

# Marine litter tackling in the Mediterranean

## Actions and recommendations

We  
are  
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Mediterranean Report  
2019-2023

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# COastal Management and MOnitoring Network

for tackling marine litter in Mediterranean sea





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# Introduction and aim of task

COMMON project (COastal Management and Monitoring Network for tackling Marine Litter (ML) in Mediterranean Sea), is funded by the European Union under the ENI CBC MED programme, this project aims to use the Integrated Coastal Zone Management (ICZM) principles to tackling marine in 5 pilot coastal areas in Italy, Lebanon and Tunisia.

The project is composed of 5 Work Packages. INSTM (as PPI) is a leader of WP4 (Institutional capacity building in tackling marine litter throughout ICZM plan). Among the aims of this WP is pulling out legal recommendations (rules and law) and best practices for developing public policies for an improved management of marine litter and governance of targeted coastal areas.

In this regard, the activity 4.2.1: “Best Policies and proposal collection and fine-tuning” aims to collect from involved people the concrete good practices, best experiences and ideas for a marine litter disposal for each involved country and at Mediterranean level to improving waste management reviews, community-based methodologies, wastes reducing rules and laws, individual and corporate behaviour changes, communication best actions.

Recommendation will be pulled out during training sessions, awareness days, scientific actions (Beach monitoring, microplastic sampling, biota analysis) and from the created networks.



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# Overview

## State of play

### Statistics on marine litter at Mediterranean level

The United Nations defines marine litter as solid, manufactured or processed materials that are discarded or abandoned in the marine environment. However, it should be emphasised that plastics are the dominant component of the total marine environment.

The Mediterranean is polluted by an estimated 730 tonnes of plastic waste every day, plastics accounting for between 95 to 100% of total floating litter, and more than 50% of seabed litter. It should be noted, as well, that single-use plastics represent more than 60% of the total recorded marine litter on beaches [1].

The Mediterranean is one of the areas most affected by marine pollution. In fact, the IUCN (International Union for Conservation of Nature and Natural Resources) has dubbed the Mediterranean the Mare Plasticum. More than 229,000 tonnes of plastic waste are dumped into the sea every year. The countries that contribute the most are: Egypt (74,000 tonnes per year), Italy (34,000 tonnes) and Turkey (24,000 tonnes). Most of the waste found in the sea can be attributed to land-based activities and, more specifically, waste mismanagement.

Plastic litter affects the entire Mediterranean coast. The accumulation of plastic waste on beaches, in the sea, and along coastlines is affecting not only the beauty of the region but also the health of marine life and the livelihoods of coastal communities. To tackle this issue, efforts are needed from both governments and individuals to reduce plastic use and properly dispose of waste.

Recent studies on the Mediterranean have highlighted the severity and complexity of marine pollution in the region. One study published in scientific revue PLOS ONE found that microplastics, small plastic particles less than 5 millimetres in size, were present in high concentrations in the Mediterranean Sea, with levels surpassing those found in the infamous Great Pacific Garbage Patch [2].

Another study by the European Commission's Joint Research Centre revealed that plastic pollution in the Mediterranean is not only a marine environmental issue, but also a public health concern as microplastics have been found in seafood and even in human stool samples [3].

In addition to plastic pollution, other studies have also shown that the Mediterranean is facing challenges related to overfishing, habitat degradation, and climate change.

A report by the United Nations Environment Programme (UNEP) and the Mediterranean Action Plan (MAP) found that marine biodiversity in the Mediterranean is at risk due to multiple stressors, including pollution, overfishing, and habitat destruction [4].

Overall, these studies highlight the urgent need for action to protect the Mediterranean and its unique ecosystems. Governments, businesses, and individuals must work together to address the root causes of marine pollution, reduce plastic use and waste, and promote sustainable fishing practices and habitat conservation.

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[1] Pollution in the Mediterranean (2019) Pollution in the Mediterranean | UNEP MAP. Available at: <https://www.unep.org/unepmap/resources/factsheets/pollution> (Accessed: April 17, 2023).

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[2] Cózar A, Sanz-Martín M, Martí E, González-Gordillo JI, Ubeda B, Gálvez JÁ, et al. (2015) Plastic Accumulation in the Mediterranean Sea. PLoS ONE 10(4): e0121762. doi:10.1371/journal.pone.0121762

[3] European Commission's Joint Research Centre. (2018). Microplastics in water, air, soil and biota: Analytical methods and environmental risks. Publications Office of the European Union.

[4] United Nations Environment Programme (UNEP) & Mediterranean Action Plan (MAP). (2020). State of the Environment and Development in the Mediterranean.

## Main current laws regarding waste management, especially plastics, in the Mediterranean basin

Currently, the European Union (EU) is taking action to reduce marine litter in the Mediterranean basin. The EU has formulated a number of policies to address this issue, such as the Marine Strategy Framework Directive (MSFD) and the Single-Use Plastics Directive (SUPD). The MSFD requires EU Member States to develop strategies to reduce marine litter and the SUPD sets restrictions on the use and sale of certain single-use plastics. Moreover, the EU has recently released the [Mediterranean Strategy for Marine and Maritime Sustainable Development](#), which addresses the ecological, economic, and social aspects of the situation.

At the regional level, the Barcelona Convention for the Protection of the Mediterranean Sea Against Pollution has been in place since 1976. This Convention sets out measures to reduce the amount of marine litter entering the Mediterranean, as well as to reduce the use of hazardous chemicals. Additionally, the Protocol on Land-Based Sources of Marine Pollution, which was adopted in 2003, requires the signatories to take action to reduce the amount of plastic that enters the sea.

At the national level, several countries have implemented measures to reduce marine litter. For example, Italy has launched a national framework for cooperation (Legge Salvamare) for the Prevention and Management of Marine Litter, which focuses on a number of actions, including the reduction of plastic waste, the promotion of circular economy, and the adoption of best practices for waste management. Other countries in the region, such as France, Tunisia, and Turkey, have also enacted legislation to address marine litter.

