

COastal Management and MOnitoring Network

for tackling marine litter in Mediterranean sea



WP4 - O.4.2 Proposal of actions for developing public policies for an improved management of marine litter

Activity 4.2.1. Best policies and proposal collection and fine-tuning

Marine litter tackling in Italy: actions and recommendations

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 PP1) 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 behavior 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.

***The outputs of the task are:**

Four final reports with legal recommendations (rules and laws) and best practices for improving the management of marine litter. Three reports will collect all the propositions for each involved country (Italy, Lebanon and Tunisia) and one report will be the same for the whole Mediterranean basin.

***Target Group:**

EU and Mediterranean local, regional and national policy makers and waste agencies.

***This document** provides guidelines and a template to the consortium partners on the redaction of the final report of recommendation and proposition for improving ML management for each targeted country.



Report Plan:

Overview:

State of play:

Statistics on marine litter at local level and on the pilot areas.

The Mediterranean Sea is one of the most severely affected areas by marine litter pollution. Indeed, according to the report of the IUCN (International Union for Conservation of Nature and Natural Resources) entitled “The Mediterranean: Mare Plasticum”, 229,000 tonnes of plastic waste are dumped in the Mediterranean Sea every year, the equivalent weight of 15 sperm whales per day. Based on the report, the countries that contribute the most are: Egypt (74,000 tonnes per year), Italy (34,000 tonnes) and Turkey (24,000 tonnes). According to this and other studies, most of the waste found in the sea can be attributed to land-based activities and, more specifically, waste mismanagement.

The monitoring of marine litter is an activity provided by the Marine Strategy Framework Directive 2008/56/EC (transposed in Italy by Legislative Decree 190/2010), which implements measures to protect the marine ecosystem in order to achieve and uphold Good Environmental Status across 11 descriptors. Descriptor 10 refers to marine litter, and one of its sub-criteria, criterion D10C1, requires that “the composition, amount and spatial distribution of litter on the coastline, in the surface layer of the water column, and on the seabed, are at levels that do not cause harm to the coastal and marine environment”. The monitoring of beach litter in Italy is carried out by the National System for Environmental Protection (SNPA) with the technical and scientific support of the Italian National Institute for Environmental Protection and Research (ISPRA). The Ministry of Ecological Transition (MiTE) is the competent authority that oversees the coordination of the activities provided for within the framework of the Marine Strategy.

According to the Environmental Data Yearbook of ISPRA, the Italian body responsible for collecting and processing data from the monitoring performed by the regional ARPA (environmental protection agencies) implementing the Marine Strategy Framework Directive, the density of waste along Italy's coastline is higher than in other European seas, whose median densities in the years 2015-2016 were: 40 items/100 metres in the Baltic Sea; 106 items/100 m in the Black Sea; 233 items/100 m in the North-east Atlantic and North Sea (Hanke et al., 2019). In 2020, the average value in Italy was 311 pieces of litter per 100 m. The Adriatic coast (Friuli-Venezia Giulia, Veneto, Emilia-Romagna, Marche, Abruzzo, Molise, Apulia) was the most badly affected, with an average of 468 pieces of litter per 100 linear metres of beach. The western Mediterranean coasts (Liguria, Tuscany, Lazio, Campania, Sardinia), the Ionian Sea and the central Mediterranean (Calabria, Basilicata, Sicily) had similar densities: 258 items/100 m and 202 items/100 m respectively. The Adriatic is affected by high concentrations of waste from fisheries and aquaculture, with a density of 186 items/100 m. Smoke-related waste was more abundant in the Adriatic (15 items/100 m) than in the other two sub-regions.



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With regard to microplastics, the ISPRA Environmental Data Yearbook reports that there is still no threshold value to define good environmental status for this category. Nevertheless, by processing data from 2015 to 2020, it is possible to establish an average density value for microparticles in our seas. The concentration is 0.04 microparticles per m² that is 40,000 microparticles per km².

Main current laws regarding waste management, especially plastics, the existing gaps and how to improve.

The legislation on plastic waste and packaging in Italy is prolific and varied, thanks in part to developments in recent years at EU level. The direction taken is certainly promising, but much still needs to be done to minimise the negative impacts. Moreover, and especially with regard to illegal waste disposal, these laws require strict, effective and comprehensive controls at territorial level to ensure their correct implementation.

Legislative Decree 152/2006, Italy's consolidated environmental code, defines the general principles regulating the marketing and production of packaging, emphasising the need to reduce the quantity and hazardousness of plastics used to the greatest extent possible through initiatives aimed at promoting the development of clean technologies and reducing the production and use of packaging upstream, as well as by encouraging the production of reusable packaging and its actual reuse. In accordance with the “polluter pays” principle, Legislative Decree 152/2006 also emphasises the fact that the responsibility of producers and consumers of packaging is proportional to the quantity produced and consumed. It also states that it is the responsibility of the municipal authorities to ensure that separate collection facilities are developed at local level. The decree also establishes the administrative sanctions to be applied when waste of any kind is dumped in the environment, as well as the criminal sanctions to be imposed in the case of illegal disposal.

In 2008, Directive 2008/56/EC (Marine Strategy) was issued, establishing a framework of measures needed to achieve or maintain good environmental status in the marine environment by 2020 (currently under review), and implementing the strategy for protecting and conserving the marine environment. The directive states that strategies must be developed and implemented to: protect and preserve the marine environment, prevent its degradation or restore marine ecosystems in areas where they have been damaged; prevent and reduce the dumping of waste in the marine environment, with a view to phasing out pollution to ensure that there are no significant impacts or risks to marine biodiversity, marine ecosystems, human health or lawful uses of the sea. This directive was **transposed in Italy by Legislative Decree no. 190 of 13 October 2010**. Linked to the latter is Commission Decision (EU) 2017/848 of 17 May 2017, which defines criteria and methodological standards for good environmental status of marine waters as well as specifications and standardised methods for monitoring and assessment.

In 2015, the European Union defined a preliminary “Action Plan for the Circular Economy”, which was followed by a series of regulations amending the main previous EU regulations on waste. The aim of these new directives is, to promote a circular approach to waste, to produce less and substantially increase the recycling of municipal and packaging waste, to reduce the use of landfill and incineration, and to promote the use of economic instruments, such as extended producer responsibility schemes. Among these,



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Directive 2018/851/EU, which constitutes the new regulatory framework on waste, and Directive 2018/852/EU, which amends the previous Directive 94/62/EC on packaging and packaging waste, transposed in Italy by Legislative Decree no. 116 of 3 September 2020, are particularly relevant.

Legislative Decree 196/2021 (enacted to implement Directive (EU) 2019/904 on the reduction of the impact of certain plastic products on the environment, also referred to as the Single-Use Plastic Directive), stipulates that since the 14th of January 2022, the placing on the market of specific single-use plastic products (including plastic cutlery, plastic plates and straws, food containers) and oxo-degradable plastic products is prohibited. However, for plastic products for which no alternatives exist, Member States will have to develop national plans, with detailed measures, to significantly reduce their use, which must be submitted to the Commission within two years of the entry into force of the Directive. The legislation also sets a 90% collection target for plastic bottles by 2029 and stipulates that 25% of plastic bottles must be made of recycled materials by 2025, a quota that will rise to 30% by 2030. The “polluter pays” principle has also been consolidated with the introduction of an extended liability regime for tobacco and fishing equipment producers.

