Tackling marine litter in the Mediterranean, from research to action

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Legambiente
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Legambiente is one of the largest environmental organization in Italy, created in 1980 for the safeguard of the environment, for the promotion of sustainable.

Goletta Verde is the widest campaign of analysis and information about sea pollution even promoted and conducted by an environmental organization. Every Summer, since 1986, it monitored the quality of Italian seas.

With this activity Legambiente want to contribute to the Marine Strategy Directive (2008/56), which requires Member States to monitor the state of seas and take the measures needed to reach or maintain its ‘good environmental status’ by 2020.
floating **macro** litter in italian seas

in conjunction with ISPRA NAT-BIO and Accademia del Leviatano ONLUS

**In 2016:**

The average concentration of wastes in the investigated area is **57,6 items of waste / sq km of the sea**

The **95.7%** of the waste monitored consists of **plastic**.

<table>
<thead>
<tr>
<th>Most common waste</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bags</td>
<td>16,2%</td>
</tr>
<tr>
<td>Sheets</td>
<td>9,6%</td>
</tr>
<tr>
<td>Net/Lines</td>
<td>3,6%</td>
</tr>
<tr>
<td>Polystyrene other</td>
<td>3,1%</td>
</tr>
<tr>
<td>Bottles</td>
<td>2,5%</td>
</tr>
<tr>
<td>Caps/Lids</td>
<td>2,5%</td>
</tr>
<tr>
<td>Tableware</td>
<td>2,2%</td>
</tr>
<tr>
<td>Sanitary towels</td>
<td>1,8%</td>
</tr>
<tr>
<td>Polystyrene box</td>
<td>1,6%</td>
</tr>
<tr>
<td>Other Plastic</td>
<td>49,2%</td>
</tr>
</tbody>
</table>

Among the **most common objects** there are single-use plastics, in particular **plastic bags**, and other object that could be linked to **fishing activities** (as net and lines, or polystyrene box for example).
Microplastic particles were found in each sampling area and in all the samples.

The more important aspect of this study is that we found high values of plastic litter density even in the areas located far from the inland input zones, with the lowest human density and the lack of industrial activities as islands are.
There is a growing awareness that even freshwaters are not immune to this problem, a new and dangerous menace for these fragile semi closed systems, which might be more sensitive to the presence of waste, and in particular to the micro particles, which originate.

Micro plastic particles were found in every single sample, in every lake considered.
Science and awareness: a mediterranean connection against marine litter

by Università di Siena and Legambiente (IT) (Partnership)

The main objective of this commitment is to enforce the link between scientifc research and awareness activities on the topic of marine litter in the Mediterranean sea.

https://oceanconference.un.org/commitments/?id=20169
Monitoring beach litter in Mediterranean shores

From Marine Strategy to the citizen science

Plastic bag I’m watching you!!

This year let us keep under watch the plastic bags. Indeed this is the most common item found during the last “Clean up the MED”. In Mediterranean Seas an estimated 25 million plastic bags pollute every 1,000 km of coast and this material can trap or suffocate sea turtles, birds and marine mammals. Moreover the economic cost associated to impacts on marine ecosystems could be estimated at least 8 billion dollars per year considering the revenue loss to fisheries and the marine tourism industries, plus the cost of cleaning up beaches. This are the reasons why Legambiente encourages the local Marine protected areas communities to contribute to a cleaner beach.
The monitored beaches in the Mediterranean basin are 105 in 8 countries: Algeria, Croatia, France, Greece, Italy, Spain, Tunisia, Turkey.
Results

105 monitored beaches

58,886 items

Over 320 thousand square meters sampled

Average: 561 items every 100 meters of beach

The data was gathered in several editions of the campaign, in April and May, from 2014 and 2017. On 105 monitored beaches, over 320,000 square meters, the volunteers found over 58,000 waste, an average of 561 waste per 100 linear meters of beach.
Plastic has the highest rate (81% of the collected items). Following metal waste (4.7%), glass/ceramic (4.3%) and paper/cardboard (4%). Processed and worked wood items are the 3%. Cloth and textile (including shoes and sandals) are the 1.7% and rubber is 1.4%.
The 63% of the waste found on the beaches can be sorted in 10 specific categories. First of all the **cigarette butts** (12%). Second place for **caps and lids** (9,9%) from drink bottles or cleanser container, which are very small objects easy to scatter. In this category plastic drinks caps have the highest percentage (64%). Third place for **plastic drink bottles** (8,2%) and fourth place for **mussel and oyster nets** (7,6%, all found on Italian beaches). The fifth place is for **plastic fragments** (7,4%); it’s a very alarming fact, because it means this items have been floating and crumbling since long time. In sixth place there are **cotton bud sticks** (4,5%); this is a marker of bad water treatment considering these sticks are too often dropped in the WC. Then **disposable cups, cutlery/trays, straws, dishes; plastic bags, polystyrene pieces and other identified plastic/polystyrene items** (not in list) close out this particular merit ranking.

