

Plastic Busters MPAs Final Conference  
Athens, 12-13 April 2022



# THE PLASTIC BUSTERS MPAs MARINE LITTER PREVENTION & MITIGATION ACTIONS: A SYNTHESIS

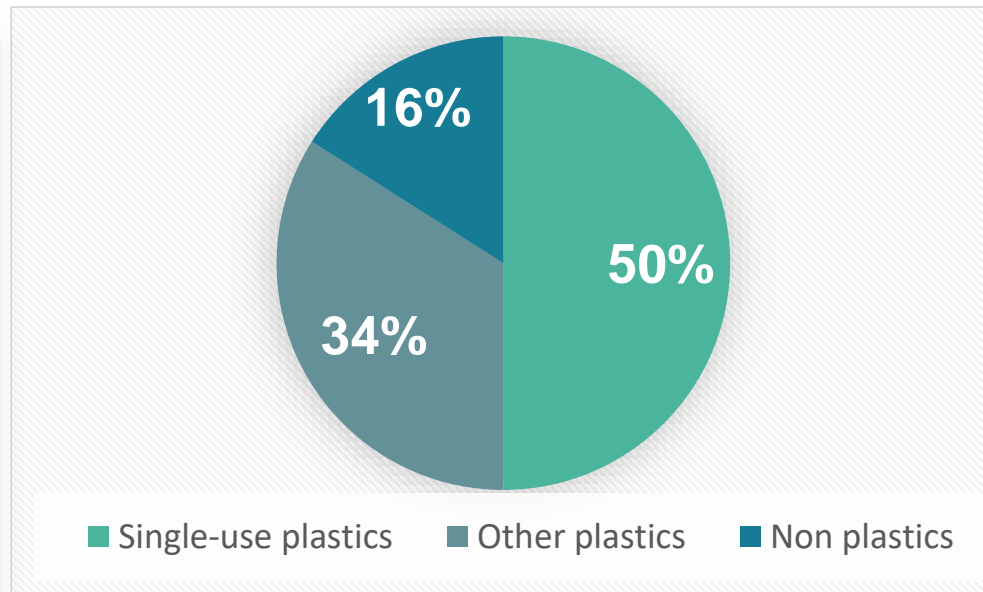
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**PhD Environmental Chemistry & Ecotoxicology**

Member of the MSFD Technical Group on Marine Litter

Member of the UNEP/MAP CORMON Group



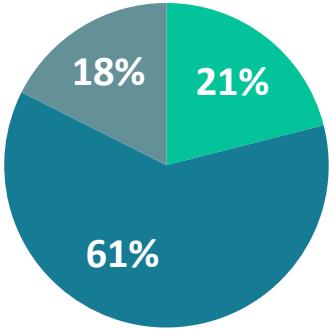
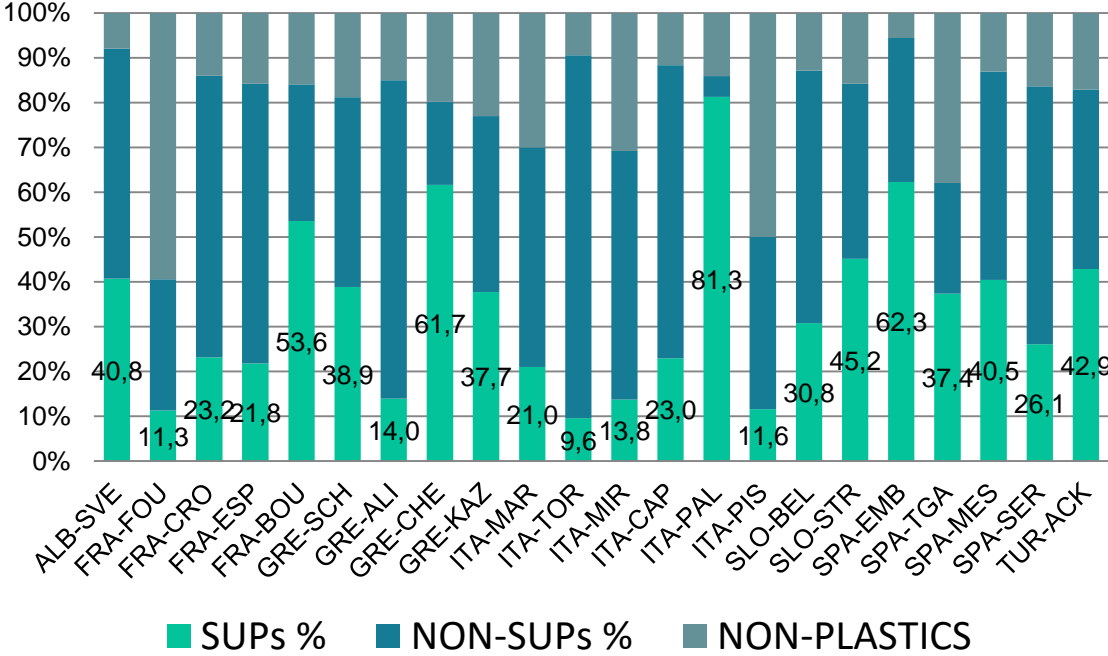
# PERCENTAGE OF SUPs FOUND ON EUROPEAN BEACHES IN 2016



