

Addressing plastic pollution with a life-cycle approach

An international perspective

82nd LCA Discussion Forum, Zürich

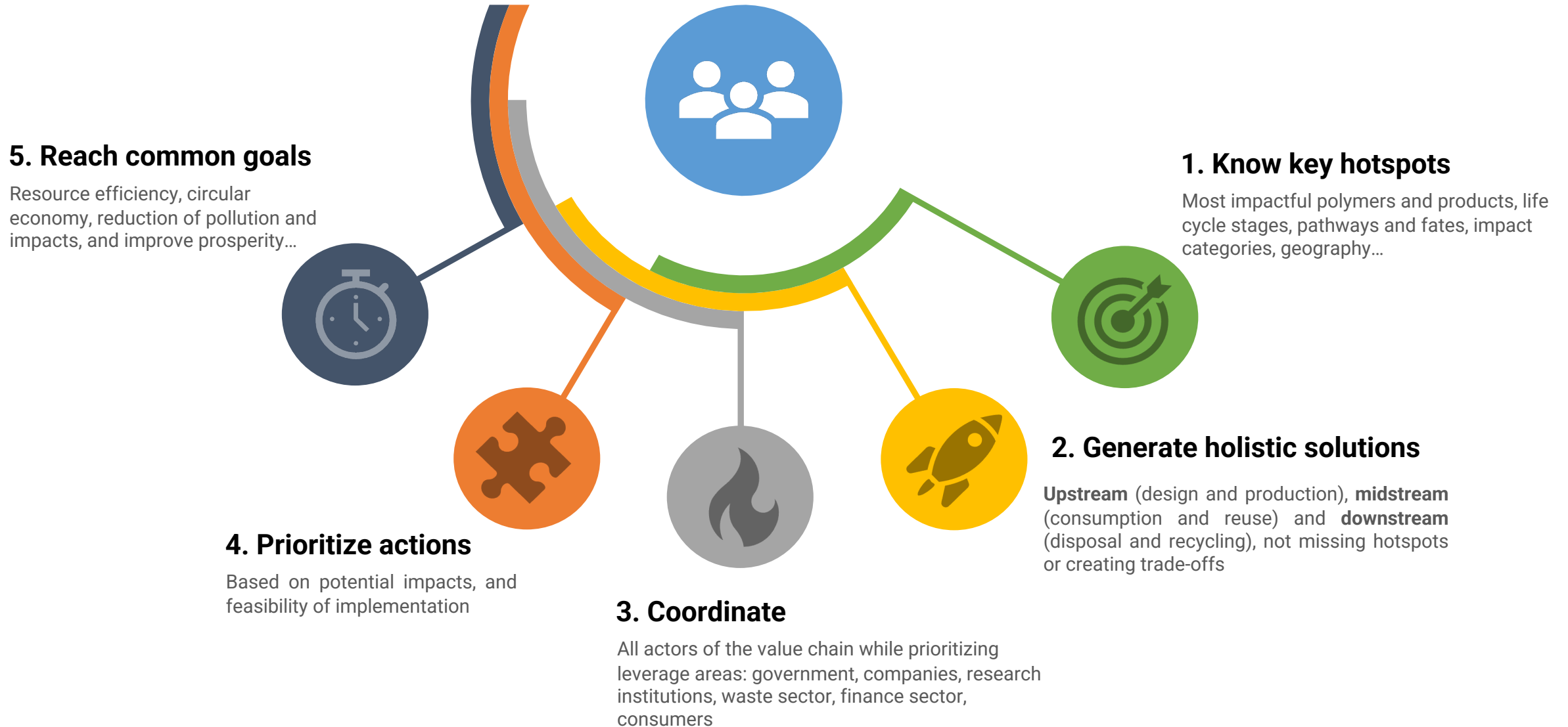
Addressing the issue of plastic pollution: status quo and the way forward

