

# SWIM and Horizon 2020 Support Mechanism

Working for a Sustainable Mediterranean, Caring for our Future

## ML THE IMPACT IS REAL | THE MARLISCO VIDEO

### ASSESSMENT OF MARINE LITTER IN THE EGYPTIAN MEDITERRANEAN COASTLINE

19/09/2017, Alexandria, Egypt

This Project is funded by the European Union



umweltbundesamt<sup>®</sup>

ATKINS

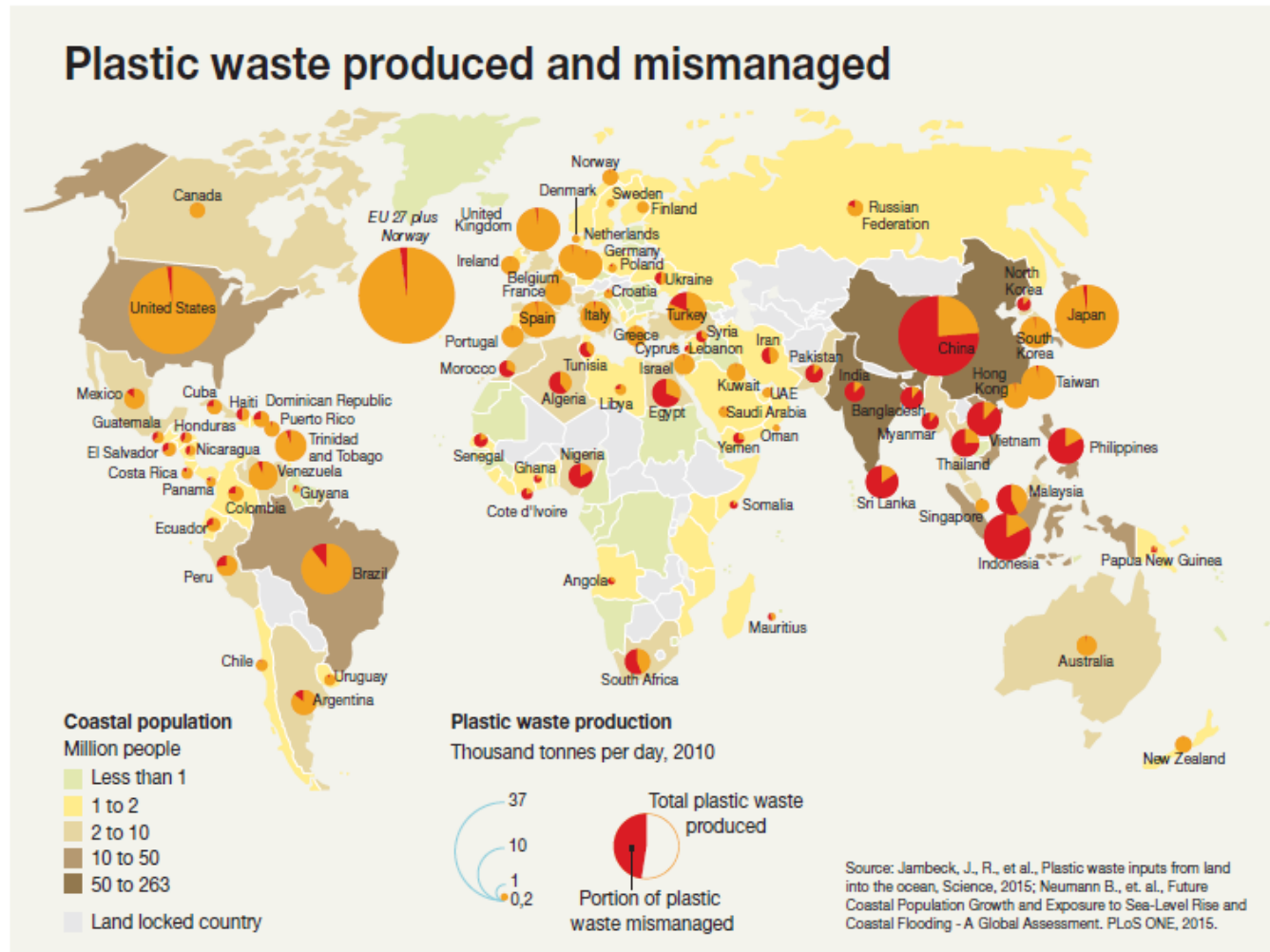
# ML DEFINITION

**Marine litter** is any persistent, manufactured or processed solid material discarded, disposed of or abandoned in the marine and coastal environment  
It may be visible (**macrolitter**), hardly visible or even invisible (**microlitter**)...



