



Global Partnership  
on Marine Litter

UN   
environment  
programme

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1972-2022

# Marine debris monitoring for Global Policy

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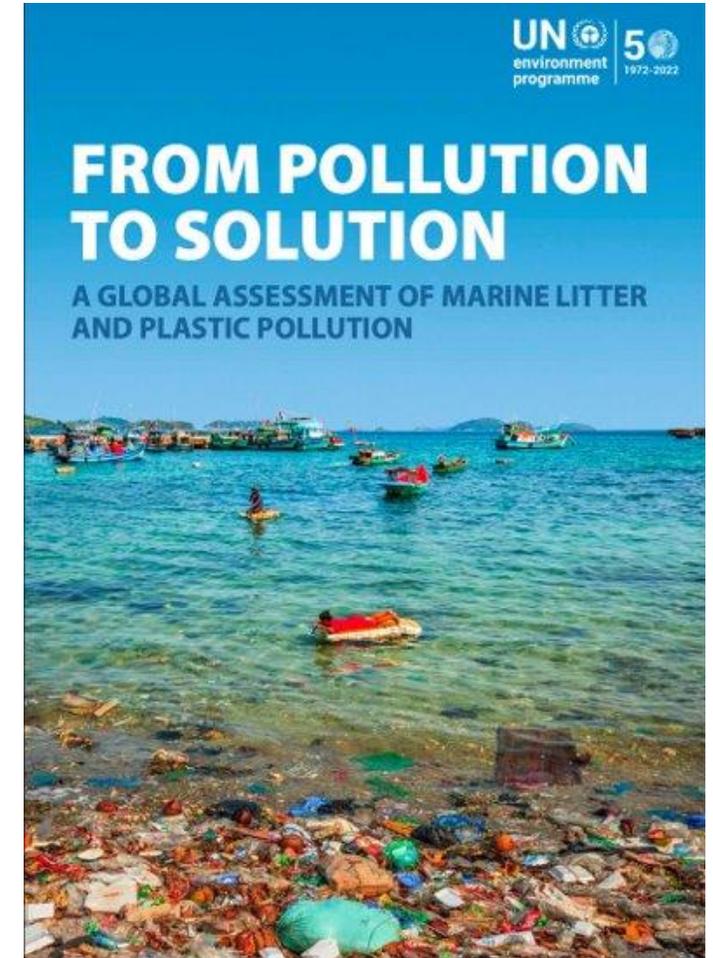
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# From Pollution to Solution: A global assessment of marine litter and plastic pollution

The assessment provides **evidence to enable** policymakers and the wider public to:

- comprehend the magnitude and severity of the effects and risks associated with marine litter and plastic pollution;
- identify gaps in knowledge;
- raise awareness of solutions;
- help stimulate global interventions to control and prevent marine litter and plastic pollution and to safeguard human and ecological health.



# 'From Pollution to Solution' – Key Findings

1. The amount of marine litter and plastic pollution has been growing rapidly. Emissions of plastic waste into aquatic ecosystems are projected to nearly triple by 2040 without meaningful action.
2. Marine litter and plastics present a serious threat to all marine life, while also influencing the climate.
3. Human health and well-being are at risk.
4. There are hidden costs for the global economy.
5. Marine litter and plastics are threat multipliers.
6. The main sources of marine litter and plastic pollution are land-based.
7. The movement and accumulation of marine litter and plastics occur over decades.
8. **Technological advances and the growth of citizen science activities are improving detection of marine litter and plastic pollution, but consistency of measurements remains a challenge.**
9. Plastic recycling rates are less than 10 per cent and plastics-related greenhouse gas emissions are significant, but some solutions are emerging.
10. Progress is being made at all levels, with a potential global instrument in sight.

# 'From Pollution to Solution' - Monitoring and Data (I)

Currently there are various major operational monitoring programmes in different geographical ranges, linked to three types of activity:

1. marine litter action coordination
2. data collection frameworks
3. large- scale data repository and portal initiatives.

## ‘From Pollution to Solution’ - Monitoring and Data (II)

However, to date, the data and information being collected remain largely unconnected and fragmented.

