

# RETHINKING PLASTICS

Catalyzing a Circular Economy

July 2019

Presentation by Anjali Acharya  
Sr. Environmental Specialist, World Bank



# No Time to Waste

## The numbers are dire

- Estimated 300 million tons of plastics being produced annually  
Currently 150 million tons of plastics in the world's oceans
- Another 250 million will be added if current trends in urbanization, production and consumption continue



## Regional dimension is clear

- The top regional generators of Mismanaged Plastic Waste are **Southern Asia, Eastern Asia, and South-East Asia**
- 90% of global marine plastic pollution is estimated to come from just 10 rivers, **8 of them is Asia**



## The impacts are significant

Economies, Sectors	Ecosystems, Biodiversity	Food Security
<i>The cost of ocean plastics to tourism, fishing and shipping industries in APEC economies alone was \$1.3 billion in 2008</i>	<i>Damage caused by plastics to marine ecosystems estimated to be at least \$13 billion per year</i>	<i>In Makassar fish market, plastic found in 28% of individual fish and in 55% of species sampled</i>

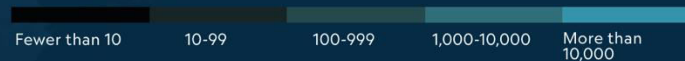


# Mismanaged municipal plastic waste



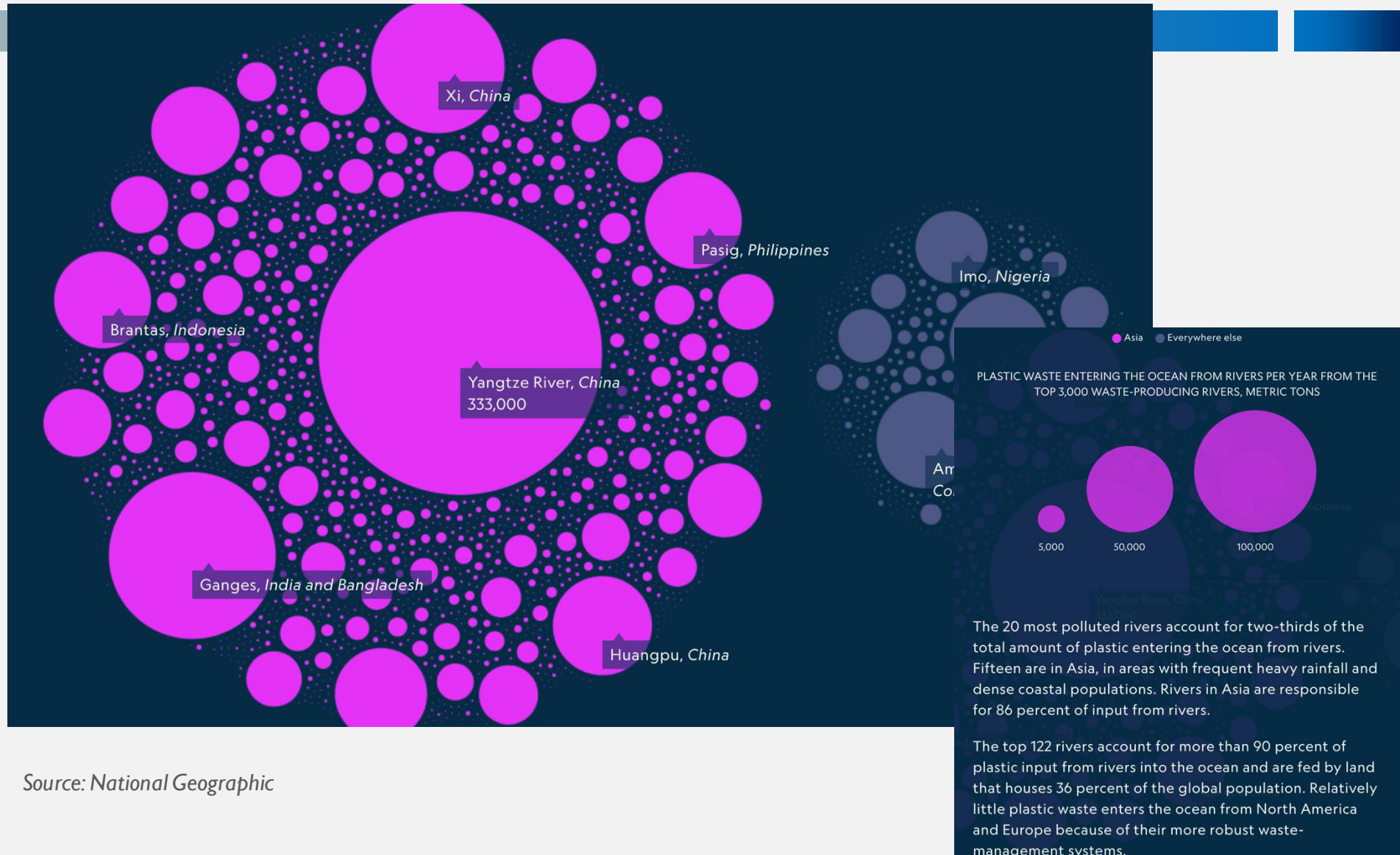
Source: National Geographic

MISMANAGED MUNICIPAL PLASTIC WASTE, TONS PER YEAR



Let's start with how discarded plastic is handled on land. In 2015, researchers calculated how much waste is flowing from coastal countries into the oceans. Mismanaged plastic waste is defined as waste that doesn't make its way to proper receptacles, either intentionally or accidentally. Mismanaged waste tends to be higher in developing countries lacking municipal waste-collection systems that deliver garbage to recycling centers and/or landfills.

