Mitigating Plastic Pollution

Regional Efforts

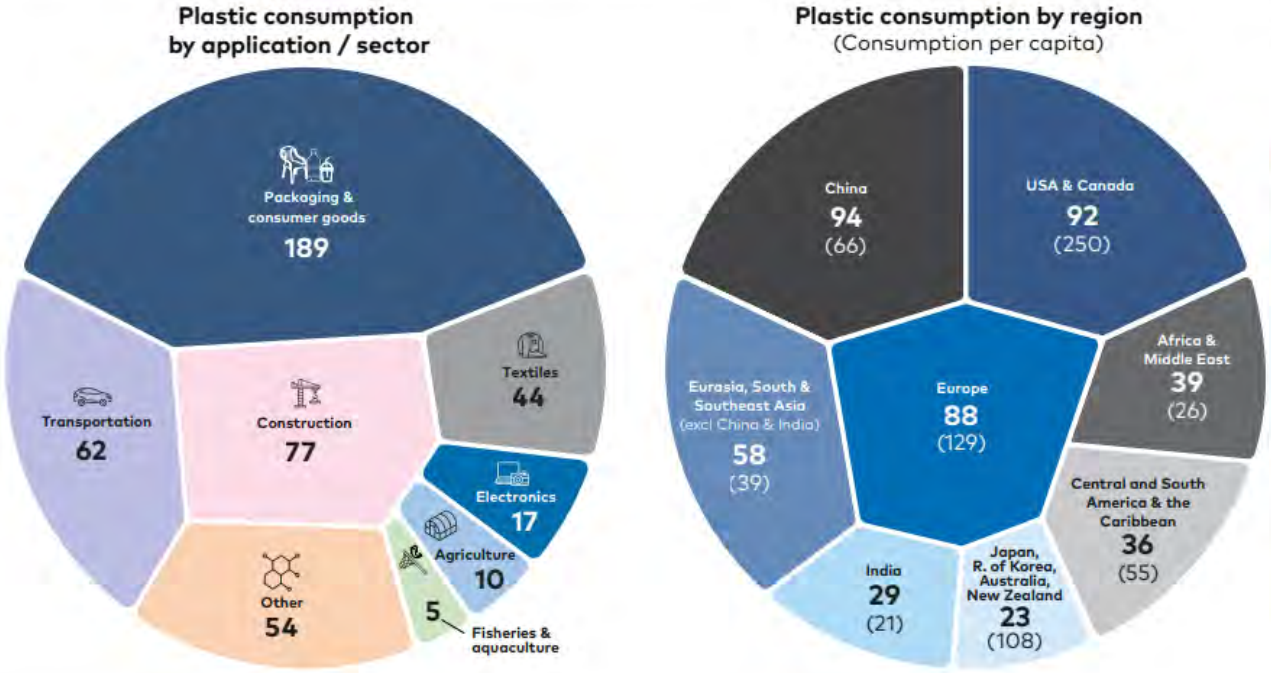
Mushtaq Ahmed Memon, Ph.D.
Regional Coordinator,
Chemicals and Pollution Action Subprogramme,
United Nations Environment Programme- Asia and the Pacific Office
memon@un.org

Plastics Scenario

FIGURE 3 **Breakdown of plastic consumption in 2019**

Plastic is used across a broad variety of economic sectors and applications around the world

Mt/year, 2019. Consumption per capita in Kilos of plastics consumed / year. All numbers are subject to rounding.

