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STUDY GUIDE

UN ENVIRONMENT ASSEMBLY 1

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Solutions from the One Planet network to curb plastic pollution

Solutions from the One Planet network to curb plastic pollution

This report by the One Planet network responds to the request made at the Fourth United Nations Environment Assembly, in its Resolution 6 on 'Marine plastic litter and microplastics', operative paragraph 5 (UNEP/EA.4/Res.6):

> "*Requests the Executive Director, through UNEP's 10-Year Framework of Programmes on Sustainable Consumption and Production patterns, to develop guidelines for the use and production of plastics in order to inform consumers, including about standards and labels; to incentivize businesses and retailers to commit themselves to using sustainable practices and products; and to support governments in promoting the use of information tools and incentives to foster sustainable consumption and production.*"

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Foreword

It's time to shift gears. Think, act, and inspire others.

Our message is simple – stopping plastic pollution at the source, changing our behaviors, and shifting towards circular approaches that keep materials in our economies for as long as possible, is feasible.

Plastic is slowly poisoning the planet and its inhabitants, with a seemingly ever-growing production and recycled at a rate that seems not to take into account plastic's dangerous effects on marine and terrestrial ecosystems. This report can only reinforce the urgency of addressing plastic pollution and confront its readers with the reality that this will require a defining shift in global production and consumption patterns.

The momentum for such change was met during the fifth session of the United Nations Environment Assembly (UNEA), during which 175 countries adopted a Resolution, titled "End Plastic Pollution: Towards a legally binding instrument". The landmark document established an Intergovernmental Negotiating Committee (INC), appointed to draft the new plastic pollution treaty which will address the entire life cycle of plastics.

The Intergovernmental Negotiating Committee has a strong mandate to enable the fundamental shift to a circular economy model, where the use of plastics is minimized right from the earliest stages of its value chain, with upstream solutions. Indeed, this shift in paradigm requires reliable sustainability information, systematically distributed to consumers, based on life cycle thinking and credible labelling standards.

The One Planet Network has leveraged the joint expertise of its global community of practitioners, policymakers, and experts to collect in this report tools and solution, coherent with its long-established work on SDG 12.

Consistent efforts will be needed to inform consumers, but also trigger behavioral change, market sustainable solutions, promote sustainable procurement practices, and engage businesses in different high-impact sectors.

Our message is simple –stopping plastic pollution at the source, changing our behaviors, and shifting towards circular approaches that keep materials in our economies for as long as possible, is feasible and, in fact, is already happening across many industries. We need to shift gears, think, act and inspire others to act.

This report represents a key contribution to the upcoming work of the Intergovernmental Negotiating Committee and a solid foundation for a future treaty on plastics to address prevention and upstream solutions.

Jorge Laguna-Celis
Head
One Planet Network Secretariat

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Executive Summary

The challenges around plastic pollution result from unsustainable consumption and production patterns and inadequate waste management, compounded by increased demand for single use plastics induced, among others, by the coronavirus global pandemic (COVID-19).1 The 2022 New Plastics Economy Global Commitment Progress Report2 demonstrates that in 2021 the use of plastic packaging increased by 2,5%, bringing us back to the levels of 2018.
In this context, it becomes clear that only a systemic change in the ways we produce and consume can reverse the current trends. Circular economy approaches can support driving this systemic change.

The Plastic Waste Amendments to the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes recommends actions that governments, business and individuals can take to facilitate upstream and systemic solutions to address plastic pollution. A coordinated multi-stakeholder action is needed, particularly by addressing use and consumption of plastic packaging - a major source of marine litter.

The present report was developed in collaboration with the stakeholders of the One Planet network (Consumer Information, Lifestyles and Education, Public Procurement and Tourism programmes), a global community of practitioners, policymakers, and experts, including governments, businesses, civil society, academia, and international organisations, joining forces around implementation of Sustainable Development Goal12 (SDG12).

The report provides an overview of solutions and recommendations developed by the One Planet network around:

- Reliable sustainability information within existing standards, labels, and claims
- Triggers for behaviour change, including nudging strategies and awareness campaigns
- Creation of markets for sustainable solutions and concrete pathways for governments to lead by example using sustainable procurement practices
- Implementation of circular economy of plastics in the tourism sector, including through direct engagement of businesses towards reduction of plastics pollution.

Additionally, the present report builds on findings from previous reports by the United Nations Environment Programme (UNEP) under the Global Environment Facility (GEF) Marine Plastics Project and brings forward solutions to address plastic pollution as assessed in the 2021 report *From Pollution to Solution - A global assessment of marine litter and plastic pollution* and demonstrates of how a multi-stakeholder network can mobilize action to agilely deliver concrete outputs and a practical way to implement requests by Member States.

1 United Nations Environment Programme (UNEP), 2021b. From Pollution to Solution. A global assessment of marine litter and plastic pollution. United Nations Environment Programme. Nairobi, Kenya.

2 Ellen MacArthur Foundation, 2022, The Global Commitment 2022 Progress Report https://emf.thirdlight.com/link/p6ceo32knlw0-e57spw/@/#id=0

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CHAPTER ONE

INTRODUCTION

Summary: Chapter 1

This chapter introduces the problem of plastic pollution, highlighting its environmental impacts, including harm to wildlife, disruption of ecosystems, and contribution to greenhouse gas emissions.

1.1 aim of the report

Plastic pollution is one of the major environmental challenges of our time. Rising levels of plastics are accumulating in the environment, with the flow of plastic into the ocean projected to almost triple by 2040. This trend is causing worldwide environmental and health impacts. Mismanaged plastic alters habitats, harms wildlife and damages ecosystem function and services. Fossil fuel feedstock inputs for virgin plastics add to global greenhouse gas emissions; plastic waste can block drainage systems and amplify the risk of flooding, contamination and diseases; while open burning emits dioxins and other toxic pollutants that transfer pollution burdens to air and water.3

The challenges around plastics result from unsustainable production and consumption patterns and inadequate waste management, and are now being compounded by coronavirus disease (COVID-19).4

Although plastic has been critical to the COVID-19 response through its use in personal protective equipment (PPE) and in supporting public health measures regarding hygiene, those responses have scarcely adopted a sustainability lens and considered environmental impacts. In fact, COVID-19 has further emphasized the need to better understand the system in which the plastics value chain operates, including how different drivers shape operations along the value chain and highlighting trade-offs that deserve particular attention.

The Plastic Waste Amendments to the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes were adopted in 2019 and added plastic waste to the controls on global trade, thereby promoting progress in waste management guidance. This report illustrates the role of sustainable consumption and production in systemically addressing plastic pollution and recommends actions that governments, business and individuals can take to facilitate upstream and systemic solutions to address plastic pollution. It specifically focuses on guidance around the use and consumption of plastic packaging - the main application of plastics and a major source of marine litter.

It also shows how a multi-stakeholder network can efficiently mobilize to deliver concrete outputs and a practical way of implementing Member State requests. The report is a direct response to resolutions adopted at the fourth session of the United Nations Environment Assembly (UNEA4) in March 2019 (including the resolution on marine plastic litter and microplastics (UNEP/EA.4/Res.6), the resolution on addressing single-use plastic products pollution (UNEP/ EA.4/ Res.9)) and the need to accelerate progress on United Nations Sustainable Development Goal (SDG) 12. This applies in particular to SDG 12.5 on reducing waste generation through prevention, reduction, recycling and reuse; SDG 12.6 on encouraging businesses to adopt sustainable practices and to integrate sustainability information; SDG 12.7 on promoting sustainable public procurement practices; and SDG 12.8 on ensuring relevant information and awareness for sustainable lifestyles.

This report builds on findings from previous reports by the United Nations Environment Programme (UNEP) under the *GEF Marine Plastics Project* and brings forward solutions to address plastic pollution as assessed in the 2021 report *From Pollution to Solution - A global assessment of marine litter and plastic pollution*.

3 The Pew Charitable Trusts, SYSTEMIQ, 2020. United Nations Environment

4 Programme (UNEP), 2021b. From Pollution to Solution. A global assessment of marine litter and plastic pollution. United Nations Environment Programme. Nairobi, Kenya.

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1.1 Did you know that...

Definition: Plastic pollution is the accumulation of plastic products in the environment that adversely affects wildlife, wildlife habitat, and humans.

Did you know that...? By 2060, 145 metric tons (Mt) of plastics will have accumulated in the ocean. The ocean is projected to receive an annual inflow of 4 Mt of mismanaged waste plastics from rivers and coastlines by 2060, more than double the inflows of 1.7 Mt in 2019. (OECD, 2022)

1.1 Something to think about

Did you know that...? Researchers estimate that humans ingest around 5 grams of plastic a week, equivalent to a credit card. These plastics can carry toxic chemicals that disrupt endocrine functions and potentially cause cancers or developmental issues. Microplastics are found in tap water, bottled water, salt, honey, and even beer. A person consuming seafood regularly can ingest 11,000 microplastic particles annually.

Did you know that...? Asia is the largest plastics producer in the world. China alone accounted for 32 percent of global production in 2022. (Statista Research Department, 2024)

1.1 Did you know that...

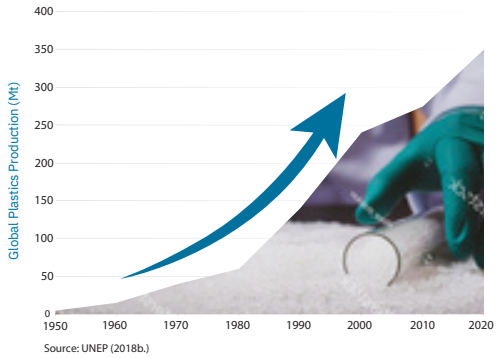
Something to think about: How much did the volume of plastics generated increase after the COVID-19 pandemic and what was its impact on the marine ecosystem?

Did you know that...? It is estimated that in Italy alone, between 160,000 and 440,000 Mt of additional waste was produced in 2020 due to intensified reliance on medical protective equipment during the Covid-19 pandemic. (UNEP, 2021)

1.2 global plastic consumption and production

Plastics have become one of the most ubiquitous materials used globally. Their production has increased dramatically, quadrupling over the past four decades.5 A major economic actor, the plastic industry corresponds to about 3% of the global economy,6 and demand continues to grow, with the size of the global plastic market estimated to be around US$580 billion in 2020 (compared to an estimated US$502 billion in 2016).7 If current trends continue, by 2050 the plastic industry could account for 20% of the world's total oil consumption.8

Figure 1.1: Annual global polymer resin and fibre production in million metric tonnes, 1950 to 2015



Source: UNEP (2018b.)

Approximately 6.3 billion tonnes of plastic have reached end-of-life since the start of mass production in the 1950s, only around 9% of which has been recycled and 12% has been incinerated.9 Current levels of plastic recycling fall well below global recycling rates for other commodities and resources such as paper (58%), iron (70%) and steel (98%). Problems with recycling plastics arise when waste streams are mixed, when the reuse of plastics is restricted or when proper waste management infrastructure is not available. Current recycling rates are also low due to the lack of information about the components of plastic products, which can lead to loss of quality through the mixing of waste streams. Ultimately, this has caused millions of tons of plastic waste to be discarded and placed in landfills, to become part of uncontrolled and mismanaged waste streams or to be dumped in the environment, including at sea.10 The fact that plastic is extremely durable means that it will persist in nature for a long time: it can take the ocean 450 years to break down plastic.11

With global cumulative plastic production between 1950 and 2050 predicted to reach 34,000 million tons, it is urgent to reduce global plastic production and flows of plastic waste into the environment.

Plastics represent the largest, most harmful and most persistent proportion of marine litter, accounting for at least 85% of total marine waste.12 The scale and rapidly increasing volume of marine litter and plastic pollution are putting the health of all marine ecosystems, the quality of coastal environments and the viability of tourism and fishery industries at risk. Evidence has shown the ingestion of plastics by fish, and the possible migration of constituent chemical additives into the food chain.13 Plastics can also alter global carbon cycling through their effect on plankton and primary production in marine, freshwater and terrestrial systems. Marine ecosystems, especially mangroves, seagrasses, corals and salt marshes, play a major role in carbon sequestration. The more damage that is done to oceans and coastal areas, the harder it is for ecosystems to offset and remain resilient to climate change.14

5 UNEP, 2021b. From Pollution to Solution. A global assessment of marine litter and plastic pollution. United Nations Environment Programme. Nairobi, Kenya

6 UNEP, 2018, Mapping of global plastics value chain and plastics losses to the environment, p.6.

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8 Ellen MacArthur Foundation (2016), The New Plastics Economy: Rethinking the future of plastics, p.27.

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1.2 Something to think about

How can we reduce plastic production? What effects does the plastic industry have on the environment? What other materials can replace single use plastic with the aim of reducing its impact on the environment?

1.2 Did you know that...

Asia is the largest plastics producer in the world. China alone accounted for 32 percent of global production in 2022. (Statista Research Department, 2024)

1.2 Something to think about

Levels of plastic recycling are low due to improper waste management and lack of information. It can take the ocean 450 years to break down plastic. How can we reach people and teach them how to recycle plastics to avoid mixing waste streams (such as plastics, metals, organics, and other materials) in the disposal or recycling process which complicates the management of plastic pollution and undermines efforts to reduce it?

Did you know? Plastic has been found in Antarctica and at the bottom of the Mariana Trench, showing that no part of the planet is untouched. This highlights how ocean currents and atmospheric transport spread plastic globally.

1.2 global plastic consumption and production

Plastics have become one of the most ubiquitous materials used globally. Their production has increased dramatically, quadrupling over the past four decades.5 A major economic actor, the plastic industry corresponds to about 3% of the global economy,6 and demand continues to grow, with the size of the global plastic market estimated to be around US$580 billion in 2020 (compared to an estimated US$502 billion in 2016).7 If current trends continue, by 2050 the plastic industry could account for 20% of the world's total oil consumption.8

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1.2 Did you know that...

The five major ocean gyres act like vortexes that trap plastics forming floating debris fields. The Great Pacific Garbage Patch which is the largest accumulation of ocean plastic in the world and is located in the North Pacific Gyre between Hawaii and California. It contains an estimated 1.8 trillion plastic pieces, weighing roughly 88,000 tons—equivalent to 500 jumbo jets. Almost half of its mass is made up of discarded fishing nets.

Definition: In oceanography, a gyre is any large system of ocean surface currents moving in a circular fashion driven by wind movements.

Did you know that…? An estimated 11 million metric tons of plastic enter the oceans every year. Without significant intervention, this number could triple to 29 million metric tons by 2040, effectively creating a "plastic pandemic." In 2016, the Ellen MacArthur Foundation in collaboration with the World Economic Forum (WEF) predicted that by 2050 there will be more plastic in the ocean by weight than fish. This statement was featured in a report titled The New Plastics Economy: Rethinking the Future of Plastics. The report highlighted the increasing levels of plastic pollution and the need for a circular economy approach to address the growing environmental crisis.

Did you know that…? Approximately 80% of marine plastics come from land-based activities, including littering, inadequate waste management, and industrial spillage; 50% of plastic waste is single-use items like bags, bottles, and packaging, which are used for just minutes but persist in the environment for centuries; synthetic fabrics like polyester release up to 700,000 microfibers per washing cycle, eventually entering rivers and oceans. These tiny fibers make up a significant portion of marine microplastics.

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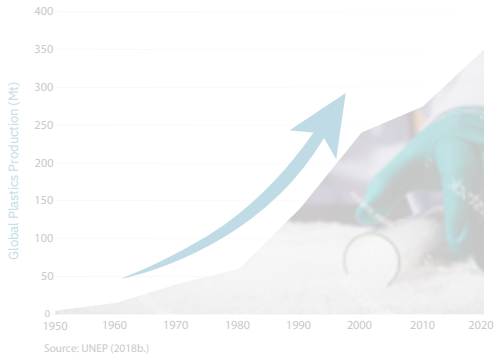

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1.2 Something to think about

What has been the impact of marine plastic litter on the biodiversity of animals and organisms living in the ocean? How has plastic contributed to population declines of seabirds and marine mammals? How many coastal environments have been affected by plastic pollution and how has it impacted tourism?

1.2 Did you know that...

Coral reefs are being suffocated by microplastics, which block light and trap pollutants, leading to bleaching and loss of marine biodiversity.

1.2 Did you know that...

In 2016, the Ellen MacArthur Foundation in collaboration with the World Economic Forum (WEF) predicted that by 2050 there will be more plastic in the ocean by weight than fish. This statement was featured in a report titled The New Plastics Economy: Rethinking the Future of Plastics. The report highlighted the increasing levels of plastic pollution and the need for a circular economy approach to address the growing environmental crisis.


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Plastic pollution also impacts air quality and soil. Recent research shows that microplastic contamination in soils is between 4 and 23 times larger than in the sea.15 However, almost no studies on plastics' fate in soil have been conducted.16 Plastic contamination is also associated with its chemical additives, which can leach or migrate out of the plastics along the life cycle. These can reach the environment and harm humans and ecosystems around the world. The release of chemicals through plastic leaching is receiving increasing attention, as some of these chemicals are substances of concern or have endocrine disrupting properties.17


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15 iSQAPER (2018), Plastic Pollution in Soil, https://ieep.eu/uploads/articles/attachments/2c23c38c-1b4d-49f3-a37b-785495a0ba0d/Plastic%20pollution%20in%20soil_FINAL.pdf?v=63698434362, p.5.

16 Food and Agriculture Organization of the United Nations (FAO) (2018), Soil Pollution: A Hidden Reality, http://www.fao.org/3/I9183EN/i9183en.pdf, p.12.

17 UNEP, 2021b. From Pollution to Solution. A global assessment of marine litter and plastic pollution. United Nations Environment Programme. Nairobi, Kenya.

CHAPTER TWO

CIRCULAR APPROACHES TO PLASTIC POLLUTION

Summary: Chapter 2

This chapter delves into the global plastics value chain, identifying use and end-of-life stages as hotspots for plastic leakage and environmental impacts. It discusses the dominance of packaging in plastic applications and emphasizes the need for systemic approaches to build circularity in the plastics value chain.

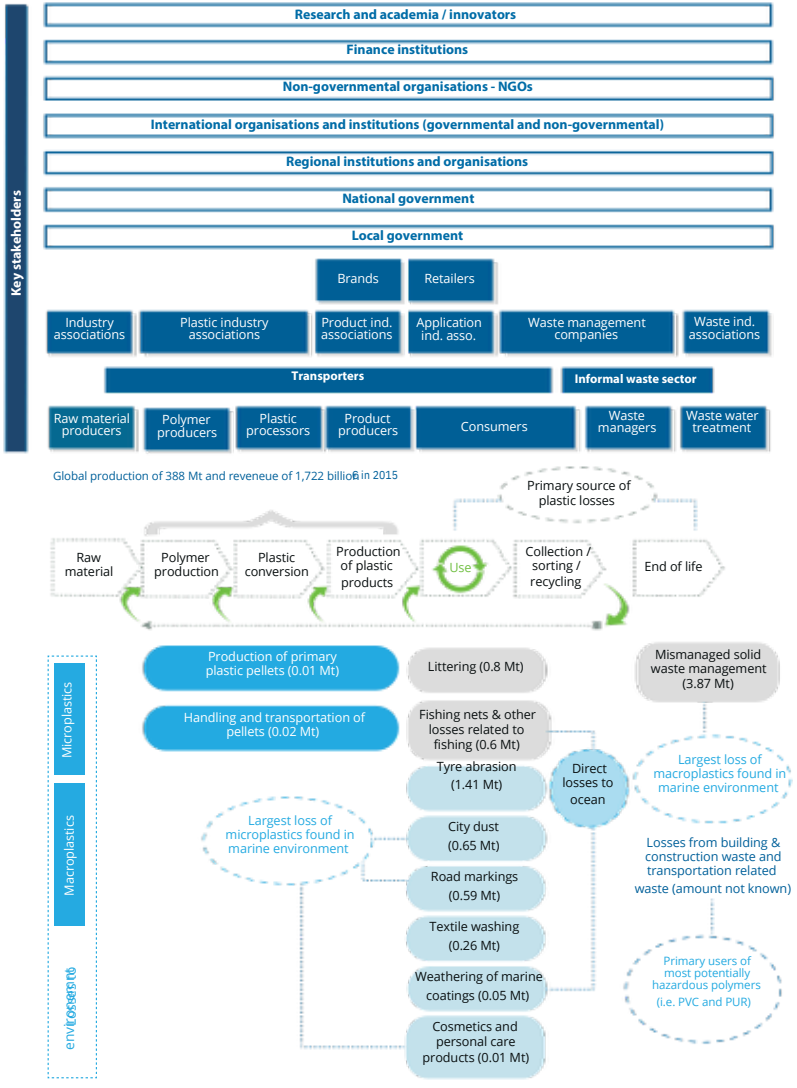
2.1. the global plastics value chain: use and end-of-life stages as hotspots of plastic leakages and impacts

Based on UNEP's 2018 report on *Mapping of global plastics value chain and plastics losses to the environment*, an overview of the global plastics value-chain is provided in Figure 2.1.

