



***SNAPSHOT: Why monitoring marine litter and why use an national inventory approach***

*Jillian Campbell, Statistician, UN Environment*

# SDG 14: Life below water

- The UN General Assembly adopted a set of 17 Sustainable Development Goals in 2015.
- Goal 14: Conserve and sustainably use the oceans, seas and marine resources for sustainable development
- Seven targets, the first is on marine pollution, including marine litter

... but it is not enough to track only the marine environment, we need to understand sources, pathways and solutions



# National inventory approach

## National action plan

### National Inventory

Statistics on plastic production, imports, use and lifecycles (links to SDG 12.2.1 and 12.2.2)

Waste statistics (linked to SDG 11.6.1 and 12.5.1)

Monitoring of freshwater and wastewater (links to SDG 6.3.1 and 6.3.2)

Monitoring of coastal and marine waters (SDG 14.1.1)

Legislation and advocacy

Policy review

# Plastic production

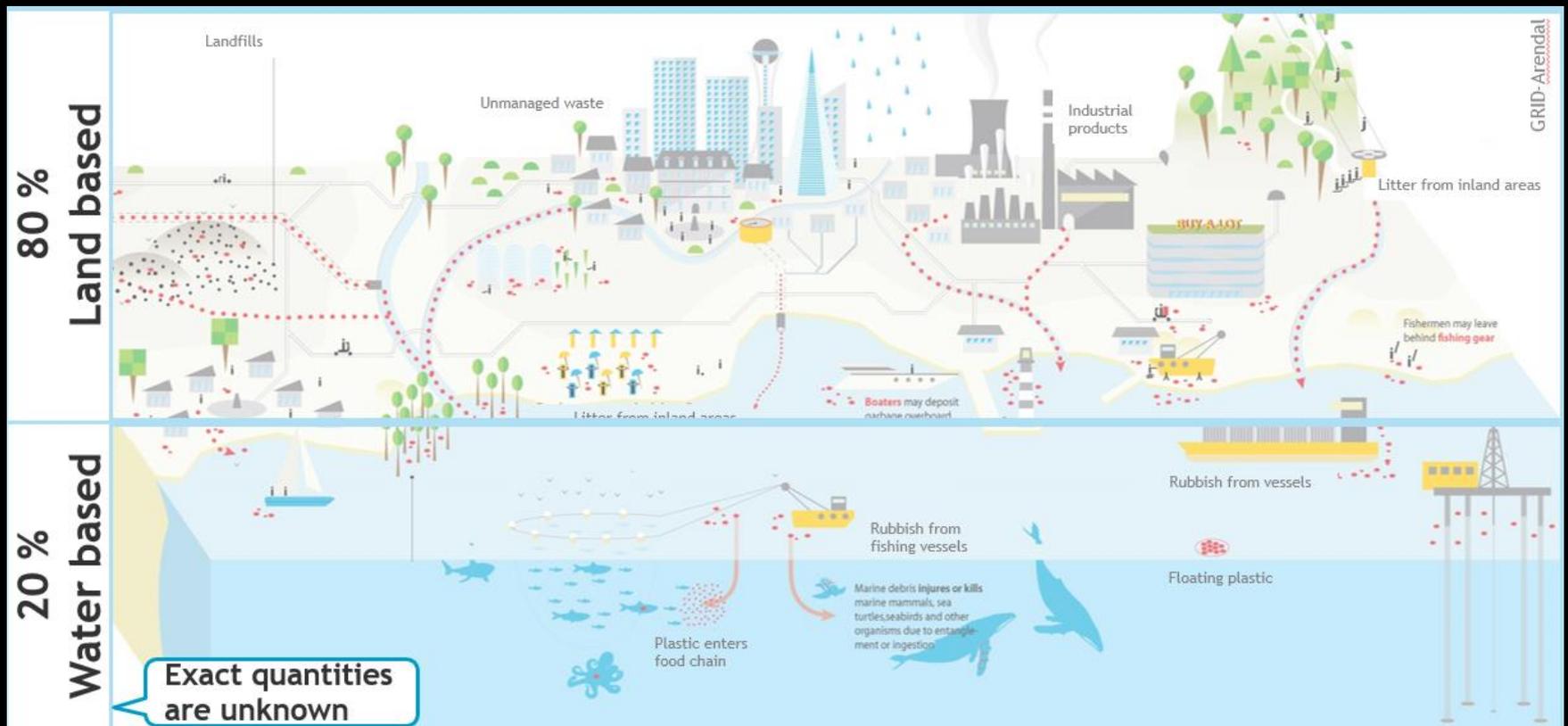
Plastic production has risen exponentially from **2 million tons per year in 1950** to **381 million tons in 2015**.