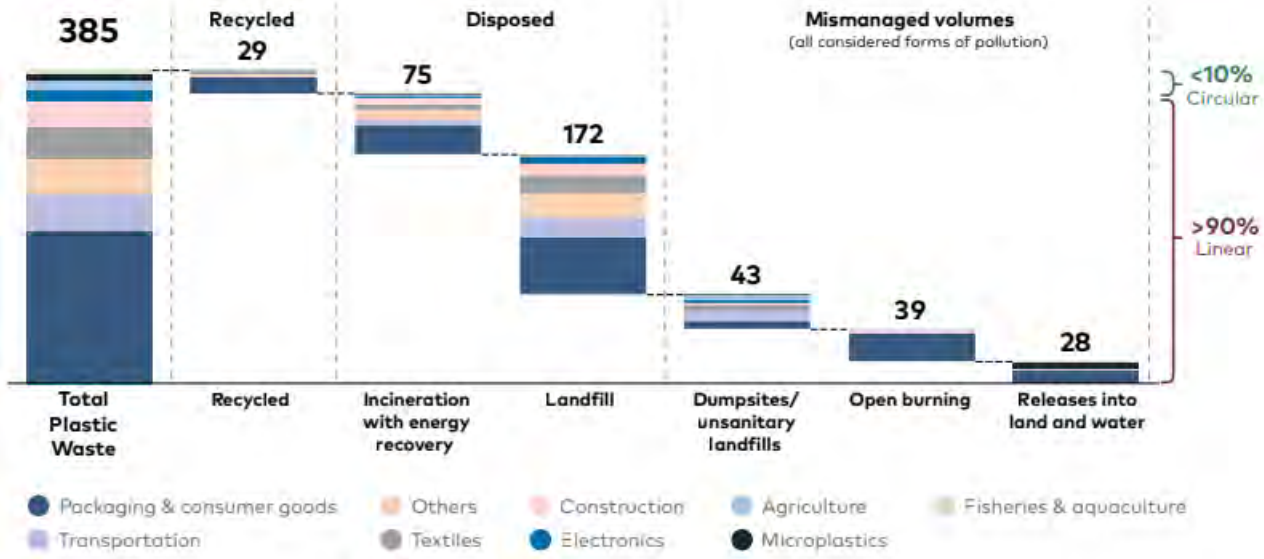


Plastic consumption per capita estimates for the modelling include all plastics consumed in a given region, including those from industry.
Source: OECD Global Plastic Outlook, FAO, Environmental Action, UN population data, Systemiq analysis.

FIGURE 4 **End-of-life fate of plastic waste in 2019 by sector**

Out of the 385m Mt of plastic waste generated, less than 10% was recycled and 28% was mismanaged.

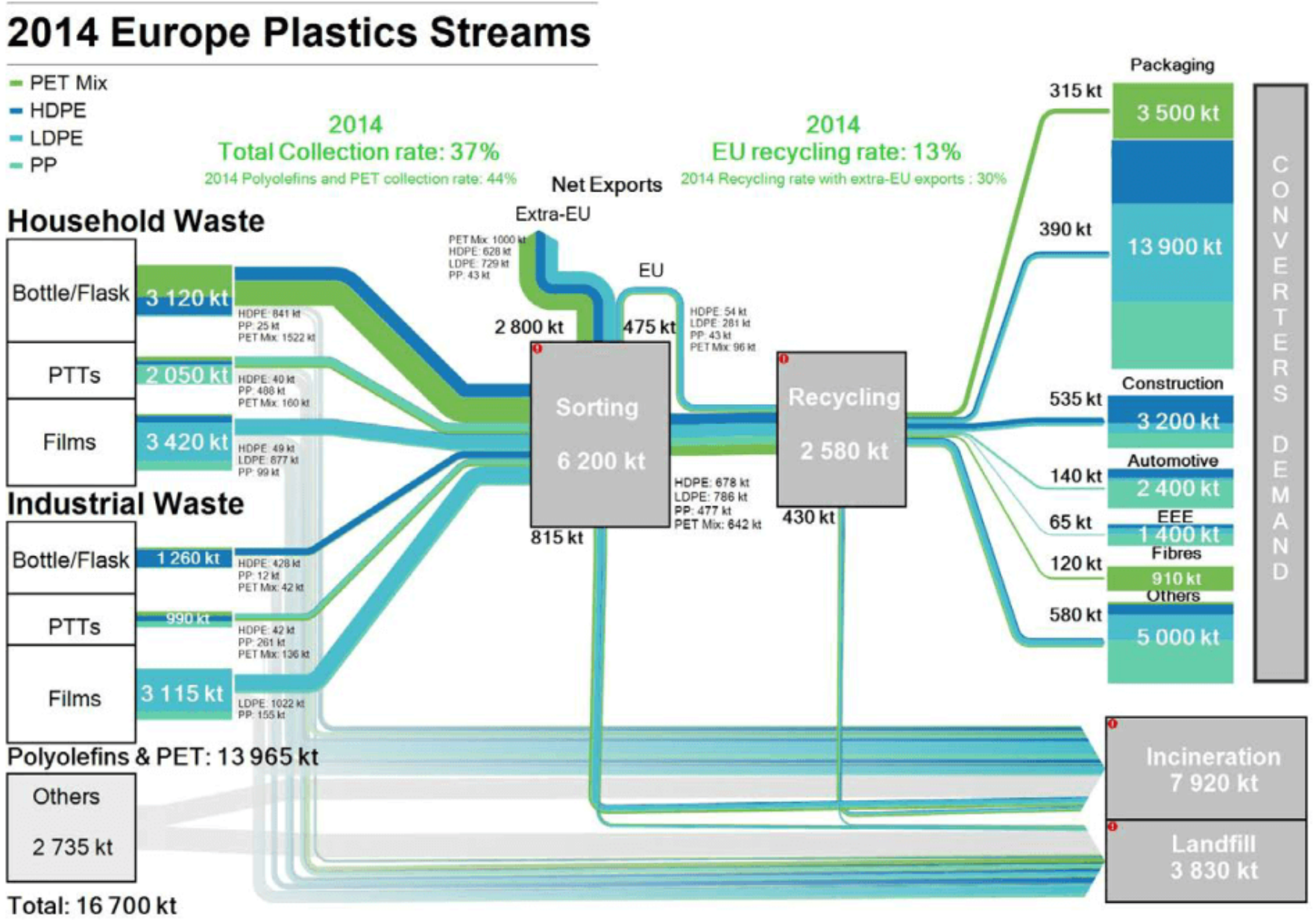
Mt/year. All numbers are subject to rounding.