Key plastic value chain stages and associated stakeholders

A circular economy for plastics cannot be achieved without a joint effort from all relevant stakeholders. Figure 2.1 below provides an overview of the global plastics value chain and the key stakeholders associated with plastic production, consumption and end-of-life. Key actors in production stage are the plastic producers and processors, as well as the plastic industry associations. With regards to the plastic and plastic-containing products, industries and consumers who use the products are key actors who can influence and put pressure on plastic producers and processors based on their consumption choices. The end-of-life stage actors are the companies and governments responsible for managing the plastic waste. Plastic waste management is likely to be dominated by public waste management for consumer-citizen plastic waste, while private companies are more likely to dominate waste management from industries. Running across the entire value chain are national and international governmental bodies, as well as other non-governmental institutions. These can influence all parts of the plastic value chain through different measures.

Figure 2.1: Overview of stages and stakeholders/interest groups associated with each stage of the plastic value chain



Source: UNEP (2018b.)

2.1 Did you know that...

…? Adopting a circular economy approach, where materials are reused, recycled, or repurposed instead of discarded, could reduce 80% of ocean-bound plastics by 2040.

2.1 Did you know that...

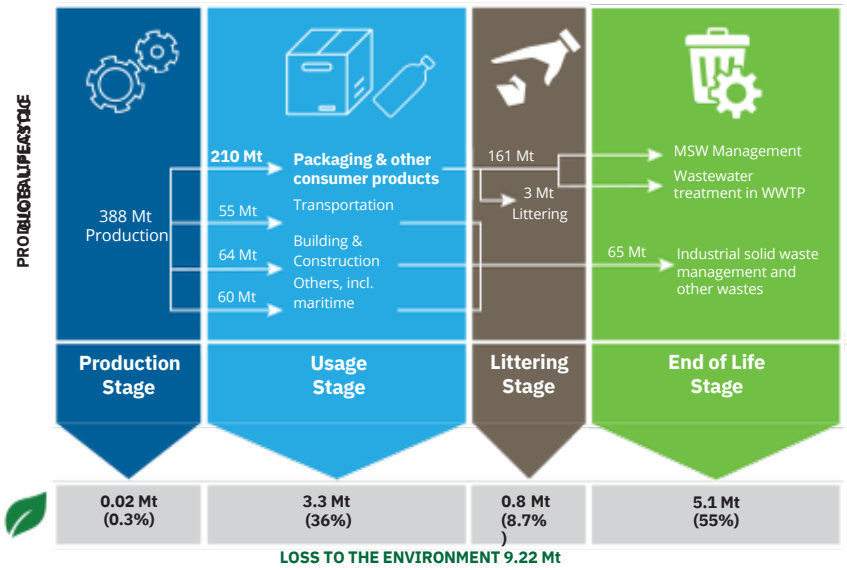
Definition 1: Microplastics are small plastic particles less than 5 millimeters in diameter.
Definition 2: Macroplastics are large plastic items, typically greater than 5 millimeters in size, such as plastic bottles, bags, and packaging materials.

2.1 Something to think about

Figure 2.1: Overview of Stages and Stakeholders/Interest Groups associated with each stage of the plastic value chain.

How can we reduce microplastic leakages in use and end-of-life stages of plastic products after they have been used and discarded? How can Member States take action to reduce the impact of plastics in other stages of the plastic value chain?

Figure 2.2: Global plastic value chain and estimated leakages to the environment, 2015



Source: Ryberg et al. (2019).

The stages along the plastics value chain range from the extraction of raw materials for plastics production to the final disposal of the plastic or plastic-containing products. Studies based on a life-cycle approach indicate that plastic leakages can happen throughout the entire value chain, from polymer production to final plastic commodity production, from the usage stage to end-of-life treatment.

When examining the global plastics value chain, the largest plastic leakages occur at the use stage (36%) and end-of- life stage (55%). In general, about 90% of microplastic leakages are related to the use stage, about 77% of macroplastic leakages are from the end-of-life stage and 13% of macroplastic leakages stem from littering.18 Figure 2.2 on the global plastic value chain and estimated environmental leakages shows amounts produced, used in different sectors and eventually disposed of for 2015. Total masses of plastics leaked to environment (marine, freshwater and terrestrial categories) are shown per value-chain stage.19

At the use stage, businesses and consumers who use the products are the key stakeholders who can influence and put pressure on plastic producers and processors based on their consumption choices. At the end-of-life stage, the main stakeholders are the businesses and governments responsible for managing plastic waste. Plastic waste management is likely to be dominated by public waste management systems, often collected as part of municipal solid waste (MSW), either in the form of mixed residual waste or as a separate plastic component. Businesses are more likely to be responsible for waste management from industries where there are only few plastic types, while impurities from other waste are also low compared to citizen waste, thus making it more suited to recycling.20

National and international governmental bodies, as well as other non-governmental institutions, can influence all parts of the plastic value chain through different measures. This can be done by implementing legislation, setting targets, specifying standards or otherwise applying pressure on other stakeholders involved.21

2.1 Did you know that...

Some countries are requiring corporations to take back and recycle the plastics they produce, shifting accountability to producers.

18 Ryberg, Michael Z. Hauschild, Feng Wang, Sandra Averous-Monnery, Alexis Laurent (2019): Global environmental losses of plastics across their value chains. Resources, Conservation & Recycling, 151 (2019) 104459 DOI, https://doi.org/10.1016/j.resconrec.2019.104459.

19 The mass of plastics produced is not equal to the mass of plastics disposed of due to plastic service lifetime extending beyond the year of production. Accordingly, a proportion of the plastic waste disposed of in 2015 was produced prior to 2015.

20 UNEP, 2018b. *Mapping of global plastics value chain and plastics losses to the environment* (with a focus on marine environment).

21 UNEP, 2018b. *Mapping of global plastics value chain and plastics losses to the environment* (with a focus on marine environment).

Figure 2.3: Examles and sizes of plastics found in the marine environment

Illustrative sizes and examples of plastics commonly found in the marine environment1 (ten Brink et al. 2016)

Size class	Nano	Micro	Meso	Macro	Mega
Particle size	< 1 µm	< 5 mm	< 3 cm	< 1 m	> 1 m
Examples of plastic particles	• Nanofibres from clothing Rubber tyre • dust • Nanoparticles in products and pharmaceuticals	• Microbeads from personal care • Fragments of larger plastic products • Polystyrene • fragments • Blasting plastic from shipyards Incineration par ticules	• Bottle caps • Plastic pellets • Fragments of larger plastic products	• Beverage bottles • Plastic bags • Disposable tableware and cutlery • Take-away containers and disposable cups (including those of Styrofoam/polystyrene •) Beer ties • Tyres • Pipes • Balloons and toys • Textiles	• Fishing nets • and traps • Rope • Boats • Plastic film • Construction PVC

Adapted from ten Brink et al (2016).

Both for macroplastics and microplastics, the main hotspots in terms of leakages and potential impacts on the marine environment are related to the use stage and the end- of-life stage of the plastic value chain. Businesses, consumers and governments are key stakeholders influencing these stages.

ADDITIONAL RESOURCES BOX
The plastics value chain

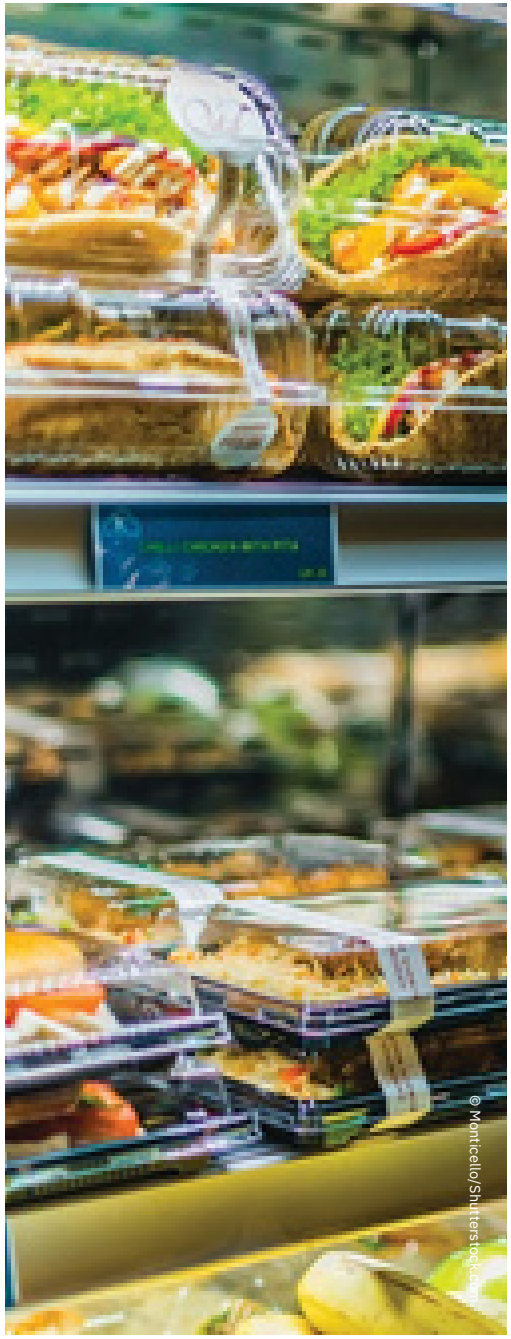
- *Addressing marine plastics: A systemic approach – Stocktaking report* - takes stock of existing knowledge and actions
- *Mapping of global plastics value chain and plastics losses to the environment* - maps plastic leakages to identify hotspots along global value chain
- *Addressing marine plastics: A systemic approach – Recommendations for action* - recommends systemic actions to achieve a circular economy
- *Addressing Marine Plastics. A Roadmap to a Circular Economy* - provides an action-oriented strategy through a set of priority solutions to be implemented by targeted stakeholders
- *National guidance for plastic pollution hotspotting and shaping action* - introduces science-based workflow to support the development of key interventions

2.2 packaging as the largest application of plastics

The packaging sector accounts for around 30% of the world's total plastic use, with higher rates observed in many regions and countries (such as 40% in Europe and 53% in South Africa).22 Typical plastic packaging includes bottles, take- away containers, drinking cups, pouches, wrappers, bags and foam packaging. Packaging includes many items consumed in large numbers by the retail, commercial, household and tourism sectors. Other major plastic applications include building and construction (17%) and transportation (14%), electrical/electric appliances, personal care products, coatings and markings, textiles and so forth.23

> Plastics packages are widely used for numerous applications because they are relatively durable, light and economical compared with other materials.

The economic implications of plastic packaging are considerable. In 2017 industry figures for packaging indicated that 93% of global plastic used was virgin, 7% recycled (of which 98% was downcycled) and only 2% ended up in a closed loop.24 Most of this plastic packaging is used only once and 95% of the value of plastic packaging material, worth US$80 billion to 120 billion annually, is lost to the economy. The cost of negative externalities generated by plastic packaging, plus the cost associated with greenhouse gas emissions from its production, is conservatively estimated at US$40 billion annually.25



22 UNEP, 2018a. Addressing marine plastics: A systemic approach - Stocktaking report. Notten, P. United Nations Environment Programme. Nairobi, Kenya.

23 UNEP, 2018, Mapping of global plastics value chain and plastics losses to the environment, p.32.

24 UNEP, 2021b. From Pollution to Solution. A global assessment of marine litter and plastic pollution. United Nations Environment Programme. Nairobi, Kenya.

25 Ellen MacArthur Foundation, 2016. The New Plastics Economy – Rethinking the future of plastics. https://www.ellenmacarthurfoundation.org/our-work/activities/new-plastics-economy/2016-report.

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2.2 Did you know that...

Definition of types of packaging: Reusable Packaging is packaging designed to be used multiple times before being discarded.

Did you know that…? Litter is either the consequence of an end user's behaviour, or the lack of available waste management infrastructure to handle plastic waste.

Something to think about: How can the packaging industry collaborate to reduce marine litter?

2.2 Did you know that...

Definition: Negative externalities occur when a transaction has a cost that neither the buyer nor the seller are forced to pay. For example, a factory may release air pollution into the environment, incurring large social costs that neither the factory owners nor the consumers purchasing their product pay. The same is true of the costs to society that are created by plastic packaging.

Did you know that? Marine plastic pollution costs the global economy billions (estimated to be as much as USD $13 billion) in damages to fishing, aquaculture, tourism, and clean-up efforts. Coastal regions bear the brunt of these costs.

Figure 2.4: Global plastics consumption by application

Packaging as the largest application of plastics

Application	Amount (tonnes)	Share (%)
Consumer & Institutional Products		%
Industrial/Machinery		4%
	2.54E+04	0.01%
	5.88E+05	0.2%
	2.49E+07	6% 3%
	1.35E+07	

Table: Global plastics consumption distributed on different plastic applications.
Source: UNEP (2018). Mapping of global plastics value chain and plastics losses to the environment (with a particular focus on marine environment).

95% of the value of plastic packaging material, worth USD 80-120 billion annually, is lost to the economy.

The cost of negative externalities generated by plastic packaging, plus the cost associated with greenhouse gas emissions from its production, is conservatively estimated at **USD 40 billion annually.**

Source: Ellen MacArthur Foundation (2016).
The New Plastics Economy - Rethinking the future of plastics.

Plastic packaging is also one of the main contributors to marine litter. In terms of macroplastics, clean-up data and plastics production data are consistent in pointing to packaging as the sector that makes the highest contribution to marine plastics. These plastic items are typically small, light and can easily enter the marine environment if littered, dumped or mishandled in the waste management systems. Plastic packaging represents more than 62% of all items collected in international coastal clean-up operations (including non-plastics but excluding cigarette butts). 26Many of these packaging items, such as polyethylene terephthalate (PET) bottles and polystyrene (PS) food containers (Styrofoam), are particularly visible due to their buoyant nature and their common presence on beaches. Packaging products are also well documented as being a source of entanglement and ingestion by marine life.

To reduce leakages and potential impacts on the environment, focus should be given to the pollution caused by plastic packaging - the largest application of plastics. Initiatives should not be limited to the end-of-life stage; instead, a systemic approach is needed that includes measures for reducing potential plastic leakages along the entire plastic value chain.

2.3 adopting a systemic approach to prioritize action on plastics

Adopting the value-chain approach27

served as a basis for One Planet network stakeholders to identify a strategic intervention point to shape actions to optimize the impact of the expertise in the network. Building on the existing knowledge and available data on the plastics value chain and applications, packaging at the use stage was identified as the key entry point for the network's collective response.

Box 1: The One Planet network

The One Planet network implements the 10-Year Framework of Programmes on Sustainable Consumption and Production Patterns (10YFP) and is a formally designated implementation mechanism for Sustainable Development Goal (SDG) 12.

As a global multi-stakeholder partnership, it is made up of governments, civil society, businesses, scientific organizations and international organizations. The One Planet network is leading the shift to sustainable consumption and production by setting the agenda and providing tools, knowledge and solutions to deliver on SDG 12.

Through its accelerator programmes and the active participation of its stakeholders, the network fosters collaborative and systemic approaches for the implementation of sustainable consumption and production.

Programmes working together under the One Planet networks plastics initiative and contributing to this report include:

- Sustainable Public Procurement;
- Consumer Information;
- Sustainable Lifestyles and Education;
- Sustainable Tourism; and Sustainable Food Systems.

Most plastic is being used for packaging (30%), and the use stage of the plastics value chain is one of the main stages for plastic leakages into the marine environment (36%).

A systemic view of the plastics value chain highlights the connections between stages. Systemic opportunities to address plastic pollution occur at various points in the value chain and are often interdependent and mutually reinforcing. The actions applicable to different stages, as identified in the UNEP report *Recommendations for Systemic Action* (2019), are summarized in Figure 2.5. Identified systemic opportunities at the use-stage of the plastics value chain served as a basis for One Planet network stakeholders to frame its collective response.

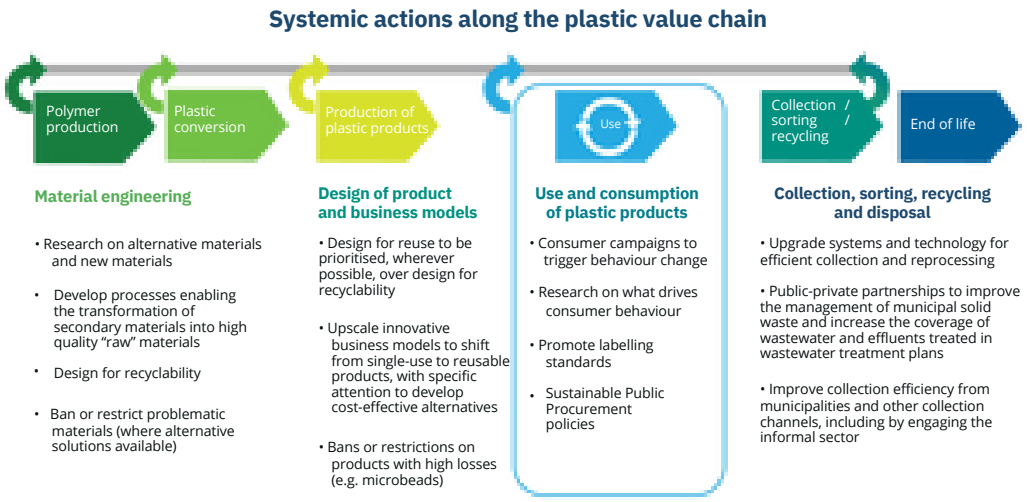
At the use stage of the plastics value chain, consumer awareness needs to be increased in order to change behaviours. This goes hand in hand with the need for

brands/
industry to provide consumers with credible sustainability

26 World Economic Forum, Ellen MacArthur Foundation and McKinsey & Company (2016) The New Plastics Economy - Rethinking the future of plastics, World Economic Forum, Ellen MacArthur Foundation and McKinsey & Company: Cowes, UK. P.14.

27 The value-chain approach considers the entire value chain of economic activities by understanding what is happening at different stages of the value chain as well as how the value chain operates as part of a system. Adopting a value-chain approach helps to identify strategic intervention points and shape corresponding actions that improve natural resource management and achieve multiple sustainability objectives simultaneously (UNEP, 2021).

Figure 2.5: Systemic actions along the plastic value chain



information that is clear and reliable,28 and for governments to promote labelling standards to ensure that the information is communicated.29

While the solution to plastic packaging pollution is broader than sustainable communications, clearer sustainability information could play a crucial role in reducing consumer confusion. Consumers' ability to make decisions that consider reusability, recyclability, compostability or use of recycled plastic (or other sustainable feedstock) depends on their access to and trust in this information. Better sustainability information (labels and claims) on plastic packaging and the underlying standards are important tools for informing consumers − individuals, businesses and governments − about packaging materials and proper disposal. Business and governments need to unite to increase the adoption of more effective on-package communications, thereby easing the burden on consumers and empowering them to play a more productive role in the transition towards more sustainable consumption and production patterns, as well as creating a circular economy for plastics. This type of sustainability information is often supplemented by other efforts, including communication campaigns. Effective campaigns can influence purchasing decisions, reuse behaviour and can be used in conjunction with policy to drive societal shifts. The more effective these campaigns are, the faster society can shift toward sustainable consumption and production. Education and awareness campaigns are needed to drive up acceptance of products made from secondary materials and to drive down consumer choice of non-recyclable products and packaging, as well as driving consumer participation in recycling programmes.

