

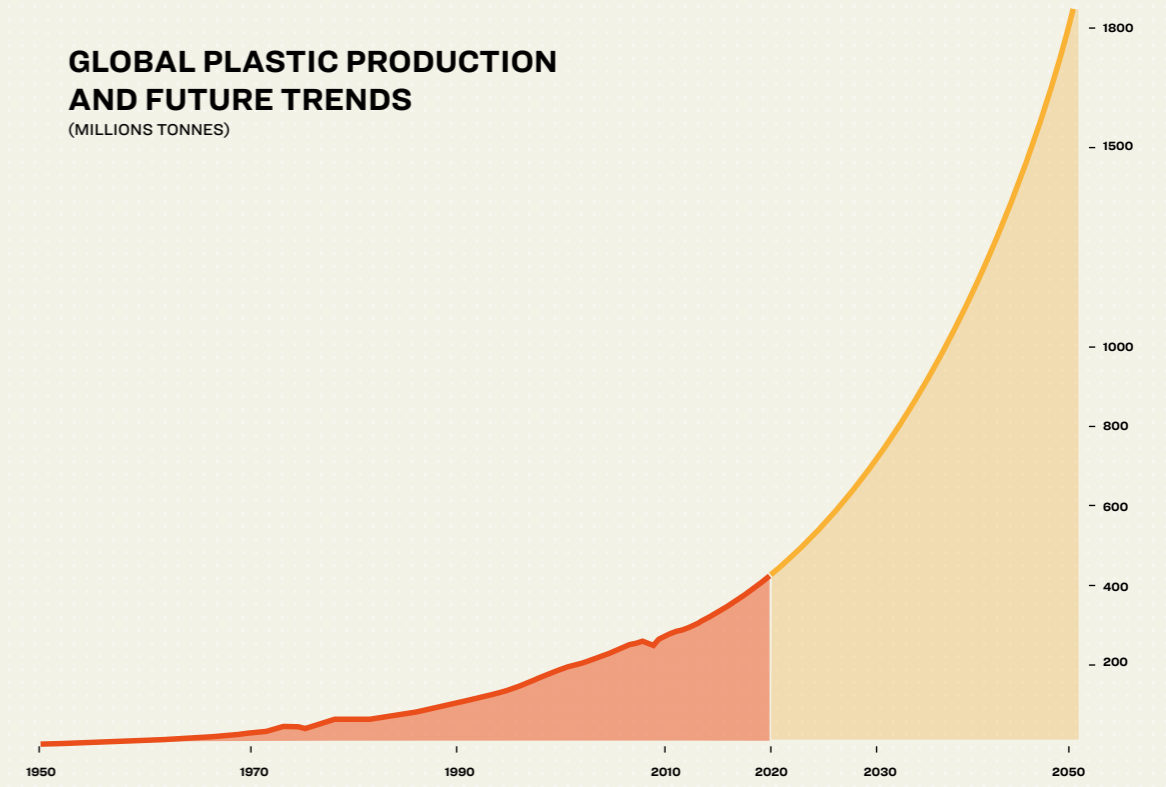


# 1. Introduction

## 1.1. The problem with plastics

The modern world has a plastic addiction. Since the 1950s, when plastic production took off, we have relied on this cheap, light, flexible, waterproof, unperishable material for an ever-increasing number of uses. From aeroplanes, electronics and insulation to medical equipment, furniture and ubiquitous packaging, plastic permeates every aspect of our lives. Production has skyrocketed - from just 2.3 million tonnes in 1950 to 162 million tonnes in 1993, which more than doubled to 448 million tonnes by 2015<sup>1</sup> - and half of all plastics ever made have been produced since 2005.<sup>2</sup>