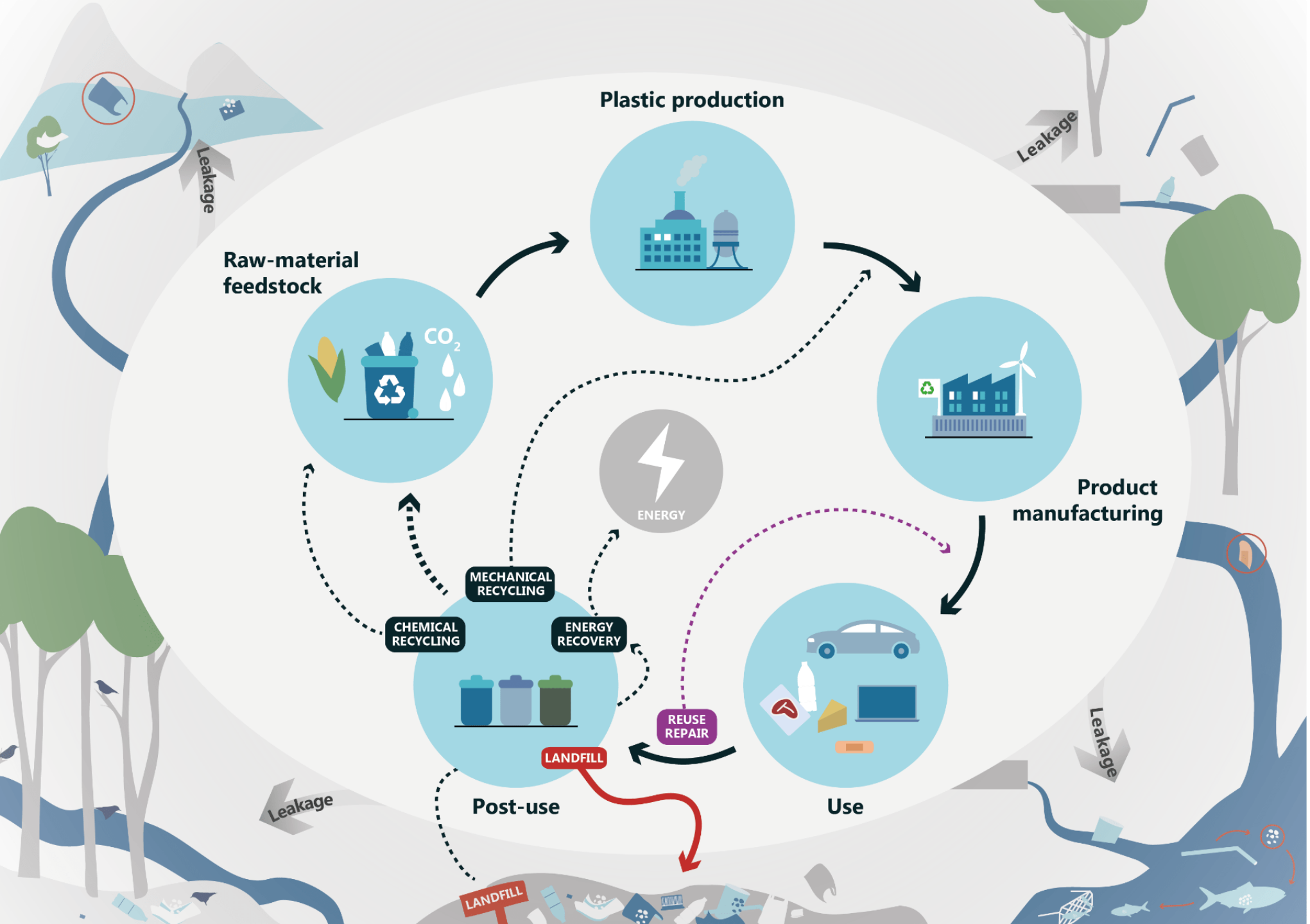
The Business-as-Usual Scenario would lead to a substantial increase in plastic production, mismanaged plastics and GHG emissions

Baseline 2019	**430** Million tonnes Virgin plastic produced	**110** Million tonnes Mismanaged plastic	**1.9** Gigatonnes CO_2e GHG emitted
Business-as-Usual 2040	**712** Million tonnes ↑66% vs 2019	**205** Million tonnes ↑86% vs 2019	**3.1** Gigatonnes CO_2e ↑63% vs 2019

Plastic Leakage Monitoring - Examples



From the report by Deloitte Sustainability 'Blueprint for plastics packaging waste: Quality sorting & recycling . Final report' (2017) at https://www.plasticsrecyclers.eu/sites/default/files/PRE_blueprint%20packaging%20waste_Final%20report%202017.pdf