Another recent regulatory development is the **transposition of Directive 2019/883¹, dated 17 April 2019, on port reception facilities for ship waste, by Legislative Decree no. 197 of 8 November 2021**. The purpose of the decree is to protect the marine environment from the negative impacts of waste discharged from ships that use ports located on state territory. It also aims to ensure the smooth flow of maritime traffic by improving the availability and use of adequate port waste reception facilities and the delivery of waste to these facilities. Unintentionally caught waste during fishing operations, is no longer considered special waste but rather urban waste within the meaning of Article 183, paragraph 1, letter b-ter of the same legislative decree.

Law no. 60 of 17/05/2022 known as "SALVAMARE - Provisions for the recovery of waste found at sea and in inland waters and for the promotion of the circular economy": this law aims to support the recovery of the marine ecosystem and the promotion of the circular economy, as well as to raise the public's awareness of virtuous behavioural models aimed at preventing the dumping of waste at sea, in lakes, rivers and lagoons and the correct management of waste. According to the above-mentioned legislative decree, which incorporates the European Directive 2019/883, unintentionally caught waste is considered equivalent to municipal waste and may therefore be deposited at the port reception facility. The most significant aspects of the law are as follows: the costs of managing waste caught unintentionally are covered by the national waste tax to be paid by all citizens; fishermen will be rewarded with indirect recognition or reimbursement; it is also possible to organise specific clean-up campaigns targeted at the collection of waste at sea; the law also provides for the promotion of educational and awareness-raising activities in schools.

¹ amends Directive 2010/65/EU and repeals Directive 2000/59/EC



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The European Commission is currently ²working on **updating Directive 94/62/EC of 20 December 1994, on packaging and packaging waste, by means of a regulation** that aims to reduce the impact of packaging by promoting its recovery and recycling. The purpose is to find solutions to the increasing production of packaging waste, in particular from single-use packaging, thereby reducing its production, reducing the need for natural resources by promoting a circular economy and promoting the adoption of high quality recycling policies.

Issues:

At the national level, especially with regard to the recent legislative breakthroughs introduced by Legislative Decree 196/2021 (transposition of the Single-Use Plastic Directive), sustainability targets still remain unambitious. Real change could be achieved if the very concept of disposability were eradicated from everyday life. For this to be a possibility it would be necessary to systematically and extensively leverage wider culture and promote a holistic understanding of the environment and its dynamics. Alongside the regulatory initiatives, there must also be an effective and extensive network of controls to ensure that the measures are successfully implemented.

Furthermore, in order to be fully operational, the SALVAMARE law (L. 60/2022) requires some implementing decrees, which have currently³ not been issued. These would finally resolve the regulatory gaps in Italy, which prohibited the collection of waste caught in nets during fishing activities because it was considered special waste and therefore could not be deposited at port reception centres. These activities were only possible thanks to a number of experimental campaigns.

Report objectives:

Guideline to present practical solutions and proposed recommendations to influence policymakers, the general public and the media in order to reduce marine litter by using ICZM approach.

Plastic waste pollution is a holistic problem; its effects impact environmental, economic, social and public health sectors. To turn things around, we need to work together on the cultural, economic, social and environmental aspects through targeted policies to combat the roots of the problem, namely unsustainable production, consumption habits and market trends.

Regarding the spread of waste in the Mediterranean basin specifically, the main problem lies in the fact that there are no national borders. But even acting locally on consumption and management regulations, both at national and EU level, standardising the waste management legislation of countries whose coasts border the same sea basin remains a delicate and complex issue. Nevertheless, the new regulations in force in Europe certainly lay the foundations for initiatives that could be adopted on a larger scale.

The transition to a circular economy must be initiated as soon as possible in all Mediterranean countries, albeit with their economic, social and political differences. Change must be made at the national level but can also be brought about locally by involving businesses and civil society. Companies have a key role to

² updated in January 2023

³ updated in January 2023



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play, starting with the upstream process of deciding which products to put on the market and their characteristics. Several aspects must be taken into account: the sustainability of production, the choice of raw materials, product design, and recyclability or reusability of the product itself are just some of the most important and decisive ones. Businesses must be involved, informed and incentivised.

The lessons learned from the Common project, like those of so many other projects in which different countries collaborate, demonstrate how crucial it is to pursue joint objectives, work in synergy, and continue to exchange information and experiences. Cooperation must be strengthened between shores, while maintaining an overarching vision of the waste management cycle on land and at sea, both at the coast and inland.

Tackling marine litter phenomenon and reducing waste dispersed in the marine environment and inland waters is only possible if appropriate measures are taken, which may vary from area to area depending on the environmental dynamics and the existing economic and production activities. For this reason, knowledge of the problem is crucial in identifying the most effective countermeasures. Up until now, data coverage is still incomplete and there are gaps in large areas, especially in the southern Mediterranean. Much more remains to be done to fully understand the impacts of marine litter. Monitoring and scientific data collection must be performed in a cooperative manner and by sharing resources, with sampling and analysis protocols standardised across the Mediterranean countries. For this reason, one of the aims of the Common project was to standardise the monitoring and analysis protocols on marine litter quantities and impacts in the five pilot areas, and to compare the results obtained. By comparing data from several countries, it is possible to better understand the sources and causes of litter in the sea and on beaches, leading to targeted and undoubtedly more effective mitigation actions. Continuous monitoring then allows us to assess the effectiveness of the actions introduced in the long term.

To move from the theory of data processing to the practice of implementing mitigation actions and strengthening the fight against marine litter, the connection between science and policymakers must be reinforced and made more robust, while involving the civil society, starting with schools.

From a practical point of view, some common strategies that can be adopted by the three countries are:

1. exchanging information and sharing knowledge, best practices and experiences which are essential to start discussions and collaborations. The two networks, coastal cities and Sea Turtle Rescue Centres, which the project aims to create, are moving towards this goal;
2. promoting collaborations and exchanges between actors throughout the waste production, consumption and management chain. Systemic waste management should be aimed for in order to implement the principles of the circular economy;
3. providing an empty-to-return system for certain product categories that require packaging, with a cashback system to reduce the amount of packaging disposed of;
4. the compulsory switch, where possible, from disposable to reusable food containers;
5. promoting tap water or providing drinking water dispensers in public and private places and facilities with high footfall;
6. working on a joint tracking system for fishing and aquaculture equipment and creating laws to regulate their management in the event that they are lost at sea;



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7. incentives for the creation of small production waste recycling plants and promoting the use of production waste for the creation of widespread micro-economies in the regions;
8. support for promoting and upholding a culture of sustainability in schools at all levels that applies across the board and consistently from headmasters to staff, teachers and students.

It is essential to overcome the paradox of reduction. Banning single products or increasing recycling rates and the amount of recycled plastic within packaging can be initiatives that promote and support the emergence of circular or, at least, more sustainable economies. However, on their own they are not enough to solve the major problem of waste: awareness-raising and educational activities among citizens and all stakeholders are of paramount importance if we are to achieve lasting cultural change.

