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Technical Assistance for Assessment of Türkiye's Potential on Transition to Circular Economy

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Holistic Implementation of the EU Marine Litter Legislation

Activity 2.2.2. Workshop on Roadmap on Single Use Plastics and Marine Litter

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Istanbul

Holistic Implementation of the EU Marine Litter Legislation



Credits: COMMON project <https://www.enicbcmed.eu/common-mediterranean-network-tackle-marine-litter>

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How EU tackles the marine litter problem?

- The EU's overall strategy is to transform policy, energise industry and motivate consumers to act.
- No silos: more integration
- At the centre is the **European Green Deal**, supported by action plans for the circular economy and for zero pollution, as well as the plastics strategy.
- EU Regulations, directives and communications
- Monitoring and assessment of the implementation
- Taken together, these policies have the ambition to drive positive change.

Waste management is not a silver bullet for the problem of marine litter — prevention comes first.



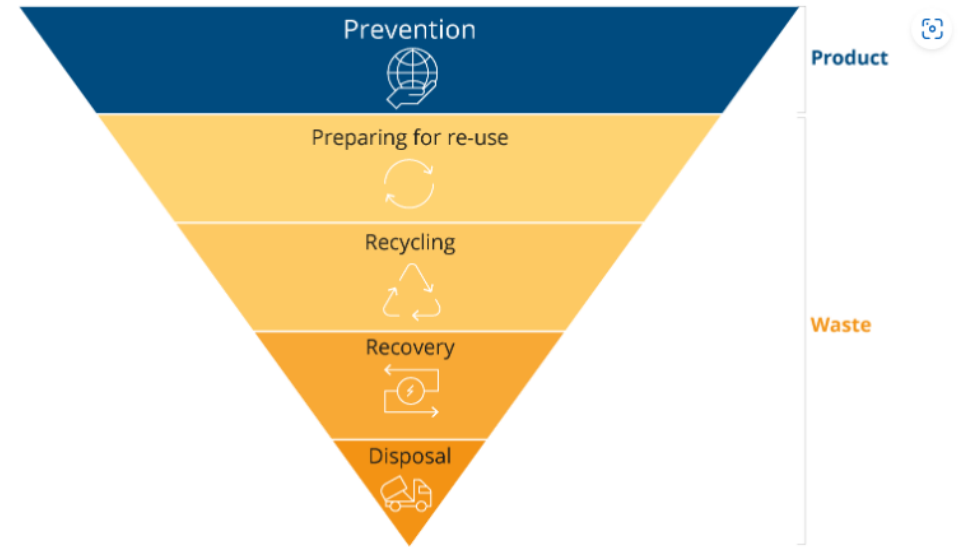
EU policy instruments relevant to marine litter

Overarching policy instruments

- **Zero Pollution Action Plan (ZPAP)** A set of 2030 targets to catalyse the prevention of pollution at source and include the reduction of waste, plastic litter at sea and the release of microplastics into the environment.

- **Circular economy action plan:** Adopted in 2015, plastics are one of its five priority areas. The plan sets long-term targets to increase preparation for reuse and recycling of key waste streams, such as packaging.

Waste hierarchy



Source: European Commission.

The EU has set out **ambitious goals to be achieved by 2030** that link the circular economy and zero pollution agendas.

50%

reduction in residual municipal waste

50%

reduction in plastic litter at sea

30%

reduction in microplastics leaked into the environment

EU policy instruments relevant to marine litter

Land-based sources

- **Strategy for plastics in a circular economy:** first EU-wide policy framework that takes a life-cycle approach by integrating the design, use, reuse and recycling of a specific material.

- **Waste Framework Directive (2008/98/EC; amended as (EU) 2018/851):** waste management systems to include sustainable material, improve resource use and ensure that waste is valued as a resource.

- **Directive 1999/31/EC (amended as (EU) 2018/850) on landfilling of waste:** Sets out strict requirements for landfill sites

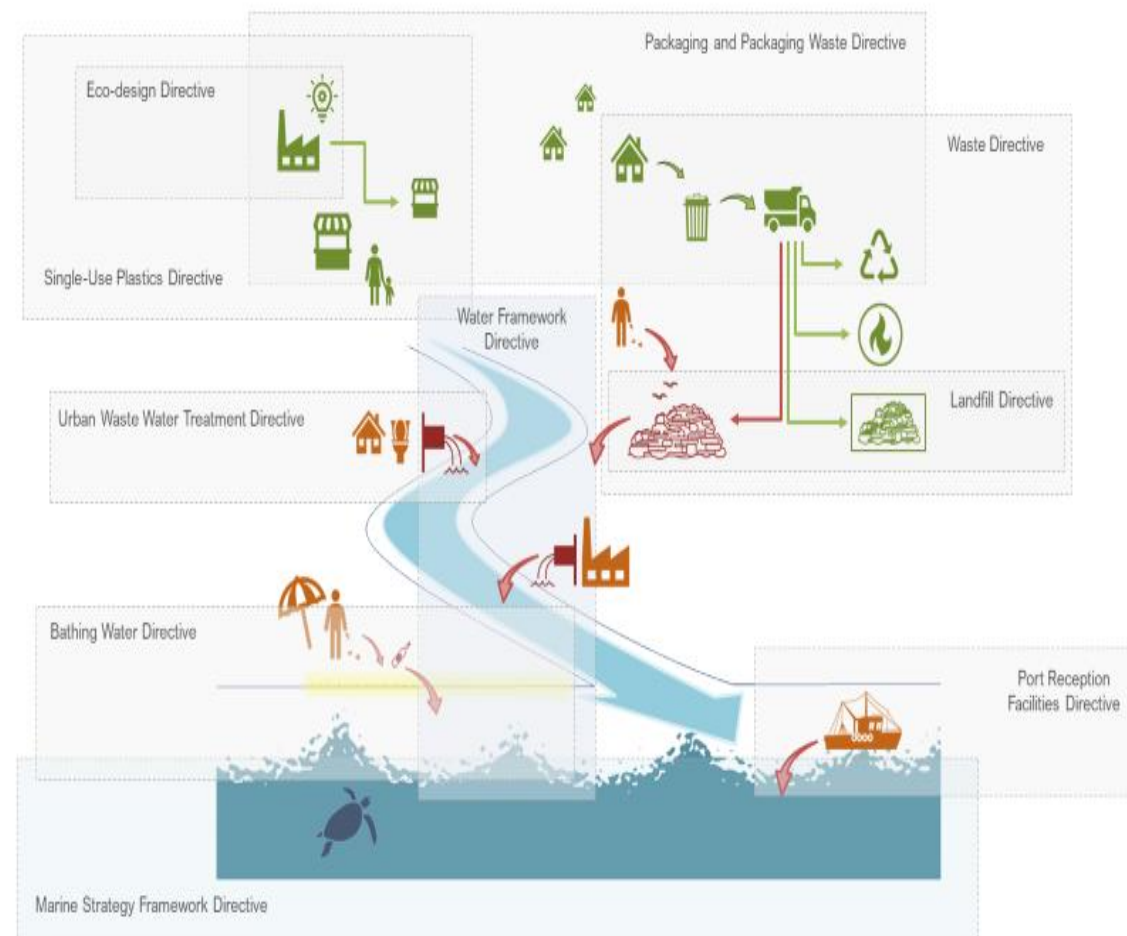
- **Packaging and Packaging Waste Directive 94/62/EC (amended as (EU) 2018/852):** recycling targets for plastic packaging at 50% by 2025 and 55% by 2030 and EPR schemes