In addition to the measures taken at the regional and national levels, there is also a growing number of initiatives from civil society organisations to tackle marine litter in the Mediterranean basin. These include beach clean-ups, educational campaigns, and campaigns to reduce plastic use. These initiatives have been beneficial in raising awareness and inspiring individuals to make more sustainable choices. Furthermore, the European Commission has joined the Clean Sea Campaign, which encourages citizens to take action on marine litter in their own areas.

Overall, the Mediterranean basin is facing a significant challenge in terms of marine litter, particularly plastic waste. While there have been a number of initiatives and policies implemented to address this issue, more needs to be done in order to ensure that the region's marine environment is protected. It is clear that governments, civil society, and individuals alike must work together in order to reduce marine litter in the Mediterranean and protect its unique biodiversity.

The UN Sustainable Development Goals (SDGs) provide a global framework to protect the environment and promote sustainable development. In particular, SDG 14 on life below water calls for the conservation and sustainable use of the oceans, seas and marine resources. The 2021-2030 UN Decade of Ocean Science for Sustainable Development will help to achieve this goal by providing the necessary scientific knowledge for sustainable management of the oceans, including the Mediterranean, which is essential for the protection of marine ecosystems and the reduction of human impacts on the environment.

The UN Convention on Biological Diversity (CBD) and the Post-2020 Global Biodiversity Framework also play an important role in protecting marine and coastal ecosystems by promoting biodiversity conservation and sustainable use of natural resources. The MARPOL Convention - Annex V "Prevention of Pollution by Garbage from Ships" seeks to prevent marine pollution from ships by prohibiting the discharge of plastic and other garbage into the sea.

The Barcelona Convention Regional Plan on the Management of Marine Litter in the Mediterranean is a regional plan to reduce the amount of plastic and other garbage in the Mediterranean Sea and is of great importance to protecting the marine environment from land-based activities.

The Barcelona Convention Integrated Monitoring and Assessment Programme of the Mediterranean Sea (IMAP) is a critical tool for monitoring and assessing the state of the marine environment in the Mediterranean and for identifying and mitigating sources of marine pollution. The Barcelona Convention Post-2020 Strategic Action Programme for the Conservation of Biodiversity and Sustainable Management of Natural Resources in the Mediterranean Region (Post-2020 SAPBIO) is a regional programme to protect and conserve the Mediterranean region's biodiversity and to support the sustainable management of its natural resources.



The Union for the Mediterranean 2030 GreenerMed Agenda (Thematic Axis 2) is focused on the protection of the Mediterranean's marine and coastal ecosystems and the reduction of marine litter and pollution, which is essential for keeping our oceans healthy.

The UfM Ministerial Declaration on Environment and Climate Action adopted in 2021 outlines a range of initiatives to reduce pollution, improve air quality and protect the marine environment, as well as to develop a regional ocean governance framework.

Finally, the UfM Ministerial Declaration on Environment and Climate Change adopted in 2014 provides a framework to address climate change and its impacts on the Mediterranean, including the development of adaptation measures for increased resilience and the reduction of greenhouse gas emissions. These initiatives are all critical for ensuring a healthy and sustainable ocean environment for generations to come.

The EU Directives and initiatives are all essential in creating a comprehensive framework for the management of marine litter.

The Marine Strategy Framework Directive (MSFD) sets out a wide-ranging plan for the protection and sustainable management of the marine environment and the EU Action Plan:

«Towards Zero Pollution for Air, Water and Soil» focuses on reducing marine litter by introducing measures aimed at the prevention, reduction, reuse and recycling of marine litter.

The SUP Directive, Waste Framework Directive, Packaging and Packaging Waste Directive, and Plastic Bags Directive all focus on the reduction of plastic pollution by introducing stricter rules on the production and use of single-use plastics and packaging.

The European Biodiversity Strategy for 2030 sets out a clear vision for restoring Europe's biodiversity and aims to reduce the impact of human activities on the marine environment. Additionally, the Directive on port reception facilities for the delivery of waste from ships seeks to ensure that waste is delivered to the appropriate disposal facilities for processing and disposal, thus helping to reduce the amount of marine litter in our oceans.

Furthermore, all of these initiatives and directives are important in meeting the objectives of the Paris Climate Agreement and the Sustainable Development Goals. Together, these initiatives and directives can help to ensure a cleaner, healthier marine environment for future generations and help us protect our oceans and the incredible biodiversity within them.



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Event	Date
MARPOL Convention - Annex V	1988
Packaging and Packaging Waste Directive	1994 (rev. 2018)
Barcelona Convention Regional Plan on Marine Litter	2013
UfM Ministerial Declaration on Environment and Climate Change	2014
Plastic Bags Directive	2015
Paris Climate Agreement	2015
Sustainable Development Goals	2015
Marine Strategy Framework Directive (MSFD)	2008
Waste Framework Directive	2008 (rev. 2018)
Barcelona Convention Integrated Monitoring & Assessment Programme (IMAP)	2016
SUP Directive	2019
Directive on port reception facilities for the delivery of waste from ships	2000 (rev. 2019)
European Biodiversity Strategy for 2030	2020
Barcelona Convention Post-2020 SAPBIO	2020
UfM Ministerial Declaration on Environment and Climate Action	2021
EU Action Plan: «Towards Zero Pollution for Air, Water and Soil»	2021
Union for the Mediterranean 2030 GreenerMed Agenda (Thematic Axis 2)	2023

# I- State of play of marine litter issue regarding the COMMON pilot areas

## I-1- The scientific outcome of the monitoring activities of the COMMON project

The project's scientific monitoring activities were focused on the analysis of macrolitter and microlitter on the beaches, on the sea surface, and ingested by mussels, commercially fish species, and sea turtles.

### Beach litter monitoring

The beach litter monitoring activities involved 3 countries with 5 study areas and 11 beaches surveyed. Plastic accounts for 80% of the marine litter dispersed in the marine and coastal environment (Fig.1A).