There is a need to **streamline**:

- methodologies
- data flows
- indicator sets

There is also a need to **facilitate**:

- joint analyses
- unified definitions
- standards and formats
- well- developed infrastructures for data flow, storage and sharing

# 'From Pollution to Solution' - Monitoring and Data (III)

Urgent need for further improvements in **standardization, harmonization, and the interoperability** of datasets and platforms

## A selection of data coordination, collection, repository and portal initiatives

Their geographical range, activities and application areas

|   |  | GEOGRAPHICAL RANGE           | ACTIVITIES | APPLICATION AREA | INCLUDES CITIZEN SCIENCE |
|---|--|------------------------------|------------|------------------|--------------------------|
| <b>MARINE LITTER ACTION COORDINATION</b>              |  |                              |            |                  |                          |
| GPML  | Global Partnership on Marine Litter                            | Worldwide                    |            |                  | yes                      |
| GEOSS   | Global Earth Observation System of Systems' Platform           | Worldwide                    |            |                  | -                        |
| -   | Living Atlas of the World                                      | Worldwide                    |            |                  | yes                      |
| ODIS  | IOC Ocean data and information system                          | Worldwide                    |            |                  | -                        |
| ODP   | Ocean Data Platform  | Worldwide                    |            |                  | yes                      |
| MDMAP   | NOAA Marine Debris Monitoring and Assessment Project           | US west coast, Worldwide     |            |                  | yes                      |
| MSFD  | Marine Strategy Framework Directive - EMODnet                  | European waters              |            |                  | -                        |
| EMODnet   | European Marine Observation and Data Network                   | European waters              |            |                  | -                        |
| SeaDataNet  | Pan-European infrastructure for ocean & marine data management | European waters              |            |                  | -                        |
| <b>DATA COLLECTION FRAMEWORKS</b>                     |  |                              |            |                  |                          |
| TIDE  | Trash Information and Data for Education and Solution          | Worldwide                    |            |                  | yes                      |
| -   | LITTERBASE   | Worldwide                    |            |                  | yes                      |
| GGGI  | Global Ghost Gear initiative - database and app                | Worldwide                    |            |                  | yes                      |
| -   | Resource Watch   | Worldwide                    |            |                  | yes                      |
| MEDITS  | International bottom trawl survey in the Mediterranean         | Mediterranean                |            |                  | -                        |
| <b>LARGE-SCALE DATA REPOSITORY/PORTAL INITIATIVES</b> |  |                              |            |                  |                          |
| COASST  | Coastal Observation and Seabird Survey Team - Marine Debris    | US                           |            |                  | yes                      |
| -   | Deep-sea Debris Database - JAMSTEC*                            | Pacific & Indian Oceans      |            |                  | -                        |
| AMDI  | Australian Marine Debris initiative database                   | Pacific, Oceania             |            |                  | yes                      |
| DOME  | DOME (Marine Environment) data portal - an ICES data portal    | European waters <sup>1</sup> |            |                  | -                        |
| DATRAS  | The Database of Trawl Surveys - an ICES data portal            | European waters <sup>1</sup> |            |                  | -                        |
| -   | Marine LitterWatch   | European waters              |            |                  | yes                      |

### ACTIVITIES<sup>2</sup>

- Data acquisition
- Collection/compilation
- Analysis
- Coordination

### APPLICATION AREA<sup>2</sup>

- Beach
- Water column
- Biological - ingested plastic
- Shoreline
- Sea floor
- Inland water bodies

\* Japan Agency for Marine-Earth Science and Technology

<sup>1</sup> Baltic Sea, Skagerrak, Kattegat, North Sea, English Channel, Celtic Sea, Irish Sea, Bay of Biscay and the eastern Atlantic from the Shetlands to Gibraltar

<sup>2</sup> Including but not limited to

Source: UNEP 2021.

# Managing Risks – Risk Framework (I)

**A systematic and holistic risk framework is needed to assess the risks marine litter and plastic pollution pose to ecosystems and biodiversity, economies and human health and society.**

- there are multiple risks which are interconnected and these need to be tackled in a systematic holistic manner;
- risks can act as threat multipliers and are stressors that may combine with other stressors (e.g. climate change), resulting in far greater damage than when they are considered in isolation;
  - emerging findings of the effects of plastics on the coastal ecosystems underlines their importance in climate mitigation and adaptation;
- social aspects including gender aspects have often been neglected;
- long-term effectiveness of different actions and policies need to be assessed in light of emerging risks.

# Managing Risks – Risk Framework (II)

**A systematic and holistic risk framework contributes to:**

- A better understanding of the multiple and cascading risks including the wide range of potential hazards and exposure routes and their interactions and interconnectedness
- Assessing the various impacts on ecosystems and biodiversity, economies and societies including their secondary consequences
- Prioritization and design of actions and policies to tackle the issue in a holistic and coherent manner
- Informing risk management based on evidence taking into account environmental, economic and societal aspects
- Ensuring policies for reducing risks are based on a clear understanding of the nature and magnitude of the risks
- Highlighting where knowledge gaps exist

# Assessing Effectiveness

- Lack of assessing effectiveness and impact of policies and regulations due to limited monitoring systems and/or data
- A major need for existing monitoring programmes, concerns the development of indicators for different policy measures
- The majority of indicators are focused on downstream processes and impacts, rather than on prevention measures or their effectiveness.