# Rivers polluted with most plastic...



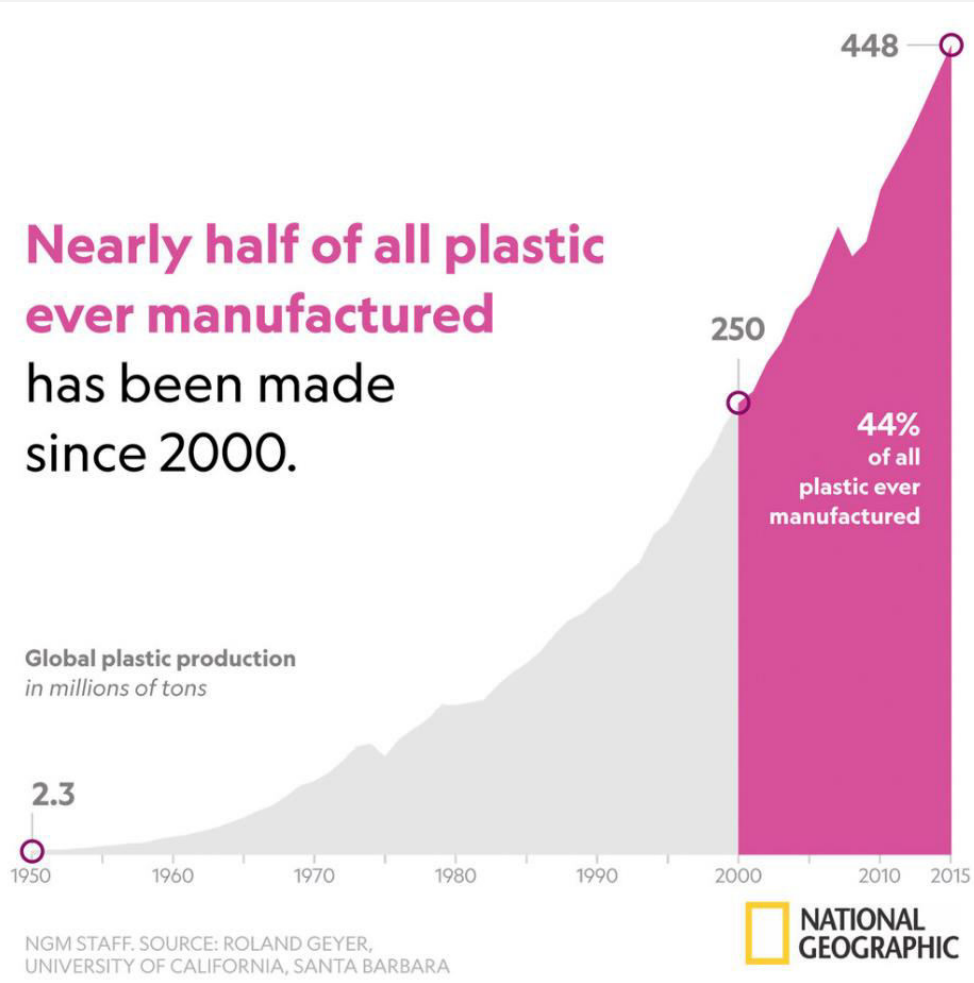
Source: National Geographic

# Marine Plastics

## A LIFETIME OF PLASTIC

The first plastics made from fossil fuels are just over a century old. They came into widespread use after World War II and are found today in everything from cars to medical devices to food packaging. Their useful lifetime varies. Once disposed of, they break down into smaller fragments that linger for centuries.

Nearly half of all plastic ever manufactured has been made since 2000.