At the use stage of the plastics value chain, procurement practices also play a significant role in changing purchasing behaviour and encouraging market shifts, for example by encouraging more circular products and closing the plastics material loop. This has a ripple effect that drives change at different stages of the plastics value chain, affecting business and individual consumers. Adopting a value-chain approach to procurement is a major step in changing procurement practice. This implies not just thinking about what something is made of, where it comes from and who made it; but also, how will it be used, and finally what will happen to the product or material at end of use.Sustainable public procurement can create markets for sustainable solutions and offer a concrete pathway for governments to lead by example, for instance through procurement criteria that reduce the use of plastic packaging in purchasing, and by encouraging demand for secondary reprocessed plastics through the procurement of recycled content in packaging. Through its role in framing the procurement of viable collection and recycling infrastructure and services, public procurement also influences plastics waste collection policies and their implementation.

28 UNEP and ITC, 2017. Guidelines for Providing Product Sustainability Information.

29 UNEP, 2019. Addressing marine plastics: A systemic approach - Recommendations for action, p. 45.

2.2 Did you know that...

Citizen-led initiatives, like beach clean-ups and campaigns to reduce single-use plastics, are empowering individuals to take action.

2.4 building circularity in the plastics value chain

The UNEP approach to building circularity in the plastics value chain involves all stakeholders rethinking a system where plastics are kept at a high value and the oceans, rivers and land are not polluted.

> Circularity of the plastics sector means a world without negative impacts from plastics, where plastics attain their highest value along the value chain, no plastics leak and damage the environment and maximal circularity for plastic materials is achieved around the globe.

Solutions and actions should follow life-cycle thinking and adhere to the "Reduce, Reuse, Recycle" hierarchy by focusing on the following areas:

- Eliminate problematic and unnecessary plastic products;
- Innovate design, production and business models to ensure that necessary plastics are reusable, recyclable or compostable and free of toxic additives;
- Circulate plastic products at their highest value within the economy to keep them out of the environment.

Stakeholders of the One Planet network identified *The New Plastics Economy Global Commitment*, led by the Ellen MacArthur Foundation in collaboration with UNEP, as an initiative to be leveraged in defining a common agenda and priority actions. As mentioned in UNEP's report *From Pollution to Solution*,30 the Global Commitment unites more than 500 businesses, governments and other organizations behind a shared long-term vision of promoting sustainable consumption and production of plastics and building circularity in the plastics value chain. Businesses united under the Global Commitment represent over 20% of the plastic packaging market and have committed to an ambitious set of 2025 targets to: eliminate unnecessary plastic; innovate so all necessary plastics are designed to be safely reused, recycle, or composted; and circulate everything that is used to keep it in the economy and out of the environment.

30 UNEP, 2021b. From Pollution to Solution. A global assessment of marine litter and plastic pollution. United Nations Environment Programme. Nairobi, Kenya, p.99.

The role of *The New Plastics Economy Global Commitment* in guiding high-level targets, and in driving convergence in implementing a circular economy for plastic, led to the adoption of these commitments as the key principles for the One Planet Network-Wide Plastics Initiative.

With regards to plastic packaging, the common agenda adopted by the One Planet network aims to achieve the following:31

- Elimination of problematic or unnecessary plastic packaging through redesign, innovation and new delivery models as a priority
- Reuse models are applied where relevant, reducing the need for single-use packaging
- All plastic packaging is 100% reusable, recyclable or compostable
- All plastic packaging is reused, recycled or composted in practice
- The use of plastic is fully decoupled from the consumption of finite resources
- All plastic packaging is free of hazardous chemicals, and the health, safety and rights of all involved are respected.

Shared understanding through common definitions

The key principles contain terms such as "reusable", "recyclable", "compostable", "renewable" and "recycled content". To foster transparency and consistency of actions across the network, it was important to agree on a set of common definitions. These were drawn from the extensive review of existing definitions, detailed discussions with experts and a broad stakeholder-review process undertaken by The Global Commitment. Figure 3.6 summarizes some key terms related to plastic packaging as used for this report; Annex 1 contains the complete list of definitions in use by the network.

31 Ellen MacArthur Foundation, https://www.newplasticseconomy.org/assets/doc/npec-vision.pdf.

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2.4 Something to think about

Definition: Circular Economy is an economic system aimed at minimizing waste that promotes the continual use of resources by reusing, recycling, and refurbishing products and materials in order to eliminate or significantly reduce waste. Unlike the traditional linear economy model—where resources are extracted, used, and then discarded—a circular economy focuses on keeping products, materials, and resources in use for as long as possible.

Something to think about: How can we achieve a plastics Circular Economy?

2.4 Something to think about

What's the difference between the following terms "Reusable", "recyclable","compostable", and "renewable"? Refer to chapter five for detailed definitions (from page 59 to 62, definitions are highlighted).

Tupe of packaging	Definition
	1. It is not reusable, recyclable or compostable (as per the definitions below). 2. It contains, or its manufacturing requires, hazardous chemicals that pose a significant risk to human health or the environment (applying the precautionary principle). 3. It can be avoided (or replaced by a reuse 4. model) while maintaining utility. 5. It hinders or disrupts the recyclability or compostability of other items. It has a high likelihood of being littered or ending up in the natural environment.
	Packaging that has been designed to accomplish or proves its ability to accomplish a minimum number of trips or rotations in a system for reuse. A system for reuse defined as established arrangements (organizational, technical or financial) that ensure the possibility of reuse, in closed-loop, open-loop or in a hybrid system, as defined in ISO 18603:2013.
	Packaging or a packaging component is recyclable if its successful post-consumer collection, sorting and recycling are proven to work in practice and at scale. The threshold suggested to prove recycling works “in practice and at scale” is a 30% zpost-consumer recycling rate achieved across multiple regions, collectively representing at least 400 million inhabitants.
	Packaging or a packaging component is compostable if it is in compliance with relevant international compostability standards and if its successful post-consumer collection, sorting and composting are proven to work in practice and at scale. The threshold suggested to prove composting works “in practice and at scale” is a 30% composting rate achieved across multiple regions, collectively representing at least 400 million inhabitants.**32**

32 Ellen MacArthur Foundation, https://www.ellenmacarthurfoundation.org/assets/downloads/13319-Global-Commitment-Definitions.pdf.

2.5 developing recommendations for implementing a common agenda for plastic pollution

Following the principles of a circular economy for plastics, programmes of the One Planet network asked partners to formulate priority recommendations under three areas at the use stage (identified as having gaps in addressing plastic pollution):31

(1) Sustainability information: standards, labels and claims on plastic packaging
(1) Triggers for behaviour change: assessment of plastic pollution campaigns and green nudging
(1) Sustainable procurement practices.

Even when addressing the use stage of the plastics value chain, these areas are seen as triggers that could drive change across the entire plastics value chain by boosting the availability of sustainable options. They can shape the operations of actors by driving innovation, improved design for reuse, accelerated degradability, recyclability and ultimately a reduction in leakage and plastic pollution.

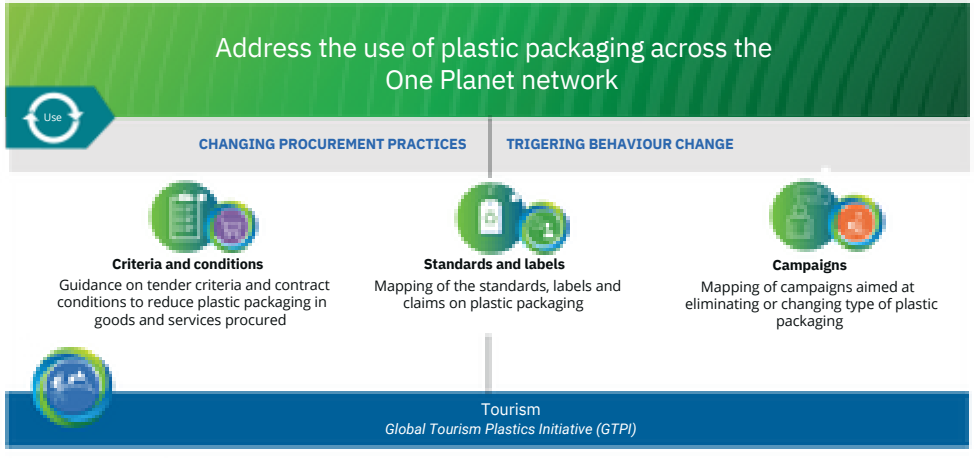
To develop an informed understanding of the situation and formulate relevant recommendations, programmes coordinated the development of:

1. Global mapping and assessment of standards, labels and claims on plastic packaging led by the Consumer Information programme
2. Global mapping and assessment of plastic pollution campaigns led by the Sustainable Lifestyles and Education programme.
3. Guidance on procurement of plastics packaging led by the Sustainable Public Procurement programme.

Recommendations by One Planet network programmes set the foundations for a continued alignment of stakeholders around the plastic packaging issue, for sharing knowledge and ideas to overcome barriers, and for developing further guidance and evidence for change.

These resources have informed actions to tackle plastic pollution in the tourism sector, which is recognized as a key source of marine litter and plastic pollution. Within the framework of the Sustainable Tourism Programme, UNEP and the World Tourism Organization (UNWTO), in collaboration with the Ellen MacArthur Foundation, implemented the *Global Tourism Plastics Initiative* (GTPI) to address the root causes of plastic pollution in the sector and act as the tourism sector interface of the New Plastics Economy Global Commitment.

Figure 3.7: Addressing pollution from plastic packaging at the use stage of the value chain across the One Planet network [33]



33 UNEP, 2019. Addressing marine plastics: A systemic approach - Recommendations for action, p. 34.

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CHAPTER THREE

SOLUTIONS TO REDUCE THE USE OF PLASTIC PACKAGING

Summary: Chapter 3

This chapter presents solutions to curb plastic packaging pollution, focusing on providing consumers with reliable information, encouraging sustainable public procurement by governments, and engaging consumers and key industries, particularly tourism. The chapter emphasizes the role of education, awareness campaigns, and behavior change strategies to reduce plastic use.

3.1 providing reliable and quality information to consumers

The core function of labels and claims on plastic packaging should be to provide reliable, relevant, clear, transparent and accessible information. In doing so, they can empower consumers − individuals, businesses and governments − to be active partners in the transition to more sustainable consumption and production patterns and a circular economy. A set of five recommendations was developed based on the findings of a global mapping and assessment of standards, labels and claims on plastic packaging carried out by the Consumer Information programme.34 These recommendations identify the key challenges and opportunities in terms of standards, labels and claims, while also highlighting what should be done to create more effective consumer communication on plastic packaging.

Figure 3.1: Definitions of standard, certification, label and claim

- **Standard** refers to specific criteria or norms of material goods or services, including packaging, which may also serve as benchmarks.
- **Certifications** refers to a formal accreditation process, in which it is confirmed that the certified entity or product/package meets a given set of (minimum) standards.
- **Label** describes a logo or stamp highlighting a product or service's specific characteristic(s), which may also be used as a form of trademark. A label may or may not represent a certification.
- **Claim** refers to assertions made by companies about beneficial qualities or characteristics of their goods and services.

Sources: (ISO 14020); (UN Environment and ITC 2017); (Organisation for Economic Co-operation and Development [OECD] 2011)

34 UNEP and Consumers International, 2020. Can I Recycle This? A Global Mapping and Assessment of Standards, Labels and Claims on Plastic Packaging.

3.1.1 Following the Guidelines for Providing Product Sustainability Information in plastic packaging communications

Businesses (including manufacturers, suppliers and retailers) should take steps to ensure their labels and claims correspond with the five fundamental principles of the Guidelines described in Figure 4.2 as a minimum.

In assessing the labels and claims found on plastic packaging, the analysis found wide variations in terms of whether they met the five fundamental principles outlined in the Guidelines for Providing Product Sustainability Information: reliability, relevance, clarity, transparency and accessibility. Most labels were identified as having a combination of well and poorly designed elements, or the experts consulted disagreed on whether the labels could be categorized as good or bad. Two conclusions can be drawnfrom this observation. First, even among experts, communications are inherently subjective and depend on different experiences and understandings. This highlights the importance of clear guidance developed through an international consensus-finding process, such as the Guidelines for Providing Product Sustainability Information. Second, it shows that there is considerable room for improvement for most consumer-facing sustainability communications on plastic packaging.

Figure 3.2: Principles for providing product sustainabiilty

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3.1 Something to think about

What's the difference between the fundamental principles referred to as reliability, relevance, clarity, transparency and accessibility? (Refer to Table 2 in page 28 to answer this question.). How can the labeling of plastic products based on these fundamental principles contribute to reducing misinformation regarding plastic recycling? Do you think that standardizing the labeling of plastics based on the fundamental principles outlined on this page could help to reduce plastic pollution? Why or why not? Do you think this could be done on a global level? What would it take to do this?

information

Table 2: Summary of Fundamental Principles

Fundamental Principle	Description	How the Principle Applies to Labels and Claims on Plastic Packaging and Disposable Food-Ware
RELIABILITY 	Build your claims on a reliable basis • Accurate and scientifically true • Robust and consistent • Substantiated data and assumptions	• Is the label consistent? Is the label's claim • consistent with applied methods and standards? • Does the label accurately communicate packaging attributes? Is the label substantiated by scientific evidence? •
RELEVANCE 	Talk about major improvements, in areas that matter • Significant aspects ('hotpots') covered • Not masking poor product performance, no burden shifting • Genuine benefit which goes beyond legal compliance	• Does the label allow the consumer to evaluate the sustainability of the packaging? • Is the label relevant to the packaging? • Is the label relevant to the local context?
CLARITY 	Make the information useful for the consumer • Exclusive and direct link between claim • and product Explicit and easy to • understand Limits of claim clearly stated	• Does the label clearly and simply communicate what it means? Is there text or iconography that explains the label? Does the label communicate the proper handling of the packaging? Does the label contain enough information to correctly guide consumer behaviour?
TRANSPARENCY 	Satisfy the consumer's appetite for information, and do not hide • Developer of the claim and provider of evidence published Traceabiilty and • generation of claim (methods, sources, etc.) published • Confidential information open to competent bodies	• Is the label based on a third party standard or verification process? Is the information provided • comprehensible for the consumer and can the label be evaluated by the consumer?
ACCESSIBILITY 	Let the information get to the consumer, not the other way around • Clearly visible: claim easily found • Readily accessible: claim close to the product, and at required time and location	• Is the label easy to read? • ARe there size specifications that companies must comply • with when applying the label? Is the label translated into local language?

Desirable: three dimensions of sustainability, behaviour change and longer term impact, multi-channel and innovative approach, collaboration and comparability.

Table 3: Summary of Aspirational Principles

Aspirational Principle	Description	Commentary on Assessed Labels and Claims
THE THREE DIMENSIONS OF SUSTAINABILITY 	Show the complete picture of product sustainability • Environmental, social, and economic dimension considered • Burden shifting between the dimensions avoided • Complementary certification schemes combined	• Assessed labels and claims primarily focused on the environmental dimension of sustainability.
BEHAVIOUR CHANGE AND LONGER-TERM IMPACT 	Help move from information to action • Insights from behavioural science applied • Consumers actively encouraged to play a role, where appropriate • Longer-term relationship built with consumer	• On-package recycling labels help inform consumers about proper action. • Providing credible information about plastic packaging can guide consumers towards more sustainable behaviour in purchase decisions, product usage and disposal of a product.
MULTI-CHANNEL AND INNOVATIVE APPROACH 	Engage with consumers in diverse ways • Various complementary communication channels used • Different user groups addressed with different channels • Not overloading the consumer with information	• On-package labels and claims can be an effective component of a multi-channel approach. • Multi-channel and other innovative approaches may also be a helpful tool in localisation of disposal guidance for consumers as they can provide more loally customised information, as well as providing varying amounts of information depending on consumer interest.
COLLABORATION 	Work with others to increase acceptance and credibility • Broad range of stakeholders included in claim development and communication • Joint communication channels employed • Inclusive language used to make consumers feel part of a movement	• Evaluation of the label or claim development process is outside the scope of this report.
COMPARABILITY 	Help consumers choose between similar products • Product comparisons must be objective and useful for the consumer • Participate in collaborative approaches initiated by government or third parties • Make sure that product comparisons are based on very strict and objective rules relevant to the specific product	• Except for labels and claims that provide specific thresholds within the same criteria (e.g. per cent recycled content), comparability is quite difficult. • A comparison of plastic packaging should also consider the packaged product and the implications of its production process to evaluate overall sustainability. However, this level of detailed information is usually unavailable or too complex to be communicated to consumers.

3.1.2 Harmonizing definitions about the content and reusability of plastic packaging at a global level

There should be globally consistent definitions on the content and reusability of plastic packaging in standards. Labels and claims should be updated to reflect these.

One of the clearest messages to emerge from the consultation and assessment was that the current state of on-package communications is very confusing for consumers. A large part of this prob¬lem is that the definitions underpinning standards, labels and claims lack consistency or real-world applicability. The terms used in labels and claims are not consistently defined or verified, even in the same region. This is of particular concern for messages designed to influence purchasing decisions such as recycled or "ocean plastic" content, biobased materials and reusability. Inconsistency makes it more difficult for consumers to compare the sustainability characteristics of one product's packaging to another. This creates consumer confusion and enables greenwashing.

3.1.3 Standards, labels and claims need to better reflect real conditions

The definitions and technical requirements used in standards on recyclability, compostability and biodegradability should better reflect real world conditions and be more attentive to accessibility. Where possible, claims and labels should be based on recognized national or international standards.

While consumers would benefit from greater consistency in terms of information about the content and appropriate use of plastic packaging, information about proper disposal should better reflect the local conditions that consumers experience. The assessment showed that there are currently two key problems in this area:

1. There is a discrepancy between the content of claims and what is likely to happen to that packaging in real life, particularly in terms of compostability and biodegradability. This is problematic for industrial composters and for people carrying out backyard composting. Consumers may also mistakenly litter these plastic items if they do not understand the need for specific conditions of decomposition.

2. Guidance on proper disposal is only relevant if consumers have access to the facilities and infrastructure needed for such processes. Just as the Ellen MacArthur Foundation's definition of "recyclable" stipulates that products must be recyclable "in practice and at scale", the same criteria should apply to claims regarding compostability. While biodegradability encompasses a slightly different process, the need for items to be practically biodegradable is also relevant.

3.1.4 Restricting the use of the "chasing arrows" symbol to indicate recyclability

Businesses using the "chasing arrows" design for claims other than recyclability should redesign their image-based communications without the arrows. In circumstances where legislation or regulation still mandate the use of outdated resin codes, these should be revised to reflect the updated triangular design. The design of labels and logos should seek to minimize the potential for misinterpretation.

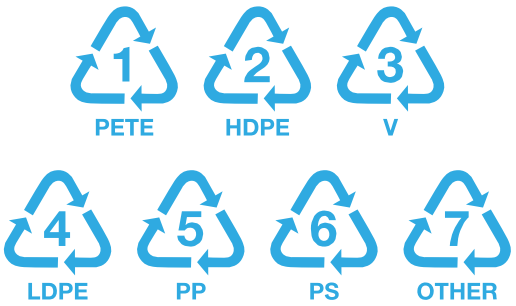
The mapping and assessment highlighted design practices that increase consumer confusion. Two examples are the Green Dot and the outdated but still widely used resin codes; both use the "chasing arrows" in their design but do not indicate recyclability for consum¬ers.