# MARINE LITTER

## A GROWING PROBLEM OF GLOBAL CONCERN

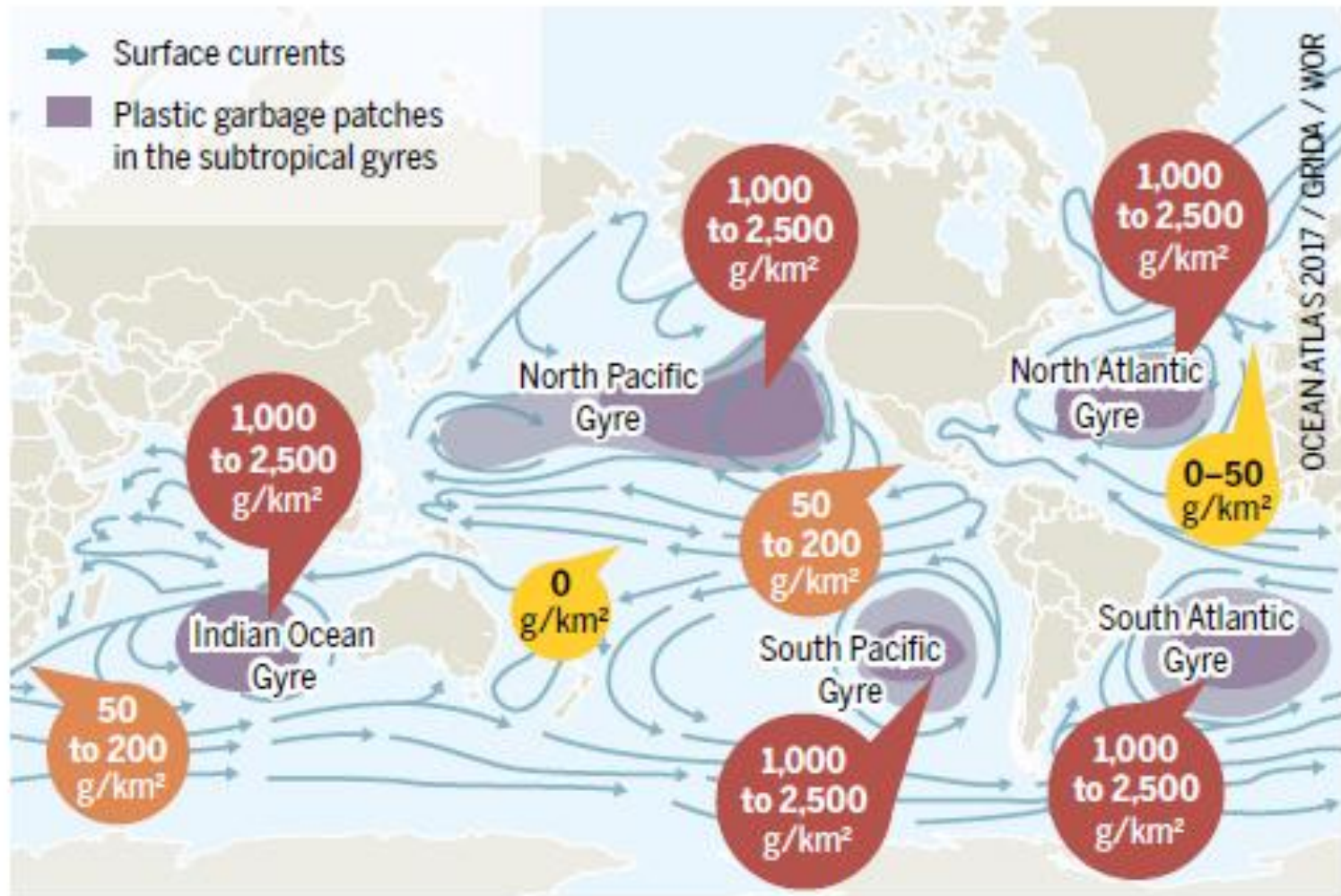


Source: UNEP and GRID-Arendal, 2016. Marine Litter Vital Graphics.  
United Nations Environment Programme and GRID-Arendal.