The monitoring activities were conducted in the 4 seasons (autumn, winter, spring and summer) using the harmonised methodology and protocols capitalised from Interreg Med Plastic Busters MPAs project. More than 90,000 objects were collected and analysed: 17,000 (about 20%) were cigarette butts, followed by pieces of plastic with size between 2.5 and 50 centimetres (9%), derived from the result of the fragmentation of larger plastic objects, and 6,000 (about 7%) cotton bud sticks. More than half of the litter collected (53%) is represented by single-use plastic (SUPs) (Fig.1B).

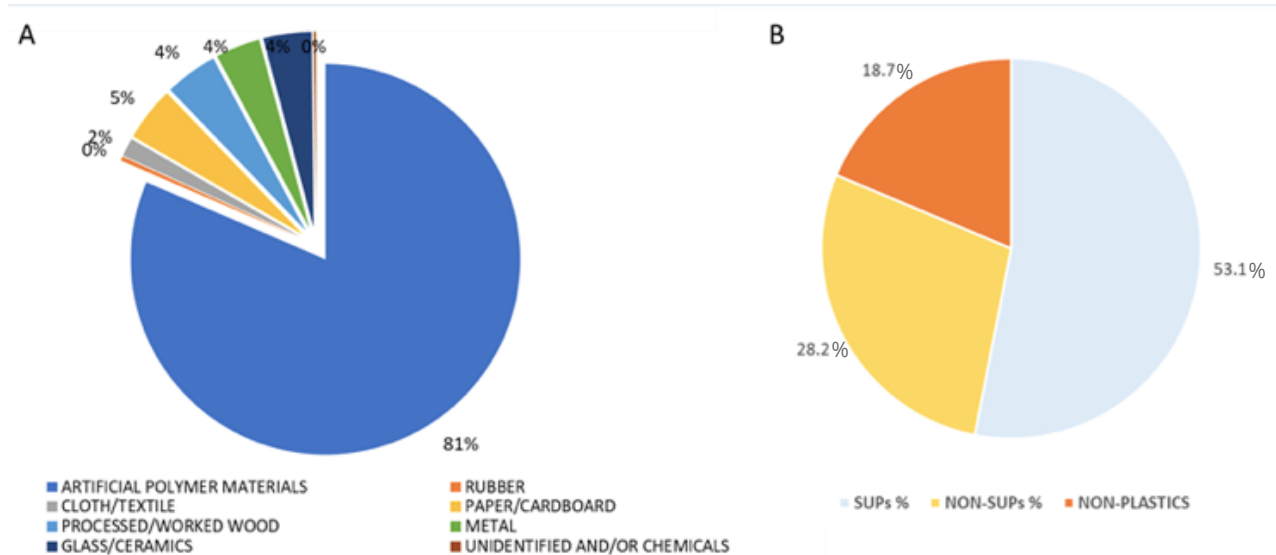


Fig.1 (A) Percentage of different categories of marine litter isolated from beach litter sampling in the 5 study areas and (B) percentage of Single Use Plastic (SUP)

### Microlitter on the sea surface

Regarding the investigation of microlitter in the water column, 130 samples were collected in three countries and five different areas using the manta net (Photo 1 and 2).



Photo1: Microlitter on the sea surface sampling activities in Maremma study area, Italy  
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A total of 22,793 items were isolated and characterised. The highest floating microlitter abundance was found in the waters facing the Tyre Reserve in Lebanon, particularly during the rainy season, demonstrating the strong influence of riverine run-off on the transport of marine litter and microplastics in the sea.



Photo 2: Microlitter on the sea surface sampling activities in Maremma study area, Italy  
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### Impact of marine litter on biota

The data obtained during the project confirms the impact of marine litter and microplastics on Mediterranean biodiversity, which is not only related to the physical harm to marine species but also the potential ecotoxicological effects related to the leaching of toxic compounds present in plastic particles both as additives and adsorbed contaminants.

The gastrointestinal tract of over 700 specimens of 6 commercially important fish species was analyzed: *Engraulis encrasicolus* (anchovy), *Sardina pilchardus* (sardine), *Sardinella aurita* (round sardinella), *Boops boops* (bogue), *Mullus barbatus* (red mullet), *Lythognathus mormirus* (striped seabream). On average, one-third of the specimens analyzed had ingested microplastics, confirming the impact of marine litter on fish species in the Mediterranean Sea (Photo 3 and 4).



Photo3: Biota analysis (*Mullus barbatus*)  
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The significant and innovative aspect of the analysis is that some of the species considered in the project (*Mullus barbatus* and *Sardina pilchardus*) were analysed in all pilot areas, allowing these sentinel organisms to be used as indicators of the health of the environment being investigated and a proper data comparison among the different areas.

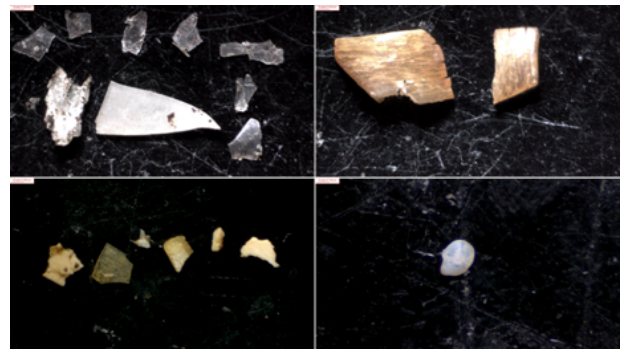


Photo 4: Microplastics isolated from commercial fish species  
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The sea turtle *Caretta caretta* was also used as an indicator of the health of the basin, by the Integrated Monitoring and Assessment Programme of the Mediterranean Sea and Coast (IMAP), and revealed that in over 140 specimens from Tunisia, Lebanon, and Maremma (Italy), the ingestion levels vary between 40% and 70%; the individuals from the Maremma area are those in which the highest frequency of ingestion was found (Photo 5).