Figure 3.3: Problematic design practices in plastic packaging

Universal Symbol for Recycling

Source: Public Domain

Original Resins Identification Codes



Source: ASTM International

This is a problematic but fairly widespread practice. The expert consultation highlighted that consumers typically misinterpret these symbols to mean recyclability or perhaps recycled content. Confusion often leads consumers to overestimate how many items are recyclable, leading to higher levels of contamination in the recycling stream. This contamination has an impact on the economic viability of the recycling system, while confusion may also undermine consumer confidence in recycling. In general, it is crucial that labels or images intended to communicate information about sustainability are designed to consider the perceived meaning of the symbols used and any scope for misinterpretation.

3.1 Something to think about

What steps can the UN and Member States take to harmonize definitions about the content and reusability of plastic packaging at a global level to make it easier to compare the sustainability characteristics of one product's packaging to another and reduce consumer confusion?

3.1 Something to think about

What types of facilities and plastic waste management infrastructure would be needed to make it possible to recycle plastics on a large scale?
Did you know that...? Scientists are exploring biodegradable plastics made from algae, mushrooms, or corn. However, the production scale and costs remain challenges.

3.1.5 Informative and verified recycling guidance labels and enforcement of proper use

Businesses should use recyclable plastic packaging, adopt and commit to placing it on all packages at a readable size. The organizations managing these labels should explore further aligning requirements and design of their labels to minimize consumer confusion and facilitate broader adoption by companies. Governments need to support recycling efforts by providing the necessary infrastruc¬ture and introducing policies to ensure consumers follow recycling guidance in a proper way.

The mapping and assessment highlighted good design practices that help consumers do the right thing. For example, recycling guidance labels such as the Woolworths label and the Australasian Recycling Labels were considered informative and useful. These labels can be effective in increasing responsible consumer behaviour. Experts also argued that the adoption of these labels has spurred more sustainable design innovation by prompting brands to redesign packages to avoid having to include the "not recyclable" label. It is equally important, however, to avoid contamination in recycling streams by clearly stating that an item is not recyclable when appropriate and prevent the misuse of recyclability labels and claims.

ADDITIONAL RESOURCES BOX
A global mapping and assessment of standards, labels a claims on plastic packaging

- Provides a global mapping of standards and on-
- package labels and claims related to plastic packaging,
- Creates a framework to categorize labels and claims by type, focus, geography and other relevant characteristics, Assesses how well the on-package labels and claims align with the Guidelines for Providing Product Sustainability Information (UN Environment and International Trade Centre (ITC) (2017), and Identifies opportunities to use standards,
- labels and claims to more effectively tackle plastic pollution.

Can I Recycle This? A Global Mapping and Assessment of Standards, Labels and Claims on Plastic Packaging report

- Builds on the Guidelines for Providing Product Sustainability Information
  (Complemented by a set of case studies with illustrative detailed assessments of labels found on plastic packaging)
- Used for the development of a series of 3 Key Message Papers for Businesses, Governments and Standard-setters and labelling organizations to effectively implement the 5 recommendations of the report

3.1.6 Examples of good practices

Box 3.1: Good practice - Case 1

Australasian Recycling Label (ARL)

Sector	Retail
Region	Australia and New Zealand
Best Practice	The ARL provides relevant disposal information for each material, as most packaging is composed of more than one element (with various implications for recyclability). The Australasian Recycling Label (ARL) Program is an initiative of the Australian Packaging Covenant Organisation (APCO), alongside Planet Ark and the Packaging
Recyclability Evaluation Portal (PREP) Design	The ARL Program is an evidence-based national labelling programme for Australia and New Zealand that provides consumers with accurate recycling information and helps brands to design and label packaging for recyclability. The ARL features on products in supermarkets and other participating stores and features three main classifications: Recyclable - This can be placed in consumer's kerbside recycling (left-hand image). Conditionally recyclable - Can be recycled if the instructions below the symbol are followed (middle image). Not recyclable -This cannot be placed in kerbside recycling (see right-hand image).

The ARL Program was launched in 2018, and more than 460 businesses had signed up by 2020.

PRINCIPLE 1: RELIABILITY

The ARL is the only evidence-based labelling system on the Australian and New Zealand market and is supported by PREP, which is an online tool that assesses packaging recyclability in Australia and New Zealand. The PREP tool assesses each piece of packaging against the number of people that can recycle it via their council collection, the potential for the packaging to be accurately sorted and the end markets available for the material. Kerbside access levels are determined using the data from RecyclingNearYou.com.au, which are updated annually.

Build your claims on a reliable basis

- Accurate and scientifically true
- Robust and consistent
- Substantiated data and assumptions

The ARL can only be used by businesses once they have completed a PREP assessment. The evidence supplied by PREP leads to the classification of plastic packaging into the three categories and it can then be labelled accordingly.

PRINCIPLE 2: RELEVANCE

The ARL is currently a voluntary programme. The PREP tool simulates the recycling system and can evaluate the technical recyclability of a package based on weight, shape, size, inks and glues. Adoption of the ARL addresses a significant aspect of environmental sustainability by maximizing efforts to achieve cleaner recycling streams.

Talk about major improvements in areas that matter

- Significant aspects ("hotspots") covered
- Not masking poor product performance, no burden shifting
- Genuine benefit that goes beyond legal compliance

The programme helps brand owners to design packaging that is recyclable at the end-of-life, thereby contributing towards a more circular economy.

3.2 Did you know that...

- 44% of consumers say the Australasian Recycling Label (ARL) encourages them to recycle more than they do.
- The ARL is helping to cut confusion around problematic materials, e.g. 60% of aluminum foil was correctly disposed with ARL vs 40% without the ARL.

PRINCIPLE 3: CLARITY

The ARL provides clear, specific and relevant information to the consumer by identifying the specific packaging component the label is referring to: for example, “Bag”. For “conditionally recyclable” items, simple instructions are provided on the label to inform consumers about any additional steps required before recycling an item. For example, “Store Drop Off”. Awareness and understanding of the label are tested annually to track understanding of the programme.

Make the information useful for the consumer

- Exclusive and direct link between claim and product
- Explicit and easy to understand
- Limits of claim clearly stated

The ARL is easily seen on-pack and separated visually across three classifications:the “recyclable”label has a coloured/ opaque recycling symbol, the “conditionally recyclable” label has a transparent recycling symbol and contains further instructions, and the “not recyclable” label includes the bin symbol. This consistency helps consumers to recognize and understand the labels and recycling instructions.

PRINCIPLE 4: TRANSPARENCY

The process of creating the labels, how the availability of collection services is accounted for and what each symbol stands for is made available on the ARL website. The website contains an information page containing details about how the label is created through the PREP tool and where data are sourced.

Satisfy the consumer’s appetite for information, rather than hiding

- Developer of the claim and provider of evidence of published
- Traceability and generation of claim published (methods, sources and so on)
- Confidential information open to competent bodies

Information is made available on the website about what consumers should do when they find instructions beneath “conditionally recyclable” items, such as “return to store: return this item to the soft plastics collection bins at any Coles or Woolworths store in Australia only”.

PRINCIPLE 5: ACCESSIBILITY

The label is clearly visible on the packaging, easy to find at the moment of purchase and the URL is always included on the label. Information about how the labels work is made available via the ARL website, which is displayed on the product packaging (see image opposite). Programme members can also supply an alternative website for further information on recycling and the ARL such as woolworths.com.au/recycling. Consumer messaging and campaign resources are tested regularly using focus group testing.

Let the information reach the consumer, not the other way around

- Clearly visible: claim easily found
- Readily accessible: claim close to the product, and at the required time and location

The ARL gives assurance to consumers by addressing the different materials used and whether they can be readily separated by consumers. The “conditionally recyclable” label is supported with short phrases to give clearer instructions to consumers.

Key learnings

- Make further information about the label available on a website and list the URL on-pack.
- For any “conditionally recyclable” items, provide simple and easy instructions for consumers on-pack and make further details available via a website.
- Consistent use of symbols and specific phrases ensure clarity and help consumers.
- Collaborate with relevant partners involved in the recycling system for reliable, localized data.

Box 3.1: Good practice - Case 2

Underwriters Laboratory's (UL) Environmental Claim Validation / UL Recycled Content Validation label

Case study can be consulted here

Sector:	Manufacturing sector Global The UL Recycled Content Validation label enables products to showcase recycling efforts and
Region:	incorporating recycled content into the product, and also incorporates social and economic implications into its criteria. The Underwriters Laboratory (UL)'s Environmental Claim Validation (ECV) service and label test a manufacturer's product and validate the environmental claims made in marketing and packaging materials, including claims on recycled content (see image opposite).
Best Practice:	Manufacturers can evaluate recycled content to UL's 2809, an Environmental Claim Validation Procedure (ECVP) that evaluates the amount of recycled content in products including: • Post-consumer recycled content • Pre-consumer (post-industrial) recycled content • Closed-loop recycled content • Total recycled content. Receiving the recycled claim validation means that products can feature the UL Environmental Claim Validation label on their packaging and marketing materials – this label is displayed in the image above.

PRINCIPLE 1: RELIABILITY

The UL Environment provides independent, third-party, science-based validation on a product's environmental claims and helps demonstrate its sustainability efforts. The third-party certification is based on stringent standards and requirements to help deliver credible green messaging.

Build your claims on a reliable basis

- Accurate and scientifically true
- Robust and consistent
- Substantiated data and assumptions

The UL reaches 2 billion global consumers annually with safety, security and sustainability messages, while the UL labels appear on tens of billions of products globally.

PRINCIPLE 2: RELEVANCE

The UL 2809 Standard specifically measures the amount of recycled content in products and validates pre-consumer and/or post- consumer defined source material content, which informs and assures consumers that validated products are made with recycled materials.

Talk about major improvements in areas that matter

- Significant aspects ("hotspots") covered
- Not masking poor product performance, no burden shifting
- Genuine benefit that goes beyond legal compliance

UL 2809 originally measured the percentage of recycled content and has been updated to include assessments of the social impacts of collecting pre-consumer and post-consumer recycled materials on local economies, including criteria for ocean-bound and ocean-sourced plastics. If a product meets the criteria and features the label on the packaging, then consumers will be able to use the website listed on-pack to find out how the company created the recycled plastics and what social and/or economic impact it has had on local communities.

PRINCIPLE 3: CLARITY

The UL Validation intends to combat “greenwashing” by ensuring the claims manufacturers make are substantiated. The presence of the label helps consumers feel confident that the products they are choosing are accurate and the minimum recycled content is stated within the label.

Make the information useful for the consumer

- Exclusive and direct link between claim and
- product Explicit and easy to understand Limits of
- claim clearly stated

The UL website is clearly displayed on the label and directs consumers to a page that includes an overview of the products UL certifies, brochures and a whitepaper on ‘Making Effective Sustainability Claims’.

PRINCIPLE 4: TRANSPARENCY

To find information about UL certified products and components, users can access the UL Product iQ: this provides users with free access to thousands of UL certified products, components and materials, and enables users to compare between products.

Satisfy the consumer’s appetite for information, rather than hiding

- Developer of the claim and provider of evidence of published
- Traceability and generation of claim published (methods, sources and so on)
- Confidential information open to competent bodies

Consumers can also retrieve data on the UL SPOT® Product Guide, an online tool that connects consumers with credible product information and enables them to identify sustainable products by product category, company name, product name or type of claim.

PRINCIPLE 5: ACCESSIBILITY

The label is clearly visible on the packaging and is close to the product and at the required time and location (insofar as it features on-pack). The label states the minimum recycled content, thereby providing consumers with clear information about the product’s sustainable attribute.

Let the information reach the consumer, not the other way around

- Clearly visible: claim easily found
- Readily accessible: claim close to the product, and at the required time and location

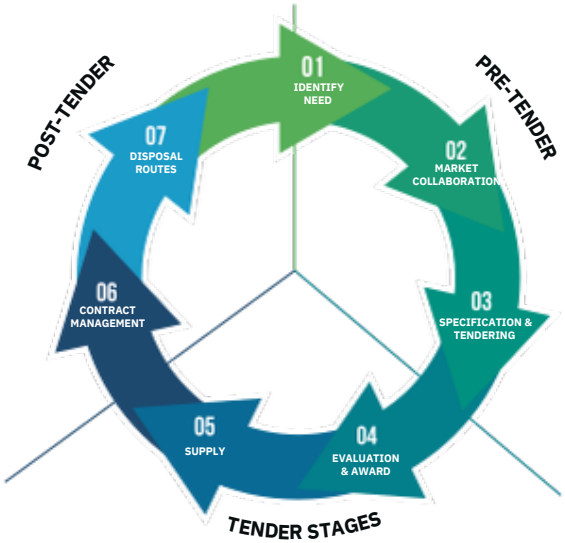
The presence of the label helps consumers to make more environmentally conscious purchasing decisions whilst also recognizing businesses’ recycling efforts and commitment to circularity.

Key learnings

- Providing clear information in the text below the label to inform consumers of the direct sustainable attribute.
- The criteria for the UL2809 includes social and economic impacts which other standard-setters/labelling organizations can emulate.

Self-assess your plastic packaging label using the self-assessment tool available on the One Planet Network website.

Figure 3.4: Simplified procurement cycle



Source: Rijkswaterstaat/Sustainable Global Resources/EU BSR CircPP.

3.2 governments leading by example and steering market transformation through public procurement

Public procurement represents an average of 12% of gross domestic product (GDP) in countries of the Organisation for Economic Co-operation and Development (OECD) - often between 25% and 30% of GDP in developing countries - and around 30% of total government expenditure.35 If used strategically, it is a particularly important lever in driving forward sustainable consumption and production, accelerating the transition to a circular economy and encouraging behaviour change, innovation and performance improvement through supply chains and in purchasing organizations.

Addressing the challenge of plastic packaging through procurement is most effective as part of a wider sustainable procurement policy within organizations that adopts an integrated and whole-life approach to the impacts of procurement. Good procurement is sustainable procurement and not an "add-on". Sustainable public procurement includes several essential elements – it is transparent, fair, non-discriminatory, competitive, accountable, involves an efficient use of public funds and is verifiable. Tenders should also ensure that suppliers understand and align with these policy goals.

Box 3.2: Sustainable Public Procurement definition

A process whereby public organizations meet their needs for goods, services, works and utilities in a way that achieves value for money on a whole life cycle basis in terms of generating benefits not only to the organization, but also to society and the economy, whilst significantly reducing negative impacts on the environment.

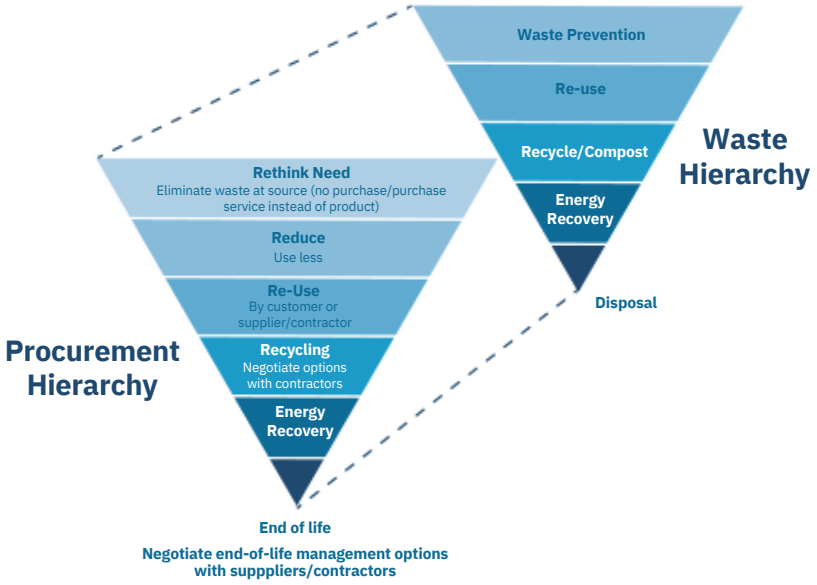
Procurement actions include, but are not limited to, embedding requirements on the procurement of plastic packaging in sustainable procurement policies, and setting out green public procurement criteria in tenders that relate directly or indirectly to packaging. Actions relate to the whole procurement cycle: pre-procurement; tendering and award; and contract management (see Figure 3.4).

35 Public procurement. OECD 2020.

3.2 Something to think about

Definition: Public procurement Refers to the process by which governments and public institutions purchase goods and services. It can be a powerful tool to drive sustainable consumption and production (SCP). By prioritizing sustainability criteria in procurement decisions, public entities can influence markets, encourage innovation, and promote environmentally and socially responsible practices across industries
Something to think about: How can we address the challenge of plastic packaging through procurement to have more successful results?

Figure 3.5: Applying waste hierarchy principles to procuring plastics



Source: Procuring the Future: Sustainable Procurement National Action Plan. Department for Environment, Food and Rural Affairs (DEFRA), United Kingdom, 2008.

3.2.1 Planning an approach to plastic packaging as the first step of the procurement exercise

Tackling the plastic packaging challenge through procurement requires initial planning before the tendering stage to determine actions, target areas for action and identify who is responsible for delivering the actions within the procurement cycle. Planning involves confirming the purchasing need, validating its objectives with internal stakeholders and identifying the risks and opportunities in terms of eliminating and reducing plastic packaging. The procurement approach to plastic packaging should be guided by an understanding of how it is used across the government's purchasing of goods and services.

Understanding where the impacts of unnecessary and problematic plastic packaging arise through procurement presents a challenge, as packaging is typically not the primary subject matter in the purchasing decision. Procurement influences the impact of plastic packaging in three ways:

1. Direct purchasing – this is purchasing plastics packaging for the purpose of packaging, for example as part of catering service requirements. Food and beverage packaging accounts for the majority of direct packaging purchasing,[36] for example in the provision of food services in health and education; and catering services for staff canteens, meetings, conferences and events.
2. Indirect purchasing – purchasing products (not just food products but also office consumables, information and communications technologies, building and maintenance products and cleaning supplies) packaged in single-use plastic packaging. Packaging provides a valuable role in protecting the products that are the direct subject matter of the tender.
3. Encouraging demand for secondary reprocessed plastics, for example through setting requirements for recycled content in packaging. The public sector is responsible for setting waste collection policy and implementing it, including through the procurement of viable waste collection and recycling infrastructure and services. This infrastructure tackles both municipal waste, including plastics packaging, and packaging from commercial and public sector sources. Waste and recycling infrastructure may be owned by the State or contracted as a service from the private sector. Either way, the average percentage of packaging collected for recycling is only 15% globally each year.[37]

36 WRAP Cymru Ceredigion Catering Consumables Final report. WCB101-003, 2019.

37 Improving Markets for Recycled Plastics. OECD, 2018.

3.2.2 Adopting a waste hierarchy to close the plastic loop

The waste hierarchy contributes to the circular economy by retaining value at the highest levels and helping to close material loops. The waste hierarchy prioritizes the management of problematic plastics by ranking options according to environmental impact, with prevention being the preferable option and landfill as the last resort.

Procurers can take unilateral action or be part of a wider team addressing plastics. Actions should be prioritized according to waste hierarchy principles:

a. Reduce – eliminate the use of unnecessary plastic packing in the first place by challenging the need to purchase items using plastic such as in packaging.

b. Reuse – where procurers cannot avoid plastic packaging, for example in the health sector and for some food items, then plastic items should be reusable, where feasible.

c. Recycle – plastic items should be fully recyclable and fully recycled. Ensure that only those polymers that are easily recycled within local waste systems are specified and that compostable packaging is only used where the right facilities exist.

d. Recover or landfill – ensure that only items that are difficult to eliminate or recycle are effectively captured for energy recovery (where it exists) or landfill to avoid leakage through intentional or unintentional littering.

3.2.3 Engaging early with suppliers and markets

Communicating with suppliers and markets early in the tender process encourages transparency and prepares them to meet changing demands. It gives suppliers the opportunity to communicate any possible downstream impacts and contributes to an understanding of where the plastic packaging hotspots are and what types of plastics are being used.