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

I-1- Knowledge of litter sources and impact on marine ecosystems resulting from the COMMON project scientific actions:

On the Tuscan coast, monitoring activities, carried out between 2020 and 2021 as part of the COMMON project on beach litter, reported that there were more than 300 pieces of litter per 100 metres of beach. 95% of waste is plastic and 1 in 3 pieces of litter is a cotton bud. These are just the preliminary results of the monitoring carried out over the last two years on the Tuscan coasts and the data from the analyses carried out on some fish species that inhabit the Mediterranean Sea. On the Tuscan coast alone, researchers found more than 300 pieces of litter for every 100 linear metres of beach. This data is well beyond the threshold value set by the European Union to indicate the good environmental status of a beach, namely 20 pieces of beached waste per 100 linear metres of coastline. More than 95% of the waste found was plastic, half of which was disposable plastic objects, while one out of every three pieces of waste was a cotton bud. Thanks to the scientific protocols used, it was possible to determine the sources of pollution responsible for the beach litter: inland activities were confirmed as the main source of pollution, responsible for 35% of the total litter, followed by coastal activities, responsible for 20%. A fairly significant percentage of waste, about 5%, is generated solely by maritime activities such as fishing and aquaculture.

As for the presence of floating litter in the sea by the Maremma region, 12 different locations were sampled in two different seasons, autumn and spring. In total, 7000 microplastics were isolated, with an average density of 0.18 MP/m². This value is in line with the average for microplastics detected in the Mediterranean Sea, where an average microplastic concentration of 0.53 MP/m² has been estimated. Nevertheless, this value is subject to wide fluctuations between areas, ranging from 7.6 MP/m² in the Levantine basin to 0.028 MP/m² in the north-western part of the basin.

The origin of the litterfloating on the sea surface is the same as that of the objects found on the beaches, i.e. mainly attributable to land-based activities and, to a lesser extent, fishing and aquaculture.

As for the investigation into the presence of plastic particles in fish species, five different species belonging to different habitats and one invertebrate were sampled: *Engraulis encrasicolus* (anchovy), *Sardina pilchardus* (pilchard), *Sardinella aurita* (round sardinella), *Boops boops* (bogue), *Mullus barbatus* (red mullet) and *Mytilus galloprovincialis* (Mediterranean mussel). The results on ingestion rates in fish species revealed that microplastics were present in 25% of the specimens analysed. More specifically, 111 microplastics were isolated out of a total of 276 organisms with an average value of 0.4 MP/individual. These data are in line with the average ingestion rates reported by other studies carried out in the Mediterranean Sea (Anastasopoulou et al., 2018; Giani et al., 2019; Pedà et al., 2020).

In terms of the evaluation of the presence of MP in the tissues of *M. galloprovincialis*, out of 30 specimens sampled, 27% contained plastic particles, with an average value of 0.4 MP/individual. The ingestion rate is lower than that reported by other studies along the coast of Turkey and in the Ionian Sea (Gedik et al., 2020; Digka et al., 2018).



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Monitoring has revealed that there is a close relationship between the microplastics found in the organisms and those found in the marine environment, and further analysis is underway to establish any chemical impacts linked to the organisms' ingestion of plastic waste.

On the Salento coast, beach litter sampling activities, between January and November 2021, recorded an average of more than 350 pieces of litter per 100 metres of beach. 93.5% of the waste consisted of plastic polymers and of these 34% were cigarette butts. The researchers recorded an average of 357 pieces of litter per 100 linear metres of beach, similar to the results for the Tuscan coast and well above the limit set by the European Union for achieving good environmental status. The differences between the quantities of waste detected in the different seasons could be attributable to the increased number of beach users in the summer season, with a knock-on effect on the autumn season; to confirm this hypothesis, however, it will be necessary to conduct further investigations over time periods of more than one year. In the summer and autumn seasons, the average number of items found per 100 linear metres was 461 and 852 respectively, compared to 289 and 204 for winter and spring.

Overall, the most common three items found were cigarette butts - 4873, plastic pieces measuring between 2.5 and 50 cm - 3211 and cotton bud sticks - 887.

As for the presence of floating microplastics in the seas of the Salento area, three different locations were sampled in autumn and spring. In total, 3066 microplastics - understood to be fragments of plastic waste with a diameter of less than five millimetres - were isolated with an average value of 0.28 fragments per square metre (0.28 MP/m²). According to researchers from CIHEAM Bari, this data is in line with the average value for microplastics detected during the 2017 research campaign conducted by Greenpeace, CNR Ismar and the Polytechnic University of Marche, which found that the concentrations of microplastics varied between 0.03 and 1.78 fragments per square metre, a figure that fluctuated greatly between different areas. For the southern area of Apulia, the highest value was found in Gallipoli: 1.16 MP/m² in Autumn 2020, while in Spring 2021 the highest value was found in Otranto, with concentrations between 0.59 and 0.96 MP/m². All other values were in the range of 0.04-0.54 MP/m².

Analyses of the presence of plastic particles in four fish species of commercial importance were also carried out: *sardina pilchardus* (pilchard), *Boops boops* (bogue), *Mullus barbatus* (red mullet) and *Mytilus galloprovincialis* (Mediterranean mussel). Across the three vertebrate species, 203 individuals were analysed at 2 stations between the Adriatic and Ionian seas; the percentage of individuals with plastic in the gastro-intestinal tract was 44.3%. The quantity of microplastics detected was 1091 pieces, of which 84% were fibres, 8.2% pellets and 7.4% plastic fragments, with the average data per individual being 3.12 MP. For mussels, from a total of 273 individuals analysed, 599 MPs were detected, 90% of which were fibres. Of the samples analysed, 68.44% contained microplastics with a concentration of 1.28 MP/individual. The highest values were found in organisms from the sites closest to the most urbanised areas, with the concentrations found in the populations from Taranto being twice as high as those from Porto Cesareo and San Foca. In comparison with the data from the literature, the concentration values for Porto Cesareo and San Foca were similar to those reported by Digka et al., 2018 and Wakkaf et al., 2020 for the Ionian Sea along the coast of Greece and Tunisia respectively. The concentrations of microplastics in the Taranto samples, on the other hand, were comparable with those found by Wakkaf et al., 2020 for a heavily urbanised area of the Tunisian coast.

I-2- Institutional capacity building in tackling marine litter: training activities with local stakeholders, focuses and proposals

General part:

As part of the COMMON project, 9 workshops were held between the two pilot areas involving different categories of stakeholders and policy makers. 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. Furthermore, by bringing these stakeholders and the administrative world together, it was possible to set up territorial and local discussion tables in a bid to resolve the various difficulties related to the territory.

The main problems and concerns that emerged from the meetings are as follows: tourist operators complained that they often have to take charge of maintaining the cleanliness of areas that are not strictly related to them (e.g. near the lidos or near campsites or tourist facilities), especially during the summer period; 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 (an issue that could be resolved by implementing the guidelines of the recently passed Salvamare Law - no. 60/2022). 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.

Date and format	Title of workshop	Participants
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
5 June 2021 - in-person, Tricase Porto Naval League	"Waste in the marine environment: good practices for involving fishermen in combating marine litter and pollution".	26 fishermen



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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
1 September 2022 - in-person, CIHEAM premises at Avamposto Mare at Tricase Porto	"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
15 December 2020 - online	"Waste management and issues related to beach and marina litter".	70 students and their teachers
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
1 April 2022 - in-person, Grosseto University Campus	"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
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

Table 1 Specific meetings with local stakeholders in the two pilot areas, Salento and Maremma.

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 proposed the creation of 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 is 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. Of the two Local Platforms envisaged for Italy, to date the one in the Salento area has been established and the one in the Maremma area will be implemented closer to the end of the project, once the sectoral meetings have been completed.

Date and format	Title	Participants
Salento		
29 May 2022	AETHER - BONSEA - COMMON TOGETHER FOR THE ENVIRONMENT	47

Table2 Specifications of the Local Platform organised in Salento.