# WHERE DOES ALL THE **PLASTIC WASTE** WIND UP?

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Source: Ocean Atlas 2017. Heinrich Böll Foundation, the Schleswig – Holstein and the University of Kiel's Fututre Ocean Cluster of Excellence

## Sea-based

## Land-based

*Litter from land sources finds its way to the sea via rivers, drains, sewage and storm water outlets or when blown by winds, or even swept with the tide.*

offshore mining

shipping

fisheries and aquaculture

tourism and recreational activities

discharges of untreated municipal sewage

industrial outfalls

poor waste management

# WHAT DO WE KNOW?

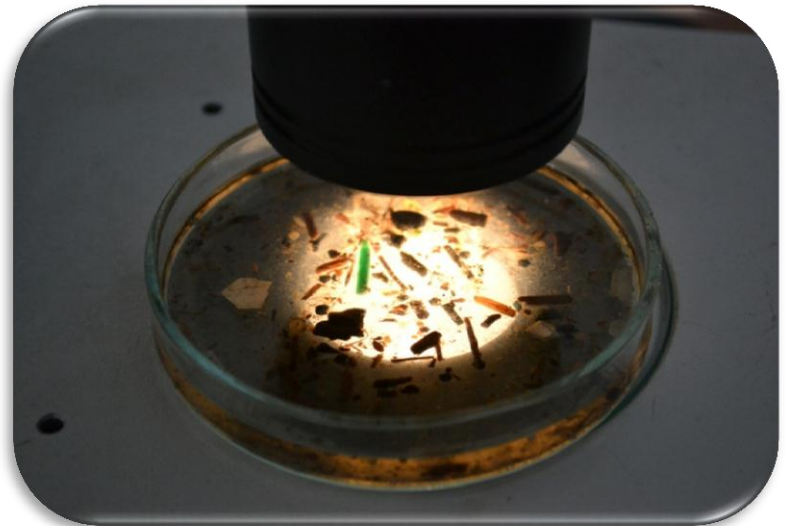
- ✓ Marine litter is **ubiquitous** in the coastal and marine environment and their abundance is increasing;
- ✓ **Plastics** consistently rank as being the most abundant type of marine debris on a global scale;
- ✓ Marine litter poses a threat to wildlife and ecosystems with impacts varying from **entanglement** and **ingestion**, to **bio-accumulation** and **bio-magnification** of toxics either released from plastic items or adsorbed and accumulated on plastic particles; facilitation of **introduction of invasive alien species**; **damages to benthic habitats** and communities (e.g. through abrasion of coral reefs from fishing gear, disruption of colonies, reduced oxygenation or 'smothering' of communities)
- ✓ Marine litter **impacts ecosystem services, human livelihoods** and **wellbeing**;

