
UN environment programme
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Our planet
is choking
on plastic

It is time to change how we produce, consume and dispose of the plastic we use.

While plastic has many valuable uses, we have become addicted to single-use plastic products — with severe environmental, social, economic and health consequences.

Around the world, one million plastic bottles are purchased every minute, while up to five trillion plastic bags are used worldwide every year. In total, half of all plastic produced is designed for single-use purposes – used just once and then thrown away.

Plastics including microplastics are now ubiquitous in our natural environment. They are becoming part of the Earth's fossil record and a marker of the Anthropocene, our current geological era. They have even given their name to a new marine microbial habitat called the "plastisphere".

So how did we get here?

From the 1950s to the 1970s, only a small amount of plastic was produced, and as a result, plastic waste was relatively manageable.

However between the 1970s and the 1990s, plastic waste generation more than tripled, reflecting a similar rise in plastic production.

In the early 2000s, the amount of plastic waste we generated rose more in a single decade than it had in the previous 40 years.

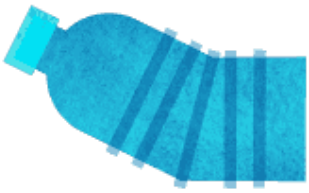
Today, we produce about 400 million tonnes of plastic waste every year.

We are seeing other worrying trends. Since the 1970s, the rate of plastic production has grown faster than that of any other material. If historic growth trends continue, global production of primary plastic is forecasted to reach 1,100 million tonnes by 2050. We have also seen a worrying shift towards single-use plastic products, items that are meant to be thrown away after a single short use.

Approximately 36 per cent of all plastics produced are used in packaging, including single-use plastic products for food and beverage containers, approximately 85 per cent of which ends up in landfills or as unregulated waste.

Additionally, some 98 per cent of single-use plastic products are produced from fossil fuel, or "virgin" feedstock. The level of greenhouse gas emissions associated with the production, use and disposal of conventional fossil fuel-based plastics is forecast to grow to 19 per cent of the global carbon budget by 2040.

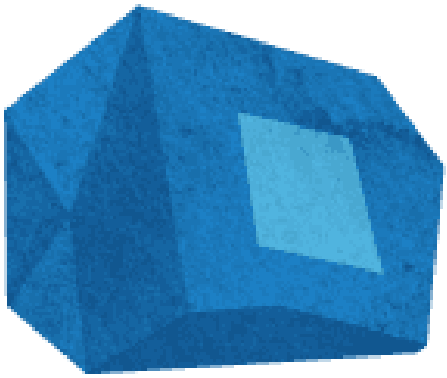
These single-use plastic products are everywhere. For many of us, they have become an integral part of our daily lives.



Polyethylene terephthalate (PET)
Water bottles, dispensing containers, biscuit trays

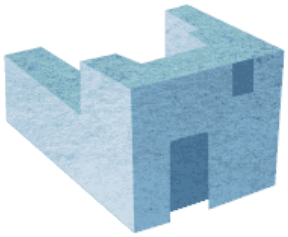
High-density polyethylene (HDPE)
Shampoo bottles, milk bottles, freezer bags, ice cream containers

Low-density polyethylene (LDPE)
Bags, trays, containers, food packaging film



Polypropylene (PP)
Potato chip bags, microwave dishes, ice cream tubs, bottle caps, single-use face masks

Polystyrene (PS)
Cutlery, plates, cups



Expanded polystyrene (EPS)
Protective packaging, hot drink cups

"Banning single-use plastic: lessons and experiences from countries" UN Environment Programme report (2018)

Systemic change is needed to stop the flow of plastic waste ending up in the environment.

Of the seven billion tonnes of plastic waste generated globally so far, less than 10 per cent has been recycled. Millions of tonnes of plastic waste are lost to the environment, or sometimes shipped thousands of kilometres to destinations where it is mostly burned or dumped. The estimated annual loss in the value of plastic packaging waste during sorting and processing alone is US$ 80- 120 billion.

Cigarette butts — whose filters contain tiny plastic fibers — are the most common type of plastic waste found in the environment. Food wrappers, plastic bottles, plastic bottle caps, plastic grocery bags, plastic straws, and stirrers are the next most common items. Many of us use these products every day, without even thinking about where they might end up.