**Figure 1.1:** The exponential production of plastics - Source: UN Grid-Arendal<sup>3</sup>



This sheer volume of plastic has overwhelmed the waste-management systems designed to contain it, pouring out into the natural world at a rate of 8 million tonnes a year, or one garbage truck per minute.<sup>4</sup> Here, it saturates almost every surface of the planet - from the deepest abysses to the highest mountains and remotest islands - causing an unprecedented crisis for wildlife.<sup>5</sup> What makes plastic ideal for convenience and durability makes it a nightmare for nature, and it has become infamous for choking, ensnaring and poisoning everything from plankton to porpoises. Images of dead whales stuffed with plastic bags, seals garrotted by netting, turtles' noses impaled by straws, albatross chicks starved from being fed plastic fragments, and seas swelling under layers of bottles and other plastic detritus are published daily. Just as insidious are the plastic particles we cannot see. Microplastics and plastic fibres smaller than 5mm slough off from polyester clothing, car tyres, fragmented packaging and even when we open plastic containers.<sup>6</sup> These easily enter the food chain when ingested by plankton or insects,<sup>7</sup> and even contaminating fruits and vegetables,<sup>8</sup> working their way directly and indirectly into our lungs, stomach and bloodstream.<sup>9</sup>

The exact effects of microplastics in the human body are still unclear, but studies on animals suggest they leach harmful toxic chemicals and hormone disruptors, and can even cross the blood-brain barrier.<sup>10,11</sup> Our rate of literal plastic consumption is alarming - it is estimated that we ingest a credit card's worth of plastic each week.<sup>12</sup> But it is not just in the food we eat, the water we drink and the air we breathe that plastics cause us harm. The consequences of mismanaged waste - including plastics - to human health have become a silent and toxic crisis, killing between 400,000 and 1 million people each year in low- and middle-income countries.<sup>13</sup> Indeed, from extraction and production to use and disposal, the entire life cycle of plastic poses serious toxic risks to human health, contributing to cancer, neurotoxicity, reproductive issues, endocrine disruption and genetic problems on a global scale.<sup>14</sup> Our mismanagement of plastics is also a major economic failure. The negative externalities associated with plastics tally up to a conservative estimate of \$40 billion annually - for example, through degrading the natural environment, hampering infrastructure or harming people's health<sup>15</sup> - a cost predominately borne by low-income communities.

Packaging is the largest end-use market segment for plastics, accounting for just over 40% of total usage, most of which is single use.<sup>16</sup> By throwing away 95% of packaging of material value after just one use, an estimated \$80-120 billion is being lost to the global economy on a yearly basis.<sup>17</sup> Since plastic production took off in the 1950s, just 9% of all plastic has been recycled, while 12% has been incinerated and 79% has ended up in landfills or the natural environment.

The plastics crisis also has serious implications for climate change. More plastic means more fossil-fuel extraction, and each stage of the plastic life cycle is carbon intensive: plastic refining is one of the highest greenhouse-gas-producing industries and the fastest-growing manufacturing sector; waste management in the form of incineration - often euphemistically labelled 'waste-to-energy' or 'thermal recycling' - and backyard burning produces toxic emissions; unmanaged post-use plastic releases greenhouse gases as it degrades in the environment; and microplastics disrupt ecosystems that help to sequester carbon.<sup>18</sup>

Critically, as plastic production skyrockets and our attempts to manage plastic pollution continue to falter, associated emissions will reach alarmingly unsustainable levels. Emissions from just 2 of the 24 planned refineries starting production in the US total the equivalent of adding 800,000 cars to the roads.<sup>19</sup> Unless production slows, emissions from plastics will add up to the equivalent of 295 new 500-megawatt coal-fired power plants built in the next 10 years, or 10-15% of our remaining carbon budget by 2050.<sup>20</sup>

But production is not slowing - it's soaring. At current trajectories, plastic production will double in the next 10-15 years as the fossil-fuel industry seeks to open new revenue streams, relying on plastic to make up the diminishing long-term prospects of fossil-fuel consumption in energy and transport.<sup>21</sup> We are at risk of heating the planet to uninhabitable levels by producing superfluous, disposable packaging that we simply do not need.

## 1.2. Blaming consumers and a crisis of accountability

Whereas awareness of the severity of plastic pollution has only recently entered the mainstream, this is not a new issue. In fact, the plastics industry has known about the growing ocean plastics problem since at least the 1950s - yet has continued to ramp up production, consistently branding plastic as safe, benign and key to a modern way of life.<sup>22,23</sup>