Addamo, A.M., Laroche, P., Hanke, G., 2017. *Top Marine Beach Litter Items in Europe*. EUR 29249 EN, Publications Office of the European Union, Luxembourg, 2017, ISBN 978-92-79-87711-7, JRC108181.

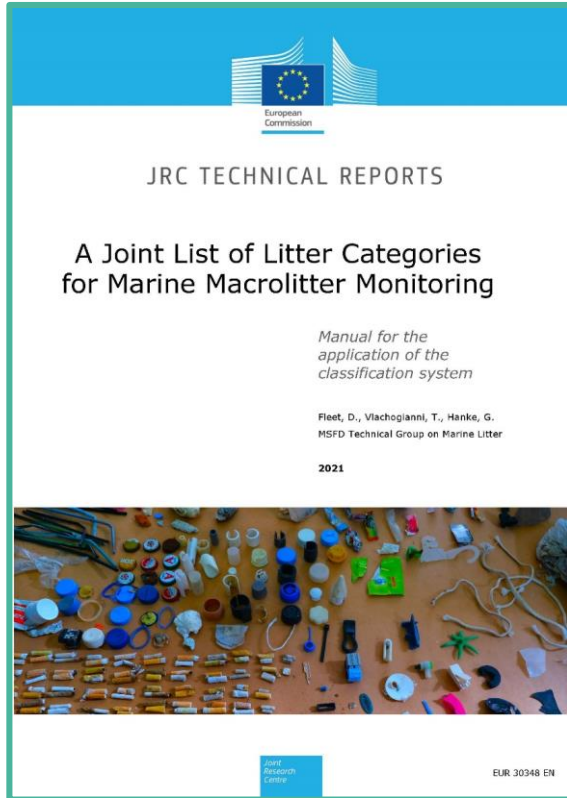
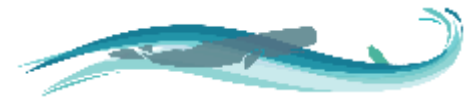


# PLASTIC POLLUTION & SUPs IN MEDITERRANEAN MPAs



Vlachogianni, 2019. Marine Litter in Mediterranean coastal and marine protected areas – How bad is it. A snapshot assessment report on the amounts, composition and sources of marine litter found on beaches. Interreg Med ACT4LITTER & MIO-ECSDE.

# THE JOINT LIST OF LITTER CATEGORIES



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MACROLITTER  
ITEMS > 2.5 CM