Source: National Geographic

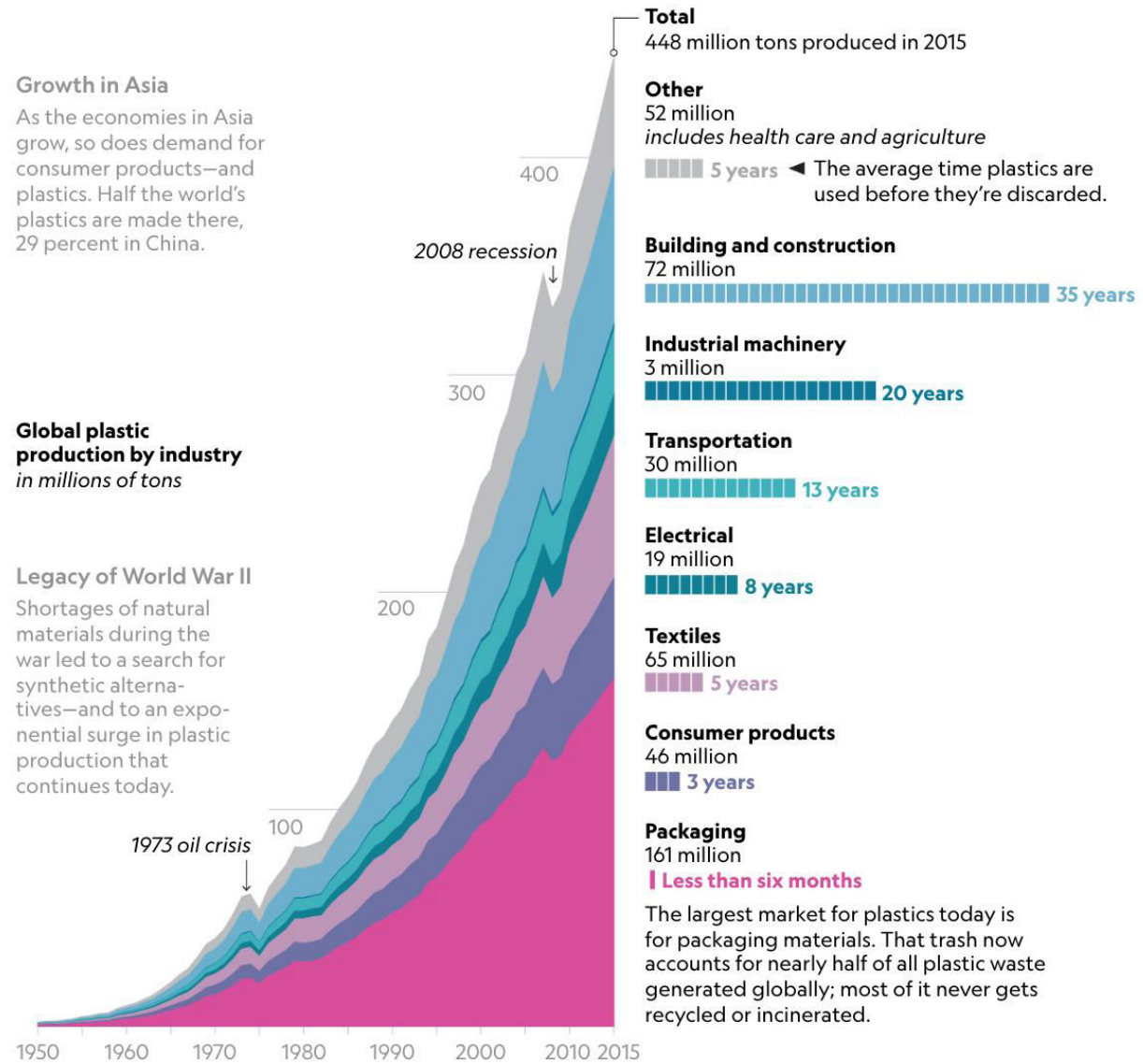
### Growth in Asia

As the economies in Asia grow, so does demand for consumer products—and plastics. Half the world's plastics are made there, 29 percent in China.

