

## CLAIM project: INNOVATIVE APPROACHES TO REDEFINE THE WAYS IN WHICH WE TACKLE MARINE LITTER

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**HCMR** 



Research and Innovation for blue jobs and growth in the Mediterranean Area

#### CLAIM: 2 Seas, 16 Countries, 21 partners, 48+6 months





























































#### Objectives













































Advance our knowledge on the current status of marine plastic pollution



**Fostering ecosystems:** 

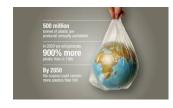
interventions to tackle marine litter issues and produce impact on human well being



**Provide innovative technologies** to reduce the amount and impact of plastic pollution



**Economic feasibility, social** acceptance, institutional framework enabling



Set the basis for **operational** forecasting of the impacts of marine plastic litter pollution



**Change policy and public** perceptions and provide advice for management decision making





### Technologies and Approaches



#### **CLEAN TRASH SYSTEM**

















#### Technologies and Approaches



PRE-FILTERING DEVICE hcmr





PHOTOCATALYTIC DEVICE



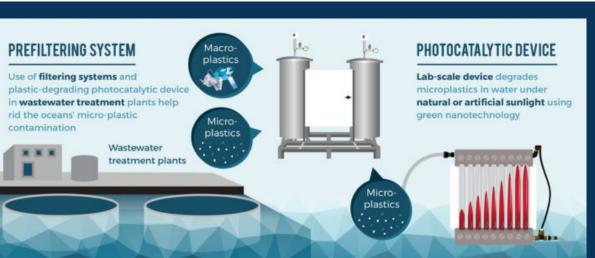






















### Technologies and Approaches









ON-BOARD SAMPLING















#### CLAIM's enhanced modelling tools include:

- Ocean circulation models
- Wave models
- Eulerian tracer drift and sedimentation
- Individual-based particle drift models
- Sustainable business models and integrated impact assessment

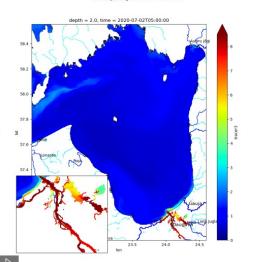


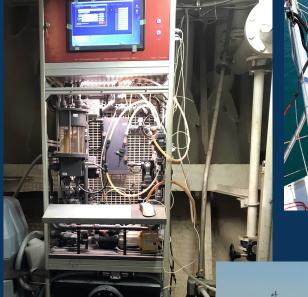


# Automated seawater sampling device and passive flow-through filtering system to assist the collection of data on the distribution of microplastics and understand their impact on marine ecosystems.



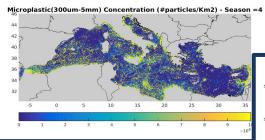


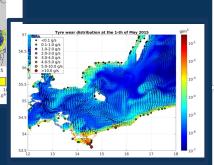












Healthy Mediterranean Sea - BlueMed Workshop for a Heal



#### Ecosystem approach













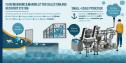


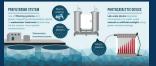




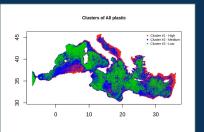


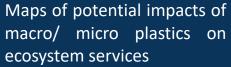


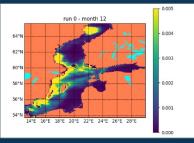












Distributions overlapped with areas of high ecological and commercial importance, thereby identify services under threat from micro and macro plastics





#### Socioeconomics

























#### Recommendations

- Enhance coordinated efforts to reduce MPL by regional sea conventions and by Directorate Generals
- Stimulate public engagement and responsibility
- Develop and deploy education programs to increase public understanding
- Strengthen extended producer responsibility





#### Dissemination – Policy Briefs

























































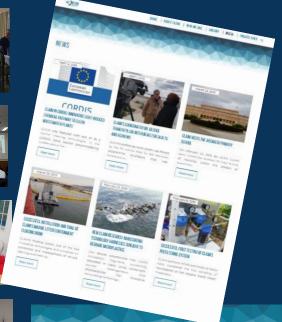














- CLAIM peer-review publications 17 + 9 in special issue in Frontiers
- Events, Stakeholder workshops, Conferences (BlueMed, UfM, OPL, Microplastics Pollution, Ocean Plastic Pollution, ...)
- Local events (Schools, Reseracher's nights,...)
- TV and Radio interviews
- Attracting venture capital (Blue Invest Forum)
- **Policy Briefs**
- Press releases
- CLAIM website (updated constantly)





## Raised Difficulties / Improvements Required blue





















- COVID-19 restrictions delayed implementation of devices and sampling/validation (limit access to labs, embarkation, work in sensitive areas-WWTPs, stakeholder surveys). Extension of the program is required to achieve all the objectives. Unforeseen until now, need to adopt measures.
- Shortage of data sets for initialization and validation of models (to describe the dynamics and pathways of MPL in the Med). Used all available data from rivers and WWTPs, surveys for data sampling in case study areas. Need for more surveys.

  Improvement: New models for macro and microplastics have been developed taking into account ecosystem processes that affect microplastics, like biofouling and degradation.

  Next step: Numerical modelling of microplastics embedded in fish and mussels.
- General knowledge about plastics / recyclability is rather low. Views on who is responsible to reduce and manage MPL vary significantly. Legislation should be updated. Prevention and management should be clear.





#### Healthy plastic-free Mediterranean













































Useful tools developed to address the impacts on key economy drivers in the Med;

Dynamic models that allow identification of hotspot areas and how they may affect ecosystem services (fisheries, aquaculture, coastal tourism, Marine Protected Areas)

## **Attracting Venture Capital**

Joint collaboration (HCMR + NNL) to promote the CLEAN TRASH system

#### Take home message



Prevent MPL at its source (Rivers, WWTPs)

New policy targets – legislation

Use technological & governance solutions, distinct for macro & micro plastic litter (MPL)

Create platforms for active engagement of key public and private sector stakeholders



#### THANK YOU

QUESTIONS?



Research and Innovation for blue jobs and growth in the Mediterranean Area





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