Beach

Sea  
surface

Fit-for-  
purpose  
data

Comparable  
data

Reliable  
data

Seafloor

Biota

THE JOINT LIST:  
A LIST FOR ALL MARINE  
COMPARTMENTS



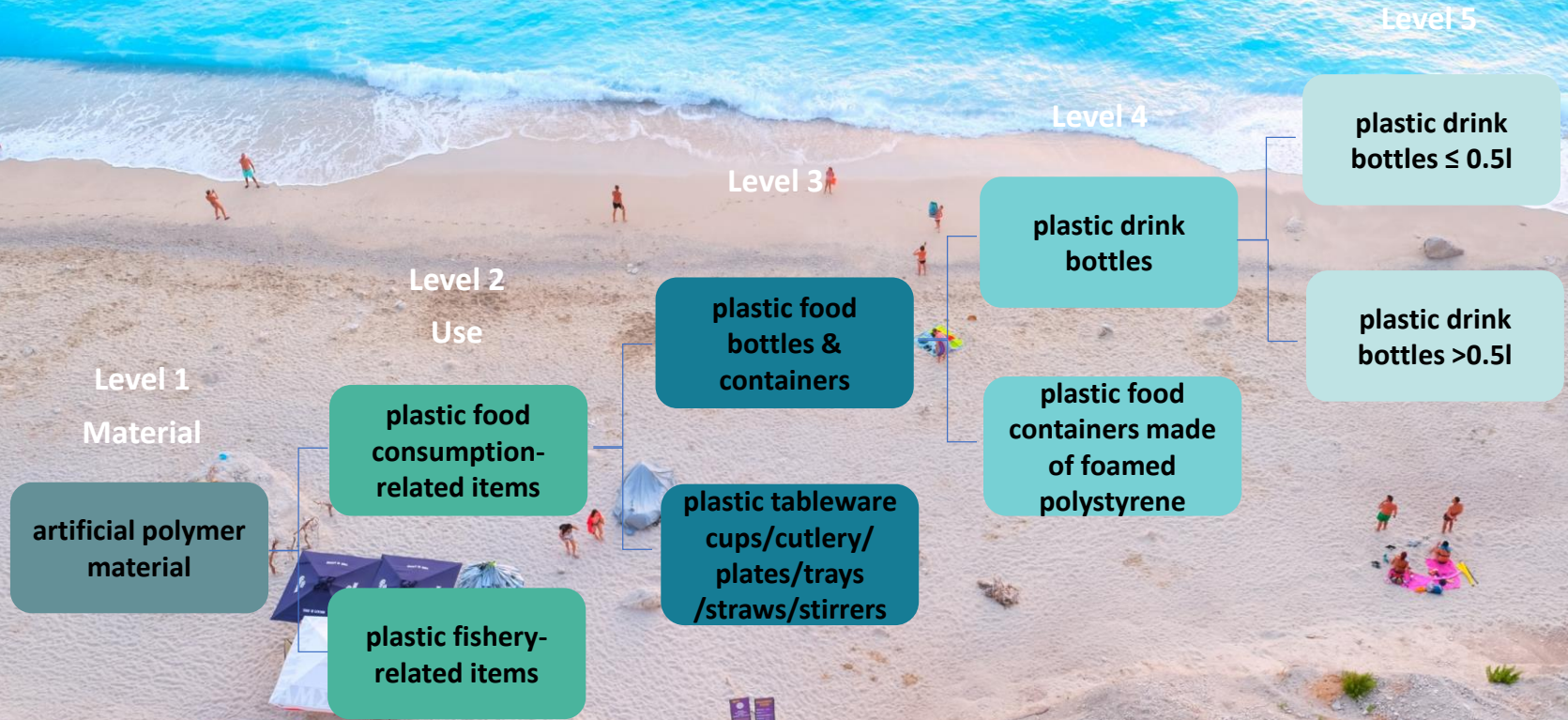
# THE USE CATEGORIES



Type-code	Name
ag_	agriculture related
aq_	aquaculture related
cl_	clothing
co_	building & construction related
fc_	food consumption related
fi_	fisheries related
hy_	personal hygiene and care related
md_	medical related
nn_	undefined use
re_	recreation related
sm_	smoking related
vk_	vehicle related
hu_	hunting related



# THE JOINT LIST & ITS HIERARCHICAL STRUCTURE



# THE MAIN TARGETED LITTER ITEMS



Bags



Cutlery



Straws



Food & beverage containers



Cups & cup lids



Plates



Stirrers





# THE MAIN TARGETED LITTER ITEMS

SEA-BASED SOURCES ARE OF PARAMOUNT IMPORTANCE IN MANY AREAS OF THE MEDITERRANEAN, INCLUDING MPAs!



Thesprotia, Greece



Lavezzi island, France



Milazzo, Italy

Sea-based

Land-based

offshore mining

shipping

fisheries and aquaculture

tourism and recreational activities

discharges of untreated municipal sewage

industrial outfalls

poor waste management

Interreg  
Mediterranean



PLASTIC BUSTERS  
MPAs

# WISE USE OF PLASTICS WITHIN A CIRCULAR ECONOMY

Source

Manufacture

Distribute

Consume

Waste



# WHAT ARE SUPs MADE OF?

## Thermoplastics

capable of being repeatedly moulded, or deformed plastically, when heated

Polyethylene Terephthalate (PET); Polypropylene (PE); Low Density Polyethylene (LDPE); High Density Polyethylene (HDPE); Polystyrene (PS); Expanded Polystyrene (EPS); Polyvinylchloride (PVC); Polycarbonate; Polypropylene (PP); Polylactic acid (PLA); Polyhydroxyalkanoates (PHA)