# Capacity building



## Massive Open Online Course

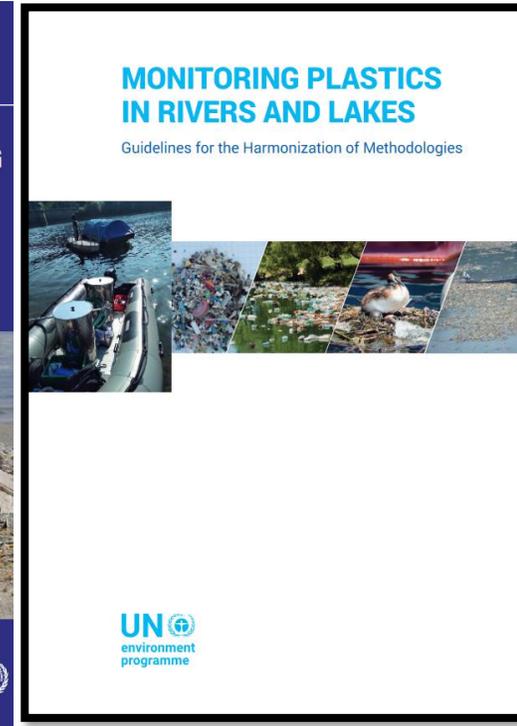
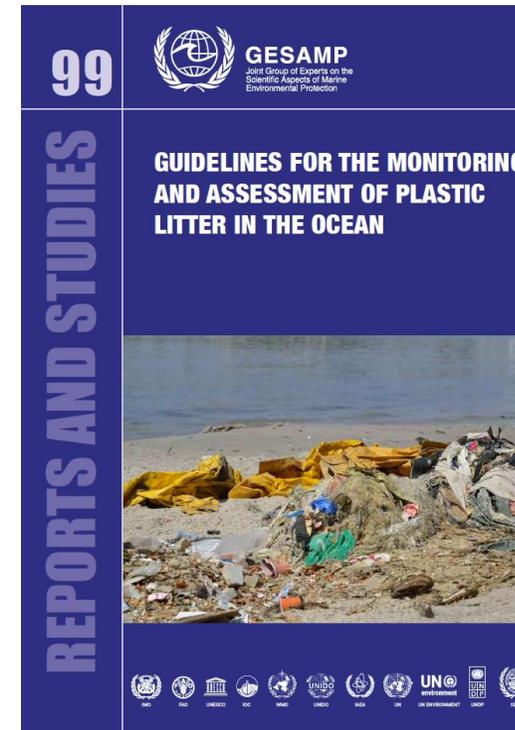
- 30,000 registered students - 54+ countries, 10 languages

## Harmonizing Monitoring & Assessment

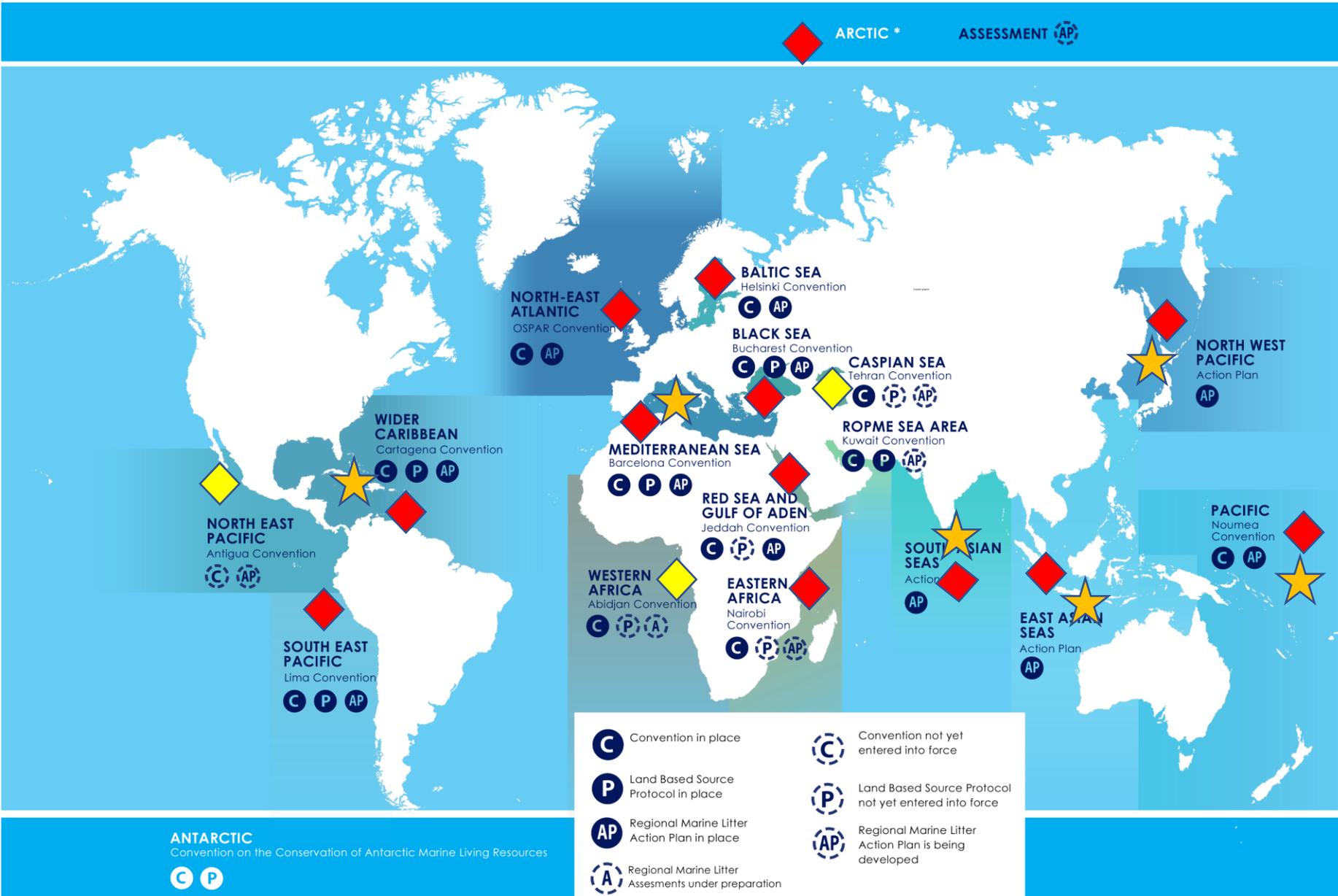
- Training of Trainers
- National training
- Baseline setting & brand audits