Good market engagement will enable procurers to understand the market's capability to meet circular principles around reducing the dependency on plastics and the impacts from plastics. This will help procurers assess whether to set more functional questions – based on outcomes – or more technical requirements around the products and services required for a given tender. The better the suppliers' understanding of circular economy principles, the more likely that a functional question can be asked in the tender. This enables the market to offer more innovative and circular solutions for addressing the plastics challenge.

Procurers must also consult and collaborate with suppliers to ensure compliance from suppliers covered by any national legislation and voluntary agreements. Participation in eligible voluntary agreements, for example, could also be used as part of award criteria.

3.2.4 Setting requirements for plastics

Following the circular and waste hierarchy principles, procurers should ensure that the procurement of products containing plastics includes relevant requirements for:

1. Reducing use of harmful substances – for example by excluding plastics that exceed certain threshold levels of harmful substances and/or mixtures.
2. Increasing recyclability – by avoiding composite materials, polymers that are hard to recycle and plastics with black/near black colour (except when made from recycled plastics) as these complicate recycling processes.
3. Extending the useful life of products – through repair and reuse, whenever feasible, to reduce the carbon footprint of procurement and to reduce the impacts of new plastic.
4. Increasing demand for recycled plastic – by specifying inclusion of recycled content, where practical, to help encourage uses for reprocessed plastic from recycling.

Procurement criteria relating to plastics may be covered within different parts of the tender process, for example, as part of:

- Supplier selection;
- Technical specification requirements;
- Award criteria; and
- Contract management and performance clauses.

Criteria relating to plastics may compromise one, or a combination, of the following elements:

- ***Packaging*** – avoidance or elimination of certain plastic polymers or forms. Criteria may also be used to ensure that suppliers are complying with mandatory requirements and providing explanations for the products offered, for example packaging formats and materials. To eliminate the reliance on single-use plastic packaging, criteria may also specify an alternative or substitute, selected through a full life-cycle assessment that compares the environmental impacts of different materials and avoids unintended trade-offs.
- ***Recycled content*** – setting levels, where applicable, to avoid or reduce the use of virgin polymers. Tenders should also encourage bidders to substitute hard-to-recycle plastics materials and propose alternatives to non-recyclable plastic polymers and items in their responses. Procurers can minimize the potential for waste by using the following criteria:

— The packaging consists of one polymer or plastic polymers that are separate from each other (not composite or bonded) and other packaging materials.

— The plastic packaging materials are readily recyclable and will be recycled through local collection and recycling infrastructure, or are fully traceable if not.

— Plastic packaging consists of PET, PP, HDPE, LDPE or PS - These can consist of both biobased and fossil raw materials.

- ***Toxicity*** – to reduce the dependency on, and impacts from, additives such as colourants, fillers, plasticizers, stabilizers and flame retardants. The procurement of goods and services should also avoid purchasing plastic packaging that may contaminate other plastic waste streams to make recycling impossible or commercially unviable. Standards like EN 13432 for compostable packaging38 can help with verification in tenders to ensure that compostable packaging biodegrades effectively in industrial/in vessel composting conditions and is distinguishable from other biodegradable but non-compostable materials.
- ***Identifying recycling solutions*** – to encourage bidders to propose collection and recycling solutions that reduce plastic waste, for example take-back packaging schemes. Plastic items recovered by suppliers should either be reused, recycled or, as a last resort, disposed of responsibly. These requirements should be supported by contract management clauses covering continual improvement and reporting of recycling rates. Verification of claims is important, and procurers should require and validate the relevant product data to assess how, and if, these products can be recycled/disposed locally.

3.2.5 Building capacity to shift practices towards more sustainable public procurement

Addressing the use of plastic packaging through procurement is more than just setting criteria and requirements in tenders. It involves shifting practices towards more sustainable procurement and adopting a more strategic role for procurement in delivering rather than hindering policies and commitments. An investment in people as well as processes enables sustainable procurement to be more clearly recognized as strategic for policy delivery, for example in encouraging a more circular economy.39

38 EN 13432 "Packaging: requirements for packaging recoverable through composting and biodegradation". A harmonized European standard linked to the European Directive on Packaging and Packaging Waste (94/62/EC).

39 Building Circularity into our Economies through Sustainable Procurement. UN Environment, 2018.

3.2 Something to think about

How can public procurement incentivize businesses to adopt more sustainable practices?

When building capacity, it is vital to think in terms of the broader procurement cycle to identify the wide range of roles and stakeholders relevant to different stages and decision points in the procurement cycle. This should include baselining a working knowledge of sustainable procurement principles across the organization - not just within the procurement function.

The importance of product sustainability information

Procurers face the challenge of identifying the type of packaging material in the face of limited data from suppliers and manufacturers, while the latter are also challenged by multiple sources, producers and packaging formats. Information and training for procurers are necessary to ensure that plastic packaging waste arising from purchasing decisions can be collected and recycled locally using available and commercially viable technologies. Better and more accessible information around packaging materials is key to informing purchasing decisions and addressing this challenge.

Standards, certification and labels can help procurers in verification and evaluation and avoid the unintended consequences of innovation in polymers and packaging formats, such as the mixing of compostable, biodegradable and fossil-based plastic packaging in recycling operations.

ADDITIONAL RESOURCES BOX Sustainable Public Procurement of Plastics, The Rijkswaterstaat, Netherlands, on behalf of the UN One Planet Network Sustainable Public Procurement programme, 2022

The guide is aimed at procurement practitioners responsible for embedding and implementing policies to reduce the impact of problematic and unnecessary plastic through their procurement activities. This covers the development and implementation of approaches for identifying where single-use plastics occur within procurement spend areas and actions around tendering to help reduce the level of plastics and their impacts within public sector procurement.

The guidance may also be of use for policymakers in understanding the role sustainable public procurement can play in mitigating single-use plastic and contributing towards the delivery of a more circular economy and sustainable consumption and production through the closure of plastic materials loops.

Sustainable Public Procurement of Plastics Guidance

3.3 engaging households and consumers in the fight against plastic packaging pollution

Campaigns by governments and intergovernmental organizations, non-profit groups, foundations and business have contributed to increased awareness and action on plastic pollution. Beyond awareness, however, campaigns are a mechanism for influencing individual choice and behaviour by playing an important role in the shift towards more sustainable consumption and production. It is therefore essential to develop an informed understanding of the role they can play in changing mindsets to identify strategies that are effective in turning awareness and concern into behaviour change.

To this effect, the Sustainable Lifestyles and Education programme carried out a global mapping and assessment of plastic pollution campaigns targeting individuals. A review of the scientific literature, articles and surveys examining what can effectively shift people's behaviour revealed three important findings. Campaigns targeting plastic pollution:

— are making mistakes based on outdated beliefs about what works;

— are leveraging several strategies that work but could do more to maximize effectiveness; and

— must be careful in their use of strategies that could backfire, or prove to be double-edged swords.

Insights reveal a set of effective strategies, "watch-outs" (things to be careful of) and common mistakes that campaign designers should consider as they craft campaigns for influencing individuals' consumption of plastic.

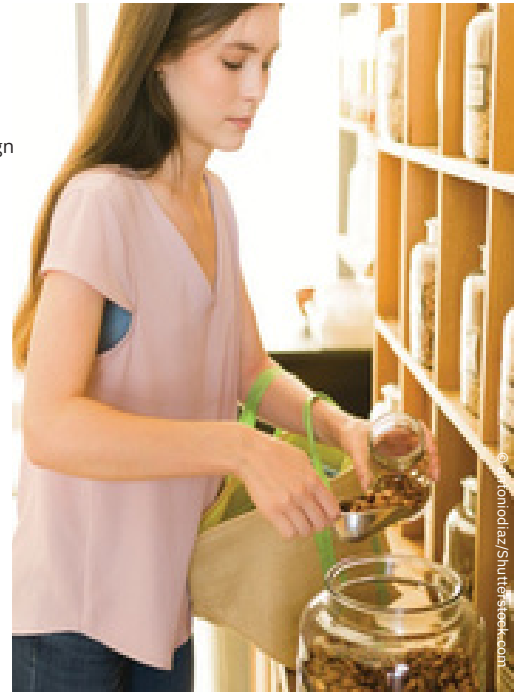
Figure 3.6: Definitions of campaign

A campaign is defined as: An organized course ofaction formulated to achieve a particular result through one or more communications channels, including TV, radio, print media, social media, events, face-to-face, websites, apps, print mailings or email.

A campaign can involve sharing a single image in an intentional way, or an integrated plan that includes every potential campaign element, and all the combinations in between.
Campaigns may be created and run by:

- Government agencies, policymakers or intergovernmental organizations (IGOs) as part of efforts to align behaviour with new regulations or simply to promote sustainable behaviour as part of their mission.
- Companies as advertisements to promote the sustainability of their products and packaging.

Foundations or non-profits that are working to influence individuals to adopt sustainable behaviour, aggregating and elevating individual voices demanding changes from government or companies, or rallying support for new policies.



wfuna
World Federation of United Nations Associations

3.3 Something to think about

How can we make campaigns more effective in getting people to adopt more sustainable consumer behaviors? How can we measure whether a public awareness campaign has been successful in getting consumers to fight plastic packaging pollution?

3.3.1 Using proven effective strategies

The literature review provided examples of strategies that have worked, at least in the context of the research conducted. Campaigns that targeted specific demographic or psychographic groups were typically more effective than those that did not. Positive social norms were among the most effective strategies for shaping behaviour, when used properly, including the use of celebrity endorsers or role models. Being specific, prompting commitments and showing people that their choices mattered were also shown to positively influence behaviour.

Campaigns addressing plastic pollution should use the following strategies that have been shown to be effective:

— Customize based on psychographic as well as demographic characteristics and consider life-stage specific messaging as well.

— Use positive social norms to establish or reinforce sustainable use of plastic as a social norm.

— Be specific about what people can do so that they know what positive choices they can make, not just what not to do.

— Challenge people to make a commitment to a new behaviour, especially publicly, as this increases the likelihood that they will stick with it.

An analysis of campaign objectives showed that the most common "ask" from campaigns, at 72% of those reviewed, was simply to refuse single-use plastic products and packaging. However, only just over half of campaigns emphasized choosing reusable solutions specifically – illustrating that many campaigns are telling people what not to do, but not always telling them what a better choice would be.

The strategy of using good norms, one of the most promising strategies, was used in just over half the campaigns, albeit with different approaches or levels of emphasis. Campaigns designed to establish or reinforce positive social norms related to sustainable use of plastic – when done well – have been shown to be very effective.

Just under half the campaigns tapped into positive emotions, which has been shown to be more effective at influencing behaviour than evoking negative emotions. Similarly, just under half the campaigns illustrated the importance of individual actions in the context of an "overwhelming" systemic challenge, which can also help motivate individual action.

Figure 3.7: Summary of six effective strategies

Icon	Strategy	Description
	**#1 Customizing**	Recognize that different approaches will work for different people (such as introverts versus extroverts), and that major life transitions (like moving home or becoming a parent) are opportunities to change habits.
	**#2 Using good norms**	Use social norms to shape behaviour. People imitate others, especially those with recognized status such as celebrities, and they respond to norm-based cues about what is acceptable and expected.
	**#3 Specifying action**	Be specific about what to do. Especially when it comes to plastic, where people can feel disempowered, provide clear direction on what meaningful actions people can take.
	**#4 Catalyzing commitments**	Challenge people to make a public or private commitment to do something specific. Once people make that commitment, they are more likely to follow through and even shift habits over time.
	**#5 Tapping into positive emotions**	Tap into pride, hope and optimism. People who experience pride, hope and optimism as part of their pro-environmental behaviours tend to stick with them.
	**#6 Showing it matters**	Show that the results – even of just one person's actions – matter. In the face of a global crisis, it is easy to believe that a bottle here or a sweet wrapper there do not matter. Show people that they do.

3.3 Something to think about

What are some examples of campaigns that address plastic pollution by using psychographic as well as demographic characteristics?

4.3.2 Using watch-out strategies with care

Some campaign strategies must be deployed with care. Use of positive incentives, whether financial or "points", are effective at shaping behaviour but can undermine intrinsic motivation and must be ongoing to maintain effectiveness. Use of humour can make a campaign more memorable but can also cause individuals to take the message less seriously. Appealing to altruistic motivation will work for a segment of the population, but should not be the default messaging strategy for behaviour change related to plastic. About a third of campaigns, particularly those by governments and non-profits, rely on "for the greater good" as a rationale for individual action. However, evidence shows that people are more likely to make and maintain behavioural changes when they perceive a benefit (or threat reduction) for themselves or their closely identified group.

Campaigns addressing plastic pollution should be careful when following these strategies:

— Tread carefully when using an approach that may evoke fear. Fear, without offering any meaningful action that can be taken to reduce the threat, creates anxiety rather than action.

— Use humour when in line with the campaign objectives, in particular with younger audiences. Humour can provide a social critique in a way that does not make people defensive, and humorous campaigns tend to be more memorable.

— Use incentives to build new habits but avoid undermining intrinsic motivation.

— Combine appeals to the greater good or the future with messages about benefits to individuals and communities in the present to ensure resonance with the broadest possible audience.

Figure 3.8: Summary of the four watch-outs

Icon	Watch-out	Description
	#1 Fear	Fear is most productive when there is something effective that a person can do to alleviate the threat. When the threat is existential or there is no immediate remedy, it just leads to anxiety and passivity.
	#2 Incentives	Incentives work – but the behaviour goes away when the incentive goes away. Worse, intrinsic motivation can be eroded through incentives.
	#3 Humour	People enjoy funny or clever campaigns and they can be more memorable. However, they do not necessarily translate into the desired behaviour change, and they sometimes do the opposite.
	#4 Altruism	While altruistic claims resonate with some, people tend to make behavioural choices that prioritize their present needs and desires over the good of the group and even over meeting their own future needs.

4.3.3 Avoiding common mistakes

While awareness-raising may be an important step on the way to action, it is ineffective by itself, and when focused on eliciting fear, guilt or other negative emotions, there is a risk that it will backfire. Appeals that reduce the geographic, temporal or psychological distance of a problem, making it relevant to individuals here and now, can be effective. There appears to be untapped potential in customizing strategies by audience, personality type, values profile or life stage, as targeting was only apparent in about a quarter of campaigns analysed. Campaigns that call attention to bad behaviour can inadvertently normalize that bad behaviour, achieving the opposite of their intended result. Campaigns addressing plastic pollution should avoid these common mistakes:

— Assuming that awareness of the problem will lead to behaviour change, as this has been shown not to be the case. Campaigns that do not provide a specific rationale for behaviour change are unlikely to influence behaviour.

— Using guilt to try to change behaviour; while it works for some, those people are already struggling with an excess of environmental guilt and for everyone else it triggers resistance.

— When tapping into social norms, be careful not to inadvertently emphasize the regrettable frequency of undesirable behaviour, as this effectively tells people that the "wrong" behaviour is actually the norm.

— Failing to frame the problem and solutions as "close" – in terms of time, space, personal impacts and geography.

Campaign designers can only expect people to take actions that they are in a position to take. Individuals seeking to change their consumption patterns for plastic have more options than in recent years, but sustainable plastic packaging is still the exception rather than the rule. Sustainable consumption is not possible without sustainable options or credible sustainability information to compare available options. Campaigns can elevate individuals' voices to demand that companies change, and can call companies out for their poor sustainability performance. However, until sustainable alternatives are prevalent, it is very difficult for individuals to live their values through their purchasing decisions.

ADDITIONAL RESOURCES BOX
A Global mapping and assessment of plastic pollution campaigns

1. Identifies which strategies can be effective – and which might be counterproductive – when it comes to shifting people's actions around plastic.
2. Six effective strategies (positive techniques that should be included in a campaign); four "watch-outs" (techniques that can be productive if used thoughtfully but can backfire if used poorly); and four common mistakes (strategies that are ineffective or counterproductive) are explained.
3. Provides recommendations that can be used by anyone creating a campaign concerned with plastic use.

Reducing Plastic Pollution: Campaigns that Work

Figure 3.9: Summary of the four common mistakes

Icon	Common mistakes	Description
	#1 Stopping at awareness	Assuming that making people aware of the problem will lead to behaviour change. Awareness can be a first step on the path to action, but the journey is not inevitable.
	#2 Using guilt	Using guilt to try to change behaviour. Appeals to guilt will create resistance in many people. For the rest, their guilt cup is already overflowing, reducing potential effectiveness.
	#3 Reinforcing bad norms	Showing the regrettable frequency of undesirable behaviours. Social norms are effective at shaping behaviour – so showing the prevalence of bad behaviour backfires.
	#4 Allowing distance	Allowing the problem to feel distant or intangible, and relying more on statistics than images and stories. People are more moved to action by problems that are local, urgent and tangible. Physical, temporal or psychological distance all undermine our motivation to act.

NUDGING: EXPLORING THE USE OF GREEN NUDGES TO REDUCE CONSUMPTION OF DISPOSABLE COFFEE CUP

A study on the use of nudging as a complement to traditional policies to reduce the use of plastics was developed as part of the ongoing cooperation on behavioural insights for policymaking within the One Planet network programme on Sustainable Lifestyles and Education, and in line with the Swedish Environmental Protection Agency's goal to strengthen national and international cooperation for the circular and sustainable use of plastics.

The report *Next steps in tackling plastic litter – a nudging strategy for reducing consumption of single-use disposable cups* draws on existing knowledge and experiences to suggest green nudges to reduce plastic pollution. It aims to propose a nudging strategy and implementation guidelines that can be adapted and used by national and local governments in Sweden, other EU countries and globally. The expected environmental effects include reduced plastic consumption and pollution. To accomplish that, the report provides a foundation for the application of behavioural science in policymaking more broadly, as well as specific directions for applying nudging to reduce pollution from single-use disposable cups.

What is nudging?

Consumers tend to be aware of plastic pollution as an environmental problem, but they often fail to grasp the extent of the problem and its acute nature, and to translate this awareness into more sustainable behaviours. In order to bridge the gap between awareness and sustainable behaviour change, behavioural sciences are being used to explore new potential strategies to reduce plastic pollution. Nudging is one tool that is increasingly applied to address challenges related to sustainability and the environment.

> *Nudges are non-restrictive interventions that alter the environment to make it easier for citizens to make "better" decisions (Thaler & Sunstein, 2008). Changes to the "choice architecture",40 or the "decision context", aim to guide citizens towards a particular behaviour change without prohibiting other possible choices or impinging on free will.*

Nudging goes beyond the traditional communicative approach, usually influencing behaviour in the moment when decisions are made. They are easy and relatively cheap to implement for organizations that are not involved in policymaking. Green nudges are a positive and gentle persuasion technique to encourage pro-environmental behaviour, they can complement policy and make citizens more amenable to future changes but are not necessarily policy instruments in themselves.

When to nudge?

Nudging can be considered as a first step towards change in emerging policy areas, or as a way to enable other policy instruments to work more efficiently. Nudging is appropriate when individuals' attitudes and intentions are aligned with the performance of a given desired behaviour, but they fail to act in accordance with these due to situational or psychological constraints.

38 A choice architecture is the structure in which choices are made, such as how and in what order and with what attending information different options are introduced.

Defining a nudging strategy to reduce user-level consumption of single-use disposable coffee cups

There are two important stages that must be undertaken before any nudging strategy is put into practice. First, there needs to be a process for determining when nudging is feasible; and second, a systematic examination of the relevant behaviours. With those stages addressed, the report proposes three nudging interventions to reduce user-level consumption of single-use disposable coffee cups:

— Nudge 1: A soft new default for coffee ordered over the counter implies that single-use disposable cups will no longer be the default option.

— Nudge 2: Bring your own cup for convenient self-service facilitates the replacement of single-use cups by making personal reusable cups the quicker and more convenient way of getting coffee in self service locations.