<table>
<thead>
<tr>
<th>Percentage</th>
<th>Waste Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>12,0%</td>
<td>Cigarette butts and filters</td>
</tr>
<tr>
<td>9,9%</td>
<td>Caps/lids (all material type)</td>
</tr>
<tr>
<td>8,2%</td>
<td>Plastic drink bottles</td>
</tr>
<tr>
<td>7,6%</td>
<td>Mussel nets, Oyster nets</td>
</tr>
<tr>
<td>7,4%</td>
<td>Plastic pieces (2,5 cm &gt;= 50 cm)</td>
</tr>
<tr>
<td>4,5%</td>
<td>Cotton bud sticks</td>
</tr>
<tr>
<td>4,0%</td>
<td>Disposable cups, cutlery /trays, straws, dishes</td>
</tr>
<tr>
<td>3,5%</td>
<td>Plastic bags</td>
</tr>
<tr>
<td>3,1%</td>
<td>Polystyrene pieces (2,5 cm &gt;= 50 cm)</td>
</tr>
<tr>
<td>2,9%</td>
<td>Other plastic/polystyrene items</td>
</tr>
</tbody>
</table>
TopTen: plastic bags

One of the largest waste in our oceans and seas are plastic bags. Around 100 billion plastic bags are produced per year and are placed in the market only in the European Union. In Mediterranean Sea an estimated 25 million plastic bags pollute every 1,000 kilometers of coast, more than 1 trillion for 46000 kilometers of the Mediterranean Sea per year.
Valuation of the sources: Mismanaged urban waste

The 62% of items from this source are packaging and plastic is the predominant material. There is also wood, paper, glass and textile packaging. Four on five they are food packaging.

Just three items (cigarettes packs, lighters and butts) proof enough the effects of a bad urban waste mismanagement. The habit to drop on the ground or bury under the sand the cigarette butts doesn’t stop and it’s common everywhere. Over 7000 butts found, equal to over 350 cigarettes packs.

Sanitary & sewage related litter

The inefficiency of water treatment systems, but sometimes also the lack of connection to the sewerage network, is only partially responsible for the presence of cotton bud sticks, but also blisters of medicines, contact lens containers, small insulin needles, napkins or applicators and other objects of this type that we find on the beaches (6% of the waste). The main responsibility lies in the bad habit of throwing standard urban waste in the toilet.
A too short life

A very interesting analysis concerns how long have been living the items found on the beaches before to become waste. The surprising data is 64% of the stranded waste are items thought and produced to be disposable or shortly used. The 27% are materials or packaging with a very short life and 37% are disposable items.
Common commitments and policies in all Med countries

**Preventing is better than cleaning up**

- Awareness raising activities among distributors/retailers and consumers can help avoid the generation of marine litter.
- Research to improve product design and efficiency of processes can prevent waste, and improve recycling and resource efficiency.
- Research to improve knowledge on sources, pathways and fate to improve existing measures and regulations and enable awareness and attitude change.
- Better implementation of existing legislation on the release of litter, on land and at sea, helps to reduce marine litter at source.
- Behavioural and system changes leading towards more sustainable production and consumption patterns.
- The application of extended producer responsibility (EPR) can help to avoid certain types of marine litter.

**Economic incentives, such as deposit refund schemes and plastic bag charges, can influence consumer choice and/or encourage different habits.**

- Bans (e.g. on plastic bags, smoking on beaches, plastic blasting in shipyards or plastic microbeads in cosmetics) can provide a cost-effective solution to avoiding marine litter.
- Investment in waste management infrastructure and wastewater treatment facilities can avoid dispersion of litter in the marine environment.

**Marine litter clean-ups are costly but necessary downstream actions.**

- Fishing for litter can be a useful final option, but can only address certain types of marine litter.
Common commitments and policies in all Med countries

Stop plastic bags in the Mediterranean Area

A BAN ON PLASTIC CARRIER BAGS IN MEDITERRANEAN AREA

CONSIDERING,

Unep states that "marine litter in the Mediterranean is a confirmed critical issue. The problem is exacerbated by the basin’s limited exchanges with other oceans, its densely populated coasts, highly developed tourism, 30% of the world’s maritime traffic passing through and various additional inputs of litter from rivers and very urbanized areas."

Plastic bags emergency. In the European Union, around 100 billion plastic bags are put on the market each year (equivalent to 190 million tons of oil consumption). Many end up in the seas or on the coast. In Mediterranean Sea an estimated 25 million plastic bags pollute every 1,000 kilometres of coast, more than 1.1 trillion for 46000 kilometres of the Mediterranean Sea per year. Total consumption of PE (HD and LD, high and low density) estimate more than 25 millions of tons in EMEA countries and low price of NAFTA pushed production and consumption in the last six months.