### Global plastic production by industry in millions of tons

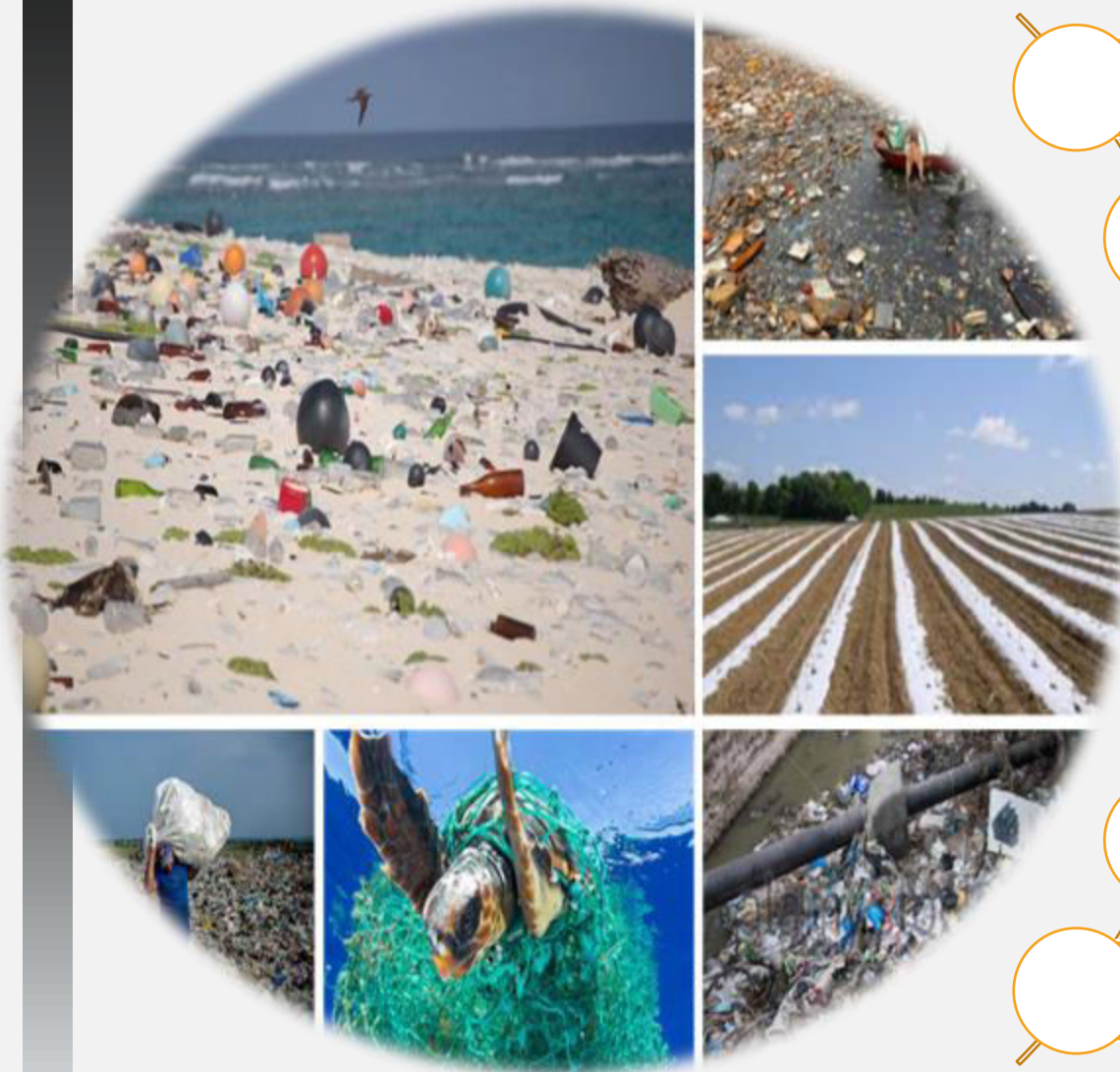
### Legacy of World War II

Shortages of natural materials during the war led to a search for synthetic alternatives—and to an exponential surge in plastic production that continues today.



The largest market for plastics today is for packaging materials. That trash now accounts for nearly half of all plastic waste generated globally; most of it never gets recycled or incinerated.

# Challenges for Addressing Marine Plastics



- Gaps in policies and regulations.
- Improper collection and sorting, leakage during transport, lack of treatment infrastructure.
- Lack of investment in basic solid waste infrastructure.
- Limited economic analysis relating to marine litter costs & solutions.
- Limited access to technologies and innovation.
- Fragmented institutional arrangements.
- Inadequate metrics and monitoring.

## MAKING PLASTICS MORE CIRCULAR



**CIRCULAR SUPPLIES:** Use renewable energy, bio-based or fully recyclable input material to replace toxic and single-lifecycle inputs



**PRODUCT AS A SERVICE:** Offer product access and retain ownership to internalize benefits of circular resource productivity



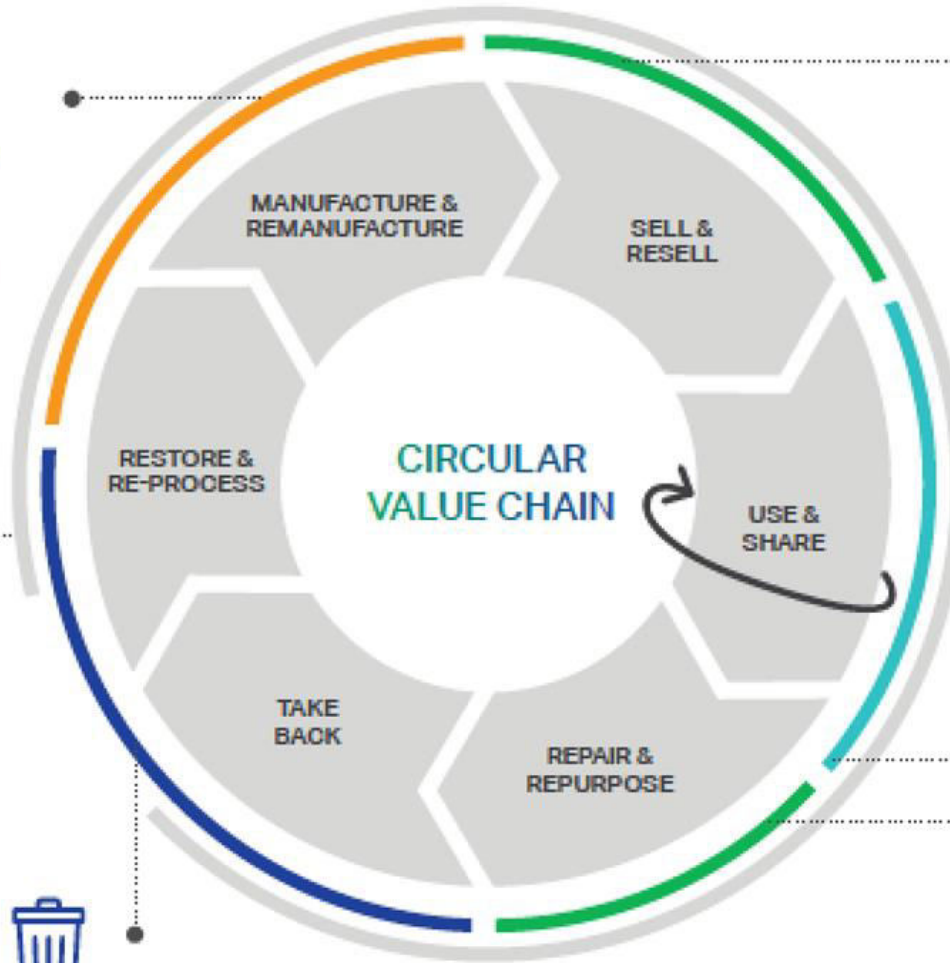
**RESOURCE RECOVERY:** Recover materials, resources and energy from disposed products or by-products