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Thursday November 4th, 2022

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- Overview of [INC-1 Document 7 on Plastic Pollution Science](#)
- Insights on forthcoming UNEP publication on solutions to plastic pollution
- Next steps on engagement
 - Feedback on publication
 - [Information sessions on INC-1 documentation](#) between 1-15 Nov
 - [Multistakeholder Forum](#) in conjunction with INC-1, Saturday 26th Nov, hybrid (Punta del Este, UR + online)
 - In-session stakeholder dialogue on Tuesday 29th November pm, TBC

The systemic, value chain approach



1-2. Identifying hotspots and holistic solutions

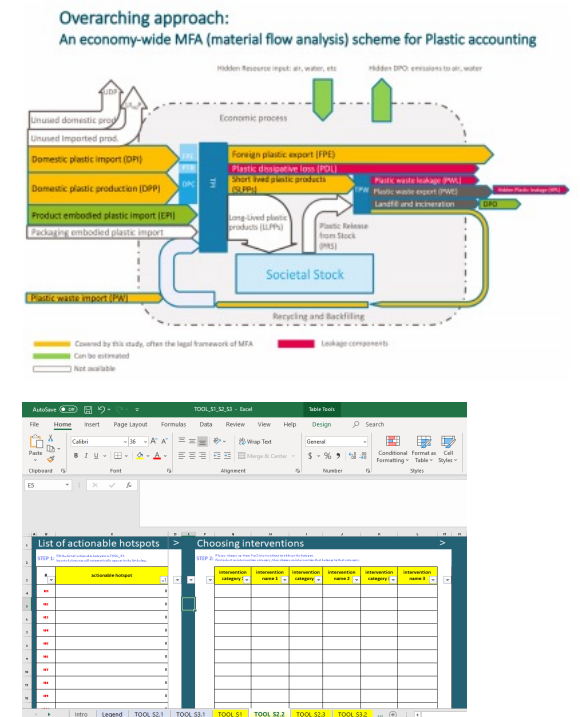
A methodological framework and guidance for countries to :

Identify key hotspots towards the most relevant plastic polymers, products, and pathways leaking into the environment, as well as associated impacts

Prioritize key areas of intervention relevant for the country, with key stakeholders along the plastics value chain