On 29 May 2022, the first territorial meeting regarding the Local Platform for the Salento pilot area was held in Tricase Porto. The focus of the meeting was to protect the marine environment by implementing concrete actions to clean the seabed and releasing 2 loggerhead sea turtles. The day began with the cleaning of the seabed and the quays of Porto Vecchio, with the support of representatives from Scout, Clean UP Tricase and CAS - Coordinamento Ambientale Salento [Salento Environmental Coordination]. It continued with a talk from a representative of the Sea Turtle Rescue Centre of Calimera and in the afternoon there was an in-depth discussion among the various participants.



Image 1 Local Platform at Tricase Porto, Salento, 29.05.2022.

Specific part:

In the **Salento** pilot area, the following took place:

- 1) An online workshop via ZOOM on **22 April 2021** entitled "**Innovative strategies and solutions for the management of Marine Litter in coastal areas**" involving 11 participants from the local authorities in the Salento and Taranto areas. The main objective of the meeting was to raise knowledge and awareness of the critical issues related to marine waste disposal in port areas with the scientific and technical support of the University of Salento and experts from CIHEAM in Bari.



Image 2 Meeting of local authorities in Salento, online, 22.04.2021.

During the meeting, problems caused by the lack of waste management systems in port areas for waste caught unintentionally by fishermen were discussed. The critical issues highlighted how the current policies and laws fail to address the need to be able to manage this waste as MSW without it being lumped together with special waste. The use in fishing and aquaculture equipment, such as polystyrene crates and plastic mussel socks that are often lost at sea, was also discussed. The solutions proposed were suggested by the experts of the University of Salento and were also based on the good practices already adopted by the Porto Cesareo Marine Protected Area such as the use of compactors in ports and controlled-access waste disposal areas, the adoption of SEA BIN automatic devices for collecting floating waste and carrying out scientific monitoring in collaboration with fishermen who use trawl nets in order to adopt targeted management actions.

- 2) An in-person workshop with fishermen held on 5 June 2021 at the Tricase porto naval league with 26 participants entitled: **“Waste in the marine environment: good practices for involving fishermen in combating marine litter and pollution”**.



Image 3 Meeting with Salento fishermen, Tricase Porto, 05.06.2021.

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In particular, the workshop provided an opportunity to communicate scientific evidence on the issue of marine litter and showcase the initiatives to mitigate the problem that have been developed and implemented to date at both the international and local levels. This was followed by an open discussion with the fishermen who highlighted the critical legislative issues that affect their profession and lead to inefficient management of the waste caught and produced by discarded fishing equipment. However, they also showed an interest in potentially implementing the proposed good practices and were willing to collaborate.

- 3) An online workshop via ZOOM on 15 November 2021, entitled "**School education and initiatives to tackle marine litter and marine pollution**" with 59 participants including teachers of secondary schools of first and second grade, directors, school staff and speakers from Ciheam Bari, researchers, environmental b-corps, Legambiente and voluntary associations. The topics discussed included worldwide initiatives involving schools, what the limitations of each of these initiatives are and how they can be overcome. Italian examples of virtuous initiatives for involving schools were also presented by Giuseppe Internò of the Plasticaquà association, Annarosa De Luca of the B-corporation Invento Innovation Lab, and Valentina Mazzarelli of Festambiente. Afterwards, there was time to hear the thoughts of the teachers, who pointed out that they require a lot of support with the environmental and sustainability education initiative. They also mentioned the contradiction between the messages they try to convey during awareness-raising projects and the consumerist and capitalist culture that is also present within the institution i.e., snack and soft drink vending machines.



Image 4 Meeting with students, teachers and school directors from Salento, online, 15.11.2021.

Furthermore, the need for a ministerial initiative that is not limited to one-off projects but that will include environmental education in the curricula of schools at all levels was also discussed. In any event, it was recognised that there is a possibility for schools to create synergies with local and non-local organisations working in the field of environmental education, and there are also a large number of free resources available online.



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- 4) An in-person Workshop on 1 September 2022 entitled **"Plastic waste and ghost nets: good practices and the involvement of fishermen to tackle marine pollution"** at the CIHEAM headquarters at the Avamposto Mare in Tricase porto, involving 44 participants including fishermen, local authorities, maritime authorities and the general public. The workshop focused on technological and scientific developments, especially in the area of citizen science, for the detection and possible removal of ghost nets, waste that has a significant impact on the marine ecosystem.



Image 5 Meeting with fishermen, maritime authorities, administrations and civil society in Salento, Tricase Porto, 01.09.2022.

For this purpose, a special application for mobile devices has been developed for geo-referencing marine litter and other critical environmental issues and creating a database of locations where action can be taken. This was followed by a lecture by Piero Carlino of the Calimera Sea Turtle Rescue Centre on first aid practices for these animals in the event that they are accidentally captured or discovered in distress at sea or along the coast.

In **Maremma**, five specific meetings were held for each stakeholder category involved in the project. More specifically:

- 1) On 7 November 2020, the first meeting with fishermen entitled **"Fisheries and marine litter, the experience of those working in the maritime sector: problems, priorities and proposals"** took



Image 6 First meeting with Maremma fishermen, online, 07.11.2020.

place online and was attended by 17 fishermen and representatives of the FLAG and fishing cooperatives and 4 representatives of local authorities. Those working in the sector all agreed to implement actions to combat the issue of plastic in the sea, in particular by transporting waste collected when fishing ashore. However, all participants raised the critical issue of legislation that prohibits fishing for litter from becoming standard practice, thereby blocking initiatives already introduced by virtuous authorities (such as that of Castiglione della Pescaia). Proposals: insert chips in fishing nets to locate them if they are lost; the fishermen asked for waste containers to be put in their boats; willingness to collect unintentionally caught waste and take it ashore but to a suitable facility; proposal to reuse waste brought ashore.

- 2) On 15 December 2020, an online webinar was held with experts from Legambiente and the University of Siena on "**Waste management and issues related to beach and marina litter**". The webinar was aimed at schools and was attended by about 70 students and their teachers.

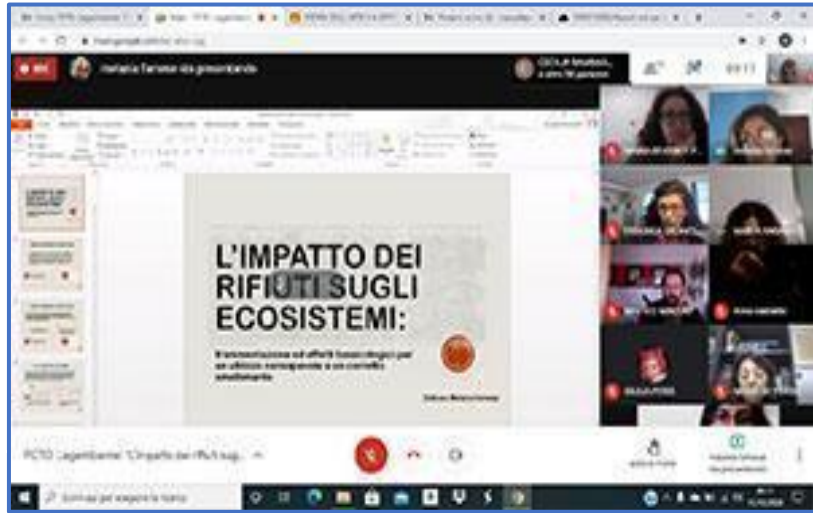


Image 7 Meeting with students from Maremma, online, 15.12.2020.