# THE EMERGING THREAT OF MICROPLASTICS

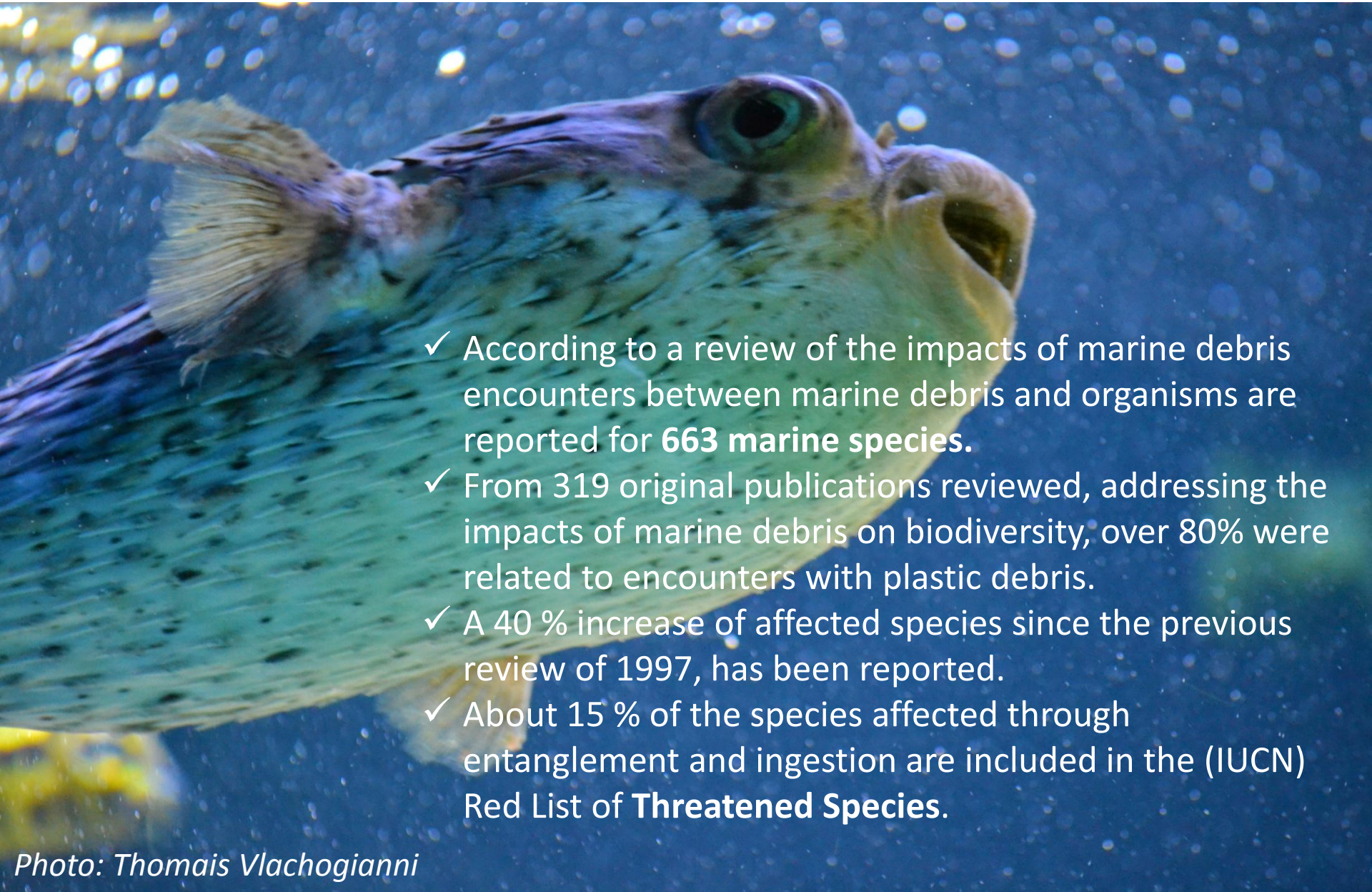
- ✓ Microplastics are part of the overall plastic marine litter problem, generated by our plastic-addicted societies and the mismanagement of plastics and plastic waste.
- ✓ Their abundance is increasing;
- ✓ They cannot be removed from the marine environment in significant quantities.
- ✓ They are ingested by large variety of organisms, with potential adverse effects that vary from physical damage of their digestive tract to toxic effects from inherent contaminants leaching from microplastics, or extraneous pollutants, adhered to microplastics.



*Photos: Thomais Vlachogianni*







- ✓ According to a review of the impacts of marine debris encounters between marine debris and organisms are reported for **663 marine species**.
- ✓ From 319 original publications reviewed, addressing the impacts of marine debris on biodiversity, over 80% were related to encounters with plastic debris.
- ✓ A 40 % increase of affected species since the previous review of 1997, has been reported.
- ✓ About 15 % of the species affected through entanglement and ingestion are included in the (IUCN) Red List of **Threatened Species**.