In response to early backlash against plastic waste and the tabling of bans in several US states, the industry actively sought to promote recycling as a solution; a way to process increasing volumes of the plastic packaging it was putting on the market, rehabilitate the sinking reputation of the material, and - critically - pre-empt bans and regulatory action. Yet internal documents from the time show the industry had 'serious doubt that [recycling] can ever be made viable on an economic basis';<sup>24</sup> with the majority of plastics not feasibly recyclable at scale. In spite of this, the industry and consumer-goods companies mounted vast advertising campaigns extolling the virtues of plastics and recycling. Wide-ranging public campaigns, such as Keep America Beautiful (KAB)'s 'Crying Indian' campaign (whose slogan was 'People start pollution. People can stop it.') and the American Chemistry Council's Plastics Make it Possible campaign, branded consumers as 'litterbugs' and sought to pin accountability solely on individual behaviour - a theme that continues to this day.<sup>25</sup> At this time, the industry also started to move against container-deposit systems, noting that every returnable container displaced from the market would mean the sale of 20 single-use containers.<sup>26</sup>



Having successfully distracted the public and governments with the false promise of widespread recycling, plastic production began an exponential surge, roughly doubling every decade,<sup>27</sup> overtaking all corners of our lives and coming to define the convenience-is-king throwaway culture of the 21st century. Out of sight, mountains of plastic waste piled up in landfills, burned in incinerators or were shipped overseas for processing. For a 30-year period (1988-2018), material that couldn't be effectively recycled domestically - representing around 50% of the world's plastic waste - was shipped to China to be downcycled into plastic pellets for use in China's booming manufacturing sector.<sup>28</sup> This was no magic trick, however; dirty scrap plastic was causing a health and environmental hazard, and what couldn't be crudely recycled ended up in incinerators, landfill or the environment. China decisively severed itself from the global waste trade with its National Sword policy in 2018, rejecting all but the purest waste streams. But the waste trade didn't just disappear; it flowed into new countries, with Thailand seeing a 2000% jump in imports of US plastic waste in the first six months of 2018.<sup>29,30</sup> Overwhelmed







by the world's waste, and with vast amounts of it leaking into the natural world, one by one these countries have closed their doors, tightened restrictions or turned away shipments of contaminated waste.<sup>31</sup>

The waste trade has compounded growing domestic waste-management issues in middle- and low-income countries across the world. Looking to expand into new markets, consumer brands such as Unilever, Nestlé and Procter & Gamble have increasingly pushed single-use plastics on countries like India, the Philippines and Malaysia, offering products previously only sold in larger quantities in small, affordable sachet form. This revolutionised access to items like shampoo and detergent but saddled countries with a multilayer plastic-waste problem, which the same companies are still struggling to address effectively.

While continuing to offload responsibility for dealing with plastic waste onto consumers in all markets, Big Plastic points the finger of blame at Asian countries, in particular, where the majority of plastic enters river systems and the marine environment - even though the industry itself is responsible for overloading countries lacking developed waste-management system with unrecyclable bags, films, foils and sachets, 60% of which comes from just 10 companies.<sup>32</sup> Meanwhile, across the world, hard-to-recycle or contaminated plastics are piling up - many of them diligently sorted and placed in the recycling bins by citizens, who are unaware that their recycling often ends up in faraway countries that lack the capacity to deal with this waste.<sup>33</sup>

### 1.3. A turning point for plastic pollution?

The fight against plastic pollution has been mounting since seabirds were first discovered to be ingesting plastics in 1960.<sup>34</sup> Since then, and particularly in the past five years, our understanding of the breadth and gravity of the plastics crisis has spilled out into the mainstream, with a flurry of studies, documentaries and public campaigns. In the face of huge scrutiny, the plastics industry, consumer brands and retailers have found themselves in a repeat of the 1970s - back under the spotlight, facing bans, regulation and consumer outrage. Over 90% of European citizens believe protecting the environment and climate is important, with solid support for policy measures to tackle plastic pollution;<sup>35</sup> likewise, over 90% of respondents to our own surveys in California and Austria agreed that plastic producers should contribute to managing plastic waste.<sup>36</sup>

Responding to unprecedented public awareness and pressure, in 2019 the European institutions adopted the EU Single-Use Plastics Directive (EU SUP Directive), a raft of measures to ban problematic items - like plastic straws and polystyrene cups - and to stimulate effective recycling, with mandatory inclusion of 30% recycled content in plastic bottles and 90% separate collection by 2029. Other countries have attempted to follow suit: China recently unveiled its plan to cut down single-use plastics, such as plastic bags, by 2022, which could threaten 4 million tonnes of plastic demand per year;<sup>37</sup> and, in the US, the ambitious Break Free from Plastic Pollution Act proposes holding plastic producers accountable for the plastic crisis, banning certain items, bringing in a nationwide deposit return system and introducing a moratorium on new plastic refineries.<sup>38</sup>