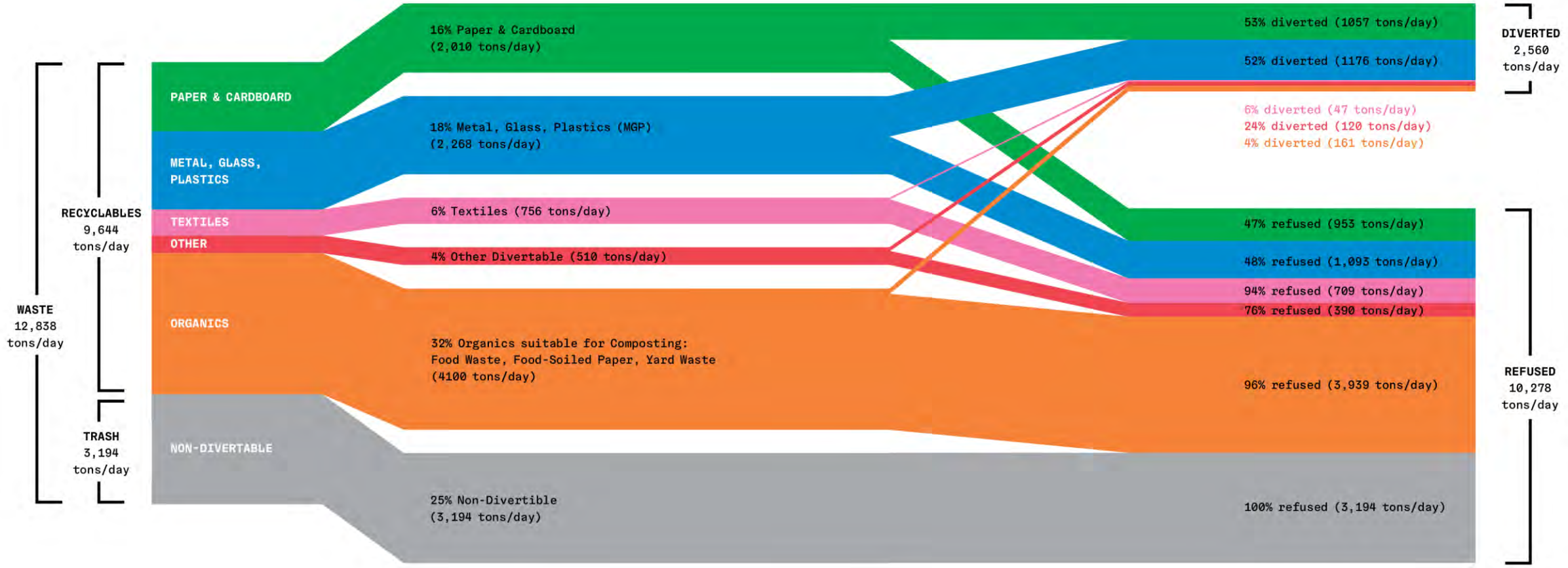
https://www.google.com/url?sa=i&url=https%3A%2F%2Fdebrisfreeoceans.org%2Fthe-life-cycle-of-plastics%2F&psig=AOvVaw2jlDuwtErsj1rdVC_FesPh&ust=1717210704980000&source=images&cd=vfe&opi=89978449&ved=0CBIQjRxqFwoTCLDuqMnytoYDFQAAAAAdAAAAABAJ