**Impacting negatively vital economic sectors:**

**Tourism**

**Fisheries**

**Aquaculture**

**Navigation**

**Bringing losses to:**

**Individuals**

**Enterprises**

**Communities**

**ML related information in the Mediterranean is limited, inconsistent and fragmented but it is widely accepted that it is one of the most affected seas by ML worldwide.**

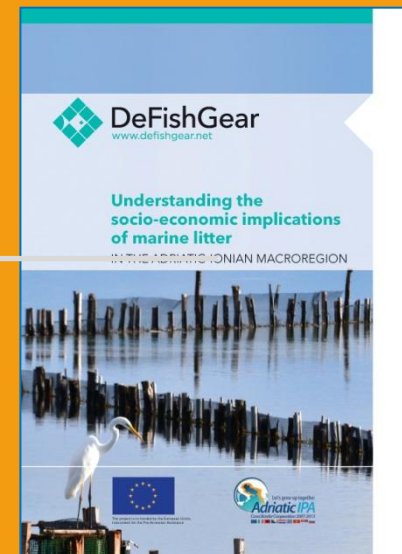
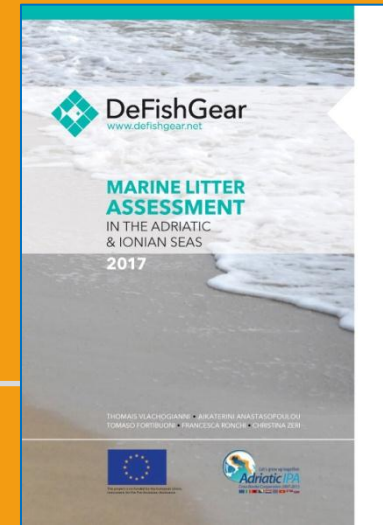
**Certain features of the Mediterranean complicate the issue of tackling ML:**

- ✓ Most of the big towns and industries are situated along its coasts.
- ✓ The region is a popular tourist destination receiving every year approx. 200 million tourists.
- ✓ Waste disposal sites are often located close to the coasts.
- ✓ The Mediterranean is a “semi-closed” sea with a slow renewal rate.
- ✓ It has a lot of maritime traffic.
- ✓ It is a deep sea (up to 4.000 meters) and litter “trapped” at these depths will take many years to decompose.
- ✓ High temperatures accelerate litter degradation into secondary products that are difficult to collect or treat.