- **Directive 94/62/EC (amended as (EU) 2015/720) on plastic bags:** lightweight plastic bags

- **Single-Use Plastics Directive (EU) 2019/904:** Targets the top 10 single-use plastic items found on Europe's beaches and seas.

- **REACH Regulation amendment:** Ban on intentionally added microplastics

- **Proposal for a Regulation on preventing plastic pellet losses to reduce microplastic pollution**



EU policy instruments relevant to marine litter

Sea-based sources

- **Directive 2010/65/EU (amended as (EU) 2019/883) on port reception facilities:** incentives for ships to dispose of their waste on land, notably with a reduced fee. This fee also applies to fishing vessels.
- **Regulation (EC) No 1228/2009 on compliance with the common fisheries policy:** Contains provisions intended to retrieve lost fishing gear.
- Ship Source pollution Directive

Pathways

- **Water Framework Directive (2000/60/EC):** includes design and implementation measures, some of which relate to marine litter management. However, the directive does not refer to plastic litter specifically.
- **Directive 91/271/EEC (amended as 98/15/EC) on urban waste water treatment:** revised directive includes treatment and monitoring of microplastics.

State and impacts of marine pollution

- **Marine Strategy Framework Directive 2008/56/EC:** Outlines criteria for good environmental status, including that 'properties and quantities of marine litter do not cause harm to the coastal and marine environment'. It suggests processes for target-setting and monitoring and measures to be implemented.

Waste management and waste prevention

Single Use Plastics

Directive 2019/904 on the reduction of the impact of certain plastic products on the environment: Single Use Plastics (SUP), fishing gear and oxo-degradable plastics

> **EEA** supporting **countries** and the **Commission** in **data reporting** and **assessment**



Reporting by July 2024 (2022 data):

- **Cups of beverages and food containers placed on the market and measures** to reduce their consumption – ambitious and sustained reduction
- **Separate collection of SUP beverage bottles**
- **Fishing gear** containing plastic **placed on the market** and **separately collected** waste fishing gear containing plastic

Reporting in 2025 (2023 data):

- Recycled content in SUP beverage bottles
- Separate collection for recycling of waste

Do the EU policies work?

- They can and they are having an impact: Beach litter is decreasing.
- Much more is needed on the implementation side
- The effective roll-out of the Single-Use Plastics Directive in 2019 inspires confidence.
- SUPD bans items often found on the beach, such as plastic cutlery, plates and coffee stirrers: change of consumer behaviour and transformation of the sector
- We must solve the plastic pollution problem at its source



WEB REPORT

From source to sea — The untold story of marine litter

[From source to sea — The untold story of marine litter — European Environment Agency \(europa.eu\)](#)

European Environment Agency



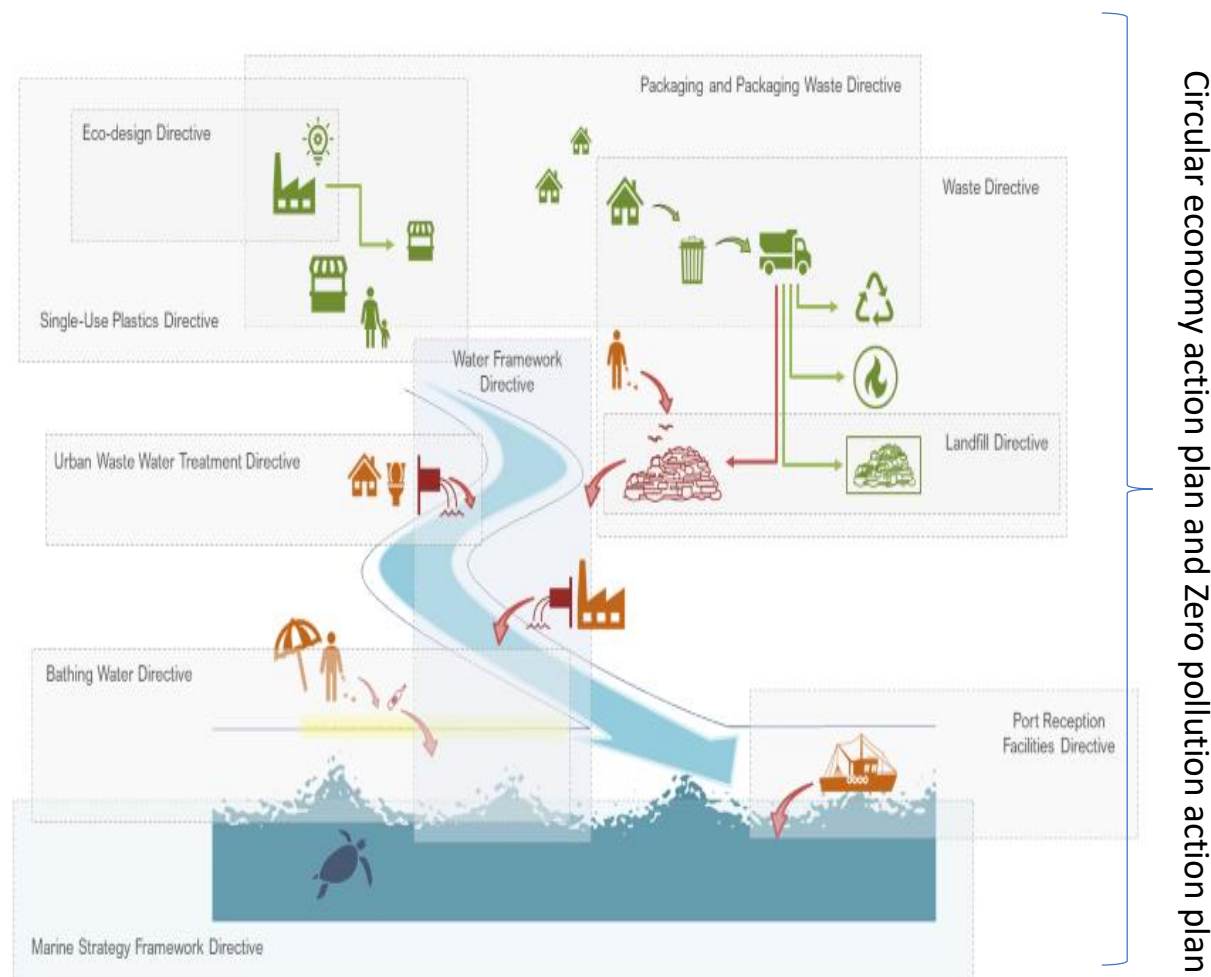
A timely contribution to knowledgebase and methodology

Why the report is a timely contribution?