Photo 5: Monitoring activities on sea turtle (*C. caretta*)  
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## I-2- Institutional capacity building in tackling marine litter: training activities with local stakeholders, focuses and proposals

Institutional capacity building in the network countries is one of the key actions foreseen in the COMMON project, as is essential in addressing the issue of marine litter. It involves strengthening the abilities of organisations and institutions to tackle the problem effectively. This includes developing and implementing policies, regulations, and programs that aim to reduce the amount of litter that ends up in the ocean and seas. Additionally, it involves training and educating staff and stakeholders on the importance of preventing marine litter and the steps that can be taken to achieve this goal.

Institutional capacity building also involves the development of partnerships between various organisations and government agencies, including local communities, businesses, and non-profit organisations. These partnerships can help to increase awareness of the issue and promote the sharing of knowledge and resources. Moreover, it provides an opportunity for organisations and institutions to collaborate and coordinate their efforts, implementing effective solutions.

Investing in institutional capacity building can have long-term benefits in the fight against marine litter. By strengthening the abilities of organisations and institutions, it helps to ensure that effective measures are in place to prevent and reduce marine litter. Additionally, it helps to build a sustainable and resilient system that can respond to the challenges posed by marine litter.

The main objective of the workshops was to train a group of professionals to monitor and better manage beached litter in coastal areas. Representatives from the local authorities, tourist operators and fishermen were the main stakeholders.

The topics addressed were proposed by the stakeholders involved and mostly concerned the management of waste from the land, the more problematic waste from the sea, how to reduce the production of waste on the beach and how to manage the waste produced by the influx of tourists during the summer period.

In all meetings, after a face-to-face training phase led by experts, the stakeholders were given the opportunity to speak. The participatory approach adopted has facilitated discussions between the stakeholders; the meetings have identified specific problems and needs as well as the regulatory gaps that currently exist and the experiences, proposals and best practices to be replicated, implemented and disseminated throughout the Mediterranean basin to combat the problem of the mismanagement of waste and its dispersion into the environment.



Photo 6: Institutional capacity-building programme in Tunisia

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In the following table 1 the official training activities and workshops realised, and officially foreseen by the project, are listed together with their topics and targets. In addition to this many other meetings also with mixed stakeholders have been organised.

Place	Date	Title & Aim	Target group
ITALY			
Salento	22 April 2021 - online	"Innovative strategies and solutions for marine litter management in coastal areas".	11 participants from the local authorities of the Salento and Taranto areas
Salento - Tricase Porto Naval League	5 June 2021 - in-person	"Waste in the marine environment: good practices for involving fishermen in combating marine litter and pollution".	26 fishermen
Salento	15 November 2021 - online	"School education and initiatives to tackle marine litter and marine pollution".	59 participants including teachers of secondary schools of first and second grade, managers, school staff
Salento - Avamposto Mare at Tricase Porto	1 September 2022 - in-person	"Plastic waste and ghost nets: good practices and the involvement of fishermen to tackle marine pollution".	44 participants including fishermen, local authorities, the general public and maritime authorities
Maremma	7 November 2020 - online	"Fishing and marine litter, the experience of those working in the maritime sector: problems, priorities and proposals".	17 fishermen and representatives of the FLAG and fishing cooperatives and 4 representatives of the local authorities
Maremma	15 December 2020 - online	"Waste management and issues related to beach and marina litter".	70 students and their teachers
Maremma	3 March 2021 - online	"Tourism and waste management. Problems, experiences, proposals".	12 representatives of tourist and economic activities on the Maremma coast and 4 representatives of local authorities
Maremma - Grosseto University Campus	1 April 2022 - in-person	"Fishing and marine litter. The impact of marine litter on the supply chain, priorities and proposals from the first COMMON monitoring data in Maremma".	53 attendees, including fishermen, fishermen's cooperatives, coastguards and students
Maremma	5 May 2022 - online	"The COMMON project: integrated local objectives and actions to reduce the risks of marine litter".	6 representatives of the Maremma coastal authorities

LEBANON			
Tyr Beach Reserve/tourist zone	28 July 2021	Recycling marine litter as a good source of economy and Increase the circular economy	20 Beach kiosks operators
Tyre House	20 December 2021	Corporation, coordination and law enforcement	11 participants from local authorities
Tyre port	24 May 2022	Promoting responsible fishing and encouraging good practices marine ecosystem conservation.	34 fishers
Fishers Syndicate Center - Tyre	15 September 2022	Monitoring techniques to study the impact of marine litter ingested by turtles and on fishes (especially Lionfish)	37 fishers
Tyre Coast Nature Reserve	29 November 2022	Actions and techniques for releasing a caught sea turtles/ birds/ sharks/ and dolphins.	20 students
TUNISIA			
Monastir	4-5 March 2021	Promotion of an eco-responsible school model	21 participants including School headmasters, administrative directors, teachers
Monastir	1-2 July 2021	Integrated Coastal Zone Management	20 participants including Researchers, Municipality of Monastir, ANPE, URAP, ONAS, CRT Monastir, CFPP Teboulba, NGO's
Monastir	17-18 August 2021	Circular economy approach to tackling marine litter	23 participants including Municipality of Monastir, young entrepreneurs (recycling), students and young graduates (ISBM, ISPAB), ANPE, AVFA, researchers, NGOs
Monastir	21-22 December 2021	Marine waste: what a danger for MPAs, RAMSAR areas and endangered species	25 participants including Researchers, Municipality of Monastir, APAL, ANPE, NGOs, URAP
Monastir	10-11 March 2022	Conscious entrepreneurship for tourism operators	18 participants including Tourist operators, Researcher, CRT Monastir
Téboulba	22 February 2022	Negative effects of marine litter on human health and biodiversity	36 participants including Fishermen, researchers, fisheries administration

The topics and issues addressed by the stakeholders were different in the 5 pilot areas, dependent on the progress of legislation on waste management above all, but also on the specific socio-political conditions. For example, in Italy tourist operators complained that they often have to take charge of maintaining the cleanliness of areas that are not strictly related to them, especially during the summer period, and that there is still a lack of correct and detailed information on waste sorting for tourists and citizens in general.