Plastic Leakage Monitoring – Example

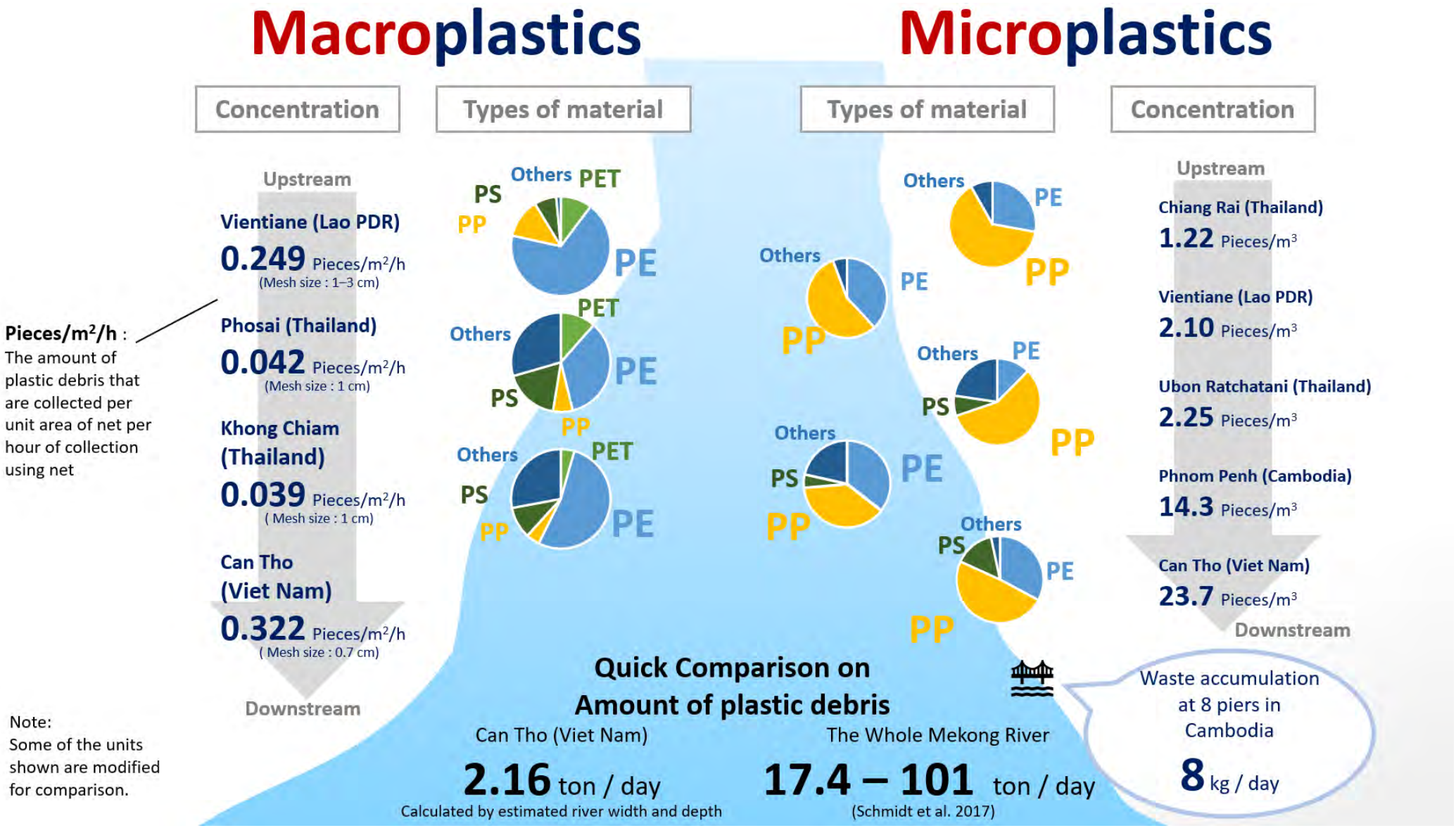
New York City

What does New York City's waste flow look like today?

https://www.sankey-diagrams.com/tag/waste/



MRC Assessment



Circular Economy based on 3R Appraoch

Generating circular economy for plastics to reduce plastics pollution and increase resource efficiency:

- goods (plastics and plastic containing),
- services (catering, waste management,),