- The move towards an **integrated EU legislation** and monitoring: a need for integrated assessment of the pollution
- Ongoing UNEA effort to end plastic pollution and form a [binding international agreement by 2024](#). initially covered marine litter: now the entire lifecycle of plastic

What is the aim of the report?

- **Reveal the untold part of the story:** to provide a complete picture to policymakers by tracing the problem from its source to the sea.
- to establish a robust methodology for source-to-sea marine litter assessments



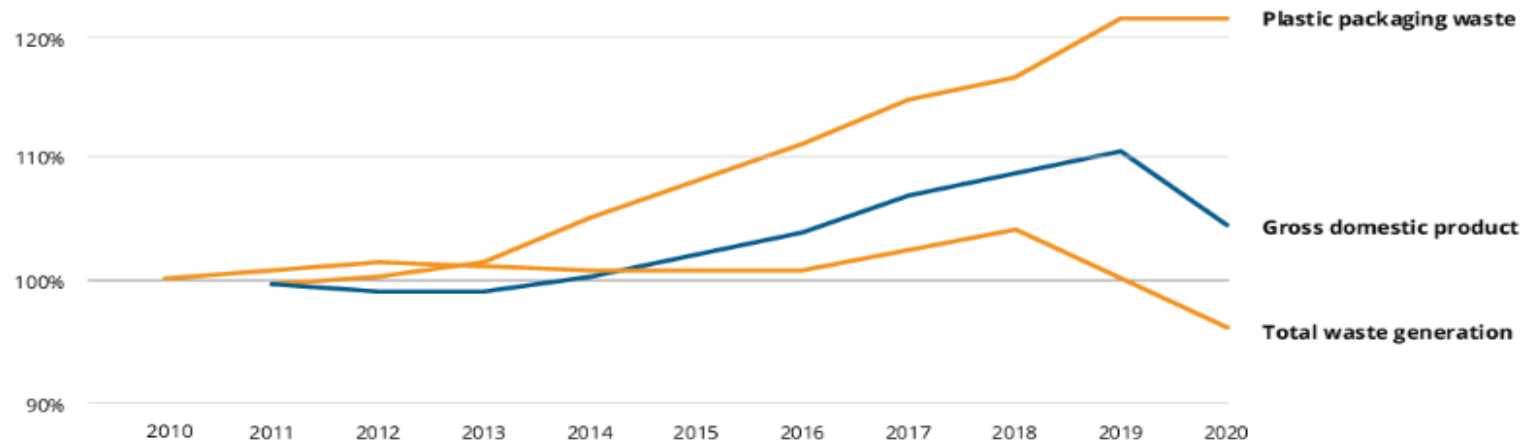
What is the problem?

Wood, metal, paper, wool or cotton-looking plastics: plastic is everywhere. Useful but can be harmful.

Mismanaged plastic packaging waste and single-use plastics are the primary sources of marine litter in Europe.

Sources of micro (plastic) litter include losses in the manufacturing, transport (e.g. pellets) or use of micro-sized particles, e.g. in cosmetics, weathering of road tyres, synthetic textiles, geotextiles and paints. In addition, macro litter items (such as packaging and SUP) are fragmented into micro litter particles.

Increase in plastic production and inadequate waste management: significant amount of plastic leaking into the environment.



Impacts on marine life

Marine litter poses significant threats to marine life, including entanglement, ingestion and transfer of contaminants.



A Rainbow Runner in the North Pacific Gyre that had ingested 18 pieces of plastic (2008). Credit: Dr. Marcus Eriksen Gyres Institute

Marine litter has implications for human health, as plastics and contaminants in marine biota can lead to the transfer of pathogens.

Hazardous chemicals in plastics

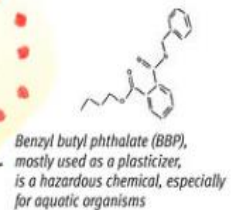
A 2018 study found that 3,377 chemicals are potentially associated and 906 chemicals are likely associated with plastic packaging. Out of these, 148 have been identified as most hazardous (Groh et al. 2018).

Persistent, bioaccumulative and toxic (PBT) (7 chemicals)

Human health hazards (63 chemicals)

Environmental hazards (68 chemicals)

Endocrine disrupting (15 chemicals)



Microplastics found in human body is a worry

Researchers found that 50 per cent of the blood samples contained polyethylene terephthalate (PET). This was the most prevalent plastic type in the samples.

PET is a clear, strong and lightweight plastic that is widely used for packaging foods and beverages

[Microplastics found in human BLOOD for first time | Daily Mail Online](#)

Microplastics have been detected in human heart. They also exist in stool, lungs, and placentas, which have direct exposure to the external environment through various body cavities, including the oral/anal cavity and uterine/vaginal cavity.

[Detection of Various Microplastics in Patients Undergoing Cardiac Surgery | Environmental Science & Technology](#)