— Nudge 3: Refillable cups increase reusability with the psychologically, environmentally and economically more impactful and attractive property of refillability. It elevates reusable cups to markers of identity and status and provides a way for coffee chains to build long-term customer relations by tying coffee subscription plans to branded cups. At the same time, it ensures that reusable cups get reused enough times to compensate for the environmental impacts of their production.

These three nudges can be used individually but are expected to produce the greatest benefits if used in combination. The scale of implementation must be fairly large in order for the nudging strategy to produce desirable effects, in terms of the geographical area and the number of business locations where the nudges are implemented. As a rule, a major city and its surrounding commuter belt would be the minimum scale for implementation. Implementation is a collaborative effort between policymakers, market stakeholders and experts in behavioural science.

Participating individuals and organizations from each of these groups will need to be open-minded and flexible throughout the implementation and evaluation process. An ongoing series of workshops involving policymakers, market stakeholders and experts in behavioural science and other disciplines should be initiated as a first step towards implementation. These workshops should become the central arena for collaboration throughout the evaluation and upscaling phases. Policymakers should work to form, maintain and develop collaborative alliances with market stakeholders and experts in behavioural science. Such alliances are the foundations of a successful nudging strategy.

Next steps: Tackling Plastic Litter - A Nudging Strategy for Reducing Consumption of Single-Use Disposable Cups

Additional resource on nudging: WRAP, Exploring the Use of Green Nudges to reduce Consumption of Disposable Coffee Cups in Sweden

Examples of good practices

Box 3.3: Good practice -#ISupportBanPlasticsKE

Organization:	Individual Not applicable Social media posts Social media, real life 2015 English Kenya James Wakibia, a
Organization type:	photojournalist, created the campaign calling on the Kenyan Government to ban plastic bags
Elements:	first on social media and received a tweeted response from the Secretary for Environment and Natural Resources expressing her support. He then took a banner with the hashtag "#ISupportBanPlasticsKE" printed on it to the streets of Nakuru and took photos of people holding it, which he then tweeted on social media.
Channel(s):	Refuse single-use plastic products and packaging; support policy solutions
Year:	The plastic bag ban was passed in 2017
Languages:	
Geography:	
Description:	
Objective(s):	
Results:	

Assessment:

Overall: This grass-roots campaign is simple and uses several effective strategies while avoiding pitfalls. The campaign is positive and action-oriented, and likely built support for its own success by shifting the social norm around plastic bag usage.

James Wakibia, a photojournalist, created the #BanPlasticsKE campaign in 2015, calling on the Kenyan Government to ban plastic bags on social media. When one of his tweets received a response from Cabinet Secretary for Environment and Natural Resources, Judi Wakhungu, expressing her support, he took a banner with the hashtag "#ISupportBanPlasticsKE" printed on it into the streets and parks of Nakuru and took photos of different people holding it, which he then tweeted on social media. Kenya banned single-use plastic bags shortly after. Using the faces of people he met around Nakuru, photographed in recognizable local places, Wakibia ensured that the problem and the message felt relevant and personal, minimizing the geographical, psychological and temporal distance of the plastic waste problem. This approach also serves to show that the social norm around using plastic bags is shifting, a powerful motivator for behaviour change. Finally, the campaign includes a statement of commitment and taps into positive emotions ("I support").

Links: https://www.sbs.com.au/topics/voices/culture/article/2017/05/12/how-man-helping-solve-kenyas waste-problem

Observations:

- The campaign is grounded in a positive social norm and includes a statement of commitment, tapping into positive emotions ("I support")
- The significance of each individual in taking this action is clear for participants, but there is an extra layer of relevance here as well, as this campaign was initiated and executed by one person.

Customization	Good norms	Specificity	Commitment	Positive emotions	Significance	Fear	Incentives	Humour	Altruism	Awareness	Guilt	Bad norms	Distrance
	X		X	X	X								

Box 3.4: Good practice -Plastic free july

Organization:	Plastic Free Foundation Non-profit Social media posts, pledge, videos, posters, website, shopping resources, email
Organization type:	newsletter and other assets (badges and so forth)
Elements:	Website, social media and email
Channel(s):	2011
Year:	English
Languages:	Global
Geography:	
Description:	
Objective(s):	Refuse single use plastic products and packaging; choose reusable packaging and foodware; choose – and demand – sustainable packaging & products
Results:	In July 2019, an estimated 250 million people in 177 countries took part in the challenge. 29% of people were aware of the campaign; almost half of those took part in 2018. 90% of participants made changes that have become habits or a way of life.

Assessment:

Overall: This campaign integrates all six effective strategies and avoids all five common mistakes, providing an excellent example of an effective campaign, and the results confirm it. The Plastic Free July campaign began in 2011 as a small initiative with just a handful of participants in Western Australia, but has grown to millions of people across 170 countries. The challenge is, as the name implies, not to use any plastic in July, though the supporting resources are available to access any time.

The commitment is very specific – a discrete set of actions, time-bound and placed in the context of daily decisions. “My Challenge Choices” show the relative impact of different commitments by connecting the action to an outcome in the world such as climate change or environmental pollution.

Far from being associated with negativity, the campaign taps into positive emotions: the language is action-oriented and positive, and focused entirely on equipping people to be part of the solution. The website and social media posts avoid sad photos of pollution or terrifying statistics, emphasizing instead the positive collective impact of many individuals’ actions. Importantly, the benefits for the actions are framed as primarily personal and local (clean streets, beautiful communities) rather than “for the greater good” or “for the future.”

Like most effective campaigns, it also uses social norms both through reporting participation and with the “What Others Do” page on their website, which reinforces new social norms while also providing practical advice.

Observations:

- Effective use of social norms both through reporting participation in pledge and with the “What Others Do” page on their website, which reinforces new social norms while also providing practical advice. Commitment is very specific – specific actions, time-bound
- and placed in the context of daily decisions. “My Challenge Choices” show the relative impact of different commitments by connecting
- the action to a real outcome in the world. Taps into positive emotions – language and focus is all very action-oriented and positive.
- The campaign identifies plastic pollution as the problem to solve but spends almost no time or space on the problem itself, rather it focused entirely on equipping people to be part of the solution, and it emphasizes the collective impact of many individuals’ actions. Benefits for the actions are primarily personal and local (clean streets, beautiful communities).
-

Customization	Good norms	Specificity	Commitment	Positive emotions	Significance	Fear	Incentives	Humour	Altruism	Awareness	Guilt	Bad norms	Distrance
													
X	X	X	X	X	X								

3.4. engaging key sectors and industries against plastic pollution: tourism

3.4.1 Tourism: a priority sector in addressing plastic pollution

With 80% of all tourism taking place in coastal areas, plastic pollution from tourism can easily end up in oceans and waterways. In coastal areas, a significant proportion of marine plastic litter comes from tourism and other tourism related value chains. Much of the plastic used in the sector is made to be thrown away and often cannot be recycled. Single-use plastic products, including plastic packaging, are indeed widely used in the sector for a number of reasons, including compliance with health, safety and hygiene expectations, standards and regulations. Operationally speaking, it is lightweight, cheap, readily available and convenient for both employees and customers in the tourism sector.[41]

The tourism sector is among the hardest hit by the consequences of the COVID-19 pandemic. The need to prevent the spread of infection has made plastic pollution management even more complex in the sector, resulting in a temporary return to single-use plastics in some specific applications (small format packaging, water bottles and plastic bags), but also the introduction of new single-use items such as disposable face masks and gloves.[42]

3.4.2 A multi-dimensional challenge: plastic pollution across the tourism value chain, in the tourism sector and its industries

The tourism value chain is the entire sequence of activities or parties that provide or receive value in the form of tourism products or services and their relationships and dynamics. In relation to plastic pollution, this means that it is not only products that are used by tourism businesses in their own operations, but products used throughout the value chain by all stakeholders, including products not solely composed of plastics. For example, to grow fruits and vegetables served by tourism businesses, horticulture growers use plastic materials for crop covering, soil mulching, packaging, containers, pots, irrigation and drainage pipe mulching, some of which may leak into the environment.[43]

The tourism sector itself consists of several industries, including accommodation, meetings or events, aviation and cruises. Each industry has its own characteristics when it comes to the use of plastic products and their disposal.

The five most common single-use plastic products from hotels and accommodation providers are: water bottles, disposable toiletries, plastic bags and bin liners, food packaging and cups. For cruises, the types of plastic products used are likely to be similar. The items of most concern in meetings and events are food packaging and service ware (plates, cutlery, cups, coffee cups and lids), water bottles, vinyl banners and polystyrene-core boards, vinyl tabletops, cling film, plastic sheeting to protect carpets pre-event, giveaways and name badges. For airlines, bottles are probably the main single-use plastic product, followed by cutlery, cups, plastic bags and cleaning wipes.

Regarding plastic packaging specifically, its use in the sector is often linked to and considered necessary for preventing food waste, which highlights the need to implement solutions to reduce plastic packaging as part of a holistic approach to tackle food loss and waste within the food system.

Accommodation, events and aviation seem to generate similar volumes of plastic waste, and while cruises generate much lower volumes (as they have fewer guests), they could still be a significant source of pollution due to proximity to the marine environment and risks of littering. Aviation is likely to be the least significant source of the four industries. Despite large volumes of waste generated, the risk of leakage is relatively low, due to tight regulations around the disposal of cabin waste. For the accommodation and events sectors, the availability of waste services will largely influence leakage and impacts.[44]

41 UNEP, 2020. Rethinking Single Use Plastic Products in Tourism: Impacts, Management Practices and Recommendations.

42 UNEP, 2020. Rethinking Single Use Plastic Products in Tourism: Impacts, Management Practices and Recommendations.

43 UNEP, 2020. Rethinking Single Use Plastic Products in Tourism: Impacts, Management Practices and Recommendations.

44 UNEP, 2020. Rethinking Single Use Plastic Products in Tourism: Impacts, Management Practices and Recommendations.

3.4 Something to think about

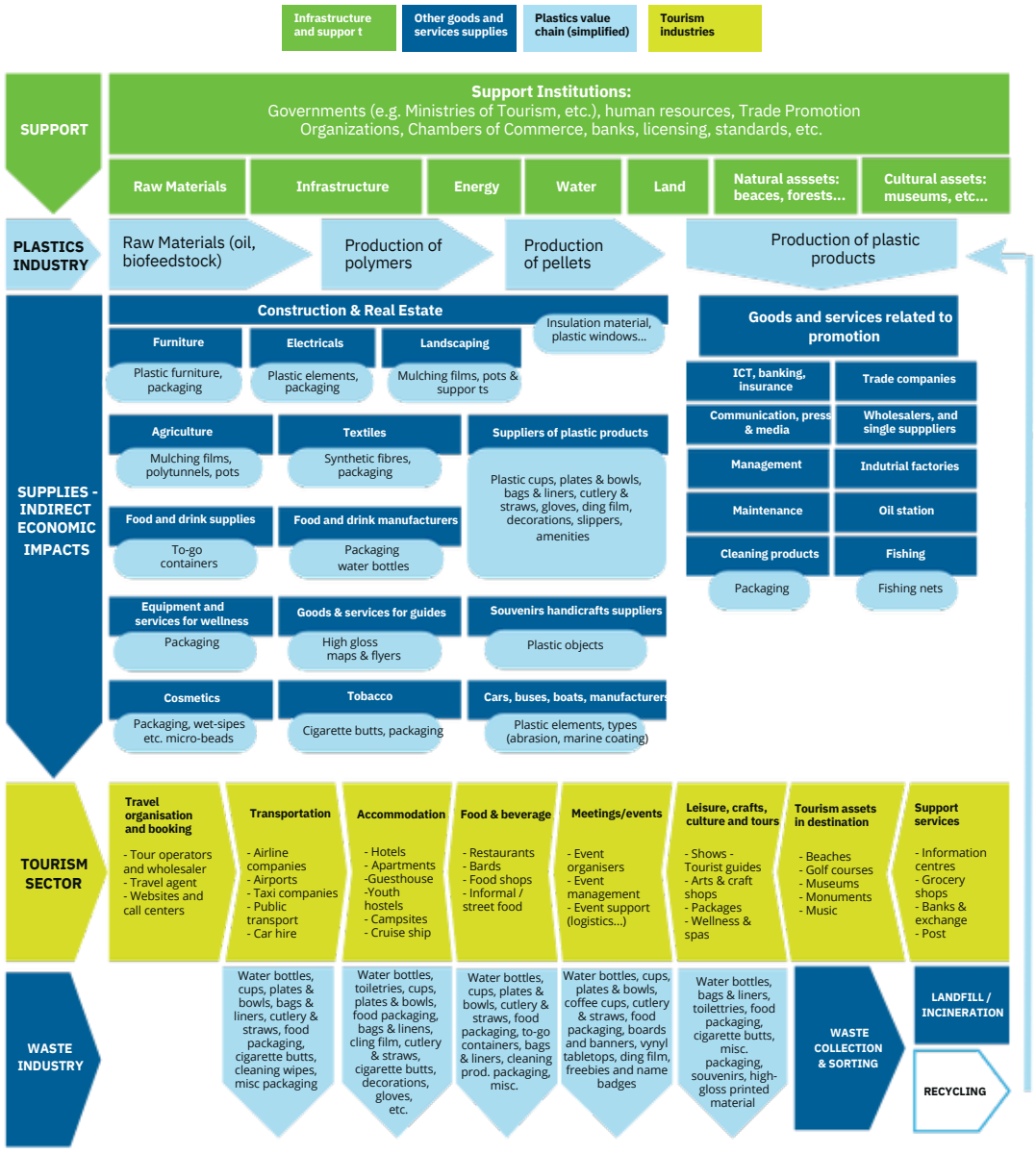
In coastal areas, a significant proportion of marine plastic litter comes from tourism and other tourism-related value chains. How can we reduce the use of single-use plastic in coastal areas?

Did you know that...? Most of the chemicals leaching from food packaging come from plastics? A new study has discovered that roughly 25% of the chemicals known to be in food packaging have been found in the human body. How many chemicals in food packaging enter through the foods we eat depends on the type of packaging and type of food. For example, high temperatures can cause chemicals to leach more quickly into food. That is why scientists recommend avoiding microwaving food that is in plastic take out containers

3.4 Something to think about

Given that major tourism industries (hotels, meetings or events, aviation and cruises) use large quantities of single-use plastics, what can these industries do to reduce the quantity of plastic products that are used?

Figure 3.10: Tourism value chain with key plastic products and uses (Adapted from United Nations Environment Programme and World Travel & Tourism Council (2021) *Rethinking Single-Use Plastic Products in Travel & Tourism - Impacts, Management Practices and Recommendations.*)



packaging

3.4.3 The need for a concerted approach

Tourism companies and destinations have been making great strides towards reducing their environmental impact and operating in harmony with nature. However, the problem of plastic pollution in tourism is too complex for any single organization to fix on its own. To match the scale of the problem, changes need to take place across the whole tourism value chain.

Taking action on plastic pollution and transitioning to circularity in the use of plastics is critical to increase sustainability in the sector and can significantly help prevent plastic ending up as pollution while also reducing the amount of new plastic that needs to be produced.

Considering the interaction between industries with different characteristics, the interrelationships between the tourism value chain and many other sectoral value chains (such as food, building, construction, furniture and so on), and the complexity of plastic pollution management within operations, a systemic approach and global coordination efforts are required to tackle the plastics pollution challenge in the sector.

3.4.4 The Global Tourism Plastics Initiative

To mobilize all actors across the tourism value chain towards in joint actions against plastic pollution, the Sustainable Tourism programme launched the Global Tourism Plastics Initiative (GTPI), led by the United Nations Environment Programme (UNEP) and the World Tourism Organization (UNWTO) in collaboration with the Ellen MacArthur Foundation (EMF). The initiative is being implemented within the framework of the One Planet Sustainable Tourism Programme and with support of the Government of France. The GTPI acts as the tourism sector interface of the New Plastics Economy Global Commitment.

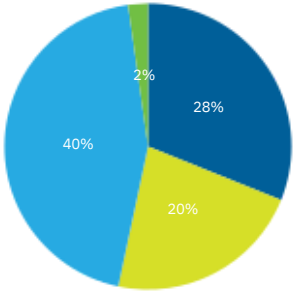
The GTPI requires tourism organizations to make a set of concrete and actionable commitments by 2025:

1. Eliminate problematic or unnecessary plastic packaging and items by 2025;
2. Take action to move from single-use to reuse models or reusable alternatives by 2025;
3. Engage the value chain to move towards 100% of plastic packaging to be reusable, recyclable or compostable by 2025;
4. Take action to increase the amount of recycled content across all plastic packaging and items used;
5. Collaborate and invest to increase the recycling and composting rates for plastics; and
6. Report publicly and annually on progress made towards these targets.

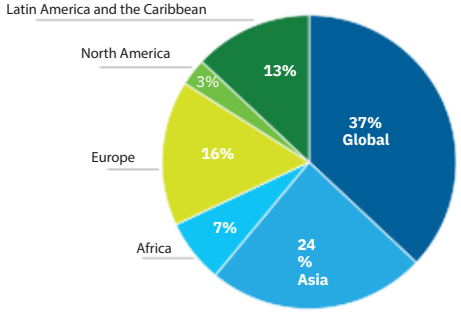
To support the tourism sector in the implementation of these ambitious objectives, while ensuring technical rigor and the transparency of the actions implemented by relevant organizations, the objectives are being broken down into actionable elements within a number of tailored signatory packs45 to address the needs of each target stakeholder group. The minimum ambition level of the commitments will be reviewed every 18 to 24 months46 and become increasingly ambitious over the coming years as appropriate, to ensure it continues to represent true leadership.

One year and a half since the launch of the Initiative (in early 2020), GTPI has gathered over 100 signatories despite the ongoing global pandemic that has considerably affected the tourism sector's operations. Signatories include a variety of stakeholders across the tourism value chain such as suppliers, accommodation providers (large multinational companies and SMEs), tour operators, booking platforms, waste management service providers and a range of supporting organizations (business associations, consultancies and non-governmental organizations (NGOs)).

Type of Global Tourism Plastics Initiative Signatories



Regions of Global Tourism Plastics Initiative



45 As of June 2020, signatory packs are available for accommodation businesses, suppliers of plastic packaging or packaged goods, destinations and supporting organizations to become signatories. Additional signatory packs for other stakeholder groups were at the development stage in 2020.

46 For the Global Tourism Plastics Initiative, the 18 to 24 months term to review its ambition level began at the industry launch event at the International Tourism Fair (FITUR) on 22 January 2020.

3.4 Something to think about

The Global Tourism Plastics Initiative (GTPI) listed actions to be taken by 2025 by the tourism industry. Which regions have higher levels of tourism? Are these regions committed to the GTPI initiatives?

Signatories include renowned companies such as Accor Group, Iberostar Group, Club Med and TUI Group. Other companies that could potentially have a strong impact on the circular economy of plastics in the tourism sector (such as Booking.com and deSter (a Gate Group member)) have also joined as signatories.

— Accor Group: hospitality group with more than 5,000 hotels and residences across 110 destinations;

— TUI Group: with over 350 hotels and 17 cruises;

— ClubMed with over 68 resorts worldwide;

— deSter (a Gate Group member), a leading provider of innovative and sustainable food packaging and service ware concepts to the aviation, hospitality and food service industry;

— Booking.com: world's leading online travel platform, with more than 29 million reported listings across more than 141,000 global destinations.

So far, an overview of the commitments by signatories has shown them to prioritize areas directly linked to the guest experience: rooms, bathrooms, food/beverages and service areas. While some of these areas will be addressed in the short term, in most cases the elimination of plastic items and packaging in food and beverages appears as a mid-term goal, owing to the dependence on suppliers from the food sector. Commitments related to recyclability and recycled content require an active engagement of suppliers and procurement teams, the existence of corporate tools such as procedures and targets to drive the engagement of suppliers and the need to engage regulators and supporting organizations in such efforts.