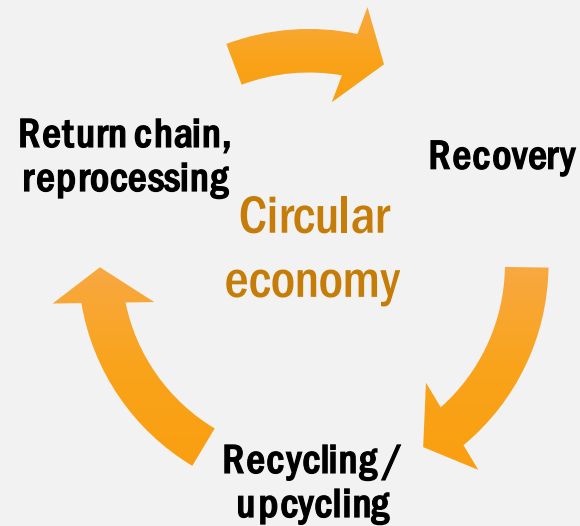
**PRODUCT LIFE-EXTENSION:** Extend working lifecycle of products and components by reselling, repairing, remanufacturing and upgrading



**SHARING PLATFORM:** Enable increased utilization rate of products by making possible shared use/ access/ownership



# Circular Economy: Long-term Approach To Address Marine Plastics

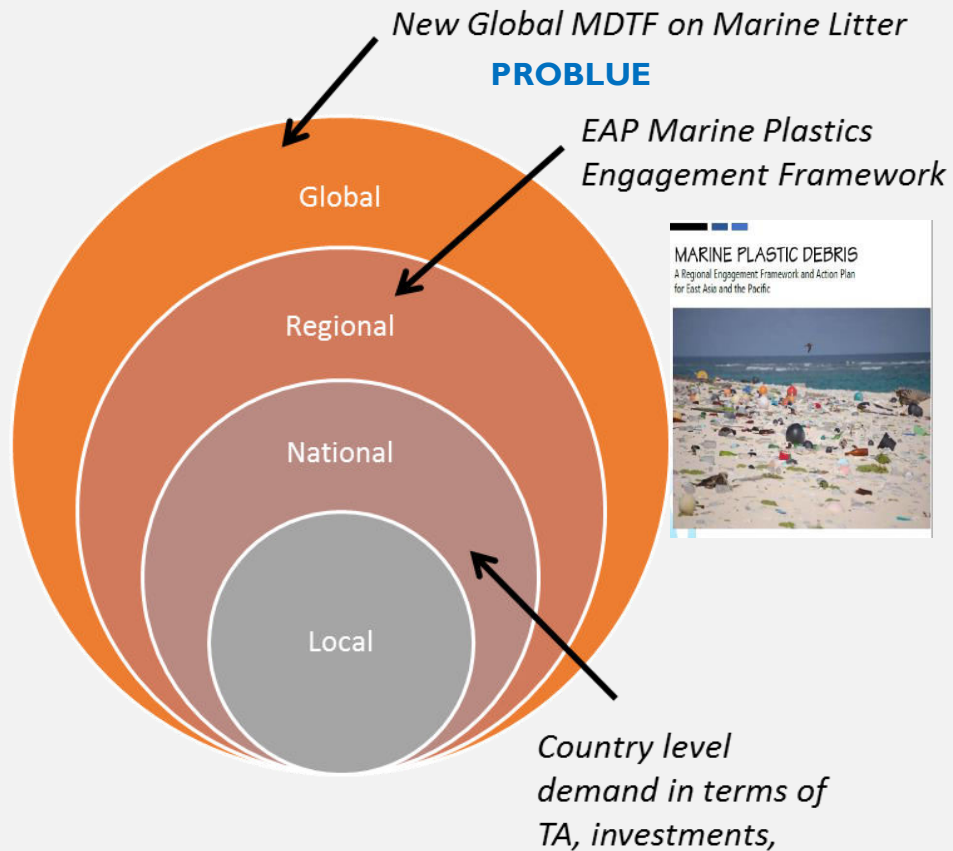


- Integrated Solid Waste Management => provide the feedstock for recycled plastics
- Recycling markets development
  - Public & private investments
  - At the regional level
  - Global standards in materials, product design
  - Disclosure & Monitoring at all market stages
  - Create commodity exchanges
- Reducing consumption & contaminating products (resource efficiency & clean production) requires:
  - technological & social innovation
  - behavioral change
  - Policy reforms and Education