Plastic bags in Mediterranean coast and sea. In 2015, from April to May, was conducted a BEACH LITTER survey within “Clean-up the Med 2015”, with the contribute of many associations: 54 Mediterranean beaches (Algeria, Croatia, Greece, Italy, Portugal, Spain, Turkey, and Tunisia). The survey reported the frequency and quantity of plastic waste collected. A total of 12,000 bags were found and 180,000 pieces of plastic waste. The majority of the bags were single-use, non-decomposable and difficult to recycle.

ASK TO IMPLEMENT ASAP

- Coordinate a ban on plastic carrier bags below 100 microns except bags for primary transport (i.e. fisheries) and biodegradable and compostable certified EN 13432 or ISO 14955
- A ban on microbeads used in cosmetics and cleaning products
- A ban on cotton buds non biodegradable and compostable certified EN 13432 or ISO 14955
- Define a plan for reduction and recycling of plastic in all sector, from primary sector to retail with mandatory goals
- An international campaign to improve separate collection of urban waste with a specific focus on domestic and commercial food waste
- Funding for biodigesters and composting plant as a infrastructure for climate adaption
Best practices and lesson learnt

the strength of taking care

During 2016 monitoring activities our group of Bagheria (Sicily) found a massive presence of waste and the bay was also surrounded by unstable cement artifacts. The area was immediately reported to the authority and closed.

In 2016 Legambiente Campania join forces and carried out monitoring ion 16 beaches. This effort permit to read better data and relate them to the regional policies.

involving students in monitoring activities
Actions and policies

Legambiente’s campaign Goletta Verde and Clean up the Med in the 1000 Our Ocean actions recorded in 2016 by US State Dep.

The Our Ocean commitment map is now live. Click here to see it now

Share Your Ocean Action and Inspire the World

The U.S. State Department and Paul Allen’s Vulcan Inc. are partnering to show how together, our global community is working hard to save our oceans. With your help, we will create a public visualization of the most successful solutions, inspirational stories and significant innovations powering positive change in our seas. We will feature the greatest local achievements from NGOs, schools, local governments and individuals in a compelling visual guide that will drive the next wave of significant actions.

Has your school helped clean a local beach? Does your organization combat illegal fishing? Is your company developing a technology that
The most significant of these initiatives at the regional level are the following:

- the Italian environmental organization legambiente coordinates every spring-summer beach clean ups in the Mediterranean. "

(UNEP, 2015)
Actions and policies


Parliamentarians, the European Commission, environmentalists and industry together to define prevention policies and actions starting with the circular economy package.
We’re participated to the UN Ocean Conference of June 2017 to talk about Mediterranean sea, with special focus on marine litter.

We also promoted (with a voluntary commitment) actions and policies for preventions, as PLASTIC CARRIER BAGS BAN in all the Mediterranean areas, based on the Italian ban, launched during the COP22 in Marrakech (Morocco) in collaboration with other environmental organizations.
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MED-SEALITTER

Developing Mediterranean-specific protocols to protect biodiversity from litter impact at basin and local MPAs scales

THE PROJECT

The project aims at accomplishing and validating, within the Mediterranean basin, systematic protocols for monitoring marine litter and its potential effect on key biodiversity species. This will allow to strengthening effective management within MPAs and by coordinating conservation measures across MPAs.

PARTNERS

➔ Cinque Terre National Park and Marine Protected area, ITALY
➔ Legambiente Onlus, ITALY
➔ Italian National Institute for Environmental Protection and Research (ISPRA), ITALY
➔ University of Barcelona, SPAIN
➔ MEDASSET - Mediterranean Association to Save the Sea Turtles – GREECE
➔ University of Valencia, SPAIN
➔ Municipality of Villasimius - Capo Carbonara Marine Protected Area, ITALY
➔ Ecole Pratique des Hautes Etudes, FRANCE
➔ Hellenic Centre for Marine Research, GREECE
➔ EcoOcean Institute, FRANCE
➔ Municipality of Favignana – Managing Body of Egadi Islands Marine Protected Area, ITALY
The overall aim of the Clean Sea LIFE project, financed under the LIFE Programme, is to support the application of the Marine Strategy Framework Directive (MSFD) and EU biodiversity policy relating to marine litter.

The specific objectives are:
- To increase awareness of marine litter, empowering citizens to become part of the solution;
- To remove existing litter, including lost fishing gear, and prevent further littering;
- To promote "fishing for litter" initiatives and to train fishing industry professionals in responsible practices;
- To provide guidelines for the management of marine litter, increase exchange of knowledge and the uptake of best practices and assist authorities in achieving a Good Environmental Status of the sea, as required under the Marine Strategy Framework Directive.
https://www.legambiente.it/marinelitter/?lang=eng
The interactive map of Legambiente surveys on marine, beach and lake litter in Italy.