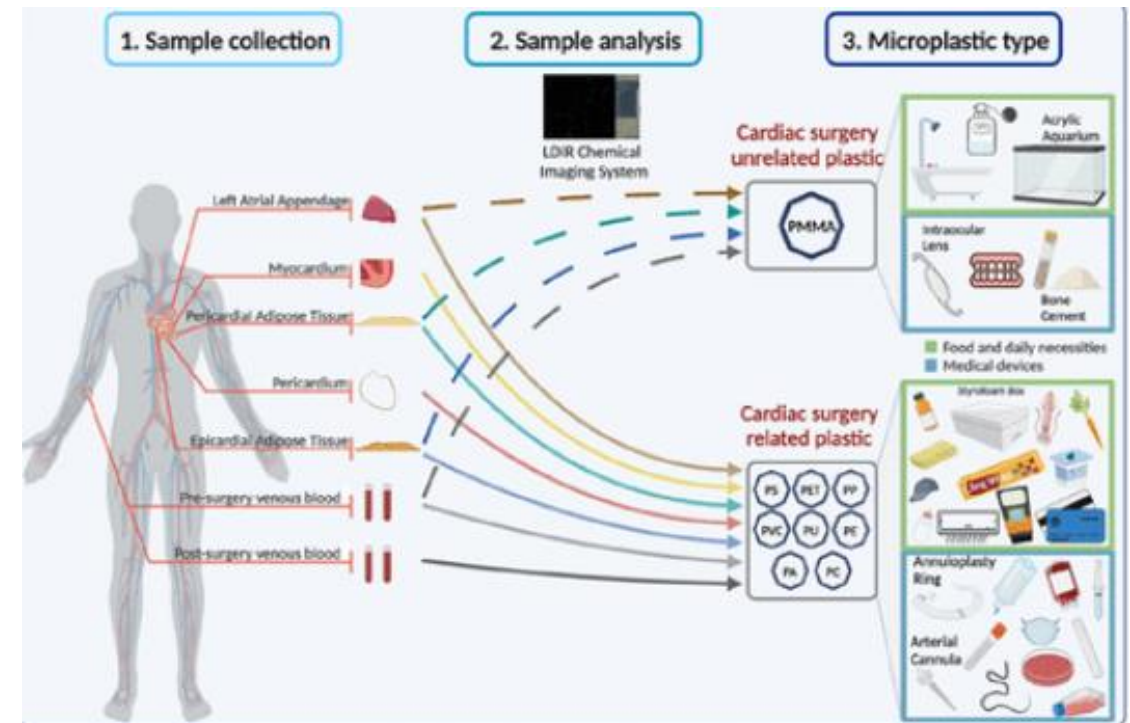
Environment International
Volume 163, May 2022, 107199



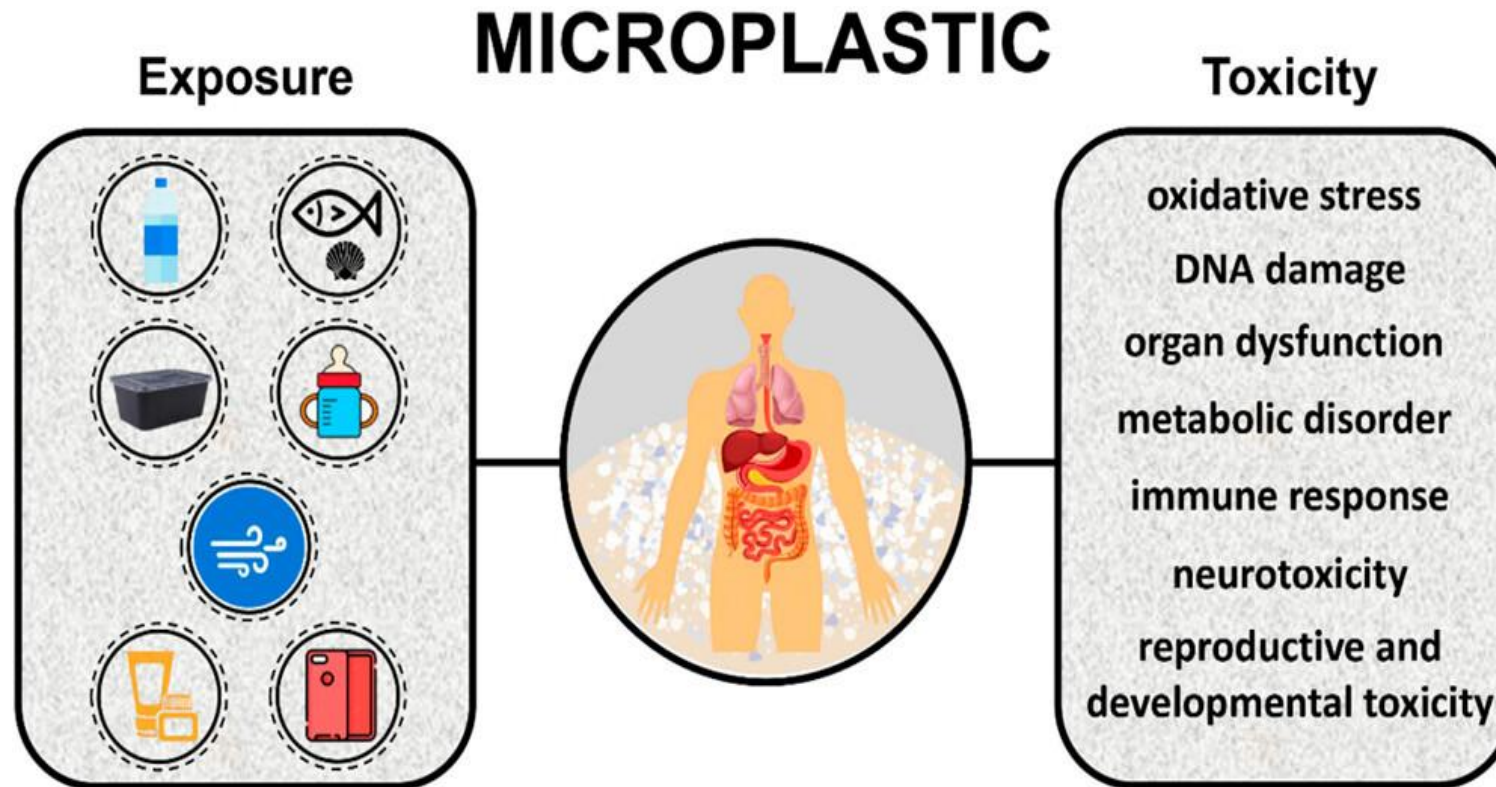
Full length article

Discovery and quantification of plastic particle pollution in human blood

Heather A. Leslie ^a, Martin J.M. van Velzen ^a, Sicco H. Brandsma ^a, A. Dick Vethaak ^{a, b}, Juan J. Garcia-Vallejo ^c, Marja H. Lamoree ^a