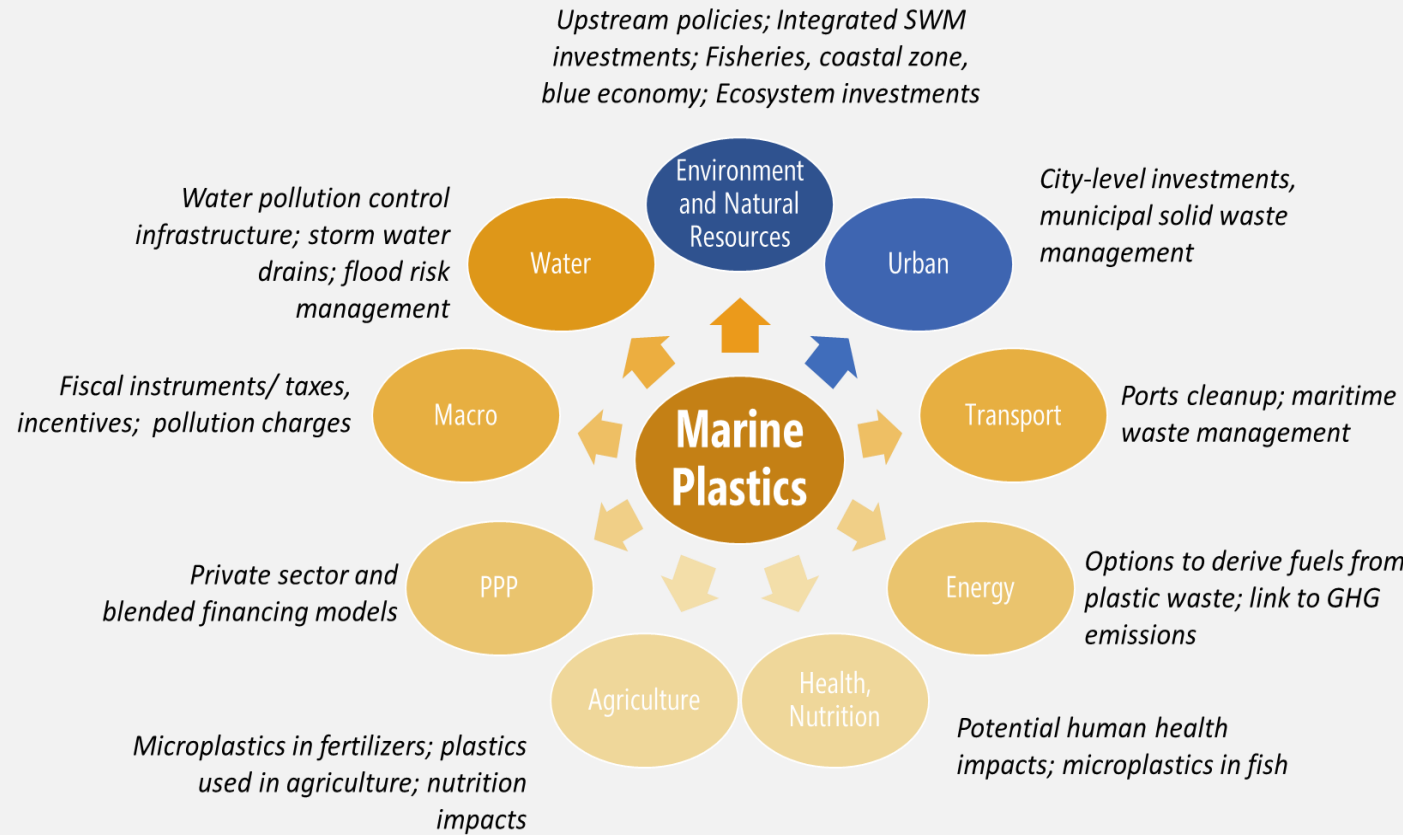


# World Bank Group Engagement in Marine Plastics

## Working across levels



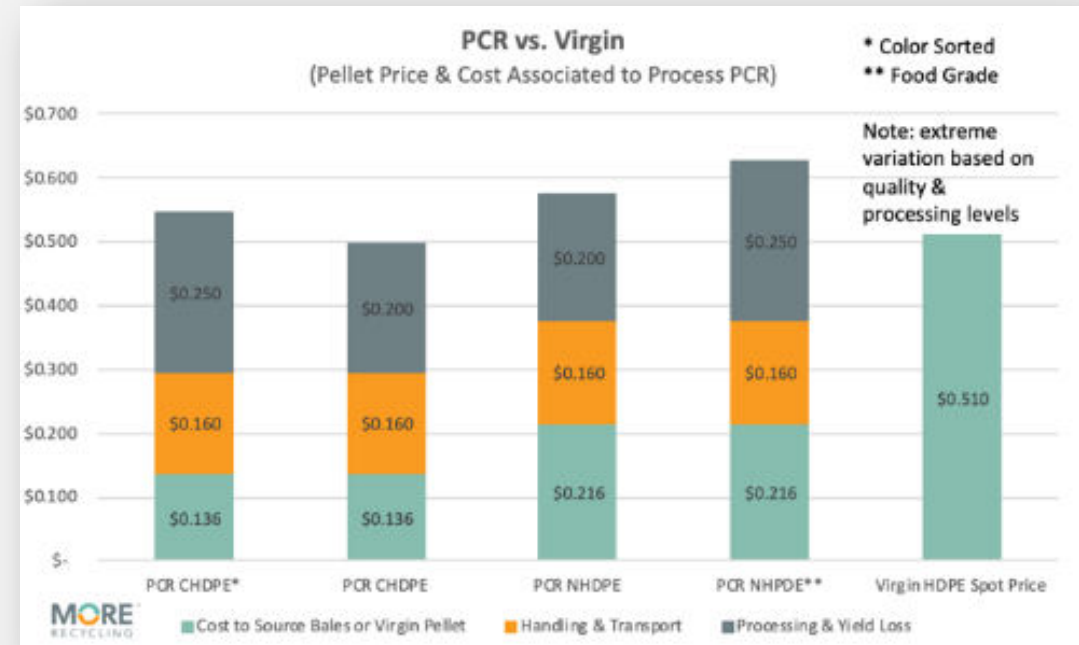
## Working across sectors



# Key Messages - #1

## Pricing must be right for resources

- Circularity implies using fewer non-renewable resources. But **many countries still heavily subsidize both the extraction and consumption of natural resources**, reducing incentives for circularity.
- **National-level subsidy reforms can be undermined without adequate trade policies and international coordination.** Governments and industries are generally reluctant to phase out subsidies and to introduce environmental taxes unilaterally, for fear of undermining domestic competitiveness. However, fiscal and trade policies can be designed to address this concern.