# ML in the Mediterranean coasts and sea

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# KEY STEPS OF A SUCCESSFUL PROBLEM SOLVING PROCESS – MARINE LITTER

## WHERE ARE WE?



• Identification of the problem

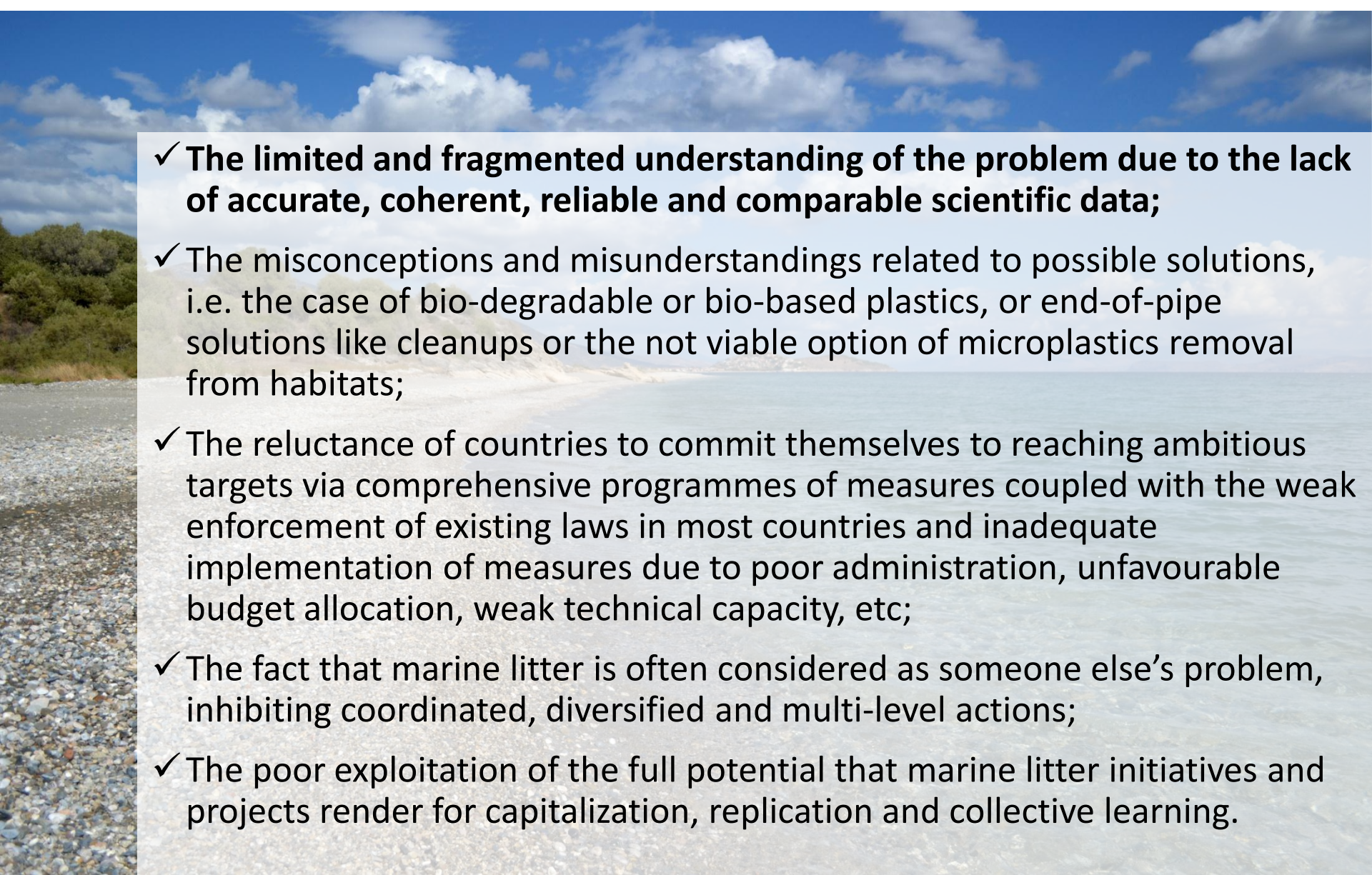
• Understanding the problem

• Identification of possible solutions

• Selection of the appropriate solutions

• Putting solutions into action

# KEY CHALLENGES & IMPLICATIONS TOWARDS TACKLING **MARINE LITTER**

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- ✓ **The limited and fragmented understanding of the problem due to the lack of accurate, coherent, reliable and comparable scientific data;**
  - ✓ The misconceptions and misunderstandings related to possible solutions, i.e. the case of bio-degradable or bio-based plastics, or end-of-pipe solutions like cleanups or the not viable option of microplastics removal from habitats;
  - ✓ The reluctance of countries to commit themselves to reaching ambitious targets via comprehensive programmes of measures coupled with the weak enforcement of existing laws in most countries and inadequate implementation of measures due to poor administration, unfavourable budget allocation, weak technical capacity, etc;
  - ✓ The fact that marine litter is often considered as someone else's problem, inhibiting coordinated, diversified and multi-level actions;
  - ✓ The poor exploitation of the full potential that marine litter initiatives and projects render for capitalization, replication and collective learning.