Fishermen have many concerns regarding the management of waste caught at sea and its delivery/management ashore. The authorities mainly complained about a lack of national regulations on waste management and the competence of those required to manage it. For the general public, especially the students involved, more awareness-raising campaigns and general information on the waste collection and management system should be carried out.

Instead, in Lebanon emerged the importance of cleaning the sea waters from marine litter involving in particular fishermen, recommending to work more on the involvement in the monitoring activities, furthermore emerged the importance of declaring the loss of nets by the fishers, to help the fishers by training them and involving them in the ongoing projects, the importance of contacting Tyre Coast Nature Reserve and especially the national expert in case of accidentally catching a flag species.

Finally, in Tunisia, they highlighted the importance of promotion of an educational project on the reduction of marine litter and single-use plastics, and an eco-friendly school management. They discussed the idea to eliminate single-use products in favour of bioplastics or recyclable materials, and to improve and promote sustainable tourism.

In order to discuss how to deal with the problem of marine litter and to summarise the meetings held at the local level, the project created a **Local Platform of Knowledge** for each pilot area, to which all the stakeholders involved, representatives of institutions, civil society and the economic sphere would contribute, in the hope that it would become a tool that would remain available to the area even after the project ended.

In fact, the purpose of the Platform was to present the results obtained from the project and in particular from the work done through the workshops, comparing the different opinions and proposals of the actors involved and, despite the differences, to encourage a participatory approach to planning the coastal area in a bid to solve the problem of marine litter, both from an institutional point of view and by means of grassroots initiatives.



Photo 7: Institutional capacity-building programme in Tunisia  
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## I-3- Best practices collected in pilot areas

This section on good practices has essentially been a collaborative effort with the municipalities in the pilot areas.

All the capacity building actions listed below have resulted in recommendations of good practices, which has been divided into 2 main themes: “Management of waste generated by fishing activities” and “Reduction of waste generation/recycling (tourism operators, etc.)”.

To have more detailed information on good practices in the three countries of the project you can see the [project platform](#), from which you can download the descriptive sheets of each experience.

The number, distribution and topics of good practices collected reflect territorial differences. We have collected many good practices from the northern Mediterranean, especially from the Maremma, areas already sensitised and organised on the topic of waste management in coastal areas. Most of the good practices regarding waste management from fishing and aquaculture activities comes from Salento, an area where these activities are very present and fundamental for the economy of the region.

From Tunisia and Lebanon, the best practices networked mainly concern the increase of events of cleaning of beaches and seabed, implementation of the system of collection and recycling of waste and deepening awareness campaigns in schools.

The heterogeneity of the information collected leads us to underline the importance of the creation of networks of sharing, especially between north and south of the Mediterranean, to arrive at defining management models as much as possible shared at the basin level; being the Mediterranean a closed basin and above all without borders.

### a- Management of Waste collected during fishing activity:

Fishing and aquaculture activities are one of the major causes of marine litter arising from the sea but also among the most impacted sectors. Despite this, it remains very difficult to work to find the causes and propose solutions to this type of pollution, especially because there are strong shortcomings from a regulatory point of view.

### ITALY

- Mare Pulito - Clean Sea, municipality of Nardò (Salento)
- Slow-food presidium for the Tarantine mussels, municipality of Taranto (Salento)
- EEF project Pescamica, municipality of Porto Cesareo (Salento)
- Seabed cleaning - Program agreement, municipality of Porto Cesareo (Salento)
- Ecological island in the harbour, municipality of Castiglione della Pescaia (Maremma)

### b- Reduction of waste production/recycling (tourist operators, etc):

Waste management is considered to be one of the major causes of beach litter from land. In this case, regulations and laws exist but are often fragmented and not homogeneous even from one city to another. These differences do not help the development of a conscious and sustainable tourism, nor do they help the creation of circular economy chains extended to wide territories.

### ITALY

- Archeoplastica, il museo degli antichi rifiuti spiaggiati, municipality of Ostuni (Salento)
- Ecolibreria Plastiaquà APS, municipality of Taranto (Salento)
- ADRINET, Adriatic Network for Marine Ecosystem, municipality of Castro (Salento)
- Environmental educators, municipality of Grosseto (Maremma)
- Clean Summer, municipality of Grosseto (Maremma)
- Schools competition, municipality of Grosseto (Maremma)
- Nature puts the sun, we give you the shade, municipality of Grosseto (Maremma)
- Smoke free beaches, municipality of Piombino (Maremma)
- Delibera Plastic free, municipality of Castiglione della Pescaia (Maremma)
- Our waters project, municipality of Castiglione della Pescaia (Maremma)
- Poseidon project, municipality of Castiglione della Pescaia (Maremma)
- Drink without plastic, municipality of Castiglione della Pescaia (Maremma)
- Water in carafe, municipality of Follonica (Maremma)
- Water houses, municipality of Follonica (Maremma)
- Plastic free school, municipality of Follonica (Maremma)

- Plastic free challenge, municipality of Follonica (Maremma)
- Cala Violina, municipality of Scarlino (Maremma)

#### LEBANON

- Blue Tyre, Lebanon and Italy, municipalities of Tyre and Tricase
- Clean for sea turtle season, municipality of Abassieh
- The active citizens for Tyre public garden, municipality of Tyre
- Cleaning Al Rashidiyeh beach due to the oil spill, municipality of Tyre
- Implementing a sustainable waste management solution, municipality of Al Kharayeb
- Cleaning Al Mansouri beach due to the oil spill, municipality of Al Mansouri

- Transform chips and upcycling non-recyclable materials, municipality of Tyre
- Cleaning up and preserving the sea shore in Abbasieh, municipality of Abbasieh
- Establishment of the women training center Fil d'Art for recycling old fabrics, municipality of Deir Knoun El Nahr
- Sorting waste in Tyre 2nd public school, municipality of Tyre