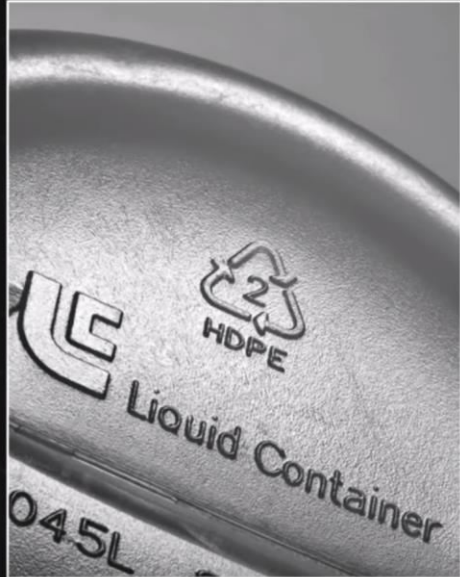
## Key Messages- #2

### Harmonized product standards are key for trade to support the CE

- **Toxins should be removed from products for the CE to become a reality.** In addition to the risks posed to consumers and the environment, products with hazardous substances are harder to recycle.
- **Many developing countries need support building the regulatory frameworks, institutional capacity and governance systems to phase out toxic products.** This notably means ensuring that imports meet domestic health, safety and quality standards, and that exports comply with foreign market requirements.

## RESIN IDENTIFICATION CODES

1	<b>POLYETHYLENE TEREPHTHALATE (PET)</b> BEVERAGE BOTTLES, CUPS, OTHER PACKAGING
2	<b>HIGH-DENSITY POLYETHYLENE (HDPE)</b> BOTTLES, CUPS, MILK JUGS
3	<b>POLYVINYL CHLORIDE (PVC)</b> PIPES, SIDING, FLOORING
4	<b>LOW-DENSITY POLYETHYLENE (LDPE)</b> PLASTIC BAGS, SIX-PACK RINGS, TUBING
5	<b>POLYPROPYLENE (PP)</b> AUTO PARTS, INDUSTRIAL FIBRES, FOOD CONTAINERS
6	<b>POLYSTYRENE (PS)</b> PLASTIC UTENSILS, STYROFOAM, CAFETERIA TRAYS, ETC.
7	<b>OTHER PLASTICS</b> ACRYLIC, NYLON, POLYCARBONATE AND POLYLACTIC ACID (PLA)



**It's not enough to improve product standards on a country-by-country basis.** Product components often come from many countries – all with different environmental regulations. We need international agreements and cooperation on manufacturing and recycling standards for toxic substances.

# Key Messages - #3

**The transition to a CE will result in greater trade in second-hand goods, end-of-life products, secondary materials or waste, and in related services**

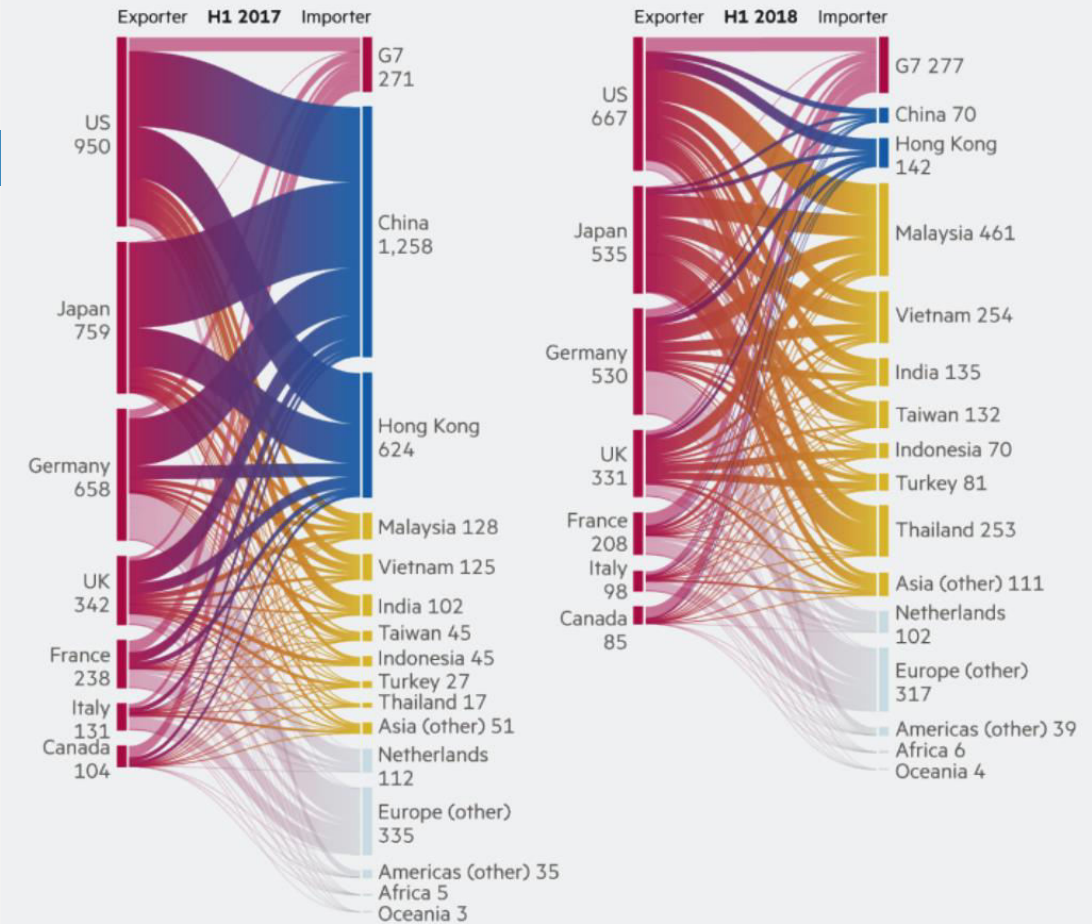
For this reason, there need to be **clearer rules, quality standards, data and management systems for trade of second-hand goods, secondary materials and waste.**