Possible impacts on human health



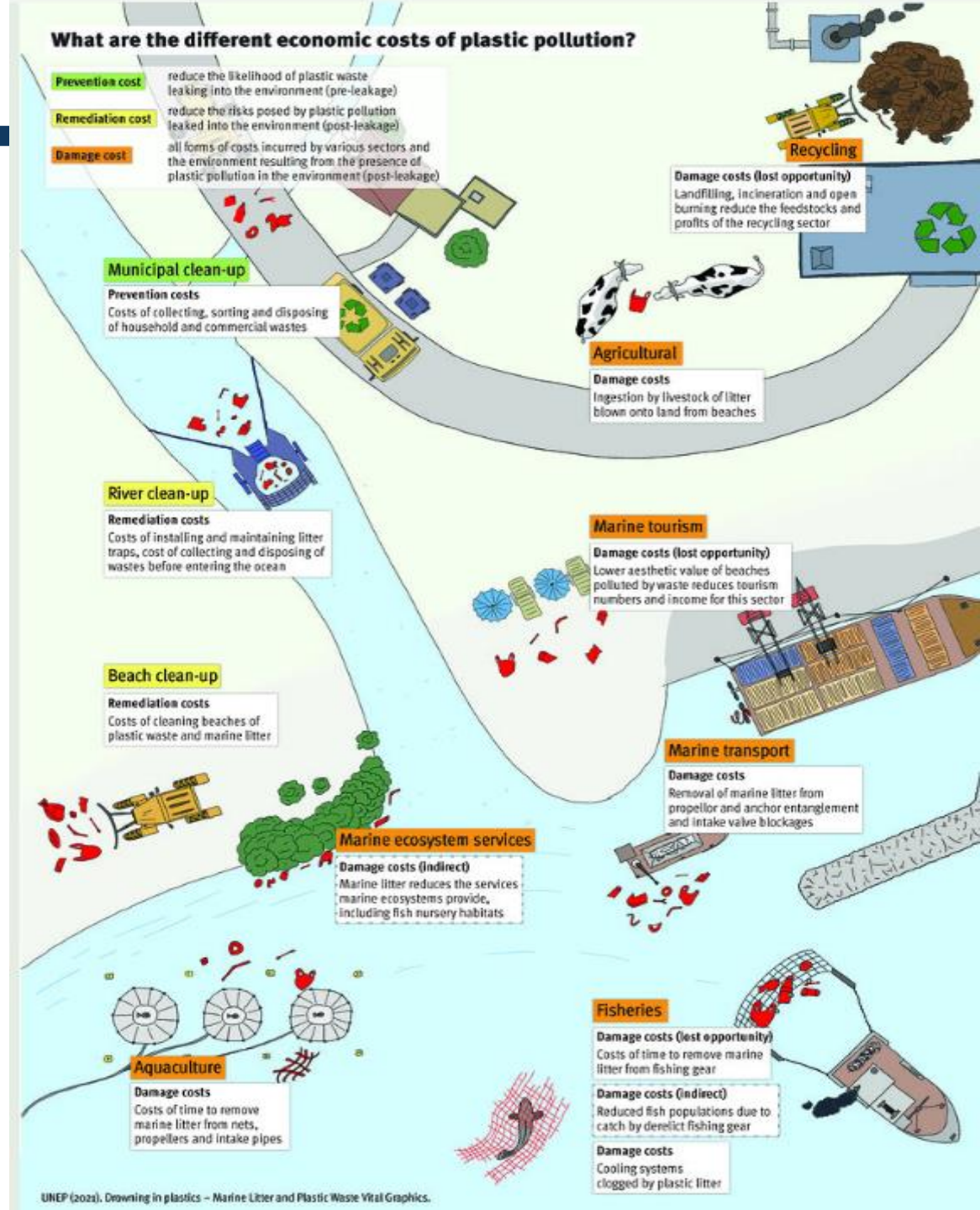
In addition, the epidemiological evidence suggests that a variety of chronic diseases may be related to microplastics exposure.

<https://pubs.acs.org/doi/10.1021/envhealth.3c00052#:~:text=Experiments%20show%20that%20the%20exposure,as%20reproductive%20and%20developmental%20toxicity.>



Impacts on economy

Marine litter has economic and social consequences, impacting coastal tourism, fisheries, shipping and aquaculture.

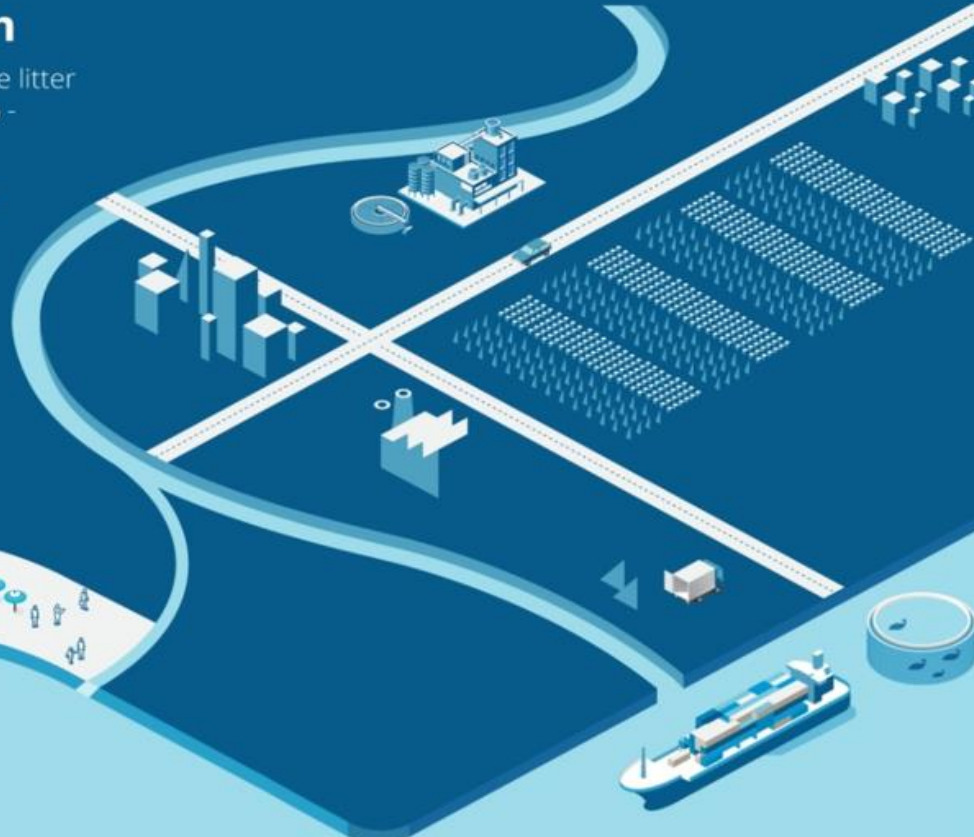


Where does marine litter come from?

The problem

The majority of marine litter - approximately **85%** - is **plastic waste**.

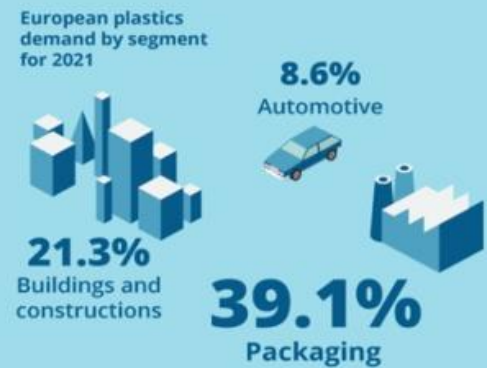
Between 2011 and 2020, the total plastic waste generated in the 27 EU Member States (EU-27) per person increased by **22%**.