In response, Big Plastic and the world's most-polluting consumer brands are once again drawing on a playbook of tactics and false solutions designed to delay, distract and derail change for as long as possible, protecting business as usual and actively devising strategies to avoid legislation that aims to reduce plastic pollution.<sup>39</sup> They are seeking to convince consumers and governments that, despite decades of churning out vast volumes of unrecyclable plastic trash, they can be relied on to fix it. They have been quick to voluntarily, and non-bindingly, pledge an end to plastic 'waste' - from totally ineffectual (but highly publicised) sponsored beach clean-ups to token products made from ocean plastic, renewed recycling campaigns, non-binding targets, chemical recycling and promoting 'greener' - but often pricier - products. However, these commitments often end up as no more than a trail of broken promises, as we will see in chapter 2. To take just a small example, from 2017-18, British supermarkets' plastic footprint increased from 886,000 to 903,000 tonnes, in spite of their widely publicised declarations to turn the tide on plastic.<sup>40</sup>

### 1.4. Co-opting a crisis

Since the beginning of the Covid-19 pandemic, the world's governments, businesses and civil society have mobilised in an unparalleled response to protect public health and ensure vital services remain operational. With the fallout of shutting down much of the economy and stipulating social isolation and stay-at-home orders for 3.9 billion people, and the ensuing threat to livelihoods, governments have been swift to arrange financial aid and bailouts for businesses and individuals affected by the crisis.<sup>41</sup>

While many businesses, such as those in hospitality and other service sectors, have legitimately sought to lobby government for assistance, the oil, gas and petrochemical industry - including major plastics producers - stand out for their attempts to seek not only high levels of direct and indirect financial support but also a range of regulatory rollbacks, exemptions from worker-safety and environmental protection laws, and the criminalisation of protest.<sup>42</sup> Much of this goes far beyond the scope of support that governments are offering, including letters from the European Plastics Converters (EuPC) to the European Commission (EC) requesting delaying the EU SUP Directive;<sup>43</sup> from industry association PLASTICS to the US Health and Human Services Secretary, soliciting an official declaration of support for single-use plastic products as 'the sanitary choice', despite the lack of scientific evidence to support that claim;<sup>44</sup> and from a coalition of plastic producers to the US Congress, asking for a \$1 billion bailout.<sup>45</sup>

These are just a few examples of the plastics industry attempting to co-opt the crisis to portray itself as the guardian of public health during the Covid-19 pandemic. The petrochemical industry is holding up PPE - vital products in the fight against the virus - as a poster child, and using it to justify the expansion of new plastic-manufacturing facilities, despite the fact that PPE would represent just a fraction of such facilities' output, and that currently almost half of all plastics are used for disposable packaging.<sup>46,47</sup> Additionally, a recent scientific consensus statement showed that over 12,000 chemicals hazardous to human health are present in single-use plastics,<sup>48</sup> including endocrine-disrupting chemicals - present in everyday plastic products - that weaken the immune system and the body's ability to defend itself from Covid-19.<sup>49</sup> In combination with the serious harm posed by the entire life cycle of plastic, and its exacerbation of climate change, this makes Big Plastic's determination to depict itself as vital to human health appear deliberately brazen. Oil, gas and petrochemical companies are banking on plastic production as a lifeline amid the declining profitability of fossil fuels;<sup>50</sup> they are desperate to ensure its future, and unbind it from regulatory shackles, wherever they can. The industry's rapid lobbying in response to Covid-19 shows its readiness to co-opt crises, manipulate harried politicians and exploit public fears to continue smothering the world with plastic.

Additionally, pandemic-related moves to pause or postpone the implementation of deposit return systems (DRS), such as pressure by supermarkets in the UK in July 2020,<sup>51</sup> are being enacted to lessen the strain on businesses and municipalities during the crisis. As traditional opponents of bottle bills and deposit systems, many retailers are using this as an opportunity to paint such return systems as dirty and unhygienic to ensure any hiatus is made permanent, despite the utility of such systems in providing effective and clean streams of easily recyclable plastic.<sup>52</sup>

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