assessing the progress and effectiveness of Marine Protected Areas in the Mediterranean: A decade of insights* [Poster presentation]. Open Ocean Science Congress, Nice, France. MedPAN & SPA/RAC

The GBF, in particular, adopted at COP15 in 2022, introduced the ambitious "30 by 30" target to designate 30% of terrestrial and aquatic areas as protected by 2030. This target aligns with the 30x30 initiative, a global effort endorsed by over 100 nations, including many Mediterranean countries. The European Union's Biodiversity Strategy for 2030 complements these global goals by committing to protect 30% of EU marine areas, with 10% under strict protection, by 2030.

According to the latest figures of MAPAMED, of which MedPAN and SPA/RAC are the custodians, 8.8% of the Mediterranean Sea has an MPA designation, and only 0.04% of the cumulative surface is strictly protected (meaning no-go, no-take, and no-fishing zones).

The current MPA coverage (8.8% of the Mediterranean Sea) remains well below the objective set for 2030. This target can only be achieved through the establishment of new MPAs or by extending existing ones in the Mediterranean Sea.

In addition, Claudet et al. (2020)²⁴ pointed out that in 95% of the protected areas in the Mediterranean, regulations inside MPAs are no stricter than those outside²⁵—in other words, in a large majority of MPAs, protection is only on paper. Furthermore, even within MPAs, one of the greatest threats to the integrity of the seabed and its habitat is bottom-contact fishing, such as bottom trawling and dredging.

Thus, although MPAs are established to protect rich and diverse marine biodiversity, their management is often insufficient. One recurring issue with MPAs is the presence of "paper parks," where protection statuses exist on paper but lack effective management or enforcement—even when multiple designations are in place.

Achieving effective protection of Mediterranean ecosystems requires not only an increase in the number of protected areas, but also the full implementation of existing and new MPAs.

1.3. Marine Protected Areas and Local Economies: Shedding Some Light on the Benefits of MPAs

The creation or extension of MPAs often raises concerns about the potential losses that protection measures might cause for local economies and blue economy sectors. In this respect, two recent studies conducted by the Plan Bleu (in 2021 and 2024) looked in detail at the socio-economic costs and benefits associated with protection measures and concluded that:

- MPAs deliver significant benefits of collective interest, i.e., those associated with biodiversity and ecosystem improvements, as well as local communities;

²⁴ Underprotected Marine Protected Areas in a Global Biodiversity Hotspot (Claudet et al. 2020) - <https://www.sciencedirect.com/science/article/pii/S2590332220301500>

²⁵ As it will be shown later on in this report, this will be acknowledged in the value transfer exercise through the introduction of an "environmental adjustment factor" adjusting benefit values to the actual level of implementation of the management plan in each MPA in the selected countries.

- For the fishing sector, there is no consensus on whether positive spill-over effects (such as increased fish populations) outweigh the negative impacts of fishing restrictions—as outcomes depend on local factors. Tourism and recreation, however, consistently benefit from MPAs;
- Although negative impacts on some economic sectors exist, these are minimal compared to the benefits pertaining to the collective interest. Nevertheless, quantifying these negative impacts remains important, to ensure that local impacts are recognized and addressed, potentially through compensation measures²⁶;
- The time horizon is also crucial: short-term analyses may favour lower protection due to immediate gains, but long-term analyses typically highlight the benefits of higher protection by avoiding resource overexploitation.

In short, several questions remain open with respect to the socio-economic costs and benefits of MPAs, and this study does not have the ambition to respond to all of them—but rather to shed some light on the benefit side of the equation at an overall (national) scale.

This study, in particular, aims to estimate the socio-economic benefits of coastal MPAs in the Mediterranean Sea. Overall, the study contributes, to some extent, to consolidating and advancing existing **socio-economic knowledge on MPAs**, as well as to a broader understanding of the extent to which different sectors benefit from MPAs and how public perception shifts over time.

It should be noted that this study does not aim to conduct a full cost-benefit analysis of MPAs at the national scale and in the three pilot countries. Due to time and budget constraints, this study focuses on estimating the average annual benefits of MPAs in four pilot Mediterranean countries through a simple value transfer model, complemented by information from existing literature and interviews with MPA managers and national experts.

²⁶ The valuation exercise conducted in the context of this study, by its nature (as shown in the following chapter) could not quantify such negative impacts. Nevertheless, negative impacts are still taken into account in this report through the collection of information in available literature and, in qualitative terms, in the context of interviews with MPA managers and national experts.

2. Methodology for Assessing the Socio-Economic Benefits of Mediterranean MPAs²⁷

2.1. Identifying Socio-Economic Benefits: Target Sectors and Stakeholders

The assessment of the socio-economic benefits of MPAs was structured around the different maritime sectors and activities mapped by MEDTRENDS²⁸, a project by WWF (Figure 3), namely: offshore oil and gas, maritime transport and ports, fisheries, and tourism, among others.

Society and local communities (including carbon sequestration), and biodiversity and ecosystems, were added to this framework as part of the Plan Bleu studies (2021 and 2024)²⁹, to ensure a comprehensive coverage of the expected socio-economic benefits—and, among others, these two sectors help effectively cover all aspects related to the local dimension of the benefits of MPAs, as well as climate change resilience.

It should be noted that, in the results section, the benefits related to carbon sequestration are presented separately from other benefits for society and local communities because of their relevance and significance, to better highlight the crucial role of MPAs in providing such benefits.

The economic sectors included in the study are shown in the figure below.

²⁷ A more detailed description of the methodology can be found in Annex I of this report.

²⁸ <http://www.medtrends.org/sectors.php>

²⁹ De Paoli, G., Tode, L., Zaiter, Y., Saito, A., Strosser, P., 2021. Socio-economic analyses of MPA development in the Mediterranean: investigating protection levels. Unpublished study for the Plan Bleu.

Plan Bleu, 2024. Evaluation des coûts et bénéfices AMP françaises.
<https://planbleu.org/publications/evaluation-couts-benefices-amp-france/>

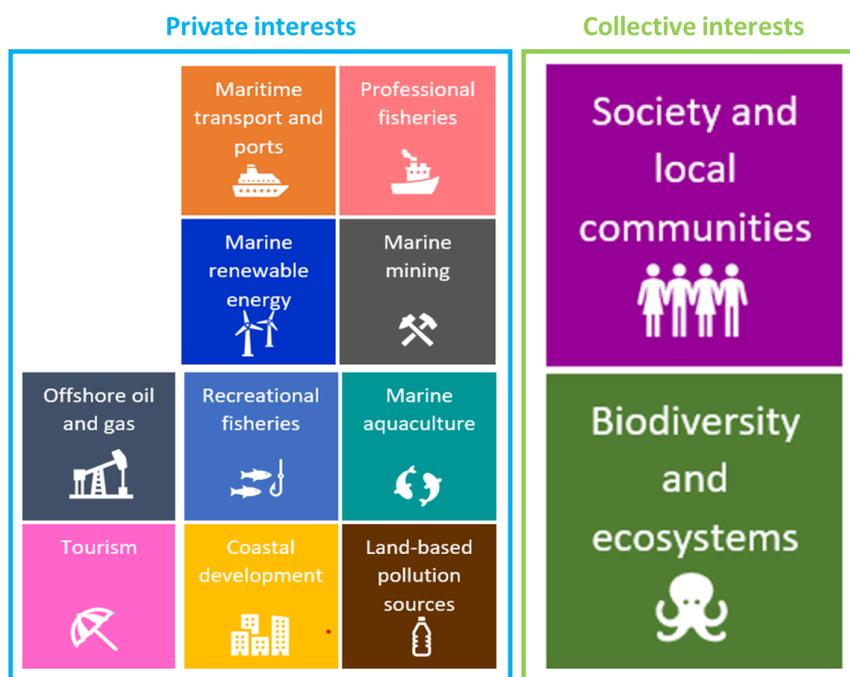


Figure 4 Key economic sectors considered in the previous studies, as refined in Plan Bleu, 2024

Within this framework, particular attention was given to local communities, small-scale fisheries, and resilience to climate change.

The advantage of using this framework—and categorizing available cost and benefit information according to economic sectors—is that the assessment automatically maps not only the available values of socio-economic benefits (and costs), but also how these are distributed across the local economy, thus highlighting competing uses and trade-offs involved in the establishment and management of MPAs; it is also highly effective for communication and advocacy purposes, as it clearly outlines the potential gains and losses linked to MPAs.

2.2. Methodologies for Assessing Socio-Economic Benefits

While most benefits to blue economy sectors, biodiversity and ecosystems are quantifiable in economic terms, this is not always the case for benefits for society and local communities. There is, in fact, a range of impacts on society and local communities which cannot be captured in economic terms, but that can be instead described in qualitative, or quali-quantitative terms. However, these wider social impacts can still be very relevant for local communities and society as a whole, and might play a crucial role in determining the acceptance—or not—of MPAs.

For this reason, socio-economic benefits quantifiable in economic terms, and wider social impacts were assessed separately.

As will be shown more extensively in this chapter, this study assesses the benefits of MPAs by applying the value transfer model based on existing studies on the benefits of MPAs. It does not take into account any disbenefits or opportunity costs, as the approach primarily focuses on benefits. The only cost values that could be found in the reviewed literature refer to administrative and management costs. Thus, this study does not aim to provide a full cost-benefit analysis of MPAs.

Assessment of Quantifiable Socio-Economic Benefits

The assessment of quantifiable socio-economic benefits was based on existing socio-economic studies on MPAs in the Mediterranean and beyond, following the four-step approach illustrated below. In total, 78 previous studies were reviewed as part of this project; among these, 50 studies refer to either Mediterranean-wide studies of MPAs in the Mediterranean region, and 15 refer to either European-wide studies or MPAs in Europe (including the UK).

Key Steps of the Assessment of Quantifiable Socio-Economic Benefits

- 1** Review of available evidence
- 2** Extraction of unitary values of costs and benefits assessed by available studies, and collected into the database
- 3** Benefit transfer: assessment at the country level, including adjustments for the actual protection levels
- 4** Cross-country comparison

The values of benefits (and costs) found in the literature were then used to assess the benefits at the national scale (in three Mediterranean pilot countries; see the following chapter) by applying the value transfer methodology.

Assessing the Relationship Between Levels of Protection and Net Benefits According to Mangos & Claudot (2013)

The value transfer methodology is a widely used approach in environmental economics to estimate the economic benefits in a specific location by applying values derived from studies conducted in other regions. The process involves the following steps:

- Selection of relevant studies from similar ecological and socio-economic contexts
- Extraction of unitary benefit values from selected studies, expressed as benefits per hectare of MPA (EUR/ha)
- Adjustment of the unitary values based on key parameters such as GDP, Purchasing Power Parity (PPP), and environmental conditions
- Application of unitary values to each MPA (adjusted unitary value * area) and sum of total benefits across all MPAs

In this study, the application of the value transfer methodology involved a two-step approach to account for socio-economic and environmental differences across countries—namely:

1. **Socio-economic disparities** were incorporated by adjusting benefit estimates using GDP and PPP, ensuring that differences in economic capacity and willingness to pay for ecosystem services were reflected in the transferred values
2. **Environmental adjustment factors** were applied to tailor the estimates to local MPAs based on their level of protection.

By integrating both socio-economic and environmental parameters, the value transfer approach provided a structured framework for comparing MPA benefits across Spain, Italy, Tunisia and Morocco.

Among the 78 studies reviewed as part of this project, 9 were found to provide suitable benefit values and/or methodological indications that could be used for this assessment—and these are reported in the table below. The full list of studies that were reviewed is provided in Annex II to this report, whereas the full list of updated unitary values that were used in the analysis is provided in Annex VI.

Table 1. Studies providing benefit values that were used in this assessment, including indications of the MPAs where such source values were assessed and sectors for which values are provided

Studies Used in the Benefit Transfer Valuation	Mpas for Which Benefit Values Are Provided	Sectors for Which Benefit Values Are Provided
Mangos A., Claudot M.A. (2013). <i>Economic study of the impacts of marine and coastal protected areas in the Mediterranean</i> . Plan Bleu, Valbonne. (Plan Bleu Papers 13).	Kuriat Islands (Tunisia) Cap de Creus (Spain) Kas Kekova (Turkey) Mont Chenoua – Kouali Coves (Algeria)	Overall cost-benefit and cost-effectiveness ratios Fisheries Tourism and recreation CO ₂ sequestration (society and local communities) Administration and management costs
Vertigo Lab, MedPan (2019). <i>Evaluation of the socio-economic benefits of the Mediterranean Marine Protected Areas</i> . Vertigo Lab. Final Report, September.	Al Hoceima National Park (Morocco) El Salloum (Egypt) Kuriat Islands (Tunisia)	Overall cost-benefit ratio Fisheries
WWF (2019). <i>Ecosystem Services, socio-economic values and organization profiles of Mediterranean MPAs</i> .	Torre Guaceto (Italy) Egadi Islands (Italy) Telascica Nature Park (Croatia) Gouraya National Park (Algeria) Taza National Park (Morocco)	Fisheries Tourism and recreation
ICL, IEEP, PML (2018). <i>Study on the economic benefits of Marine Protected Areas</i> . Literature Review Analysis.	Medes Islands (Spain)	Tourism and recreation
Plan Bleu (2017). <i>Socio-economic tools for supporting the achievement of Good Environmental Status of Mediterranean marine waters</i> . Valbonne, Plan Bleu. (Technical Report).	Mediterranean level	Overall value ranges
ABIOMMED Project (2022). <i>Deliverable 5.1 – Ex-post socioeconomic analysis of marine management and protection measures outcomes in the Mediterranean</i> .	Mediterranean level	Overall values and methodological elements
Les Parcs Nationaux de France (2014). <i>Les Parcs nationaux, une valeur sûre pour les territoires</i> .	Port-Cros National Park (France)	Overall benefit values Tourism and recreation

Plan Bleu (2024). <i>Assessing the costs and benefits of protection measures in two French marine protected areas.</i>	Port-Cros National Park (France) Cerbère Banyuls Nature Reserve	Fisheries Tourism and recreation CO ₂ sequestration (society and local communities) Administration and management costs
Landrieu G. (2013). <i>L'évaluation de la valeur économique des parcs nationaux, en particulier du Parc national de Port-Cros : un exercice nécessaire mais délicat.</i>	Port-Cros National Park (France)	Overall cost-effectiveness ration Tourism and recreation

Insights on the values provided by these studies, and the correlation between benefits and levels of protection, is provided in Plan Bleu (2021): a summary of the relevant chapter is provided in Annex III to this report.

