

## Research for REGI Committee – Actions of cities and regions in the Mediterranean Sea area to fight sea pollution



### **Mediterranean Sea under anthropogenic pressure: addressing marine pollution**

The Mediterranean Sea is a semi-enclosed basin characterised by high population density and urbanisation along the coasts, and intense maritime traffic. It has approximately 150 million inhabitants on its coasts in addition to a large number of tourists, and high levels of industrial and shipping activities that

have collectively led to a rapid increase in marine pollution. This is combined with other anthropogenic drivers of environmental change including climate (e.g., sea water temperature, heatwaves, salinity, acidification, extreme events, and sea-level rise), unsustainable land- and sea-use practices and non-indigenous species. With 15-30% of all global shipping activity, and influxes of freshwater from densely populated river catchments, the Mediterranean Sea is one of the world's most heavily affected areas for marine pollution, specifically marine litter, and plastic pollution in particular. Waste, and its management, remain a key challenge in many coastal Mediterranean countries and is a major source of marine pollution. In this context, international cooperation between EU and non-EU countries is fundamental to tackle this problem.

The Mediterranean Sea has an anti-estuarine circulation that causes this basin to act as a trap for particles including pollutants and specifically, marine litter and plastics. This unique geography and oceanographic setting, along with its high population density and inefficient waste management result in a high level of marine pollution in the Mediterranean.

The present document is the executive summary of the study on Actions of cities and regions in the Mediterranean Sea area to fight sea pollution. The full study, which is available in English can be downloaded at: <https://bit.ly/406RP7s>

Marine pollution can take many forms: (i) physical, substances that are not necessarily involved in chemical or biological reactions; (ii) chemical, substances that are involved in chemical reactions, e.g. pesticides; and (iii) biological, e.g. bacteria.

## **Mediterranean Sea as accumulation hotspot of marine litter and plastic pollution**

Due to its geomorphological configuration and its specific oceanic circulation, the Mediterranean Sea acts as a natural trap for marine litter. In the basin, 80% to 90% of marine litter is made of plastic, and it is estimated that on a yearly basis 230,000 tonnes of land-sourced plastic leak into the Sea. All the abiotic compartments are affected by this pollution, from the shores, to the surface waters, to the water column and the seabed. On the beaches, two-thirds of marine litter is comprised of just ten item types, with cigarette butts and filters being the most abundant at 27.3%, while 9 out of 10 of these items are completely or partly made of plastic. The composition of marine litter floating at the surface of the Mediterranean Sea or lying on the seafloor show a similar pattern, with plastic items representing respectively, up to 90% and 80% of the pollution. It is the same for microplastic pollution, which like macro-litter, affects all abiotic compartments of the Mediterranean Sea. Higher concentrations of these pollutants are associated with areas under high anthropogenic pressure and proximity to land-based sources of (micro)plastics. In most Mediterranean countries, the root causes of rising plastic pollution are found in the increase of plastic use, unsustainable consumption patterns, ineffective/inefficient waste management and loopholes in plastic waste management. The recreational use of Mediterranean beaches can generate up to half of the beach litter, while fisheries and aquaculture account for 2% to 15% of litter found on beaches, floating on the sea surface, or lying on the seafloor. Rough estimates show that shipping lanes can generate up to 20,000 tonnes of sea-sourced plastic litter every year.

## **Mediterranean EU nations, regions and cities - tools to fight marine pollution**

Understanding the different stages of policy creation and implementation is necessary to address marine pollution in the Mediterranean region. Policies need to address various concerns such as the management practices implemented in waste reduction and treatments, tourism, and strategies for plastic pollution and river waste management. This study specifically examines the strategies used to implement the EU single-Use plastics directive in France, Spain, Italy, and Greece and the need for a strategy to reduce plastics which includes market restrictions, improved waste management and agreements between consumers and producers. It emphasises the need for continued efforts to achieve a good environmental or ecological status for the Mediterranean. Overall, it emphasises the importance of innovation and development of effective environmental policies for unique areas like coastal Mediterranean cities, touristic coastlines and Mediterranean islands, and the urgent need to decrease sources of marine pollution in the region.

The importance of mandatory policies in reducing pollution and achieving environmental goals in coastal cities in the Mediterranean region are highlighted. It focuses on the European Union's strategy targets for key sectors, such as consumption patterns, production and waste management to promote sustainability.

Local policies tailored to specific needs are analyzed, as well as the effectiveness of cooperation and implementation. There is a need for clear targets and monitoring indicators to achieve effective science-based environmental policies. Such policies play a significant role in managing natural

resources, protecting biodiversity, and reducing marine pollution. However, measuring the effectiveness of these non-binding policies and cooperative agreements can be challenging compared to binding European directives which apply to all EU member states, and have specific and measurable targets that make it easier to evaluate their effectiveness.

Mediterranean Interreg cooperation and cohesion programs are crucial for reducing marine pollution including marine litter and stimulate the design of effective policies. A review of the main challenges and impediments that the region faces needs to be carried out with the intention of increasing their effectiveness and broadening the range of their application. The cooperation of Mediterranean countries in implementing effective legislations to fight marine pollution is fundamental for effectual reduction of waste generation.

Science-based policy and action recommendations to fight Mediterranean marine pollution should be provided according to the level of knowledge with three stages to policy creation: (a) the discovery and characterisation phase, in which the issue is recognised as a problem and initial preventive actions can be implemented; (b) the political or decision-making phase, in which the problem is framed in policy dimensions and the legislative framework is established; and (c) the management phase, in which policy decisions and management practices are put in place.

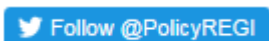
It is essential that the fight against marine pollution in the semi-enclosed Mediterranean Sea is endorsed not only by EU countries, but that regulations are implemented by all Mediterranean countries through effective cooperation and collaboration.

## Further information

This executive summary is available in the following languages: English, French, German, Italian and Spanish. The study, which is available in English, and the summaries can be downloaded at: <https://bit.ly/406RP7s>

More information on Policy Department research for REGI:

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