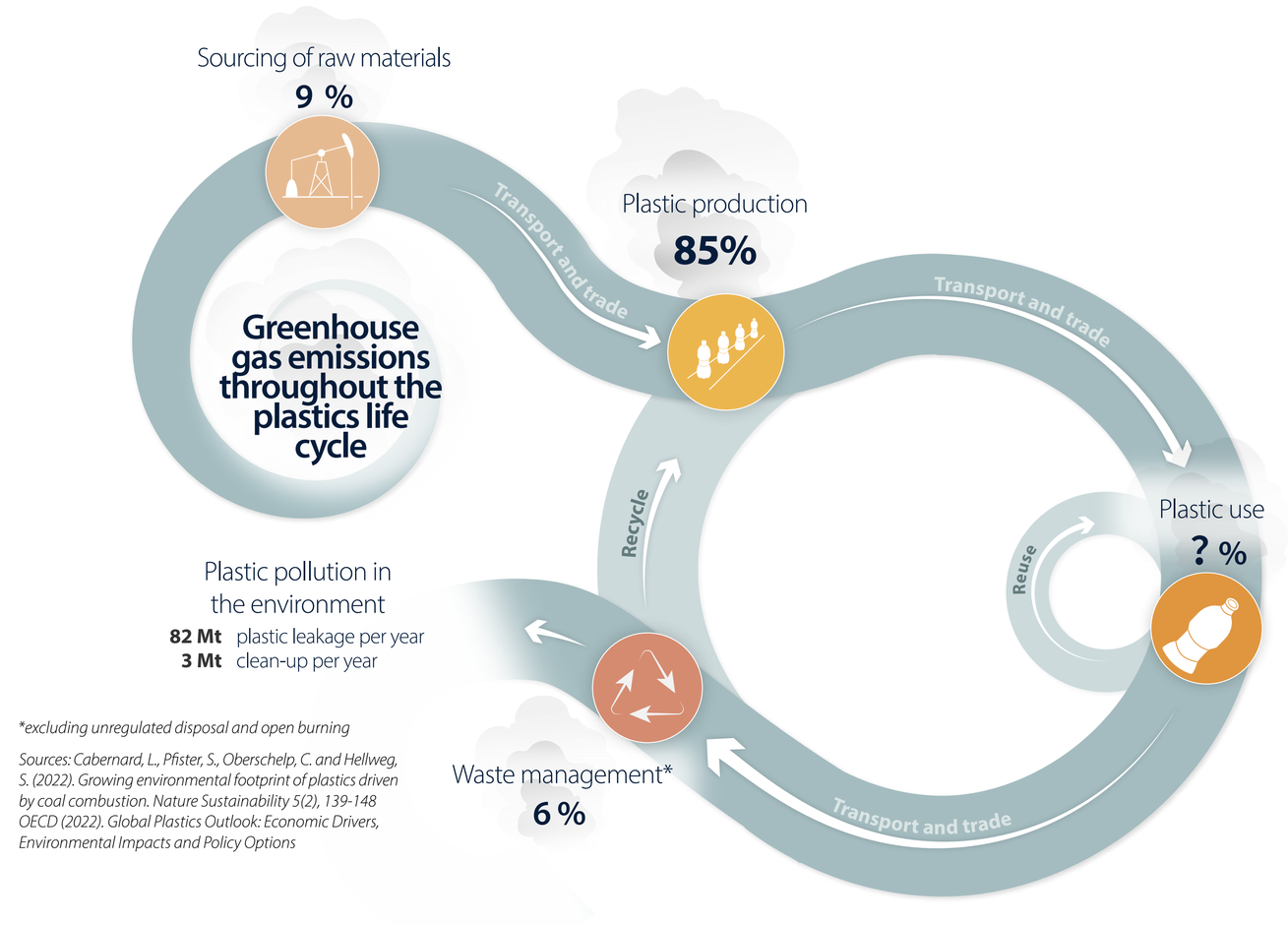
PLASTIC ACTION IS *CLIMATE* ACTION

Plastics drive climate change throughout their entire life cycle – from fossil fuel extraction for plastic production to waste and pollution at their end of life. These impacts include environmental damage, economic costs, and social issues, all of which contribute to climate change.[1] Addressing these challenges means considering the full picture of how plastics affect our planet.