This exercise was conducted for different categories of benefits: available studies, in fact, can either present overall benefit figures—i.e., not disaggregated across economic sectors—or type of benefits or benefit figures for specific sectors. In the context of this study, both types of figures (overall and by sector) were transformed into unitary benefit figures, and thus the model was run both for overall benefits and for benefits by sector—the latter was aimed at getting a flavour of how each sector contributes to overall benefits. Sector-specific unitary benefit values (EUR/ha/year) were also adjusted to the national contexts based on the same adjustment factors that were considered to estimate total benefits (i.e. GDP, PPP, environmental adjustment factor).

Available literature provides benefit estimates for only some of the sectors identified by MEDTRENDS and Plan Bleu: thus, this study could only assess the benefits for those sectors.

This makes sense, as MPA managers interviewed for this study also mentioned these economic sectors as relevant in their MPAs—also because several activities (e.g., mining, commercial transport) are obviously not allowed in protected areas.

The sectors for which unitary benefits were estimated at the national level are shown below.

Unitary Benefits by Economic Sector: What Was Considered?



Professional fishing – small-scale fisheries

The benefits for professional fishing are usually expressed as production value or value added (thus referred to the catches). It should be noted that only local, small-scale fishing is allowed in MPAs, so these benefits apply exclusively to artisanal fishing.



Recreational fishing

The benefits for recreational fishing are usually expressed as value added or total revenues from this activity (e.g. rental of fishing boats).



Tourism and recreational activities

A range of activities can be included in this category, including for example accommodation and food, scuba diving (recreational fishing and boating are not included, as our framework assessed these two as separate sectors). Benefits considered as part of this sector can be measured as touristic expenditures, value added of the activities, or recreational or well-being value of nature-based tourism.



CO₂ sequestration (by Posidonia grasslands)

According to our framework, this benefit is considered part of the benefits to society as a whole. However, we decided to present the results for this benefit separately from other societal benefits, because it is particularly relevant from a climate change mitigation perspective.



Society and local communities

This category includes the value (or value added) provided by ecosystem services preserved by the MPAs, as well as the benefits associated with coastal and erosion protection provided by MPAs.



Biodiversity and ecosystems

This category includes the patrimonial (non-commercial) value of biodiversity and ecosystems.

At the sectoral level, only unitary annual benefits per hectare were assessed in each country, whereas overall benefit values extracted from the literature were then used to estimate the total annual benefits of MPAs at the national level—i.e. unitary overall benefit values were multiplied by the total MPA area in each country.

Nevertheless, different MPAs within each pilot country have varying protection levels (i.e. level of implementation of the management plan), and this is likely to influence the delivery of benefits.

The so-called environmental adjustment factor is thus key when MPAs are concerned: it is a well-known fact that MPAs (in the Mediterranean sea and elsewhere) do not have the same level of implementation—referring here to the existence of a management plan and, when this is in place, to its actual level of implementation. The assumption behind this reasoning is that full implementation of an MPA management plan results in stronger, more effective ecosystem protection, improving ecosystem health and thus delivering higher benefits. Therefore, when transferring values from the literature to the national level, these were adjusted according to the levels of implementation specific to each MPA in each pilot country, based on a qualitative and critical assessment of the MedPAN database, which provides information on the status of management plans across MPAs in the Mediterranean.

More specifically, the levels of protection were transformed into coefficients, as shown in the table below. The choice of these coefficients was a significant factor in explaining the trend in socio-economic benefits across the four scenarios of implementation level.

Table 2 Coefficients used to modulate the benefits based on the levels of actual implementation

Coefficient	Corresponding Level Of Actual Implementation
0.75	On-paper protection: management plan non-existent
1	Low implementation: management plan not reported or considered insufficient
1.1	Partial implementation: management plan partially implemented
1.25	Full implementation: management plan fully implemented

The logic and assumptions behind the choice of the coefficients are based on Mangos & Claudot (2013) and are illustrated in the text box below.

Assessing The Relationship Between Levels Of Protection And Net Benefits According To Mangos & Claudot (2013)

The study assessed the long-term benefits for some economic sectors, as well as overall benefits of MPAs as Net Present Value (NPV) over the period 2010-2030 in three scenarios: S1-Business-as-usual (BAU), S2-increasing protection, and S3-decreasing protection – the protection levels investigated in this paper are also referring to the level of implementation of the management plan, as done in this study.

The table below shows the Net Present Value of overall Net Benefits of the three MPAs for which the assessment is available (the Kuriat Islands, Cap de Creus and Kas Kekova), calculated as the gross benefits minus administrative and management costs (to be noted that the total benefits have then been translated into benefits per hectare by the Authors of the Plan Bleu report, to facilitate comparison with other values).

Table SEQ Table * ARABIC 2 Projected overall net benefits of three MPAs in Mangos & Claudot (2013), and variations from the BAU scenario across different levels of protection – Time horizon: 2010-2030

Based on this, the environmental adjustment factor used in this study was based on these findings: on average, it can be observed that overall net benefits increase by 15% for an increase in the level of protection, and they decrease by 11% for a decrease in the level of protection.

The steps described so far allowed for the estimation of the benefits of MPAs at the national level, taking into account all MPAs with national status in the three pilot countries. However, these numbers alone do not provide a meaningful indication of the additional benefits resulting from the establishment and implementation of MPAs. For example, would marine ecosystems still provide (some) benefits in the absence of protection? To what extent? And what would be the benefits generated by full implementation of existing MPAs?

To ascertain the actual effects that existing MPAs have on economic sectors, biodiversity, local communities and society—as well as the additional benefits that would result from their full implementation—we developed alternative scenarios by applying different environmental adjustment factors to the existing MPAs. These scenarios are shown below.

Alternative Scenarios Explored in the Assessment

Full implementation	Management plan fully implemented in all national MPAs (coefficient of 1.25, as also used in Table 2 above).
Actual implementation	Each MPA in the country was assigned a coefficient based on the actual implementation of the management plan (as in Table 2).
No protection	A coefficient of 0.5 was assigned to all MPAs in the country. The coefficient is lower than the coefficient assigned to the category “on-paper protection”; it is, in fact, assumed that on-paper protection might still constitute a constraining factor to the exploitation of the area.
Environmental degradation	A coefficient of 0.25 was assigned to all MPAs in the country. Even in case of degradation, in fact, it is assumed that economic activities will still take place (e.g. fishing, tourism), although generating a smaller value due to degradation.

By its nature, the benefit transfer method provides benefit estimates based on values available in the literature, so the results must be considered as estimates whose level of accuracy is difficult to measure. Calculations were computed using minimum, average, and maximum values, and the results presented here refer to the mean values of benefits³⁰.

Undoubtedly, the robustness of this method also depends on the representativeness of the source unitary values that are transferred: for example, it would be highly misleading to assume that values from an island hotspot like the Balearics would be representative of those from vast areas of open sea. At the same time, as shown in Table 1 above, unitary values were sourced from a wide range of studies, covering several MPAs with different levels of protection and different socio-economic profiles, also distributed across the whole Mediterranean region: thus, although representativeness remains a critical point in value transfer exercises, the studies and values used in this study offer a good representation of the variety of MPAs across the Mediterranean.

In addition, to complement the information retrieved from the literature review and the MedPAN database, we conducted interviews with selected experts in the pilot countries³¹

³⁰ A critical analysis of the results of the model highlighted an additional challenge: the results present disproportionately large deviations between the minimum values and the average values of total benefits, as well as between the deviations between the average values and the maximum values of total benefits. For this reason, we decided to **only display the average values of total benefits obtained at the national level with the benefit transfer model.**

³¹ In Tunisia, relevant contacts and country-level information were collected in close collaboration with the SPA/RAC, which also shared the contacts of local associations involved in protection.

(national MPA experts, researchers with experience in the socio-economic assessment of MPAs, and managers of MPAs with particularly effective implementation of the management plan). These interviews were very useful in collecting contextual information on MPAs in the country—and thus in building the overall picture of actual marine protection, especially when it comes to real-life observations of the costs and benefits of MPAs.

Value Transfer Methodology Limitations

The benefit transfer methodology used in this study offers a practical way to estimate the socio-economic benefits of MPAs, especially in contexts lacking country-specific valuation studies. However, several limitations affect the robustness and accuracy of the results.

The method applies unitary values (EUR/ha/year) to the surface area of MPAs in each country, assuming a uniform distribution of benefits across each MPA. This simplification overlooks variations in ecological value, use intensity, and management effectiveness within and across MPAs. Consequently, it may overestimate benefits in countries with large MPAs (e.g., Spain) and underestimate them in countries with smaller MPAs (e.g., Tunisia).

To improve comparability, adjustments were applied to account for economic (GDP), social (PPP), and environmental differences across countries. While these adjustments help contextualize the values, they rely on national averages and assumptions that may not capture local realities or sector-specific conditions. In particular, the environmental adjustment—based on protection levels derived from literature and the MedPAN database—is informed by limited case studies and should be viewed as indicative rather than precise.

In summary, the value transfer approach enables a useful first-order approximation of MPA benefits at the national level. However, the estimates should be interpreted with caution and used primarily to illustrate general trends rather than to provide exact economic figures.

In addition, studies of MPA benefits tend to focus on particular coastal and island areas and are not representative of the open sea—a limitation which could not be addressed by the applied methodology, nor within the resource and time constraints of this study.

The value transfer approach, by its nature, does not allow for an accurate assessment of the tradeoffs that might be involved in the creation of MPAs, including possible conflicts over the use of the marine space. Most of the time, existing studies mostly focus on the benefits associated with quality improvements of protected ecosystems, while less information is available on the opportunity costs of these improvements—in other words, whether other maritime sectors have experienced losses due to regulations and use restrictions.

As mentioned earlier, the value transfer exercise was complemented by interviews with national experts and MPA managers in the countries selected for in-depth assessment (Spain, Italy, and Tunisia) which had a two-fold purpose:

- To obtain real-life, qualitative insights on the benefits of MPAs as observed in the field; and
- To gain a qualitative understanding of the conflicts and trade-offs among economic sectors and local communities associated with the creation of MPAs.

In addition, Annex III to this report provides insights from existing literature on how different economic sectors can benefit—or not—from increasing or decreasing levels of protection. Some key highlights are provided in the box below.

Do Benefits Always Increase From Increasing Levels of Protection?

A Sectoral Perspective

As shown above, the value transfer exercise conducted in this study relies on the environmental adjustment factor, which is based on the assumption that the benefits of MPAs increase with higher levels of protection.

While this assumption is supported by the results of Mangos & Claudot (2013)—which refer to the overall net benefits of MPAs and are illustrated above—the same study offers additional sector-level insights, which show a more complex picture. While the full results are summarized in Annex III to this report, the key sectoral highlights are as follows:

- **Professional fisheries:** With increasing protection, in some cases the positive spillover effects of protection are expected to prevail; in others, fishing restrictions are projected to result in losses for the sector. The study does not provide detailed explanations for these differences, but several factors are likely to influence the outcomes of different protection levels (e.g., the structure of local fishing fleets, location of fishing areas, etc.). With decreasing protection levels, overexploitation of fish stocks is projected to reduce catches in the longer-term. However, in one case, this effect is not captured in the overall benefits due to an initial increase in catches, which is “amplified” by the application of a discount rate to the analysis—i.e., short-term benefits are given more weight than longer-term ones.
- **Recreational fisheries:** In this case too, it is not possible to reach strong conclusions based on these projections—the question of whether fishing restrictions are “stronger” than spillover effects, or the other way around, remains open.
- **Tourism and recreation:** Overall, increasing protection levels correspond to increasing benefits for the tourism and recreation sector. In general, better environmental quality is expected to attract more tourists, but environmental protection is expected to have additional positive effects on the sector.
- **Biodiversity and society:** these benefits increase with increasing levels of protection and decrease with decreasing levels of protection. The relationship observed here—increasing benefits with increasing protection levels, and the reverse with decreasing levels—might apply to all benefits linked to environmental improvements, such as those for society as a whole and for biodiversity and

ecosystems. In fact, these benefits do not imply restrictions or a contraction of existing economic activities; rather, they are additional benefits brought by the MPA as such.