## Thermosets

once formed, cannot be remoulded by melting

Polyurethane (PUR), Phenolic resins, Epoxy resins, Silicone, Vinyl ester, Acrylic resins, Urea-formaldehyde (UF) resins

Polymer	Plastic product
HDPE	Milk bottles, freezer bags, shampoo bottles, ice cream containers
PET	Bottles for water and other drinks, dispensing containers for cleaning fluids, biscuit trays
LDPE	Bags, trays, containers, food packaging film
PP	Microwave dishes, potato chip bags, bottle caps
PS	Cutlery, plates and cups
EPS	Hot drink cups, insulated food packaging, protective packaging for fragile items



# BIO-BASED VS PETRO-BASED PLASTICS

## Bio-based plastics

made from renewable  
resources

## Petro-based plastics

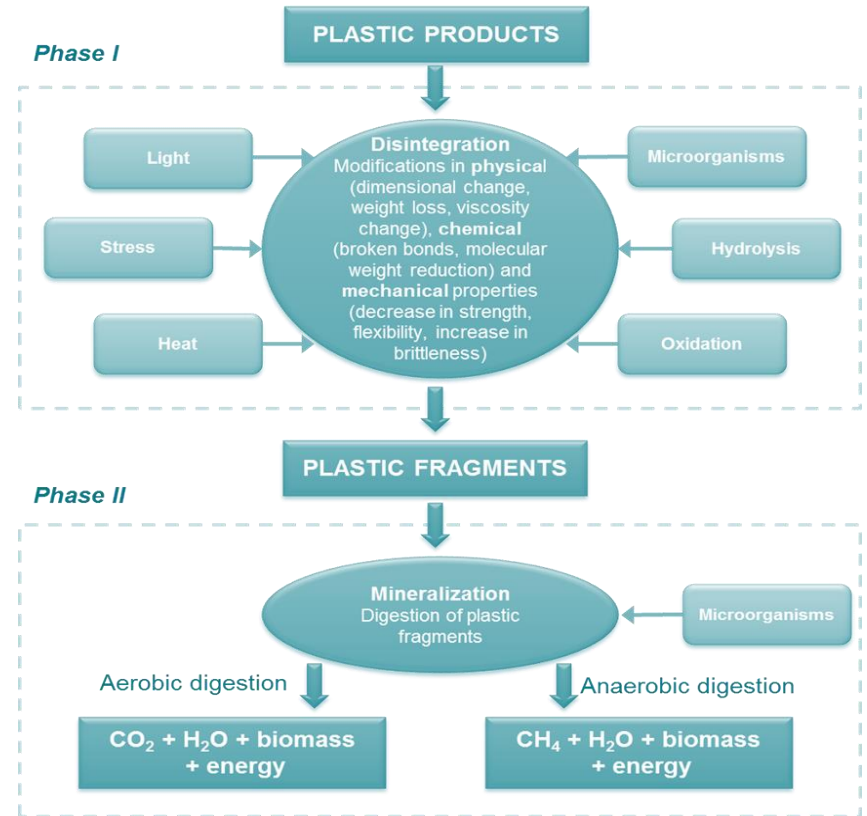
made from non-  
renewable petroleum  
based resources

- Renewable resources can include corn, potatoes, rice, soy, sugarcane, wheat, and vegetable oil.
- Two very common examples of bio-based plastics are bio-polyethylene and poly(lactide). While most of the conventional polyethylenes are produced from fossil fuel, bio-polyethylene a leading bio-based plastic is produced entirely from biomass feedstock.



# DEGRADATION OF PLASTICS

- The degradation of plastics is defined as the process that induces changes in the polymer properties (deterioration of functionality) due to chemical, physical or biological reactions.
- Depending upon the nature of the causing agents, polymer degradations have been classified as thermal- (heat), photo- (sunlight), oxidative- (oxygen), hydrolytic- (water), mechanical- (stress), and bio- (microorganisms) degradation.



# THE PLASTIC BUSTERS MPAs APPROACH TO MARINE LITTER PREVENTION & MITIGATION ACTIONS

Substituting 'conventional' plastics with biobased plastics is merely a distraction to the marine litter issue.

End-of-pipe solutions such as cleanup operations cannot address the issue.