#### TUNISIA

- School's awareness days, municipality of Sayada
- Waste separation and recycling, municipality of Monastir
- Composting station, municipality of Monastir
- Selective sorting, municipality of Mahdia
- Ecological footprint action, municipality of Akouda
- Beach ecological tent, municipality of Akouda

## I-4- Awareness actions

During the years of the COMMON project, various stakeholders involved in or working with the sea at different levels have participated. The main objective of the project is to apply the principles of Integrated Coastal Zone Management (ICZM) to the management of marine litter, involving the wider coastal communities. To this end, specific awareness-raising and outreach events were organised for the different target groups. The target groups involved were: fishermen, coastal economic-tourism operators, coastal town councils, civil society and other environmental organisations. These activities include principally:

- Awareness-raising events and workshops
- Information and communication campaigns
- Publications and brochures
- Networking and partnership building activities
- Participation in relevant conferences and exhibitions
- Development of web-based resources and information platforms.

In addition, some of the awareness-raising activities were carried out at the same time in the different countries of the network.

We will cite here the **BEach CLEAN** and **Clean Up The Med** campaigns

The "BEach CLEAN" summer awareness campaign directly involved coastal establishments and tourist operators in raising the awareness of tourists and beachgoers by displaying the 10 golden rules on virtuous behaviour and best practices on the beach and distributing questionnaires on the public's perception of this problem. The operators themselves were asked to fill in questionnaires on waste management in their respective areas at the beginning and end of the season to better understand the dynamics that could affect the presence of waste on the beaches and to assess the effectiveness of this campaign.



Photo 8 : Campaign Clean Up The Med 2020, Monastir, Tunisia  
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Photo 9 : Campaign Clean Up The Med, Italy  
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Photo 10 : Campaign Beach Clean, Salento, Italy  
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During the 3 years we involved more than 90 structures in the 3 countries of the project. The results produced in the final report show that one of the major problems encountered concerns the abandonment of cigarette butts: they are the most found litter on the beaches of the Mediterranean sea, and beyond. To try to overcome this problem we focused the last year of the campaign to sensitize smokers. We distributed portable ashtrays to all the establishments that have joined the campaign. This initiative seems to have helped, in fact we were asked for others at the end of the season.

Another major problem stems from the sale of plastic bottles and the limited availability of drinking water dispensers. This, however, unlike cigarettes, is a problem that should be addressed in a different manner depending on the area in which we are located and the availability of drinking water in general.

Finally, the use of disposable plastic items should be limited both as regards the people on the beaches and for those who have catering services, in order to avoid their dispersion as much as possible.

Civil society was mainly involved in beach cleaning operations and awareness-raising activities through the Clean Up The Med campaign and beach litter monitoring. Across the three editions of the Clean Up The Med, 21 countries in the Mediterranean basin took part, and more than 500,000 volunteers collected around 800,000 tonnes of waste along more than 160,000 km of coastline. Citizens were also involved in Citizen Science activities monitoring beached waste in accordance with a shared protocol.



Photo 11 : Campaign Beach Clean, Lebanon  
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Finally, contests were held in schools in the pilot areas to raise the younger generations' awareness of coastal and marine pollution issues and good waste management practices. Around 25 classes took part from the 5 pilot areas. The "We are all Med - Schools vs Marine Litter" contest took place in the school year 2020 - 2021, and was repeated in the school year 2021 - 2022.



Photo 12 : Schools Vs Marine Litter competition, Monastir, Tunisia  
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Photo 13 : Schools Vs Marine Litter competition, Italy  
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The fishermen attended workshops and seminars in the 5 pilot areas, focusing mainly on the problem of litter at sea, the impacts on their business, and the widespread issue of managing litter accidentally collected when fishing. Best practices and actions that can help overcome these difficulties were also shared.



Photo 14 : Awareness-raising activities with fishermen, Monastir, Tunisia

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Photo 15 : Awareness-raising activities with fishermen, Italy

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## I-5- Creation and support of networks

### I-5-1. Local working group network

The main source of the waste found along coastlines and dispersed at sea is land-based activities and, more specifically, the mismanagement of waste in urban and suburban contexts. Without forgetting the responsibilities of inland areas, the COMMON project focused on coastal urban areas as a crossroads and interface between local authorities, production activities and tourism activities. In order to promote the relationship between marine litter reduction and Integrated Coastal Zone Management (ICZM) and to build cross border capacity of coastal institutional staff and all stakeholders, the COMMON project has created Local Working Groups bringing together different local actors (representatives of local waste management agencies, regional authorities, municipalities, NGOs and other relevant stakeholders with regulatory capacity or influence) and facilitating the comparison and constructive exchange of different perspectives.

A first meeting was made involving all stakeholders, during which the specific working groups were created for the different categories and also the main issues that the individual groups wanted to address.

Workshops and seminars were made to inform them about the problem and to collect specific issues and possible solutions to share.

### I-5-2. Network of Marine Turtle Centres in the Mediterranean

Sea turtles are one of the organisms most impacted by the presence of litter in the sea. The loggerhead sea turtle, in particular, is the most common sea turtle in the Mediterranean Sea and one of the species most severely affected by marine litter. For this reason, they are considered one of the indicator organisms for assessing the impacts of plastic on marine fauna.

One of the objectives of the COMMON project was to strengthen the collaboration between the marine turtle centres around the Mediterranean.

Sea Turtle Rescue Centres carry out first aid on sea turtles, often working together with fishermen, and have been involved in the COMMON project through the exchange of experiences and good practices. They have also benefited from the analysis techniques developed by the project's scientific partner researchers, transmitted through international workshops for turtle rescue centres staff. In addition to meetings and training events, information was collected from the Mediterranean Sea turtle rescue centres that were in contact with partners of the COMMON project. This information included data about the number of turtles recovered in recent years and the percentage of individuals that had ingested plastic.