In synthesis, while the assumption appears to be valid for most of the sectors investigated by Mangos & Claudot, the actual impacts of increasing protection on both professional and recreational fisheries are likely to be more nuanced, and to depend on several factors linked both to the protected site and the time horizon over which benefits are assessed.

Assessment of Wider Impacts on Society and Local Communities

The assessment of wider social impacts was conducted in parallel with the assessment of the quantifiable socio-economic benefits of MPAs. The key steps of this part of the assessment are shown below.

Key Steps of the Assessment of Wider Impacts on Society and Local Communities

- 1** Dedicated literature review
- 2** Interviews with experts in the assessment of social impacts
- 3** Online survey of MPA managers in the pilot countries

For the literature review, papers with a national scope or focusing on several MPAs representative of all the country's MPAs, as well as papers focusing on a single MPA, were investigated. Whenever possible, social impacts were assessed by the stakeholder category to reflect on social equity and fairness issues. Social impacts are purposely presented in a neutral way, since each impact can be negative or positive depending on the situation.

The information collected through the literature and the interviews was structured in a dedicated database, with the main entry point being the impact categories. Such categories are listed below.

Key Categories of Wider Social Impacts



Well-being and health



Access to resources and livelihoods



Knowledge and education



Local culture and values



Social relations



Inclusion and empowerment

In addition to the literature review and the interviews, an online questionnaire was distributed to all MPA managers in Italy and Spain. For Tunisia, information for this pilot site was collected through interviews conducted with only two MPAs (out of five) in the country. The aim of this survey was to gain an understanding of the social impacts of marine protected areas in Spain and Italy. However, despite our efforts, we only received three replies to the survey (one respondent from Spain, representative of the Spanish Ministry for the Ecological Transition, and two respondents from Italy).

3. Defining The Scope Of This Assessment: The Selected Countries

This chapter presents the three pilot countries included in this study: Spain, Italy and Tunisia. The following principles guided the selection of pilot countries:

- ✓ Countries with a well-developed network of MPAs were prioritized;
- ✓ Selected countries were chosen to represent geographical diversity across the Mediterranean region; and
- ✓ Information on MPAs and their benefits had to be available and/or easily accessible.

The assessment focused specifically on MPAs with a national status, particularly those managed by government authorities (ministries or regional governments) and national parks. This approach was chosen to ensure comparability between the MPAs regarding classification, status, and protection levels³².

This section provides an overview of MPAs in the selected countries, whereas the results of the assessment will be presented in the next chapter. When not indicated otherwise, the sources of information for this chapter are the interviews with national MPA experts.

3.1. Spain

The figure below presents the marine protected area coverage in Spain (figure for MPAs in both the Mediterranean and the Atlantic)³³ in 2022, as well as the map of MPAs on the Mediterranean side.

³² For instance, national MPAs in Europe apply similar zoning principles—Zona A, Zone B special, Zone B and Zone C—with progressively decreasing protection levels, ranging from no-go/no take areas to general reserves allowing various uses.

³³ Information on coverage in the Mediterranean sea only could not be found.

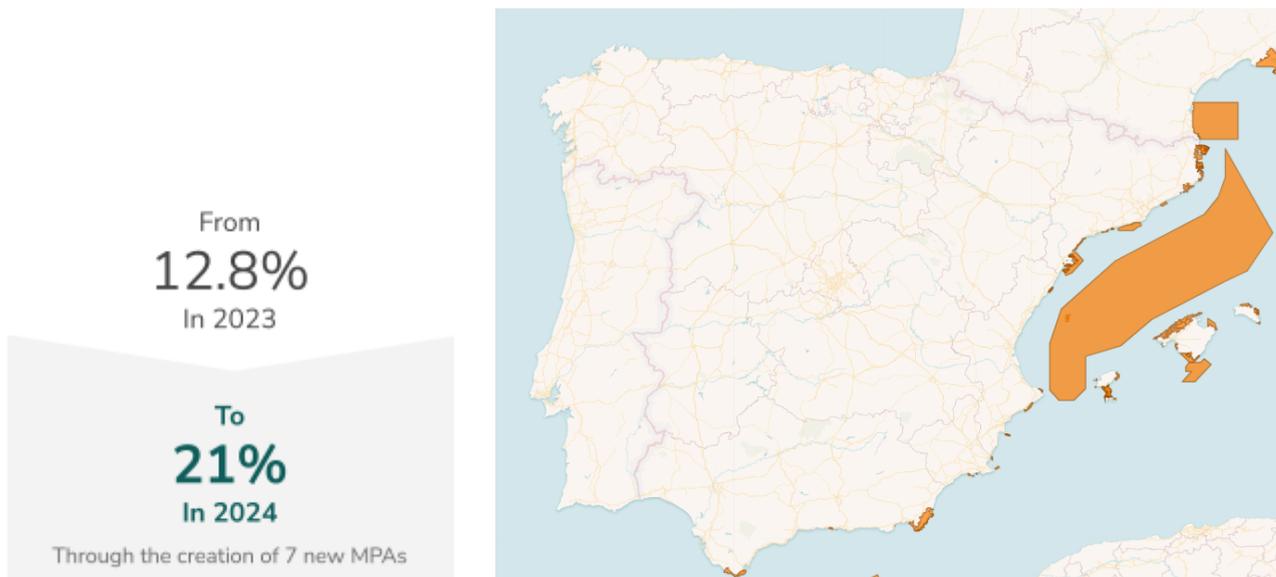


Figure 5 MPA coverage in Spain (Mediterranean + Atlantic), and map of MPAs in the Mediterranean

– Source MPA coverage

<https://oceana.org/press-releases/oceana-applauds-the-designation-of-seven-new-marine-protected-areas-in-spain/>

- Source MPAs map: <https://www.mapamed.org/>

On its national territory (thus including both the Mediterranean and the Atlantic sides), Spain is making considerable efforts towards the 30x30 objective. According to the Spanish Ministry for the Ecological Transition and the Demographic Challenge³⁴, seven new MPAs were designated in Spain in 2024 under the Natura 2000 network³⁵. SUBMON³⁶, an organization dedicated to marine biodiversity conservation, reported that these newly designated areas span over 9.3 million hectares, representing an 8.7% increase in Spain's total marine protected area.

Consequently, as highlighted by Oceana³⁷, the largest international advocacy organization focused solely on ocean conservation, Spain's marine protected areas expanded from 12% to 21% – with a resulting coverage of more than 30% in the Mediterranean Sea – advancing the country toward its objective of protecting 30% of its marine waters by 2030 (Mediterranean and Atlantic).

Nevertheless, management challenges still exist in Spanish MPAs, and these are summarized in the box below.

³⁴ <https://www.boe.es/buscar/act.php?id=BOE-A-2023-26741>

³⁵ This includes six new Sites of Community Importance (SCI) and one newly established Special Protection Area for Birds (SPA).

³⁶

<https://www.submon.org/en/charting-a-new-course-for-marine-conservation-spain-establishes-seven-new-marine-protected-areas/>

³⁷ <https://oceana.org/press-releases/oceana-applauds-the-designation-of-seven-new-marine-protected-areas-in-spain/>

Main Challenges in the Implementation of Management Plans in Spain



Lack of comprehensive management plans provided by the Ministry, and conflict over responsibilities among administrations/ministries due to the joint management.



Conflicts with fishing interests.



Insufficient budgets³⁸, which often cover only surveillance activities, but not scientific monitoring or broader management needs.

Over the last 20-30 years, marine ecosystems under protection have seen improvement, particularly where enforcement is strong. Even though there have not been outright negative outcomes, there have been cases where MPAs have failed to produce significant positive effects.

In the context of this study, besides assessing the benefits of MPAs at the national level, two Spanish MPAs were investigated in greater detail, as qualitative information was collected through interviews with MPA managers. These were, in particular:

- Cap de Creus; and
- Reserva Marina de Nueva Tabarca.

The list of experts and MPA managers interviewed in Spain is provided in the Box below.

Experts and Managers Interviewed in Spain

- Pablo Rodriguez Ros, Marilles Foundation (MSA member)
- Michael Sealey and Noelia Hernandez Muñoz, Oceana (MSA member)
- Just Bayle-Sempere, Universidad de Alicante
- Arturo Lopez-Ornat, IUCN WCPA Member
- Ponç Feliu Latorre, Cap de Creus Natural Park

³⁸ According to an interview with a researcher, the typical yearly budget of Spanish MPAs is between 100 000 and 250 000€.

3.2. Italy

The figure below presents the marine protected area coverage in Italy (10.71%), as well as the map of MPAs.

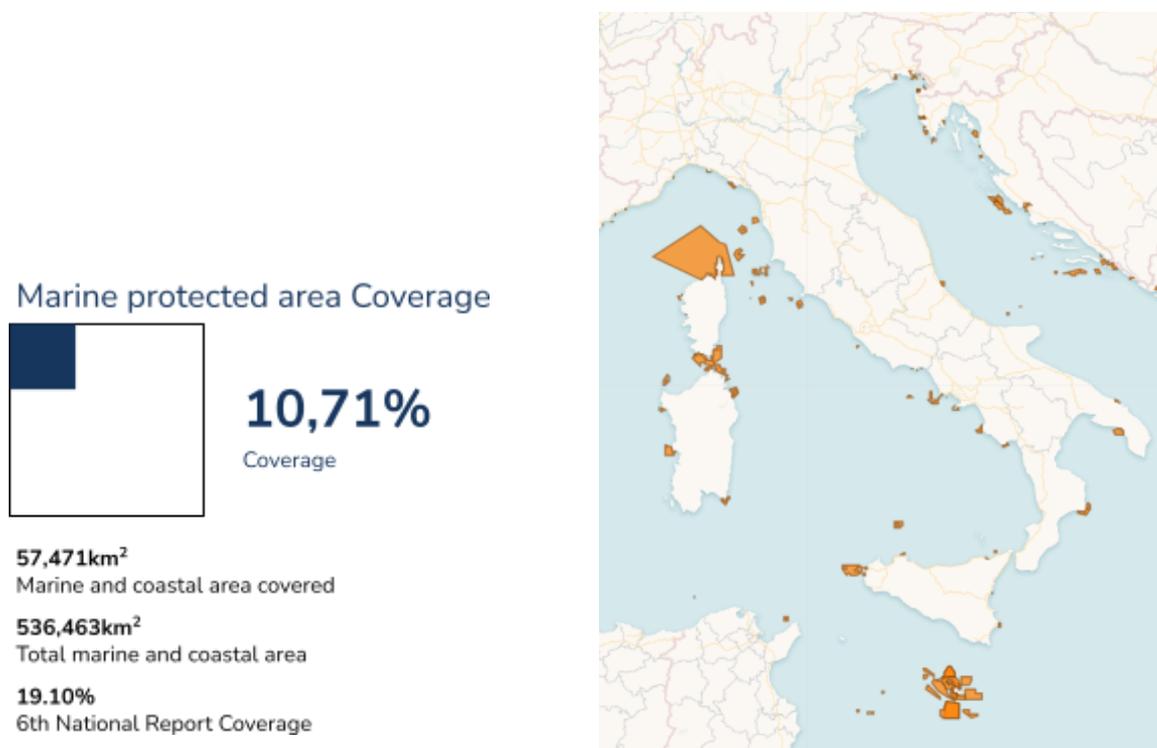


Figure 1 Marine protected area coverage in Italy, and map of MPAs in the country – Source MPA coverage: <https://www.protectedplanet.net/en/country/ITA> - Source map of MPAs: <https://www.mapamed.org/>

The MAPAMED map above shows only the MPAs with national status, which are the focus of this assessment; in contrast, the coverage figure also includes the Pelagos Sanctuary and Natura 2000 marine sites. This figure, however, is strongly contested by national NGOs and experts. Greenpeace, for example, points out that the Pelagos Sanctuary is in fact an area with no regulations where all activities are permitted. Natura 2000 sites, in turn, are managed at the regional level and, in the majority of cases, do not have any management plan³⁹.

According to Greenpeace⁴⁰, the MPAs with national status shown in the map on the right-hand side are effectively protected: these include MPAs under the management of the Ministry of Environment, and Arcipelago Toscano and La Maddalena National Parks). This area corresponds to only 0.9% of the total Italian marine area.

³⁹ Leonardo Tunesi, ISPRA, and Italian MSA members, personal communications.

⁴⁰

https://greenpeace.it/salviamo-il-mediterraneo/?utm_source=greenpeace-org&utm_medium=news&utm_campaign=mare&utm_term=mappa-30x30&_gl=1*ul16dj*_ga*Mjc2ODY0Njk2LjE3MzQ2MjAyNTM.*_ga_Yy7FES8KL3*MTczNDYyMDI1My4xLjEuMTczNDYyMDI1NC4wLjAuMTYyNjAwNDQ2Ng.*_fplc*VmpYT0ZQSXEIMkJUyVhRakRsSjFyRUh0OTFPRzdHNHo3aiUyQjdGVU85NEoyOUhGTmlrV2Q4MkdGb2dNa3k3WjhSbU1oRGZvcUzeW56MHFXJTJCaVMlMkIwZW1SJTJGcFFubUZEbTFIalZqTKY4bEhTRDILO3Q3cWgzTWphdHk3cTdwam9ldyUzRCUzRA..