The GTPI is supporting its signatories in implementing their commitments by providing information on tools, methodologies and recommendations through:

— Curated resources and tools related to a circular economy of plastics in the tourism sector. Database resources include recommendations from the Consumer Information and Sustainable Lifestyles and Education on labels, certifications and communication campaigns; and

— Consultative development of recommendations and guidance on key topics identified by signatories such as life-cycle approach, measurement and monitoring and sustainable procurement.

Tackling plastic pollution in the context of COVID-19

As a first step, and in light of the urgency driven by the COVID-19 pandemic in the sector, the One Planet Sustainable Tourism Programme and its GTPI released the "Recommendations for the tourism sector to continue taking action on plastic pollution during COVID-19" to support the ongoing debate on hygiene and sustainability. Tourism businesses and organizations have applied the recommendations to develop COVID-19 recovery plans, revise standard operating procedures and define plastic management strategies.

The Recommendations build on the key concepts underlying a common vision for a circular economy for plastic, the common definitions of the Global Tourism Plastics Initiative, 47 the One Planet Vision for a Responsible Recovery of the Tourism Sector48 and the latest guidance from the World Health Organization (WHO), World Tourism Organization (UNWTO), UN Environment Programme (UNEP), Ellen MacArthur Foundation and leading business associations.

More specifically, the document illustrates how reducing the plastic footprint, increasing the engagement of suppliers, working more closely with waste service providers and ensuring transparency can significantly contribute to a responsible recovery of the tourism sector. The five main recommendations are:

1. Removing unnecessary plastic packaging and items to reduce cross-contamination touch points;
2. Developing robust cleaning and sanitization procedures that encourage the adoption of reuse models;
3. Evaluating the use of unavoidable plastic packaging and items, enquiring about their recyclability and reassessing needs on a regular basis;
4. Engaging suppliers, waste management providers and local governments to improve the effectiveness of actions, coordination and resilience;
5. Ensuring open and transparent communication with staff and clients.

The document also provides examples of situations and questions faced by tourism businesses in the context of the pandemic and demonstrates how these recommendations can be effectively applied.

47 https://www.oneplanetnetwork.org/sites/default/files/definitions_globaltourismplasticsinitiative.pdf.

48 One Planet Sustainable Tourism Programme (2020) – One Planet Vision for a Responsible Recovery of the Tourism Sector. https://www.oneplanetnetwork.org/sustainable-tourism/covid-19-responsible-recovery-tourism.

Key messages on a life-cycle approach for tourism stakeholders

In 2021 the GTPI team issued additional recommendations to help signatories navigate the multiple information sources related to the life cycle assessment. The document "Addressing pollution from single-use plastic products: A Life Cycle Approach – Key messages for tourism businesses" summarizes the key findings of the Life Cycle Initiative's report series and summary report from the tourism sector's perspective.49 It aims to educate tourism stakeholders and provide evidence-based guidance for decision-making to address pollution from single-use plastics. Key messages and recommendations are presented for the following single-use plastic products: bottles, cups, bags, take-away food packaging and tableware. These key messages and recommendations are also relevant for other single-use plastic products commonly used in the tourism sector such as single-use toiletries and straws – the main problem is their single-use nature and the resulting impacts (rather than the material of which they are made).

The Recommendations outline the crucial role of reuse models in reducing environmental impacts (as opposed to single-use plastic or other materials), while also emphasizing the idea that a reusable alternative should be used a certain number of times (depending on the product) to effectively reduce environmental impacts in comparison to a single-use product.

ADDITIONAL RESOURCES BOX
Resources made available as part of the GTPI

Recommendations for the tourism sector to continue taking action on plastic pollution during COVID-19 recovery - Global Tourism Plastics Initiative, 2020

(1) Helps hotels to have a quick and informed response in the context of the lack of resources and time;
(2) Supports and reinforces companies' internal CSR positions in favor of reuse models;
(3) Reassures hotels on the fact that cleaning procedures and staff training are the most effective measures in terms on hygiene.

Addressing pollution from single-use plastic products: A Life Cycle Approach – Key messages for tourism businesses - Global Tourism Plastics Initiative, 2021

(1) Summarizes, from the tourism sector's perspective the key findings of a series of meta-analyses of LCA studies on single-use plastic products and their alternatives.
(2) Educates tourism stakeholders and provides evidence-based guidance for decision-making to address pollution from single-use plastic products.

Rethinking Single Use Plastic Products in Tourism: Impacts, Management Practices and Recommendations - UNEP and WTTC, 2021

(1) Maps single-use plastic products across the travel and tourism value chain, identifying hotspots for environmental leakages and providing practical and strategic recommendations for businesses, policymakers and other value chain actors.
(2) Helps actors take collective steps towards coordinated actions and policies that drive a shift towards reduce and reuse models, in line with circularity principles as well as current and future waste infrastructure.

GTPI plastic measurement methodology tools for Accommodation Providers

(1) supports accommodation providers with measurement of weight of plastics in operations.
(2) accompanied by two calculation tools to gather data on property and company levels

Addressing plastic pollution in tourism through sustainable procurement

The guidance is providing practical tools for procurers in tourism businesses ; these include model wording for tender criteria; a hierarchical decision tree for informing actions to eliminate and reduce the dependency on plastics within tenders; and a summary of procurement tools.

49 Life Cycle Initiative (2021). Single-Use Plastic Products (SUPP) and their alternatives: Recommendations from Life Cycle Assessments, and United Nations Environment Programme (2021), Addressing Single-use Plastic Products Pollution Using a Life Cycle Approach. Nairobi.

Box 3.5: LCA-Based recommendations for tourism businesses to address plastic pollution from single-use plastic take-away food packaging

Avoid switching from plastic packaging to another single- use alternative

- When evaluating alternatives, be aware of trade-offs
  - A single-use polypropylene (PP) container has the most severe impacts on climate change, acidification and other environmental categories;
  - An aluminium container scores worst in terms of ozone layer depletion, human toxicity, marine and terrestrial ecotoxicity.
- Before switching to another single-use options, carefully learn about and evaluate the alternatives based on the given context.

Introduce reusable take-away food packaging systems

- Reusable packaging, if reused enough times, has better overall environmental performance than single-use packaging.
  - Consider introducing incentives, such as discounts for customers who bring their own food containers from home.
  - Select the reuse model (in-house, third-party or mixed) that fits the business and keeps track of the containers in business operations.

Use communications to create guest and staff awareness around reuse practices

- Consumer behaviour directly influences the environmental performance of food packaging
  - A Commit to reuse practices as part of the business strategy and communicate this to customers in encouraging and innovative ways
  - Use targeted campaigns to encourage customers to consistently reuse their reusable food containers brought from home and/or provided by the tourism business

Engage suppliers to understand their material sourcing and production processes

- The environmental impact of a type of packing is influenced by whether it is made from fossil or bio-based resources, and from primary or secondary (Recycled) resource
  - Partner with suppliers committed to sustainable production methods (such as renewable energy, resource-saying appliances, low emissions, waste generation and so on).

The food contained often has a higher environmental impact than the packaging itself.

- Evaluate how well the packaging used prevents food waste and spoilage.

Understand how product design can help reduce environmental impact

- The design and technical performance of a food container can directly influence its environmental impact throughout the product life cycle.
- Designs with straighter lines and that avoid corners and narrow openings are easier to wash, and therefore more resource efficient.
- Consider using technologies that allow careful tracking of how the product is used, whether it has a problem that makes it unsafe and so forth (such as radio-frequency Identification).
- Purchase containers that are easy to handle and encourage future uses in internal operations (cleaning and cooking) and by guests.
- Choose packaging that is as lightweight and durable as possible while achieving required functionality.
- Consider options for end-of-life treatment when making a product choice (Including littering rates at destination and recyclability of the material.)

Re-evaluate the transport and delivery schemes behind take-away or room services

- A well-established delivery system and efficient ways of transportation can significantly improve environmental performance.
  - Develop sustainable transport options, such as delivery by e-trucks and bikes, energy-efficient elevators in-house and so one.

Implement resource-efficient washing solutions for reusable food containers

- The biggest share of the environmental footprint of reusable containers is created during the washing stage (>40%)
  - Take advantage of technological innovations to reduce the use of water, energy, and detergent.

During the transition to reusable food packaging, ensure good waste separation systems in any tourism business.

- The way products are managed in their final life stage has a substantial influence on their environmental impact.
- Packaging that is effectively recycled can significantly reduce the use of raw materials for producing new ones.
  - Make sure waste separation is easy to understand and well signposted
  - Establish disposal systems are designed to segregate different types of materials (recyclable versus non-recyclable) and are free of food leftovers.
  - Ask waste service providers about their current and projected capacity to recycle bags of different materials.

CHAPTER FOUR

RECOMMENDATIONS AND CONCLUSIONS

Summary: Chapter 4

This chapter provides key messages and recommendations for governments and businesses to address plastic pollution.

4.1 key messages to governments

Governments have a critical role to play in increasing consumer awareness to bring about behaviour change, and in improving and promoting consumer information on plastic packaging to move towards a more circular economy for plastic. It is recommended that governments:

(1) Act to make on-pack labels actionable and relevant: regulate to ensure that consumer information available on the market is aligned with the principles of the Guidelines for Providing Product Sustainability Information; update the use of the pre-2013 Resin Identification Codes by implementing legislation to enforce the use of the new enclosed triangular design; change the design of the Green Dot™ logo and restrict the use of the label where it is not relevant.

(2) Act against greenwashing: regulate or at least set out strategies to tackle greenwashing effectively. Regulations that define common on-package sustainability claims would reduce greenwashing and the use of terms that consumers find confusing and difficult to compare.

(3) Promote campaigns that inform consumers about the content of labels and claims, and the actions they should take: organize education campaigns to inform consumers about commonly used terms, claims, labels and symbols on plastic packaging and how to identify credible sustainability information. Highlight what a misleading claim is and how consumers can report these to relevant bodies in their area.

(4) Promote campaigns as part of efforts to align behaviour with new regulations.

(5) Implement effective campaigns by using specific strategies that have shown to be effective: customize campaigns based on psychographic as well as demographic characteristics, and consider life-stage-specific messaging as well; use positive social norms to establish or reinforce sustainable use of plastic as a social norm; specify what people can do so that they know what positive choices they can make, not just what not to do; challenge people to make a commitment to a new behaviour, especially publicly, as this increases the likelihood that they will stick with it; tap into positive emotions such as hope, optimism, pride and love as these emotions are associated with enduring behaviour change; show that the results – even of individual actions – matter, to counteract the sense that people may have of feeling insignificant or overwhelmed by the scope of the problem.

(6) Evaluate the outcomes of campaigns: measure and share the results of the implemented strategies to enable further research and learning.

Sustainable Public Procurement can create markets for sustainable solutions and offer a concrete pathway for governments to lead by example, for example by introducing procurement criteria that foster the reduction of the use of plastic packaging in purchasing, and by encouraging demand for secondary reprocessed plastics through the procurement of recycled content in packaging. It is recommended that governments:

(1) Follow the recommendations to improve labelling standards, mitigate confusing claims and raise awareness (as described above): better and more accessible information around packaging materials is key to informing purchasing decisions. Standards, certifications and labels help procurers in verification and evaluation processes.

(2) Challenge the need to use and consume plastic packaging as the first step in every procurement exercise: governments should adopt a waste hierarchy for plastic packaging, prioritizing action according to the principles of reduce, reuse, recycle, recover or landfill.

(3) Embed requirements on the procurement of plastic packaging in sustainable procurement policies: set out green public procurement criteria in tenders that relate directly or indirectly to plastic packaging.

(4) Collaborate with suppliers to foster innovation: through market engagement, work with suppliers to understand not just where the plastic packaging hotspots are, but also what types of plastics are being used, and encourage new design solutions to eliminate non-recyclable plastics or ensure more effective recycling.

4.2 key messages to businesses

Business action and collaboration are required to increase consumer awareness, promote behavioural change, improve consumer information and encourage a more circular economy for plastic packaging. It is recommended that businesses:

(1) Act to ensure sustainability information and imagery are clear and relevant: adopt consumer information tools that are fully aligned with the principles of the Guidelines for Providing Product Sustainability Information; develop localized communications on plastic packaging to ensure that relevant tools used are actionable for consumers (for instance, materials used in packaging can be paired with local disposal information to prevent consumer confusion); liaise with managers of waste infrastructure and government to help improve standardized labelling with simple and consistent language that aligns with local recycling capabilities.

(2) Strengthen sustainability information on e-commerce platforms: Ensure that e-commerce platforms are transparent, provide comprehensive information about packaging and highlight the potential for reuse schemes and reverse logistics given the high volume and frequency of deliveries.

(3) Increase circular literacy amongst consumers: redesign packaging to facilitate reuse and recycling, and ensure that this is clearly communicated to the consumer through labelling and further online information.

(4) Collaborate with governments to increase awareness around what certain labels/claims stand for or do this as part of their marketing efforts: running campaigns to better educate and inform consumers, alongside labelling and other communication efforts to help guide consumers in the marketplace.

(5) IImplement effective campaigns by using strategies that have shown to be effective: customize campaigns based on psychographic as well as demographic characteristics, and consider life-stage-specific messaging as well; use positive social norms to establish or reinforce sustainable use of plastic as a social norm; specify what people can do so that they know what positive choices they can make, not just what not to do; challenge people to make a commitment to a new behaviour, especially publicly, as this increases the likelihood that they will stick with it; tap into positive emotions such as hope, optimism, pride and love as these emotions are associated with enduring behaviour change; and show that the results – even of individual actions – matter, to counteract the sense that people may have of feeling insignificant or overwhelmed by the scope of the problem.

Procurement practices also play a significant role in changing purchasing behaviour and encouraging market shifts. Adopting a value-chain approach to procurement is a major step in changing procurement practice. This implies not just thinking about what something is made of, where it comes from and who made it; but also, how will it be used, and finally what will happen to the product or material at end of use. It is recommended that businesses:

(1) Explicitly make sustainable procurement a delivery mechanism of organizational sustainability policies: create transparency and provide a clear mandate for embedding sustainable procurement practices within the procurement process. Implement sustainable procurement indicators to enable the benefits of sustainable procurement to be captured and reported with a view to contributing to corporate goals and commitments.

(2) Build procurement capacity and knowledge: work to understand the impacts of procurement at the organizational scale and implement capacity-building on plastic pollution reduction strategies through sustainable procurement.

(3) Challenge the need to use and consume plastic packaging as the first step in every procurement exercise: organizations should adopt a waste hierarchy for plastic packaging, prioritizing actions according to the principles of reduce, reuse, recycle, recover or landfill.

4.3 way forward

It is widely acknowledged that the current linear production, use and disposal model of the plastic industry is not sustainable. To solve this problem at source, there is a need for a fundamental shift to a circular economy model where plastics are kept within the economy at their highest possible value. Such a shift requires key interventions across all stages of the plastic value chain, with upstream and downstream solutions jointly deployed. If acted upon, these intervention points present the greatest opportunities for improvement.
Key upstream interventions related to the use of plastic products include:

— Providing clear and reliable sustainability information based on life-cycle thinking and promoting credible labelling standards so that consumers are aware of more sustainable choices.

— Increasing consumer awareness through targeted and effective consumer campaigns to trigger behaviour change.

— Setting up sustainable public procurement policies to support reusable options and products containing recycled content.

Collaborative efforts are considered an important step in recognizing ongoing efforts and encouraging exchange of best practice and the sharing of solutions, including legislative instruments.50 Tools, expertise and solutions are available across the One Planet network to implement these interventions. There is an opportunity to build on ongoing initiatives of its programmes, and to capitalize on its multi-stakeholder network to mobilize action, define concerted action and efficiently deliver concrete outputs to address plastic pollution. The network's programmes include expertise and knowledge resources on consumption practices and high-impact sectors, which can in turn be applied to plastic pollution.

Through the implementation of the One Planet Network-wide Plastics Initiative, the network has proven its capacity to:

— Foster the adoption of science-based decisions and action

— Set the agenda on SDG 12, bringing stakeholders together to tackle key issues that call for collaboration

— Develop and share good practice guidance to set a clear direction across areas of expertise and sectors

The Multi-Partner Trust Fund for SDG 12 established by six UN agencies51 brings together the expertise of the 10-Year Framework of Programmes on Sustainable Consumption and Production Patterns (10YFP) and its One Planet network and the comparative advantages of the participating UN agencies. The Fund provides a unique opportunity for a financial mechanism to support transformative actions on plastics guided by the Global Strategy on SDG 12 and sustainable consumption and production (SCP).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50 UNEP, 2021b. From Pollution to Solution. A global assessment of marine litter and plastic pollution. United Nations Environment Programme. Nairobi, Kenya, p. 104.

51 UN Environment Programme, the Food and Agriculture Organization of the United Nations (FAO), the UN World Tourism Organization, UN-Habitat, the UN Office for Project Services and the UN Development Programme (UNDP), administered by the UN Multi-Partner Trust Fund Office.

CHAPTER FIVE

KEY DEFINITIONS

Summary: Chapter 5

This chapter provides definitions for key terms related to plastic packaging and sustainability, such as problematic plastic packaging, reusable and recyclable
packaging, compostable materials, and biodegradable products.

Based on the common definitions for the New Plastics Economy Global Commitment,50 this annex lists key definitions regarding circular economy for plastics. These definitions provide a basis for the terminologies used in the plastics- related activities, tools and solutions of the One Planet network's programmes in the context of this guidance.

Problematic or unnecessary plastic packaging or plastic packaging components

The following list of criteria is provided to help identify problematic or unnecessary plastic packaging or plastic packaging components:

(1) It is not reusable, recyclable or compostable (as per the definitions below).

(2) It contains, or its manufacturing requires, hazardous chemicals52 that pose a significant risk to human health or the environment (applying the precautionary principle).

(3) It can be avoided (or replaced by a reuse model) while maintaining utility.

(4) It hinders or disrupts the recyclability or compostability of other items.

(5) It has a high likelihood of being littered or ending up in the natural environment.

REUSABLE PACKAGING

REUSE

Definition: Reuse of packaging

Operation by which packaging is refilled or used for the same purpose for which it was conceived, with or without the support of auxiliary products (1) present on the market, enabling the packaging to be refilled.

Source: ISO 18603:2013, Packaging and the environment – Reuse, modified (clarification in note 1 below).
Note: An auxiliary product is a product used to support the refilling/loading of reusable packaging. (…) An example of an auxiliary product is a detergent pouch used to refill a reusable container at home (ISO 18603). As per ISO 18603, auxiliary products that are one-way products (designed to be used once) are not considered reusable packaging.

Further explanatory notes

(1) Attention should be paid to the intended use and function of the packaging, in order to verify whether it is being reused for the same purpose or a secondary use. In the latter case the packaging is not considered as reusable packaging (ISO 18603, "Packaging used for the same purpose"), such that the use of a package as a pen-holder or as decoration cannot be qualified as reuse.

(2) A package is considered reusable if the design of the packaging enables the principal components to accomplish a number of trips or rotations in normally predictable conditions of use (ISO 18603). According to ISO 18601, a packaging component is a part of packaging that can be separated by hand or by using simple physical means (such as a cap, a lid, a (non in-mould) label).

52 Hazardous chemicals are those that show intrinsically hazardous properties: persistent, bio-accumulative and toxic (PBT); very persistent and very bio-accumulative (vPvB); carcinogenic, mutagenic and toxic for reproduction (CMR); endocrine disruptors (ED); or equivalent concern, not just those that have been regulated or restricted in other regions (Source: Roadmap to Zero, definition based on EU REACH regulation - http://www.roadmaptozero.com/).

53 New Plastics Economy Global Commitment definitions are built on an extensive review of existing definitions, detailed discussions with dozens of experts and a broad stakeholder review involving over 100 organizations and experts across businesses, governments, NGOs, academics and standard-setting organizations. See the full list of New Plastics Economy Global Commitment definitions: https://www.newplasticseconomy.org/assets/doc/13319-Global-Commitment-Definitions.pdf.