Application of monitoring guidelines through Pilot approaches in collaboration with countries

Masterclasses on monitoring and assessment



# Global and Regional Action



## UNEA and AHEG-4

13 Regional Action Plans on Marine Litter

3 Draft Regional Action Plans

5-6 Regional nodes – Global Partnership on Marine Litter

Ongoing: National source inventories pilots to guide action plan development

# National Source Inventory Approach



- University of Wollongong: Concept development and indicator recommendation
- UN-Habitat: waste statistics, including municipal waste flows, major leakage points
- UNEP:
  - legislation review and policy support
  - monitoring of freshwater, coastal and marine waters and pilot testing
  - Harmonize methodologies and models
  - Knowledge management
  - Freshwater risk models

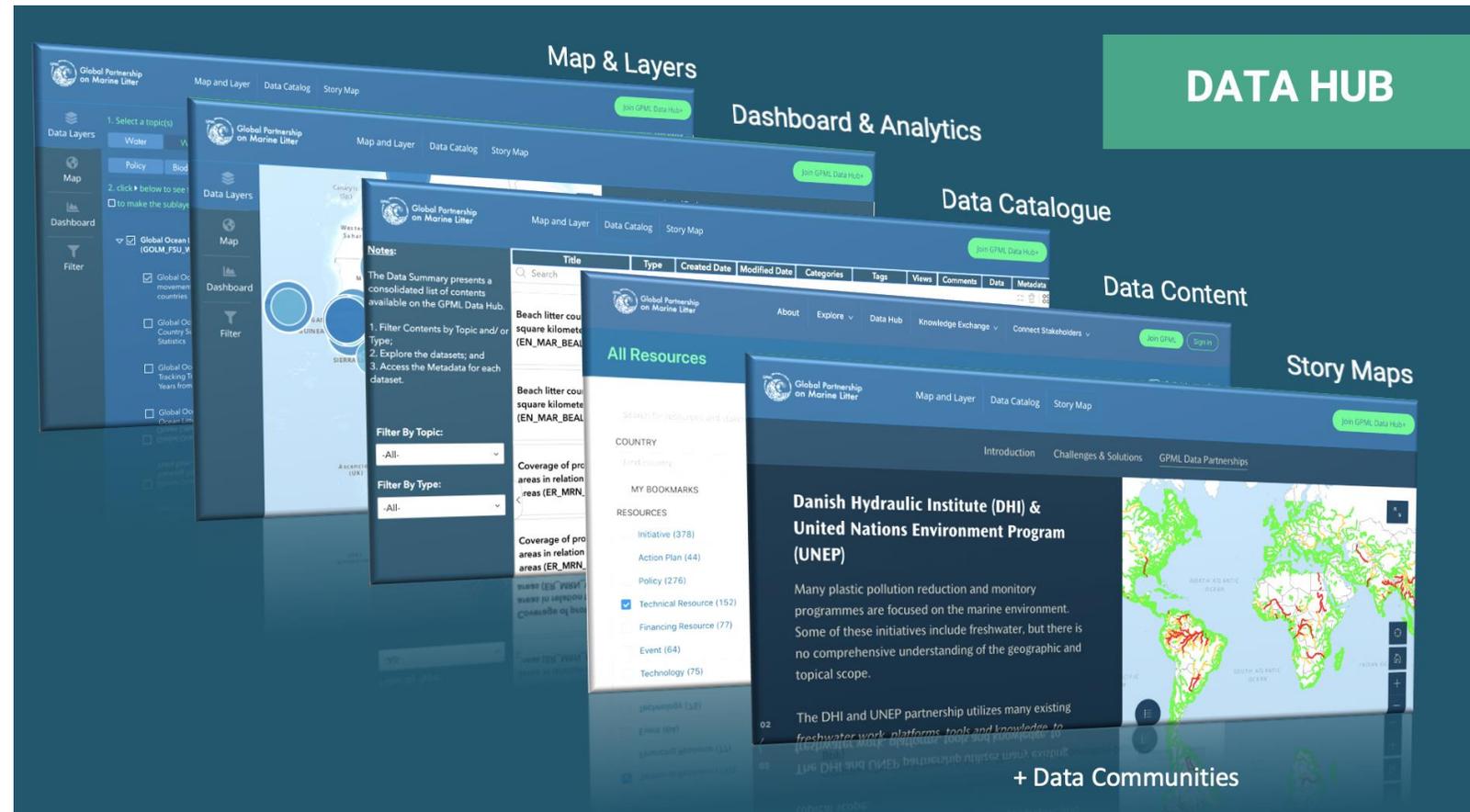
The objective is to produce a comprehensive and evidence-based National Action Plan to support and guide countries towards eliminating ML & plastic pollution.