The management challenges reported by Italian interviewees are summarized in the Box below.

Challenges of MPA Management in Italy



Increase ministerial funding to cover for a minimum number of staff (i.e., not only the Director) to ensure continuity to the MPA managers. In some cases, this continuity already exists, thanks to the directors' efforts.



The first MPAs were established between the 1980s and 1990s. While regulations and management plans have been refined at the national level over the years, some MPAs still have outdated regulations (e.g., 20 years old) which should be revisited to update and harmonize them.



Rather than being “paper parks”, in some sites protection measures are in place, but these are insufficient and additional measures would be needed (e.g., Natura 2000 sites for the protection of Posidonia).

In the context of this study, besides assessing the benefits of MPAs at the national level, three Italian MPAs were investigated in greater detail, as qualitative information was collected through interviews with MPA managers. These were, in particular (from North to South):

- Bergeggi Island;
- Tavolara – Punta di Coda Cavallo; and
- Capo Milazzo.

The list of experts and MPA managers interviewed in Italy is provided in the box below.

Experts and Managers Interviewed in Italy

- Leonardo Tunesi, ISPRA
- Augusto Navone, former director of the Tavolara Punta Coda Cavallo MPA
- Giulia Visconti, director of the Capo Milazzo MPA
- Davide Virzi, director of the Isola di Bergeggi MPA
- Marco Costantini, WWF
- Mariasole Bianco, Worldrise (MSA member)
- Giulia Bernardi and Ambra Messina, Blue Marine Foundation (MSA member)

3.3. Tunisia

The figure below presents the marine protected area coverage in Tunisia, as well as the map of MPAs. According to official data, Marine and Coastal Protected Areas (MCPAs) cover around 1% of the marine territory. Tunisia has unofficial or de facto Marine Protected Areas (MPAs)—areas that are ecologically important and functionally protected to some extent, but not yet officially designated as MPAs in national law or reported to global databases. Several key biodiversity areas are managed under broader coastal or environmental regulations and are largely sustained through co-management by NGOs together with the Agence de Protection et d'Aménagement du Littoral (APAL, i.e., Coastal Protection and Planning Agency).

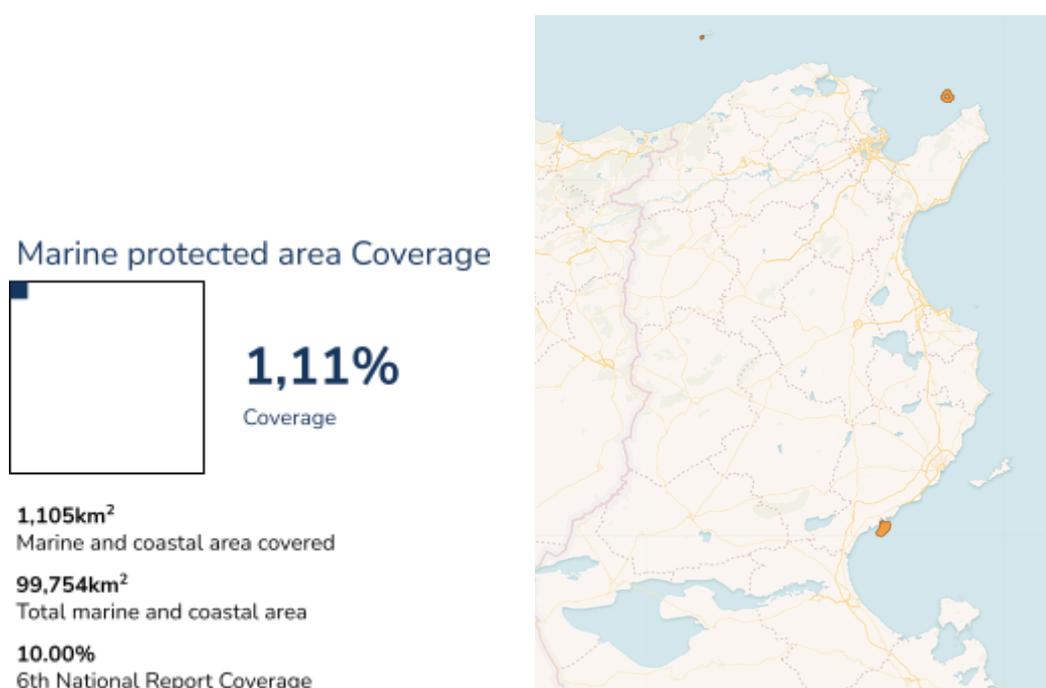


Figure 2 Coverage of MPAs in Tunisia, and map of existing MPAs – Source MPA coverage: <https://www.protectedplanet.net/en/country/TUN> - Source MPAs map: <https://www.mapamed.org/>

Located on the southern shore of the Mediterranean, Tunisia provides a contrasting perspective as compared to Spain and Italy, which are both situated on the northern shore and are EU Member States. Among the countries on the southern shore of the Mediterranean, Tunisia is the most accessible in terms of data availability. In the context of this study, a great contribution was provided by SPA/RAC, which facilitated contacts including APAL, associations, and experts.

In particular, Tunisia is currently experiencing significant momentum with respect to MPAs – a process in which SPA/RAC is closely involved. Several studies on various aspects of MPAs have been or are being conducted on topics such as protected ecosystems, MPA management, sustainable use by economic sectors, and financing mechanisms⁴¹.

⁴¹ For these reasons, SPA/RAC has expressed a strong interest in selecting Tunisia as a pilot country for this study – and this was seen as a valuable opportunity to establish a meaningful collaboration between SPA/RAC and the MSA.

The challenges to MPA implementation in Tunisia are summarized in the box below.

Challenges to MPA Implementation in Tunisia



Legal and institutional framework: the absence of legal declarations for all sites limits enforcement and sanctioning capabilities.



Financial constraints: many planned actions remain unimplemented due to insufficient funding.



Availability of human resources: retention of skilled staff is challenging due to low salaries, with much of the work relying on voluntary contributions.

Despite these challenges, positive impacts have been observed in all five MPAs in Tunisia. For example, at the Kuriat Islands—an MPA currently in the process of obtaining its first legal decree—management actions have led to notable improvements, such as increased populations of marine turtles, the return of bird species, and the regeneration of native vegetation. Similar outcomes have been recorded in other sites, highlighting the potential of effective management plans to achieve tangible environmental benefits.

In the context of this study, besides assessing the benefits of MPAs at the national level, two Tunisian MPAs were investigated in greater detail, based on qualitative information collected through interviews with MPA managers. These were, in particular:

- Zembra; and
- La Galite.

The list of experts and MPA managers interviewed in Tunisia is provided in the Box below.

Experts and Managers Interviewed in Tunisia

- Yassine Ramzi Sghaier, SPA/RAC
- Aymen Nefla, Coordinator of the "MEDFUND" initiative for Zembra Marine and Coastal protected Area conservation
- Moez SHAIEK, Project manager association MAN, La Galite MPA

3.4. Additional Case Study: MOROCCO

While for Spain, Italy and Tunisia this study conducted a more in-depth assessment of socio-economic benefits—including interviews with national experts and MPA managers—in Morocco it carried out a lighter assessment, i.e. only the assessment of benefits based on the value transfer method was conducted. Morocco was thus included to provide one more example of the benefits of MPAs – and an example on the southern shore of the Mediterranean, thereby ensuring a better representativity of the results of the study from a Mediterranean perspective.

The figure below presents the MPA coverage in Morocco (0.27% - covering Mediterranean and Atlantic regions), as well as the map of MPAs.

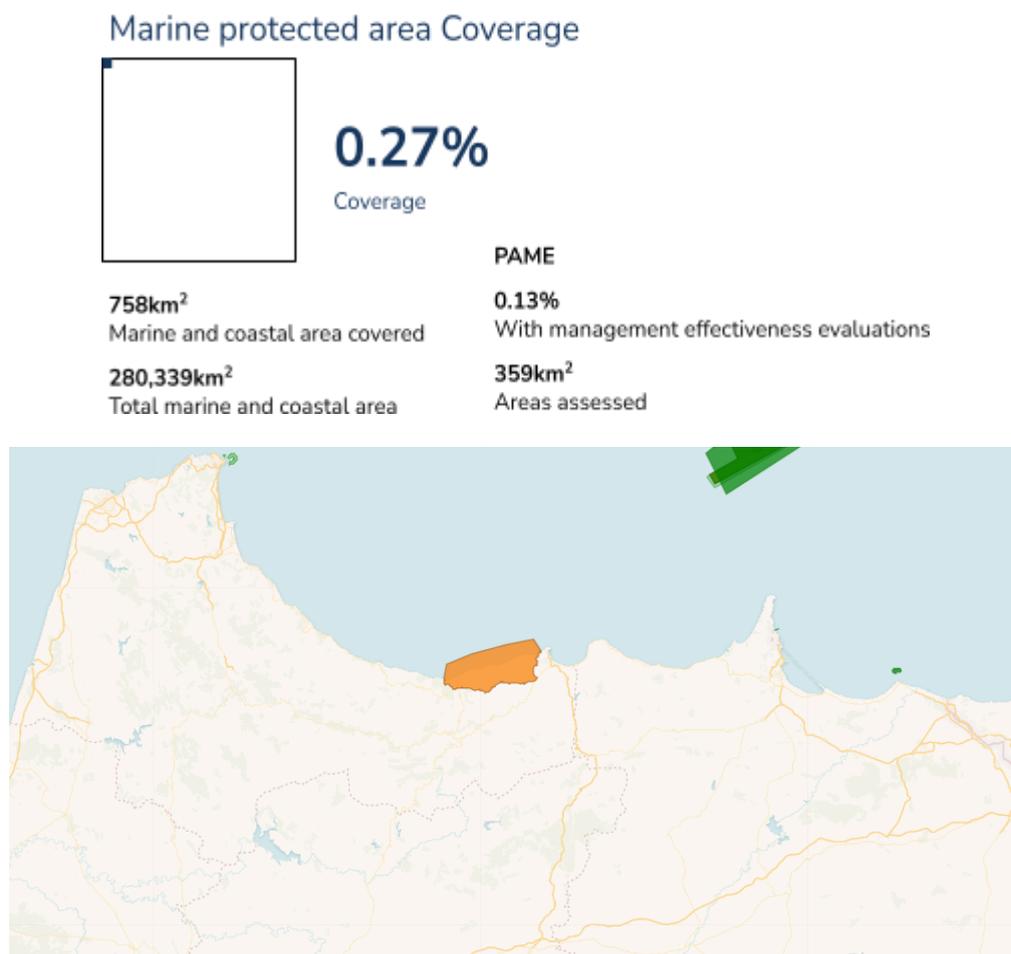


Figure 3 Coverage of MPAs in Morocco (Mediterranean + Atlantic), and map of existing MPAs in the Mediterranean region – Source MPA coverage: <https://www.protectedplanet.net/en/country/MAR> - Source MPAs map: <https://www.mapamed.org/>

The map highlights the officially designated MPAs in Morocco, including Al Hoceima, which covers 19,000 hectares of marine area and 48,460 hectares in total, encompassing both marine and terrestrial zones. Given the limited number of MPAs in Morocco, Al Hoceima is the only MPA considered in this study.

4. The Socio-Economic Benefits of MPAs in Spain, Italy, Tunisia and Morocco – and Why Full Implementation Matters

This section presents the results of the calculated MPA value transfer benefits in the four selected countries, considering the different scenarios previously outlined.

Estimates were generated for marine areas only, and for marine and terrestrial areas altogether. However, it was jointly decided with the client to use the marine area only as a basis for the benefit transfer, to focus specifically on the benefits of protecting marine ecosystems, as this is the main focus of MPAs. Nevertheless, benefit values referring to marine areas only are often very similar to the benefit values referring to both marine and terrestrial areas. This similarity is explained by the fact that the terrestrial area is usually very small as compared to the marine area—and this was one more reason behind the choice of presenting only results referring to marine areas only.

4.1. Results of the Benefit Transfer Exercise and Insights from the Interviews With MPA Managers

Spain

The graph below depicts the annual overall socio-economic benefits per hectare of protected areas across the four assessment scenarios as estimated by the value transfer model: full protection, actual protection, no protection and environmental degradation.