The drivers

The causes of mismanaged waste are human needs, which increase consumer and **certain economic sector** demand for plastics.

In 2021, demand for virgin plastic by the **packaging sector** reached 39.1% of total plastic demand, while the demand from the building industry and the automotive industry was 21.3% and 8.6% of the total, respectively.



The source

The primary source of marine litter is **mismanaged plastic waste**, which slowly leaks into the environment. In 2018, it amounted to **3 million tonnes**.

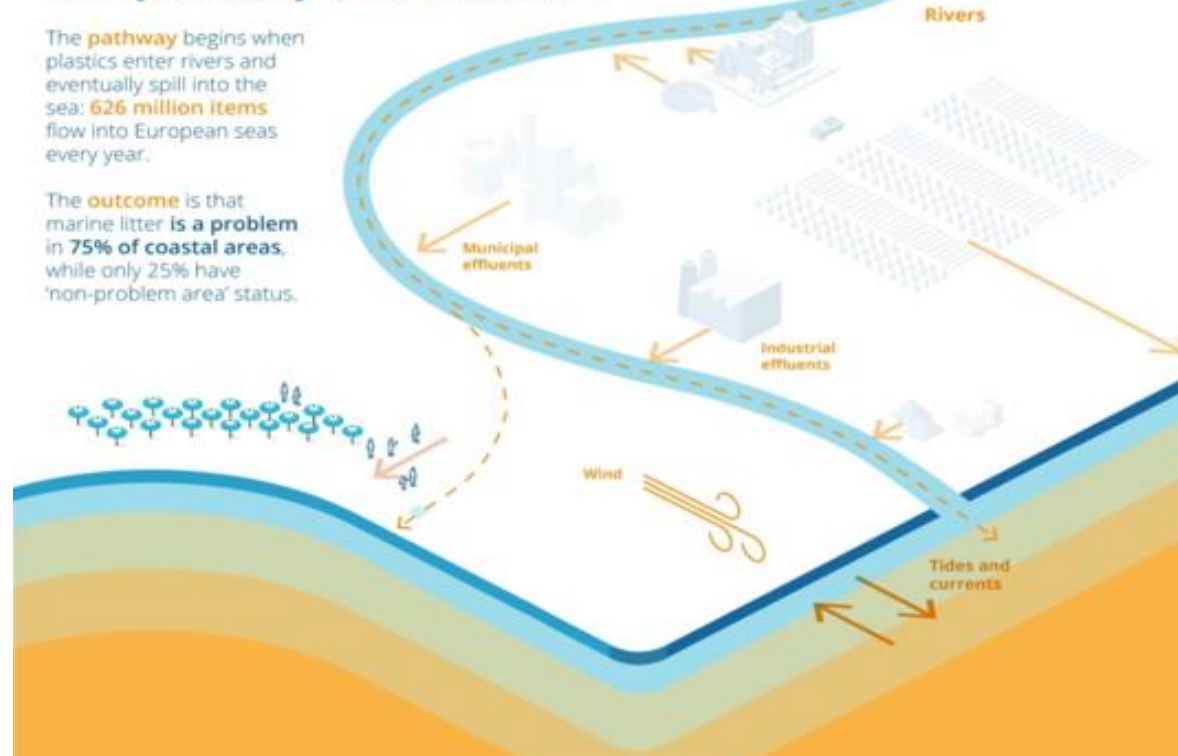
Approximately **80%** of marine litter starts on **land**, while 20% begins at the sea.



The pathway and outcome

The **pathway** begins when plastics enter rivers and eventually spill into the sea: **626 million items** flow into European seas every year.

The **outcome** is that marine litter **is a problem** in **75% of coastal areas**, while only 25% have 'non-problem area' status.



Mismanaged waste — a key source of marine litter

In most European countries, the amount of PPSI waste increased between 2012 and 2018, whether managed or mismanaged

Improvements at the waste management level have not been sufficient enough to reduce the amounts of mismanaged PPSI waste.

100.000 tonnes of more mismanaged plastic waste (estimated) leaked to the environment in 2018 compared to 2012

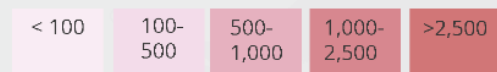
Plastic pollution accounts for 85% of marine litter



Between 2012 and 2018, total PPSI waste generation increased

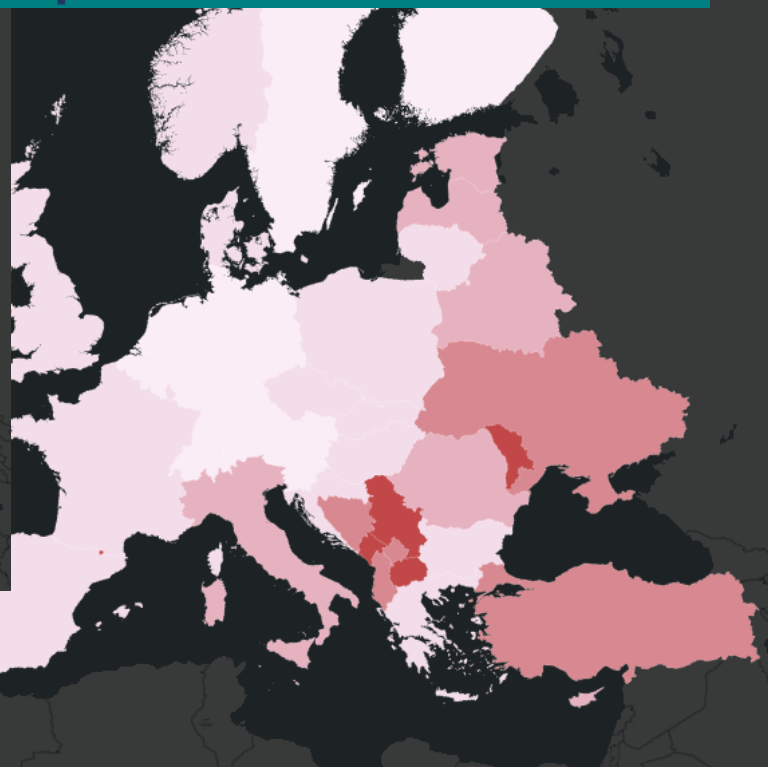
The estimated total mismanaged PPSI waste in Europe's coastal areas increased by 12% between 2012 and 2018. This is especially the case in the Mediterranean and Black Sea regions, which collectively account for 90% of total mismanaged waste found in Europe's coastal areas. However, some improvements were observed in the North-eastern and Baltic regions.