Recycling has increased but still only **9%** of plastic waste produced has been recycled.

Packaging accounts for almost half of all plastic waste.

# Waste management

- Most marine litter is the result of leakages in the waste management system.
- Understanding waste generation, treatment and leakages is key to developing actions related to marine litter.



# Waste management and recycling in the SDGs

11 SUSTAINABLE CITIES AND COMMUNITIES



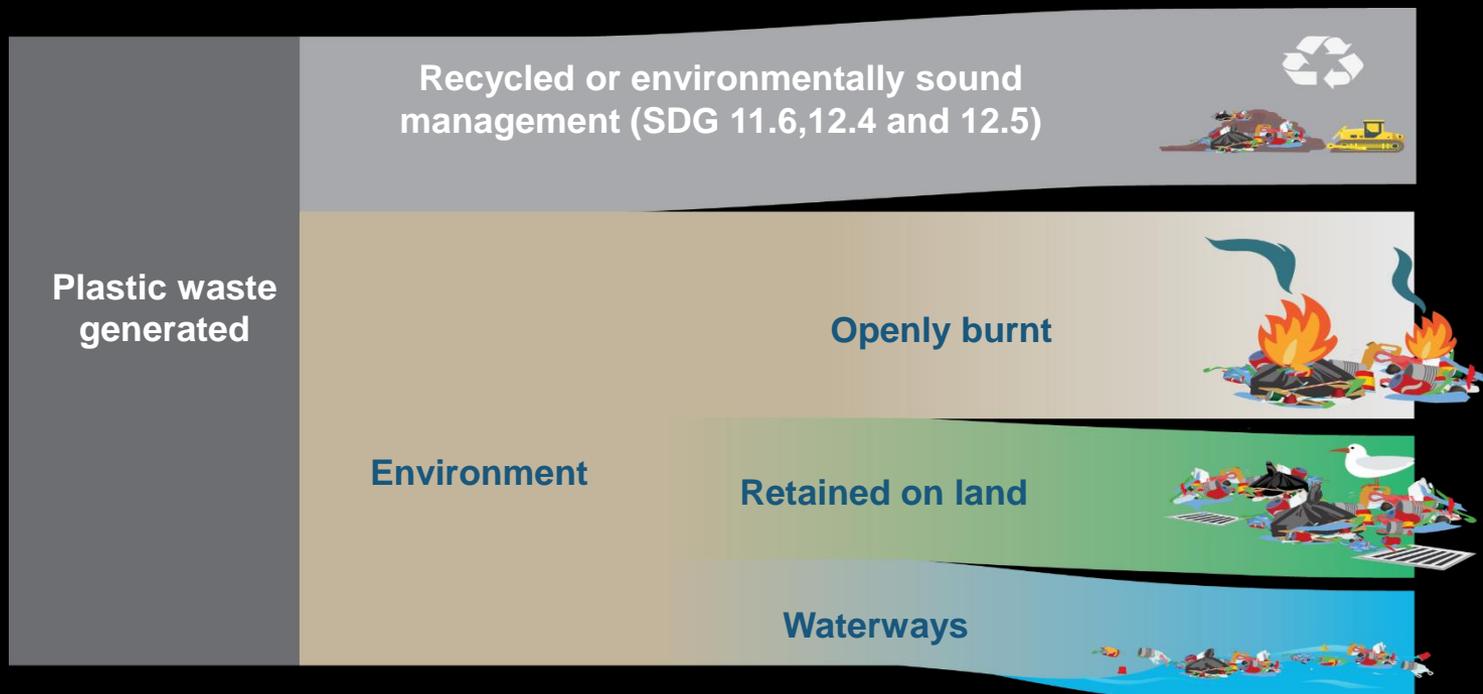
SDG 11.6.1 – municipal solid waste management