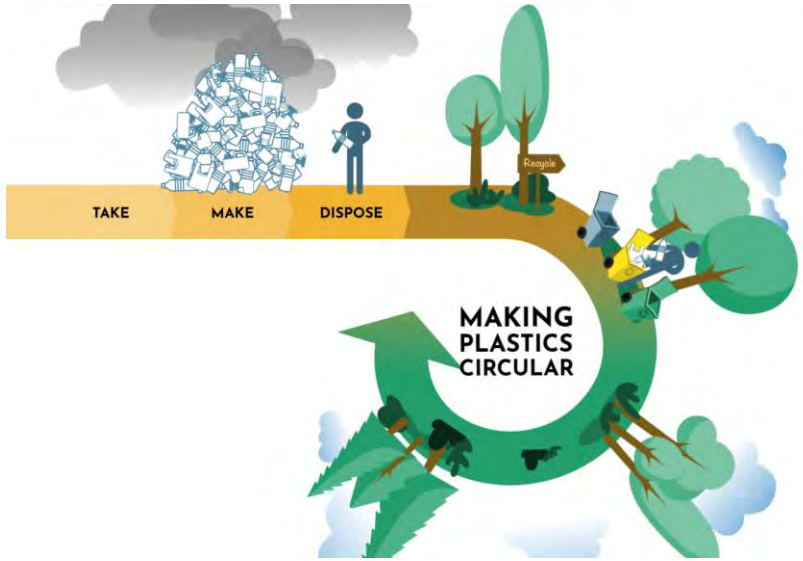
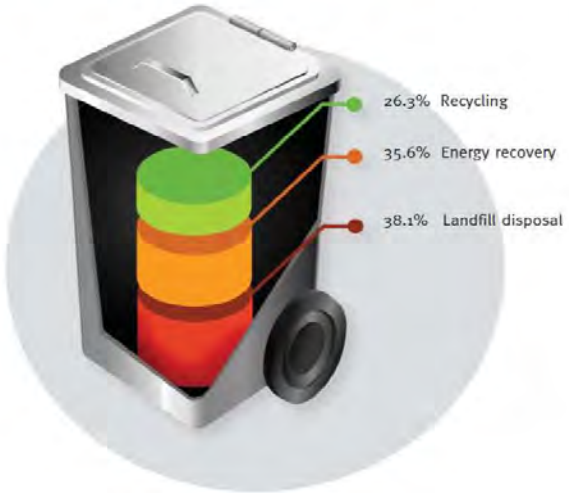
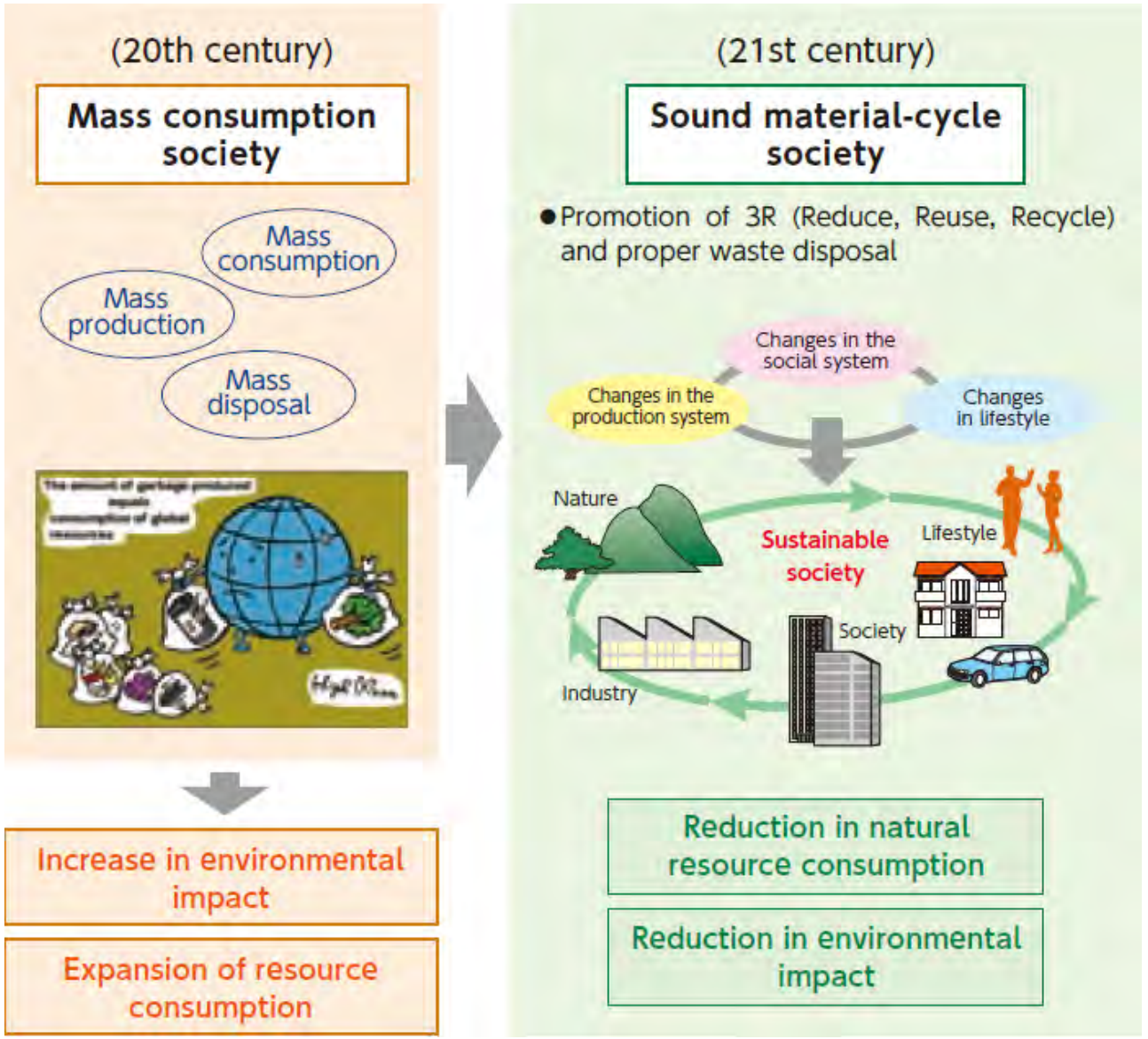


FIGURE 1: THE WASTE HIERARCHY (Directive 2008/98/EC)

FIGURE 2. DISTRIBUTION OF RECYCLING, ENERGY RECOVERY AND LANDFILL DISPOSAL OF POST-CONSUMER PLASTICS IN 2012 FOR EUROPE (PlasticsEurope, 2013).



Linear to Circular!