Support government converging towards instruments to implement the interventions

<https://plastichotspotting.lifecycleinitiative.org/>



1-2. Shaping action in countries through hotspots identification

Global view on plastic in Thailand

Hotspots

Shaping action from the hotspots

66%

Mismanaged rate

65%

Collection rate

10% Collection for recycling

7% Domestic recycling rate

483 Kt

Leakage

7 Kg

Per capita leakage

Most leaking Applications

Bags

Snack bags/Pouches

Trays/Boxes/Cups

Baby diapers

Cigarette filters

Bottles

Caps/Cap Rings

Sanitary towels

Most leaking Polymers

LDPE

HDPE

Polyester

Synthetic Rubber

PET

PP

PS

PVC

#hotspots per waste management stage

●●●●○ Waste generation

●●●●○ Waste segregation

●●●●● Waste collection

●●●●○ Leakage while waiting for collection

●●●●● Waste related behaviors

●●●●○ Waste management infrastructure



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Provinces

responsible for 50% of the waste mismanagement



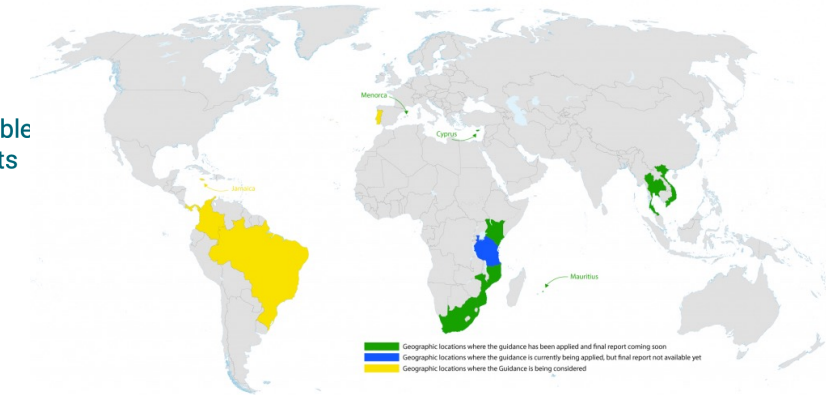
14

Actionable Hotspots



19

Key Interventions



<https://plastichotspotting.lifecycleinitiative.org/>



Life Cycle Initiative

Authors of the guidance



Quantis

2. Holistic Assessment of Solutions to single-use plastic products (in response to UNEA4/9)

<https://www.lifecycleinitiative.org/single-use-plastic-products-studies/>



Single-Use Plastic Products (SUPP) and their alternatives: Recommendations from Life Cycle Assessments



End Plastic Pollution resolution

Key elements

End plastic pollution resolution in a nutshell

Develop an international legally binding instrument on **plastic pollution** addressing the **full life cycle of plastic**

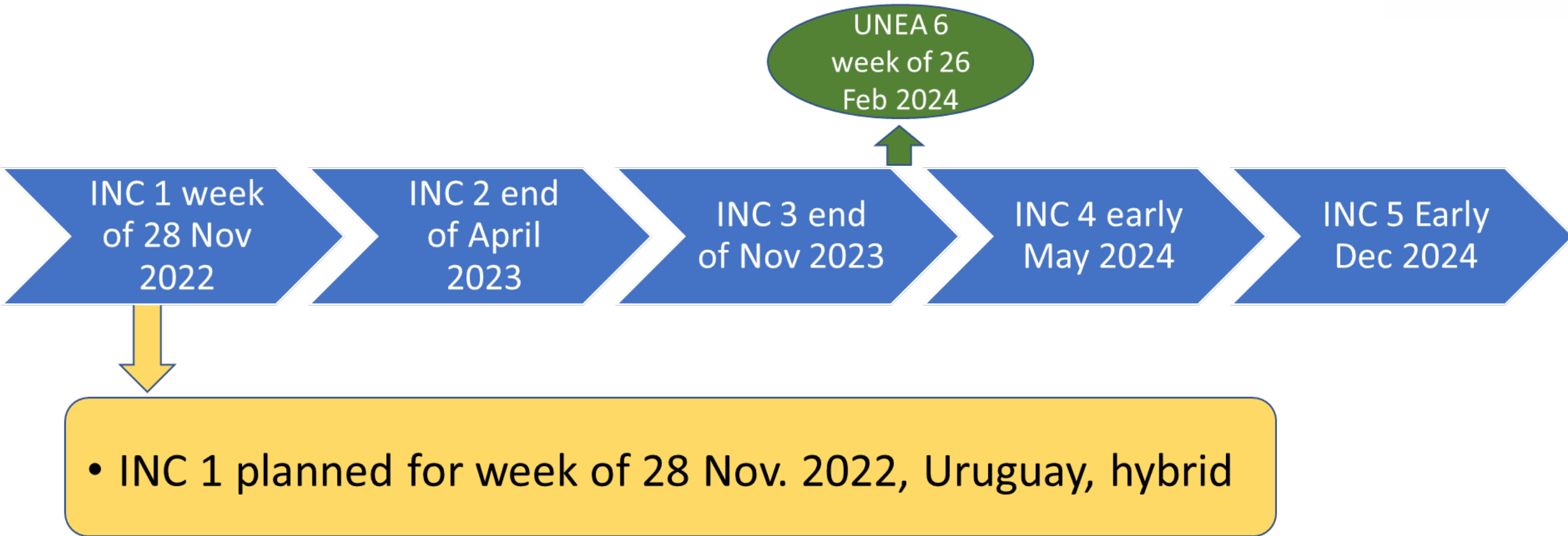
UNEP to convene an **ad hoc open-ended working group (OEWG)** in May / June 2022 to prepare for the work of the INC

Convene an **intergovernmental negotiating committee (INC)**:

- Starting work during the second half of 2022
- Convene a multi-stakeholder forum at INC-1 to exchange information
- Completing its work by the end of 2024
- *(an INC is the process to generate an international legal instrument)*

Convene a **diplomatic conference of plenipotentiaries** upon completion of negotiations to adopt the instrument and open it for signature

Nominal dates for INC process (agreed at OEWG)



INC-1 Meeting flow Scenario

Punta del Este, Uruguay



- [First meeting of the Intergovernmental Negotiating Committee \(INC-1\)](#) on 28th November – 2nd December 2022
- [Multi-stakeholder Forum alongside INC-1](#) on 26th November 2022



First Session, Intergovernmental Negotiating Committee (INC-1)

Punta del Este, Uruguay, 26Nov-2Dec 2022

Overview

Plastic pollution science - [UNEP/PP/INC.1/7](#)

- A. Summary
- B. Trends in plastic production, waste generation and chemical use in manufacturing
- C. Plastic pollution sources and pathways in the environment
- D. Impacts of plastic pollution
- E. Monitoring and reporting
- F. Solutions and technologies and their costs and benefits

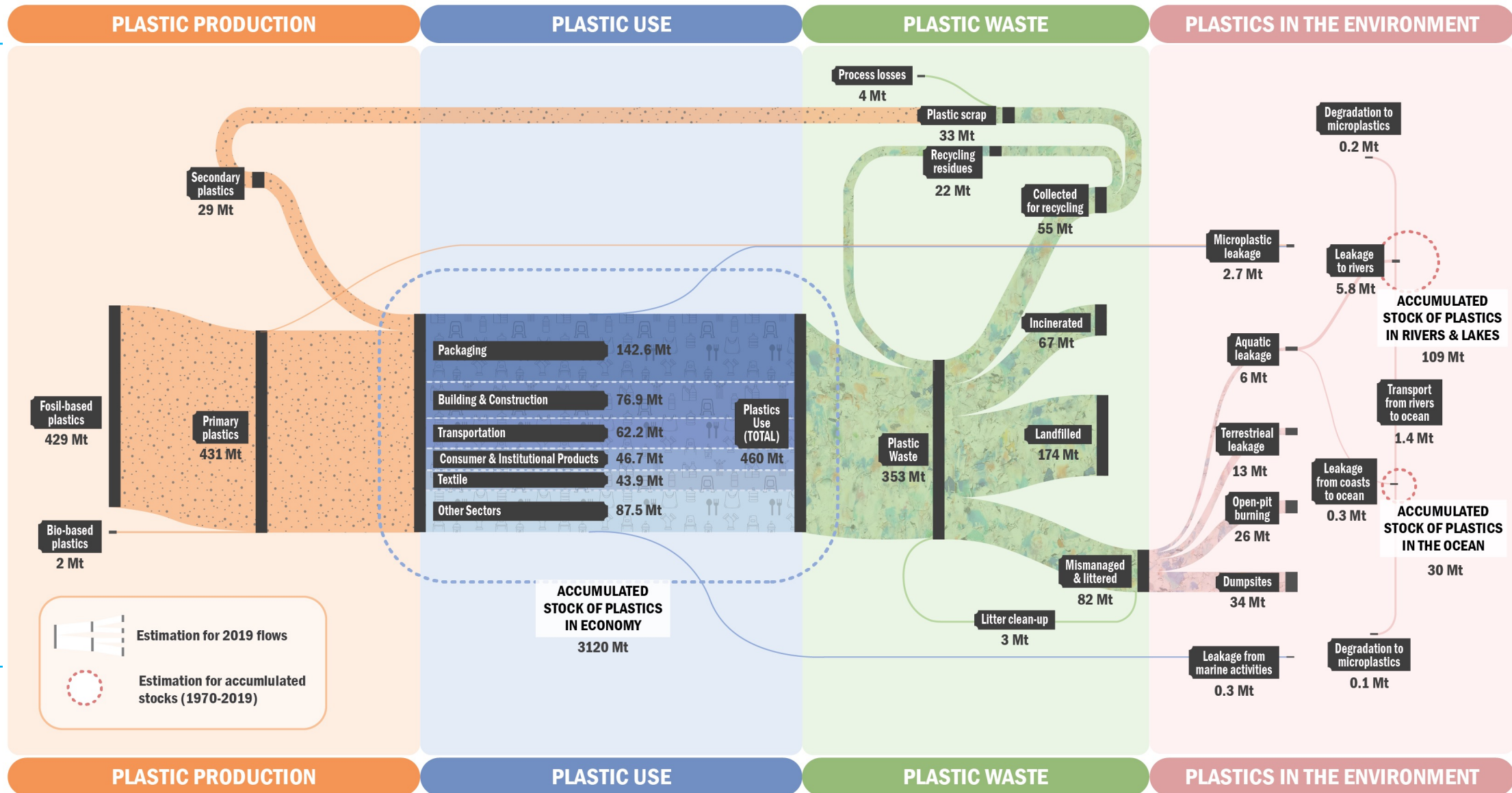
A. Summary

Plastic pollution science

1. The world has seen a massive increase in plastic production.
2. There is increasing clarity regarding the links between plastic and human and environmental health.
3. Plastic pollution is lethal for many species.
4. Throughout its life cycle, plastic also contributes to climate change.
5. The resource-inefficient, linear, take-make-waste plastic economy is at the core of the plastic pollution crisis.
6. Millions of workers in informal settings ensure some level of waste collection and recycling in many countries across the world.
7. Circularity in the economy is a critical part of the solution
8. Four strategic goals can guide the transition to a circular economy.
9. A comprehensive and integrated approach to solutions is needed.
10. Following a life-cycle approach is critical
11. Harmonized measures and legal obligations will be key.
12. Systems change is possible, but this demands vision targets, monitoring and reporting.

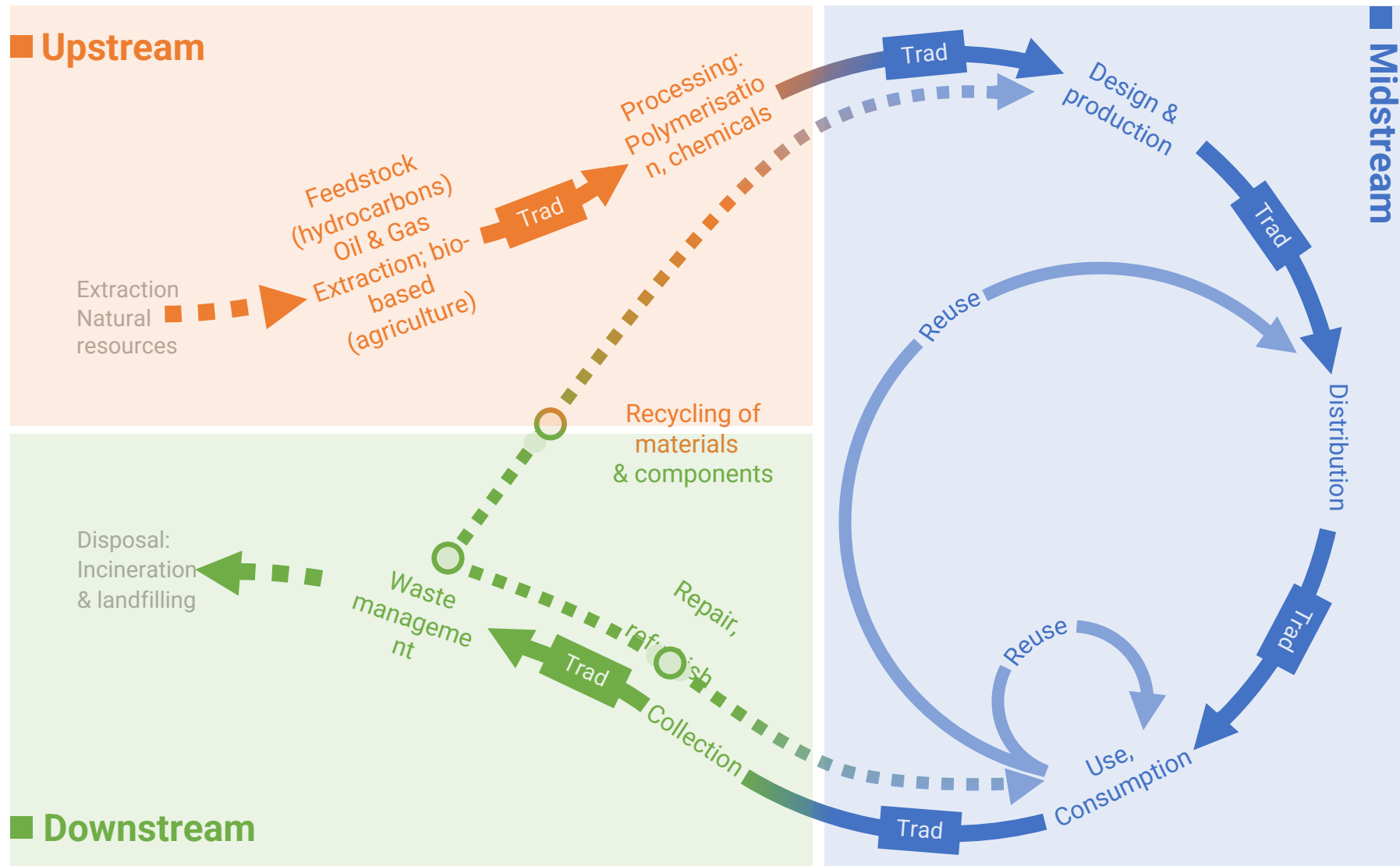
C. Plastic pollution sources and pathways in the environment