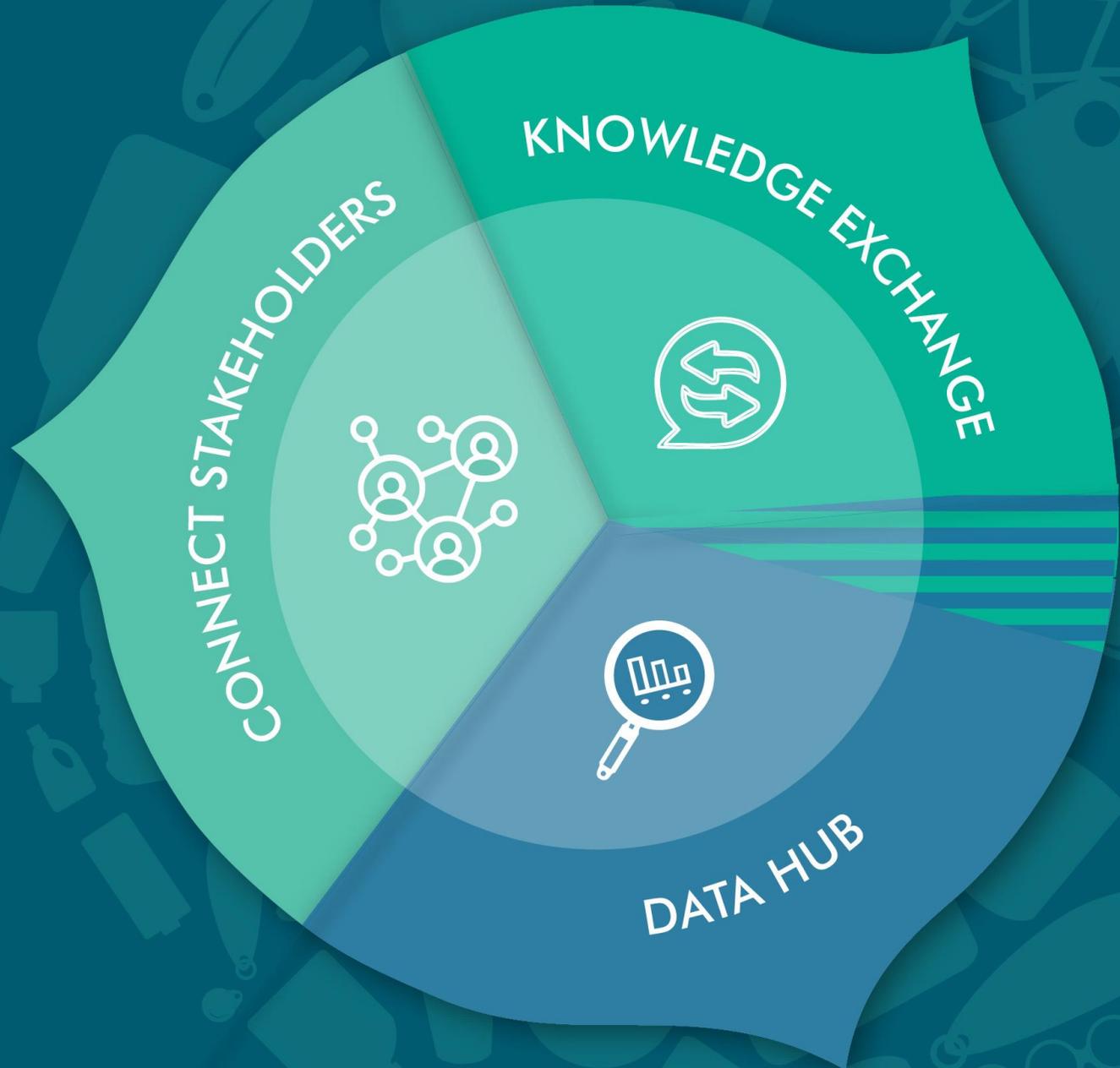
# GPML Digital Platform

A multi-stakeholder online platform to connect stakeholders, exchange knowledge and experiences, and act as a data hub on marine litter and plastic pollution globally.