# Combating ML at the Mediterranean coasts and sea

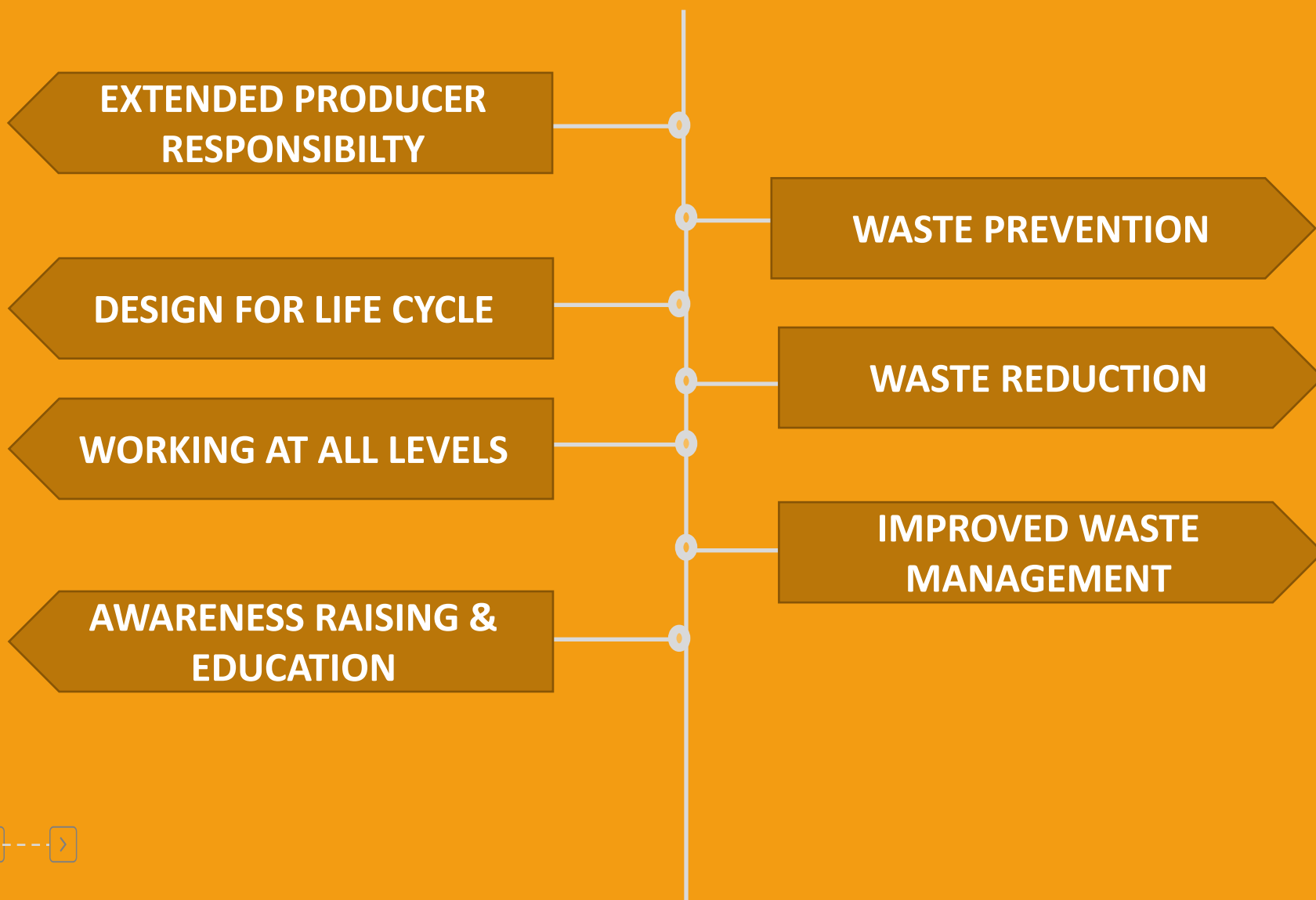
The Regional Plan for Marine Litter  
Management in the Mediterranean of  
the Barcelona Convention  
(Decision IG.21/7)

## Main objectives

- ✓ **Prevent** and **reduce** to the minimum marine litter pollution in the Mediterranean and its impact on ecosystem services, habitats, species in particular the endangered species, public health and safety;
- ✓ **Remove** to the extent possible marine litter by using environmentally respectful methods;
- ✓ **Enhance knowledge** on marine litter;
- ✓ Achieve that its management is performed **in accordance with accepted international standards** and approaches.



# MEASURES TO TACKLE MARINE LITTER



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**Thank you for your attention!**

This Project is funded by the European Union