Flows of plastic in the global plastic life cycle, and losses to and accumulated stocks in the environment.



F. Solutions and technologies and their costs and benefits

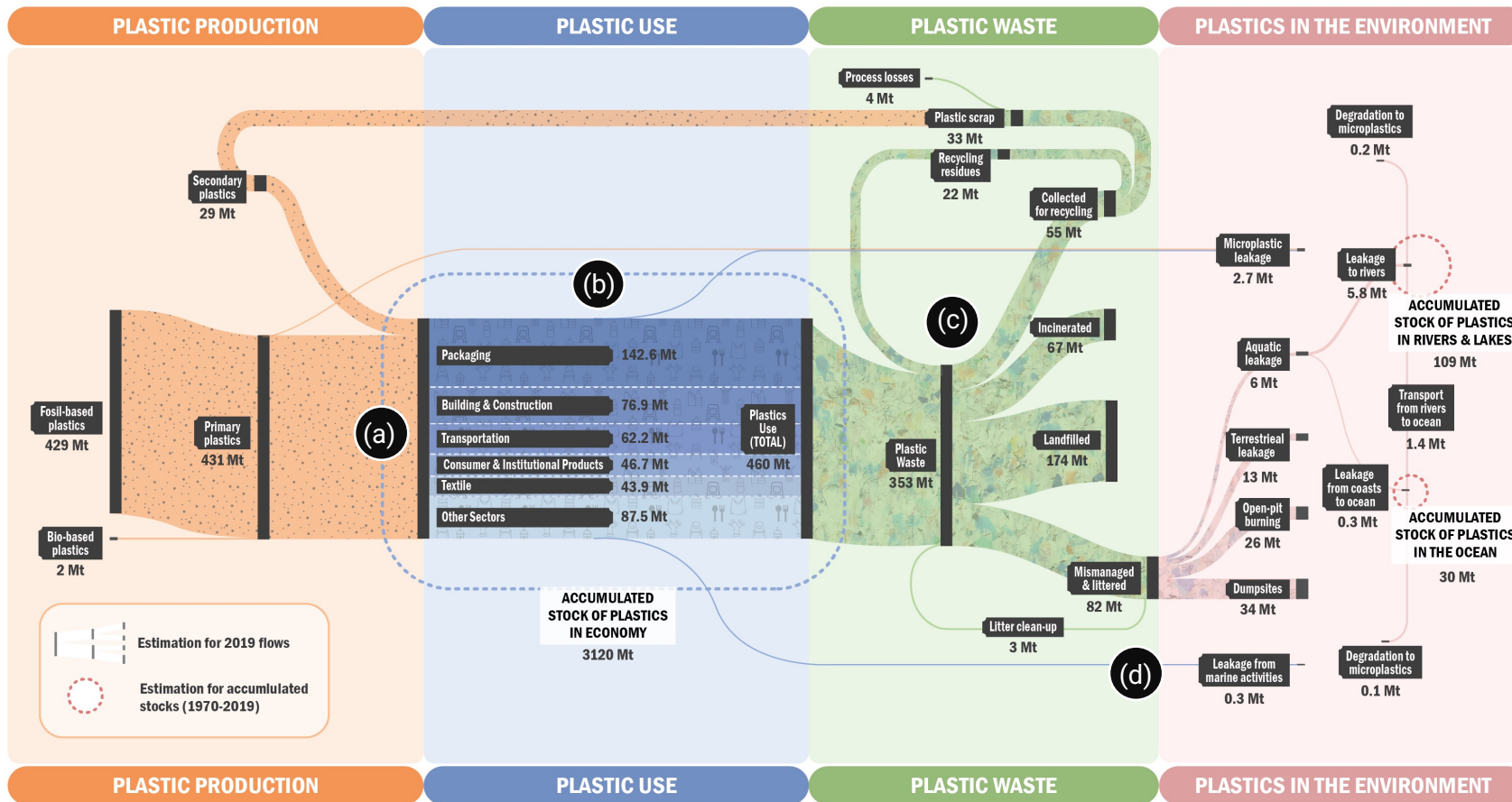
Life-cycle approach to addressing plastic pollution