Currently available in beta version from

[www.digital.gpmarinelitter.org](http://www.digital.gpmarinelitter.org)





# Tracking Marine Litter With a Global Ocean Model

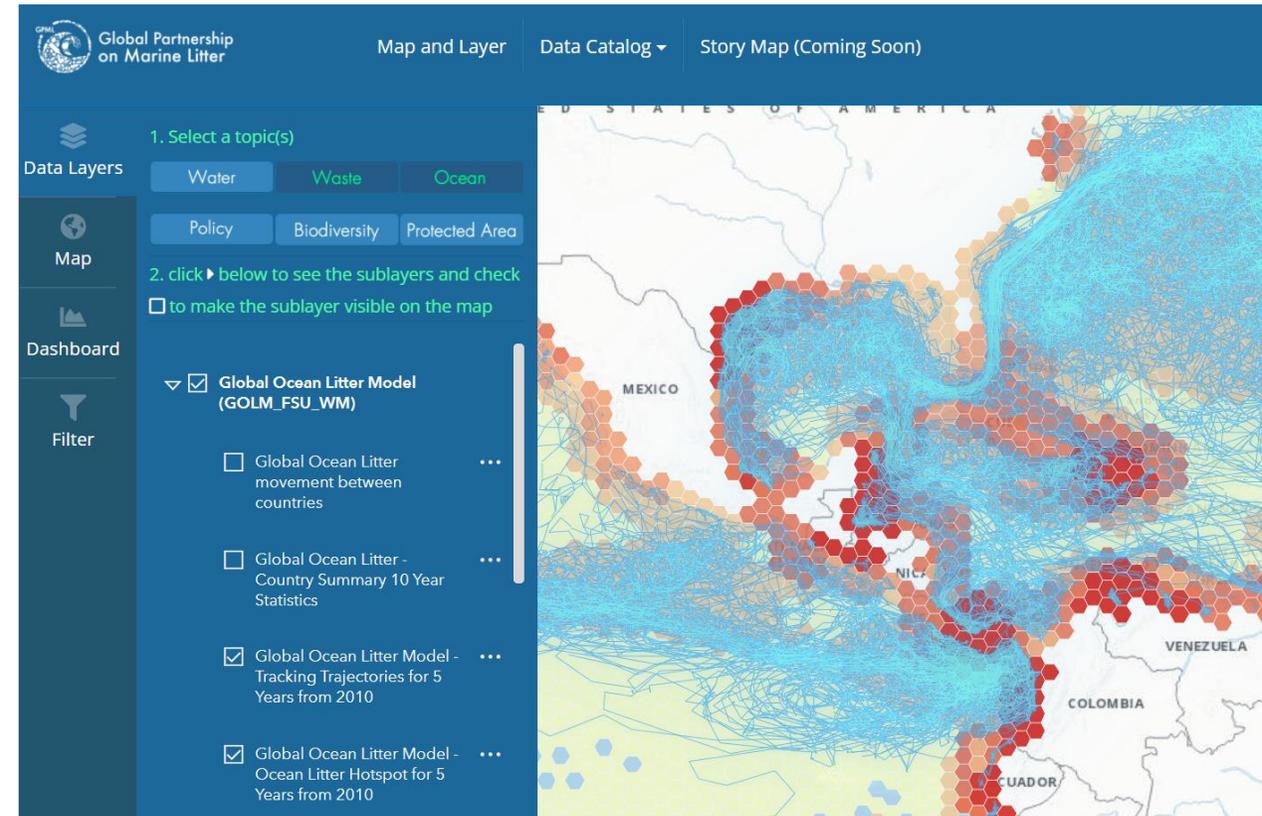
Where Does It Go? Where Does It Come From?