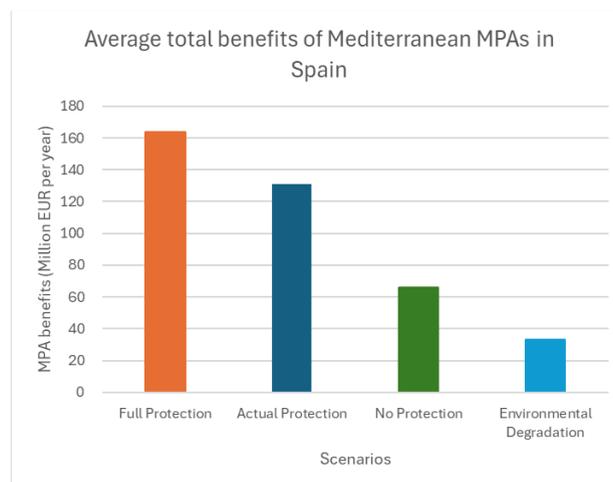


Figure 4 Total yearly benefits of Mediterranean MPAs in Spain (Million EUR/year), in the actual protection scenario and in the alternative scenarios

Inevitably, the value transfer model indicated that total benefits follow a decreasing trend, ranging from the highest benefits generated by full protection to the lowest benefits under environmental degradation. The key insight, here, lies in the magnitude of this deviation from the actual protection scenario, which is shown in the table below:

- Full enforcement of protection across the country would result in an increase of total benefits by 25% compared to the current situation.
- No protection, in contrast, would result in a decrease of total benefits by 50%, whereas environmental degradation would imply a benefit loss of 75% as compared to the current situation.

Table 1 Average total yearly benefits of MPAs in Spain in the four assessed scenarios (Million EUR/year), and deviation of alternative scenarios from the actual protection scenario

Scenarios	Average total yearly benefits (Million EUR/year)	Deviation from actual protection
Full protection	164	+25%
Actual protection	131	
No protection	66	-50%
Environmental degradation	33	-75%

In addition to the figures above on overall average annual benefits, the following illustration presents the average unitary benefit estimates (EUR/ha/year) for the different sectors; the unitary value of overall benefits (which was used to derive the estimates provided in the previous section) is also shown in the graph as a term of comparison.

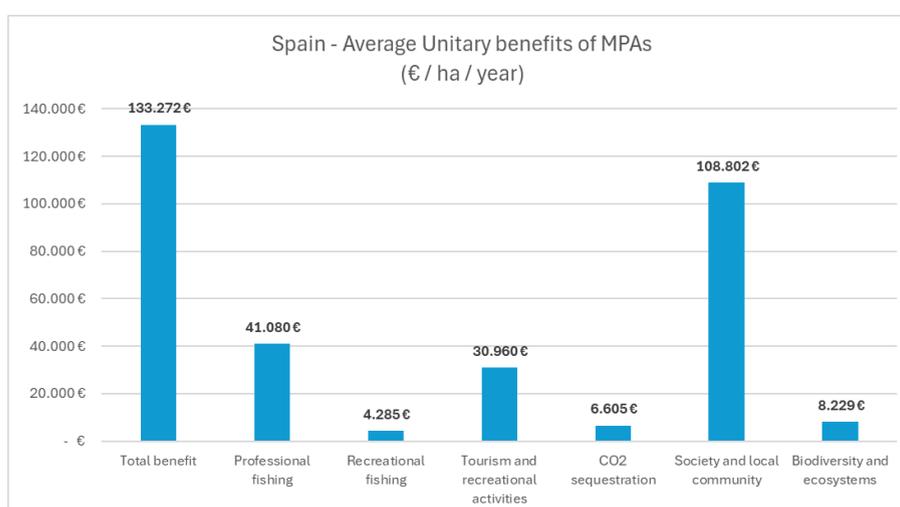


Figure 9 Average unitary benefits by sector provided by Mediterranean MPAs in Spain (EUR/ha/year)

As mentioned earlier, the benefit transfer exercise is based on some (sometimes strong) assumptions. In order to get a more complete picture, the box below provides a qualitative overview of the economic benefits of one MPA in Spain, based on the observations and experience of its manager.



The Benefits of MPAs by Sector: Evidence From Cap de Creus⁴²

Balancing tourism growth with sustainability

The park's protected status has led to a significant increase in tourism. The presence of abundant marine life and well-preserved landscapes attracts visitors, benefiting local businesses. For instance, the number of scuba diving companies has increased from 2 in the 1990s to 14 today. Additionally, businesses offering sea cruises and boat trips have also expanded. In general, tourism generates income through accommodation, food services, and other local businesses, boosting the economy. While increased tourism can be beneficial, excessive visitor numbers can negatively impact the environment and local communities. The new management plan seeks to balance tourism growth with sustainability by implementing stricter regulations.

Italy

The overall average total annual benefits of Mediterranean MPAs in Italy are presented in the figure below in the four assessed scenarios, as estimated by the value transfer model: full protection, actual protection, no protection and environmental degradation.

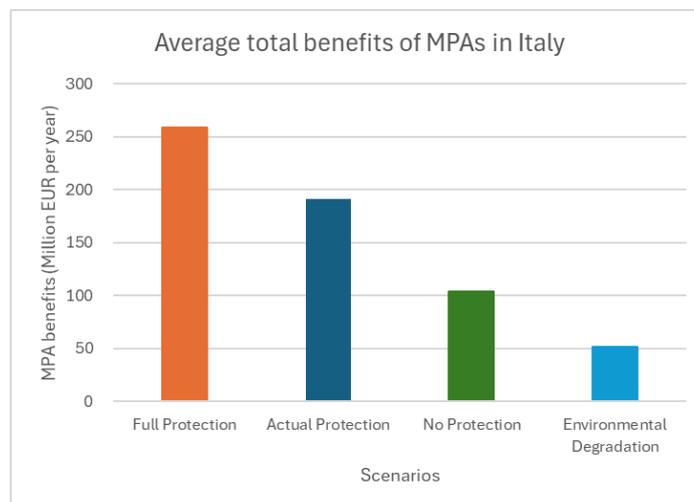


Figure 5 Total annual benefits of MPAs in Italy (Million EUR/year), in the actual protection scenario and in the alternative scenarios

⁴² Source: Interview with Ponç Feliu Latorre, MPA manager

Also in this case, the value transfer model indicates that benefits decrease from the maximum generated by full protection to the minimum generated by environmental degradation. What is more interesting here is to understand the magnitude of this deviation from the actual protection scenario, as shown in the table below:

- Full enforcement of protection in the country would result in an **increase of total benefits by 36%** as compared to the current situation.
- No protection, in contrast, would result in a decrease of total benefits by 46%, whereas environmental degradation would imply a **benefit loss of 73%** as compared to the current situation.

Table 2 Average total annual benefits of MPAs in Italy in the four assessed scenarios, and deviation of alternative scenarios from the actual protection scenario

Scenarios	Average total yearly benefits (Million EUR/year)	Deviation from actual protection
Full protection	259	+26%
Actual protection	191	
No protection	104	-46%
Environmental degradation	52	-73%

In addition to the figures above on overall average annual benefits, the following illustration presents the average unitary benefit estimates (EUR/ha/year) for the different sectors; the unitary value of overall benefits (which was used to derive the estimates provided in the previous section) is also shown in the graph as a term of comparison.

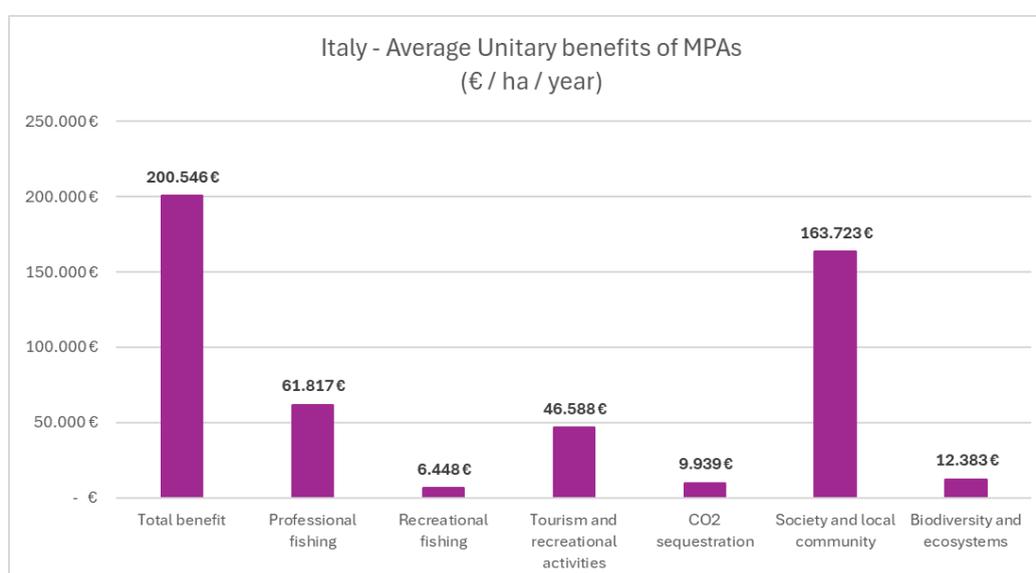


Figure 10 Average unitary benefits by sector provided by MPAs in Italy (EUR/ha/year)

As mentioned earlier, the benefit transfer exercise is based on some (sometimes strong) assumptions. In order to get a more complete picture, the box below provides a qualitative overview of the economic benefits of two MPAs in Italy, based on the observations and experience of their managers.



The Economic Benefits of MPAs by Economic Sectors: Evidence From the Field – Bergeggi Island MPA⁴³

Higher accommodation prices and real estate values thanks to the creation of the MPA

Bergeggi is a small municipality with a small accommodation network composed of three hotels, some Bed & Breakfasts and private holiday homes: these facilities have certainly benefited from the MPA, as thanks to its creation the value of the territory is now recognized. In terms of the number of tourists, accommodation facilities probably work today as they did 20 years ago, before the MPA was in place, but their attractiveness has increased: they fill up faster, they can ask for increased prices. The real estate value in the village has also grown, as it is the case with all protected areas (e.g. also in the mountains), because people go there more, there are more services and territorial marketing.



The Economic Benefits of MPAs by Economic Sectors: Evidence From the Field – Capo Milazzo MPA⁴⁴

From a transit town to a place to visit

Traditionally, Milazzo was just a transit town, where tourists caught the ferries to the Aeolian islands. In more recent years, the establishment of the MPA, together with the renovation of the town, have resulted in increasing requests for accommodation: last summer all accommodations were fully booked, and the number of B&Bs and holiday homes in town is increasing. Instead of just passing by, people stop by before or after their trip to the islands to visit the MPA. In addition, the MPA always participates in cultural and recreational events organized in the city – for example, many school groups coming from other towns take a trip to Milazzo, and spend half a day at the medieval castle, which hosts the Museum of the Sea, and half a day at the MPA.

⁴³ Source: Interview with Davide Virzi, MPA manager

⁴⁴ Source: Interview with Giulia Visconti, MPA manager

Tunisia

The average total annual benefits of Mediterranean MPAs in Tunisia are presented in the figure below in the four assessed scenarios, as estimated by the value transfer model: full protection, actual protection, no protection and environmental degradation

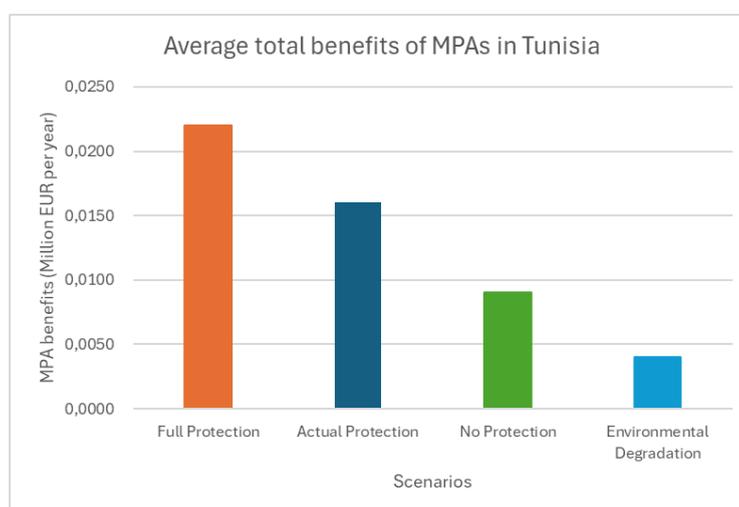


Figure 6 Average total annual benefits of MPAs in Tunisia (Million EUR/year), in the actual protection scenario and in the alternative scenarios

Also in this case, the value transfer model indicates that the total benefits show a decreasing trend, from the maximum benefits generated by full protection to the minimum benefits generated by environmental degradation. What is more interesting, here, is to understand the magnitude of this deviation from the actual protection scenario, as shown in the table below:

- Full enforcement of protection in the country would result in an increase of total benefits by 38% as compared to the current situation;
- No protection, in contrast, would result in a decrease of total benefits by 44%, whereas environmental degradation would imply a benefit loss of 75% as compared to the current situation.

Table 3 Average total annual benefits of MPAs in Tunisia in the four assessed scenarios, and deviation of alternative scenarios from the actual protection scenario

Scenarios	Average total yearly benefits (Million EUR/year)	Deviation from actual protection
Full protection	0,022	+38%
Actual protection	0,016	
No protection	0,009	-44%
Environmental degradation	0,004	-75%

In addition to the figures above on overall average annual benefits, the following illustration presents the average unitary benefit estimates (EUR/ha/year) for the different sectors; the unitary value of overall benefits (which was used to derive the estimates provided in the previous section) is also shown in the graph as a term of comparison.