- Resolution 5/14 shows that
- the need for a comprehensive, integrated application of solutions across the **full life cycle of plastics**
 - and the need to shift to a **resource-efficient circular economy** have been embraced politically.

F. Solutions and technologies and their costs and benefits

Policy and legislative tools across the life cycle: Four Strategic Goals (SG)



(a) SG1. The elimination of problematic and unnecessary plastic, including hazardous additives.

(b) SG2. Innovation to ensure that the plastics used in the economy are reusable, recyclable or compostable.

(c) SG3. Circulation of all the plastic items used, to keep them in the economy and out of the environment (reused, recycled or composted in practice).

(d) SG4. Collection and responsible disposal of plastics that cannot be recycled or have accumulated in the environment.

F. Solutions and technologies and their costs and benefits

Strategic goals to support a systems change to address plastic pollution



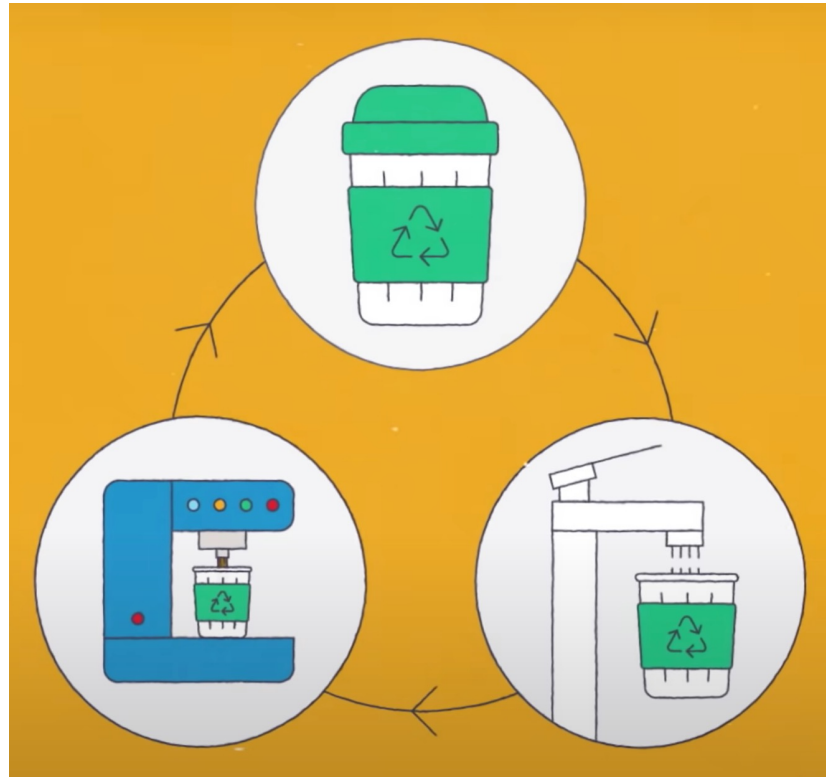
SG 1: Reduce the size of the problem by **eliminating and substituting** problematic and **unnecessary plastic items**, including hazardous additives