### I-5-3. Network of Coastal Cities against Marine Litter

The Coastal Cities Network was also created to tackle the issue of marine pollution and is a means of sharing and replicating experiences, best practices and success stories. Sharing virtuous projects and replicating innovative strategies and solutions in areas facing the same critical issues is one of the measures taken by the COMMON project to reduce the problem of marine litter, with the aim of applying such solutions to the whole Mediterranean. From plastic-free schools to quality water supply systems, from the sustainable management of tourism in protected areas to slow food initiatives: several good practices have been identified thanks to the project network. These practices relate to two main categories: reducing the production of waste/recycling and waste management during fishing activities. The good practices, available to the entire Mediterranean area, can be found on the platform under the section "[Coastal Cities Network](#)".

## II- Recommendations to tackle marine litter

The project has generated a lot of data and results and each country has proposed its own recommendations based on the status of the pilot area and the different actions undertaken.

We have summarised here the main recommendations that can be applied to the Mediterranean region, distinguishing them from the local recommendations that should be applied depending on the region.

### II-1- Scientific actions (beach monitoring, microplastic sampling, biota)

Monitoring activities are essential for understanding the extent and impact of marine litter in different environmental compartments, such as water, sediment, and biota. Data can be collected on the quantity and characteristics of marine litter, including its composition, size, and origin. Moreover, monitoring activities can help to identify hotspots of marine litter accumulation and areas where vulnerable species or ecosystems are at risk of being impacted.

By analyzing the results of monitoring activities, it is possible to gain insight into the scale and scope of the marine litter problem, which can inform the development of targeted and effective mitigation actions. For example, monitoring data can help to identify the sources of marine litter and inform waste reduction policies, or it can provide information on the ecological impacts of marine litter, which can inform conservation and restoration efforts. Ultimately, the analysis of monitoring data is crucial for developing evidence-based management strategies that can help to reduce the impacts of marine litter on the environment and human health.

The collaboration and sharing of data can provide a more comprehensive understanding of the distribution and effects of marine litter and can facilitate the planning and implementation of targeted and effective mitigation measures in the areas studied and at basin level.

- The use of common and harmonized protocols during monitoring activities, to assess the quantity and impacts of marine litter (macro and micro) in each environmental compartment, allows the comparison of data collected in different sampling areas by the different bodies involved (e.g. universities and research organisations).
- Standardized protocols should specify the sampling techniques, the selection of monitoring areas, the frequency and duration of monitoring, the types of equipment to be used, and the methods of data collection and analysis.

The protocols should also take into account any potential sources of variation, such as seasonal or regional differences, to ensure that the data collected is robust and can be used for meaningful comparisons across different regions and time periods.

- The innovative approach used in the COMMON project, adopted from the Plastic Busters initiative, to quantify the eco-toxicological effects of ingested marine debris on marine fauna, is highly recommended. This so-called “threefold” approach is based on the simultaneous investigation, in bioindicator species, of gastro-intestinal contents to analyse the marine litter ingested by organisms, of plastic additives and PBT compounds used as plastic tracers, and of the effects of biomarker responses at different levels of biological organisation. This makes it possible to conduct a more complete assessment of the real impact of marine organisms’ ingestion of plastic debris. Furthermore the information obtained can then be used to develop targeted and effective mitigation measures to reduce the impacts of marine litter on the environment and human health.

Other scientific recommendations include:

- Promote and support scientific research to fill gaps in knowledge about the sources and impacts of marine litter: is one of the key ways to address the issue of marine litter. To promote and support scientific research, funding should be made available for research projects, and research institutions should be encouraged to prioritize research on marine litter. Governments and non-governmental organizations can also play a role in supporting and promoting research by providing data and resources to researchers, and by encouraging collaboration and knowledge-sharing across different sectors and countries.

- Emphasize participatory science by involving more people who are not necessarily scientists to raise awareness and collect data: this approach can help to increase public engagement and ownership of the issue, and can help to ensure that research is conducted in a relevant way to the needs and concerns of local communities, and build partnerships and collaboration across different sectors and communities.

For this reason it is important to encourage citizen science initiatives, involving members of the public in collecting data and contributing to research projects. For example, fishermen, young people, students, and other public institutions can be involved in collecting data on marine litter, raising awareness about the problem, and contributing to the development of mitigation strategies.

## II-2- Institutional capacity building (training workshops)

Share and disseminate good practices, base regulations on research and scientific data, deepen the link between data and decision makers. To do this, to build up a dialogue with authorities, whether local or further afield, is highly recommended. Indeed, in accordance with the authorities and decision-makers, several opportunities could be scouted, possibly leading to hand-on projects to be implemented. These include the organisation of training on plastic sorting and recycling; waste collection for local communities, push for free plastic localities, developing the coastal cities networks for fighting against plastic pollution, increasing the knowledge on regulations/ laws/ decision allowing the decrease of use of plastics, among others.

- It is essential to involve authorities in the training activities, to create synergies in the territories, to raise awareness on a complex subject and to stimulate constructive dialogues in the search for practical solutions, thereby creating an action plan to combat pollution.
- Especially in the context of projects lasting several years, it is useful to identify a fixed contact person who follows developments and actively participates in meetings.
- Comparison between authorities is highly recommended. For some practices, working together can help initiatives spread faster and more effectively. Some specific campaigns could be shared (e.g.: an information and awareness-raising campaign among neighbouring coastal municipalities, like smoke free beaches..).

## II-3- Best practices gathered in pilot areas

The best practices collected can be outlined in more detail as follows:

- Enhance coordination and collaboration among various national and regional stakeholders: establishing strong communication channels and partnerships between different agencies, organizations, and groups working on marine conservation will foster a more cohesive and efficient approach to combating marine pollution. This may involve regular meetings, workshops, or joint projects to ensure everyone is working towards a common goal and sharing resources effectively.
- Support and provide resources for marine turtle rescue centers to enable immediate response: allocate necessary funding, equipment, and personnel to marine turtle rescue centers to facilitate rapid intervention when needed.