The global marine plastic waste tracking simulations are designed to address the following questions:

1. Where does the marine plastic waste go once released into the ocean?
2. Where does the marine plastic waste found on the coast come from?

## Global statistics available from the GPML data hub

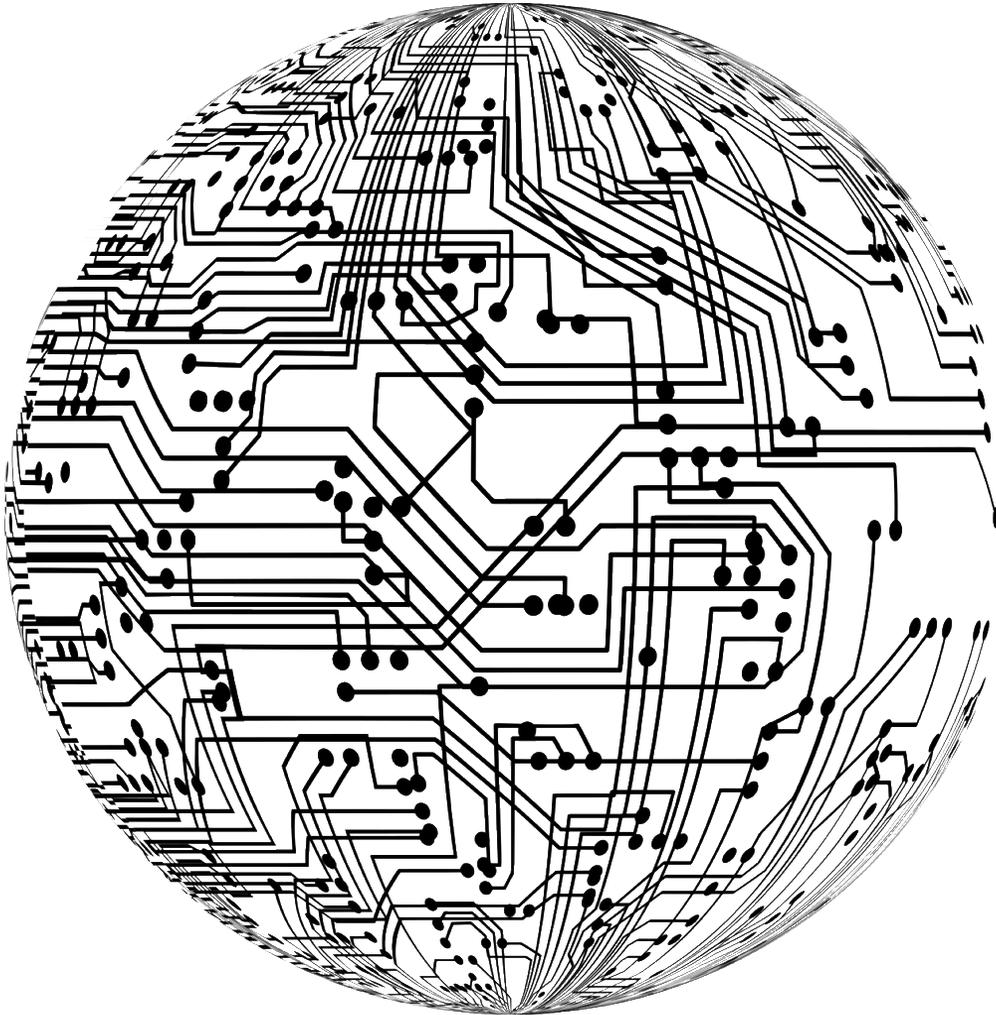
*Current work:* Development of a probabilistic atlas of stranding time and locations of marine litter originating from the Wider Caribbean Sea region to document a) the location and the type of plastics leaked in the environment, b) travel pathways as a function of seasons, c) where the plastic litter ends up, d) how useful is the model to address infrastructure gaps, and e) how can waste management be strengthened.