12 RESPONSIBLE CONSUMPTION AND PRODUCTION



SDG 12.4.1 and 12.4.2 – chemicals and hazardous waste generation and treatment

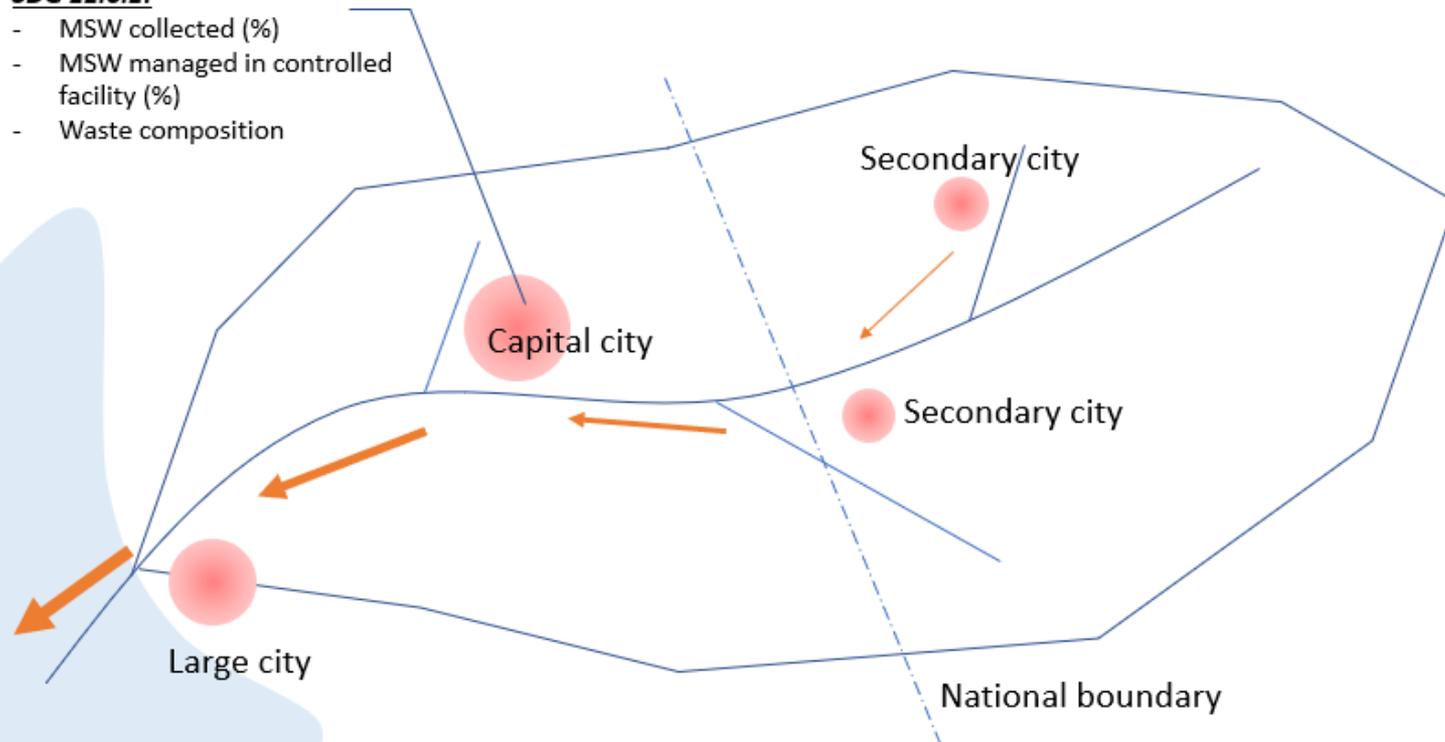
SDG 12.5 – recycling rate



# Unmanaged waste leaks into the environment

## **SDG 11.6.1:**

- MSW collected (%)
- MSW managed in controlled facility (%)
- Waste composition



# Unmanaged waste and rivers: pathways

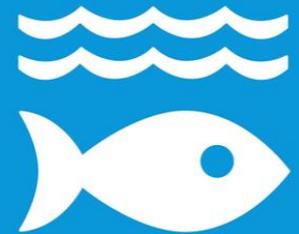
- Understanding how plastics and microplastics enter riverways is not only a marine issue, but important for freshwater ecosystems
- Plastic waste can clog water ways and drains – creating a breeding ground for disease
- The impacts of microplastics on health are unknown.