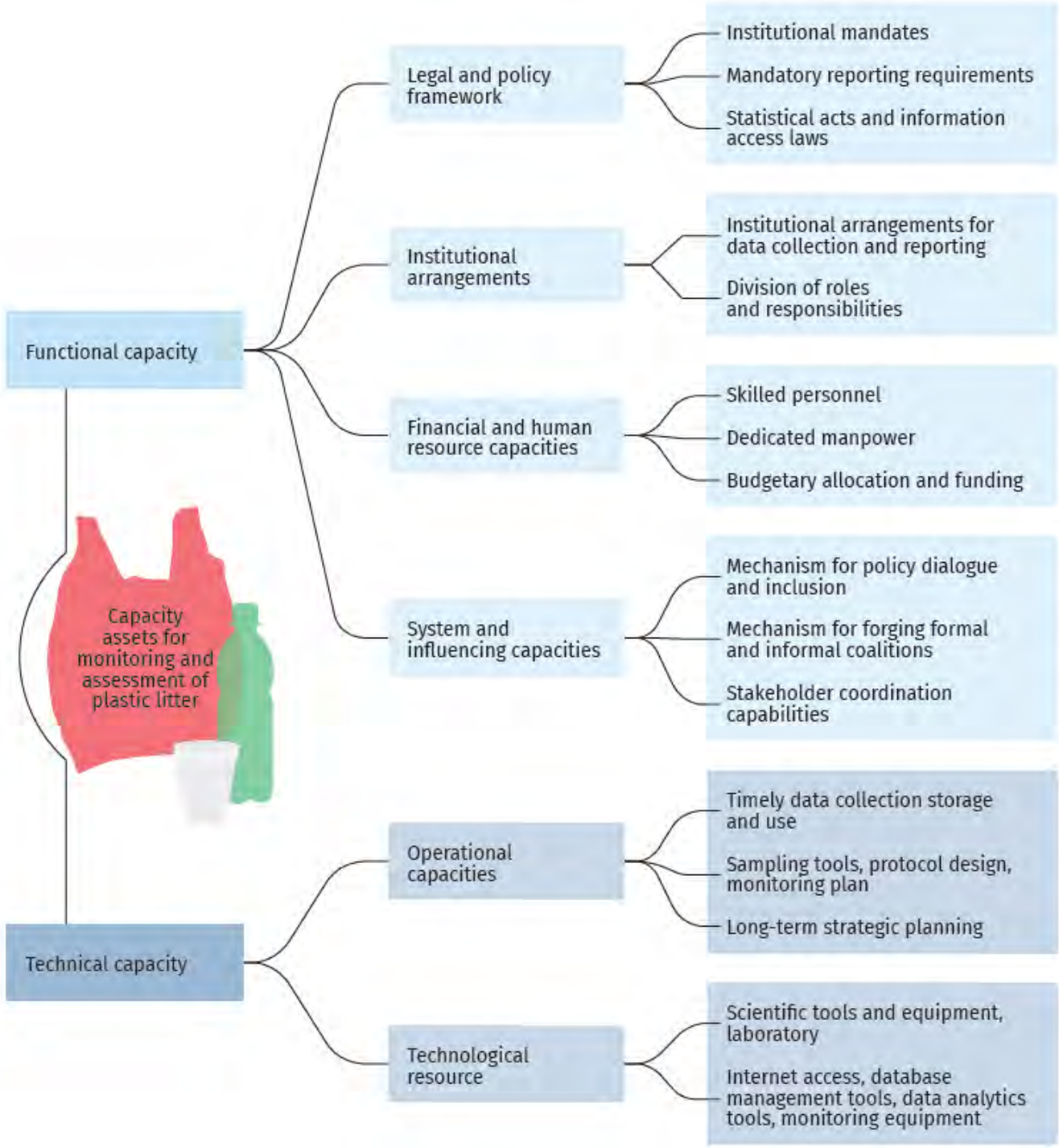


History and Current State of Waste Management in Japan, MOEJ (2014)

Major Components

Business model	Description	Illustration
Circular Supply Chain 	Provide renewable energy, bio-based-or-fully recyclable input materials to replace single life-cycle inputs	BASF is replacing finite fossil resources with sustainably produced renewable resources through its innovative production Verbund Biomass Balance approach
Recovery & Recycling 	Recover useful resources / energy from disposed products or by-products	Nike reuses and recycles footwear manufacturing scrap and post-consumer shoe wastage, converting it into raw material for other sports equipment manufacturing players
Product Life Extension 	Extend working lifecycle of products and components by repairing, upgrading and reselling	Patagonia launched an online store where customers trade-in their used clothing in return for store credit, thereby extending the life of products
Sharing Platform 	Enable increased utilization rate of products by making possible shared use, access or ownership	Airbnb operates as an online marketplace for people to lease or rent short-term lodging, facilitate tourist experiences or make restaurant reservations
Product as a Service 	Offer product access and retain ownership to internalize benefits of circular resource productivity	Philips offers lighting as a service, wherein users are required to pay for the consumed intensity (rather than for the product)

Regional Efforts

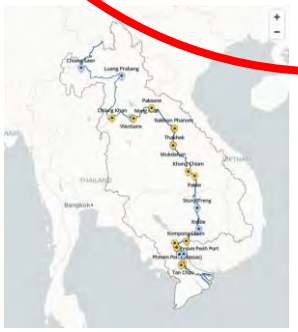

Capacity assets for monitoring and assessment of plastic litter
Functional capacity
Technical capacity
Legal and policy framework
Institutional mandates
Mandatory reporting requirements
Statistical acts and information access laws
Institutional arrangements
Institutional arrangements for data collection and reporting
Division of roles and responsibilities
Financial and human resource capacities
Skilled personnel
Dedicated manpower
Budgetary allocation and funding
System and influencing capacities
Mechanism for policy dialogue and inclusion
Mechanism for forging formal and informal coalitions
Stakeholder coordination capabilities
Operational capacities
Timely data collection storage and use
Sampling tools, protocol design, monitoring plan
Long-term strategic planning
Technological resource
Scientific tools and equipment, laboratory
Internet access, database management tools, data analytics tools, monitoring equipment