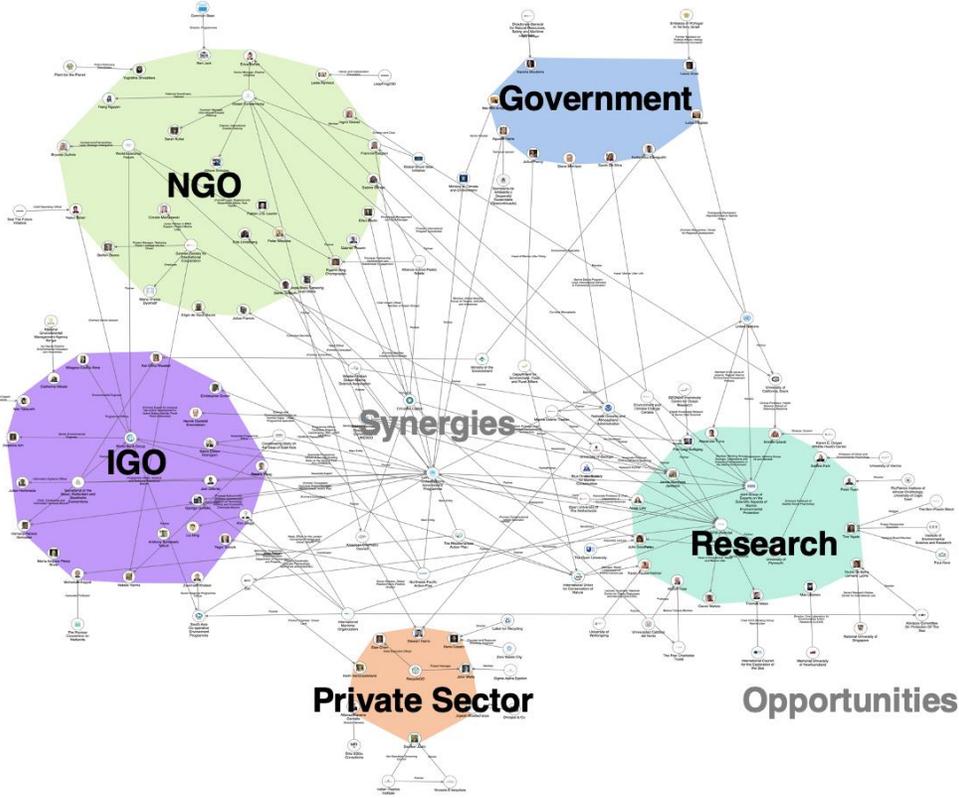
# Ontology & Glossary

## Marine litter and Plastic Pollution Ontology

- A set of 70 terms has been identified with their definitions through the first peer review process
- Community of Practice established for peer review. Join!
- Draft terms are already in the Environment Ontology (ENVO) and in the Sustainable Development Goals Interface Ontology (SDGIO)
- Implemented in collaboration with IOC UNESCO Ocean Best Practices System (OBPS)



# Multi-stakeholder Engagement



**Global Partnership on Marine Litter**



# Global Partnership on Marine Litter

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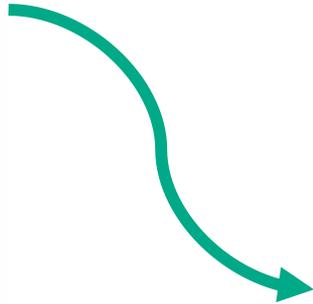
- Multi-stakeholder voluntary partnership (2012) – leverage action
- **Reduce the leakage** of plastics into the ocean, through **improved design**, the application of the ‘3Rs’ principle (reduce, re-use, recycle), **encouraging ‘closed-loop’ systems** and more circular production cycles, maximization of resource efficiency and minimization of waste generation;
- Support implementation of relevant UNGA / UNEA resolutions and decisions, 2030 Agenda as well as **implementation of legal, policy, institutional frameworks** and relevant frameworks that implement international law rel. to marine litter and plastic pollution
- GPML Action Track 1 on Science Policy – harmonize approaches, zoom in on massbalance and risk framework development

# Seventh International Marine Debris Conference (7IMDC)



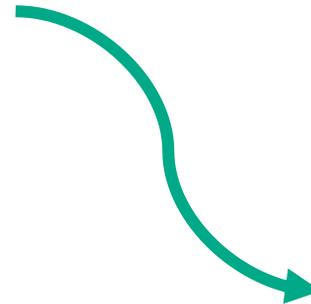
INTERNATIONAL  
MARINE DEBRIS CONFERENCE

MARCH 2011  
HONOLULU, HAWAI'I  
USA



Innovation. Collaboration. Action.

MARCH 2018  
SAN DIEGO, CALIFORNIA  
USA



7TH INTERNATIONAL  
**MARINE DEBRIS  
CONFERENCE**  
18th - 23rd September 2022  
BUSAN, REPUBLIC OF KOREA



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[www.7imdc.org](http://www.7imdc.org)



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**Global Partnership  
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**Thank you.**

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**Heidi Savelli**

heidi.savelli@un.org

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United Nations Avenue, Gigiri  
PO Box 30552 – 00100 GPO Nairobi, Kenya

[www.gpmarinelitter.org](http://www.gpmarinelitter.org)