Biodegradable and compostable plastics pollute our coasts and seas just like conventional plastics, as they behave quite differently in the marine environment than in a terrestrial setting (landfill, composter) where the conditions required for rapid biodegradation are unlikely to occur. In addition, mixing of such plastics with normal plastics in the recycling stream may compromise the properties of the newly synthesised polymer.

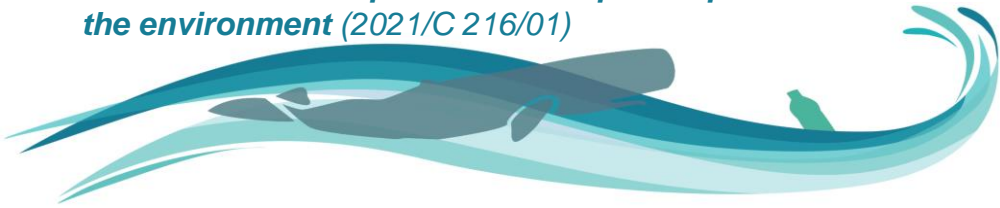
PHOTOGRAPH BY JUSTIN HOFMAN



# EC GUIDELINES ON SINGLE-USE PLASTIC PRODUCTS

‘Plastics manufactured with modified natural polymers, or plastics manufactured from bio-based, fossil or synthetic starting substances are not naturally occurring and should therefore be addressed by the SUPs Directive. The adapted definition of plastics should therefore cover polymer-based rubber items and bio-based and biodegradable plastics regardless of whether they are derived from biomass or are intended to biodegrade over time’

*Commission guidelines on single-use plastic products in accordance with Directive (EU) 2019/904 of the European Parliament and of the Council on the reduction of the impact of certain plastic products on the environment (2021/C 216/01)*



# THE EUROPEAN WASTE HIERARCHY AT THE HEART OF THE PLASTIC BUSTERS MPAS MARINE LITTER PREVENTION & MITIGATION INTERVENTIONS

## Phase out or eliminate

This option refers to the absolute removal of a SUP-related item from a business, i.e. no bottled water is given to customers.

## Reuse

This option refers to deploying a reusable alternative, i.e. by joining a reusable coffee-to-go cup scheme.

## Reduce

This option refers to the reduction of the use of a SUP-related item, i.e. by providing it to a customer only when requested (handing out a carrier bag only upon request).

## Replace with a sustainable or more sustainable alternative

This option refers to replacing a SUP-related item in use with a less harmful alternative i.e. replacing a plastic straw with a 'straw' straw or replacing a plastic cup with a FSC non-plastic-coated paper cup.

## Improve recycling

This option refers to ensuring that a SUP-related item that is necessary due to a regulation or due to the unavailability of alternatives, is fully recyclable, is appropriately collected and recycled.