*excluding unregulated disposal and open burning

Sources: Cabernard, L., Pfister, S., Oberschelp, C. and Hellweg, S. (2022). Growing environmental footprint of plastics driven by coal combustion. Nature Sustainability 5(2), 139-148 OECD (2022). Global Plastics Outlook: Economic Drivers, Environmental Impacts and Policy Options

The unsustainable production and disposal of plastics have created a dual crisis of pollution and climate impact, harming ecosystems, human health, and our planet's stability. Global production of primary plastics is estimated to have released around 2.24 gigatonnes of GHG emissions in 2019, representing about 5.3% of global emissions.*[2] To protect people and the planet, we must urgently ensure plastic production is within sustainable levels, improve waste management, and find sustainable alternatives.[3] Every step we take towards minimising plastic pollution, also supports the fight against climate change.

* This figure is the latest estimate based on calculations of 9 major types of fossil fuel-based plastic polymers. Together this accounts for 80% of plastic production

[1] Ford *et al.*, 2022; Kumar *et al.*, 2021; Sharma, Sharma, and Chatterjee, 2023
[2] Karali *et al.*, 2024
[3] GRID-Arendal, 2024

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Photo by Muhammad Amdad Hossain:
It is not very easy for these boys to live in the environment in which they fight every day for food. The boys find plenty of food and stuff from the dirt all day long. By selling goods at the end of the day, it's a kind of daily war. Image taken from the Depot of Chittagong City, Bangladesh.

This photograph is provided by the Plastic Waste Partnership (PWP) established under the Basel Convention.

01 Extraction of raw materials: Almost all plastics are derived from fossil-based sources

Sourcing of raw materials involves the extraction of fossil-based feedstocks such as crude oil, coal or natural gas. 99% of plastics are made from fossil fuels.[1] Currently 4-8% of global oil production is used to make plastics, including for material feedstock and the energy required for the production processes. This percentage is predicted to rise to 20 per cent by 2050.[2]

The extraction phase contributes to approximately 9% of GHG emissions across the plastic life cycle. The emissions of GHGs of the extraction phase are likely underestimated.[3] Reducing the carbon footprint of the plastics industry should be considered as a critical opportunity to reduce global greenhouse gas emissions.

Extraction of raw materials contribute to greenhouse gas emissions and pollution.

[1] Plastics Europe 2023, Cabernard *et al*., 2022
[2] World Economic Forum, 2016
[3] Cabernard *et al*., 2022; Masnadi *et al*., 2018

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Photo by Noemie Coissac/Greenpeace: *Greenpeace International together with artist and activist Benjamin Von Wong unveil a 5-metre tall art installation called the #PerpetualPlastic Machine on the banks of the Seine River on Saturday, 27 May 2023 to present a clear message: the Global Plastics Treaty must stop runaway plastic production and use.*

This photograph is provided by the Plastic Waste Partnership (PWP) established under the Basel Convention.

02

Production of plastics* contributes significantly to greenhouse gas emissions

Primary polymer production accounts for 85% of known GHG emissions in the plastics life cycle.[1] Production needs energy-intensive processes in petrochemical plants where feedstocks undergo refining and cracking processes. Refining fossil fuels is responsible for 40% of all emissions from the oil and gas supply chain.[2]

The industry's current growth trajectory is exponential, and plastic production is expected to almost double or triple by 2050.[3]

Limiting plastic production to sustainable levels, should be considered as a critical opportunity to limit global temperature rise.

* These figures exclude extraction, and include refining and conversion of feedstocks.

[1] Cabernard *et al.*, 2022
[2] IEA, 2018
[3] Karali *et al.*, 2024

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Photo by Sufyan Arshad: *A woman in Mandi Bahauddin Punjab, Pakistan is collecting and grading plastic bottles to sell them in the factory. This is her means to feed her family due to the lack of resources in the region. Some people, like this lady, work for their own survival as well as for the planet by transporting plastic to the recycling factories.*

This photograph is provided by the Plastic Waste Partnership (PWP) established under the Basel Convention.