Mismanaged plastic waste in Europe's coastal areas, 2018, tonnes



[Click on the map for more data](#)

With a few exceptions, mismanaged PPSI is considerably high compared to 2012. Waste management is not a silver bullet for the problem of marine litter – prevention comes first.

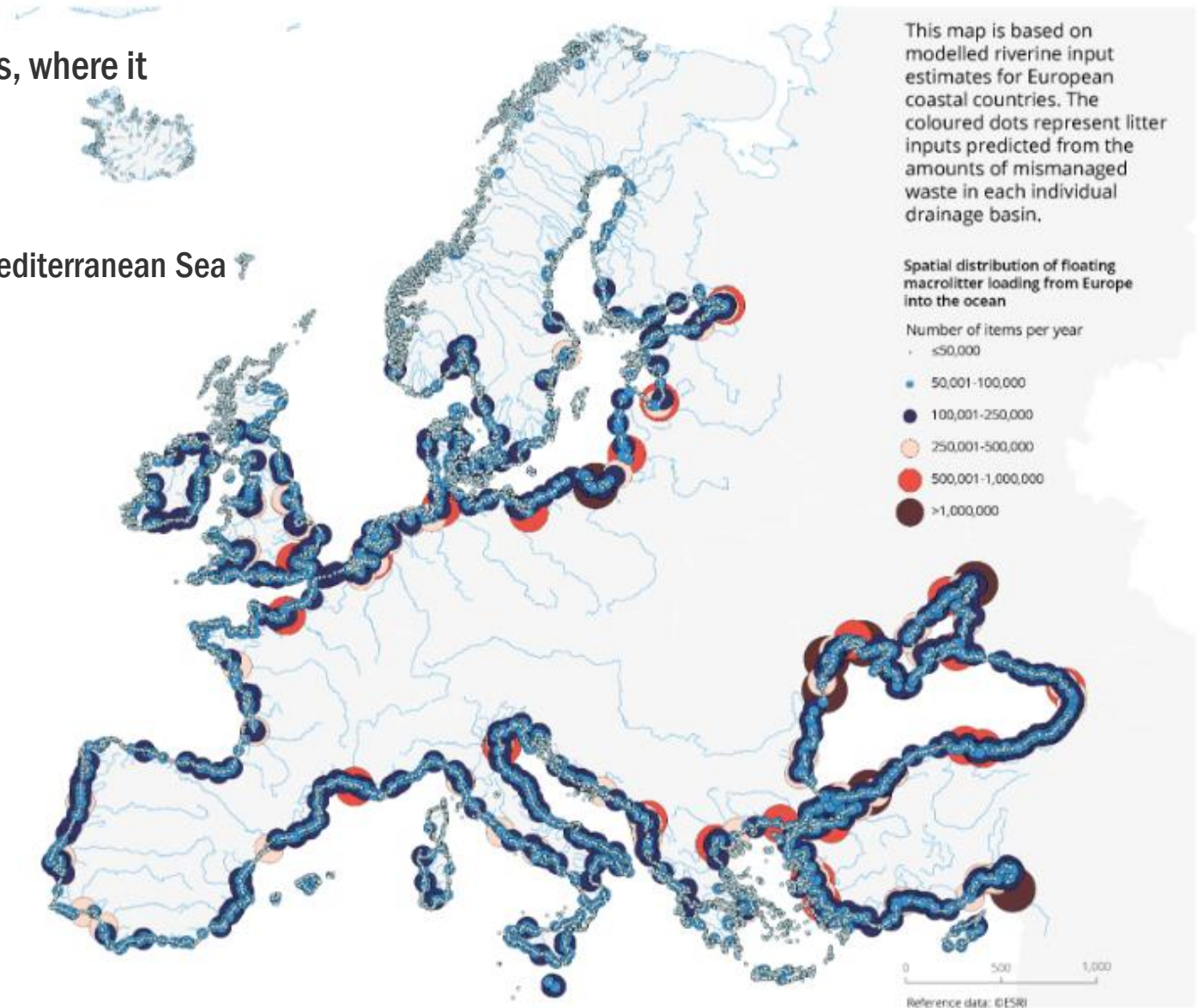


Spatial distribution of floating macrolitter inputs to the sea from Europe

How does litter reach the sea?

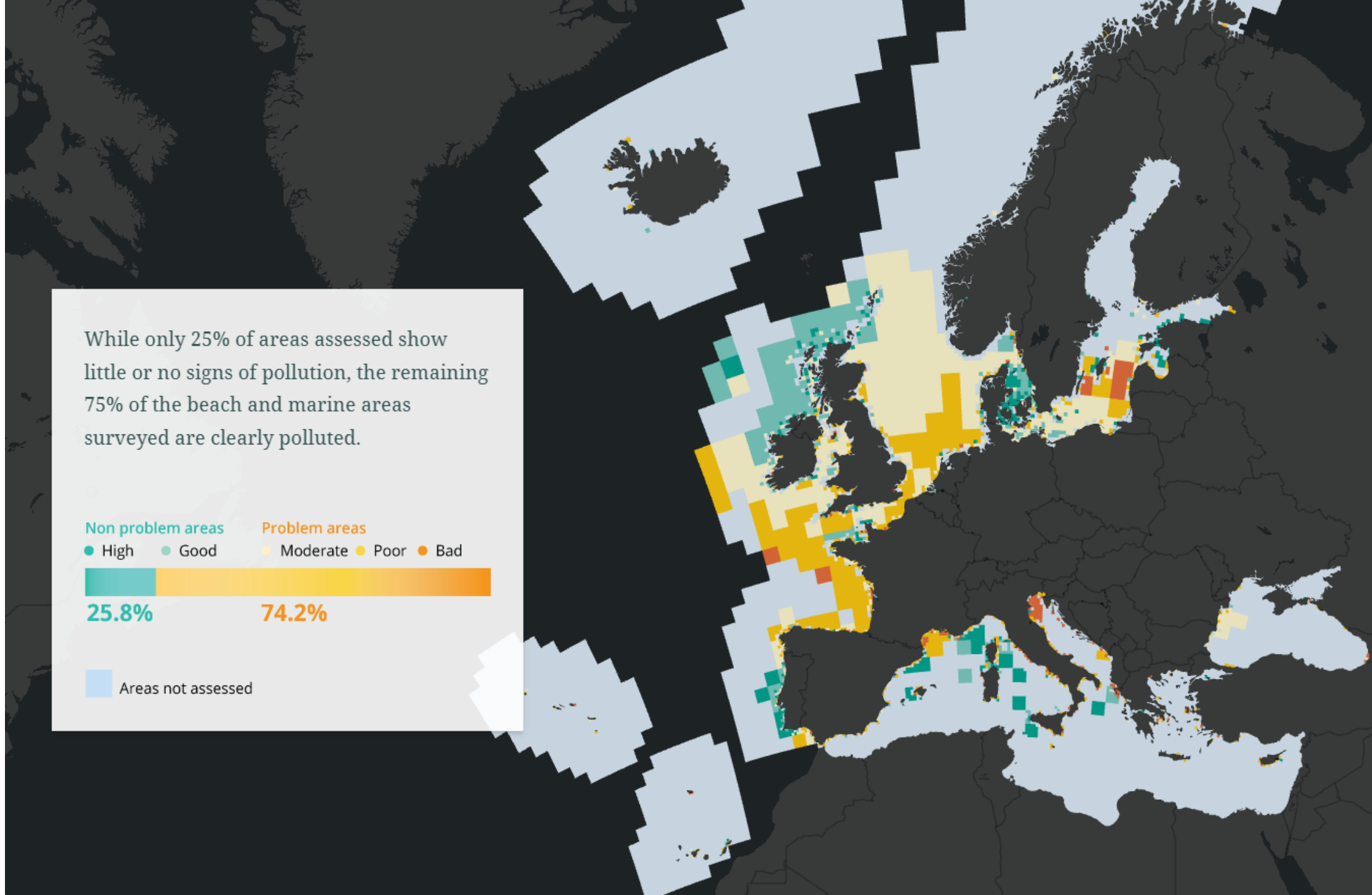
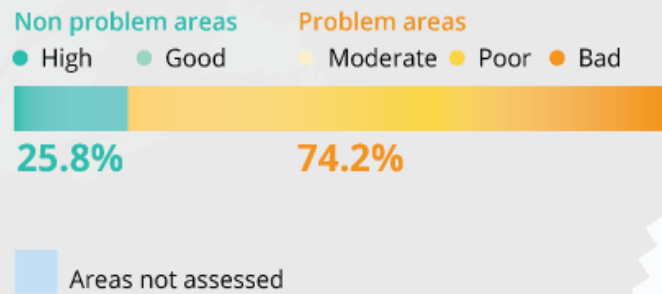
Rivers are the main pathways that carry the litter to the seas, where it continues to accumulate.