# Monitoring SDG 14.1.1

- Target 14.1: By 2025, prevent and significantly reduce marine pollution of all kinds, in particular from land-based activities, including marine debris and nutrient pollution
- Indicator 14.1.1: Index of coastal eutrophication and floating plastic debris density

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# Approaches and methods

SDG 14.1.1 monitoring parameters	Level 1	Level 2	Level 3
Plastic patches greater than 10 meters	X		
Modelling of litter movement through oceans	X		
Beach litter (beach surveys)		X	
Floating plastics (visual observation, manta trawls)		X	
Water column plastics (demersal trawls)		X	
Seafloor litter (benthic trawls (e.g. fish survey trawls), divers, video/camera tows, submersibles, remotely operated vehicles)		X	
Plastic ingestion by biota (e.g. birds, turtles, fish)			X
Plastic litter in nests			X
Entanglement (e.g. marine mammals, birds)			X
Plastic pollution potential (based on the use and landfilling of plastics)	X	X	
River litter			X
Other parameters related to plastic consumption and recycling			X
Health indicators (human health and ecosystem health)			X

**Note:** Microplastics monitoring is not shown in the above table, but could be sampled on beaches, in the marine environment and in biota.

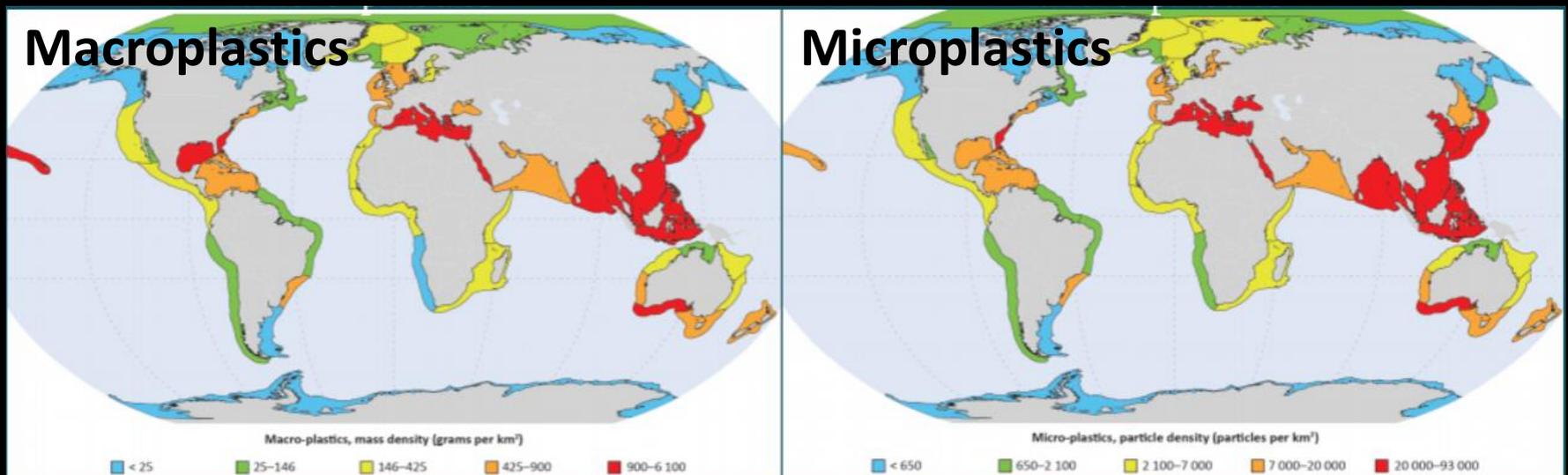
Level 1: Can be estimated globally

Level 2: Recommended for national data collection

Level 3: Possible supplementary indicators

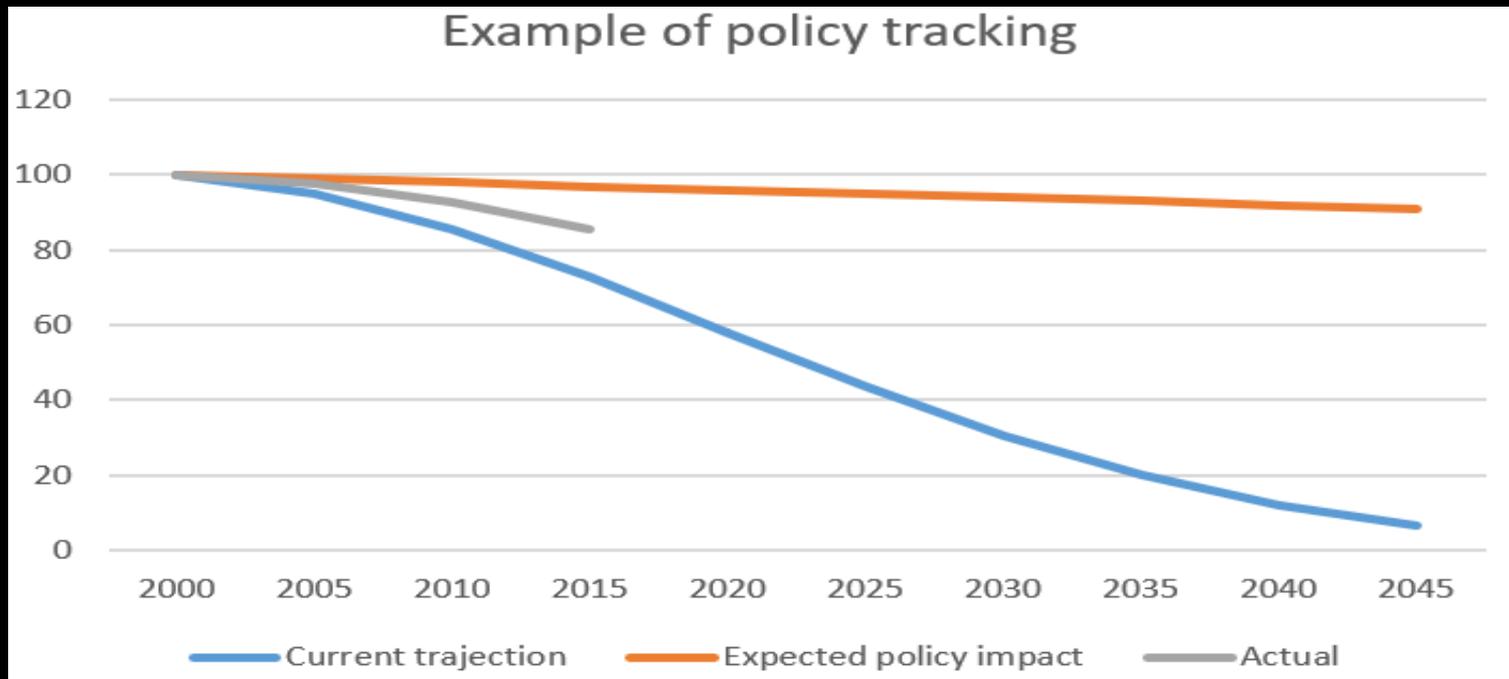
# Current practices: SDG 14.1.1

- Some monitoring of the sources of plastics and microplastics by regional seas and countries – but monitoring is inconsistent.
- Global models have major limitations and cannot be scaled down to the national level.
- Overall, little is known about the current volume of plastic or microplastic and even less about where plastic accumulates.
- Very little use of remote sensing data or citizen science data in any regional or global monitoring effort.



# Course correction

- Imagine that in 2000, a policy was developed which was expected to completely change the trajectory and eliminate marine litter, but after monitoring for 15 years it became clear that the things were not on track.
- We need monitoring to make sure that our actions are creating results



# Bringing data sources together for an accurate picture of litter sources, pathways and final destination

## Healthy People, Healthy Planet



**Big data** is one of the world's emerging valuable resources **changing environmental assessment processes**



### Future Data Needs



More **inclusive and open access** to data will assist in achieving equity, transparency and best use of data for sustainability and development



**Traditional knowledge** can complement science-based knowledge



**Citizen Science** is engaging the public in collecting and analysing big amounts of environmental data



As **women and men** have different rights over the environment, measuring the **gender-environment nexus** is a high priority



More **environmental data** are needed, focused mostly on the **interlinkages** between **environment, society** and **economy**



**Innovative methods of data collection** are required to transform the provisioning of environmental data and statistics

## Current State of Data and Knowledge



# Moving forward: this week

- What are your data sources?
- Does this approach match with your needs?
- How can this feed into national action planning?





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