Examples

Packaging can be reused in different ways:

— Business-to-business applications: packaging is reused through a redistribution system between one or more companies54 (such as pallets loaded with the same or different product,55 crates or pallet wraps)

— Business-to-consumer applications: packaging returned to the supplier to be reused (refilled) for the distribution and sale of an identical or similar product (such as a container that is part of a deposit return or refund system for reuse, a returnable transportation packaging item, a reusable container in the food service industry) or packaging not returned to the supplier, but instead reused by the user as a container or as a dispenser for the same product supplied by the manufacturer for the same purpose (such as a refill, including in a concentrated form).

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Definition: Reusable packaging

Packaging which has been designed to accomplish or proves its ability to accomplish a minimum number of trips or rotations (1,2) in a system for reuse (3,4).

Source: ISO 18603:2013 – Packaging and the environment – Reuse, modified (packaging component mentioned in notes)

Notes:

(1) A trip is defined as transfer of packaging, from filling/ loading to emptying/unloading. A rotation is defined as a cycle undergone by reusable packaging from filling/loading to filling/loading (ISO 18603).

(2) The minimum number of trips or rotations refers to the fact that the "system for reuse" in place should be proven to work in practice. In other words, a significant share of the package is actually reused (measured by an average reuse rate or an average number of use-cycles per package).

(3) A system for reuse is defined as established arrangements (organizational, technical or financial) that ensure the possibility of reuse, in closed-loop, open-loop or in a hybrid system (ISO 18603).

(4) See above for the definition of reuse, which stresses - *inter alia* - the need for the packaging to be refilled or used again for the same purpose for which it was conceived

Further explanatory notes

(1) For a container to qualify as reusable, there needs to be a "system for reuse" in place that enables the user of the package to ensure it is reused in practice where the item is placed on the market. Such a system for reuse should be able to prove a significant actual reuse rate, or average number of use-cycles of a package, in normal conditions of use.

(2) A package is considered reusable if the design of the packaging enables the principal components to accomplish a number of trips or rotations in normally predictable conditions of use (ISO 18603:2013). According to ISO 18601, a packaging component is a part of packaging that can be separated by hand or by using simple physical means56 (such as a cap, a lid, a (non in-mould) label).

(3) Single-use packaging (designed to be used once) aimed at delivering a refill for a reusable package is not

54 ISO 18603:2013, "Closed-loop system"/"Open-loop system" definitions: Reuse can take place within a company or a cooperating group of companies (closed-loop) or amongst unspecified companies (open-loop).

55 ISO 18603:2013, "Packaging used for the same purpose" definition: Reuse of pallets, loaded originally with dairy products and now loaded with house bricks is reuse for the same purpose.

56 ISO 18601:2013, Packaging component definition.

considered reusable packaging.

(4) A reusable item can undergo reconditioning, which refers to operations necessary to restore a reusable packaging to a functional state for further reuse (ISO 18603:2013).

(5) Reusable packaging should be designed to be recyclable, as it will inevitably reach the maximum number of reuse cycles at some point, after which recycling ensures the material is kept in the economy.

RECYCLABLE PACKAGING

RECYCLING

References to "recycling" in this guidance always refer to "material recycling".

Definition: Material recycling

Reprocessing, by means of a manufacturing process, of a used packaging material into a product, a component incorporated into a product, or a secondary (recycled) raw material; excluding energy recovery and the use of the product as a fuel.

Source: ISO 18604:2013 – Packaging and the environment – Material recycling, modified (note to entry not applicable).

Further explanatory notes

(1) This includes both mechanical recycling processes (maintaining polymer structure) and chemical recycling processes (breaking down polymer structure into more basic building blocks via chemical or enzymatic processes).

(2) It explicitly excludes technologies that do not reprocess materials back into materials but instead into fuels or energy.

Chemical recycling can be considered in line with a circular economy if the technology is used to create feedstock that is then used to produce new materials. However, if these same processes are used for plastics-to-energy or plastics-to-fuel applications, these activities cannot be considered as recycling (according to the International Organization for Standardization (ISO)), nor as part of a circular economy. For a chemical recycling process, just like for the production of virgin plastics, no hazardous chemicals should be used that pose a significant risk to human health or the environment, in application of the precautionary principle.

(3) High quality recycling and of recycled materials are essential in a circular economy, where one aim is to keep materials at their highest utility at all times. This maximizes the value retained in the economy, the range of possible applications for which the material can be used and the number of possible future life cycles. It therefore minimizes material losses and the need for virgin material input.

— Maximizing the quality and value of materials during recycling is made possible through a combination of packaging design and high-quality collection, sorting, cleaning and recycling technologies and systems.

— On the design side, organizations such as the Association of Plastic Recyclers (APR), Plastics Recyclers Europe (PRE), European PET Bottle Platform (EPBP), RECOUP and others have design-for-recyclability guidelines for plastic packaging that, as well as recyclability, often indicate the quality of the recycled output (through traffic light systems or classifications such as "preferred for recycling" versus "detrimental for recycling").

In the context of the New Plastics Economy Global Commitment, as well as this guidance, where the term "recyclable" is used by businesses that put packaging on the market (including packaging producers, fast-moving consumer goods companies, retailers, hospitality and food service companies), "technically recyclable ,57 is clearly not enough: recycling does not just need to work in a laboratory. Instead, it should be proven that packaging can be recycled in practice and at scale.

"In practice and at scale" means that there is an existing system (collection, sorting and recycling) that actually recycles the packaging (it is not just a theoretical possibility) and that covers significant and relevant geographical areas measured by population size.

It is important to assess the recyclability of each package separately, taking into account its material composition, format design, manufacturing processes and the most likely way of using, disposing of and collecting it. For example, the fact that polyethylene terephthalate (PET) bottles are proven to be recycled in practice and at scale does not necessarily imply that all PET packaging formats can be considered recyclable, nor that every single PET bottle is (depending on labels, glues and inks).

57 Technical recyclability considers the technical possibility to recycle a package, but does not take into account if the collection, sorting, and recycling of the package happens in practice, at scale, and with reasonable economics (for instance if it could work in a lab or in one (pilot) facility but not be economically viable to replicate at scale). Therefore, such a definition does not directly correlate to what is actually recycled in practice, and it would result in almost all packaging being considered "recyclable".

5 Something to think about

Packaging that can be recycled should be able to be recycled on a large scale. How can we ensure that communities have the proper infrastructure to collect, sort and recycle a higher percentage of plastics?

Similarly, a large polyethylene (PE) film and a small-format PE wrapper might currently have a different likelihood of being collected and recycled in practice.

Moving towards only using "recyclable" packaging as described above is a necessary first step, but it should happen in conjunction with other efforts to ensure all packaging is actually recycled in practice in every market where it is used.

Definition: Recyclable packaging

A packaging (1) or packaging component (2,3) is recyclable if its successful post-consumer (4) collection, sorting, and recycling (5) is proven to work in practice and at scale.

Notes:

(1) In the context of the Global Commitment as well as this guidance, a package can be considered recyclable if its main packaging components, together representing >95% of the entire packaging weight, are recyclable according to the above definition, and if the remaining minor components are compatible with the recycling process and do not hinder the recyclability of the main components.

Examples:

— If a bottle and its cap are recyclable, the packaging can be claimed to be recyclable if it has a label (<5% of total weight) that does not hinder the recyclability of the bottle and cap.

— If that same bottle has a label that hinders or contaminates the recycling of the bottle and cap, the entire packaging is non-recyclable.

Longer term, the aim should be for all packaging components (including labels) to be recyclable according to the above definition.

(2) A packaging component is a part of packaging that can be separated by hand or by using simple physical means (ISO 18601) such as a cap, a lid and (non in-mould) labels.

(3) A packaging component can only be considered recyclable if that entire component, excluding minor incidental constituents (6), is recyclable according to the definition above. If just one material of a multi-material component is recyclable, one can only claim recyclability of that material, not of the component as a whole (in line with US FTC Green58 Guidesand ISO 14021).

(4) ISO 14021 defines post-consumer material as material generated by households or by commercial, industrial and institutional facilities in their role as end users of the product that can no longer be used for its intended purpose. This includes returns of material from the distribution chain. It excludes pre-consumer material (such as production scrap).

(5) Packaging for which the only proven way of recycling is recycling into applications that do not allow any further use-cycles (such as plastics-to-roads) cannot be considered "recyclable packaging".

(6) ISO 18601:2013: A packaging constituent is a part from which packaging or its components are made and which cannot be separated by hand or by using simple physical means (such as a layer of a multi-layered pack or an in-mould label).

Further explanatory notes

(1) Based on the principle that recycling needs to work in practice and at scale, the definition requires the entire system to work: material choices; packaging design; the manufacturing process; most likely way of using, disposing and collecting the packaging; and the availability, compatibility and performance of infrastructure for collection, sorting and recycling. It also implicitly requires the system to work technically, conveniently enough for actors to participate and economically (so that the economic stack up and there are end markets for the material)

(2) Based on the principle that recycling needs to work in practice and at scale, the definition of recyclable packaging allows for innovation. A packaging item that is not currently recyclable could be so in future (for instance by introducing effective collection, sorting and recycling technologies at scale).

(3) It is important to assess the recyclability of each package

58 United States Federal Trade Commission (2012), Guides for the Use of Environmental Marketing Claims ("Green Guides"), Part 260.

separately, taking into account its design, manufacturing processes and most likely way of using, disposing and collecting it, which all have a significant impact on the possibility and probability of the package being recycled in practice. For example:

— Design - choice of materials, shape and size of the packaging, additives and colourants, glues, inks, caps and labels.

— Manufacturing process - sometimes additives are used in the manufacturing process or residual amounts of catalysts or other products end up in the packaging.

— Most likely way of using and disposing - assuming the most likely way of using and disposing the packaging rather than assuming unlikely conditions. For example, in most countries one cannot assume that a significant share of households will disassemble packaging before disposing of it. Other questions to consider include: would the package be disposed most often with or without the label or cap still attached? would it most likely be disposed of empty and clean, or contaminated with product residues, glue or lid residues?

— Most likely way of collecting - is the pack most likely to end up in a collection system for business-to-business bulk materials or in one for household materials? A package could be recycled in practice and at scale in business-to-business but not in business-to-consumer applications (for instance, PE pallet wraps usually end up in different collection systems from PE wraps around consumer products).

(4) While the definition does not specify where a package is recycled (to allow for the export and import of materials), businesses should ensure any exported packaging actually gets recycled before considering the recycling pathway to work in practice.

(5) The available technical design-for-recycling guidelines by organizations such as APR, PRE, EPBP, RECOUP bring a more technical and in-depth analysis of design for recycling prerequisites. As such, these guidelines are complementary to the "recyclable" definition of this appendix, and businesses are encouraged to refer to and apply these design-for-recyclability guidelines.

It is challenging to quantitatively define "in practice" and "at scale" because of data availability. However, a few (non-exhaustive) suggested qualitative prerequisites are listed below:

(1) There are some geographical areas where (formal or informal) collection systems are in place to collect for recycling a large share of the packaging marketed in that region.

(2) The package is compatible with the material stream in which it is collected.

(3) The package is sorted and aggregated into defined streams for recycling processes and most of what is collected gets recycled.

(4) The package can be processed and recycled with commercial recycling processes.

(5) A viable end market for the recyclate is available to put the material back in use.

This definition does not apply to claims linked to specific geographical areas (such as on-pack recycling labels or customer communications), as these should always take into account the local context and systems in place (in line with ISO 14021 and US FTC), and be in line with the local regulations that apply to such claims.

COMPOSTABLE PACKAGING

In a circular economy, all (plastic) packaging should be designed to be recyclable, or where relevant compostable16 (or both), 59 ideally after several reuse cycles. As designing packaging for recycling comes with the advantage of keeping the value of the material in the economy, it is often preferred over designing for composting. However, the latter can be valuable for targeted applications where considered appropriate and beneficial, if coupled with the relevant collection and composting infrastructure to ensure it gets composted in practice.

These targeted applications include packaging items for which composting offers a mechanism to return biological nutrients from the product the packaging contains, which would otherwise have been lost, back to the soil in the form of fertilizer or soil improver. Examples could include tea bags, compostable bags for compost collection in cities, or packaging materials that often end up in organic waste streams (such as fruit/vegetable labels). Applications for which compostable plastic packaging is used are ideally harmonized across the industry and clearly indicated, to avoid cross-contamination of compostable and recyclable material streams.

59 Building on APR/PRE Global Definition of "Plastics Recyclability" (July 2018).

wfuna
World Federation of United Nations Associations

5 Something to think about

Definition: Recyclable Packaging is packaging that can be processed and reused in the production of new products.

What standards does packaging have to meet so it is considered recyclable?

Compostable packaging needs to go hand in hand with appropriate collection and composting infrastructure in order for it to be composted in practice. Therefore, when claiming compostability in the context of a specific geographical area (such as on-pack recycling labels, public communications), it is important to take into account the local context and available systems in place as outlined in ISO 14021, and be in line with the local regulations that apply to such claims.18

Composting can take place in an industrial facility, following a controlled process managed by professionals, as well as in a collective or at home, where the process is subject to the householder's skills and other environmental conditions. The terms "composting" and "compostable" referred to in this document mainly refer to industrial composting.

COMPOSTING

Definition: Composting

Aerobic process designed to produce compost.

Note 1 to entry: Compost is a soil conditioner obtained by biodegradation of a mixture consisting principally of vegetable residues, occasionally with other organic material and having a limited mineral content.
Source: ISO 472:2013, Plastics – Vocabulary.

Further explanatory notes

(1) Composting can take place in an industrial facility, a collective, or at home:60

— Industrial composting: Municipal or industrial composting is a professionally managed and controlled, aerobic thermophilic waste treatment process covered by international standards and certification schemes, which results in compost - a valuable soil improver.61
— Home composting: Designing packaging so that it is home-compostable means it adheres to more stringent conditions than industrially compostable packaging and increases the range of possible composting processes (both industrial and home composting). The home-composting process remains subject to the variability of householders' skills and experience, and the final product is not standardized

Compostability is a characteristic of packaging or of a product, not of a material. As testing standards require packaging to disintegrate and biodegrade in a certain time frame, compostability is influenced not only by the material choice but also by, for example, the format, the dimensions, and usage of inks and colourants. For example, while a thin PLA film might be compostable, a solid block of the exact same material might not degrade fast enough to be considered compostable.

Care should therefore be taken when claiming "compostability" for a material. When materials are referred to as compostable, it most often means that the material could be used to produce compostable items or packaging. It does not mean that all items produced using this material are compostable.

Definition: Compostable packaging

A packaging or packaging component (1) is compostable if it complies with relevant international compostability standards (2) and if its successful post-consumer (3) collection, (sorting), and composting is proven to work in practice and at scale (4).

Notes:

(1) ISO 18601:2013: A packaging component is a part of packaging that can be separated by hand or by using simple physical means (such as a cap, a lid and (non in-mould) labels).

(2) Including ISO 18606, ISO 14021, EN13432, ASTM D-6400 and AS4736.

(3) ISO 14021's defines post-consumer material as that generated by households or by commercial, industrial and institutional facilities in their role as end users of the product that can no longer be used for its intended purpose. This includes returns of material from the distribution chain.

(4) "At scale" implies that there are significant and relevant geographical areas, as measured by population size, where the packaging is actually composted in practice.

Further explanatory notes

(1) As per ISO 18606, a package is industrially compostable if it meets the following criteria:

- Characterization: identification and characterisation of components prior to testing;
- Biodegradation: conversion of at least 90% of organic carbon to CO2 within 26 weeks under controlled composting conditions (at +58°C +/-2°C);

60 Along with composting, anaerobic digestion can also be considered as a circular after-use pathway for plastic packaging, in line with ISO 18606. However, as the Foundation believes the use of anaerobic digestion is currently limited for plastics packaging as at the date of publication, this appendix focuses on composting.

61 European Bioplastics, Factsheet *Bioplastics – Industry standards & labels, Relevant standards and labels for bio-based and biodegradable plastics* (2017).

5 Something to think about

Definition: Compostable Packaging is packaging that can break down into natural elements under composting conditions.

What is compostable packaging? What characteristics have to be
met so the packaging is compostable? What is the percentage of actual products that are compostable?

- Disintegration: disintegration is considered satisfactory if within 12 weeks under controlled composting conditions, no more than 10% of the original dry mass of a package remains in the oversize fraction after sieving through a 2,0 mm sieve (at +58°C +/-2°C).

— Compost quality: the compost obtained at the end of the process does not cause any negative effects;

— Maximum concentration of regulated metals: it does not exceed a given concentration. Of regulated heavy metals and other substances hazardous to the environment.

(2) As per ISO 18606, a package is considered compostable only if all the individual components of the package meet the compostability requirements specified. If the components can be easily, physically separated before disposal, then the physically separated components can be individually considered for composting.

(3) Compostable plastic can be composted in a municipal or industrial facility as well as, if it is designed to be home compostable, in a collective or at home as a complementary after-use option where relevant.

(4) In line with ISO 14021 and US FTC Green claims, a marketer should clearly qualify compostability claims to the extent necessary to avoid deception (such as considering whether one component is not compostable or if the item cannot be composted safely or in a timely manner in a home compost pile or device). For example, the US FTC Green guide states: "§ 260.7 Compostable Claims: "To avoid deception about the limited availability of municipal or institutional composting facilities, a marketer should clearly and prominently qualify compostable claims if such facilities are not available to a substantial majority of consumers or communities where the item is sold".

(5) Local context and available infrastructure should be taken into account when claiming compostability in a specific geographic area.

BIODEGRADABLE

The term "biodegradable" should not be confused with "compostable". "Biodegradability" designates a property that is needed – among others – to make a package compostable. It does not indicate whether aplastic package can in practice be collected and composted following a managed process (in terms of how quickly and under what conditions it can biodegrade).

POST-CONSUMER RECYCLED CONTENT

In a circular economy, products and components are to be made from as much recycled content as possible (where legally and technically possible). This reduces the dependence on virgin (fossil) feedstocks, and creates a demand-pull for recycled plastics, sending a clear signal stimulating investments in the collection, sorting and recycling industry.

It is important for industries with requirements for high-quality materials, such as the packaging industry, to maximize the use of recycled content (keeping in mind regulatory constraints such as food contact and health and safety regulations). First, this is because keeping materials at their highest utility and value at all times maximizes the number of possible future use-cycles of the material. Second, it is because if all plastics were to be recycled with significant quality or value loss – for example if all plastic packaging were to be recycled into lower-quality applications – the "high-quality industries" such as packaging would remain dependent on continuous virgin material input.

Definition: Post-consumer recycled content

Proportion, by mass, of post-consumer (1) recycled material in a product or packaging.

Note: ISO14021 defines post-consumer material as that generated by households or by commercial, industrial and institutional facilities in their role as end users of the product that can no longer be used for its intended purpose. This includes returns of material from the distribution chain.

Source: ISO 14021:2016 modified, *Environmental labels and declarations — Self-declared environmental claims (Type II environmental labelling), Usage of terms*, modified (focus on post-consumer recycled material).

Further explanatory notes

(1) While in a circular economy, pre-consumer waste should be kept in the system, the priority is to avoid such pre-consumer waste as part of an efficient production process. This definition therefore excludes pre-consumer recycled content (ISO 14021, Usage of terms, Recycled content: Pre-consumer recycled content includes materials diverted from the waste stream during a manufacturing process).

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5 Something to think about

Definition: Biodegradable are materials that can decompose naturally through the action of living organisms, typically microorganisms.

What is biodegradable? What is the difference between biodegradable and compostable?

(2) Transparency about the nature of the recycled content (post-consumer versus pre-consumer, for instance) is to be ensured whenever possible.

(3) As referred to in ISO 14021, the percentage of recycled material (by weight) shall be mentioned when a claim of recycled content is made, separately stating the percentage of recycled content used in products and packaging, without aggregating it.

(4) Amounts and quality of packaging made out of recycled content should be in line with relevant food contact and health and safety regulations where packaging is put on the market.

(5) To verify or certify the use of recycled content, there are verification systems issued by a range of assurance bodies.

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