Rivers and lakes carry plastic waste from deep inland to the sea, making them major contributors to ocean pollution

Despite current efforts, it is estimated that 75 to 199 million tonnes of plastic is currently found in our oceans. Unless we change how we produce, use and dispose of plastic, the amount of plastic waste entering aquatic ecosystems could nearly triple from 9-14 million tonnes per year in 2016 to a projected 23-37 million tonnes per year by 2040. How does it get there? A lot of it comes from the world's rivers, which serve as direct conduits of trash into lakes and the ocean.

It is estimated that 1,000 rivers are accountable for nearly 80% of global annual riverine plastic emissions into the ocean, which range between 0.8 and 2.7 million tonnes per year, with small urban rivers amongst the most polluting.

Flowing through America's heartland, the Mississippi River drains 40 per cent of the continental United States – creating a conduit for litter to reach the Gulf of Mexico, and ultimately, the ocean. Data collected through the Mississippi River Plastic Pollution Initiative shows that more than 74 per cent of the litter catalogued in pilot sites along the river is plastic.

In 2019, data was collected through the CounterMEASURE project in southeast Asia and India to monitor and assess land-based plastic leakage entering waterways such as river and canals or drainage to the sea. Two sampling points were selected along the Mekong River in the Khong Chaim and Phosai districts.

It was found that the total weight of plastic waste collected in the Khong Chaim district was twice as large as that collected in Phosai. Since the Khong Chaim district is located downstream, after the connection point between the Mun and the Mekong Rivers, the plastic leakage contribution from the Mun River is considerable. Plastic waste floating in the Mekong River is largely due to household littering and dumping.

Zoom and pan to explore the map and discover the annual plastic emissions of rivers around the world.

Data from "More than 1000 rivers account for 80% of global riverine plastic emissions into the ocean" by Meijer, L. J. J., van Emmerik, T., van der Ent, R., Schmidt, C., & Lebreton, L. published in Science Advances (2021). Explore the in-depth interactive map at the Ocean Cleanup

Plastic waste — whether in a river, the ocean, or on land — can persist in the environment for centuries

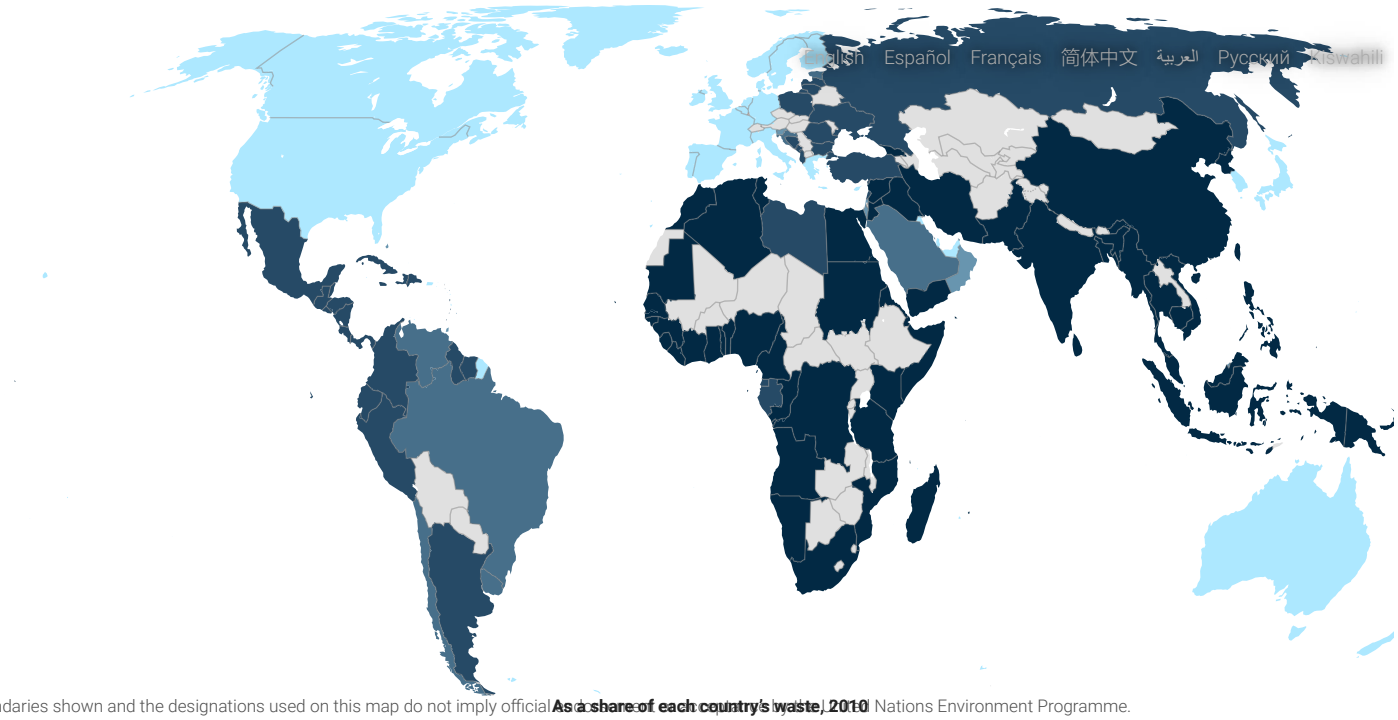
The same properties that make plastics so useful — their durability and resistance to degradation — also make them nearly impossible for nature to completely break down.