The webinar was attended by classes from college Liceo Artistico - Polo Liceale Luciano Biancardi in Grosseto. The speakers were Melania Fernese, eco-toxicologist at Festambiente (Legambiente) and Matteo Bani, researcher at the University of Siena. Students were informed about the problem of marine litter and what causes it, how waste management takes place and how it can be improved, including the approach underlying the integrated management of coastal areas. The more scientific aspects of marine litter, its severity and impacts, especially in terms of ecotoxicology on the fish species analysed as part of the Common project, were also explored. There was no shortage of good practices to make combating this phenomenon and the pooling of local experiences more effective.

- 3) On 3 March 2021, an online meeting was held with tourist operators entitled “**Tourism and Waste Management. Problems, experiences, proposals**” attended by 12 representatives of tourist and economic activities on the Maremma coast and 4 representatives of local authorities. The tourist operators agreed that smoking should be banned on the beach, and this is a goal that can easily be achieved by means of a smoke-free regulation extended to as many municipalities as possible. All attendees stressed the fact that there is a need to reinforce the awareness campaign aimed at tourists and citizens. Waste collection must be improved and waste sorting better organised. There is a need to network and to disseminate, replicate and systemise the best practices implemented in the area. Tourist operators should be educated on the matter and held accountable even during the winter months to ensure that they take care of the stretch of beach for which they are

responsible (as a minimum). More generally, they should be supported in carrying out awareness-raising activities and implementing best practices (they are the sentinels).



- 4) On 1 April 2022, the second meeting for fishermen was held at the University of Grosseto. **"Fishing and marine litter. The impact of marine litter on the supply chain, priorities and proposals from the first Common monitoring data in Maremma"**.

The meeting was targeted at fishermen and local administrators. During the meeting, preliminary data from the monitoring of beaches and seas in the Maremma area carried out as part of the COMMON project were presented. In addition, updates were given on new regulations, in particular Legislative Decrees 196 and 197 of 8/11/2021, which implement two European Directives and provide robust tools for combating marine litter, both for the authorities and fishermen. In fact, unintentionally caught waste (RAP) is no longer considered as special waste but rather as municipal waste, which can and must be deposited at the recycling facilities already present at ports or which will have to be created specifically for the practice of fishing for litter. With the SUP Directive, Europe has banned a number of products, in particular certain disposable products such as cutlery, plates and straws, food and beverage containers, expanded polystyrene cups and glasses, and others, which from 14 January 2022 can no longer be used.



- 5) On 5 May 2022, a meeting was held with local authorities on **“The Common Project: integrated local objectives and actions to reduce the risks of marine litter”**. The meeting took place online and was attended by 6 representatives of the Maremma coastal authorities.

After the introduction, in which the requests raised in previous meetings were presented by all stakeholders (fishermen, bathing establishments, hoteliers, farmers, teachers), speeches were made by local authorities with the aim of clarifying: the critical issues encountered by the authorities to



improve urban waste management, the projects in place or planned in the short term, the interest in verifying the feasibility of the proposals that emerged during the meetings with the economic categories, and any other initiatives and projects to be shared.

The Maremma region is characterised by a widespread awareness of the issue of integrated waste management and possible solutions/improvements that often come up against regulatory constraints and/or agreements with the operator. These limitations have been overcome, in part, thanks to the voluntary work and/or participatory agreement of certain economic categories, primarily bathing establishments which, perhaps more than other sectors, suffer from the poor image caused by the presence of waste on the one hand, and from management problems arising from certain environmental measures such as the plastic free regulation on the other. All the municipalities have presented valid projects and experiences that deserve to be shared and replicated in the tourism sector as a minimum, if not along the entire coastal strip, because they would enhance the territory’s image and offering as well as optimise services.

I-3- Best practices collected in pilot areas:

The best practices collected, available on the Common project platform at [this link](#), are divided into two main macro themes: Management of Waste collected during fishing activity and Reduction of waste production/recycling (tourist operator, etc). A general description of the best practices is given below, while the dedicated factsheets on the Common platform provide more details, including objectives, results, future developments and technical specifications (costs, funding, reference regulations, contacts and bibliography).

The best practices collected relate to the municipalities in the project pilot areas, namely the municipalities of Grosseto, Scarlino, Castiglione della Pescaia, Piombino and Follonica in the Tuscan Maremma (all in the province of Grosseto) and Castro, Porto Cesareo, Ostuni and Taranto in Apulia.

a- Management of Waste collected during fishing activity:

1. **The Programme Agreement for the definition of “seabed cleaning”** activities was promoted by the Porto Cesareo Marine Protected Area (MPA) and implemented in cooperation with the Ministry of the Environment and the Municipality. The aim of the agreement is to establish an integrated system of activities for the collection, grouping and optimal management of waste collected when cleaning the seabed, including by promoting educational activities. Professional fishing cooperatives, diving centres, local environmental associations and the waste disposal company Ecotecnica srl were also involved.
2. The **FEP Pescamica project** was promoted by the Porto Cesareo Marine Protected Area (MPA) and implemented in collaboration with the Porto Cesareo Marine Protected Area Management Consortium (LP), the Torre Guaceto Reserve Management Consortium, and the National Inter-University Consortium for Marine Sciences (CoNISMa). The project consists of a series of activities aimed at supporting small-scale fishing in the Porto Cesareo and Torre Guaceto areas, such as mapping the seabed to identify abandoned waste in the MPA, installing geolocation devices on fishing equipment to locate them if they are lost, direct sales and hygiene practices aimed at professional fishermen belonging to the cooperatives participating in the project, activities with schools.
3. Promoted by the Municipality of Taranto and realised in collaboration with Slow Food and Novamont spa, the initiative **“Slow-food presidium for the Taranto mussel - Experimenting with compostable materials for mussel farming”** is the result of a memorandum of understanding with the company Novamont S.p.A., a leading international group in the production of bioplastics, for the development of a biodegradable and compostable mussel sock. The abandonment of these socks covering the bottom of the Mar Piccolo in Taranto is now an established practice due to their high disposal costs, borne by the mussel farmers, and the unfair competition of this unregulated market that lowers the price of mussels.



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- In 2020, the municipality of Castiglione della Pescaia (Gr), thanks to a regional call for tenders, installed in the port area of the main town a **computerised and environmentally sustainable recycling facility for the specific and differentiated collection of plastic and glass waste** collected by fishing boats at sea. The waste is then delivered to plants for recovery to ensure that it is processed correctly and soundly. Each fisherman is provided with a card granting him access to this recycling facility. The municipality has set up an area next to the facility for the collection of waste oil and batteries, which are also associated with fishing boats.