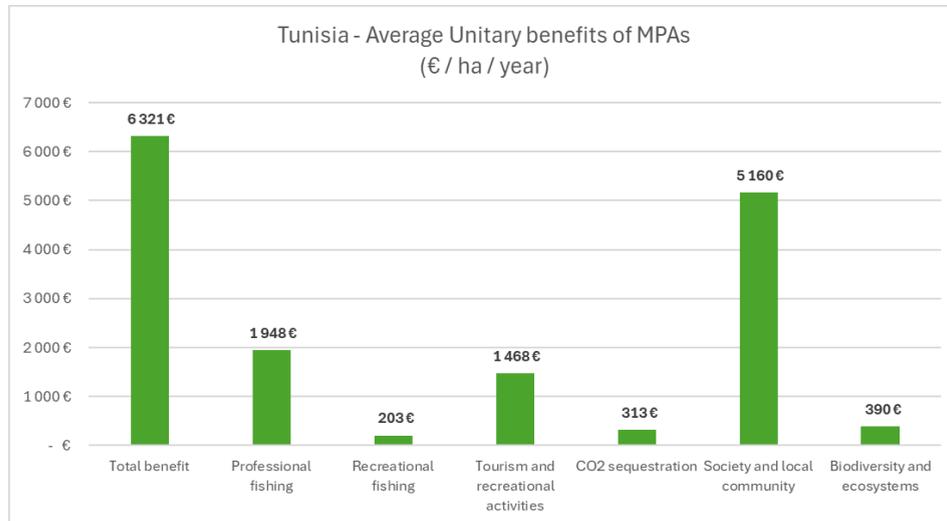


Figure 11 Average unitary benefits by sector provided by MPAs in Tunisia (EUR/ha/year)

As mentioned earlier, the benefit transfer exercise is based on some (sometimes strong) assumptions. In order to get a more complete picture, the box below provides a qualitative overview of the economic benefits of one MPA in Tunisia, based on the observations and experience of its manager.

The Economic Benefits of MPAs by Economic Sectors: Evidence From the Field – La Galite MPA⁴⁵

La Galite

At La Galite, socio-economic impacts are less visible but are beginning to be integrated into the management framework. Limited economic activities are associated with the MPA due to its isolation. However, efforts are being made to engage local fishers who frequent the area, emphasizing the benefits of sustainable fishing practices and conservation. Specific socio-economic initiatives are still in the planning stages, with a focus on addressing the unique challenges posed by the site's remoteness. These initiatives aim to ensure that the benefits of the MPA are equitably distributed while fostering stronger ties between the community and the conservation efforts.

⁴⁵ Source: Interview with Moez Shaiek, project manager of the MAN association

Morocco

The average total annual benefits of Mediterranean MPAs in Morocco are presented in the figure below in the four assessed scenarios, as estimated by the value transfer model: full protection, actual protection, no protection, and environmental degradation.

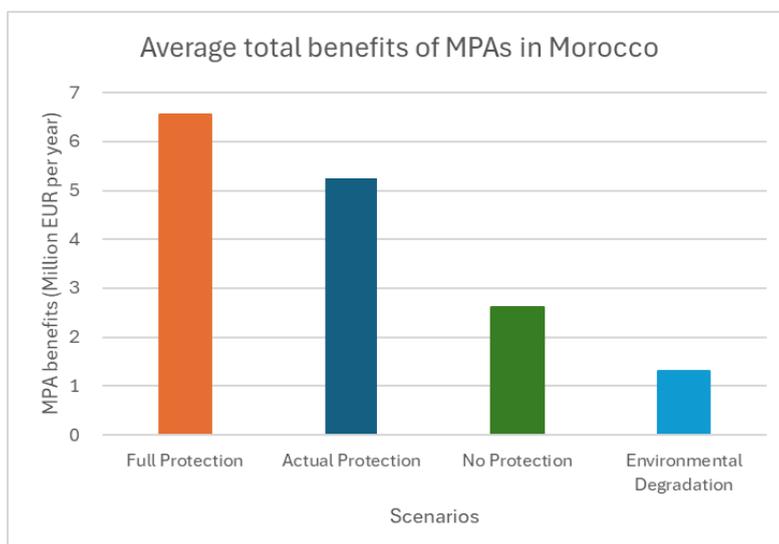


Figure 7 Average total annual benefits (Million EUR/year) of Mediterranean MPAs in Morocco

Also in this case, the value transfer model indicates that the total benefits show a decreasing trend, from the maximum benefits generated by full protection to the minimum benefits generated by environmental degradation. What is more interesting here is to understand the magnitude of this deviation from the actual protection scenario, as shown in the table below:

- Full enforcement of protection in the country would result in an increase of total benefits by 25% (marine area and marine + terrestrial area respectively) as compared to the current situation.
- No protection, in contrast, would result in a decrease of total benefits by 50% (marine area and marine + terrestrial area respectively), whereas environmental degradation would imply a benefit loss of 75% (marine area and marine + terrestrial area respectively) as compared to the current situation.

Table 4 Average total annual benefits of Mediterranean MPAs in Morocco in the four assessed scenarios, and deviation of alternative scenarios from the actual protection scenario

Scenarios	Average total yearly benefits (Million EUR/year)	Deviation from actual protection
Full protection	7	+25%
Actual protection	5	
No protection	3	-50%
Environmental degradation	1	-75%

In addition to the figures above on overall average annual benefits, the following illustration presents the average unitary benefit estimates (EUR/ha/year) for the different sectors; the unitary value of overall benefits (which was used to derive the estimates provided in the previous section) is also shown in the graph as a term of comparison.

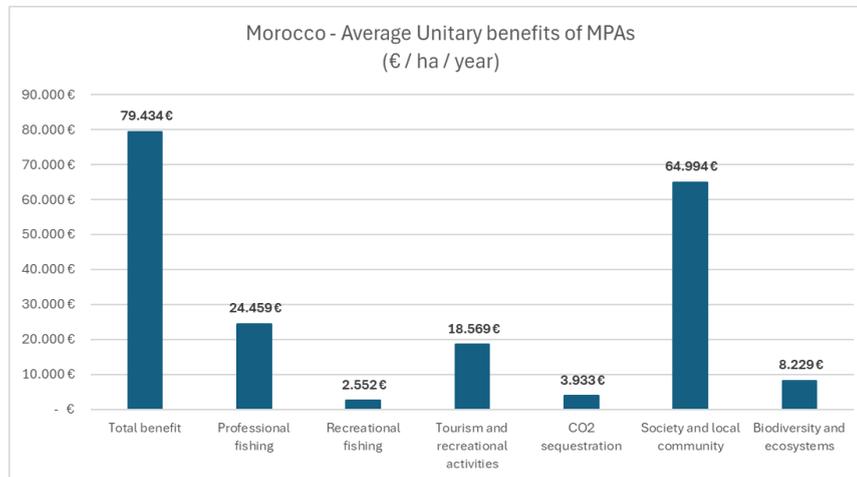


Figure 12 Average unitary benefits by sector provided by Mediterranean MPAs in Morocco (EUR/ha/year)

In the case of Morocco (as illustrated in the methodology chapter), interviews were not conducted, as only the benefit transfer model was run for this country.

4.2. Cross-Country Comparison and Transversal Messages from the Results of the Benefits Transfer Model

As shown earlier in this chapter, while all countries exhibit a similar trend, where higher protection levels yield greater benefits and lower protection levels lead to lower benefits, the magnitude of these changes varies considerably across countries.

Overall, according to the value/benefit transfer model—and the assumptions on which it is based—full enforcement of protection leads to increased benefits ranging from 25% to 36% across all countries. This suggests that strengthening the level of protection could yield substantial economic gains. Conversely, the absence of protection results in a decline in benefits of 44% to 50%, while environmental degradation leads to even greater losses, with benefits dropping by 73% to 75% compared to the current situation.

These changes can be attributed to the variation in the actual scenario conditions and the existing level of environmental protection. Spain, with eight fully protected MPAs in the baseline (actual) scenario, has a relatively higher starting point, leading to more moderate percentage changes across the scenarios. In contrast, Tunisia and Italy, which have no fully

protected MPAs in the baseline scenario, experience more pronounced percentage shifts—particularly under increased protection, where they have the most to gain from strengthening conservation measures.

Table 5 Number of MPAs in each pilot country per protection level

Level of protection	Number of MPAs			
	Italy	Spain	Tunisia	Morocco
Fully Protected	0	8	0	0
Partial Protection	12	8	1	0
Low Protection	5	17	0	1
No Protection	17	22	3	0

Additionally, the economic context plays a crucial role, as the benefit transfer methodology incorporates GDP and PPP, which influence the valuation of ecosystem services. Countries with higher GDP and PPP, such as Spain and Italy, tend to have greater economic capacity and a higher willingness to pay for conservation, leading to elevated benefit estimates. In contrast, Tunisia’s lower GDP and PPP result in more conservative benefit estimates, despite the potential for significant percentage increases under full protection scenarios. Furthermore, MPAs in Tunisia are currently very small in size and, as mentioned above, the value transfer approach might underestimate the benefits they deliver. In Morocco, by contrast, despite a somewhat similar economic context, the larger area of the MPA considered for this study may have influenced the results of the model.

At the sectoral level, the results of the value transfer model suggest that MPAs can deliver significant benefits tied to collective interests, such as CO₂ sequestration, society and local communities, and biodiversity and ecosystems. In particular, the benefits to society and local communities—such as the value of ecosystem services, coastal and erosion protection—far outweigh the benefits delivered to other sectors.

In other words, the MPAs contribution to collective well-being is highly significant—precisely the reason why MPAs are created in the first place.

In addition, the creation of an MPA also promotes the growth of sectors such as tourism and recreation, and small-scale professional fishing. This is also confirmed by the empirical evidence collected during interviews with MPA managers in the three countries. At the same time, it must be kept in mind that benefits can vary across different MPAs, as some might benefit greatly from tourism, while others very little. This level of detail, however, cannot be captured by this estimate, which is an overall estimation conducted at the national level.

4.3. The Administrative Costs of MPAs, and Comparison With Their Benefits

The administration of MPAs is often financed through public budgets, raising the question of whether funding MPAs is a good use of public money. A useful way to assess this is to compare estimates of annual administrative costs with overall annual benefits—in other words, does (often public) expenditure on MPAs generate value?

The table below summarizes the total administrative costs for each country and their breakdown by type. These figures were derived using the same value transfer method applied to the estimation of benefits—i.e. relying on administrative costs figures available in the literature. This also means that the total yearly costs are also (but not exclusively) related to the size of MPAs in each country.

Table 6 Total average administrative costs (Million EUR/year) and comparison with overall average benefits of MPAs (Million EUR/year)

Country	Total average costs (Million EUR/year)	Overall average benefits (Million EUR/year)	Average benefits / average costs
Tunisia	0,0085	0,016	1,9
Spain	4,6	131	28,5
Italy	11,8	191	16,2

Compared to these low costs, the derived benefits appear substantial.

In all three countries, the estimated administrative costs appear minimal when compared to the benefits, strengthening the case for allocating public expenditure to MPAs. One euro spent each year on MPA administration corresponds to 1.9 EUR per year of benefits in Tunisia, 28.5 EUR of benefits in Spain, and 16.2 EUR in Italy.

It is worth noting that, for Tunisia, the total average administrative costs of MPAs are significantly lower than in the other two countries. The low cost can be attributed to two primary factors:

1. Adjustments in value transfer methodology for GDP and PPP, which reduce cost estimates for countries with lower economic capacities.
2. Limited MPA surface area: Tunisia has less MPA coverage, resulting in a much smaller area to manage compared to other countries.

At the same time, one euro spent on MPAs administration still yields almost double the amount in benefits, making public expenditure on MPAs clearly worthwhile.

These are average results, and in some cases, they might be (even heavily) underestimated—as shown in the Tavolara – Capo Coda Cavallo MPA case described below.



Assessing the Benefits and Wealth Produced by an MPA: The Case of Tavolara – Punta Coda Cavallo⁴⁶

In Italy, Directive 21/10/2013 issued by the Ministry of Environment promotes the development of an experimental model of naturalistic reporting in MPAs. This is based on the guidance document *Environmental Accounting in Italian MPAs*, developed by Federparchi and Europarc.

This environmental accounting was developed for the Tavolara – Punta Coda Cavallo site by the MPA management, with the goal of calculating the wealth produced by natural capital in the MPA. The approach used was cost-benefit analysis, forming the backbone of the eValue environmental accounting model. This model integrates the economic, environmental, energy, and social dimensions, assessing both the ecosystem services provided by the protected area and the externalities generated by its use.

The evaluated ecosystem services are: wildlife for food purposes, stabilization and control of coastal erosion, climate regulation by limiting greenhouse gas emissions, tourist use, economic benefits, scientific production, educational activities.

Environmental costs were calculated by evaluating the environmental impacts on the marine area, using the Life Cycle Analysis (LCA) approach. The results are shown below.