Most plastic items never fully disappear; they just break down into smaller and smaller pieces. Those microplastics can enter the human body through inhalation and absorption and accumulate in organs. Microplastics have been found in our lungs, livers, spleens and kidneys, A study recently detected microplastics in the placentas of newborn babies. The full extent of the impact of this on human health is still unknown. There is, however, substantial evidence that plastics-associated chemicals, such as methyl mercury, plasticisers and flame retardants, can enter the body and are linked to health concerns.

In countries with poor solid waste management systems, plastic waste — especially single-use plastic bags — can be found clogging sewers and providing breeding grounds for mosquitoes and pests, and as a result, increasing the transmission of vector-borne diseases such as malaria.

Plastic waste inputs from land into the ocean

How much plastic waste is mismanaged | Where are the hotspots



The boundaries shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations Environment Programme.

Data from "Plastic waste inputs from land into the ocean" by Jenna Jambeck and others, published in Science (2015)

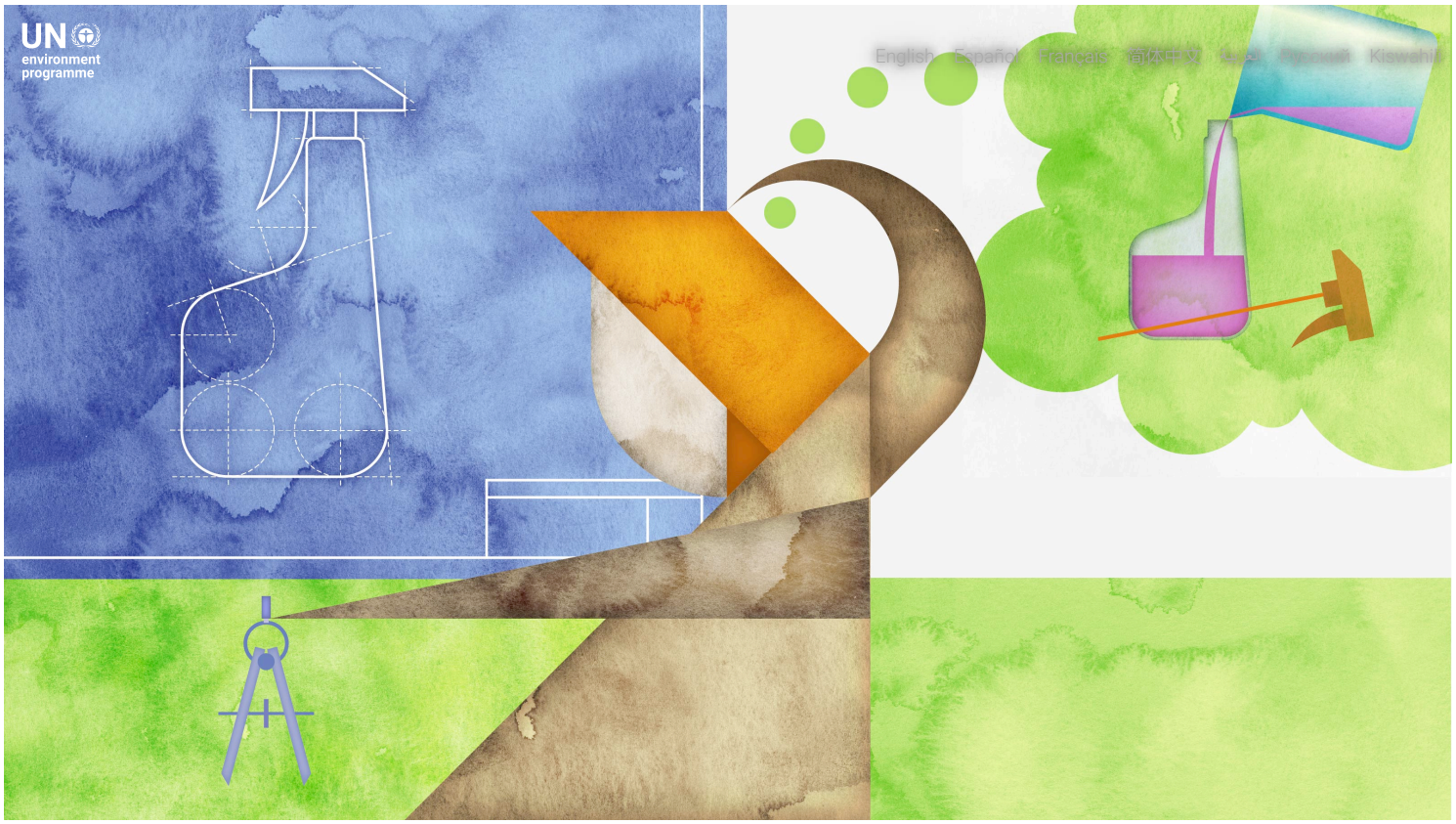
The world is waking up to the problem, and governments, industry and other stakeholders are starting to act.