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

- In 2020, the Municipality of Grosseto created the role of **Environmental Educator**, who is responsible for anticipating, supervising, and disseminating good environmental practices, as well as verifying the correct delivery, management, collection and disposal of waste produced in the municipal area; the purpose of such activities is to protect the soil, the landscape and the environment. It is possible to become an environmental educator by taking a course organised by the municipality. The purpose is to identify and correct problems relating to proper conduct for waste separation and, at the same time, raise awareness of the waste problem from all perspectives.
- Since 2021, the Municipality of Grosseto together with the Associazione Balneari di Grosseto, Lions Distretto 108La, Sei Toscana, Pro Loco di Marina e Principina, +Three, have organised the event **Estate Clean** whereby the Municipality's beaches are cleaned and art exhibitions on the theme of waste and awareness-raising activities take place.
- Since 2019, the Municipality of Grosseto, together with Sei Toscana, Banca Tema Unicoop, Tirreno Consorzio Bonifica 6 Toscana Sud and Revet has **organised two competitions for schools**. The first competition aimed to encourage separate waste collection, including that of electronic equipment, in all schools in the area, actively involving school staff, students and their families. A cash prize was awarded to the best performing schools. For the second competition, the students taking part created a poster showing the correct way to dispose of waste in the various bins, which was to be displayed on computerised stations in the city.
- The municipality of Orbetello (Gr) made an agreement with eight bathing establishments entitled **"Nature gives us the sun; we give you the shade"**. Under the agreement, the municipality granted the business owners an extension of the state licence in exchange for some additional maintenance work, i.e. taking care of a stretch of free beach, which would remain free but under the care of the managers of the neighbouring bathing establishments. The aim was to increase the distance between beach umbrellas, but also to have bathing establishments maintain the cleanliness of areas of free beach throughout the summer season.
- In 2021, the municipality of Piombino issued a **smoking ban at bathing establishments**. Anyone failing to comply with the ban on smoking on municipal beaches will be subject to a fine of between 25 and 500 euros. The ban shall be clearly signposted with special signs displayed at the places concerned. Information and awareness-raising campaigns have also been implemented.
- The municipality of Castiglione della Pescaia (Gr) issued a **plastic free resolution** requiring traders, private individuals, associations and organisations at public festivals and events **to only provide the public, visitors and tourists with crockery, straws, ice-cream scoops and disposable bags made of paper or other biodegradable and compostable material, and reusable net, cloth or fabric carrier**



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bags. The aims are: to reduce the production of waste, to increase and promote separate waste collection, to make waste disposal more economical by increasing the share of waste disposed of in less costly ways (composting), to decrease the use of non-renewable raw materials by favouring the use of renewable raw materials such as bioplastics, to use public events to promote an environmentally friendly culture and raise awareness.

11. Thanks to the **“Our Waters” project**, the municipality of Castiglione della Pescaia (Gr), together with COOP Italia and LIFE GATE, installed two **Sea-bin baskets** in the port of Castiglione della Pescaia and the marina of Punta Ala **to catch marine waste**. This device essentially consists of an electric basket that generates a small vortex at the surface of the water, thereby “catching” the waste it attracts. The aim of this project is to reduce marine litter in ports and to raise awareness of plastic pollution among the local population.
12. Through the **“Poseidon” project**, the Municipality of Castiglione della Pescaia (Gr), together with SEI TOSCANA, aims to **manage and recycle beached plant biomass**, in particular Posidonia oceanica, in an environmentally sustainable manner. Today, the most common practice is to remove it or bury it on site, which has both economic and environmental costs. The project thus aims to transform Posidonia from waste into a resource, using it for the manufacture of biodegradable composite material, cosmetics and more.
13. The municipalities of Castiglione della Pescaia (Gr), Isola del Giglio, Monte Argentario (Porto Santo Stefano and Porto Ercole) and Manciano together with the Acquedotto del Fiora and Cassa di Risparmio di Firenze have implemented a project called “Drink without plastic” for which more than **2000 water bottles will be delivered and 14 systems, including water houses and naturalized water dispensers, will be installed in the municipalities' schools**. The municipality of Castiglione della Pescaia will reuse any replaced naturalized water **dispensers** by relocating them in municipal buildings and public facilities. The aim is to involve schools in reducing the use of plastic and encouraging the conscious and rational consumption of water by promoting the use of public water.
14. Through its **project "Acqua in caraffa" - "Water in carafe"**, the Municipality of Follonica (Gr), in collaboration with the Acquedotto del Fiora, **has provided for the restoration of the naturalized water dispensers** by changing the filters and having the water controlled by taps to ensure that all students, from the youngest to the oldest, will be able to consume public water in complete safety. The aim is to eliminate the use of plastic bottles by promoting the use of public water in order to reduce the impact of plastic produced and lower costs for households.
15. The Municipality of Follonica (Gr) with the **project "Casette dell'Acqua" - "Water houses"** has installed four systems that deliver high-quality water thanks to sanitisation and sterilisation processes that have a low environmental impact. The water supplied is regularly analysed and the results published on the municipality's website. The main aim of the project is to encourage the use of water from the aqueduct, with a simultaneous reduction in the use of plastic bottles and packaging and the associated landfill costs.
16. The Municipality of Follonica (Gr), in collaboration with Acquedotto del Fiora, approved the **"Plastic free school"** environmental project in 2019, which envisages the installation of drinking water fountains in secondary schools and in the municipal building in Follonica. Also in 2019, the municipality approved and began distributing aluminium water bottles in all preschools, primary and secondary schools in Follonica.



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17. The Municipality of Follonica has adhered to the **“Plastic Free” initiative implemented by the Ministry of the Environment** and has committed to eliminating disposable products as far as possible, not only in municipal areas but also at bathing establishments. It has also pledged to encourage the use of public water and water bottles.
18. The municipality of Scarlino (Gr) has decided to restrict access to the beach of **Cala Violina, a natural heritage site of the highest value**. Within the Costiere di Scarlino area, waste bins have been removed and every tourist has to take their waste back to the rest area (about 1.6 km from the beach) where there are bins for separate waste collection. The area in the sea where the navigation and anchoring of boats is prohibited has also been extended. The decision not to provide waste bins was aimed at preventing littering on the beach and in the nearby wooded area. Furthermore, the entry of collection vehicles is prohibited. The aim is also to avoid an influx of people arriving by sea.
19. The **ADRINET (Adriatic Network for the Marine Ecosystem)** project was promoted by the University of Bari in cooperation with the Municipality of Castro, the Municipality of Herceg Novi and Crne Gore University in Montenegro, and Bujqesor i Tiranës University and the County Government Office in Vlora (Keshilli i Qarkut Vlore) in Albania. The project consists of a group of actions focused on refining a joint coastal management system and the creation of governance plans in order to preserve biodiversity and coastal ecosystems in the regions participating in the Programme; these territories share the same issues in terms of pollution, overfishing, illegal fishing, fish adulteration and “ghost fishing” (e.g. marine litter and traps for other fish stocks).
20. In the municipality of Taranto, the **Ecolibreria** project implemented by Plasticaquà APS in cooperation with AMIU Spa, and entirely self-financed thanks to the work of volunteers, is a project that focuses on reuse, the free dissemination of knowledge and the promotion of proper waste collection to encourage recycling. At Cimino Park, the association has launched an initiative whereby anyone who hands in 10 plastic bottles and cans, or aluminium cans is entitled to receive a donated book. The caps are separated and stored for an association in the province of Taranto, which sells them to a company in exchange for basketball wheelchairs for disabled people. The containers it receives are collected by AMIU Spa, which manages waste in the municipality of Taranto and sends them to the CIAL and COREPLA consortia. This popular initiative has been replicated in several locations by volunteers from other environmental associations in the provinces of Ostia, Caserta and Lecco.
21. In the municipality of Ostuni, the **Archeoplastica** project has the ethical aim of raising awareness of marine pollution through its website www.archeoplastica.it. This project is the brainchild of its creator Enzo Suma, a nature guide with Millenari di Puglia, a company working to promote the territory, environmental education and, since 2018, also committed to raising awareness on the issue of plastic pollution through collective and voluntary collection days. It was during these collections that Enzo came up with the idea for the project: to use the many pieces of beach litter, some of which are over 50 years old, to inspire the observer to reflect on the problem of plastic pollution in the sea from another perspective. At the virtual museum you can see all the exhibitions, obtain information and create many live exhibitions, which is particularly useful for schools, where you can learn about what the sea has given back. The project was financed entirely by a crowdfunding campaign via the www.produzionidalbasso.com platform and thanks to the contribution of a sponsor.