03 Plastic consumption: Half of global plastic production is for single-use products

Plastic consumption is steadily increasing across the world,[1] creating further demand for fossil fuels. The largest share of plastic demand originates from the plastic packaging industry, mainly for single-use products which are used once and then discarded. Half of all plastics produced are for single-use,[2] with many being avoidable, and unnecessary products.

A transition from a single-use throw-away culture, to promoting redesign, and reuse and refill systems, is needed to address plastic pollution and reduce emissions.

[1] OECD, 2022
[2] UNEP, n.d. Our planet is choking on plastic. Retrieved from https://www.unep.org/interactives/beat-plastic-pollution

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Photo by Muhammad Amdad Hossain:
A large number of homeless women in Dhaka, Bangladesh have lost their homes and properties through floods, river erosion and other natural calamities, and come to the city in the hope of a better future. A concrete covered street is a bed of roses for these refugees who actually do not possess any identity.

This photograph is provided by the Plastic Waste Partnership (PWP) established under the Basel Convention.

04 Plastic waste (mis)management

Effective plastic waste management is crucial in fighting climate change, yet much of plastic waste is mismanaged. Controlled plastic waste management, such as recycling, landfill and incineration, accounts for about 6%* of overall plastic life cycle emissions.[1]

Each year, thousands of tonnes of plastic waste go uncollected, with 2.7 billion people lacking access to proper waste collection services.[2] Waste pickers play a crucial role in global recycling, collecting and sorting as much as 60% of the plastic waste that is recycled.

Mismanaged plastic waste that remains in the environment is typically openly burned or ends up in unmanaged dumpsites. Open burning releases greenhouse gases and black carbon, a pollutant with up to 5,000 times the warming effect of CO_2.[3] Currently, 16% of global municipal waste is openly burned, significantly contributing to air pollution and climate change.[4] As plastics degrade in the environment, they release GHGs including methane[5] and ethylene, and other toxic chemicals to the environment.

Sound waste management is critical to end plastic pollution. Unregulated dumping and open burning harm public health, and further add to greenhouse gas emissions and climate risk.

* This figure excludes emissions from unregulated disposal and open burning.

[1] Cabernard *et al*., 2022
[2] Wilson, 2023
[3] Reyna-Bensusan *et al*., 2019; Cruz *et al*., 2022
[4] Wiedinmyer, Yokelson and Gullett, 2014
[5] Blanco *et al*., 2014

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Photo by Muntaka Chasant: *A plastic waste picker/scavenger had traveled with the recyclable plastic he had recovered on his head to a dumpsite where middlemen would later come to buy them for recycling. Plastic waste pickers play a leading role in informal plastic waste recovery. They help to reduce waste, cost of cleanups and supply materials to industries.*

This photograph is provided by the Plastic Waste Partnership (PWP) established under the Basel Convention.

05 Plastic pollution reduces the resilience of communities and the natural world to cope with climate change

A significant amount of plastic pollution has accumulated in the environment, causing biodiversity loss, disrupting ecosystems and causing harm to human and animal health. Plastic is on course to more than double by 2030.[1] Pollutants – such as GHGs, macro-, micro and nanoplastics, and toxic chemicals – are released across all stages of the plastics life cycle, from extraction, to primary polymer production through to manufacture of plastic products, use and disposal. They enter the environment and contribute to biodiversity loss and reductions in the functional capacity of ecosystems that regulate the global climate, while increasing climate risk for vulnerable communities. Plastic pollution exacerbates and compounds climate risks such as flooding,[2] air pollution, food security, water quality and human health and wellbeing.[3] Plastics governance must consider the impacts of plastic pollution in conjunction with climate change.

Plastic pollution is making the impact of climate change worse. Plastic action is climate action.

[1] UNEP, 2021
[2] Honingh *et al*., 2020
[3] Ford *et al*., 2022; Kumar *et al*., 2021; Lavers, Bond, and Rolsky, 2022

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Photo by James Wakibia: *Two boys look towards a section of Njoro River in Nakuru County in Kenya that is heavily polluted with plastic drinking bottles. The river that originates from Mau Forest collects plastic waste and other debris as it flows through residential areas in Nakuru, finally emptying all its contents in Lake Nakuru.*

This photograph is provided by the Plastic Waste Partnership (PWP) established under the Basel Convention.