ELIMINATE

REDUCE

REPLACE



# THE PILOTED & REPLICATED MEASURES



Setting up a SUPs-free network of coastal food and beverage outlets



Setting up the adopt-a-beach scheme



Establishing an ALDFG scheme to tackle fisheries & aquaculture litter



Promoting the sustainable management of mussel farming nets



Developing an awareness raising campaign for cigarette-butt free beaches

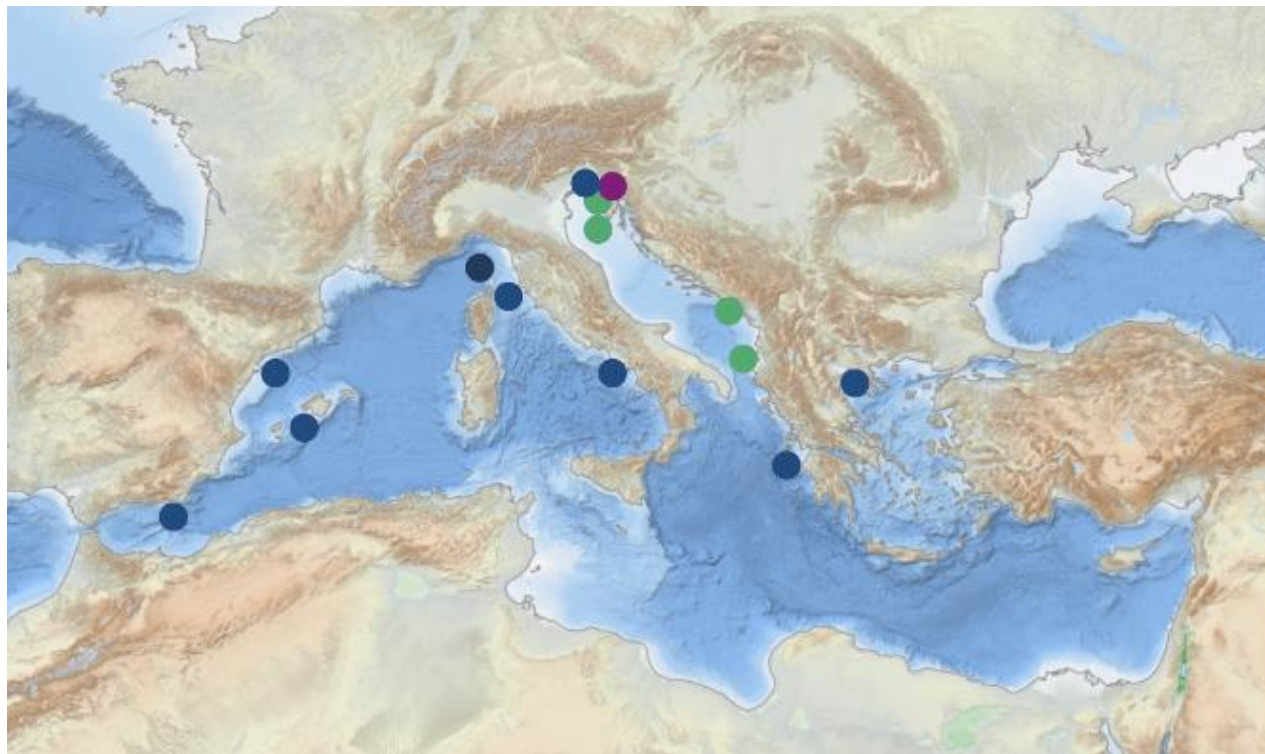


Developing a network of collection points for beverage containers



Setting up a reusable cup delivery system for beach bars

# THE PIONEERING MPAs



## ● Testing Actions

- FRANCE - Pelagos Sanctuary
- GREECE - National Marine Park of Zakynthos
- GREECE - Thermaikos Gulf Protected Areas
- ITALY - Miramare MPA
- ITALY - Pelagos Sanctuary
- ITALY - Tuscan Archipelago National Park
- SPAIN - Cabo de Gata-Níjar Natural Park
- SPAIN - Cabrera National Park
- SPAIN - Natural Park of Ebro Delta

## ● Replication Actions

- ALBANIA - Karaburun-Sazan MPA
- CROATIA - Brijuni National Park
- MONTENEGRO - Platamuni MPA
- SLOVENIA - Debeli Rtič Landscape Park

## ● Testing & Replication Actions

- SLOVENIA - Landscape Park Strunjan



# TURNING SCIENCE INTO POLICY & ACTIONS THE MAIN CHALLENGE OF OUR ERA

Fit-for-purpose  
data

Participatory  
decision-making &  
bottom up  
approaches

Feasible & effective  
solutions

Coordinated &  
multilevel actions

Methodologically-  
sound & science-  
based processes

Social innovations  
for a paradigm shift  
in the way we  
produce &  
consume

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# THE PLASTIC BUSTERS MPAS BLUEPRINT FOR A JOINT URGENT RESPONSE TO MARINE LITTER POLLUTION



The Plastic Busters MPAs showcases on how to prevent and mitigate marine litter in Mediterranean MPAs

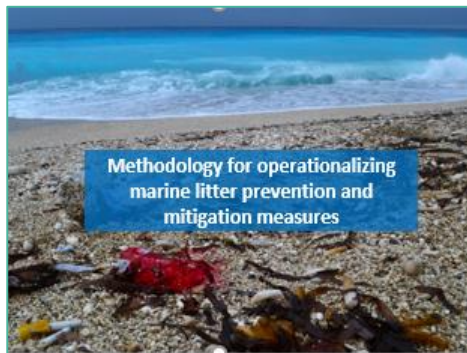
Synthesis Report

PREPARED BY  
THE INTERREG MED  
PLASTIC BUSTERS MPAS PROJECT

<https://plasticbustersmpas.interreg-med.eu>



PLASTIC BUSTERS  
MPAs



Methodology for operationalizing marine litter prevention and mitigation measures

PREPARED BY  
THE INTERREG MED  
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**Thank you!**

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[www.plasticbustersmpas.interreg-med.eu](http://www.plasticbustersmpas.interreg-med.eu)



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