- China's ban – impact on redirecting waste/recyclables to other Asian countries.

**Countries must strengthen standards and their capacity to safely process waste** – and avoid being a dumping ground for low-quality second-hand products and waste shipments.

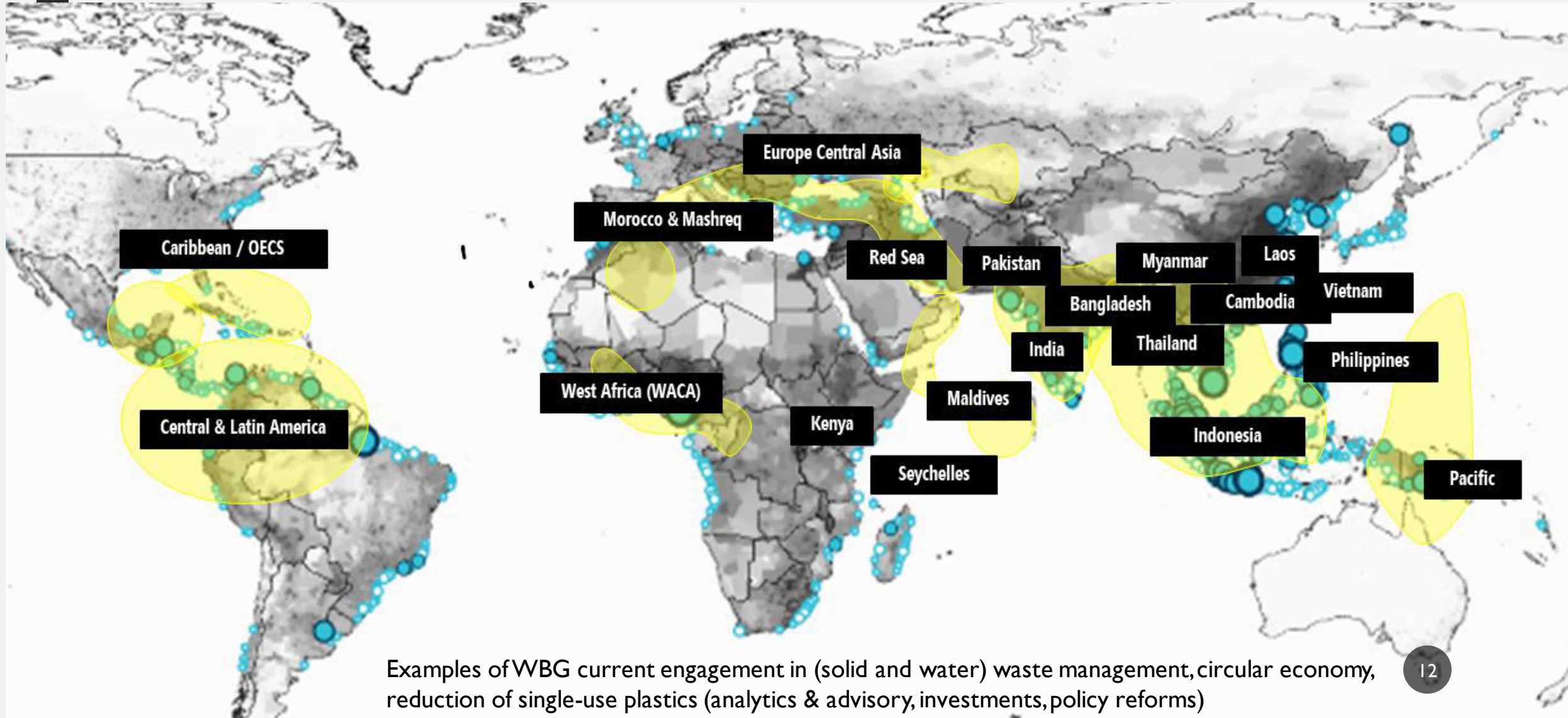
**Regulations and charges on waste imports and exports could be considered at a national-level.** In addition to standards on waste quality, it should not be possible to export waste to countries without evidence that they have the regulations, infrastructure and systems in place to safely process them.

- Basel convention – welcome step towards strengthening rules governing the transboundary movement of waste



Source: Financial Times

# WBG is Investing and Supporting Policy Reforms



Examples of WBG current engagement in (solid and water) waste management, circular economy, reduction of single-use plastics (analytics & advisory, investments, policy reforms)



**THANK YOU**