Costs	EUR/year	Benefits	EUR/year
Environmental costs	864 910	Environmental benefits	535 322 257
MPA institutional activity	1 441	Wild fauna	493 691
Professional and artisanal fishing	4 073	Erosion control	n/a
Beach resorts	278 806	Climate regulation	541 376
Diving	5 572	Recreational value	1 045 108
Recreational navigation	549 099	Economic impacts	533 242 083
Recreational fishing	25 919	Scientific activity	695 835
		Educational activity	n/a
MPA managements costs	1 151 231	MPA revenues	1 178 210
Total costs	2 016 141	Total benefits	536 500 568
		NET benefits	534 484 427
		Benefits / Costs	266
		NET benefits / ha	34 859

The 'reserve effect' generated by the management of the Marine Protected Area of Tavolara - Punta Coda Cavallo is valued at over 536 million EUR/year, out of a total

⁴⁶ Sources: <https://eframe.it/progetti/area-tavolara/> - https://www.ansa.it/canale_ambiente/notizie/natura/2019/04/24/tavolara-riserva-marina-un-business-da-535-milioni-di-euro_4d2dfdd3-afe1-4ac9-9632-ec8d76e1cfe0.html - Also discussed during the interview with Augusto Navone, former MPA director

turnover of approximately one billion. The management of beach and sea resources, the enhancement of tourist activities and those linked to fishing have direct repercussions on the territory in terms of wealth.

The wealth produced by the marine reserve, compared to one euro of public funding collected for ordinary operations, ranges between 1,125 and 1,127 EUR. These values, calculated in the field rather than derived from literature, are much higher than the value calculated at the national value through the value transfer model, suggesting that some MPAs can be hotspots of benefits (e.g. particularly attractive MPAs) that exceed the average.

5. The Wider Social Impacts of MPAs: What Numbers Cannot Measure

5.1. Literature Review on Wider Impacts of MPAs on Society and Local Communities

This section presents the outcomes of the literature review on the wider impacts of MPAs on societies and local communities—i.e., those benefits that cannot be measured in quantitative or monetary terms.

Papers Reflecting on the Social Impacts of MPAs in the Targeted Countries

- Public perceptions of marine protected areas: an Italian study (2024)⁴⁷
- Assessing the delivery of ecosystem services and benefits to human well-being of three contrasting MPAs in Spain (2024)⁴⁸
- The potential benefits of water sports for health and well-being in marine protected areas: a case study in the Mediterranean (Spain – 2023)⁴⁹
- Socioeconomic and Ecological Situation of Mogador Marine Protected Area in Morocco (2019)⁵⁰
- Low satisfaction and failed relational coordination among relevant stakeholders in Spanish Mediterranean marine protected areas (2020)⁵¹
- Sharing goals by timely communication improves fishermen’s satisfaction with marine protected areas: A case study in the Mediterranean (Spain – 2022)⁵²

All categories of social impacts are covered in the literature. Information gathered during interviews and through the survey has also been included.

⁴⁷ <https://link.springer.com/article/10.1007/s11852-024-01056-z>

⁴⁸ <https://ecologvandociety.org/vol29/iss4/art19/>

⁴⁹ <https://www.tandfonline.com/doi/full/10.1080/11745398.2021.2015412>

⁵⁰ https://link.springer.com/chapter/10.1007/978-3-030-51210-1_332

⁵¹ <https://www.sciencedirect.com/science/article/abs/pii/S0301479720309312>

⁵² <https://link.springer.com/article/10.1007/s13280-021-01683-y>



Well-Being and Health

Positive impacts related to well-being and health are highlighted, particularly the impact of conservation efforts and MPAs on sustainable fish stock exploitation, which contributes to ensuring food security (Spain).

The literature also emphasises the impact of MPAs on physical and mental health. In general, proximity to the sea and the practice of water sports have a positive effect on physical and mental health, but these effects seem to be amplified when such activities take place in a well-preserved environment (Spain). As one paper⁵³ states, *“the quality of surroundings is paramount to produce the wellness manifested physically.”* Reported mental and psychological effects include a sense of freedom, improved concentration and coordination, relaxation, and inner peace. Although this hypothesis is still under investigation, the best-preserved marine environments—and thus well managed MPAs—could yield better outcomes for human health and well-being.

The quality of the marine environment is a parameter usually perceived by sea users, such as fishermen operating in the Mogador MPA in Morocco, 60% of whom believe that the quality of the ecosystem is improving. This positive perception of the MPAs' effects on the quality of the marine environment can directly influence their acceptability. For example, divers generally show high levels of support, as MPAs enhance their recreational experiences. In contrast, fishermen demonstrate moderate levels of support due to perceived restrictions on their livelihoods, despite the long-term ecological benefits. This difference in acceptability stems from the fact that divers often seek enjoyment, while fishermen face challenges related to survival (Spain⁵⁴).

Last but not least, the creation of MPAs can be accompanied by an increase in comfort for local communities through the development of new infrastructures and services—for example, in Spain's Nueva Tabarca MPA (see box below). Similar improvements have been observed in Tunisia (see La Galite MPA), as well as in Italy, where accommodation facilities benefited from the presence of MPAs.



La Galite MPA – Impacts on Well-Being and Health

The quality of the seabed, the presence of well-preserved shipwrecks, and the clarity of the water are **significant assets for the development of diving activities**.

The Coastal Protection and Development Agency, which manages the MPA, has contributed to several projects aimed at **improving the living and working conditions** on the archipelago, thereby contributing to the island's economic development. These include the installation of drinking water networks, sewage systems, waste collection, the refurbishment of buildings, and the creation of footpaths.

⁵³ <https://www.tandfonline.com/doi/full/10.1080/11745398.2021.2015412>

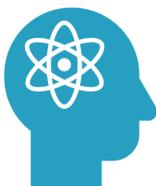
⁵⁴ Source: interview



Access to Resources and Livelihoods

In terms of social impacts with a strong economic dimension, the majority of the impacts highlighted in the reviewed literature are positive. However, some fishermen remain opposed to MPAs believing they may negatively affect their access to fish resources and their incomes. In most cases, though, conservation efforts support human well-being (broadly defined) by promoting economic growth and employment opportunities, particularly in the tourism and fisheries sector. MPAs also create incentives for local population retention (Spain).

In the Mogador MPA in Morocco, a small number of fishermen report socioeconomic changes due to the MPA—only 11%, of which 25% feel an increase in productivity.



Knowledge and Education

The literature shows that conservation efforts within MPAs contribute significantly to the creation of scientific knowledge. A paper on public perceptions in Italian MPAs⁵⁵ made a comparative analysis between a sample from 2014 and a sample from 2021, allowing an evaluation of the change in people's perceptions of MPAs in a seven-year period. Results show that the 2021 sample appeared to be more educated and aware of Italian MPAs. Perceptions of the ecological aspects and benefits of MPAs were also more positive in 2021, with MPAs recognised as important for biodiversity, culture, mitigation of human impact, and recreation. The 2021 sample also showed a stronger willingness to pay, suggesting greater support for MPA implementation. Participants also expressed a stronger sense of personal and collective responsibility. According to the authors, this could be linked to the general lack of trust in Italian authorities and institutions, as well as the relative lower compliance with MPAs' rules in Italy. In Spain, the creation of MPAs is also thought to lead to increased research, as well as increased awareness among stakeholders and the public⁵⁶.

In the La Galite MPA in Tunisia, partnerships have been set up with Tunisian universities to provide specific studies through university internships. This partnership approach is essential for increasing knowledge and improving the way in which environmental and socio-economic issues are taken into account in the MPA management.

⁵⁵ <https://link.springer.com/article/10.1007/s11852-024-01056-z>

⁵⁶ Source: interview



Local Culture and Values

In Italy, the literature confirms previous findings related to the “zoning of support”: coastal citizens show greater support for MPAs than inland ones. This support can be linked to place attachment; citizens living closer to the coast are more likely to form emotional, spiritual, and cultural bonds with the marine environment, increasing the interest in its protection and, consequently, in MPAs. People who perceive the marine environment as a heritage to be preserved show greater agreement with the implementation of MPAs and are also more aware of both the use and non-use values of MPAs.



Social Relations

Regarding social relations, MPAs have both negative and positive effects, according to the literature analysed. Conflicts among stakeholder groups—particularly over access to benefits provided by marine ecosystem services, or over the use of common resources and/or areas—are mentioned, but these conflicts are not systematic and vary depending on the MPA (Spain).

Some MPAs are minimally affected by conflict, and a reduction in tensions can also be observed over time. In Spain, different stakeholders groups (e.g. fishermen, divers, scientists, managers, neighborhood associations) have differing perceptions of communication and the quality of intra- and inter-group relations, which influence their level of satisfaction with the MPA, the behaviours of stakeholders, and the effectiveness of the MPA. Managers typically have the most positive perception of the coordination among various groups, while fishermen tend to have the least favourable, showing a fragmentation between “on-the-ground user groups” and those with more authority.

There are usually no mechanisms put in place to address conflicts or disagreements that may arise between stakeholders⁵⁷. In the Mogador MPA in Morocco, a dedicated space for communication, both within and between sites and among all stakeholders, is still lacking. Such a space could help resolve conflicts among MPA users, which is key to maintaining artisanal fishing activity in the region. Conversely, the Isola di Bergeggi MPA in Italy enjoys excellent collaboration with both fishermen and divers⁵⁸.

On the positive side, MPAs can also help stabilize the local population by supporting the development of sectors such as tourism, which generates employment. In addition, water sports practised within MPAs help foster social bonds and support socialisation processes (Spain).

⁵⁷ Source: survey

⁵⁸ Source: interview with Davide Virzi, MPA manager



Inclusion and Empowerment

In Spain, public inclusion has grown as the plans have evolved⁵⁹.

In Tunisia, the Coastal Protection and Development Agency (APAL, the national authority) was previously the only body authorised to manage MPAs from both an administrative and technical standpoint. Today, Tunisian MPAs are co-managed by APAL and the NGO MAN (“Méditerranée Action Nature”). The decision-making process is also evolving and becoming more territorially based, with the integration of multiple partners in La Galite MPA.

In Italy, several examples of successful inclusion can be reported⁶⁰. In the Tavolara MPA, for example, fishermen are actively involved in the researchers’ monitoring activities and in environmental education initiatives for young people.



La Reserva Marina de Nueva Tabarca, Alicante: When an MPA Brings Significant Social Benefits⁶¹

In Spain, the marine reserve of Nueva Tabarca has brought significant social benefits to local communities and socio-professional groups:

- For local communities, the MPA has provided **new development opportunities**, particularly through tourism growth.
- In terms of **infrastructure and services**, the creation of the MPA has encouraged investments by local administrations, resulting in the establishment of essential services such as sanitation systems, electric power supplies, and tap water access. For a small island with a small population, these services did not exist before the creation of the MPA.

For fishermen, the MPA has played a crucial role in the recovery of fish populations, not only within the protected area but also in surrounding waters. This recovery, reversing years of overfishing and environmental degradation, has significantly **enhanced the sustainability of their livelihoods** and provided long-term benefits.

5.2. Factors Influencing Social Impacts and Perceptions of MPAs: Insights from the Field

The factors influencing social impacts and the perception of MPAs can be either extrinsic, linked to the local social context, or intrinsic linked to the MPA itself. These are outlined below.

⁵⁹ Source: survey

⁶⁰ Source: interview with with Augusto Navone, former director of the Tavolara Punta di Coda Cavallo MPA

⁶¹ Source: interview interview with Just Bayle-Sempere, Universidad de Alicante

Table 7 Factors influencing social impacts and perceptions of MPAs

Factors Linked to the Local Social Context		Factors Linked to the MPA Itself	
	Geographical proximity to the coast and by extension place attachment		Duration since the MPA was created
	Perception of the state of the marine environment and resources, and the level of dependence on resources		Availability of information (through updated websites, social media accounts, etc.)
	Institutions and governance, and the actual trust in authorities and institutions		Range of engaging activities offered (education, citizen science programmes, etc.)
	Social norms		Size of the MPA
	Personal values		Level of protection
	Socio-demographic factors		Governance structure ⁶²

The Bergeggi Island MPA in Italy is a great example of how both extrinsic and intrinsic factors can combine to foster a deep connection between the MPA, local communities, and visiting tourists—as shown in the box below.



Bergeggi Island: an MPA Rooted in the Local Community —and Engaging Citizens Beyond Its Boundaries⁶³

The Bergeggi Island MPA is quite a unique reality in Liguria and in Italy as a whole: **its establishment in 2006 was requested by the local community itself**, and today the site is deeply valued by residents and is even a source of pride.

⁶² E.g. in Spain, there is a wish to balance top-down authority with local structures (cofradías), yet in practice the national and regional governments remain dominant, with cofradías only holding a consultative role in the end. This has implications on the management of fishing resources in practice

⁶³ Source: interview with Davide Virzi, MPA manager

It is a **very small MPA**, managed by the equally small municipality of Bergeggi. While its size can pose some challenges in terms of available personnel, it is **mostly seen as an asset**. If a problem arises or something unusual is spotted in the area, local residents immediately call the MPA Director. Furthermore, reaching agreements between municipality offices and citizens is easy. This municipality is a fairly enlightened case: it is one of the first to receive a Blue Flag and also manages two special conservation areas. Overall, it is an administration that has consistently paid attention to environmental issues. The **local fishing community** no longer exists, as all fishermen are now retired. However, when the MPA was first established, they were still active and immediately recognized its benefits: thanks to the no-take portion of the MPA area (zone A), fish populations have become more abundant than before. **Only residents are allowed to enter the boundaries of the MPA** (zones B and C) with their boats, whether for fishing or recreational purposes. Before the MPA was created, the area was crowded with hundreds of boats during the summer, whereas now it is reserved exclusively for residents.