Governments are key actors in the plastics value chain and there are several things that they can do:

Firstly, they can eliminate the plastic products we do not need, through bans for example..

Governments can also promote innovation so the plastics we need are designed and brought into the economy in a way that allows for their reuse.

Governments also need to ensure we circulate plastic in the economy for as long as possible.



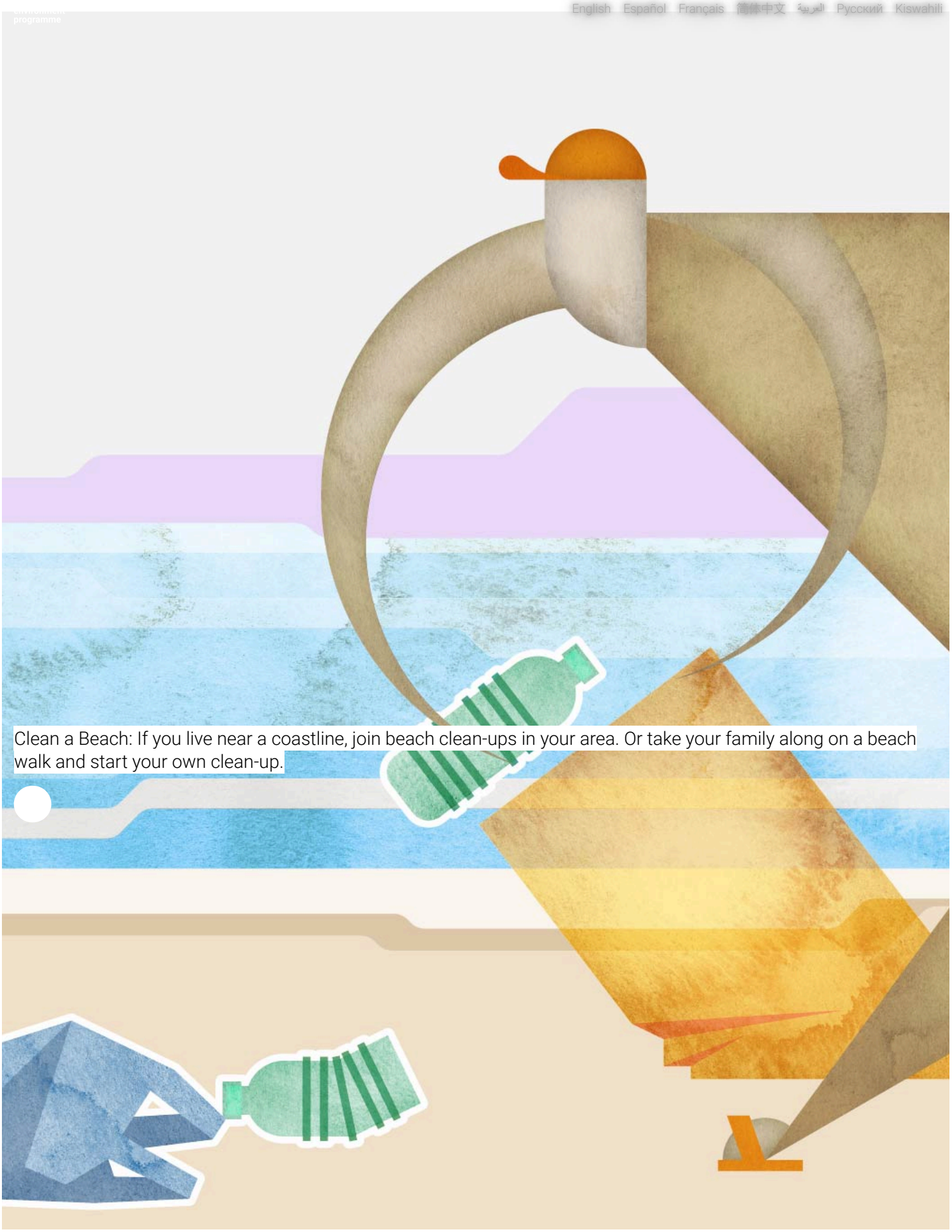
There are also has a number of actions that the plastic industry can take to accelerate this systematic change:

They can eliminate problematic or unnecessary plastic packaging or products by redesigning products for enhanced sustainability and innovating their business models to move from single use to reusable plastic products. They should provide reliable and transparent sustainability information so consumers can make informed purchases. They can also increase the use of recycled content in new products in order to circulate plastic in the economy.

We have seen a lot of positive action, but the truth is that we all need to do more and turn off the tap on plastic pollution at the source.

There are many things that you as an individual can do– from asking the restaurants you visit to stop using plastic straws, to bringing your own coffee mug to work, to pressuring your local authorities to improve how they manage your city's waste. Take the Clean Seas pledge and adopt new habits to limit your plastic footprint.

For inspiration, here are eleven things we can all do to #BeatPlasticPollution for #CleanSeas:



Clean a River: Rivers are direct pathways of plastic debris into the ocean. Join a river clean-up or do your own! The river will look nicer and benefit its ecosystem and the ocean.

Shop Sustainably: Next time you are out shopping, choose food with no plastic packaging, carry a reusable bag, buy local products, and refill containers to reduce your plastic waste and effect on the environment.

Try a Zero-Waste Lifestyle: Become a zero-waste champion. Invest in sustainable, ocean-friendly products-reusable coffee mugs, water bottles and food wraps. Consider options like menstrual cups, bamboo toothbrushes and shampoo bars. These will help you save money and the ocean too.

Travel Sustainably: When you are on holiday, try to watch your single-use plastic intake. Refuse miniature bottles in hotel rooms, take your own reusable drinking bottle and use reef-safe sunscreen, without microplastics.

Be an advocate for change: Ask your local supermarkets, restaurants and local suppliers to ditch plastic packaging, refuse plastic cutlery and straws, and tell them why. Pressure your local authorities to improve how they manage waste.

Dress Sustainably: The fashion industry produces 20 per cent of global wastewater and 10 per cent of global carbon emissions. That’s more than all international flights and maritime shipping combined. “Fast fashion” is so last year. Consider sustainable clothing lines, vintage shops and repair your clothes when possible.

Choose plastic-free personal care products: Personal care products are a major source of microplastics, which get washed into the oceans straight from our bathrooms. Look for plastic-free face wash, day cream, makeup, deodorant, shampoo and other products.

Join UNEP in taking action now!

In February 2017, UN Environment Programme launched the Clean Seas campaign, with the aim of engaging governments, the general public, civil society, and the private sector in the fight against marine litter and plastic pollution. The Campaign is part of the UNEP's broader work on marine litter and plastic pollution and supports the goals of the Global Partnership on Marine Litter and of the Global Commitment to the New Plastics Economy to raise awareness and drive innovation and change towards unnecessary and problematic plastics.

About the **Global Partnership on Marine Litter (GPML)**: This initiative is a voluntary open-ended partnership for international agencies, governments, businesses, academia, local authorities and non-governmental organizations to cooperate and innovate on tackling marine litter and plastic pollution.

About the **New Plastics Economy Global Commitment**: In 2018, UNEP joined forces with the Ellen MacArthur Foundation on the Global Commitment to the New Plastics Economy. The agreement unites private and public sector leaders to pursue circular economies around plastics.

About the **Global Tourism Plastics Initiative**: The Initiative unites the tourism sector behind a common vision to address the root causes of plastic pollution. It enables businesses, governments, and other tourism stakeholders to take concerted action, leading by example in the shift towards circularity in the use of plastics. It acts as a

tourism sector interface of the New Plastics Economy Global Commitment. It was developed within the framework of the Sustainable Tourism Programme of the One Planet network, and is led by UNEP and the World Tourism Organization (UNWTO), in collaboration with the Ellen MacArthur Foundation.

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