I-4- Awareness actions:

During the project years, different stakeholders, who are involved or work with the sea at different levels, took part. The main objective of the project is to apply the principles of integrated coastal zone management to the management of marine waste, with wider coastal communities also participating. To this end, specific awareness-raising and outreach events were organised for the various target groups. The target groups involved were: fishermen, coastal economic-tourist operators, coastal city administrators, civil society and other environmental organisations.

The fishermen, some 26 individuals and co-operatives, attended workshops and seminars in the two pilot areas, focusing mainly on the problem of litter at sea, the impacts this litter has 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.



Image 11 Meetings and workshops with the fishermen.

In addition to specific workshops, the tourist operators (66 in total, in the 2 Italian pilot areas) also took part in the **BEach CLEAN** summer awareness **campaign**. The 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

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the dynamics that could affect the presence of waste on the beaches and to assess the effectiveness of this campaign.



Image 12 Event during the BEach CLEAN campaign.



Image 13 Leaflet distributed to bathing establishment operators as part of the BEach CLEAN campaign.

To bring about real change it is crucial that administrators participate. 19 municipalities were contacted and involved in working discussions, both individually and with other stakeholders. In addition, the project partners are working on the creation of a **Network of Coastal Cities against Marine Litter**, which will be a useful way of disseminating and sharing data and best practices: so far we have collected and shared 21 different best practices.

Civil society was mainly involved in beach cleaning operations and awareness-raising activities through Legambiente's longstanding **Clean Up The Med** campaign and beach litter monitoring. Across the three editions of the Clean Up The Med campaign, 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. Over the course of the project, more than 120 beaches across Italy were monitored using this methodology.



Image 14 Clean Up The Med Campaign.



Image 15 Beach cleaning events.

Finally, **contests (2 editions)** 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 10 classes took part from the Maremma and Salento regions. 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. In Maremma,

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the competition was reserved for secondary school classes in comprehensive schools in municipalities in the province of Grosseto, while in Salento it was reserved for comprehensive schools located in the municipalities of Ugento, Tricase and Taranto. In both pilot areas, the competition aimed to promote and support schools' commitments to environmental education, with a particular emphasis on the fight against the pollution of marine and coastal ecosystems. The competition consisted of submitting an entry in the following categories:

- Graphic design/art;
- Literature (poetry, short story...);
- Multimedia (video, PowerPoint presentation, games, interactive books).

The contest winners were awarded gifts, including T-shirts and water bottles, and attended a special meeting led by Legambiente experts for the schools in Maremma and by experts from the Iam Istituto Agronomico Mediterraneo in Bari for the schools in Salento.

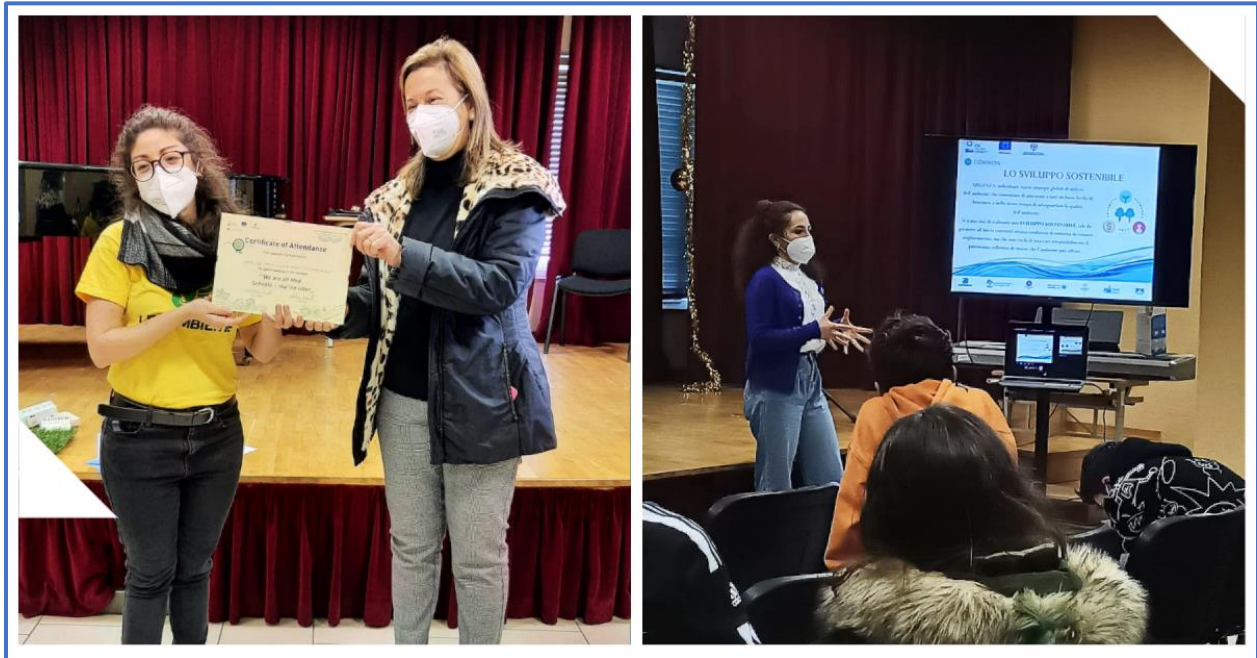


Image 16 Awarding and educating students in schools.

I-5- Creation and support of networks:

The main source of the waste found along coastlines and dispersed at sea is land-based activities and, more specifically, the mismanagement of such activities 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. Various stakeholders were



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involved in the activities of the **Local Working Groups**, first separately, and then by facilitating the comparison and constructive exchange of different perspectives.

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”](#).

Meetings	Title of meeting	Number of involved people with their affiliations
1. 8 June 2021 - hybrid format	“National meeting: working towards the Coastal Cities Network to combat marine litter in the Mediterranean”	24 in-person and 9 online participants from 12 municipalities (6 in Maremma and 6 in Salento)
2. 9 February 2022 - online	"Coastal cities against marine litter - the Mediterranean platform for sharing good practices".	22 online participants from 13 municipalities (6 in Maremma and 7 in Salento)
3. 12 December 2022 hybrid format	“From rubbish to resource - Research and innovation to ensure sustainability and foster integrated waste management within the Coastal Cities Network”	24 in-person and 4 online participants from 9 municipalities

Table 3 Specific meetings dedicated to the construction of the network of coastal cities.



Image 17 National meeting: working towards the Coastal Cities Network, Tricase Porto, 8.06.2021.



Image 18 Coastal Cities Network Meeting, Castiglione della Pescaia, 12.12.2022.

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. **Sea Turtle Rescue Centres** carry out first aid on sea turtles,

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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. In May, the first international in-person workshop for turtle rescue centres was held and saw 10 rescue centres from the Mediterranean participating.

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. The data collected thus far come from 7 rescue centres: 6 of these are located in Italy (CRT Talamone, Sea Observatory - Asinara Island, MPA Regno di Nettuno, CRT Aegedian Islands, CRT Manfredonia, Sea turtle research, rescue and rehabilitation centre, Natural History Museum of Salento).