Eliminating products by **rethinking design and purpose**.

- (Eliminating problematic and unnecessary plastic products is best achieved by rethinking the design and purpose of products to “design out” problematic or unnecessary plastic use as well as hazardous chemicals and “design in” sustainable alternatives)

F. Solutions and technologies and their costs and benefits

Strategic goals to support a systems change to address plastic pollution



Ellen McArthur Foundation: Elimination of problematic or unnecessary plastic packaging.

SG 2: Ensure that plastic products are **designed** to be **circular** (**reusable**, recyclable or compostable).

Necessary plastic products will continue to play an important role in society.

The **design phase** is a critical part of ensuring **reuse** and **recyclability** while addressing chemicals of concern.

Compostable plastic products may be part of the solution for very specific applications provided adequate standards are enforced.

F. Solutions and technologies and their costs and benefits

Strategic goals to support a systems change to address plastic pollution



Loop Durable System UK Ltd.



SG 3: Close the loop of plastics in the economy by ensuring that plastic products are **circulated** in practice (**reused**, recycled or composted)

Closing the loop of plastics in the economy is the key to transitioning to a circular economy. The two main possible technologies for recycling are **mechanical recycling** and **chemical recycling**.

Actions could help support the circularity of plastics across their life cycle. (e.g., Scale up alternative sustainable recycling technologies; Foster innovation in technologies for capturing leaked plastic)

F. Solutions and technologies and their costs and benefits

Strategic goals to support a systems change to address plastic pollution



SG 4: Managing plastic waste that cannot be reused or recycled in an environmentally sound manner (including existing pollution).

Safe disposal is still needed for non-circular plastic products.

- Minimize end-of-life plastic disposal;
- Prevent the export of waste to nations with insufficient capacity to manage that waste;
- Capture leaked microplastics by enhancing collection and management systems;
- Foster innovation in technologies for capturing leaked plastic.

F. Solutions and technologies and their costs and benefits

5. Opportunities in moving forward: the costs and benefits of systems change



80% ↓

Reduction of
plastic pollution



700,000 Jobs



Greenhouse gas
emissions ↓



Net savings

Next steps

[Multistakeholder Forum](#) in conjunction with INC-1, Saturday 26th November, hybrid

- Registration open until 31st October:
<https://www.unep.org/events/conference/multi-stakeholder-forum-inc1>
- Agenda (GMT-3):
 - 09:30 Opening
 - 10:00 What the science tells us for a system change to end plastic pollution
 - 10:45 In-person Roundtable Discussions (*Online Roundtable Discussions: 11:00 - 13:30*)
 - 14:00 In-person Roundtable Discussions
 - 16:15 Key conclusions from Roundtable Discussions & Q&A
 - 17:30 Achievements and Acknowledgements
 - 18:05 Closing Remarks
 - 18.30 End
- For questions and queries on the INC, please write to:
unep-incplastic.secretariat@un.org



Thank you



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