The MPA also contributes to the **creation of a professional network in the area**: for its maintenance, the MPA relies on highly qualified local operators (such as cooperatives and service providers, e.g. for trail management), and the director often shares their contacts with other economic actors in the region—helping to coordinate all components and stakeholders supportive of the MPA and bringing together different operators.

Furthermore, the presence of the MPA, along with nature-based tourism activities it offers, has **promoted sustainable, conscious, and active tourism**. The creation of a “Blue Path,” for example, has increased the number of tourists visiting the island to engage in marine sports. This designated space, delimited by buoys around the entire island coastline, prohibits motor boats and is reserved for canoeing, diving, and swimming.

Overall, the Bergeggi MPA is **fostering a clean economy** in the area, even with the nearby presence of the industrial port of Vado.

In addition, **the MPA is raising awareness across the region through its underwater camera**. Originally installed for scientific monitoring, the live videos are now broadcasted on its YouTube channel, in commercial and recreational facilities, and even on the giant screen at the Genoa Aquarium—making it a unique case in Italy.

More often, however, the establishment of an MPA is met—at least initially—with opposition from local communities and economic operators. Anecdotal evidence collected during our interviews with MPA managers reveals that public perception of MPAs changes over time, from opposition to (often open) support. This aligns with qualitative evidence found in the literature and highlights why the length of time since the MPA was established is considered a key factor influencing public perception and acceptance.

How Public Perception Can Change Over Time—Examples from MPAs in the Three Pilot Countries⁶⁴



Cap de Creus MPA: From Fishermen's Concerns to the Opening of New Opportunities

Perceptions of the MPA have evolved over time. **Initially, the introduction of protection measures was met with mixed reactions**, particularly from fishermen concerned about new restrictions. **Over time, however, the benefits of conservation became evident**, and support has grown over the years as people have come to recognize the advantages of having a protected area.

Fishermen initially resisted new laws that restricted their fishing zones and methods. However, many later recognised that **MPAs contribute to the sustainability of their activities**. The MPA has also created opportunities for alternative economic activities, such as scuba diving and eco-tourism, which have gained popularity. As a result, more people now understand the importance of protecting these areas to ensure long-term sustainability.

The upcoming management plan introduces further restrictions, such as limiting the number of scuba diving permits and requiring advanced booking for specific dates. While initially unpopular, much like the MPA's initial reception, it is expected that the long-term benefits will lead to greater acceptance over time.



Capo Milazzo MPA: A Young MPA, Where Working with the Local Community Is Key to Increase Acceptance

Although established in 2018, the Capo Milazzo MPA has had a functioning management structure for only two years. As a **very young MPA**, its director has faced the typical **initial opposition from economic operators** and is actively working with local actors to overcome this resistance.

The **artisanal fishing sector**, in particular, is going through a crisis due to reasons unrelated to the MPA. Only about a dozen artisanal fishers remain in the Milazzo municipality, and **they initially reacted negatively to the establishment of the MPA**. However, they were involved in the consultation process prior to the establishment from the very beginning, to prepare them for the upcoming protection measures. Overall, it has always been easy to involve them and have one-to-one discussions. In 2023, thanks to an EMFF project, the director was able to meet with all of them, and this alone gave them a different perspective. They worked together for an entire year on the new regulations: both sides made proposals and were able to find mutually beneficial compromises.

In 2024, unfortunately, the director was not able to engage with them as much, leading to some renewed tension. Nevertheless, **L local fishermen are gradually beginning to**

⁶⁴ Sources: interviews with MPA managers

understand the advantages that the MPA brings, as they are the only ones allowed to fish within the MPA all year round, with very few restrictions, and this is reassuring to them.

On the bright side, there is evidence that **fish populations are increasing** thanks to the MPA. In 2024, the site hosted the underwater fishing championship and, as the director put it, “We had to move the groupers, there were so many of them!”

Some conflicts persist with recreational fishing, and the MPA management is working to address the issue. Finding the right mediation to avoid clashes is challenging since the artisanal fishing sector is already struggling and fishermen often lack social recognition. In addition, managing recreational fishing is also complex: in principle, only residents are allowed to fish in the protected area (with a permit), but many illegal boats come from out of town. Now that the MPA staff are more regularly present at sea, however, the situation is improving. Furthermore, fishermen with permits are beginning to recognise how disruptive illegal ones are, and **the community is starting to respond by reporting infractions** and suspicious activities, some even offering to conduct checks themselves.

This, combined with the growth of the tourism sector in the Milazzo town, is **slowly shifting the perception of the MPA among the local community and economic operators**. Hoteliers and restaurateurs are increasingly turning to the MPA management for information to support their guests, and many additional requests also come from neighbouring areas, especially thanks to the panoramic path, which includes an environmental education center, fitness center, guided tours, a sea room, and signage. In short, **the local community is beginning to realise that sustainable use is possible**, despite the limitations imposed by protection measures.

Another factor supporting this shift in perception is linked to the involvement of the Milazzo municipality in the MPA’s managing authority, which facilitates coordination with other cultural and sporting initiatives organized in the town. This is creating a vibrant network among different realities: for example, the swimming association has proposed to have a competition in the MPA, and the refinery’s after-work association has requested to host activities at the MPA Sea House. Overall, **the MPA is increasingly becoming an integral part of the social and cultural life of the town**.



Tavolara – Punta Coda Cavallo MPA: Giving Attention to Economic Sectors and Helping Them Understand Ecosystems Was Key to Its Success

When the Tavolara – Punta Coda Cavallo MPA was established in 1997, local communities and economic operators did not welcome it with open arms, to put it mildly. Local communities knew nothing about ecosystems or the need to protect them, and the MPA was essentially imposed from above, so they were not supportive. Things did not change until 2003-2004, when the management consortium was established and the director was appointed: at that time, all he had was the Statute and an office with a telephone. Back then, **all the community wanted was to get rid of the MPA staff**.

Despite this, the negotiations started immediately. The MPA offices were always open, and economic operators could discuss any problem with the director.

And this has been the strength of the MPA: **the management has been working very seriously on ecosystem conservation, while giving great attention to socio-economic sectors** and making them understand that protecting ecosystems without degrading the local economy is a tough job, but it is possible. Such a serious approach led to **the financial participation of the economic operators in the MPA management costs** (for a total of 300,000 EUR/year), and even without conflicts, supported by very competent reasoning on the dynamics and the numbers of the MPA. In Tavolara, the benevolence of local communities and economic operators has stemmed from the esteem earned by the management in the field, and from the fact that negotiations, discussions and exchanges have been constant throughout the years—as this cannot be a one-off.

Operators were also **guided in understanding marine ecosystems**: for example, they came to understand that Posidonia on beaches is not waste, and must be properly managed.

Another cornerstone of the process was the **involvement of fishermen**, for example hiring them to **transport researchers during monitoring activities** and, of course, paying them for the service. They were also involved in **environmental education activities**: the MPA staff brought children to the port when the fishing boats returned, and the children were fascinated by the fishermen's stories. The MPA management also organized events where children could cook with local fishermen and restaurant chefs—events that turned into joyful celebrations. These were effective ways to build connections with the fishing world and created a moral commitment to preserve artisanal fishing.

Another key success factor was the **continuity of leadership**, as the same director was in charge for about twenty years. The process was also consistently shared with the political representatives of the community.



Zembra MPA – “Protected” Doesn’t Mean “Restricted”! Working with Fishers to Create New Opportunities

At Zembra, there has been a **significant evolution in how the MPA is perceived over time**. Initially, the concept of an MPA was met with strong resistance, particularly from fishers. To them, **the term "protected" meant fishing restrictions and the end to their livelihoods**, which made dialogue very difficult.

However, thanks to a **consistent presence in the village and daily interactions**, attitudes began to shift, and socio-economic dimensions are now gradually being addressed. This change was primarily driven by the **establishment of a fishers' cooperative**, which provided a legal framework to access funding and subsidies. The aim is to organise their activities and facilitate access to funding for transitioning to more sustainable fishing practices. Efforts are also underway to develop **dedicated markets and certification labels** to increase the visibility and value of their products. For the **fishers' wives**, projects are being explored to establish **small-scale processing units** for fish products, offering additional income opportunities.

Today, while acceptance is not universal, a **significant majority of fishers**—60 to 70 members of the new cooperative—**actively participate and contribute to conservation efforts**.

Local schoolchildren and teachers are also being engaged through **awareness campaigns** led by local institutions. These programs focus on environmental education, including regular plastic waste collection initiatives, helping to **foster a culture of sustainability among younger generations**. While the agricultural community was mentioned, specific actions targeting this group are yet to be defined.



La Galite MPA, where perceptions are shaped by a deep emotional connection with the site

At Galite, **perceptions of the MPA are shaped by a deep emotional connection and nostalgic attachment among those with historical ties to the island**. Many people who were born there or once lived there hold strong sentimental feelings for the site. Beyond this, Galite is also **perceived as a dream destination by the wider public**—an island home to protected species and significant archaeological and historical heritage. Recreational fishing has been increasing year by year, although its impact on the site remains minimal. This widespread admiration for the island underscores its unique value and the importance of its protection.

Summing up:

The stories of the MPAs presented above are all different when it comes to their relationship with local communities. However, not only do they have some elements in common, but they also outline some key success factors on how to accompany local communities and economic operators towards acceptance of—and even support to—the MPA, namely:

- Dialogue and negotiations must begin from the very start and become a regular, ongoing process. They must be an integral part of management activities, hand in hand with conservation and protection efforts;
- Local communities and businesses may not immediately see the socio-economic benefits of marine protected areas. That's why good management is important—not just to help people understand these benefits, but also to support the transition to more sustainable livelihoods and to create new opportunities linked to healthier ecosystems;
- Often, residents and economic operators know very little about marine ecosystems and why protecting them matters. Raising awareness is key.

In short, what clearly emerged from these stories is that, although local communities and economic operators might seem like opponents at first, they can become the strongest allies of MPAs. Building that trust takes time and effort, but it's well worth it—it has a decisive impact on the overall effectiveness of MPAs.

6. Bringing the Assessment Into Practice: How Can These Results Be Used?

As seen in the previous chapter, gaining public acceptance is one of the main concerns of MPA managers—an aspect that requires constant effort to be properly managed, and that often emerged during our interviews with them. At the same time, both the literature and the experience of MPA managers confirm that public acceptance of MPAs tends to improve over time, shifting from initial opposition to a recognition of the benefits for the local community and economic operators.

This is a crucial point, because it shows that MPAs do deliver visible and substantial socio-economic benefits to local communities and operators. The results of this study provide an estimate of the magnitude of these benefits at the national level, showing that the contributions of MPAs to national economies is far from being negligible.

In the results chapter, we noted that the value transfer method—used to assess benefits at the national level—is based on benefit values from the literature, and its main limitation is that it may be too dependent on the total size of protected areas in each of the three countries.

However, results of a similar magnitude were obtained in Tavolara – Punta Coda Cavallo, where the economic valuation of natural capital was based on data collected on site. The results of that assessment exercise were instrumental in:

- Establishing relationships with **local economic operators**, who began to finally see the MPA and its ecosystems as an actual asset with a clear and substantial economic value—one that both the MPA management and the operators must manage and protect. In this light, the MPA is no longer perceived as a limiting factor;
- Supporting public investment in the conservation and enhancement of environmental heritage, as each euro invested in the MPA generates benefits for 1,125 EUR; and
- Promoting social acceptance among nearby local communities.

Overall, and despite some notable exceptions, the economic valuation of the socio-economic benefits of MPAs is not yet an established practice, either at the national or at the MPA level. However, the results of this study, along with other available evidence, might encourage MPA managers and national experts to transform what is now an occasional exercise into a standard practice in MPA management and in relationships with local communities and operators.

To conclude, the box below provides a summary of the key messages emerging from this study.

In Short: Key Messages From This Study

- Well-managed MPAs can be a valuable resource for local economies, while the absence of protection can lead to losses for certain economic sectors, as well as for biodiversity, society, and local communities. In general terms, higher levels of protection were observed to bring greater benefits, although the magnitude of these benefits varies across countries depending on their economic contexts and baseline conditions.
- At the same time, restrictions on certain economic activities may lead to losses for some economic sectors—in other words, they can create opportunity costs. While such disbenefits could not be estimated through the value transfer model, evidence from the literature and interviews with MPA managers highlighted that some uncertainty remains for both professional and recreational fishing sectors. In some cases, spillover effects may prevail, increasing fish stocks in areas surrounding the MPA; in others, particularly in the short term, losses due to restrictions may play a stronger role.
- Other economic sectors such as tourism, biodiversity and ecosystems, and society and local communities, by contrast, tend to consistently benefit from increased levels of protection. In particular, the sectors that benefit the most from the creation of MPAs are those related to the collective goods, such as biodiversity, ecosystems, society and local communities.
- The estimated administrative costs appear minimal relative to the benefits, reinforcing the case for allocating public expenditure in MPAs.
- Finally, while MPAs are often met with resistance from local communities and economic operators at the beginning, public perception shifts over time—from initial opposition to, in many cases, open support. This is also due to stakeholders experiencing first-hand the benefits of the MPA on their activities.