MRC Methodology Development

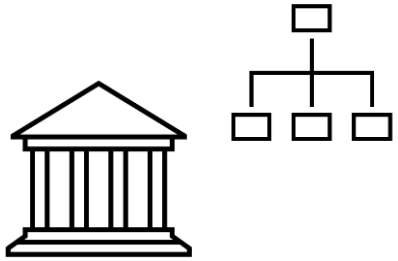
OBECTIVE

Timely data and on transboundary plastic pollution

- ✓ Pollution levels
- ✓ Status and Trends
- ✓ Distribution



Reflect the information into **policy making processes**

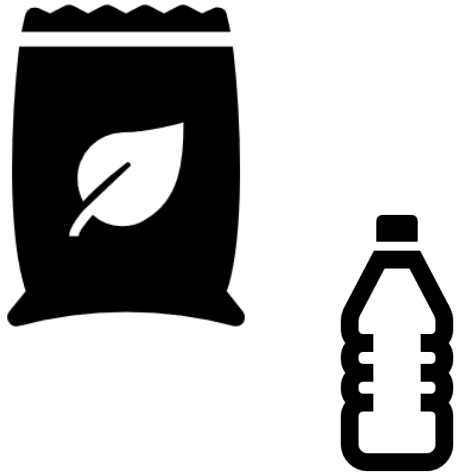


Preventing impacts on human health and ecosystems

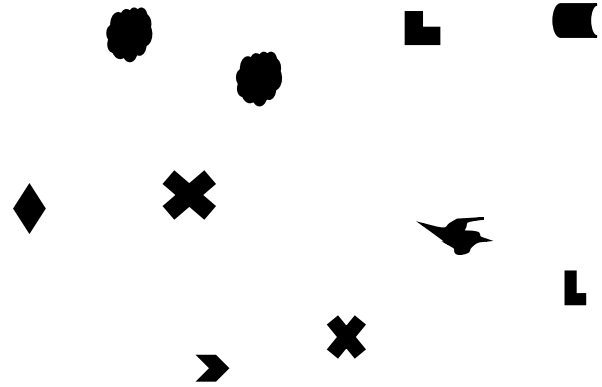
To obtain comparable data over time in different locations, standardization of a monitoring methodology is crucial.

MRC Protocols

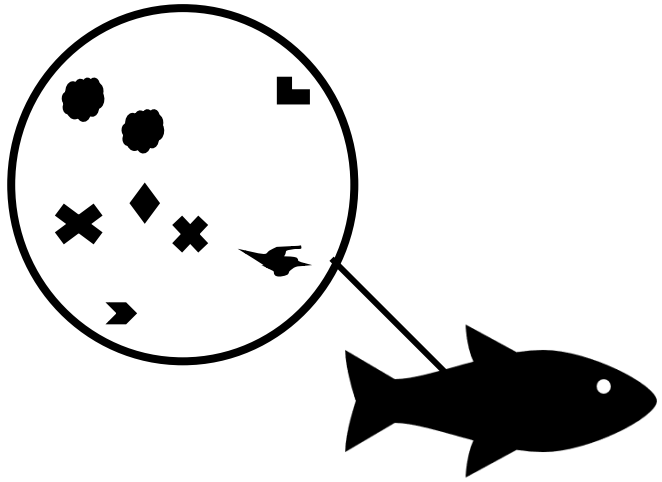
Riverine Macroplastic



Riverine Microplastic



Microplastic in fish



Private Sector Engagement

Strategic thinking for private sector engagement across the value chain of plastics

1. Types of private sector in plastic value chain based on lifecycle analysis (LCA)
2. Interlinkages across different types of private sector
3. Interlinkages of different types of private sector with government and stakeholders
4. Factors influencing different types of private sector for their products and services as well as operations:
   - Regulatory frameworks
   - Economic or market-based tools including taxes, access to finance, and so on
   - Trade agreements from global to regional and bilateral
   - Technology access
   - Public opinion and consumer choices
5. Concerns of private sector
6. Strengths, weaknesses, opportunities, and threats (SWOT) analysis for private sector
7. UNEP objectives – ending plastic pollution across the value chain based on LCA
8. Value addition by UNEP for private sector engagement
9. Entry points and entry routes for strategic engagement with private sector


Ending Plastic Pollution
Strategic Engagement with Private Sector

Policy Formulation and Implementation

Public Sector

Regulatory Framework, Institutional Setup, Tariff Designing, Subsidies & Guarantees

Private Sector

Financial Share, Technical Innovation, Managerial Role, Local Knowledge, Backward & Forward Linkages

Plastic Pollution Free Planet

Consumers

Willingness to Pay, Awareness and Will, Environmental Friendly Life Styles

Identification of Priorities for Regional Cooperation

a. National and sub-national (local) capacity

- Institutional Arrangements and human resources
- Policies including reporting
- Technologies and local capacity to operate technologies
- Financing
- Awareness and stakeholder engagement

b. Leapfrog

- Knowledge sharing from other countries
- Exchange programmes – country visits
- Regional training and exchange of lessons learned
- Partnerships

c. Implementation of

*Action plan

Thank you!

Mushtaq Ahmed Memon, Ph.D.

Regional Coordinator for Chemicals and Pollution Action Subprogramme

United Nations Environment Programme, Asia Pacific Regional Office, Thailand