This support will enable these centers to effectively rescue, rehabilitate, and release marine turtles impacted by marine pollution, thereby contributing to the conservation of these endangered species.

- Promote best practices and encourage initiatives to combat marine litter: raise awareness about successful strategies and solutions for reducing marine litter, and motivate communities, organizations, and individuals to adopt and implement these practices. This can be achieved through educational campaigns, workshops, and showcasing successful case studies.
- Sharing best practices represents a grassroots approach to addressing marine plastic pollution. By fostering constructive dialogues during meetings with authorities and schools, and using an online platform to exchange these practices, stakeholders can create lasting impact and develop new local synergies.

The experience gained from the project shows that simpler and more cost-effective practices tend to have a longer lifespan and are more easily replicable. However, the potential innovative effects resulting from experimentation and research projects are essential for developing future strategies and solutions.

Additionally, it has been observed that initiatives proposed by nationally significant organizations are more likely to gain widespread adoption and may be more easily implemented.

For example, in Italy, the Ministry of the Environment launched a Plastic-Free campaign that has been adopted by numerous municipal authorities and other public entities across the country.

## II-4- Awareness actions

Basically, awareness-raising actions mean the involvement of civil society, volunteering and other vulgarisation activities with the less informed and young people. The most recurrent recommendations are undoubtedly the cleaning actions, both on the beaches and in the sea (the jellyfish robot in Tunisia as the main example). This also includes the creation of environmental clubs in schools, municipalities and other civil society manifestations, such as visits for schoolchildren to observe and evaluate environmental issues, the signing of agreements with environmental associations to further support awareness-raising actions and interventions in the field of environmental protection, the implementation of awareness-raising campaigns for the local population and visitors (especially during the summer) on solid waste management, etc.

- Working with civil society, stakeholders, schools and volunteers is very important to raise awareness of environmental dynamics and the impact that incorrect actions can have on the environment and public health

Organising beach and seabed clean-up days is undoubtedly a useful way to spread awareness and encourage reflection, but not enough to tackle the phenomenon, so we must work on prevention.

- It is essential that schools are persistently committed to raising awareness of the value of biodiversity and the integrity of ecosystems for the present and future of humankind, going beyond individual projects. It is therefore up to the Ministries of the Environment and Education to work in synergy to include these topics in the curricula of schools at all levels.
- Local institutions must also focus their attention on creating synergies and partnerships with organisations already working in the area to protect and safeguard the environment, such as environmental associations and park authorities.

## II-5- Creation and support of networks

With regard to this topic, the experience with the COMMON project was certainly helpful in understanding the complexity of creating and maintaining a network. It is a lengthy process and before embarking on it, it is important to perform a thorough check to ensure that no networks involving the same categories of stakeholders already exist and, if so, to contact them to sound out possible opportunities for participation and collaboration.

In order to capitalise on the work done, it is important that there is a logical and operational continuity across the various meetings. Designing the network as small and specialised networks that connect to each other remains the best approach for its continuity and viability.

# Conclusions

The COMMON project (COastal Management and MOnitoring Network for tackling Marine Litter in the Mediterranean Sea) aimed at addressing the increasing problem of marine litter in the Mediterranean Sea. The networks built within the project brings together various stakeholders, including government agencies, NGOs, academia, and the private sector, to work together in addressing the issue. With its comprehensive approach, COMMON was able to gain knowledge about the extent of marine litter and the identification of the sources of litter, as well as develop and implement effective management and mitigation strategies.

In addition to the actions outlined above, it is important to emphasise the need for collaboration and cooperation between global institutions and local authorities and communities. This is essential in bringing common policies to the ground and ensuring that they are implemented effectively. Thanks to the close connection with the Plastic Busters initiative, labelled and endorsed by the Union for the Mediterranean, COMMON gained a privileged position to ensure that, within its actions, the issue of marine litter has been addressed effectively and sustainably.

Global institutions can provide support and guidance, as well as funding for research and mitigation measures. However, it is crucial to involve local authorities and communities in the decision-making process, as they are often the ones who are directly impacted by marine litter and can provide valuable insights and knowledge. By working together in a bottom-up approach, global institutions and local communities can develop and implement effective policies and solutions that are tailored to the specific needs and challenges of each region. This collaboration can also help to raise awareness and promote behavioural change, which is essential in preventing marine litter in the first place.

Furthermore, international institutions can provide valuable support for the projects, including access to funding, technical expertise, and resources. They can also help to promote the project's goals and objectives on a global scale, and to facilitate collaboration and knowledge-sharing across different regions and countries.

For example by acting in accordance with the Barcelona Protocol for the protection of the Mediterranean Sea against pollution from land-based sources, countries can develop and implement waste management plans that prioritize the reduction of marine litter. This can include measures such as banning single-use plastics, implementing deposit schemes for plastic bottles, and promoting the use of reusable bags and containers.

In conclusion, following the COMMON experience there are several key actions that can be taken, in order to tackle marine litter. Scientific actions are critical in understanding the extent and impact of marine litter, and involve using standardised and common protocols to assess the quantity and impacts of marine litter in different environmental compartments. Adopting a “threefold” approach for eco-toxicological analyses can make a more complete assessment of the real impact of marine organisms’ ingestion of plastic debris. Furthermore, promoting and supporting scientific research is essential for identifying the sources and impacts of marine litter, and filling gaps in knowledge about the issue. Involving more people who are not necessarily scientists in the research process through participatory science can increase public engagement and ownership of the issue. Institutional capacity building through training workshops is also important, as it can help disseminate good practices, base regulations on research and scientific data, and deepen the link between data and decision makers.

Additionally, creating and supporting networks is crucial for addressing the complexity of marine litter and plastic management. Finally, raising awareness through organising beach and seabed clean-up days, creating environmental clubs, and working with civil society, stakeholders, schools, and volunteers, can help to promote behavioural change and prevent marine litter in the first place. By taking these actions, we can work towards reducing the impact of marine litter on the environment and human health.







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