Meetings	Title of meeting	Number of involved people with their affiliations
1. 5 March 2021, online	Med Turtle Rescue: the charter of intent to protect sea turtles	44 participants including 17 from Turtle Rescue Centres and Marine Protected Areas
2. 12-14 July 2022	"Monitoring marine litter in environment and biodiversity"	41 in-person and 5 online participants

Table 4 Specific meetings dedicated to creating the network of turtle rescue centres.



Image 19 Turtle Rescue Centre meeting, Manfredonia, 12-14.07.2022.

II- Recommendations to tackle marine litter:

Categorisation of the recommendations collected from different project actions, as well as recommendations according to our own experiences

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

Scientific monitoring that follows standardised protocols is necessary to obtain specific information on the abundance and distribution of marine litter (macroplastics, microplastics, for example) in different environmental areas (beach, sea surface, water column, seabed). Using these shared protocols during monitoring operations also allows data collected in the different sampling areas to be compared by the different bodies involved (universities and research organisations, for example). It is only by analysing the results obtained from monitoring activities that it is possible to plan and implement targeted and effective mitigation actions in the areas investigated.

In addition, the innovative approach used in the COMMON project, adopted from the Plastic Busters initiative, is recommended for quantifying the eco-toxicological impacts of ingested marine litter on marine fauna. The 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.

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

To ensure the success of the project, it was 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. When working with authorities, 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. Only in this way can the involvement of an authority be effective and constructive and help develop skills that can be utilised long after the completion of the project.

Comparison between authorities, whether from the same geographical area or further afield, is highly recommended. For some practices, working together can help initiatives spread faster and more effectively. Based on the experiences shared during the Common meetings, authorities could share some specific campaigns, e.g.: an information and awareness-raising campaign among neighbouring coastal municipalities; making public offices and schools plastic free; identifying joint projects/funds/grants that could improve waste collection or make some activities (e.g. fishing) more sustainable; incentivising collaboration with bathing establishments, fishermen and divers through protocols and initiatives that



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award a benefit; launching technical discussions among municipalities to study the feasibility of joint resolutions (e.g. to make beaches smoke free without penalising tourists and residents that smoke).

II-3- Best practices collected in pilot areas:

The exchange of best practices represents a bottom-up approach to finding solutions to the problem of marine plastic waste pollution. The sharing of best practices fuelled constructive dialogues during meetings with authorities and schools, and the use of an online platform for the exchange of best practices proved to be a valuable tool to leave a lasting mark, inspiring and developing new synergies at local level. The data collected, as they have been compiled, also provide a reference to the economic and regulatory framework underpinning each good practice implemented, as well as the details of a contact person. In terms of the experience gained from the project, simpler and cheaper practices have a longer lifespan and greater replicability; however, the “potential” innovative effects resulting from experimentation and research projects makes them necessary for the development of future scenarios.

Another interesting aspect that has been observed is that initiatives proposed by organisations of national importance ensure a more widely, and perhaps more easily, accession. In Italy, for example, the Ministry of the Environment launched a Plastic free campaign that has been taken up by several municipal authorities and other public bodies nationwide.

II-4- Awareness actions:

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. Providing correct information, simplifying complex concepts and conveying a principle of widespread responsibility serves to create and consolidate the awareness and critical thinking of a critical mass that will provoke a change in the market, social relations, daily life and consumption habits. 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. Another important focus is the training of individual teachers, who must be prepared and kept up to date on current topics such as climate change, pollution of inland and marine waters by plastic waste and the protection of biodiversity. 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.

At the heart of the network, however, is the involvement of the same type of stakeholders, or subjects with one or more common interests, who should be contacted and involved in meetings and discussions. Providing training sessions with experts in the field is not only helpful to raise awareness of the specific problem but also to raise awareness of possible solutions that already exist.

In order to capitalise on the work done, it is important that within the network there is a logical and operational continuity across the various meetings. As such, the participating entities should work with the same spokesperson to ensure that progress is made with regard to the objectives of achieving operational results that the stakeholders alone could not attain. Another prerequisite is that there should be internal consistency between the network's intentions and activities and the individual activities of the participating organisations, a requirement that is taken for granted but is not always clear and could lead to delays in achieving the objectives; the exchange of data and information is the foundation of the network's smooth operation.



Conclusions

The problem of waste at sea and its impact is complex and like all complex problems there is no simple solution. The causes, the dynamics of dispersal, and the fate of waste lost at sea are still not fully understood. As such, knowledge of the phenomenon needs to be deepened in order to address it in the most appropriate way. The implementation of mitigation and awareness-raising activities that are fully effective is slowed down, and sometimes completely impeded, by existing socio-economic and political dynamics that are difficult to act on. Nevertheless, politicians must take urgent action to improve waste management, including by banning individual categories of objects, taking into account the principles of integrated coastal zone management, and involving the business communities active in the territories. The transition to a circular economy must be implemented as soon as possible, at national and local level, by involving both businesses and civil society. Businesses and industry must change course and think in terms of sustainability and reducing the impact of their products as much as possible.

Furthermore, waste in the sea moves freely with no regard for borders, which makes it even more complicated to assess the effects of preventive actions implemented in certain countries, especially in a closed basin such as the Mediterranean Sea. It is for these reasons that the countries bordering this important basin need to work together to fully understand the phenomenon and implement strategic actions, regulations, and shared and replicable laws to combat marine litter. Sharing experiences and good practices, as well as data and protocols for monitoring and analysis, is crucial to this process.

Finally, the involvement of civil society, businesses and authorities must be a driver of fundamental change in waste production, consumption and management habits.

Thanks to the experience gained through the Common project, many actions can be implemented on various levels and with different perspectives, as described in this document and summarised below.

Short term:

II1: Use standardised and common protocols to assess the quantity and impacts of marine litter (macro and micro) in different environmental compartments. Adopt a “threefold” approach for eco-toxicological analyses to make a more complete assessment of the real impact of marine organisms’ ingestion of plastic debris.

II2: Encouraging meetings and discussions between the authorities involved is highly recommended. Organising training sessions to broaden the level of knowledge of the phenomenon and act in a coherent and conscious manner.

II3: Work on identifying and communicating good practices and organising events to disseminate them, including to the general public. For some practices, working together can help initiatives spread faster and more effectively.



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II4: Encourage schools to be engaged with raising awareness of the value of biodiversity and the integrity of ecosystems beyond individual projects.

Medium term:

II1: Continue with data collection, proceeding with evaluations of spatial and temporal trends

II2: For projects involving the authorities, it is useful to identify a fixed contact person within these bodies, who follows developments and actively participates in meetings. Only in this way can the involvement of an authority be effective and constructive and help develop skills that can be utilised long after the completion of the project.

II2: Create a shared information and awareness campaign across neighbouring coastal municipalities

II4: Involve teachers in training and refresher programmes on ecology, zoology and biodiversity conservation.

Long term:

II1: Continue with data collection, proceeding with evaluations of spatial and temporal trends. Integrate data collection and analysis with the evaluation of the effectiveness of the mitigation measures implemented.

II2: keep the connection between science and policy alive and facilitate contacts between the administrative world and the local economic entities.

II3: Maintain and continue to integrate and develop the tool for disseminating best practices by promoting its use and consultation in schools, associations, authorities and among the general public. In particular, encourage its use for simpler practices and for replicability within the reach of the various users.

II4: Conveying a concept of widespread responsibility serves to raise and strengthen awareness of a critical mass that will provoke a change in the market, social relations, daily life and consumption habits.

II5: Keep up the momentum of the network by organising discussions and training events.

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