Nearly 90% of riverine floating litter in Europe flows through the Mediterranean Sea and the Black Sea



Status of marine litter in European seas

While only 25% of areas assessed show little or no signs of pollution, the remaining 75% of the beach and marine areas surveyed are clearly polluted.



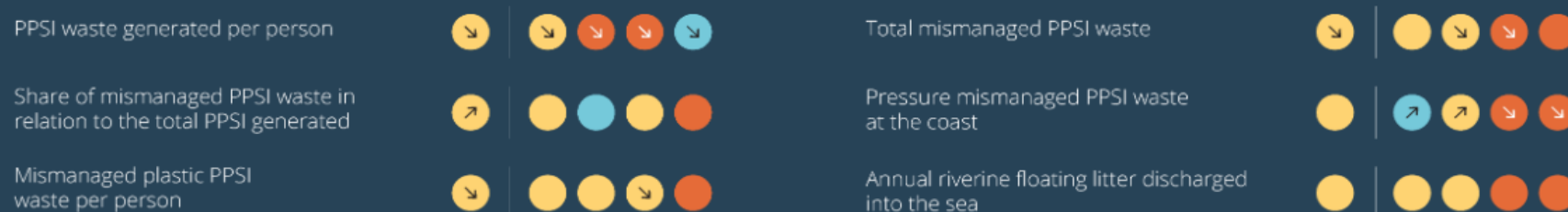
Status and trends in a DPSIR spectrum

Drivers, pressures and the state of plastic litter in the marine environment in 2018

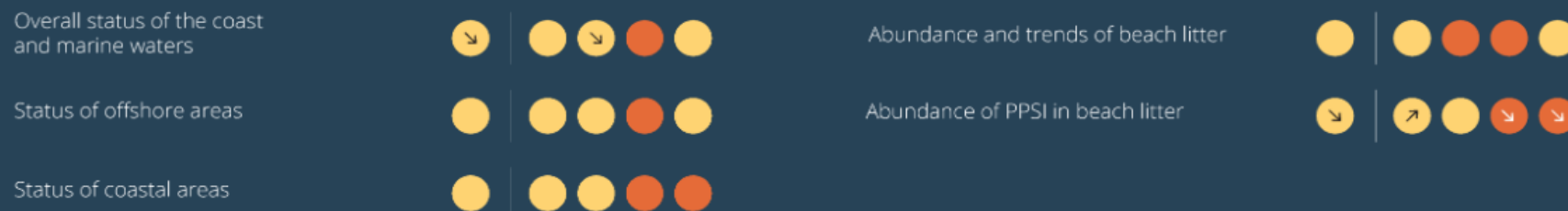
DRIVERS



REDUCTION OF PRESSURES



STATE OF POLLUTION IN THE MARINE ENVIRONMENT



Area

BAL: Baltic Sea
NEA: North-east Atlantic Ocean
MED: Mediterranean Sea
BS: Black Sea

Status

○ Not acceptable/poor situation
○ Reasonable situation but not sufficient
○ Satisfactory/good situation

Perceived change in relation to 2012

↑ Situation in 2018 is perceived as better than in 2012
↓ Situation in 2018 is perceived as worse than in 2012
○ Trend unknown

Outlook and recommendations



1.

Enhance litter data collection across all 'source-to-sea' domains and pathways and use the strength of coordinated EU and national powers to implement informed policy and good practices.



2.

Make much better use of diverse data sources (e.g. emerging technologies and citizen science) and modelling tools to better predict and analyse hotspots and priority areas.



3.

Generate indicators across different land-sea domains that are comparable across themes and report on various scales — regions, countries and specific river basins and courses.



4.

Improve knowledge on plastic waste leakages from land-based sources and develop targeted measures to inform relevant parties and effectively tackle the problem.



5.

Enhance riverine litter monitoring and research on transport processes and standardise data collection and reporting methods.



6.

Make bridges between EU policy and meaningful action on the ground, and develop a 'scoreboard' for identifying gaps in implementation via targeted monitoring and reporting on sources and pathways.

The report suggests that tackling marine litter problem requires:

- deeper understanding of the human needs that drive plastic production and mismanaged waste
- tackling and preventing plastic pollution at its source.
- Effective implementation of the EU legislation
- a move towards circular economy and decoupling of plastic waste generation from economic growth
- integrated and harmonised monitoring (and indicators) and a robust assessment methodology



**The dirty secret behind marine litter is that we
cause 100% of it and all of it is preventable**

Thank you

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This project is co-funded by the European Union and the Republic of Türkiye

Thanks for your attention.



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